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PREFACE

VOLUME LIBRARY brings together ready knowledge on a wide variety of subjects about which students constantly inquire. It is a ready reference for the busy man where he may quickly and easily inform himself about matters of education, history, literature, science, biography, geography, trade, industry, art, and an indefinite number of other equally important subjects. It is at the same time a text where may be studied arithmetic, algebra, geometry, grammar, mythology, hygiene, among a long list of studies. The Volume Library is in the best sense a library in one volume, its subject matter being so arranged that the reader and student may find the desired information with a minimum of effort. Its fifteen books are definitely graded and fully organized with a view to easy access to and mastery of its contents.

Book I. The mature knowledge of experts in Education makes this an unusually valuable book for parents as well as for teachers. Dr. Maximilian P. E. Groszmann writes on Obedience, words no parent can afford to neglect; Professor R. H. Kirtland of the New York State College for Teachers describes the relationship between education and making a living; there are book shelves with graded books for all ages; and Lillian Goetz presents a complete Kindergarten course by which the Kindergartner or the mother will find material for the entertainment and instruction of the little people.

Book II. Language and Grammar are treated for the very young by Dr. Winifred Sackville Stoner, who makes "correct speech" easy and pleasant. Her language games, "language house" and other language devices are both original and unique. The illustrations are instructive and amusing. For older persons, children and even adults, there is a complete grammar and composition. Sentences are diagrammed and the structure of the composition is outlined.

Book III. Dr. Harry Worthington Hastings has made a dictionary of authors, books, characters and literary terms that will answer the usual queries about book people. There is also a parallel outline of world literatures, lists of famous books, a list of literary pseudonyms and sobriquets, and a complete dictionary of mythology.

Book IV. Dr. F. B. Vrooman has made a History, alphabetically arranged, where historical information becomes readily available. It is profusely illustrated with drawings. Almost every important event is visualized for the reader. Universal history is presented in parallel outlines from the dawn of history to the present.

Book V. Dr. M. P. E. Groszmann writes the Geography for the very little people, showing how the youngest may pass from play to a genuine understanding of the subject. Professor George M. York of the New York State College for Teachers treats Commercial and Industrial Geography so that school children, parents and teachers may alike enjoy and profit by its study.

Book VI. The book on Trade and Industry is a storehouse of valuable facts brought together by such experts as Albert R. Mann, Charles R. Toothaker, F. D. Coburn and William Scott. Agriculture, raw materials, manufactures, banking, each will repay the reader for his efforts.

Book VII. An up-to-date atlas of the world, with special emphasis on all the states of the Union. Transportation lines, rail and steamship are featured.

Book VIII. Brief biographies of 4,000 leaders in the affairs of the world, both of today and in other times, are given. Special treatment is given to the 100 greatest men and women of all times, with the necessary references for further study.

Book IX. A multiplex dictionary makes a special feature of synonyms and antonyms, gives geographical, curious and personal names, and calls special attention to words frequently mispronounced by placing a star in front of the word.

Book X. A complete treatment of Arithmetic, Algebra and Geometry. Special emphasis is given to short methods for rapid calculation. Commercial forms are demonstrated. Algebra and Geometry are presented in simplest terms so that anyone may learn for himself. Dr. G. M. Conwell, G. M. York and C. J. Terrill of the New York State College for Teachers, and H. C. Barber of the English High School, Boston, Mass., have made Mathematics easy for the student.

Book XI. David Starr Jordan outlines the whole subject of science; Dr. Todd of Amherst gives the essentials of astronomy; Dr. Butler, the essentials of Mineralogy; Drs. Smith and Menzies, the essentials of Chemistry; Dr. Harvey W. Wiley treats Chemistry of Foods; Dr. Frederick Starr, world-famed Ethnologist, Ethnology; Dr. Davison treats Physiology; Dr. Jackson of Penn. State College writes on Electricity; Dr. Woodhall of Teachers College, N. Y., the essentials of Physics; Dr. Kingsley, the essentials of Zoology, with a dictionary of animals; Louis A. Fisher of the Census Burea9, gives complete outlines of weights and measures.

Book XII. Dr. J. W. Jenks gives the important facts regarding the United States Government; there are also miscellaneous facts about Presidential Elections, Parliamentary Law, a full text of the Constitution of the United States and recent laws affecting labor.

Book XIII. Leo L. Tully brings exceptionally interesting information together in the Useful Miscellany. Here are answered such questions as "what makes our teeth chatter" and who came over on the "Mayflower." It is an encyclopedia on oddities.

Book XIV. Dr. Caroline Croasdale of the New York State College for Teachers has treated personal hygiene. Especially valuable will it be for parents and teachers in guiding and conserving the health of children. A complete dictionary of school and college athletics, together with outdoor sports, is written by R. H. Kirtland of the New York State College for Teachers.

Book XV. Architecture, sculpture, painting, music are comprehensively treated. Illustrations are numerous and well selected. Antique furniture is described. The world's famous paintings are catalogued.

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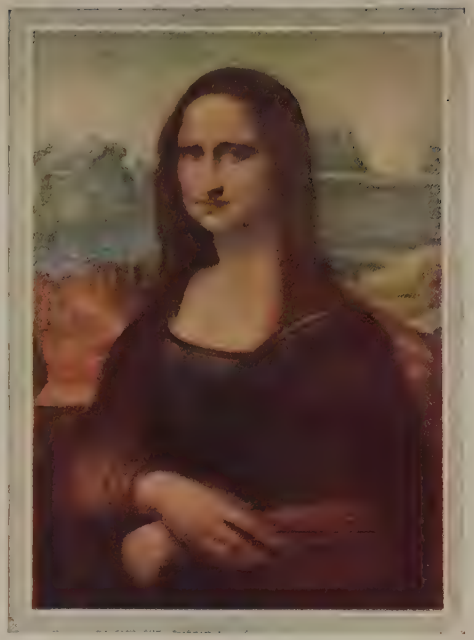
BRITISH SCHOOL



MONA LISA—*Leonardo da Vinci*
FLORENTINE SCHOOL

MADONNA DEL GRAN DUCA—*Raphael*
ITALIAN SCHOOL

SYNDICS OF THE CLOTH MERCHANTS' GUILD—*Rembrandt*
DUTCH SCHOOL

PORTRAIT OF MY MOTHER—*Whistler*
AMERICAN SCHOOL

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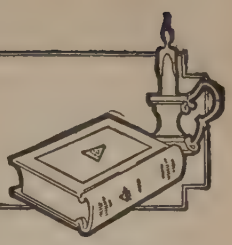
THE SCHOOLMISTRESS—*Fragonard*
FRENCH SCHOOL

FIELD OF EDUCATION

G. STANLEY HALL



THE END AND AIM OF EDUCATION. If the 25,000,000 children of school age in this country were placed in a solid line, it would extend from the northeast coast of Maine to the southwest coast of California, and according to Professor Snyder, all except those that stood in the latter state do not go beyond the grammar-grades. Worse than that, the majority of our citizens and voters have probably not gone much, if any, beyond the end of the sixth grade. Thus the problem of doing the most and best for the grammar-school children is one of profound national importance for the safety and welfare of our country.

The end and aim of education is to develop each individual to the most complete maturity of all the powers of the body and mind. In its larger sense, education begins at birth, or with the marriage of the parents, and we must not forget, that, besides the school, there are more than fourscore different types of child-welfare organizations that are essentially educational, dealing with health, morals, recreation, occupation, religion and all the rest.

An educational system naturally falls into four grand divisions: The first deals with the child up to the dawn of the teens; the second, or intermediate or high school, includes the early, and the third, or collegiate, the later pubescent years; the fourth, or professional, deals with mature young men and women.

Primary Education.—The end and aim of primary education may be divided into (a) special, and (b) general. Under the first come reading and writing. The child who has mastered these arts has access to all the literature in the vernacular. He can transcend his own limits of time and space, and commune with the greatest minds that have left their written records and literature in any age or land. He can become a world citizen and learn from the printed page whatever he will about the life of his own community, state, nation, the world; and from this point on, in some sense, his education is in his own hands.

The point now to be stressed is how to insure that he will read the best, and not the worst, things in print. He has before him the world of letters and books. There is, alas, always the possibility that he will be degraded by reading what is vile and demoralizing, for there is printed matter which anti-vice societies destroy by the ton, which causes a moral decay that is impossible to those who cannot read. A graver danger, because one to which all are exposed, is that of spending their reading time upon the second or tenth best, for print now keeps alive masses of material which would have sunk to oblivion but for the printer's art.

Good Books.—Among the most precious educational agencies are those that determine the content of school readers, advise and list the best books and incite children to read them by means of story telling and libraries in the schoolrooms and arouse and direct the reading habit, which at about the end of the grammar grades reaches the highest point of its curve. At this age, more boys, and especially girls, are liable to have reading crazes than at any other. Hence some have gone so far as to advocate a kind of school Bible or canon so as to make certain that children shall know and feel the uplift of the greatest books that make the world's classic literature, in some epitomized form. By the aid of the story teller's art this ideal is no longer impossible. From the spontaneous reading interest of children, of which there are now several admirable special studies, it would appear that on leaving the grammar grades, each child should have some special reading interest and have acquired the habit of gratifying it in our now universally diffused libraries, to which most children have access.

Arithmetic is the door to mathematics. Although we have doubtless overemphasized it, it is essential that the child command the methods of ready and correct computation which are vital for every vocation. The simple rules of arithmetic and fractions, the laws and tables of mensuration, proportion, the elements of the roots and powers of numbers, with the elements of geometry, but not much of any algebra, should be attained. Fair penmanship and simple composition, with decent command of the English language, are of course essential. The movement to defer writing till the second grade, or the eighth year, is beneficent, and will do much to improve penmanship, while more oral and less written work will tend to give a better command of language, which lives, moves and has its being in the circuit from ear to mouth, and is a dead and lifeless thing on the long circuit from the eye that reads to the hand that writes.

Nature Study, a little school gardening and occupational work, note singing, which should precede note reading by several years and which cultivates not only the voice but the heart, is now believed to be both possible and desirable for nearly all children.

Geography should begin with the knowledge of the immediate environment perhaps of the schoolroom and widen to the town, the state, the nation and the world, in concentric irradiation, with some map drawing and sand modeling, with industrial, commercial and transportational elements always stressed. This work can often be naturally connected with the industries of the locality, sources of raw material, markets for the finished products, and be helped out by regular school visitations to the principal industries of the town.

History and Civics are vital for citizenship. Both may well begin with the locality, with visits to the city hall and other public institutions of knowledge, the historical monuments and their significance and sentiments inspired by the flag.

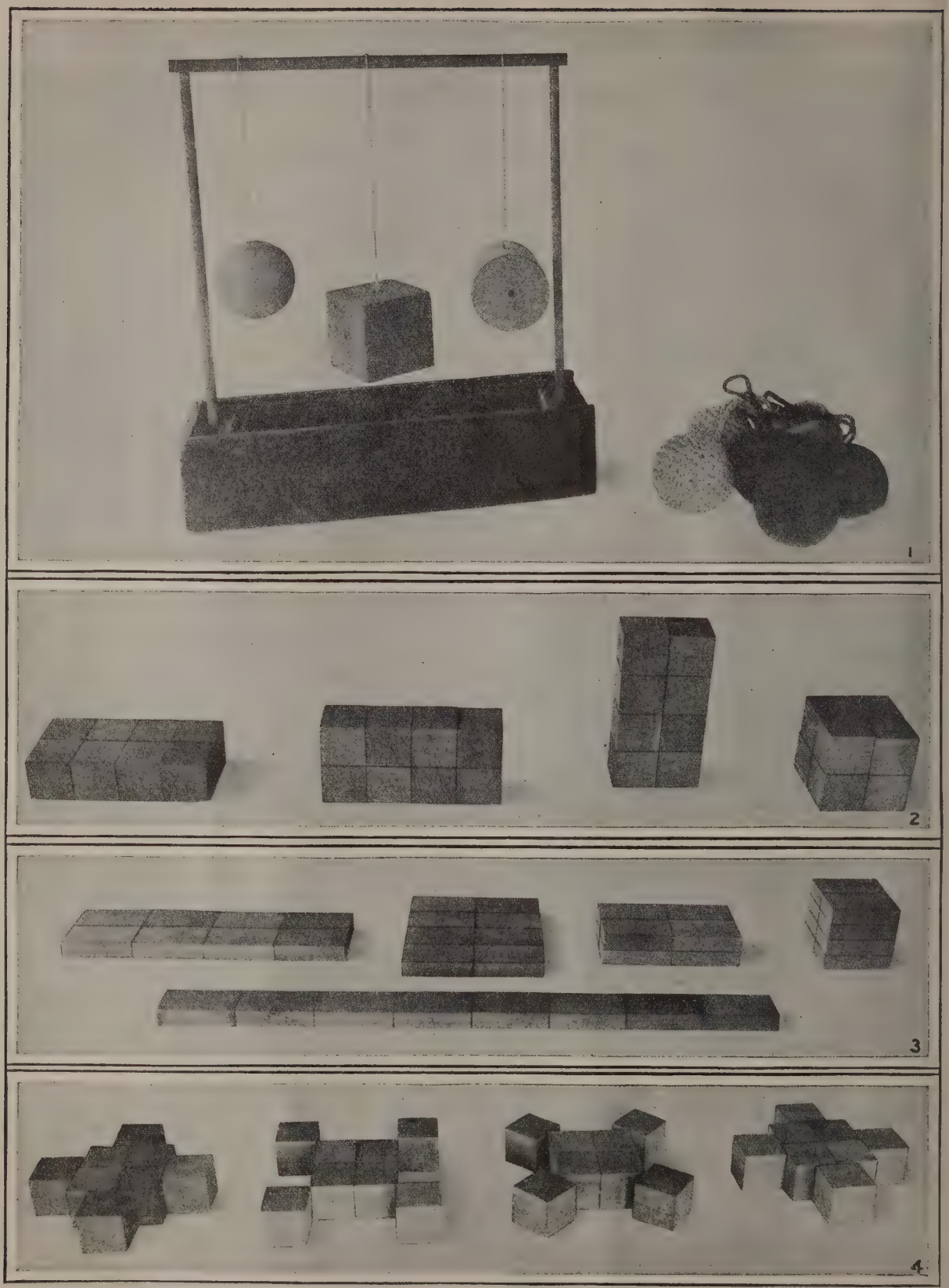
Besides these, there should be a margin or fringe of accessory influences pervading the grammar grades. Arbor Day and other holidays should always bring their lessons. There should be, if possible, visits to the reformatory and charitable institutions of the vicinity, and their lessons should be inculcated. Before leaving the grades, every child should have a good repertory of plays and games, and should have some practice in the elements of manual training as introductory to some form of skilled labor. The influence of the school house, room and yard should be made the best possible, and the personal influence of the teacher should culminate in occasional serious and carefully prepared talks upon life and its duties, obligations, social relationships.

At the very beginning of the teens, teachers and systems should recognize the marvelous expansion of energy and the new interests that are awakened and therefore the new methods that are necessary to enlist the best powers of the child.

Intermediate Schools.—Every community should have continuation schools to meet the needs of the thousands of children from thirteen or fourteen to sixteen who have left school and who cannot and perhaps should not find vocational employment. The needs of this class of children are now a great problem, and there is a growing consensus that industrial occupations should be provided for all who want them.

Moral Instruction.—In this critical period of life, habits that will endure are being formed more rapidly than any other. Morals need great attention. There is now a new awakening of the community to the dangers of sex errors, and the need especially for boys, if not also for girls, of some definite and personal instruction along these lines. It is when we consider this aspect of the subject that we realize most keenly the need of more male teachers, especially for boys who in these years experience, consciously or unconsciously, something of revolt against exclusive feminine control whether in the home or the school. Every boy needs a personal mentor such as the Big Brother movement contemplates. He also ought to be looked over by a vocation bureau and given hints at least concerning classes of occupations which he should avoid and those which he can hope to enter with some advantage.

A Sound Body.—Every school child should throughout this period have stated and repeated medical examination. The teeth almost always need attention and irremediable injury may follow if it is wanting. Ears and especially eyes should also be tested. The general condition of each child should be inspected and suggestions to parents and teachers made. In some lands a life and health book is kept, recording the observations of teachers, and the suggestions of physicians concerning regimen, diet, etc. Recent studies by the scores of hundreds show how many children are handicapped for life by defects that could be remedied and diseases that could be avoided. To this end, gymnastics, playgrounds, open-air schools, excursions, school meals, dietaries, free dispensaries and all the other health-giving agencies are now greatly desired.



KINDERGARTEN "GIFTS," PLATE I

1. Gift first, conveys ideas of *motion* and *matter*.
2. Gift two, *matter* and *measurement*.
3. Gift three, *length*, *breadth* and *thickness*.
4. G.ft four, *beauty forms*.

EDUCATION AND KINDERGARTEN

SUSAN FRANCES CHASE, M.A., Ph.D. M. P. E. GROSZMANN, PH. D. LILLIAN GOETZ
RICHMOND H. KIRTLAND, M.A.

WHAT IS OBEDIENCE?

To be obedient is usually considered the greatest virtue, and at the same time, the most sacred duty of children. But unless we understand the meaning of the words "duty" and "virtue", we cannot judge of children's obedience rightly.

Virtue is not the same as goodness. Goodness is a quality of the soul which is born with the child. Virtue is the practice of goodness, that is to say, *doing* good things. You may practice goodness without being good; or you may be good without having the training in practicing goodness. As one writer expressed it: "The tenderness of feeling shown by many children is goodness, not virtue; to abstain from theft in a thief would be virtue, not goodness."

Even the best natured child, the child with native goodness, may not *practice* the virtue of obedience unless he is *trained* to be obedient. On the other hand, there are obedient children whose obedience is far from being a desirable thing; it may be cowardice, cunning, fear, design, and what not.

Obedience as a *duty* has no meaning to the *young* child. The understanding of duty is based upon the ability to choose between right and wrong. It implies the appreciation of responsibility. But such choice and such responsibility are foreign to the young child.

The Child does not owe Obedience.—When do we OWE obedience? Obviously only when we enter into an agreement or contract the carrying out of which requires that we do certain things. Under such a contract we may have to carry out the orders of some other person and obey his directions.

The child has never entered into any contract of this sort with you. Strictly speaking, he cannot therefore owe you anything.

He "owes" you his life and maintenance, it is true. This means that he would not exist if it had not been for you becoming his parent. But his entrance into life was not of his own choice or will. He has no moral obligation on account of that. If there is any obligation it is that of the parent who owes proper care to the child for whose existence he is responsible.

This consideration may make the problem of *training for obedience* somewhat clearer.

Rather than to expect his child to be obedient from any sense of *duty*—a sense which does not exist—*the parent must win his child's obedience.*

How can this be accomplished?

Winning the Child's Obedience.—Obedience means that the child should respond promptly to his parent's, or teacher's, direction and command, without hesitating, or doubting, or arguing. This response, to be ideal, must become a sort of automatic reaction to a command, just as if the parent were pushing a button, the child doing the rest. This kind of response excludes, for the time being, independent thinking on the part of the child. He should not think for himself, he should mind.

For a number of purposes, this kind of obedience has its value. The child, inexperienced as he is, will be exposed to dangers which he does not understand, and the parent's superior intelligence and experience must have their force.

But we see right here that obedience in this sense is necessary in *the child's own interest*, not to please, or to gratify, or to accommodate the parent.

The parent, therefore, must not expect this kind of obedience when there is no educational or safe-guarding purpose.

Again, obedience like this has its limitations. It is altogether mechanical. It does not appeal to the child's own intelligence and good will. In fact, it has the tendency to destroy the child's sense of independent thought and foresight, of self-control, of responsibility.

THE PRINCIPAL AIM OF EDUCATION MUST FOREVER BE TO GIVE THE CHILD THE POWER OF SELF-CONTROL OF SELF-MANAGEMENT, AND THE SENSE OF RESPONSIBILITY, OF INDEPENDENT THOUGHT.

This is the reason why the method of securing obedience of the mechanical kind, valuable as it is, has to be employed with great caution.

The Motive of Fear.—About the worst method to secure obedience is unfortunately most commonly employed; to frighten the child by *threats* and *punishments*.

The motive of fear is the most treacherous of all motives. It breeds cowardice, deception, hypocrisy. It destroys character and personality. It prevents the development of confidence between child and parent, and will never teach a child the real reasons for right conduct.

Different Types of Children.—It must also be remembered that all children are not alike. There are many different kinds.

The *timid child* can be easily frightened. In fact, he will never be sure of himself unless commanded, or directed. Such a child, instead of being cowed by harsh commands, should be encouraged, cheered, heartened, stimulated, so that he may overcome his natural timidity and look out for himself as much as possible.

Sometimes this timidity is a sign of illness, or of nervous troubles, and then it is advisable to consult the family physician or the specialist.

There is another type of child who, while not really timid, follows the line of least resistance. We may call him the *conforming child*. He is also easily led and will learn to "obey" without much trouble.

This, however, is in a measure his misfortune. In him, it encourages slothfulness of thought, laziness of action, loss of self-respect. Often such a child becomes a misfit in life because he has never learned to assert himself. He will miss his real self, and will drift into a sort of life which requires the least exertion on his part. He will forever be a "follower", one of the mass—never becoming a leader, and quite helpless under a change of fortune. Yet, many of these "conforming children" have individual powers of their own which are well worth developing but which are lost on account of their lack of self-assertion. A strict enforcement of "obedience" in these cases is fraught with danger.

The *non-conforming child*, on the other hand, the child that is not easily led, but will assert himself and be contrary to suggestion and leadership, is the problem of most inexperienced parents.

His very self-assertion is a very hopeful sign for the development of a strong personality. Under ordinary circumstances parents ought to be happy for having obstreperous youngsters who will try their parents' skill and wisdom to the utmost. Home education is no sinecure, to be sure: but there is a great satisfaction in dealing with children who have minds of their own. They will be the greatest glory of parents in the end.

If the sense of self in a child defies all bounds, we may be dealing with a child personality that requires the advice of the psychiatrist. Extreme self-centredness is a symptom of mental disease. Here it is not discipline, but expert treatment which is required.

The *temperamental child* is one in whom emotions play a great part. To train these emotions properly is often a great problem. Often we come across nervous disturbances in these children, especially at certain periods of their lives.

Of course, the fault lies sometimes with lack of firmness and consistency on the part of the educator.

Generally speaking, we may assert that *wherever there is failure to secure obedience, the fault does not rest with the child, but with the educator.* So, do not wreak vengeance on the child, but search your own soul. Somewhere and somehow, you have failed, you have made mistakes.

To blame the child for misconduct without further investigation is just as wrong as if a physician would blame a patient for still having a fever after his treatment has failed. The wise doctor will realize that his patient has no interest in being sick, and that his, the physician's, diagnosis and treatment must be at fault. Likewise, the child has no interest in being disobedient. He would do the right thing if he knew, or had been trained to do, the right thing.

Beginning Early.—Training in obedience of the right kind must begin early. It is really a training in *habits of regularity*.

It begins with the *regular feeding of the baby, regular hours and habits of sleep, of bathing, or outdoor and indoor life, of play and exercise.*

A training in regularity has a remarkably calming and soothing effect upon a nervous and fidgety child. It is in conformity with nature's laws.

In health, pulse and heart-beat are uncompromisingly regular; breathing follows a definite rhythm; the heavenly bodies move in infinite space with the regularity of a perfect clock. So must the life of a child in all its voluntary manifestations be tuned to rhythmical symmetry.

Life rhythm is the keynote of happiness and success. Only when the body as well as the mind are well tuned can there be physical and mental health.

The life of the universe is bound by laws of uncompromising regularity, we said. A break in this regularity, and the world would go to smash. So the parent, in training his child in regular habits, must be consistent, firm, uncompromising. No weak giving in to coaxing or wheedling, or to crying and temper on the part of the child. No vacillation or indecision at any time.

A Proper Understanding.—Yet we must remember one thing. The laws of the universe are unchangeable because they are the manifestation of perfect order. We mortals cannot claim infallibility.

Our firmness must neither be arbitrary nor must it be mechanical.

It must be based upon such knowledge and understanding of the child's nature and needs as we can obtain It must be tempered by sympathy and love, terms which are not the same as weakness. It must be moderated by the knowledge that our own judgment may err.

Firm resolution on the part of the parent will not shock or repulse the child if there is a kindly smile accompanying the firm insistence, if the eyes in which an unchangeable resolution is expressed also have the twinkle and radiance of love.

The parent must know what and why he commands, or why he insists. In trifles, there is no need of dramatic force. He may allow the child to follow his own preference many a time when one way is as good, or about as good, as another. The parent will remember that a child's way is not that of an adult; that a child's standards of accuracy are not the same as those of an adult.

The parent will realize that he is the child's leader, but not his master, or owner. *The child has his own rights as a human being.* It is the parent's fine privilege to discover in his child a new soul, a new individuality, and to help that individuality to develop through the ages of infancy and childhood until the time comes when it can assert itself in an independent way.

The parent will learn to *distinguish* between *"naughtiness"*, so-called, and *distress.* He will make sure, absolutely so, that his child's apparent unwillingness to respond is not due to bodily or other causes.

The baby may cry because there is an actual discomfort or illness. The older boy or girl may not answer because he, or she, is, unbeknown to the parent, *hard of hearing.* The child may not give the right answers to questions because he is *color-blind*, or *defective of vision.* Eye-strain may be responsible for ill-temper, just as are indigestion and incipient disease.

The parent will learn to read the *danger signs* of fatigue, of illness, of nerve-strain, of unhappiness, before he insists upon his point.

The parent will understand *situations* and *emergencies* such as occur in the daily life of a child.

Generally speaking, it is necessary that the child should have his regular times for meals, play and sleep. Yet, there may be occasions when the parent's call for supper or bedtime is ill-timed, regular hour notwithstanding. A child absorbed in his play is a human being seriously occupied in solving his life's problem. For every bit of *play* is really an *experiment* which helps the child to understand his surroundings and his own powers. He may be just in the midst of a fascinating problem the solution of which is at hand if he can remain undisturbed.

The wise parent will not call his child away from his absorption by shouting from another room, or will not scold indiscriminately when not promptly obeyed. He will *sympathize with his child's problem*, and if he thinks it reasonable to interrupt his child's pre-occupation, he will take care that the chain of thought in the child's mind is not rudely broken.

All this calls for discernment, discretion, tact, understanding.

Winning the Child's Confidence.—The youngest child's response depends mainly upon a more or less mechanical habit. But the older the child grows, the more must we enlist his *intelligent co-operation.* Even the older child, it is true, must learn to obey immediately, instinctively, without at the moment questioning the parent's reason. He will do so if he has confidence in his parent: if he knows that his parent will never demand anything which is not for his good, which is not really necessary, which is not wiser than his own choice would be.

It is a great mistake to think that we must always insist that we are right. This claim of infallibility will quickly destroy a child's belief in his parent's discretion and good will. For our children see much more clearly than we think they do. They will find us out, and will discredit our pretense. They know that we err, as all humans err. They know that we are not perfect, and that to pose before them as perfect beings is, to say the least, a foolish camouflage.

A child honors his parent more, and trusts him more, if that parent is honest enough to admit a mistake promptly, and to rectify a wrong command or suggestion.

The Method of Suggestion.—The sooner the parents taken their children into their confidence, the readier will be the response. Counseling is better than commanding, suggestions are better than demands.

When the child approaches *adolescence* and *maturity*, we must recognize his own unfolding power of reasoning, and must respect his opinions and convictions. At this critical period of development, the young mind becomes conscious of its own individual rights. A new personality arises. If opposed with too much authority, the young man or woman of fifteen or thereabouts will become rebellious, obstreperous, resentful, sullen, or deceitful.

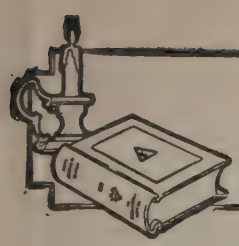
The Parent as His Child's Best Friend.—The most wonderful thing in the world is the friendship between parent and child. There is no need of enforcing "obedience" when the relationship between parents and their sons and daughters, has ripened into mutual respect, reverence, and confidence, when there is a firm *basis of love.* A child who knows that he can come to his mother and father in every crisis that confronts him; that there is no truer, or more sympathetic and understanding friend anywhere to be found than in his own home, whose closest confidantes are his mother and his father—will have the strongest safeguard against wrongdoing there is in human life.

This is most necessary in the matter of the gravest problems which confront a boy or girl of adolescent age, viz., those connected with their awakening sex instinct, the problems of *love, passion*, and *marriage.* If the proper foundation of confidence has not been laid long before this period arrives, the child's moral life may be wrecked on the rocks of unrestrained impulses.

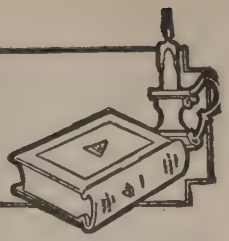
From no other lips should a child learn the truth about the wonderful mystery of life, of motherhood and fatherhood, of his own birth and growth, than from those of his own parents. The sanctity and wonder of the marriage relation, the sweetness of childlife as a product of this relation, will become living realities to the child if their true meaning is constantly exemplified to him in the frankness and honesty, and in the spirit and practice of love and purity of his own parents in his own home.

Children thus brought up will not resent their parent's advice and counsel in the matter of their own choice of mates, of their own marriage. Neither will they resent their parents' counsel in the matter of a *choice of occupation.* There will be a communion of hearts which will lead to mutual understanding and appreciation. If the counsel be not accepted, there will be no bitterness.

What we must develop in our children is not the blind and mechanical kind of obedience, but that which prompts the right-minded man and woman to bow before the laws of Nature—a trustful yielding to sympathetic wisdom, a reverence for the law of righteousness.



AMERICAN EDUCATION



Why go to School?
The Kinds of Schools in the United States.
What to Expect from Studies in the Public Schools.
How Shall I Earn a Living, and How Prepare Myself?

Why Go To School?—It pays, in dollars and cents, to go as far as one can in the right sort of school—in almost any school, in fact, Mr. Edison and Mr. Ford got along without much formal training; so did Mr. Lincoln and Walt Whitman. Very superior persons like these, and all fools, are outside the law of averages. Perhaps their superiority may lie in a specially active will and ambition, spurring an otherwise ordinary person to train himself. Somewhere, somehow, everybody who intends to amount to something in this world must *get ready*; and schools are the best answer we have learned to make, so far, to the problem of getting ready.

It pays in dollars and cents. One who leaves school early is shut out from all the professions, to begin with. He cannot be a lawyer, a doctor, a teacher, a dentist, a surveyor, a cost accountant, a preacher, an electrical or chemical engineer, a modern architect, without preparation in school. Of course almost anybody can work with his hands and feet, and we think that everybody ought to do, and keep on doing, some work of that sort; but the boy who quits school early is pretty surely condemning himself to work *only* with his hands and feet for the rest of his life. A girl may get a place in a ten cent store as soon as the law allows her to leave school, and a boy who finishes the eighth grade can strike the level of mixed drinks at a soda fountain —both perfectly respectable jobs for a summer vacation, and both likely to have tragic consequences if continued after the school bell rings in the fall. Few important business positions go nowdays to young people with less than a high school training: and the overcrowding of every American university shows pretty clearly that even college education pays.

The "learned professions" have no monopoly of the new demand for training. For example, the day of the small farmer is passing. Workers have drifted to the towns, and the farmer has been compelled to use labor-saving machinery or give up his occupation. A good machine does the work of three to ten men, so that a progressive farmer may find the losses in man power more than made up by the gain in machinery. Yet only a born genius can operate and repair all sorts of machines without training in mechanics: and the best place to get that training is in the right kind of school.

Mechanical requirements form only a part of the change in farm conditions. We have passed the years of heavy cropping at the expense of native richness. A return must be made to the land: different soils and varied crops require different treatment; crops that do well in one soil are not adapted to another. The raising of stock under modern conditions requires expert knowledge of a good many sorts. In short, while there is still a small living in old-fashioned farming, the men who make the big money on the farm are *students*; and the short cut to the things they need to know is the farmers' high school and the farmers' college. If a boy likes farming, but doesn't like the kind of school in his neighborhood, because he sees no use for Latin, Ancient History and such; if he is in a hurry to get the best training for the big-scale modern farming—the farming that pays—there are schools in his state where he can find the very courses he needs, and where he can work out part or all of his expenses while he learns about his own affairs. Beyond any question, this is the way to a big success outside the towns.

Whatever the practical future we dream about, beyond the wheel-barrow and the retailing counter, schools can shorten our road. Reckoning the working wage of a life-time, it can be fairly shown that every day in the four years of a completed high school course has been worth to an average student about ten dollars. It is work with the head that pays.

But the best rewards of going to school are not in dollars and cents. There is a stagnating littleness in the common routine of mechanical tasks, unless the mind has caught the secret of escape into broader fields. Whether gossip is malignant or harmless, its interest is in the crude stuff of fact—little lumps of information, rather more welcome if false,—about folks and things near by. Hundreds of the men and women we know are dying mentally of this kind of stricture. Training of the right sort gives a world-wide range to our interest in facts; makes us reluctant to accept mere hear-say; shows how to test information and appearances.

Yet this is only the ground-work of an always fascinating mental experience. However we get our training, in school or out, if it amounts to much, it teaches us to interpret our facts, to find the larger meanings of conduct, the relationships among physical events, in the light of principles. The reasoning student, unlike the news-gathering gossip, values facts as part of a net-work of cause and effect which it is his duty and pleasure to understand, for the common good.

This last phrase suggests the third degree of training. When facts have been collected, tested, and explained, it remains to put our knowledge to practical use. This third function of schools is finding a steadily widening application in every school that attempts to do some definite work in the world, or to prepare for thoughtful citizenship.

The fourth possible service of schools is the training of feeling and taste, so that we come to appreciate life for the rich thing it may be, and to act with consideration for the interests of our fellows. Only the rankest kind of Philistinism attempts to express the value of an art object in dollars and cents. We must live, to be sure; eat, wear clothing, sleep in a house in winter time; but the best part of life is that which the good book says shall not be by bread alone. Culture, like other New Testament graces, cannot be bought and sold, but must be lived through. The big danger of leaving school too early is the danger of personal littleness; of stagnation in a mental treadmill; of the vulgarian's death in life.

College days do more than others for mental freedom, catholicity, and taste. When we come along toward the end of our journey, we know that no part of the way has been better worth traveling than the way toward a bachelor's degree in the liberal arts and sciences.

THE KINDS OF SCHOOLS IN THE UNITED STATES

The attempt to divide any big subject into its parts requires first a point of view. We can look at education from many different angles. Who pays the bills? Who directs and controls? Who measures results? How are the schools organized? And so on. The following analysis uses the more obvious view-points.

Support.—Schools are supported from one or more of these sources: Public money collected by tax; fees, paid by students; assessments levied by societies, as for parochial schools; gifts and endowments. Gifts, endowments, fees, and parochial assessments indicate dissatisfaction with the support or the character of public education. Parochial taxes, for instance, always indicate a belief that religion, usually a certain type of religion, is so important that it must be taught in school, and that only religionists should be trusted to teach it. Probably the only reason why religion cannot be taught in schools, public schools, is that there is so much practical difficulty in determining just what religion is.

Control.—In a democracy, the state must provide for the future safety of the government by guaranteeing intelligently patriotic citizenship. Schools stand at the head of means for making that provision. In order that the guarantee may hold, there must be sufficient state control for the purpose. In some states, parochial schools may receive a share of public moneys, if they satisfy the tests applied to public schools. In other states, parochial education is an unrelieved charge upon the church.

The amount of state control varies greatly in different parts of the country. New York State, for example, has an elaborate bureaucratic centralization of authority over all its schools, from top to bottom, with regents' examinations as its most characteristic feature. In most states, the control of the schools is practically local, with state aid for those schools which satisfy certain standards. In all parts of the country, college entrance requirements have had a marked influence in shaping public schools, an influence amounting often to practical control.

Testing Results.—How should the efficiency of teaching be measured? Can examinations be framed to correctly measure a pupil's progress? Should a bad examination paper entirely overrule a long period of good class-work? Or a good examina-

tion entirely cancel the memory of year-long failure to do required work well? Should high rating be given to pupils from schools employing trained teachers, along with good libraries and apparatus? What do we really mean by results, anyway? Are there local needs, such that central examining boards can hardly be fair to every region in the state? On all these questions, schools differ widely within each state, and from state to state.

Social Purpose.—There used to be, and still are, under one name or another, "finishing schools", whose function was to put the final polish on a perfect lady. There are schools of "liberal arts," maintained under the belief that one may be "cultivated" by the pursuit of time-honored courses in language, mathematics, history and biography. There are work-a-day schools of trade and industry, where one learns to write fifty words a minute on a typewriter, or to build a sky-scraper or a chicken-coop. Sociological schools aim to open the eyes of students to the needs of their fellows, and the proper means of satisfying those needs. Religion, art, medicine, engineering, agriculture, politics, law, education—schools for every social purpose. Whatever one wants to be or to do is taught by somebody, somewhere. Increasingly, vocational studies are winning a place in the public school.

Age of Pupils.—In "regular" schools, we expect each grade to be occupied by pupils of standard age—kindergartens and first grades from four to six, junior high schools at twelve to fifteen, and so on. But many thousands of people in this country need and should have school opportunities while they earn a living. So we have part time arrangements, especially in evening classes and correspondence schools, continuing the work of day schools, preparing for special vocations, or training for American citizenship. Students in part time schools are of course likely to be older than those in the regular sessions.

Organization.—For a life time, until recently, eight or nine annual promotions have brought average students through the elementary school, and four additional years have completed the high school course. There has been much repetition and much unnecessary subject matter in the eight year period, and so marked a difference in subjects and methods between high school and grades, that many pupils have left school rather than adapt themselves to the change. The discipline and course of study in the upper elementary grades have often been distasteful to adolescents—their studies seemed to have no connection with life. The one teacher in charge of a year's work was too often a misfit, from the pupil's view-point. The answer to all this has been either a "six-six" or a "six-three-three" plan: in both cases cutting short the elementary course—in the first plan, by making a six year high school: in the second, by inventing a new transitional school, with more vocational subjects, more freedom of choice, and departmental instruction. Under the old organization, pupils passed by grades, and a failure in even one subject was likely to hold the youngster back for an entire grade, no matter how brilliant he might be in other subjects. The newer organization promotes by subjects, and tends toward a liberal theory of requirements. The junior or connecting high school seems to be winning a permanent place. One of its best effects is in keeping pupils in school who would have left, under the old system.

Methods.—The kindergarten seeks to develop certain desirable qualities; generosity, team-spirit, resourcefulness, sense of rhythm, of form, and color, skill in simple games and hand-work. Its methods stimulate initiative, at the same time respecting the rights of other folks. Kindergarten methods deserve to influence the entire public school, and even the college; but this can hardly be *found* in practice. The very worst teaching is likely to be found in the college and university, where class-room procedure implies: *Here are the facts; take them or leave them!*

The recent adoption of the problem or project method is a belated attempt to do for advanced pupils what the kindergarten has so long done for little folks. It is a tardy effort to do things in school with some reference to the methods we must use outside. When the problems are rightly chosen, and really accepted as the youngster's own, school and life are near the proper meeting ground.

Of course the big differences in method are to be accounted for by the teacher's notion of what schools are for, and by his own humane resourcefulness. But within the range of sound intention, methods ought to differ; uniformity is deadening. Sound methods give well-chosen facts a permanent place in mind; build a habit of logical thinking; offer the contagion of enthusiasm for sport, for community affairs, for all sorts of wholesome activities. The final test of method is in the student's doing of his own well useful things which the school has prepared him to do.

Young people who have missed the chance to go to high school or college, and who want to make more of themselves than their present conditions promise, should remember the method of correspondence. Correspondence schools are in many respects the most useful American universities. There are important differences among these schools. Some of them are no doubt catch-penny concerns; but the long-established ones may be fully trusted by any young man or woman of grit and intelligence. Their text-books are authoritative, their methods are thorough, and their practical value in cash promotions cannot be doubted.

Preparation of Teachers.—President Garfield once said that a university could be established anywhere in the woods, by placing an enquiring young man at one end of a log, with Mark Hopkins at the other end. It doesn't so much matter how teachers acquire their information, their insight, their knack of suggestion, but it is immensely important that they acquire them. Schools can hardly differ from each other more widely than in the personality of their instructors. That school may be called inferior whose teachers are not several sizes bigger than their pupils, in the things they know, in their ability to think problems through, in their enthusiasm for studies worth while, and in their clear strenuousness of speech.

Experience is the best trainer of teachers, from the teacher's viewpoint, but it is pretty expensive for the pupils. The quality of work done in the best schools indicates that we should raise the general standard of preparation for teaching, but always with the proviso that a teaching personality is the biggest single item of fitness. It is pretty clear that no one with less than a high school training should teach in elementary schools and that high school teachers should have the equivalent of a four year college course. In any case, a teacher's training should include psychology, the history of educational reform, and general methods.

Progressiveness.—Teachers differ in their willingness to experiment, and to accept the results of other people's experiments. There is a foolish, unreasoning prejudice of fads in education, and there is stubborn insistence on outworn methods. Conservatives are likely to believe in old-fashioned decorum, and in mental discipline by way of the time-honored classics. Liberals tend to emphasize the individuality of their pupils, the importance of vocational training, and the possibility of mental discipline through subjects of practical value.

Progressiveness appears to be a matter of native temperament, modified by age and experience. Though American teachers have followed many fads, the willingness to experiment is a condition of progress. When the experimenter learns to do his experiments in a small way at first, and then to hold fast that which is good, his progressiveness may have fewer setbacks.

Morale.—Schools are unlike in that combination of manners, customs, morals, community spirit, and general motivation which may be called *morale*. School tone is another good name for it. Every school room, every class room even, has its own tone. If we listen to the treble notes from Vassar and Wellesley and the harmonies from Harvard and Yale, we find that every college is playing its own sound tune. Schools differ in personality even as individuals do, and we do well to choose among them as carefully as we choose among persons.

Many distinctions remain unmentioned in this series: Nationality of students, location of schools, entrance requirements, social position of graduates, vocational value of diplomas, general prestige of the school—all these offer means of comparison, and show great diversity. Within limits, diversity is a good and necessary thing. The test is always the value of the school or of the process for life purposes. To take a simple example: Four trials of round vertical penmanship may give an average of fifteen or twenty words to the minute, while semi-slant or Spencerian script will under like conditions record twenty-five or thirty words a minute. When we find that slant writing is less fatiguing and fully as legible, only one conclusion is possible. Yet our pedagogues put us through the wholesale experiment in vertical round-hand.—It appears that some experiments in diversity are not worth the trial.—There are plenty of wise texts in the philosophy of education, but not enough working philosophers to go around.

An Ideal School is a dream, of course, but it is a dream worth working for, and not wholly unattainable. Its general principles are:

Society has needs, not always adequately stated in terms of cash, which schools must help to satisfy, by the development of socially useful personalities; including in due time, for every student, vocational guidance and vocational training.

Every pupil has potentialities which it is the business of the school to discover in order that, by stimulus and training, he may be fitted for the work which society needs at his hands.

It is easy enough to formulate such maxims. Fortunate centers of wealth, intelligence, and varied industry may go far toward realizing the ideal school. But before the country as a whole can follow their example, we must have a better public understanding of what education means, we must spend many times over more money for schools than we now spend, we must attract teachers from the finest American types, and we must give teachers a training adapted to their highly difficult task.

WHAT TO EXPECT FROM SUBJECTS IN THE PUBLIC SCHOOLS

Arithmetic.—The simple process arithmetic of the third and fourth grades is by far the most practical. Then in importance come [1] a working knowledge of common fractions, [2] tables of measurement, [3] simple interest. "Mental arithmetic", now unfortunately out of fashion, was one of the two best gymnastics of the grammar school a generation ago. Some of its problems were absurdly impractical, of course, but it did build a habit of picking apart complicated situations, item by item to find the key idea; and its handling of common fractions and quick cost computing had practical value. Beyond the few processes named above, most of the arithmetic taught in school might well be saved for a commercial course, given only to those who will need it in their business. Commercial arithmetic is the arithmetic of actual business practice, full of short cuts and tabulations, and entirely empty of much that was formerly insisted upon.

Composition.—Everybody should know how to write a clear, correct business letter and a pleasant friendly letter. The business letter leaves out everything unnecessary, but uses tact in putting its case. Old stock phrases are not so effective as words chosen directly for the object in mind. The friendly letter must know how to describe persons and places, must tell a story well, and should set forth the writer's opinions attractively. For the descriptions, it is important to find the right adjectives and the right comparisons. We understand new things best when we see how they resemble or differ from the things we already know well. A well told story has a plan and a point; it gives us in the beginning some clue to the persons and places of the action, but takes care not to be dryly descriptive. It keeps the secret of its climax until near the end; puts in nothing that doesn't help to make the point, has the sense to stop when its point is made. Good stories do not message a moral—it may be there, but the reader is credited with enough intelligence to find it. The friendly letter of incidents and descriptions may be pleasant, even charming, but the best moments of friendliness are in the sharing of opinions. Of course there are two good sides to such a transaction. Letters will reach their best when there are ideas in them worth sharing, sincerely held and frankly put, with literary skill. In general, sentences loosely strung together with *ands* are very bad in speech and much worse in writing. Students who really want to write well must be interested in words—for their exact meaning, for the notions they suggest, and for their sound. Much of the pleasure in reading prose comes from the rhythm of the phrases. We discover that it is possible to beat a sort of time as we read. But rhythm is not the first thing to take care of in writing. The one thing always needed is clearness. After that come strength for the business in hand, and whatever graces we can manage.

Drawing, like photography, is of two principal sorts, the mechanical and the pictorial. One measures precisely, works to scale, omits nothing necessary for exact reproduction; the other selects what will bring out certain characteristics and moods, omitting everything else. Mechanical drawing may be taught to anybody who has a little imagination and a great deal of patience. It is useful wherever any kind of building or making with tools is going on. Only those who learn the language of mechanical drawing can read it, but for them it is a means of giving and getting, almost without words, details which the draughtsman could not put into words if he wanted to, and could not understand if somebody else succeeded in wording.

Pictorial drawing is quite another matter. We can all of us do something at it, but only folks born with the knack and the impulse can go very far. Here the last word is to *draw the thing as one sees it.* The idea is not to reproduce *exactly,* as though for a carpenter or a tinsmith. A picture without a mood and a meaning quite beyond its actual lines isn't much of a picture. Every clever worker with pencil and brush puts himself into his picture. *Style,* that indefinable mixture of individuality and charm, is present in drawing just as truly as it is in literature.

At present, the bulk of professional drawing in this country goes to advertise our wares—a state of things which cynics enjoy. The offset is that while we are undoubtedly cheapening art by putting it to "base uses," we are at the same time giving an almost compensating charm to our commercialism, and are making sure that artists can live—at least on a par with other professions. An exhibit of advertising "originale", without their propaganda for this or that talcum or talking machine, is a really excellent art collection. The worker has his own standards of excellence, not altogether for sale; and meantime, the good by-product of better advertising is a training of the public taste in art.

The practical value of skill in drawing is very high, if it is combined with a trained general intelligence.

Folks who study music, pictures, poems, and other art forms find out after a while that all these things are alike. Each piece of art work is *one* with all its parts bound together by subject, intention, and treatment. There is pretty surely a climax or chief focus, to which, and from which, everything points. There is repetition, refrain, rhythm, balance of parts, so that one unit answers another, light answers dark, colors set each other off; yet all these things with such a personal selection and emphasis that an expert can surmise who the artist must have been.

Geography.—One of the best all-round values in school. Very useful in general reading. Necessary in government and in business. More important each year, by reason of the inventions which have made life so complex, every nation selling goods to every other, buying goods from every other, with instant communication and swift travel. If it isn't interesting, there is something wrong with the books or the teacher. Try testing yourself on the geography of places, peoples, and objects mentioned in the daily paper, and in magazines like the Outlook, Independent, World's Work, Review of Reviews. When our knowledge of geography is rich enough, maps become the most fascinating of publications. We see and climb the mountains, smell the salt marshes, hear the fog horns and the bells. We do not read "words, words" about towns and folks—we see them all as mental pictures. On this account it is better to have geography books with many pictures. The best aid to vivid imagining of distant places is travel, and the best travel is deliberate, with stops to find what the people are like and how they live. Of course, for practical purposes, geography of products—their growth, preparation, transportation, and values—is very important.

Grammar is good for two things, in the main. It does help to keep straight our difficult and crooked English speech, by framing and drilling on Rules of Syntax. Would you say *I did not believe it to be he,* or *I did not believe it to be him?* Rules of Syntax, simple ones at that, settle all such questions. If our speech falls below the level of the place we are seeking, the chances are against our getting the place. Nothing more surely marks the vulgarian than bad syntax, for cultured people are painstakingly correct in their use of the Mother Tongue.

But grammar has bigger uses than syntax. Folks who hear good speech at home have little need for Rules in Grammar, but everybody can find high values in analysis. The analysis of English sentences is not a grinding formality. The right kind of analysis looks for the real relationships among ideas. Learning how other people think is one of the very best ways to learn to think for ourselves. People who protest against the teaching of analysis in grammar have probably never really mastered it themselves. No single discipline in school can do more to make reading easy and accurate. College professors complain that their students have never been taught to read. What they mean is that students do not readily and always get the core idea of a sentence and a paragraph and fasten to that central idea such modifiers as are worth keeping. Analysis really *teaches us to read.*

Handwork in General.—Skill with simple tools is useful for everybody and is not inherited. Do you hoe or bat right handed? Try breaking yourself in to the other holding. Indian clubs give two arms, in place of one, for many useful movements. Laboratory manipulation takes the blundering suddenness out of our starts and stops; gives a patient control of our fingers; shortens the time of learning any other similar work with the hands. Many thousands of times in everybody's life, it is handy to be handy. We can save time and money by it; we can have and do things impossible to folks who wait for somebody else to do their tinkering for them.

History and Government of the United States.—Government of the people, by the people, for the people will perish from the earth if the people do not keep informed about public affairs and learn to make sound decisions. Government for the people really means one compromise after another, setting limits to the healthy aggressiveness which would go too far if it were not checked. Every American should know how full his country is of these "checks and balances"—nation and state; senate and house; legislature and courts; imports and exports; labor and capital; statute law and common law—to the end of a

long chapter. History will show how high have been the prices paid for the wisdom of compromise, and how sure is the failure of the peoples who do not learn to put wise limits on individual and local powers, for the general good. History helps us to avoid the blunders of the past; gives us the keen satisfaction of prophecy, along with the duty of citizenship. Civics gives a sense of the value of our institutions; shows us the distinctly American idea, worth keeping at heaviest cost; helps us to know from what points the dangers will come, with some hints of possible prevention or remedy; and trains us in the practical duties of citizenship.

Languages.—Latin.—The arguments *for* Latin are its help in the use and understanding of English, its "discipline," the culture from close acquaintance with fine literature, and the relatively good results from indifferent teaching. The arguments *against* Latin are that equal time spent on English would bring more results for English; that it is best to find our discipline in subjects of practical value; that the real appreciation of Latin literature comes only after so many years of study that the results are not worth the expenditure, especially in view of the wealth of English literature likely to be neglected by specialists in Latin; and that it is the duty of school authorities to provide teachers who can handle well the subjects we really need to know and use. It seems to the writer that the "antis" have rather the better of the argument, *theoretically*. Practically, if the best teachers of English, history, and science in any school cannot lead their pupils to think hard and work steadily in those subjects, it is probably well to fall back on the time honored Latin and mathematics. The first two years of Latin are especially useful in English. If English grammar has been badly taught, Latin grammar will insure an idea of sentence structure. The roots, prefixes, and suffixes derived from Latin make up a big percentage of literary English words. Time on the first two years of Latin is undoubtedly well spent. Beyond those years there is a period of rather neutral value in the study of Latin, before the real mastery of the language begins to bring delight. So our recommendation is two years of Latin for everybody who hopes to make something of himself mentally, and then either no more or at least four years more.

Modern Languages. — The world war shifted our emphasis on the modern languages in school. Not so many years ago, German was our most popular foreign language, with French second, Spanish negligible, and Italian practically untaught. After the war, French was easily in first place, Spanish had become popular, and German had dropped almost out of sight, along with Italian. The real reasons for studying any of these languages are some combination of these: to be ready for business, for travel, for advanced study in a foreign tongue, to bring social reputation, or for pleasure and discipline. Taking these points one by one, every great nation has its worthy literature. The interests of travel lead to the languages of those lands whose history has been of importance in shaping the traveller's own nation. Social eclat is a bubble hardly worth chasing. Pleasure in language study is largely a matter of personal taste. Advanced students will always need the languages used by science and philosophy. One who has studied Latin will find more of discipline in German than in the Romance tongues, but the adverse notion affirms that the time required to master German will give fair acquaintance with two of the languages derived from Latin. Tested by these principles, our popular eclipse of German is rather absurd, for every one of the values lost to the German language by war will come back and find us unready to use it. The new interest in Spanish has economic and political support, of a sort that should probably give it a third rank in general popularity, with French and German in the first and second places. Perhaps in the general order of values, business reasons for knowing a language rightly come first. It is this motive, along with the idea of Pan American union of interests, and the negative reaction against everything German, which has so greatly stimulated the study of Spanish. Just why Italian is neglected in America is hard to understand, unless it be on the ground of an already over crowded curriculum.

English Literature aims to inform, to convince, to persuade, to arouse, to entertain, or to charm. In the first service, it teaches us something new, or puts something old in a new light. Literature of conviction is not satisfied to teach by telling: it makes sure to give all the reasons in the case, so that we accept the opinions presented. To persuade is to reach the springs of decision, with action in a desired direction as a result; we arouse another when we excite him toward prompt and vigorous, or even violent, action. The word entertain speaks for itself. It includes the idea of charm, but the words are not interchangeable. We are not always charmed when we are entertained. Charm in literature lies for the most part in the style—the combination of fitness with unexpectedness, the happy suggestion of more than is really contained, the graceful, melodious, harmonious flow of words, the total unique attractiveness in the manner of writing—or speaking.

So when we read or write, some combination of these half dozen aims and effects is under way. The commonest and least important is mere entertainment. Ordinary gossiping conversations are like that. If the writer has a peculiarly attractive way of saying things, we grant him charm. Henry Van Dyke is charming when he writes of Little Rivers; R. L. Stevenson is charming in all his accounts of persons and places; the attractiveness of G. K. Chesterton is in the unexpectedness of wit; J. M. Barrie wins by the happy perverseness with which the youthful and the unconventional live on beyond their time in his pages; and so on. There is, then, a *mental* quality in charm which is more than idle entertainment. A wealth of rich satisfaction is to be had through pleasure in literary style. We haven't learned to read until this is a part of our satisfaction.

Of course we read in school a big bulk of things for their value as information; and this is a very respectable, worthy, necessary procedure. The richer our store of facts, the richer may be all the rest of our mental experience. When once we become absorbed in a subject for its own sake, it doesn't so much matter how the author says things. If we really want to know about some big subject—say the History of Religion, for example, we will plough through whatever the Encyclopedia Britannica has to say about that subject; but few people read in an encyclopedia for the fun of the thing. We may be peculiarly grateful to the writers who say important things in so pleasant or stimulating a way that we enjoy the learning process, and are thus painlessly led to become students. Literature has almost a monopoly of this insinuating cleverness of approach. For wherever the manner of the writing is so cleverly attractive as to win a reading regardless of content, the material has satisfied the first test of literature.

The second test of literature is that it shall be true, or seem to be true. The real student is always trying to find out which of these two he has in hand. Is the thing true, or does it only seem to be true? Does the author intend that we shall believe him, or does he only ask that we shall grant his *seeming* truthfulness? If he aims to have us accept his words as wholly and literally true, we must have a care. There are facts to be looked into, there is reasoning to think through, with eyes wide open for fallacies—those reasoning steps in which too much is assumed, or in which we allow our feelings to bias our judgment. If the writer merely asks us to admit that what he says seems true, well and good. He is aiming at the literature of sheer charm: or perhaps he is teaching indirectly, "as though he taught us not". When Maude Adams used to come to the foot-lights and challenge the house "Do you believe in fairies?"—we all rose, of course: but we meant that we believed in *her* kind of fairies. She made them seem real. So the student of literature must keep a good conscience in this matter of distinguishing between the real truth and the seeming truth.

Again, real literature is about subjects and problems permanently interesting. There was a time when good writing was expended on the question of how many angels could find standing room on the point of a sewing needle. However important and literary the discussion may have seemed to mediæval school men, we have lost interest in the matter. We do not believe in that sort of angels any more; so it would require the combined skill of Barrie and Maude Adams to lift the discussion to the rank of literature, through seeming truth and seeming importance.

Young people of intellectual promise are pretty sure to be keenly interested at some time in the big meanings of life. They want to know what it is all for and about; why we should be in the church and obey the laws; how the world and the things in it were really "made"; what the stars and the flowers are; why is pain, and how much does goodness deserve because it is good? What is it to be good, anyway, and what is the use? Great books deal with these thousand and one haunting questions of youth. They do not always agree, and for many of the problems no answer worth hearing has ever been made. Yet literature is the speaking voice recording man's best answers to the riddles of experience; and the history of literature is a study of the groups, the influence, the fashions, of man's comment on life. Schools of writers may follow and imitate a leader; may band together in acknowledged acceptance of a set of ideas; or may simply write alike because certain subjects and opinions are "in the air." However that may be, English Literature serves its best purpose when it makes us bigger: brings new and richer information; gives clues for answering Pilate's question, "what is truth?" and supplies important specimen answers; expands us with new

meanings, new delights, new intentions.

Music.—The approach to musical appreciation is in a general way the same as the approach to literature, painting, or any other art. It has to do first with the composer's purpose, his *motif* or musical theme, and his intellectual problem. When a composer writes music for a great lyric poem, for example, his problem is to parallel the author's revelation in words by a second revelation in musical tones, both aiming to convey the same basic idea and emotion.

All art forms have structure or design. The commonest form is introduction, development, climax, conclusion. Wherever there is progression, this pattern is pretty sure to appear. The introduction brings in the persons, the setting, the motif, the problem; development puts these elements into action and reaction, with a tendency to build up to a point of strongest interest or crisis. Powerful effects may end abruptly with the climax. In any case, the conclusion must not be long-drawn, even if its service is to let us "down to the C Major of this life."

Literary composition recognizes a series of telescoping unities—the unity of the sentence, the paragraph, the chapter, the book. There may be a like simple complexity in music. A large purpose may bind together parts which are in themselves quite dissimilar. In that case, the subject is of course big enough to include all the subdivisions.

In music, as in all art forms, the basis of successful portrayal is technique. There is not the slightest hope of reaching high effectiveness except through patient study and repetition of exercises.

The word style has about the same meaning in music that it has in prose and verse. Give to each of two composers the same lyric poem for setting to music, agree as best possible about the mood, even assign the musical motif or key melody—each man's thought will take a characteristic manner of expression. Give to two violinists the same *Ave Maria*, or to two singers the same *O Sole Mio*, the two interpretations will differ not only in quality of tone, but in rhythm, phrasing, shading, intensity, and total effect. Each will have his own way of doing the thing—in other words, his own style. Style is thus tremendously important. It is almost true that the style is the man.

The big question about a book, a picture, a piece of music is not *Do I like it?* but *Does it do well the thing it set out to do?* When a singer finishes his song, he should have managed to make voice, style and all *incidental*, so that we find ourselves making impersonal comments, rather than personal ones. All art is a representation of human experience. The large problem of both appreciation and interpretation, the problem of art itself, has to do with the fidelity and the fullness of the interpretation.

To be sure there are social phases of art. No matter how well a thing may be done, it is possible that it is not worth doing; even possible that it is worse than worthless in its social tendencies. On this point, the typical views of the realist and the romanticist break apart. The realist recognizes no social obligation of art but the obligation of fidelity; while the broader view judges even art by its molding effect upon society.

High School Mathematics.—Values in school are practical, cultural, or some combination of the two. Algebra, geometry, and trigonometry are direct money makers only for teachers, scientists, surveyors, and certain higher industrial workers. But since these form a considerable bulk of the possible future occupation of young students, and since practically all colleges require them, it would be bad policy to omit the high school mathematics. There are other more general grounds for the use of these subjects. It is doubtful if ordinary mortals outside the groups named above will ever have the slightest direct need for the formulas of trigonometry or the demonstrations of geometry; but the indirect uses are very great. Abraham Lincoln once said that even after he had become a practicing lawyer, he had no satisfying notion of what proof meant *until he read Euclid*. To be sure there is very little value in memorized demonstrations—we might better be memorizing Mother Goose, for our grandchildren-to-be. The value lies where Mr. Lincoln put it, in the training of a reasoning habit. Students who have an eye on the future will allow nobody and no book to do thinking for them which they can do for themselves. This means that we shall close the text-book after reading the theorem, and work out our own proofs. It means that the so-called "originals" of geometry are the best part of the book. It means that when we have really mastered the subject, we can reproduce it; not by memory alone, or chiefly, but through step by step reasoning. Incidentally, it means that the attempt to teach reasoning to youngsters who have not yet reached the reasoning stage is necessarily a disheartening waste of time. There is another proviso. Some folks reason pretty clearly in one field, at least they get across to desired results somehow, without being able to tell how they do it, or to reason formally in another field of our choosing. This means that if first trials of high school mathematics show us to be at the time ill adapted to the work, it should be at least deferred, perhaps omitted altogether. Actual tests of college students show that nearly half of them have memorized their demonstrations in high school, as the best way out of an unwelcome predicament. Where we clearly cannot adapt the youngsters to their studies, we should adapt the studies to the youngsters; and we should try to so handle every subject that it shall have the largest possible character-building effect. For it is quite certain that the scholar in one subject is likely to be the ignoramus in another, and that the accurate reasoner in one field may be the hesitating blunderer in another, unless it has been possible to develop through Latin, history, physics, what-not, a general method of accurate analysis, selection-rejection, and synthesis, amounting to a trait of character.

High School Science.—Why? It is very interesting to see how big a proportion of the man-sized jobs in production, transportation, and even salesmanship require a natural science in order to master them. Our civilization depends on applied science. All men now fifty years old have lived through an age of miracles, and there is every indication of further discovery. It is the scientist who points the way. He is the Columbus of economic advancement. For the "other half" of us, who teach, write, draw, sing, entertain, argue, buy and sell, keep accounts, work with fingers and feet, science is the enlightener, showing us the kind of world we live in; making it comprehensible; delivering us from stupid superstitions, and opening far vistas of absorbing contemplation. The supreme intellectual conception is of an all-inclusive unity, of which every shifting phenomenon is but a shifting phase. Two panoramas are always unfolding—the world of nature, and the world of men. Science tries to understand both, and the best of all reasons for studying science are that the real student never knows a dull moment, and that at any time an unexpected surmise on the border-land of things known may bring new areas of the unknown into our service.

HOW SHALL I EARN A LIVING, and HOW PREPARE?

I. Vocations in General.—Vocational studies are supposed to fit the student to earn a living. "Living" should be figured as considerably more than a comfortable subsistence of food, clothing, and shelter. A bare living wage shuts out the worker and his dependents from many of the finer satisfactions of life. Married or single, a man ought to save from twenty-five to fifty per cent of his gross income. Money "saved" is stored and accumulated toward lump expenditures or lump investments. Lump investments are made either in the hope of enlarging the sum available for future lump expenditures or with the idea of "developing" something or other, playing finance or industry as a boy plays a game. The cash return may be the end in view, but more likely the game is played for its own sake. Many a rich man dies rather unconcerned about how his money shall be spent, or by whom. He has had his fun making the money.

Two variables make saving possible: one is the income, the other the outgo; and both are largely under control. Vocational studies of the right sort reduce the time necessary to reach a satisfactory income. Such studies are well chosen when they are adapted to the taste and talent of the worker, in a useful field not over-crowded. We have, for example, too many pettifogging lawyers, too many town doctors; not enough big preachers, not enough scientific farmers; and so on.

"Livings" are graded all the way up from pure brawn work to pure brain work; and the pay roughly follows the grade. There is also possible upward movement of compensation or gross income from year to year, say from twenty-one to forty-five or fifty years of age. Leaving school too young is very likely to fix one's place lower in both these grades than it might have been. The young man of thirty doing pure brawn work is not likely to do any other kind of work, nor to make any great improvement in his income, as time goes on.

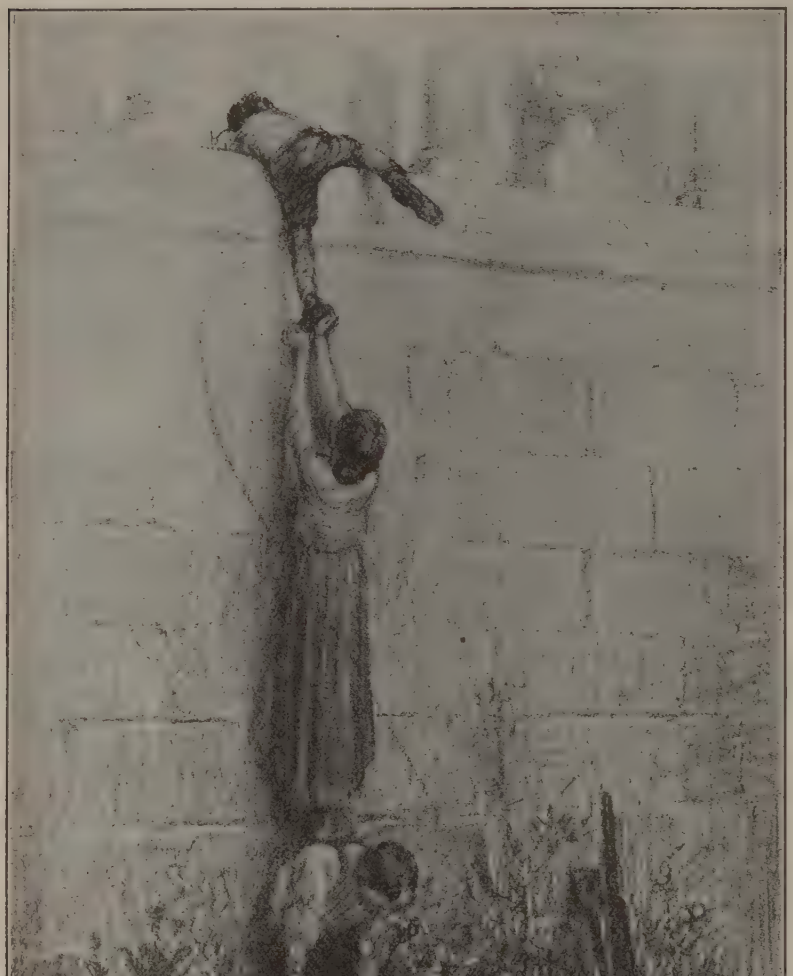
The right sort of high school and the right sort of home, taken together, will probably lead a boy to know what his future work should be—and this is becoming more true also of American girls, each year.

Very often one work must be chosen as a stepping stone to another. In such cases, it is desirable that the temporary occupation should be useful in the permanent one, if possible. For instance, short-hand, type-writing, simple accounting are valuable on the way to big business

positions; pharmacy is highly practical in a doctor's occupation; carpentry is almost necessary to a building contractor; classroom teaching is indispensable to a wise supervision of schools; and so on.

The great American game for adults is undeniably the pursuit of wealth. From this angle, vocations are of two sorts—those from which the worker may properly hope to amass a considerable fortune in his own lifetime—say $100,000 or better—and those which are sure to fall below this result. In general, it is equally clear that big fortunes come through fees and profits, rather than through wages and salaries. Few professional men become wealthy by fees alone—they too must invest their surplus, for profit. Again, any wide awake, studious, "right-hanging" wage worker in this country may pass up through the salaried group into the employing and investing class, on the way to fortune.

Schools can do much more than they have yet done toward the pursuit of fortune through practical efficiency. The big business man needs a great store of *information* about all sorts of things; his conduct of business will be much more efficient if he himself is a *technical expert;* his larger business judgments depend upon *careful reasoning* in the big field of actual facts. Schools can furnish information, can develop technical skill, can provide for the exercise of judgment on typical industrial and commercial problems. It must be said that as yet in this country correspondence schools are making the only comprehensive effort to set the young worker on his way upward through wages and salaries toward the larger efficiency.



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Getting an Education always means a Hard Climb

Notwithstanding the reactions set up classicists, and the more serious reacti set up by faddists in Education, there a very sure and legitimate drift toward use of the people's schools as defi training grounds for the people's work a work-a-day world.

When all is said about the possible serv of schools to business and industry, t interesting rejoinders are yet to ma One, unless a man is born for it, s rightly circumstanced, no amount school training can make him a rich m The knack of money-making is perh more inherent than acquired, and m social than technical.

The other rejoinder is that the gr American pastime of getting rich does interest quite everybody. The writ the painters, the sculptors, the musicia the preachers, the philosophers, the sci tists have another notion of what means. They want to *understand, enjoy,* and to *share* the world they live To get and to give the biggest possi sum of the finest possible satisfacti appears to them to be an end wh justifies their means of living. It gu antees a certain roundness of intere insures that the pleasure of practi achievement will be matched by pleasure of philosophical meditation; p vides that art shall alleviate materialis and that philanthropy will help to t away the curse of unfair accumulati Here the practical, the thoughtful, artistic, the fraternal-philanthropic, m and fuse in a union which gets most of life because it gives most.

II. What Shall I Do For A Livin

An analysis of occupations for aid students in choosing a life work.

Accounting. — Good possibilities advancement. Leads toward busin management and financial expert's wo with hardly a limit to the possible c returns. But the accountant who inte to go above $2000 or $3000 a year m study widely and have an ambition outgrow every position short of the t High schools can give him only a beginn toward the knowledge required in profession—the rest he must work out himself in spare time, or in a school business administration. Here are a f of the studies recommended in preparat for the high salaried appointments: Pa nerships, Cost Accounting, Analysis Accounts, Corporate Organization a Accounting, Auditing, Graphs, Americ Business Law, and Special Accounting Railroads, Mines, Banks, Brokers, a Cities.

Preparation. The commercial course any good high school or commercial colle the accounting courses in a reputa correspondence school—in either case, w special reference to the methods used the business which the student is lik to connect himself with.

Advertising.—Advertising agencies ma big sums, and individual workers salaried above $15,000 a year in ma instances. Requirements: understand of salesmanship in general; knowledge human nature; command of attracti convincing English; ability to seize winning points of an article or a proje skill in drawing or photography, or bo Variety of assignments, constant challe to ingenuity and skill, and big financ

returns make advertising one of the best of business opportunities.

Preparation. Special courses in college, in technical schools, or in correspondence schools. Factory experience and selling experience highly desirable.

Architecture.—A clean, interesting business, but variable in its returns. It is doubtful if the average income of architects would reach $3000 a year. Established firms of wide reputation do much better than that, but two uncertainties work against even them—an uncertainty due to competition from other architects, and a periodic uncertainty which follows the tide of building conditions. If work were constant and were paid according to the knowledge, skill, and responsibility involved, it would be hard to find a more desirable occupation.

As superintendent of construction, an architect should have a practical knowledge of every trade called for in the construction of the building he plans. In the modern division of labor, this means that during the construction of an ordinary city dwelling, for example, the architect will be called upon to pass judgment on labor and materials for fifteen or more different sets of tradesmen. He must know how to compute quantities, prices, and strength of materials; he must be able to do mechanical drawing, free hand and perspective drawing, and color work from specifications. He will need all the mathematics offered in the best high schools, including geometry, trigonometry, and logarithms. And at the top of his profession he will need the general theory and history of architecture, for every type of building in use. All told, architecture offers a fascinating combination of the aesthetic and the practical, with the possibility that the architect may become also the contractor—which is another financial story.

Preparation. As indicated above, architects need a wide range of information and experience. There are two main types of preparation: the technical college and the correspondence school. Actual residence in a school of engineering is recommended.

Automobiles.—There are four phases of interest in motor cars—manufacturing, selling, operating, and repair. At the moment of this writing, an automobile is in use in the United States for every nine or ten inhabitants. When we figure that the retail price of these machines has run from $500 to $13,000, with perhaps an average of nearly or quite $1,000 a machine, the volume of this mushroom business is staggering. Tremendous fortunes are being made in the manufacture of trucks and motor cars, and respectable fortunes are being sunk there. Competition is now so severe, and the market is so nearly filled that a second rate machine or an inefficient selling system may spell ruin for its company. Some companies have tardily learned that the future depends upon keeping the customer satisfied, and that means service.

Only second to the fortune for the successful dealer is a good motor car. Dealers' commissions on sales run from twenty per cent to as high as forty per cent, so that in every good-sized town there is likely to be at least one man whose income is $50,000 a year from the sale of motor cars.

The operating of motor cars, for hire, is of course not an occupation to be taken seriously, except as a temporary expedient, perhaps in vacation time. Hardly more can be said for the repairing of cars, as a business. A young man who might have been satisfied, a few years ago, to be a carpenter or a blacksmith may be contented now as an auto-mechanic. Sixty or seventy cents an hour may look big to the boy of sixteen, but if he stays a few months too long at that sort of thing he will find that he has mortgaged his future beyond redeeming.

Preparation. The ordinary practice of picking up the trade of auto mechanic in a garage does not commonly lead far. One should take a mechanical engineering course in some school which specializes in the problems of motor transportation. Perhaps the best schools for the purpose are in Detroit, the motor car headquarters.

Banking.—An honest, dependable young man or woman will find a clerkship in a bank to offer a tranquil, unharassed existence, at moderate salary, with promotions so far apart that even ambition commonly ceases to disturb. If a young man is in love and wants to settle down, really settle, with $2,000 or $3,000 as the pretty sure limit of his income, almost any minor place in a bank will do.

Even the higher positions in ordinary banks do not pay big salaries. $5,000 is perhaps a fair average for the managing officials. But these men, being close to big business and fully informed, have opportunities for the quick turn-over of their private funds, and by this means their banking business becomes profitable. Bank officials do not become rich by economizing on their salaries. Either they have capital before they become bankers, or they acquire their capital on the side. One of the commonest sources of profit to banks and of personal income to their officials is in the underwriting of bonds—a process by which, with little cash actually invested, large sums may be realized in a short time, by reason of the big face values of the securities transferred.

One would say that the first requirement for a bank official is downright honesty. The temptation to borrow from the bank, in one way or another, for private speculation, is very strong. Other requirements are: very broad business information, wide social acquaintance, and very shrewd judgment of men and affairs. The general policy of the bank is determined by its board of directors, but the carrying out of that policy, the actual decision of a thousand and one points of practice, is in the hands of the cashiers, the vice presidents, the presidents. These are positions of great importance, great responsibility, and great opportunity.

Preparation. Studies in economics, in the history of public finance, in business management, in banking and bank accounting. All these courses are now offered in good colleges. A bank clerk who wants to study without leaving his job will do well to consider the correspondence schools.

Building—Contracting.—Big profits in honest building are most likely to be made in connection with real estate operations and on a large scale. But if the profits in this joint operation are to be both big and quick, the purchase of land must be made at the right price in the right locality, and in the nick of time; and the purchasing of materials must be managed with discounts for quantity, and with a view to saving money by doing a large amount of machining in the contractor's own plant.

Contracting is, then, one of the many occupations in which money can be made most rapidly by those who already have money, or have money and credit to carry them through to the period of returns.

One of the worst drawbacks on contracting is that it is subject to seasonal fluctuations. There are years, and series of years, in which practically nothing is doing; as there are dead towns and live ones, dead regions and live ones. The contractor must know when it is time to lie low, and when it is time to crowd the game through with every dollar he can command.

We are still in the period of national expansion; still in the period of congestion into manufacturing centers. This means that for a long time to come there will be a good opportunity for the building contractor.

Like an architect, a contractor should know all about materials, the handling of workmen, the processes involved in all sorts of building. If he knows drawing, so much the better. But his chief money making traits lie in the combination of executive ability to keep things going at high pressure, keenness in judging men and affairs, largeness of vision, good ability in buying and in salesmanship.

It's a man's job.

Building Trades.—Four years after the World War, tenders and helpers were getting $3.50 to $5.00 a day, and masons, carpenters, mechanics of all sorts, from $5.00 to $10.00 a day. This is fully four times the wage paid a generation ago. If one tried to account for it, he would have to name among other things the continued effects of war; the American system of tariffs and living standards; the pressure of labor unions; the rapid industrialization of a once rural people; the continued expansion of America by development and by immigration; the interdependence of values, such that uplift or depression in one part of the field tends to produce a similar change all over the field.

He would also have to note that apparent high wages, if long continued, are pretty sure to be only apparently high. Necessity, or an unmistakable preference for work with the hands, of course justifies a boy or girl in choosing a mechanical trade. The satisfaction of building, making, and mending things is a strong one and a worthy one. If ambition lasts, there is always the possibility that the helper will become mechanic; the mechanic, foreman; the foreman, superintendent; the superintendent, employer. But let him beware of becoming a human machine. Every accumulation of automatic contrivances of steel in factories and shops tends to make a new set of flesh and blood automatons. To be one of these is to be cursed with the curse of modern industrialism. No matter how attractive the mess of pottage may seem in our restless younger days, the human birthright to freedom, vision, and the finer satisfactions of life should not be bartered away, of our own wills. The loss is even greatest when we are least aware of it.

Business Management.—Business management is so severe in its requirements that few men claim or attempt to know all

about it. Yet there are men whose knack of organizing and administrating amounts to genius. Such men find their place in the continued development of growing enterprises; or they may make a profession of setting weak and run-down industries on their feet, one after another. There is hardly any limit to the salaries such men may legitimately claim. When a company has several millions of investment and possible profits at stake, there will be no hesitating over a little matter of $50,000 a year to the right man.

Obviously one must be born for that sort of thing. But there are youthful indications of promise. The traits that make successful business managers for high school and college enterprises may expand into bigger effectiveness. No other type of engineering is likely to excel business management in the union of exciting adventure and big rewards.

The efficient manager is a constant student, always picking up facts, thinking out methods, testing and checking devices. He learns about his job from both books and men. There are schools for his profession nowadays. A few of the things he studies are: filing, indexing, correspondence; accounting, cost accounting, auditing, graphs; bonds, banking, brokerage, credit, collection; insurance, safety; business law; management, personnel, production; advertising, selling.

Civil Service.—Good for the man or woman who is willing to accept secure, steady employment at the sacrifice of high salary or fortune in business. Compensation from $1,000 to $4,200 or thereabouts, with the average around $1,600 or $1,800. The day's work is not more than eight hours; vacations of two to four weeks are given with pay. Provision is made for retirement on pension. Appointments are made from a list of persons eligible by examination, and the only favoritism on this list is in the interest of ex-service men. About equal numbers of men and women are appointed.

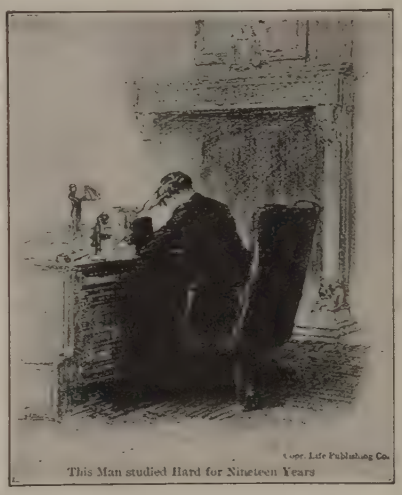
Civil Service examinations lead to positions as stenographer, typist, clerk, inspector, cashier, store keeper, gauger, light-house keeper, and general field work for the government, especially in the Post Office, Railway Mail, Internal Revenue, Immigration, and Customs Service. The probability of appointment may be judged from the fact that 20,000 to 45,000 appointments are made annually. Examinations cover elementary subjects actually needed for the work of the department. Separate examinations are given for Typist, Stenographer-Typist, Book-Keeper-Typist, Book-Keeper, First Grade Clerk, Post Office Clerk, Railway Mail Clerk, and Immigration Inspector.

One may study these subjects at home, or in the commercial courses of any good high school or business college.

Dentistry.—An established city practice in dentistry is worth at least $10,000 a year. The hours are regular, and there is little of the surgeon's or physician's responsibility for life and death. As compared with other occupations yielding a like income, the work of a dentist is narrow, monotonous, and unpleasant. But dentistry is necessary service, and an honest worker can find sustaining enthusiasm in it. There appear to be four general divisions of dentistry, concerned with diagnosis, repair, removal, and replacement. A good deal of scientific ingenuity has gone into diagnosis, repair, and replacement in recent years, to the advantage of the public health and of the dentist's finances.

A course in dentistry requires two or three years of residence in a dental college, sometimes more, with clinical practice.

Drawing, Designing, Illustrating, Cartooning.—Draftsmanship, or mechanical and architectural drawing, is a clerical member of the arts family, useful in bringing the creative notions of designers into form for the guidance of workmen. It requires patient exactness, and some training in the theory of mechanics and in the interpretation of conventional drawing. One who intends to do commercial designing should have some knowledge of mechanical drawing. Like other clerical positions, drafting cannot long hold a young man of ambition and talent, but it supplies a useful lower round in the ladder of progress.



This Man studied Hard for Nineteen Years

Designers are creative artists, whose practical success is limited only by the public demand for their inventions. The field for drawing a design is very great, in all sorts of enterprise. The commercial success of every milliner and garment maker depends on *design;* every house and all its furniture is first a mental, then a material, design; design is the interesting indispensable beginning of every lovely and every practical work of man's hand. Its contribution is as important in the foundry as in the studio. As our civilization progresses, the union of beauty with utility will be more and more insisted upon; and the man or woman who can effect this combination will be handsomely rewarded for work that is always a pleasure. Naturally, the studies which aid in designing will depend on the type of product intended. The big requisite is a creative fancy, and some means of giving form to that fancy so that less gifted folks can take up the work of material production where the artist-producer leaves off.

Illustrating gives visible body to the fancies recorded only in words until the illustrator takes hold. Good illustrations are an important second to good inventions of all sorts, especially in books and magazines. Of course, illustration at its best is also creative.

Cartooning.—There are many sorts of comment on life with pencil and brush That comment may be serious or funny; highly imaginative and closely founded on fact; definitely limited or generally applicable. Cartoons are humorous pictured remarks on men and affairs. At their best, they make wise and influential recommendations. There is probably no surer way to keep people straight, inform their ignorance, and correct their crookedness, than the way of humorous public comment in drawings. A good cartoonist is therefore much more than a skillful worker with the pencil. He is a thoroughly informed and broadly experienced philosopher, with a responsibility and a power fully as great as that of editors themselves. Such combinations are rare, and the rewards to the few who possess them are correspondingly great. A youngster with a talent for sketching and an interest in history and politics might very well adopt cartooning as a future vocation; hold to it, and train himself for it in every election of studies and in his use of free hours.

Courses in design form an important part of every program in schools of fine and applied art. The better correspondence schools offer many excellent courses in industrial and artistic designing.

Dressmaking, Millinery, Tailoring. — A good business for those whose taste and skill lie that way, *if* they run their own shops or factories, and particularly if they have the cleverness to design beautiful apparel. Only a fair trade to follow for wages. Somewhat steadier than the building trades, but confining and sedentary.

Engineering.—*Civil Engineering.*—Survey, ing, Leveling, Sewerage, Draining, Irrigation and Water Supply, Road, Railroad and Bridge Building, Water Wheels, Stone, Brick, Concrete, Reinforced Concrete, are all within the scope of strictly civil engineering. 50,000 men are professionally engaged in this work in the United States. The rank and file of this army receive salaries of $2,000 or $2,500 a year. The greater the scope of work a man can effectively manage, the higher is likely to be his compensation. The big rewards in engineering go to a combination of two or more of the types in one man. For example, there is great demand now and will be greater future demand for men able to design, construct, install, and operate hydro-electric machinery. But this requires a working acquaintance with civil, mechanical, and electrical engineering. A man who has all that, with business ability, is able to command from $10,000 a year upward.

Mechanical Engineering, unmixed, has as its field general machine shop and foundry practice and the entire theory, construction, and operation of steam boilers and steam engines. There is enormous demand for competent mechanical engineers, but there is better compensation for the man who also knows about electrical machinery.

Electrical Engineering deals with all means of generating, controlling, and using direct and alternating currents. When we remember that a really up to date dwelling house has electric communication, electric lighting, electric kitchen and laundry appliances, and even electric heating; when we recall that our great cities use electricity as their chief means of transportation; that electric motors

and electric machines are in every modern factory and are bound to be; when we reflect that water power becomes widely available only through electric power; and that with all this we are only in our first fifty years of electrical invention, the profession of electrical engineering stands out as one of the best possible occupations.

Preparation.—Engineering requires such a broad foundation in mathematics and laboratory science, that four solid years in an engineering college make only a fair preparation. A man who is already engaged in elementary engineering may continue his studies by correspondence.

Engine Running.—At its simplest, an ill-paid, easily learned occupation hardly in the class with mason's helper; at its best a highly technical and expert profession, commanding many thousands of dollars a year. Good for the boy whom machinery fascinates, if he will study and move up.

Preparation depends on the type of machinery to be operated. Head engineers in big plants, on steamships, in power houses, and the like should be machinists capable of making prompt repairs. To rise in their profession, they should have studied mechanical and electrical engineering.

Farming.—No finer work could be found, for the right man, either as a general farmer or a specialist. Probably the greatest success will be made by the man who uses general cropping as a basis for a specialty. In the central states, there is a fortune in high grade cattle, with alfalfa; a fortune in fruit; middle westerners grow rich on wheat and corn; farmers near great cities will serve their local market. Any one of a score or more of plant or animal products may prove to be the one best adapted to a particular farm, farmer, or locality.

But the day of haphazard small farming is over. Farming as a desirable business is for the man of affairs who is also a student. Agriculture is decidedly the most popular course in some American Universities—Cornell, for instance. A successful farmer needs a working knowledge of soils and soil improvement; of the raising, harvesting, and marketing of all staple crops; of live stock and dairying; fruits and storage; market and truck farming; poultry; farm machinery; and general farm management. An up-to-date farmer is necessarily something of an engineer; understands motors, and all sorts of automatic farm machinery; can operate tractors, set up, run, and make simple repairs to the dozen or twenty complicated machines about the place. A real farmer who is also a real mechanic and a real business man can make in his own lifetime and under his own honest management a fortune comparing favorably with those of the cleverest operators in cities.

Forestry.—An interesting business, of very great public service in its preparation for future need. Followed for these reasons rather than for gain. Our country is still too eagerly absorbed in the present to draw any very searching lessons from the past, or make any adequate preparation for the future. A young man who likes the simple life of the woods and the burned over districts; who is best pleased to be in the wilderness for weeks at a time; who has a vision of checking needless waste in the forests, preventing timber theft, and restoring the essential life of the cutover barrens, may find no more congenial employment than forestry, either for his state or national government. Of course there is another phase of the forester's work—the raising of young trees. This is fully as important as the field work, but it is likely to be a bit monotonous. Each seedling brings forth many thousands of plants, all alike, all to be treated alike. Even so, *if the pay were the same,* which would you do, cultivate ten thousand pine trees, or drill and fill ten thousand decaying teeth?

Agricultural colleges and many universities now offer courses in forestry.

Journalism.—It all depends. We have no absorbing respect for the gossipy trade of news gathering and news purveying. In general, reporters are glad to print whatever their customers are glad to read; and the newspaper public is pleased to read a good many things that were better

This Man stopped Studying when Twelve Years Old

unread. The dividing line between gossip and legitimate news is probably in the mind of the reader or hearer of the tale.

Yet there is such a thing as a proper responsibility for the quality of news, and the difference between news and gossip is that one stops with the fact, enjoys the fact for itself, enjoys it most when there is a good odor of carrion about it; while the other always goes beyond the fact to the interpretation of the fact and the problem of proper social response. The slogan "All the news that's fit to print" sounds well, but the fitness depends on both the news and the public reading the news. The commercial maxim "Give the public what they want" has for the back-ground "The public be damned." The chief ground of objection to reporting as a trade is that so much "news" is damning. A second, very practical, objection is that the initial stages of reporting do not pay. One may shorten his apprenticeship by study. There are even "Schools of Journalism" now—perhaps the most important being connected with Columbia University.

Journalism proper is an occupation of dignity and importance second to none. The shaping of public opinion is very largely in the hands of men who write for newspapers and magazines. The ambition of every "cub" should be to shorten the time which must pass before he can print over his own signature the opinions which he believes are needed by his public. The truer and more far reaching the opinions, and the better they are put, the larger will be the ultimate financial compensation. Journalism is a first rate vocation for a wide awake youngster who can learn to think through the tangle of twentieth century society, business, and politics, and learn to put his ideas in a forceful, popular way.

The big profits of journalism do not come to the real journalist, but to the newspaper owner, who perhaps does not write at all. The running of a big newspaper is a business proposition, purveying news, feature articles, editorials, advertising, for a double consideration—major and minor. Circulation may pay costs, but advertising brings profits. Thousands of Americans have grown rich in the business, and it has a fascination which few escape who have once known it.

Preparation.—Good English courses in high school and college help, but the student must expect a savage aftermath of training in the daily rush and grind of newspaper work. College courses or their equivalent, the broader the better, are necessary for editorial positions. Newspaper management, as a business proposition, requires a business training, in school or out. On the general problem of learning to write, see whatever notes you can find on the methods of successful writers—for instance, read Stevenson's "A College Magazine" and Smith's Biography of O. Henry.

Laboratory Science.—There are three main services of laboratory science: the maintenance of public health; the supplying of technical information for use in business and industry; the discovery of new truth by research. The inner fascination of a scientist's work is in the third of these phases. There is always the brooding possibility of "a new planet swimming into his ken." Our half century differs from all others chiefly because so many discoveries have been made through research. When once a new substance, a new principle, a new technique has been demonstrated, the pot boiling question of practical utilization comes on. In fact, few men can afford to be pure scientists. Most laboratory workers are salaried employees whose personal satisfaction is in their work for its own sake, but who earn an honest living by turning their analysis to public or corporate advantage. If the discoverer can put his new notion into a contrivance that will catch the popular fancy, protect, manufacture, and market it himself, he is on the way to the pot boiler's high reward of fortune. This is the familiar history of those American inventions whose inventors are also business men.

Law.—If in doubt, don't choose Law as your profession. There are too many lawyers now. If you're bound to be a lawyer, be a big one—and an honest one. The temptation of a lawyer to be a parasite, a pettifogger, or a pander is great under our social conditions. Lawyers make the law and too often match each other in the game of circumventing, for a consideration, the laws that lawyers have made. Mr. Lincoln's type will always be needed, always be worthy of high respect, and always fairly well paid. There are thousands of lawyers of this sort, less famous.

To build a law practice requires hard, painstaking work with long hours of labor. A successful lawyer must have a strong personality, ingenuity, careful study of the law of many centuries. The legal profession is discouraging, because it usually deals with the troubles of other people. The greatest compensation goes to the attorney who can guide big business safely between the law and the gospel.

The study of law as preparation for a business career is becoming more and more popular each year. A college education is recommended before entering law school. Law courses require not less than three years of residence in a law school.

Manufacturing in General.—See Business Management, in this series. The safest way to go into the manufacturing business is to serve an apprenticeship in an already going concern, working up through the producing, the selling, and the managing phases of the business. There is great risk in undertaking the production of a wholly new article. The first thing to be investigated is whether the article itself will sell, after a reasonable campaign of publicity. Often the advertising costs are many times over the cost of production. Granted that the article is salable, one must make sure of *finance*. There must be enough good money in sight to see the project through to the stage where income more than matches outgo. A business cannot be regarded as established until its returns above all producing and distributing costs provide for refunding of original investments through profits.

When all is said, the men who make more money than they know what to do with are the men who have hit the happy combination of producing and marketing something all the people want, or something that enough folks can be made to think they want.

Medicine and Surgery.—These two fairly distinct professions must still be united in the fundamental training of doctors, and united to a considerable degree in country and small town practice. The big money goes to specialists in both departments; the limit is the sky and the patient's ability to pay; but since big fees cannot be collected in the country and can be collected in town, only city doctors can hope to become rich through the practice of their profession. Again, a popular physician in the country is likely to work himself out with sixteen or eighteen hours a day every day in the year; while city specialists have fixed hours of their own choosing, and at their own pleasure. All of which points to a condition needing remedy but very difficult to cure.

Every business has its own set of temptations. It is literally true that most people like to be humbugged. So big a proportion of human ills are "mental" that treatment by sugar pill and suggestion is a common practice. The two together constitute a faith healing for which the charge is no doubt legitimate enough, but it makes a genial cynic of the doctor. The faith tablet is particularly valuable in city practice, where so many women are worn out by their social duties. Country folks are commonly too busy to be sick above the ears.

The great advances in the doctor's profession in our time have been in bacteriological discovery, in general appliances, and in the instruments and methods of surgery.

Country practice and special surgery are the two departments most attractive. One to the humanitarian for its genuine service where help is much needed; the other to the scientific business man for its opportunities to make searching diagnosis and skillful operation, with an aftermath of possible riches.

The best courses in medicine and surgery require six years in college—two years of studies from the college of arts, and four years of strictly professional training.

Mining Engineering.—A doubtful occupation, unless one is willing to go to any remote part of the world where mining interests may lie; doubtful also because of the social conditions of mines and mining towns; attractive through possibility of adventure and discovery, technical interest, and fair remuneration. Managing engineers are likely to get from $2,500 to to $10,000 a year. Adequate preparation is a matter of several years' intensive study at a college of mines, with severe training in mathematics, physics, chemistry, geology, mineralogy, shop practice, smelting, reduction of ores, field and underground work.

Navigation.—The captain of an American merchant ship on the high seas makes about $400 a month; the four officers, from $250 down to $150 each. Board and room are furnished by the company, both at sea and in port. The prospect of employment at sea depends on the national policy in handling the merchant marine. At present, the outlook in the United States is not favorable. There is, however, always a tremendous tonnage of big boats on the great lakes. Lake navigation is a comparatively simple matter, though very definite information is needed, for navigation from point to point in all weathers.

Ocean navigation requires mathematics through trigonometry and logarithms, elements of navigation, piloting, chart, lead, log, dead reckoning, nautical astronomy, latitude, longitude, azimuth, meterology, methods of reckoning whereabouts, international rules and signals. These subjects may be studied either in school or by correspondence.

Nursing.—Professional nurses with diploma receive $30 to $60 a week, and maintenance, with prospect of fairly steady employment. Their professional interests are much like those of physicians and surgeons, with less responsibility. The indirect responsibility of nurses is very great, since the treatment of so many ailments consists in maintaining the conditions under which nature can eventually conquer the disease. The profession of nursing is likely to divide into two chief interests, like those of the doctor. Some nurses become almost assistant surgeons, by reason of their quick perception of what is needed, and their deftness of manipulation. Strange as it may seem to a layman, surgery has a fascination hardly equalled by any other calling, so that most hospital nurses would work only in the operating room, if they were free to choose. Nursing has the advantages of comparative freedom from monotony, strong technical and social interest, the satisfying of an instinct for fellow-kindness, and a fair financial independence.

Preparation.—Two or more years in a authorized school for nurses.

Preaching.—An indispensable social servic with a unique combination of reward a sacrifice. A preacher is not expected seek riches, though his ability may guara tee comfort. Perhaps more than any oth man in the community, he may know t keen satisfaction of eloquent leadershi and may enjoy the inner approval from honest devotion to the really importa interests of his people. No other man the community gathers to himself such wealth of affection as the priest or Prote tant clergyman may receive. For in sic ness and in health, for this world and f whatever other worlds there are, devotion is for all who need him. T efficient clergyman is a very busy ma He must know his people intimately; must christen, marry, confess and bu them; he must interest himself in the pub welfare, through education, philanthro and patriotic citizenship; and his duty a sermonizer demands that he be a consta student, always learning, always thinkin so that he may not come empty-mind to his great opportunity on the seven day.

Preparation.—Not less than a full colle course of four years, with emphasis history, sociology, literature, and pub speaking. A really modern preacher w find more value in applied psycholo than in metaphysics, and will have m use for science than for theology.

Railroad Operating and Management. Many causes have reduced the desirabil of railroad stocks, in recent years. One the chief causes of the reduction or ce celling of dividends has been the gr increase of operating costs, especially wages for the maintenance of way, reps and moving of trains. It has been possi for locomotive engineers to make $300 more a month, with other wage employ grading downward from that sum, but at rates which would have seemed credibly high at the beginning of t century. What the future may hold d not appear, but probably wage earners w continue to find railroading one of the b paid employments in the country. R road agencies in the larger towns positions of comfortable income; and the top of each division are a group men who earn excellent salaries by busin management or technical efficiency as ci **mechanical, and electrical engineers.**

Preparation.—High salaried positions railroading are likely to be filled nowad by graduate engineers, with practical perience. Ambitious men in lower p tions will do well to investigate cor pondence courses.

Salesmanship.—A vital necessity in business enterprises. One should eit choose a commodity line he knows a g deal about, or put himself through a ri training. Actual factory experience making the product one is to sell is of the best item of preparation. But it necessary also to understand men; to able to interest, entertain, and win good-fellowship; to put very clearly selling points of the article in mind; compare it tactfully, without knock rival articles; and to clinch a good pression into an actual sale. Retail sa manship differs materially from wh sale; long range arguments are not those close at hand. Great enterpr

have a sales organization and a sales management. At the top of his ambition a salesman sees one of these managing positions. On the way to it, he must perfect himself not only in the art, but in the theory of his business. He must know commercial law; the principles of credit and collection. Perhaps the three big requirements are: Know your goods; know your man; and learn to say the right thing in the right way.

There are books and schools of salesmanship. The graduate from these books and schools may some day graduate from salesmanship itself, into business management for his company.

Secretarial Work.—A secretary is a superstenographer and infra-manager; worth very much more than a typist, but still definitely responsible for the carrying out of suggestions, rather than for marked initiative. Secretarial work is a comparatively recent development in business and professions, to the advantage of everybody concerned. A position of dignity, and of better than clerical compensation. Worth training for, especially for women. Definite courses in secretarial work are now available in women's colleges, and in schools of business.

Teaching.—Financially, teaching now ranks with preaching, among the upper groups of wage positions, or at the lower end of salaries. Measuring the actual service of schools by the theoretically possible service, perhaps teachers get all they earn; but weighing the importance of schools with the importance of other trades and professions, there is still scant justice in the salaries of teachers.

The best teachers do not choose that work because they can make more in that way than in any other, or because they think they can make it more easily. Teaching is not a proper substitute for typewriting or clerking in a store. Good teachers, like good clergymen, give up something in choosing to teach. If they amount to much as teachers of literature, they themselves might write; if they can train business men, it is because they themselves could make money in business; if their physics and chemistry are sound, they could be consulting specialists for big corporations; if they have mastered history, the roots of statesmanship are in them. Now if all this is true, it is at once the condemnation of the schools of the present and the program of the schools of the future. Our schools are not close enough to our life. Teachers who come to their work because they like the subject-matter of the courses they teach, or because they enjoy their week-ends and summer vacations, even teachers who have a mothering fondness for children, or who take to teaching as a "sad mechanic exercise, like dull narcotics, numbing pain" are probably not the ones the schools most need. Good salaries help, but are not a guarantee of good teaching. Perhaps if salaries were advanced to a point where rigid selection might reject the unfit from a surplus of candidates, the schools would profit by the condition. To stop the advance of salaries short of that point is to invite indifferent typists, counter and kitchen girls to try their hands at teaching for a while.

Real teachers know their subject matter and know how to use it. But they have also a constitutional liking for seeing other folks grow, and for helping on the process. To guide a youngster in the mastery of facts worth while; to make and carry out a program of thinking which causes the student to keep on thinking after he leaves the school; to so relate schools to life that even while he is in school the student will begin to do well the things which it will be his life work to do well—that is teaching. It is a magnificent work. Its best rewards are not in any salaries, high or low; but in the life long gratitude and affection of the old boys and girls who know what it all meant.

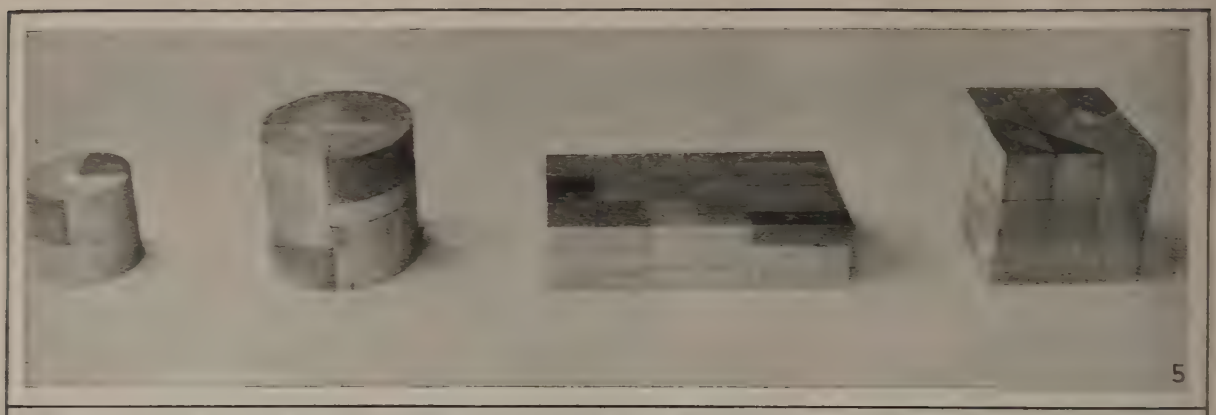
One may begin teaching with only the background of an elementary school, if he can pass an examination in the subjects he is to teach, and in the theory of education; but such beginnings are necessarily at the pupils' expense. Proper training reduces the blunders of even the born teachers. It is character, personality, that really does the teaching; and personality is built up of what we were born to be, plus every experience we have gone through. It includes not only what we know, but what we have done, what we can do, what we enjoy, what we dislike, what we intend, at every turn. Other things granted, the richest personality will guarantee best teaching.

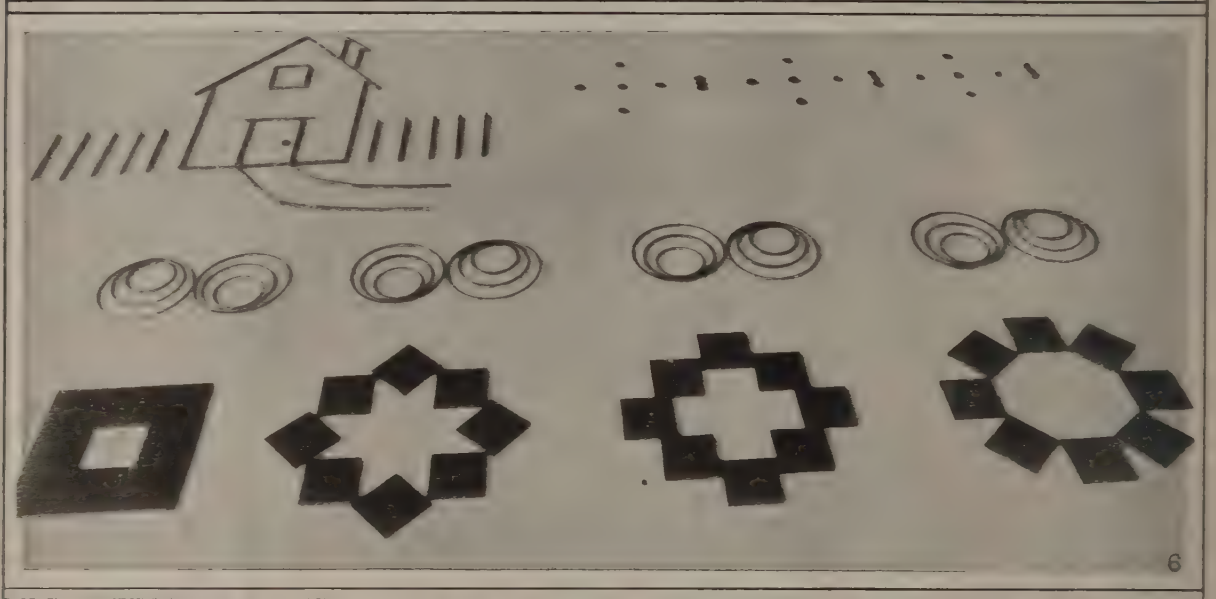
Writing.—The profession of writing, apart from news-mongering, business correspondence, or sermonizing, appears to be attracting every year a larger number of practitioners. Even poets, flocks of them, make a living by writing, supplemented by writing and talking about their writings. The popular maw for fiction is unfilled, though our presses are busier than the German Reichsbank making marks. We read everything, and so almost anything. The sheer bulk of our reading prevents a searching test of the things we read.

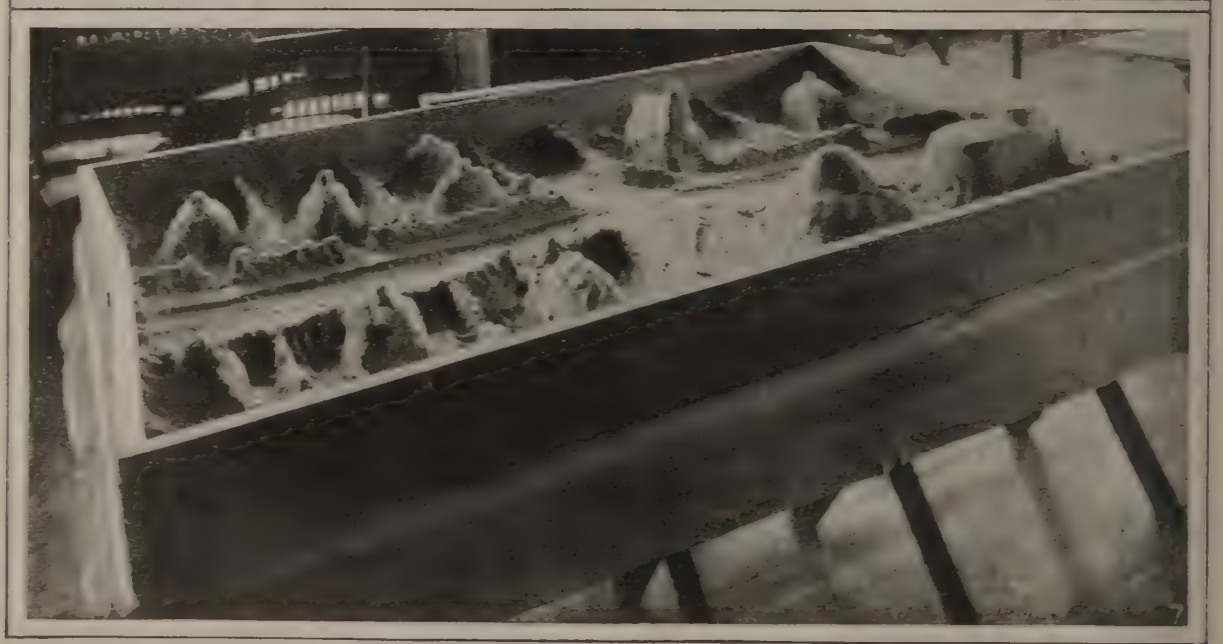
America is cosmopolitan in its fusion of standards in art. We have now an American realism, if such a thing can be anywhere—smoky gray, ill-smelling, clattering with discordant rackets on occasion, unmoral or immoral, quite continental in its notion that everything is grist to the artist's mill, but also continental in its tendency to grind only the coarser grains. We have symbolism, with real objects—stark, discordant lumps of stuff—standing for heaven knows what ideal opinions; and hazy cloud-banks of uncertainty portraying to the elect the solid facts of life. We have imagists, lifting incidental pictures into the dignity of a commentary on experience—the china decorators of art, leaving pleasant minor impressions of pleasant little things. And we have still some Anglo-Saxon art, thanks to our stars, mingling all the types that are fit to print, and judging fitness by a combination of fidelity to fact and safe social tendency. Of course it is possible to allege that a bad book is not bad to a good reader. On this ground we come at Mr. Pope's famous vindication of the ways of God to man; Whatever is, is right, at least when the right man looks at it.

All this indicates that there is plenty of room and a hearing for everybody who has something to say in print. Big fortunes are made in popular fiction, if the author is prolific, and comes into vogue. There is reason to think that many books are made with the fortune chiefly in mind. At its best, writing is a profession blending the art impulse with social melioration; the whole so cleverly done that the writer may forget about the compensation, as a thing assured. Necessity may bring lagging reluctance to the difficult moment of invention, but if we are to invent anything permanent in literature, necessity stops at the gate. Art is its own wages.

Schools can produce fair or good writers; there their power stops. They cannot make great ones. The English departments of our colleges encourage talent, and develop technique. They point out how this and that master of English learned his trade. They give local vogue and sometimes national reputation to promising undergraduate writers. Probably the best initial training to write may be found in college classes. But life itself furnishes the stuff that books are made of. Young people haven't really much to say until they have lived and thought, suffered and enjoyed. Even experience will be inert stuff without the born gifts of intellectual curiosity, imagination, and unflagging creative impulses.







KINDERGARTEN "GIFTS" — PLATE II

PRIMARY EDUCATION

IN ITS PRACTICAL RELATION TO PUPIL, PARENT AND TEACHER

Primary instruction very properly begins in the home. In no way can parents more helpfully co-operate with the school than by taking in hand the home-work, limiting it within reasonable time and holding the child to his best and most vigorous use of the time. In this way the home may supplement the school or become a check upon the school when such check is needed.

The Child and His Mother.—The world has recognized in art and story the sacredness of mother love. The intimacy of companionship between mother and child begins in the days of earliest infancy. We scarcely need Pestalozzi to teach us that in early education nothing can be compared with a mother's influence. The home training of a good mother is a preparation which sends the child out into life ready to profit by the best that life can give. The lullabys the mother sings her baby have in them more than calming into rest. "Sleep and rest, sleep and rest, Father will come to thee soon." They give faith in mother love and father care and lead to that larger faith which illumines adult years.

The Child and His Father.—In these days of prominence given to club life, and to "mother's clubs" in particular, there is danger that the importance of a father's relation to the child be overlooked. The boy and his father, the father and his little companion daughter, these are comradeships that give the noblest impulses to home life.

It was a woman far past the meridian of life who wrote, "My most blessed memories are of my father. He was my first teacher and all through childhood he was my best friend. I learned to love whatever he loved and all that he loved was good and noble." Again a woman writes, "It is years since my father left me, but I can hear his rich voice now as he read to me out of my favorite books and gave me an introduction into the great world of his books." It is the father's privilege as well as the mother's to begin that nursery training that gives refinement and joy through all the coming years. What delight the child and father may have together as they wander hand in hand through story-land.

The father or the mother who is a good story-teller may be the child's greatest asset of bliss. The story hour may become not only the bright spot of the day but it may be looked back upon as the brightest spot or memory. Through the gentle art of story-telling the child may be given companionship and laughter and right teaching.

The ethical value of the story of moral conduct, the story that teaches without seeming to instruct, is beyond any amount of deliberate argument—stories that incubate the virtues of childhood, such as kindness, gentleness, obedience to parents, respect to the aged, honesty, self-denial, truthfulness, usefulness, sympathy. Stories of pure laughter are equally good, quick, responsive, joyous laughter. Oh, the merry heart of Eugene Field, and the merry heart of children who have laughted with him.

The Child and the Teacher.—It remains for an artist to express by brush or chisel what a noble-hearted teacher may become in the life of a little child—a radiance to guide throughout life. Such an influence was Pestalozzi, was Froebel, Arnold of Rugby, Horace Mann, Mary Lyon, Alice Freeman Palmer, and an innumerable host of others whose names are written in letters better than gold.

Superintendent Maxwell relates an anecdote of a teacher in his school, which shows the divine possibilities of such a worker. With the unmistakable Yiddish accent the Jewish mother exclaimed, laying a respectful hand on Miss K's arm: "I cannot help seeing how these children, they love you. You know my Bennie and Rosie? They're in your school. Do you know, lady, when you stand on that platform in the school and you say something it is just like when God speaks."

Owen Kildare gives a graphic account of the effect upon him of the first gentle touch he had ever felt. One day a strange woman, it must have been a mother or a teacher, patted him on the cheek and he tells us that he almost cried for joy. "With a light pat on my cheek and one of the sunniest smiles ever shed on me, she put a penny into my hand. She was gone before I realized what had happened. Somehow I felt that had she come back, I could have said to her: 'Say, lady, I haven't got much to give, but I'll give you all me poipers, me pennies, and me knife if you'll do that agen.' " For such children it was written.

> Give me no pity, but a place
> Where falls the sunlight on my face.

Parent and Teacher.—For the mutual helpfulness of home and school it is desirable that parents and teacher should know and understand each other better. Mothers are awakening to the need of child study and are appealing to teachers for guidance. Parents and teachers are seeking mutually for instruction and parent-teachers' associations are formed. Through the intelligent direction of such organizations the school may arouse the home to a fuller sense of its duties toward the child's education, for often the ignorant or unthinking home is woefully lax. The physical and moral welfare of the child, through the neglect of the home, must often become of the deepest concern to the teacher.

Moral development depends upon physical development. This means that the child's moral welfare must depend upon the economic conditions under which he lives, and just in proportion as we improve these conditions, just to that extent do we increase the chances of the child to become a healthy, happy, moral citizen. No school has done its full duty unless it has aroused the entire community to a sense of its responsibility and acquainted it with the real meaning of intelligent co-operation in the training of children.

In some schools there are parents' meetings early in the fall for the purpose of giving teachers a chance to explain the studies to be taken up during the year, the method of procedure, the value of the subjects, and, if need be, the psychological reasons why particular studies occur at this point in the school course.

Natural Understanding.—The teacher should be intimate enough with the parent to talk candidly and freely about the interest of the child, and whenever peculiar conditions demand it, parents and teachers should together make a careful study of the nature and the needs of the child. Late entrance into school, irregularity of attendance, indifference to school work, physical defects are important causes of retardation which can often be overcome to a great extent through intelligent co-operation.

No parent should trust for his understanding of the rules of discipline of the school to the fragmentary and biased account of a child's interpretation. It is a fine service to the school when parents emphasize the fact that the school exists for the sake of helping the child and that the teacher is his good friend always.

The principal aid for children of incompetent homes must come from the school and the personal interest of the teacher. Of the worth of such a school and the method of such a teacher Judge Ben Lindsey has given this fine testimony: "Personal influence comes through personal contact, and since personal influence is perhaps the most powerful factor in moral or immoral development, there comes a grave responsibility to the teacher. With this responsibility comes also a great opportunity, that from the standpoint of service to mankind ought to be welcome, since there is no class of our citizens, not even parents themselves, who can do or are doing more to mold the character of the coming generations than the teachers in the schools."

Home Study.—The subject of "home study" has been regarded as so important that the National Educational Association gave it a place upon its program, and these are some of the points reviewed in round table discussion:

1. We must teach children how to study if we would secure the independence, concentration, organization, and persistence we desire.

2. Should children do any home study? If so, how much and when?

3. Parents should understand the aim of all home assignments and should agree with the teacher where the child should be given help in his work and where he should not.

4. Children get none too much sunshine as it is, hence the question of time for home study and time for play.

5. Children must be taught how to study, and this teaching should be by first guiding

them in pleasant work; then making them conscious of the process they are employing, noting its value and economy; third, arousing the will to do and to persist whenever desired; and fourth, selecting worthy subject-matter to give practice in the different fields—especially in concentration, persistence and independent thinking.

Home study fitted to advance this plan should in no way be detrimental to a child nor should it tax the parent unduly.

The following facts as formulated seem to be quite generally accepted: Children in the first four grades should be required to do very little, if any, study at home. The time out of school should be devoted to playing, occasional reading, and a little helpful service at home.

The children in the fifth and sixth grades should be required to do systematic reading at home under the direction of the teacher. Such reading should be closely related to the study of subjects in geography, history and literature.

The children in the seventh and eighth grades should be required to study one subject, as history, at home, and also to do systematic reading which should be closely correlated with the subjects taught in school. The home reading should be carefully selected, and graded as the subject-matter of the regular course has outlined.

WHEN THE CHILD FIRST GOES TO SCHOOL.—For most children the first grade is the first year in school, as the majority of children cannot attend the kindergarten. The program of the first year should be organized to meet the needs of the six-year-old child so that he may adapt himself to the life of the schoolroom as comfortably as possible. Ample opportunity should be given for outdoor exercize and physical development. The program of the first year work should include nature study, music, and handwork, language, reading, phonics, spelling, writing, some simple number work, not taken as separate and distinct subjects, but each illustrating and emphasizing the others, and all uniting to enlarge the child's experiences, to stimulate his curiosity, and to organize his knowledge. These subjects should be so arranged that they unify knowledge.

A child is interested in watching the preparation of its food. Interest is closely connected with curiosity. A child desires to know what can be known about objects that are interesting to him, such as his pet animals, his toys, etc. From this it is apparent that the mother or teacher has at the outset to seek to awaken in the child's mind a feeling of interest in the subject presented to it. This she will do partly by bringing out all that is striking, pretty, etc., in the subject, and partly by connecting it with known sources of interest in the child's surroundings. One chief aim of the instructor should be to develop new interests, answering to the different domains of knowledge to be dealt with, as history and natural science. It is evident that in order to awaken such a feeling of interest and study, attention must be paid to individual differences of sensibility.

Interest describes the effect of feeling, and more particularly pleasurable feeling, in rousing and sustaining the attention. The feeling may be the immediate result of the action of an object on the mind, as when a child is attracted by a pretty picture; or may be due to process of association and suggestion.

LEARNING TO READ — READING TO LEARN.—The mechanics of reading are so difficult that during the first and second years the energy of the reading lesson must be directed chiefly toward learning to read. This does not mean that the first reading lessons have no thought content, but this content comes as first chiefly through the suggestion of the teacher. But this is all to be changed. By the time the child has reached the third or certainly the fourth year in school the mechanics of reading should have been pretty thoroughly mastered. He reads independently now to get the thought for himself. If books have been presented to him in the right way the printed page becomes an open door by which he enters storyland. He enters because he loves it and reading is no longer a compulsion.

Two motives are strong enough to make any intelligent child a good reader—to read to himself because he wants to know, and to read aloud to others because he wants to make them understand the thing that is so well worth knowing. This involves two things—well selected reading and companionship, some one at hand, mother or father, teacher or class, to whom there is some joy in telling the story gathered from the printed page. It is not necessary to describe the method of such a lesson or the spirit of such a teacher.

Drill in Phonics.—As children are to be made self-helpful they must be taught the method of attacking new words in their daily reading. Phonic drill should be given daily in all the lower grades.

At first train the ear and vocal organs to recognize and imitate sounds. Clear distinct oral expression should be secured before any attempt is made to teach the written form. Not a few of the difficulties met by the child in mastering the mechanics of reading would be removed if his ear were trained to hear the correct sound. Very careful attention should be given to each child's ability to speak distinctly. If defects of hearing or speech are detected they should be attended to at once, for often such defects may be corrected in the young child.

After a little oral drill in clear and correct enunciation, written representations of sounds may be given, beginning with consonants and long and short vowels. New words which occur in the reading lesson should be broken up in the oral spelling lesson into syllables and spelled by sound or the sound of the vowel in the accented syllable should be given. As early as the second school year children should be able to pronounce with a fair degree of confidence almost any word that occurs in their reading lesson if they have been given the help of the accent and a few diacritical marks.

Exercises like the following may be multiplied for phonic drill: Review the consonant sounds in words with long or short vowels, and without using marks except over the first word of the groups. Place the phonogram *at* on the board. Let the pupils build the group of words *fat, bat, cat, hat, mat, rat, sat.* Beginning with *ate* they will construct the group—*ate, fate, gate, slate, plate, state.* In like manner use *an* and *ane, ad* and *ade, ap* and *ape, ag* and *age, am* and *ame, ack, ake* and *ace, ang* and *ange, and, ank, act, amp, ash.* Notice the effect of final *e* on the sound of *c* and *g*, and also on the sound of the preceding vowel.

Then take the phonograms containing short or long *e, i, o, u, y*, and make families of words as above. Give exercises in the same way with initial and terminal consonants: *sh, ch, wh*—she, shall, shell; cash, hash, lash; chin, chip, chick, child; much, such, touch; which, when, while, white.

Drill on final phonograms in words of more than one syllable: *ing*—coming, having, making, taking, living; *er* — hunter, mother, shiver, farmer; *en* — seven, garden, chicken, broken, woven; *est*—safest, surest, sweetest, dearest, kindest, honest; *ed* — lived, asked, raised, looked, wished, called, learned; *es*—waves, makes, takes, moves, loves, comes; *or*—sailor, honor, favor, savor; *et*—hatchet, bonnet, jacket; *y*—pithy, dusty, stormy; *ny* — sunny, funny, bunny; *ly*—slowly, truly, lovely; *ty*—kitty, empty, plenty.

In this way take other combinations and give frequent and thorough drills until the child can immediately produce the vocal sound from the written symbol. It is not sufficient to think that a sound once learned has been acquired. It must become a habit to speak with distinct utterance. Use phonics not only as a key to new words, but as an exercise in articulation. Divide words into syllables. Give drills on the small words that are frequently slurred over, as *to, was, of, for, from, get, just, can.* Attention should be given to voice and expression, such as characterize good conversation.

Such systematic drill in phonics should secure for the child the correction of bad habits of speech, such as nasal tones, drawling, dropping final sounds, mumbling, talking without movement of lips and jaw, and every kind of indistinct utterance, and in addition should give him power to read the printed page for himself.

Story-Telling as a Language Exercise.—Children delight in hearing good stories and in telling them again and again. The old, old story is the favorite. With the telling of the story there is often free dramatic action which may be developed into a fine method of interpretation. The story-teller gains power and freedom in the use of language. He enriches his vocabulary by unconsciously using the words of others; he enriches his life by entering into the lives of others and understanding the essential relation between motive and conduct.

The story may be made the basis of all kinds of language exercise. As in the first and second grades, what the child reads becomes the center of the school program so in the third grade language expression becomes the leading thought.

As *Hiawatha* has proved a very attractive story center for the second grade, so *Robinson Crusoe* has been found to furnish an excellent center for history, geography and language in the third-year course. From the fourth grade, on through the grammar course, history and geography form two important and interrelated centers of interest and study around which crowd many human interests and from which any amount of language teaching may be derived.

Written Work should follow as a natural sequence the oral lesson. Artificial writing is poor writing. The child talks because he wishes to talk and he talks well. In the same way he should write because he has something to write about. The technique of the art of good writing is laid down in a succession of well-organ-

ized lessons in our language books, but the practice of this art belongs to every lesson in the school and to the habit of every day. The study of grammar in the upper grades is important only as it becomes an intelligent means to the one great end, power and fluency in the use of the mother tongue.

Reading to Children.—It has been often repeated that the teacher must know literature and must read often to her class and that above all she should be a good reader as well as a good story-teller. Parents and teachers, all who mingle with little children, should know and love the books and poems that the children love. Let the teacher practice on a few of the best poems and read them to her class with responsive appreciation in her voice and she will never again be afraid that she cannot learn to read or that she cannot hold the interest of her class. A few beautiful poems are suggested here as suitable selections. Let each teacher add to these others of her own choosing. Select a few poems that appeal most strongly and then read those again and again until the words seem to be your very own. Let the teacher do this and she will in time find herself classed among the very few who are worthy to be called good readers.

Poems to Read to the Children

Rock-a-bye, thy cradle is green	Nursery rhymes.
The world is so full of a number of things	Stevenson.
What does little birdie say	Tennyson.
Twinkle, twinkle, little star	Jane Taylor.
Angels at the foot. (Watching Angels.)	Christina Rossetti.
Rockaby, lullaby, bees in the clover	Josiah Gilbert Holland.
Jam and jelly and bread are the best of food for me	Edward Lear.
The quangle-wangle's neat	Nonsense Book.
To-whit! to-whit! to-whee! Who stole the bird's nest	L. M. Child.
Who has seen the wind	C. G. Rossetti.
Great, wide, beautiful, wonderful world	W. B. Rands.
How many seconds in a minute?	Christina Rossetti.
What does the bee do?	Christina Rossetti.
Baby wants a lullaby. (Innocents' Island)	William Brightly Rands.
This is the way the ladies ride (Rhymes about a Little Woman)	William Canton.
Baby bye, here's a fly, let us catch him, you and I	Josiah Gilbert Holland.
Over hill, over dale. (Midsummer Night's Dream)	William Shakespeare.
O Lady Moon	Christina Rossetti.
While shepherds watch their flocks by night	Found in Golden Numbers.
Dark brown is the river. (Where Go the Boats)	Robert Louis Stevenson.
When the elf king went to battle. (The Magic Casement)	R. C. Lehman, Alfred Noyes.
As soon as the fire burns red and low. (The Sleepy Song in Pinafore Palace)	Josephine Dodge Daskam.
There is ever a song somewhere, my dear	James Whitcomb Riley.
The wind-broom sweeps so wondrous clean. (The Wind-Broom)	Richard Burton.
As I walked over the hills one day. (A Nursery Song, Pinafore Palace)	Mrs. Carter.
There's a merry brown thrush	Lucy Larcom.
Now the day is over. (Childs evening hymn)	Sabine Baring-Gould.

Both at home and in school read and reread: *Bed in Summer Time, I Saw You Toss the Kites on High, A Child Should Always Say What's True, How Do You Like to Go in a Swing?* Rossetti's *Who Has Seen the Wind? O Lady Moon, What Does the Bee Do?* Field and Riley and Cary and Others: *Waiting to Grow, Plump Little Baby Clouds, Sleep, Baby, Sleep, Rockabye Lady.* Jingles from the Jingle book and over and over read the rhymes of Mother Goose. Sometimes read selected psalms. Read with reverence and exaltation until the children, too, catch the uplift of the words. "When I look up unto the hills, behold, Thou art there." "The heavens declare the Glory of God, and the firmament showeth His handiwork."

Suggested Material for Help of Teachers.—The teacher of language and literature must know literature at its best. She must appreciate the double aim of language teaching—facility in the correct use of language and appreciation of good literature. For herself she needs the stimulation of the best that has been written and for her class she needs to know the literature for her grade. This is especially true for the teacher of the little ones. She must know the literature that children love, their poems and their stories, and she must practice well the art of story-telling.

The book-loving teacher will have a book-loving school. To lead children to the proper use of books the teacher must know children's books and enjoy using them.

An occasional period set aside during the week for the purpose of talking over with the children the books they have read will be found valuable. Every schoolroom should contain a library selected for the use of every child in every grade. Nowhere is the privilege of individual selection more valuable than in the choice of books. When "learning to read" has given place to "reading to learn" and "reading to enjoy" them the drudgery of learning has been overcome.

Poems that Children Love and Books that Help in Story-Telling

And I must follow, would I ever find
The inward rhyme to all this wealth of life.

Ingfen	One thousand poems for children	Jacobs Co., Geo. W.
Hazard	Three years with the poets	Houghton.
Burt	Poems every child should know	Doubleday.
Wiggin and Smith	Pinafore Palace	Doubleday.
Smith, Eleanor	Song books I and II	Milton Bradley.
Matthews	Poems of American patriotism	Scribner.
Harris and Gilbert	Poems by grades	Maynard-Merrill.
Barlee	Famous poems explained	Hinds, Noble & Eldrege.
Lear	Nonsense rhymes	Little.
Palgrave	Child's treasury of English song	Macmillan.
Bryant	How to tell stories to children	Houghton.
Bryant	Stories to tell to children	Houghton.
Houghton	Telling Bible stories to children	Houghton.
Harrison	In story land	Central Pub. Co.
Harrison	Two children of the foothills	Sigman Pub. Co.
Wiltse	The place of the story in early education	Ginn.
Wiggin and Smith	The story-hour	Houghton.
Wiggin and Smith	The posy ring	Doubleday.
Baldwin	Fifty famous stories retold	Am. Book Co.
Burt	Prose every child should know	Doubleday.
Burt	Legends every child should know	Doubleday.
Mabie	Myths every child should know	Doubleday.
Foster and Cummings	Asgard stories. (Valuable to teachers for its introduction)	Silver-Burdett.
Baldwin	Old stories from the East. (Bible stories)	American Book Co.
Richards	Five minute stories	Little.
Richards	Golden windows	Little.
Poulsson	Through the farmyard gate	Lothrop.
Poulsson	In the child's world	Milton Bradley.
Scudder	The children's book	Houghton.
Harrison	Uncle Remus. His songs and sayings	Appleton.
Pyle	Wonder clock	Harper.

Fairy tales from Andersen and selected tales from Grimm belong to every child. For other books of poems and stories see lists of books for children's library. Some books have been given in both lists because they belong equally to the teacher and to the child.

For Children at Home and the First Two Years in School

Jewett	The three baby bears	Dutton.
Dodge	Baby days. (Songs, stories, pictures)	Century
Burgers	Goops and how to be them	Stokes & Co.
Burgers	More goops and how not to be them	Stokes & Co.
Greenaway	Under the window	Warne.
Potter	The tale of Mrs. Jeremy Fiskes	Warne.
Potter	Peter Rabbit. Jeremy Fiskes	Warne.
Grimm	Fairy tales; ed. by Wiltse	Ginn.
Adelborg	Clean Peter and the children of Grubbylea	Longmans.
Lear	Nonsense books. Nonsense rhymes	Little.
Flanagan	Child stories and rhymes	Flanagan & Co.
Mother Goose, or the old nursery rhymes		Warne.
Mother Goose melodies, or songs for the nursery		Houghton.
Æsop	Child's version of Æsop's Fables; ed. by Stickney	Ginn.
Andersen	Fairy tales; selected and edited by Turpin	Maynard.
Brooks	Stories of red children	Ed. Pub. Co.
Beming	Little Indian folk. Little brothers of the West	Stokes.
Turpin	Child's book of poetry. Classic fables	Maynard.
Holbrook	Hiawatha primer	Houghton.
Alexander Blake	Graded poetry. Separate volumes for each grade	Merrill.
Andrews	Seven little sisters. Each and all	Ginn.
Brown	Stories of woods and fields	Globe.
Blaisdell	Little Boy Blue and his friends	Little.
Long	Nursery rhyme book	Warne.
Richards	Five minute stories	Estes.
Poulsson	Child stories and rhymes. Finger plays	Lothrop.
Grover	Sunbonnet babies. Overall boys	Rand-McNally.

Picture books by Nelson, Warne, Tuck, Dutton, bring a wealth of joy into the nursery.

Story of the three little pigs	Warne.
Story of the three bears	Warne.
All sorts of animals	Nelson.
Animals and their young. (Natural history series)	Tuck.
Cinderella and Red Riding Hood	Dutton.
Cosy nook farm. (Cosy nook farm series)	Tuck.
Our dogs. (Picture land series)	Tuck.
All about wild animals	Tuck.
Johnny Crow's garden	Warne.

LANGUAGE AND LITERATURE—Under teaching the child how to read, a detailed outline of suitable material arranged for first and second year language has been given, but the question may still be asked by the mother or the teacher how to instruct the little ones who are beginning to read. What is the method or what are the steps in the process?

Very little is heard nowadays about word method, sentence method or phonic method as separate methods in themselves. The best teaching chooses from all methods.

How the Several Methods May Be United in the First Reading Lessons: 1. Words as wholes. (a) Use of objects representing the word; (b) spoken word used in connection with the object; (c) the word as form, either script or printed form — the object, the idea, the vocal symbol, the written symbol, all in combination.

2. Words in combination. (a) Groups of words or words grouped in phrases; (b)

words arranged in sentences, grouped in paragraphs or as story wholes.

3. Analysis of words. (a) Words broken up into sounds—phonics; (b) words broken up into separate forms—letters.

The Eclectic Method as It Has Been Outlined for a Training School.—1. Conversational work whereby teacher gains knowledge of child's interests, intelligence, maturity, habits, home training, environment, and use of English. Here objects are often introduced.

2. (a) Blackboard work. Action sentences largely such in form and in content as have been used by child in conversational work. (Thought and sentence method.) (b) Discovery of parts of sentence words. (Word method introduced.) (c) Discovery of parts of words, letters, names and sounds of letters. (Phonic method.)

The test of good teaching is the drill that follows the development lesson. After the child has learned the nature of word symbols and has acquired a small reading vocabulary the importance of such drill exercises must be emphasized.

Analysis of a general plan for reading drill.—

1. Preparation through word mastery.

2. Results to be obtained. (a) Recognition of words at sight, (b) correct and easy enunciation, (c) mastery of sound and form elements, (d) knowledge of their meaning.

3. Methods by which this word mastery is acquired. (a) Writing new words, (b) reading new words, (c) spelling by sound and by letter, (d) meaning of new words, (e) use in original sentences. Briefly summarized, the reading drill should fix vocabulary and form word images.

4. Reading the new lesson. The test of good preparation is the grasp of thought and feeling as expressed through good vocal expression. The three arts of education—seeing, reading, thinking—should be combined in every reading lesson.

From the beginning give the child in his lesson something worth thinking about and from the first give him an interested audience—a teacher and a class who care for what he reads and will listen with interest. This will lead the child in his reading to form the habit of complete thought and complete expression as found not only in the single sentence but in the entire selection. Then what he reads will seem to him worth while and he will learn to love the printed page. As has been fitly said, he will enter the path "which our forefathers blazed through the wilderness and make of it a highway down which he may ride a king in his power to use the English language."

Things to Be Remembered in Teaching Reading.—1. Teach only such words as are needed for use.

2. Keep a complete list of all words taught.

3. Keep a separate list of all words found difficult. Review and review until mastered.

4. Call for silent reading. Have child tell you what he has read.

5. Call for silent reading of a dramatic passage. Have child act out what he has read.

6. Again call for silent reading, this time a longer passage. Have child tell in his own words what he has read.

7. From the very first sentence require natural tones. This can easily be done by simple, natural questioning.

8. Do not let any member of the class interrupt one who is reading aloud. There should be confidence, not confusion, when one is reading.

9. A few minutes of rapid drill in correction of errors common to the class is a good preliminary exercise. The teacher should correct, but not nag. Remember that drill exercises should be short.

10. Encourage every child to do his best and when he has done his best receive it in a pleasant, gracious manner. Children are sensitive to the atmosphere of approval. Encourage, suggest, do not repress.

11. Young children cannot study undirected. Work of a definite, concrete kind should be assigned to them. Through occupation they learn concentration.

12. Make the sentence or the thought a unit. By skillful questioning lead the child to the thought he is to give you from the reading, as, What did the dog do? Why did he like the boy? Such indirect help is the best way of suggesting right expression.

13. Short daily exercises of a rapid, decided, vigorous character should be given to train the class to quick recognition of words and sentences. It is a great gain in education to make a person quick and resourceful.

Suggestions and Devices for the Inexperienced Teacher.—The experienced teacher has long ago invented many of her own devices, has outgrown them and invented others. There are no fixed methods of teaching. It is a continual round of interesting change, the more interesting to the original mind which is always inventing something new. It must be remembered, however, that novelty is not the aim, but growth. The growing teacher welcomes that which adds new interest or in any way yields better results.

1. The first language lesson must begin with oral exercise—something interesting to talk about.

2. The unit of thought is the sentence. The child gives his thought, and the teacher writes it on the board, underlining the important word. It may be the child tells what he picked up from the table, as, "I have a book." Other children tell their story, as, "I have a ball," "I have a box." Each child finds his own story and his own particular word. This game of hide and seek gives zest and holds attention. It may be worked out in many ways.

3. Write the children's names. Let each child find the name of some other child or the age of some other child or the brother of some other child. Such exercises can be multiplied. The teacher makes her crayon talk, and the children talk to her. Write a nonsense rhyme upon the board. Read it to the class. Read again, pointing slowly to each word. Let children point to principal words.

B was a bat who slept all day,
Brown little bat!

Some teachers have enriched the child's fancy by adapting Lear's *Nonsense Rhymes* to the teaching of the alphabet.

C was a cat, crafty old cat,
D was a duck, dear little duck.

The pictures and the words make good seat exercises for copying.

4. Find and pronounce all words on the board containing a given letter, as *e*, *f*, *c*, etc.

5. Arrange the words of a paragraph in alphabetical order.

6. Write on the blackboard or on paper all the words of the reading lesson beginning with a certain letter. Instead of writing on the board the material in the word boxes may be used.

7. Words written upon the board promiscuously, so far as the initial letter is concerned, are to be grouped alphabetically in columns, each group with the initial letter at its head. Many forms of dictionary work may be given. Children must learn the alphabet, but there are better methods than the old mechanical method of the a, b, c's.

8. Build or write in columns all the words containing a given vowel sound.

9. Write in columns all words containing a given phonogram.

10. Words of the lesson are written on the board. Words are erased one by one and the child tells which word was erased.

11. Arrange words in duplicate columns except that the order of words is changed. Give to one of the class a pointer, and have him point to a word pronounced by the teacher. The game consists in seeing which child points first.

12. A child finds and pronounces all the words with a given ending or a given beginning. Valuable for prefixes and suffixes.

13. The teacher points to a word, the child arises and gives a sentence containing that word.

14. The singular form of nouns whose plurals are formed by adding *s* may be written upon the board. Let the children build the plural form by adding *s*.

15. Draw a doll house. Let children tell what furniture they want to put into it. Write these words in a column. Let children furnish by pointing to word and then to the place in the house where the furniture should be. Make, mark, or write word in the house. Picture of a ball game might be done in the same way.

16. Have pupils look through a paragraph and tell what has been read.

17. Have pupils look through a sentence or paragraph and act out the meaning.

18. Have pupils read a paragraph silently and illustrate the meaning by drawings or a series of drawings.

19. Give dialogue exercises frequently where one child replies to another. Encourage dramatic expression in voice and body.

20. The teacher should often read to the class and with the class. Exact imitation is not wanted but through suggestion and the glow of her own spirit the teacher may awaken her class to the love of interpretative reading.

Three Essentials in the Teaching of English.—1. Fixing the word in the child's vocabulary. 2. Fixing the word symbol through the activity of the eye and ear and hand. 3. Centering attention upon thought, rather than mere symbol getting, that in the end the child may gain mastery of thought and speech.

Suggestions for Seat Work Related to Primary Readings.—1. Seat work should be related to the lesson. The aim in all exercises should be to train the child to look for something in the lesson and expect to find it. It is the active mind, the attentive mind, that can be educated.

2. Provide worn-out books, magazines, advertisements, etc., which can be cut up. Provide blank books, one for each child. Print the letters of the alphabet on the board. Let the children find them, cut them out, and paste them neatly in order. *a* at top of page 1, *b* at top of page 2, etc., to *z*.

3. New words occurring in the reading lesson may be printed or written on the board; children may find these words, cut them out, and paste them on the proper page. This will give each child the printed vocabulary of his grade. When they can read words children may make dictionaries or word books by writing the words instead of cutting and pasting.

4. Put several alphabets in the same

box. From the letters in the boxes let the children build words that the teacher writes on the board.

5. Prepare sets of hektographed pictures with the name of the object printed plainly beneath the picture. Each set should contain twice as many cards as there are pupils in the class. Take half of each set and cut off the names. Now let the children, with the uncut card before them, match the separated pictures with their appropriate names.

6. Hektograph sentences on strips of cardboard. Cut these sentences into words or phrases and put each sentence into its own envelope. Write or print the sentence on the board and let the children build.

7. As soon as a few words can be recognized at sight, the pupils should build their own sentences, using separate words on bits of cardboard. Continue building sentences until the reading is taken up.

8. Copy from the board for form and punctuation. Very careful supervision should be given to all such copied work.

9. Copying memorized passages for exactness of form is a valuable extension of the previous exercises.

10. The teacher should use judgment as to the amount of seat work and its nature. Every child should be kept busy at some profitable employment. Playing with sitcks, marking with a pencil, or doing anything else with no definite aim should not be permitted. The child should not be aided at every turn but should be left to his own resources as much as possible. He should be encouraged to think himself out of his own difficulties. Independence in action, accuracy and skill in mechanical work, are the large results to be sought in seat occupation.

The Children's Book Shelf—Third Grade

Scudder	Verse and prose for beginners	Houghton.
Dodge	Rhymes and jingles. When life is young	Scribner.
Wilson	Myths of the red children	Ginn.
Husted	Stories of Indian children	Pub. Sch. Pub. Co.
Husted	Stories of Indian chieftains	Pub. Sch. Pub. Co.
Defoe	Robinson Crusoe	Am. Book Co.
Kipling	Jungle book	Century.
Johonnot	Book of cats and dogs	Am. Book Co. Ginn.
Miller	Little people in feathers and furs	Dutton.
Lang	Blue fairy book	Longmans.
Ingelow	Three fairy tales	Heath.
Judd	Wigwam stories	Ginn.
Andersen	Arabian Nights; ed. by Clarke	Am. Book Co.
Coolidge	Christmas tree and other stories	McLoughlin.
White	Nine little goslings	Little.
Deming	When Molly was six	Houghton.
Wade	Red folk and wild folk	Stokes.
Wade	Our little brown cousins	Page.
Wade	Our little Indian cousins	Page.
Dodge	Our little Japanese cousins	Page.
Dutton	Stories of American history	Lothrop.
Hazard	In field and pasture. (World at work series)	Am. Book Co.
Howliston	Three years with the poets	Houghton.
Harris and Gilbert	Cat tails and other tales	Flanagan.
Dodge	Poems by grades. (2 vols.)	Scribner.
Macdonald	Donald and Dorothy	Century.
Carter	Light Princess and other fairy tales	Burt.
Alden	Lion and tiger stories	Century.
Coolidge	Cruise of the canoe club	Harper.
Diaz	What Katy did. (3 vols.)	Little.
Stoddard	William Henry letters	Lothrop.
Howells	Talking leaves. Two arrows. (Indian stories.)	Harper.
Smith	Christmas every day and other stories	Harper.
Jewett	The Browns, (7 vols., a series of books describing good times in the Brown family.)	Little.
Lane	Town and city	Ginn.
	Industries of to-day	Ginn.

The Children's Book Shelf—Fourth Year

Wiggin and Smith	Golden numbers	McClure.
Wiggin and Smith	Posy ring. Fairy ring	McClure.
Shute	Land of song. (3 vols. arranged for grades.)	Silver.
Baldwin	Old Greek stories	Am. Book Co.
Francillon	Gods and heroes	Ginn.
Alcott	Little men. Little women. Aunt Jo's scrap book	Little.
Daylor	Juan and Juanita	Macmillan.
Carroll	Alice's adventures in wonderland. Through the looking-glass	Macmillan.
Otis	Ten days a newsboy	Harper.
Otis	Toby Tyler, or ten weeks with a circus	Harper.
Guerber	Stories of the thirteen colonies	Am. Book Co.
Baldwin	Four great Americans	Am. Book Co.
Beebe	Four American naval heroes	Am. Book Co.
Mulock	Adventures of a brownie	Harper.
Harris	Nights with Uncle Remus	Houghton.
Schwartz	Five little strangers and how they came to live in America	Am. Book Co.
Hawthorne	Wonder-book and Tanglewood tales	Houghton.
Brooks	True story of Christopher Columbus	Lothrop.
Brooks	True story of George Washington	Lothrop.
Brooks	True story of Abraham Lincoln	Lothrop.
Brooks	True story of the United States	Lothrop.
Mott and Dutton	Fishing and hunting. (World at work series)	Am. Book Co.
Pierson	Among the farmyard people	Dutton.
Pierson	Among the meadow people	Dutton.
Wade	The coming of the white man	Page.
Wade	Our little African cousin	Page.
Wade	Our little German cousin	Page.
Wade	Our little Italian cousin	Page.
Carter	Stories of brave dogs	Century.
Burroughs	Squirrels and other fur bearers. (School edition.)	Houghton.
Jewett	Good health	Ginn.
Cyr	Stories of three great artists	Ginn.
Cyr	Art readers	Ginn.
Foster and Cummings	Asgard stories	Silver.
Coussens	Poems children love	Dodge.
White	A little girl of long ago	Houghton.
Richards	Five mice in a mouse-trap	Estes.
Richards	Joyous stories of Toto. Toto's merry winter	Estes.
Stockton	Fanciful tales	Scribner.
Aldrich	Story of a bad boy	Houghton.
Wyss	Swiss family Robinson	Heath.
Thomas	In sunshine land	Houghton.

The Children's Book Shelf—Fifth Year

Mabie	Legends every child should know	Doubleday.
Burt	Poems every child should know	Houghton.
Æsop	Three hundred Æsop fables; tr. by Townsend	McKay.
Lamb	Tales from Shakespeare	Houghton.
Ruskin	King of the golden river	Houghton.
Baldwin	Fifty famous stories retold	Am. Book Co.
Baldwin	Thirty more famous stories	Am. Book Co.
Baldwin	American book of golden deeds	Am. Book Co.
Eggleston	Stories of great Americans for little Americans	Am. Book Co.
Brooks	True story of Benjamin Franklin	Lothrop.
Brooks	True story of La Fayette	Lothrop.
Jordan	Book of knights and Barbara	Appleton.
Kingsley	Water babies	Ginn.
Hawthorne	Great stone face and other stories	Houghton.
Myrton	Child life in Japan and Japanese child stories	Heath.
Guerber	Story of the chosen people	Am. Book Co.
Haaren and Poland	Famous men of Greece	Univ. Pub. Co.
Haaren and Poland	Famous men of Rome	Univ. Pub. Co.
Eggleston	Stories of American life and adventure	Am. Book Co.
Eggleston	First book in American history	Am. Book Co.
Boyesen	Modern vikings	Scribner.
Bull	Fridtjof Nansen	Heath.
Gilman	Discovery and exploration of America	Lothrop.
Gilman	Colonization of America	Lothrop.
Blaisdell	Stories from English history	Ginn.
Eggleston	Strange stories from history	Harper.
Kelman	Stories from the crusades	Dutton.
Coolidge	Little country girl. New Year's bargain	Little.
Morey	Little Mitchell; the story of a mountain squirrel	McClurg.
Jackson	Letters from a cat	Little.
Duncan	Mary's garden and how it grew	Century
Seton, Ernest Thompson	Lobo, Rag and Vixen	Scribner
Seton, Ernest Thompson	Lives of the hunted	Scribner.
Kipling	Just so stories	Doubleday.
Andrews	Stories Mother Nature told her children	Ginn.
Black	Four Macnichols. An adventure in Thule	Harper.
Yonge	Prince and page	Macmillan.
Farrington	Tales of King Arthur	Putnam.
Greene	Legends of King Arthur	Ginn.
Meadowcroft	A B C of electricity	Am. Tech.
Chase	Stories of industry	Ed. Pub. Co.
Hunter	Stories of famous children	Ormsby.
Matthews	Stories of American patriotism. (School edition.)	Scribner.
Montgomery	Heroic ballads	Ginn.
Beard	Outdoor handbook. (For boys)	Scribner.
Beard	What a girl can make and do	Scribner.
	St. Nicholas Christmas book	Century.

The Children's Book Shelf—Sixth Year

Mabie	Heroes every child should know	Doubleday.
Mabie	Heroines every child should know	Doubleday.
Palgrave	Child's treasury of English song. (School edition.)	Macmillan.
Patmore	Children's garland from the best poets	Macmillan.
Horne	Stories of great artists	Am. Book Co.
Frost	King Arthur and his court	Scribner.
Frost	Knights of King Arthur	Scribner.
Seawell	Twelve naval captains	Scribner.
Munroe	Through swamp and glade	Scribner.
Mowry	American inventions and inventors	Silver.
Lindsay	Daniel Boone, backwoodsman	Lippincott.
Johnson	Exploits of Miles Standish	Appleton.
Stuart	Solomon Crow's Christmas pockets	Harper.
Duncan	Adventures of Billy Topsail	Reveil.
Bonvet	Child of Tuscany	McClurg.
Eggleston	Hoosier schoolboy	Scribner.
Cody	Four American poets	Am. Book Co.
Cody	Four famous American writers	Am. Book Co.
Tomlinson	Washington's young aids	Wilde.
Tomlinson	Tecumseh's young braves	Lothrop.
Morris	Home life in all lands	Lippincott.
Roosevelt and Lodge	Hero tales from American history	Century.
Butterworth	In the boyhood of Lincoln	Appleton.
Chamberlain	How we are clothed	Macmillan.
Chamberlain	How we are fed	Macmillan.
Chamberlain	How we are sheltered	Macmillan.
Nicolay	Boy's life of Abraham Lincoln	Century.
Du Chaillu	Wild life under the equator	Harper.
Converse and others	Adventures of pirates and sea-rovers	Harper.
Converse et al	Adventures of Uncle Sam's sailors	Harper.
Converse et al	Adventures of Uncle Sam's soldiers	Harper.
Dickens	Christmas stories	Macmillan.

Cooper	Last of the Mohicans and others of Cooper's	Many publishers of school editions.
Grinnell	Jack among the Indians	Stokes.
Grinnell	Jack among the Rockies	Stokes.
Munroe	Derrick Sterling. Flamingo Feather	Harper.
McLeod	Shakespeare story book	Barnes.
Scott	Stories of a grandfather	Ginn.
Warner	Being a boy	Houghton.
Warner	In the wilderness	Houghton.
Jewett	The body at work	Ginn.
Jewett	Emergencies	Ginn.
Beard	Handicraft and recreation for girls	Scribner.
Adams	Harper's indoor book for boys	Harper.
Adams	Harper's indoor book for girls	Harper.
Benton	Saturday mornings, or how Margaret learned to keep house	Estes.
White	Child's rainy day book	Doubleday.
Brooks	Century book for young Americans	Century.
Brooks	Century book of the American revolution	

Book Shelf for Boys and Girls of the Upper Grammar Grades

Guerber	Legends of the middle ages	Am. Book Co.
Guerber	Story of the Greeks	Am. Book Co.
Guerber	Story of the Romans	Am. Book Co.
Guerber	Story of the English	Am. Book Co.
Mabie	Norse stories retold from the Edeas	Rand.
Wallach	Historical and biographical narratives	Am. Book Co.
Scott	Novels based on English history	Macmillan.
Rogazin	History of the world: earliest people	Harrison.
Church	Iliad for boys and girls; told from Homer	Macmillan.
Church	Odyssey for boys and girls; told from Homer	Macmillan.
Chapin	Wonder stories from Wagner	Harper.
Chapin	Stories of the Rhinegold	Harper.
Fiske	Discovery and colonization of North America	Ginn.
Fiske	Critical period of American history	Houghton.
Parkman	La Salle and the discovery of the great West	Little.
Parkman	Oregon trail	Little.
Roberts	Around the camp fire	Crowell.
Coffin	Abraham Lincoln	Harper.
Andrews	The perfect tribute (Lincoln.)	Scribner.
Abbott	Kit Carson. David Crockett	Dodd.
Brooks	Len, a New England village boy	Scribner.
Whitney	A summer in Leslie Goldthwaite's life	Houghton.
Whitney	We girls. Other girls	Houghton.
Stevenson	Treasure Island. Kidnapped	Rand.
Pyle	Merry Adventures of Robin Hood	Scribner.
Pyle	Story of Jack Ballister's fortune	Century.
Smith	Tom Grogan	Houghton.
Seton, Ernest Thompson	Biography of a grizzly	Century.
Twain	Adventures of Tom Sawyer	Harper.
Twain	Huckleberry Finn	Harper.
Stockton	Personally conducted	Scribner.
Verne	Tour of the world in eighty days	Burt.
Garland	Boy's life on the prairie	Macmillan.
Brown	Two college girls	Houghton.
Clark	Will Shakespeare's little lad	Scribner.
Doyle	Micah Clark	Longmans.
Wallace	Ben Hur	Harper.
Jackson	Ramona	Little.
Irving	Rip Van Winkle. Legend of Sleepy Hollow	Macmillan.
Kipling	Captains courageous	Century.
Cooper	Leather stocking tales	Putnam.
Murtfeldt and Weed	Stories of insect life; summer and autumn	Ginn.
Merian	Birds of field and village	Houghton.
Gibson	Sharp eyes. Eye spy	Harper.
Wright	Gray lady and the birds	Macmillan.
Miller	In nesting time. Autumn	Houghton.
Burroughs	Birds and bees	Houghton.
Ingersoll	Book of the ocean	Century.
Jewett	Control of mind and body	Ginn.
Gulick	The efficient life	Doubleday.
Hughes	Lakerim athletic club	Century.
Earl	On the school teams	Penn.
Thompson	Boy's book of sports	Century.
Kirkland	Six little cooks	McClurg.
Lane	Triumphs of science	Ginn.
Emery	Every day business	Lee.
St. John	Things a boy should know about electricity	
Munroe	The story of electricity	Appleton.
Lillie	Story of music and musicians	Harper.
Bolton	Famous American authors	Crowell.
Long	American poems. 1776–1900	Am. Book Co.
Bremer	Reader's handbook	Lippincott.
Champlin	Young folks' cyclopedia of common things	Holt.
Champlin	Young folks' cyclopedia of persons and places	Holt.
Champlin	Young folks' cyclopedia of literature and art	Holt.
Bulfinch	Age of fable	Lothrop.
Bulfinch	Age of chivalry	Lothrop.
Henley	Lyra Heroica	Scribner.
Eggleston	American war ballads and lyrics	Putnam.
Repplier	Book of famous verse	Houghton.

Household editions of poetry that the children love should be in every library.

Helps for Teachers of Language and Literature in the Upper Grades

Corson	Aims of literary study	Macmillan.
Corson	Voice and spiritual education	Macmillan.
Clark	Reading aloud	Holt.
Mabie	Books and culture	Dodd.
Legouve	Reading as a fine art	Penn Pub. Co.
Clark	How to teach reading	Scott-Foresman.
Chubb	Teaching of English	Macmillan.
Warner	Relation of literature to life	Harper.
Burroughs	Literary values	Houghton.
DeVinne	Correct composition	Century.
Stedman	Nature and elements of poetry	Houghton.
McMurry	How to study and teaching how to study	Macmillan.
Earhart	Teaching children how to study	Houghton.
McMurry	Methods in language	Macmillan.
McMurry	Methods in English	Macmillan.
Quinn	The art reader	Elson & Co
Bates	Talks on the study of literature	Houghton.
Larned	Books, culture and character	Houghton.

NATURE STUDY.—Pestalozzi said that the child's first tutor is nature, and her tuition begins from the moment that the child's senses are open to the impressions of the surrounding world. Since his time nature study has been defined as "learning those things in nature that are best worth knowing to the end of doing those things which make life most worth living." Its aim is a happy, helpful adjustment. It is to set the child in the midst of nature as a companion worker.

The School Garden.—To this end, "happy, helpful adjustment," the school garden has proved most practical. Froebel recognized this long ago. "It is of the utmost importance," he said, "that every child should acquire the habit of cultivating a plot of ground. Nowhere as in the vegetable world can his action be so clearly traced by him, entering in as a link in the chain of cause and effect."

Value of School Gardens.—What do the children get out of the school garden. The teaching of the school is brought into contact with life, and, best of all the lives and experiences of the children. The point of contact reaches the home interests just as directly as those of the school. The tiny garden of the school is sure to be duplicated at the home—probably on a larger scale; and this alone is worth the whole effort. The responsibility of the garden develops strength and independence in character. Honest effort wins. Judgment, as well as physical effort and steadfastness of purpose, is demanded.

The first school garden in the United States regularly authorized by a board of education was planted in Boston in 1891, but the value of such school instruction was recognized as early as 1824, when it was argued that "Agriculture and the Gospel are the two great instruments of Divine Providence to check the voluptuousness and exercise the virtues of man." In 1900 vegetables were first planted in this Boston garden. Since that time the development of school gardens and the advancement of agricultural education in the United States have been very great.

How the School Garden May Become a Vital Part of the School Instruction.—A few practical illustrations from two of our own American schools will show how the school garden may become a center of great interest and a vital part of school instruction.

Connected with the school garden is a chicken yard. The children visit it every day and it has been the subject of daily conversation with their teacher. This is the story as they told it to her one day:

We went to see Biddy.
Biddy sat very still.
She looked at us.
We stood near Biddy's nest.
She was not afraid of us.
We would not hurt her.
Biddy had eleven little chicks.
They were white, black, and yellow.
They said, "Peep, peep, peep."

The teacher wrote these stories on the blackboard as the children told them to her and they became their reading lesson. Then she wrote for them this story on the blackboard and they read it to her:

I think that when a little chicken drinks, he takes the water in his bill.
And then he holds his head up so that the water can run down hill.

The children copied all these sentences on paper and illustrated them with drawings and free-hand cuttings of their own.

NATURE STUDY AND ELEMENTARY AGRICULTURE.—Elementary agriculture in the country schools should include the fundamental principles of agricultural practice, illustrated in large measure by such laboratory and field work as will be directly and immediately helpful and practical on the farms in the midst of which the school is located. Through the teaching of elementary agriculture in the country schools, the introduction of such needed reforms as seed improvement, improved culture of soils, and the checking of waste, is entirely practicable and possible. Since the country school term does not extend throughout the whole year, the work in agriculture cannot be very satisfactorily unified upon the basis of farm operations in season, yet there are certain topics best studied at each season of the year when first-hand contact with materials is possible. The following topics as outlined in Nolan's *One Hundred Lessons in Elementary Agriculture* suggest a course for a year's work.

Topics for Autumn Months.—1. Composition of soils. 2. Relation of soils to water. 3. Fertilizers. 4. Seeds and their germination. 5. Selecting and storing seed corn. 6. Tree planting. 7. Weeds. 8. Insects. 9. Fruits. 10. Pastures. 11. Agricultural clubs. 12. Storing fruits and grains for winter.

Topics for Winter Months.—1. Judging seed corn. 2. Elements of forestry. 3. The horse and its care. 4. The cow. 5. Milk and butter. 6. Sheep, hogs, poultry, etc. 7. Feeding and care of farm animals. 8. Comparative studies of agricultural products of various states. 9. Crop records and farm bookkeeping. 10. Roads, rural mail, parcels post, etc. 11. Farm machinery, fences, etc. 12. Farm buildings.

Topics for Spring Months.—1. Testing seed corn. 2. Hot-beds. 3. Gardening. 4. Cultural requirements for vegetables. 5. Beautifying home grounds. 6. Pruning. 7. Budding, grafting, etc. 8. Spraying for scale and codling moth. 9. Plowing, harrowing, and cultivating. 10. The potato crop. 11. Transplanting. 12. Valuable birds to agriculture. 13. Sowing farm crops.

In teaching the topics suggested above the aim should be to bring out the essential principles involved in the practice, and to lead the pupils to first-hand contact with the material in as many ways as possible. The country school-teacher should strive in each case to have the lesson tried out on the pupil's home farm. The aim of each lesson should be definite, to bring out and apply one single principle relating to the topic in hand.

An excellent method to unify and organize the work of elementary agriculture in the country schools is for the pupils and teacher to imagine that they have just purchased an unimproved forty acres of land, or perhaps better still, select a forty-acre field near the school grounds, and in theory manage it for one year. Require each pupil to provide a good permanent notebook and keep a record of every detail of procedure as the farm is selected, laid out, equipped with buildings, planted, cultivated, and managed throughout an imaginary year. The practices that would properly come next in point of time in the actual management of such a farm would furnish order and sequence for the topics of study and practical exercises throughout the school course. In this method the pupil should be required to read all the farm papers, bulletins and books available, and keep a diary record of an imaginary year of actual farming.

Such a course in elementary agriculture could be well adapted to the seventh and eighth grades. Three recitations a week would be sufficient for introducing the subject, giving the last half hour of the school program to this subject.

Suggested Lessons for School and Farm.—The most helpful method of conducting experiments and developing the outlines that follow is to assign to a certain pupil or group of pupils the responsibility of the experiments or particular tests that are to be made. From parents, and from books and bulletins with which the school library is supplied, the children gather any and all information possible bearing upon the subjects under study. After free class discussion and much questioning of the pupils, the class and teacher should together work out a simple outline according to which the children will write the results of their study and observations in composition form. Some of these productions should be read in class; all errors both in fact and in English should be noted, but the compositions need not be rewritten. The sheets as first written can be put together in booklets with original designed covers. This disposition of the compositions furnishes excellent motive for careful and correct composition work and a basis for prize and competitive contests.

Alertness on the part of the teacher for the practical and everyday problems that are constantly presenting themselves to the intelligent farmer will keep an industrious teacher busy finding room for the discussion and solution of the problems in the time usually allotted to such subjects in the school program. It is well to carry with the course and experiments practical mathematical problems such as construction and capacity of cribs and silos; amount of rainfall; estimating quantity of seeds needed per acre for planting; judging corn; value of fertilizers needed for land; shrinking of corn in cribs; profit per acre on the different crops; return from one bushel of seeds, and many others that will suggest themselves to the teacher. (For problems in agricultural arithmetic write for extension bulletins published by Ohio State University Agricultural College, Columbus.)

There are the best of reasons why teachers, especially in the rural districts, should be interested in these agricultural problems as school exercises. First, the spread of the knowledge and practice of scientific agriculture has vast economical value in improving the products of American agriculture; second, the teaching of it in the rural schools exerts a strong influence toward interesting the parents in the permanent worth and importance of the school. The teacher who enters intellectually into the simple and practical exercises in agricultural nature study here suggested will not be long left in doubt as to the community's responsive interest in the school and its estimate of its practical importance to the community. Children love to do things, especially things that are obviously useful; they need only judicial direction in order to turn their instincts into the various forms of self-education, which is the only kind of education that "sticks."

Special interest and profit result from investigating the literature and different writings in which allusions are made to corn and wheat and relative subjects. Splendid use can be made of that part of Longfellow's *Hiawatha* referring to Mondamin, with whom Hiawatha wrestled after the feast. To have a number of the pupils read a collection of such selections to the school and visitors Saturday afternoons makes a most interesting hour's exercise. Topics and practical tests can be made from the following outlines suited to the various grades. Perhaps the pupils of the first four or five grades may be too young to be taught the science of agriculture, but they are not too young to gain an abundance of knowledge along the line of nature study.

Exercises on Soil.—How Soil Is Formed.—When the earth cooled it was composed of solid rock, upon which the water acted, changing or breaking it up into small particles. This was caused by the force of falling rain and hail and the expansion, by freezing, of the water in the small crevices of the rock.

Lichens then grew on the rocks and sand, obtaining their food from the air, and in their death and decay bacteria acted upon them, forming humus. Plants then grew on the sandy loam formed, and the roots, reaching down into the rocky crevices, split the rocks.

The soil and remaining rocks were then acted upon by oxidation, gravitation, wind, tides, animals, glaciers and earthquakes. All of these tended to break up and loosen the soil and prepare it for the action of water and carbonic acid, which dissolves the rock.

There are three distinct classes of soil—the alluvial, which has been brought from other places by streams; the sedimentary, which is the soil which was originally formed there; and the glacial, which was carried there by glaciers.

I. To Show Retention of Water on Soil.—Materials — Samples of clay, gravel, sand-loam, leaf mold; five glass bottles or fruit jars and five funnels.

Fill each funnel with a different kind of soil, same amount in each by weight. Tie a muslin cloth over the small end of each funnel to prevent the earth from washing through and place them over the jars. Pour an equal amount of water into each at the same time, note the soil that permits the water to pass through the fastest and the soil that retains the water the longest. Find how each soil ranks in its power to retain moisture. After two or three pourings weigh each funnel, and note the slight difference in weight; which soil retains the most water; which soil dries off the soonest after a heavy rain; which will be ready to plant first in spring; which soil will stand a very dry summer best.

II. To Show Effect of Air on Soil.—Materials—Two chalk boxes.

Fill one with loam, loosely packed. Fill the other box with clay or leaf mold, tightly packed. Plant the same kind of seed in each one and give both the same attention. In which does the plant seem to grow better?

III. To Show the Advantage of Soil Foods or Fertilizers.—Materials — Four chalk boxes or boxes slightly larger.

Fill each box with the same kind of soil. In No. 1 place a small quantity of stable fertilizer. In No. 2 a small quantity of high-grade commercial fertilizer. In No. 3 same quantity of cheap commercial fertilizer. In No. 4 omit fertilizer. Plant

same kind of seed in each box; cultivate all plants in each box by the same method. Notice the difference between the plants that receive the fertilizers and those that do not.

Outline *for the Further Study of Soil, With Test Questions and Sources.*—

(a) Origin and tillage of soil.
(b) Moisture and drainage of soil.
(c) Fertilization and improvement of soil.
(d) Adaptation to vegetation.
(e) Effect of wind upon soil.
(f) Study of properties of soil.
(g) Renovation of worn-out soil.
(h) Alkali lands.

Questions.—1. What is soil?
2. What is subsoil?
3. How is soil formed?
4. What is humus?
5. How does the earthworm influence soil?
6. Why should soil be plowed before corn is planted?
7. Why should crops be well cultivated?
8. Name three plants that improve soil. How?
9. What is meant by rotation of crops?
10. How are the following produced? Sinking coasts, rising coasts, earthquakes, volcanoes, natural bridges, lakes, cataracts, oxbow loops, deltas, glaciers, coral reefs, coal gas, oil, deserts, tundras, and estuaries. (See U. S. bulletin No. 257.)

Sources and Summary *of Bulletins Needed.*—U. S. farmers' bulletins Nos. 77, 245, 257, 262. (See list.)

Exercises on Plants.—It is assumed that the pupils who are to take up elementary agriculture have had some nature study work, and in this way have learned something of the structure of common plants—that is, they know the names and understand to some extent the functions of their essential parts: roots and stems, leaves and flowers, including the reproductive organs, stamens, pistils. When the pupils do not have such knowledge some time should be spent on these simple exercises in the study of plant anatomy.

I. To Learn and to Find the Parts of the Flowers.—Gather flowers that have all the parts, and with a sharp knife take each out and name. Cut a cross section of the cherry blossom and name the parts present.

II. To Find Stamens and Pistils and to Compare Perfect and Imperfect Flowers.—Perfect flowers have both stamens and pistils present. From a strawberry blossom point out these organs. Flowers having pistils only are imperfect flowers. Find such a blossom and compare it with a perfect flower. Will an imperfect flower produce fruit? What kind of a flower is found on Indian corn plant? Where are the stamens on the corn plant? The pistils?

III. Roots and How They Get Their Food From the Soil.—Materials—(1) A large mouthed bottle, a glass tube, an egg, some sealing wax and water. (2) Sawdust and a marble slab.

Plant food must be in liquid condition before it can be absorbed by the plant. The root structure of the plant is very intricate. There are little roots attached to the rootlets that are so small the naked eye cannot discern them. These are called root hairs and through them the plant receives its food. They are composed of a single cell filled with an albuminous substance, called protoplasm, which is similar to the white of an egg.

As the covering of the cell is not porous in the ordinary sense of the word, the question arises as to how the liquid food enters the cell. This is accomplished by the principle of osmosis. It has been proved by scientists that if a dense liquid is separated from a less dense one by a thin membrane, they will flow together, the less dense fluid flowing into the more dense one in greater proportion than *vice versa*. This can be proved in the schoolroom with an egg, a glass tube, a large mouthed bottle, some water and some sealing wax.

The glass tube is inserted into the small end of the egg and sealed in place with the sealing wax. The shell of the large end of the egg is then broken off to expose the membrane, and the large end put into the water. The water and the white of the egg will, in the course of a few hours, flow up the tube.

After the liquid enters the root hair cell, it is carried up to the plant by means of capillary attraction, which is a power which tends to raise the water.

The root hairs of a root system can collect nourishment from the undissolved plant food by tending to dissolve it with an acid secreted in the membrane of the root hair. To prove this, cover a polished piece of marble with wet sawdust and plant a few seeds in it. The root hairs will sprout, and, when removed, the marble will be rough.

IV. To Show That Plants Give Off Moisture and the Rise of Water in Plants.—Materials—Crock or pot of earth containing a plant, a piece of cardboard, glass tumbler, and a piece of wax or tallow.

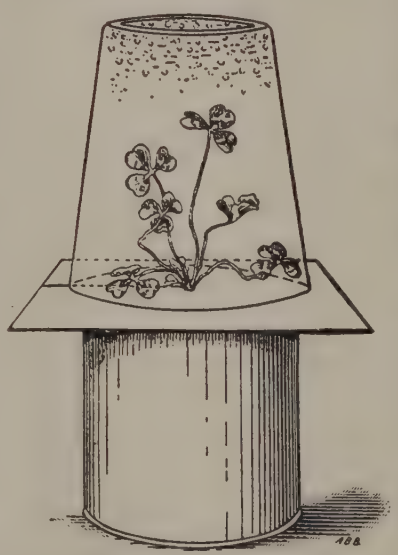


Figure to show that plants give off part of the moisture absorbed from the soil

Take a plant that is well started. Cut a slit in the cardboard and draw it around the plant. Seal the slit with wax or tallow so that no moisture can come up through it from below; cover the plant with the glass and set in a warm, sunny place. Moisture will condense on the inner surface of the glass. Where did the moisture come from? Does this experiment prove that water rises in plants? Why? Cut a stalk of green corn or the stem of a geranium three or four inches above the ground. Observe the moisture that gathers on the point where the stalk was cut. Where did this moisture come from?

V. To Show Root Development on Cuttings.—Materials—Branches ten to twelve inches long taken from a willow tree; a glass jar.

Place these cuttings in a glass jar partly filled with water. Place the jar in a warm place and in about twenty or thirty days you will observe the roots formed on many different parts.

VI. To Prepare Soft Cuttings.—Soft cuttings are sometimes made from leaves, but often from the stem. Insert the edge or a piece of a leaf in moist, warm sand; or lay the leaf, top side up, on the surface of the sand and fasten it down by running splinters through the veins in different places. Plants may spring up from the edges or at cut places in the leaf. In case of stem cutting secure thirty shoots from any strong herbaceous plant, such as the verbena or geranium, and divide them into cuttings of at least two nodes and several leaves. Break off a part of some of the leaves to check evaporation. Pack the sand firmly around the cuttings and they will soon take root.

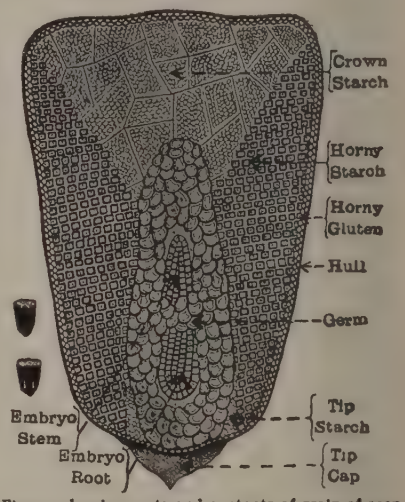


Figure showing parts and contents of grain of corn

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The suggestions here submitted cover the essential operations taught in our schools. They are not intended to teach the parent to take the teacher's place, but rather to supplement the school work of the child and to help the child over such difficulties as the parent may discover. The parent, by being the child's constant confidant and adviser, will remove many an obstacle in the way of the child's progress, and mitigate many an unfortunate experience. To the child, experiences in school, with their ambitions, their failures and their disappointments, are of the most vital importance, just as our adult life experiences are to us. There are many tragedies in childhood which we do not always realize. May the parent be always ready to help the child remove them or pass them by, so that he may not be checked in his career by an unnecessary tumble.

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MENTAL TEST PICTURES

WHAT IS WRONG WITH EACH PICTURE?

KINDERGARTEN

LILLIAN GOETZ

KINDERGARTEN PROGRAM

Aims.—To interest the child in the various helpers who serve the community, and directly, or indirectly, the home.

To give him the right kind of experience, to explain that experience, to correct past experience and enlarge upon it.

To help him to grow more kindly, courteous, and unselfish, and to gain right habits of work and play.

Introduction.—When the little child enters Kindergarten, he is entering the world arena for the first time. It is his first real parting from mother, in the majority of cases, so the Kindergarten aims to give him as much of the home atmosphere as possible, not only by making the surroundings attractive and homelike, with plants about, a piano, if possible a victrola, comfortable looking chairs and tables that are just right for him, pictures hung low, so he can enjoy them, a sand table that is sure to delight his heart, but on the tables plenty of things to play with: beads to string, pegs of the different rainbow colors to put into the boards made for them, and dolls for the little girls to play with.

After he has enjoyed playing with his playthings, we can go to the big circle that is painted on the floor and as we sit on it, play with our soft rubber balls, rolling them back and forth to each other, at first to anyone, then to a particular child. Some familiar games may also be played as we stand on the circle.

When the games have made us feel better acquainted we will march like soldiers to some martial tune played on the piano or victrola, and learn to carry our chairs out on the circle.

The first day or two may be spent in this way, but when we have learned to greet each other with the "Good Morning" song, to march fairly well together, to carry our chairs where we want them, we are ready to gather around the circle for a little talk, as we do for a little while every morning, a talk about some experience, a picture, or a story relating to the topic we are interested in.

As we grow accustomed to each other and have learned school ways a bit we are ready to follow the talk with some activity associated with it, either to build with blocks, with sand, or clay, or make something we can take home.

The topics the teacher chooses are those that not only appeal to the child as being most interesting and important, but *are* most important and have the largest meaning in social life, subjects relating to the community life about him and the world of nature, choosing, for nature material, things the child can use in his play projects.

The songs and games relating to the topics are sometimes unrelated, but appealing to the child's emotional nature, make his day happier and full of music, developing as they do his sense of rhythm. The songs should be simple and the words learned before the tune is taught. The games chosen are those which not only relate to the topics but give them the right kind of physical exercise by means of rhythmic representation, teach them to

co-operate with the larger group and learn fair play, as well as to follow their natural inclination to live in the world of "make-believe."

The games chosen for this volume represent the various types of games used, that is:

Sense games, to increase the keenness of perception.

A Ball game, to teach direction and color.

A Skipping game, for agility, grace and courtesy.

The Family game, to illustrate mutual helpfulness as represented by the family spirit.

Ten Little Indians, for imitation, and counting.

The Kitty and the Mouse, a silent game for concentration and quiet.

The Squirrel, for attention and agility as represented by animals.

The Snowman, for dramatization and good physical exercise.

The Knight game, to teach civic ideals thru play, and to introduce another physical exercise, the galloping horses.

The Parade, for the patriotic spirit, and to teach precision.

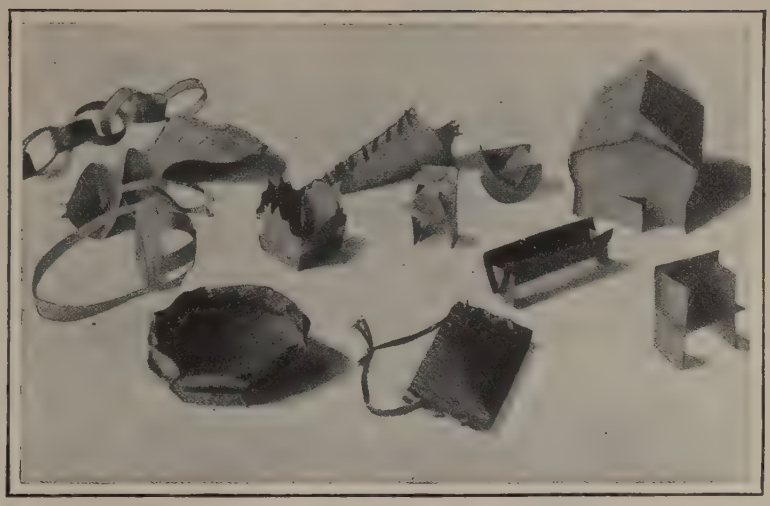
The Windmill, introducing another physical exercise as well as a demonstration of nature.

The Snail game, to teach co-operation by means of rhythmic activity.

Humpty Dumpty, for dramatization of a simple story.

A Bird game, showing how young birds are fed and thereby encouraging humane treatment of them.

The game called "Where, Oh, Where Has My Little Dog Gone?" for a running exercise.



CHILDREN'S INDUSTRIAL WORK

The Farm-Yard game, in which the characteristics of different animals are imitated.

The Farmer game, for a dramatization of an industrial activity.

Stories.—The story gives the young child his background for literature, consequently there should be on our list stories which will make him appreciate good literature. Such stories may be repeated many times, and eventually almost learned by heart. Children of this age enjoy Fairy tales, especially, and love to have them repeated again and again. If the story is simple and within his comprehension, the child will be able to tell it again and even dramatize it, thus making it a part of himself. Humorous stories like the Johnny Cake or the Gingerbread Boy, should be told for pure enjoyment.

Some stories should be read to the children as they will then concentrate all attention on the story itself rather than on the Story-teller. Stories like Peter Rabbit and Little Black Sambo are illustrations.

All stories should be simple and concise. Those in which some phrases are repeated over and over are much enjoyed by the children and help them to add words to their vocabulary.

Manual Activities.—First of all there are the playthings in Kindergarten, toys like dolls, a cradle, a doll-house, toy animals, tin dishes, scoops, and shells for the sand table, bean bags, balls of various kinds, and picture books.

Wooden beads, large and small for stringing, that are shaped like balls, cubes and cylinders and colored with the six colors of the rainbow in standard shades.

Pegs of the six colors to put in square boards with round holes in them. Enlarged sticks from one to five inches long, either white or colored. Balls covered with colored worsted covers and string attached, the colors red, orange, yellow, green, blue, and violet.

Two-inch wooden balls, cubes, and cylinders for rolling, twirling, and building.

Rubber balls for rolling, and bouncing.

Boxes of blocks like those originated by Froebel the founder of the Kindergarten, the third gift boxes containing eight two-inch cubes and the fourth gift boxes containing eight oblong blocks, two by four inches, the large fifth gift boxes containing more whole cubes and some that are divided by diagonal lines into triangle prisms, and the large sixth gift boxes containing some oblong blocks and some that are divided lengthwise and crosswise.

These blocks may be supplemented by the still larger Hennessy building blocks.

Some of the larger Kindergartens are supplied with the very large floor blocks, or rather, boards with which one may build a house large enough to play house in.

For making the more permanent things to take home, we have the plastilena or clay flour for modelling.

Drawing paper of a soft cream or gray tint and colored crayons to draw with.

Watercolor paper, also, paint brushes and watercolor in tubes.

Thin white paper for free cutting, and blunt pointed scissors.

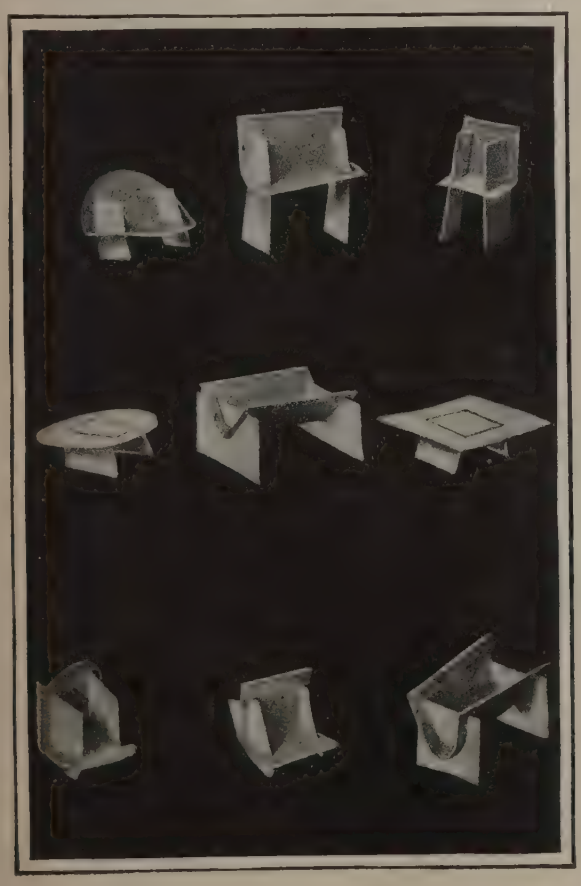
Bogus paper or colored construction paper for making boxes, baskets, wagons, etc.

Colored paper for folding boats, doll-hats, pin-wheels, etc.

Colored paper cut in strips for making chains (standard colors only).

Pieces of soft wood, hammer, nails, and a saw for making sign-posts, ladders, etc.

Weaving mats and fringes of heavy paper called Industrial weaving mats, mats made of linen, or looms may be made by the older children on the frame work of an old-fashioned slate, and set up with pieces of cloth dyed and cut in strips, or heavy jute.



Pieces of cloth and burlap, needles with large eyes and heavy thread for sewing.

These materials may be supplemented by many materials found at home, like milk bottletops for wagon wheels and spool boxes for wagons, collar buttons, spools, ribbon-bolt, etc., for construction.

Method of Using Materials.—With all Kindergarten materials the first exercises should be experimental. Just as the child when he first plays with the sand, likes to scoop it up and run it through his fingers to see how it feels and how it flies through the air, so with his other materials, he wants to feel them and try experiments with them in his own way, before suggestions come from outside.

If the child has been truly interested in the stories and talks, he will have something in mind that he will like to build, or make, to carry out the ideas conveyed, but if he merely plays aimlessly with the material, suggestions may be offered by means of questions to interest him in some project.

It is found that the best educators lead the child to think out his own projects rather than to imitate the work of some adult.

Froebel, the great Kindergartner, tells us to foster this impulse of creative self-activity if we would have our children grow to be valued citizens of the community.

After we have experimented with eight cubes for example and inquired about the shape, corners, and edges we will want to build something more definite that has been talked about. If our project is a grocery store, we will want to add to it to make it more complete, more real, so we will add large beads if we have them for the canned goods, or failing the beads, spools of different sizes. Some one may find that a better store could be made by adding his blocks to his neighbor's until we have evolved a store large enough to use as a community store. This may be left in one corner of the room or one corner of the room screened off to make our store, then when the grocery man is established and buying and selling begins, we will make other things as we feel the need for them, keeping our store a week or two as the interest lasts. Other incidental projects may be carried out in addition to this one, but our aim being to increase the child's span of interest, we will give him every opportunity to enlarge upon the first project and help him to become an independent thinker.

We will proceed much the same way with the blocks shaped like bricks; then, having learned the possibilities of these, combine the two, when we find it to our advantage. The blocks divided diagonally make our houses seem so much more real, so we use them as the work progresses for the roofs of our houses, but, of course, if we have the very large floor blocks, we use those in preference to any of the others, for our group projects. The Sand table lends itself very readily to this kind of progressive work as the picture can be added to each day, everyone contributing, working hard to see who can make the best product, as only the best may be used in the picture.

The sticks, tablets and rings may be used for flat pictures or patterns on the tables and many little number stories may be told as we make border designs or life forms with them. For instance, one ring for the head, one four-inch stick for the body, two two-inch sticks for each arm and each leg, and two one-inch sticks for the feet, make a little man, whom we can have running or walking and make pictures of.

The other materials may be used, freely, at first, and then the better form made by comparison with others or by means of dictation, as for example, the folding.

SEPTEMBER

"The dusty road goes winding
Through the nodding yellow frame
When the bright September weather
Sets the goldenrod aflame."

Topics

The Home —Family Life.

The Carpenter, Who Builds the Home.

In our first talks we naturally think of the family at home, as heretofore the home has been the child's world. If there is a baby at home, what do we do for him? What does mother do? How can we help mother? Shall we sing to baby? Sing some familiar song like "Rock-a-bye-Baby" then start a new lullaby. We might use the colored balls for babies and rock them to sleep, then tell a story about a baby.

Soon we will inquire about the other members of the family. What does mother do for us? Her different tasks lead us to ask for the game "Around the Mulberry Bush." When we talk about father's duties, sister's and brother's share, we may introduce the Family Song which we love to illustrate by finger-plays and games.

In connection with the activities of the father we may find that somebody's father is a carpenter and we can talk about how he builds the home, the tools he uses, etc. Pictures of the carpenter working and an excursion to watch him building a home will add to the interest and little girls as well as boys will enjoy building by means of dramatization, or with their materials.

If we have found milk-weed pods we will want to examine them, pick out some seeds and blow them as the wind blows them out-of-doors. The flowers that are brought in we may name, tell the color, and something about how they grow

Stories.—The "Go Sleep" story or "Wake Up" story, furnish good examples of stories about a baby.

Thumbelina, in *Stories and Story-Telling*, follows a little fairy girl on her first journey from mother and brings her back home to

tell all about her experience. All experience is valuable to the person who has it, only when he can tell about it to others or give out some product as the result of that experience.

The story of the "Three Bears" found in any collection of fairy stories, is intensely interesting to children at this age and with a little help in the way of properties, lends itself very readily to dramatization. All that is necessary is a table with three different sized bowls upon it, and the three chairs, and the children will do the rest. Great care is always exercised by the teacher that the children's expressions are correct, that is "Who has been *sitting* in my chair?" "Who has been *lying* on my bed?"

For the Carpenter there is the story "How the Home Was Built" in *Mother Stories*, by Maud Lindsay.

Songs.—Good Morning to You.
Here's a Ball for Baby.
The Family Song, in this volume. (*P. 40*)
The Milk-Weed Cradle.

Games.—Ring-a-Round-a-Rosy, or London Bridge for old familiar games.
Did You Ever See a Lassie?
Ball games, rolling the rubber ball to the center of the ring, or to some child whose name we call, and clapping when it reaches its destination.
Bouncing the ball to individual children, at first, by the teacher, then by the children who are most expert.
Around the Mulberry Bush.
The Family game, in this volume. (*P. 40*)
A Hiding game, in which one child hides his eyes and another goes out of the room so he can guess who has gone.

Manual Activities.—Among the various kinds of balls, those with worsted covers are most interesting when the child first comes to Kindergarten, as they are at a still earlier age. With these balls, color and direction may be taught by means of plays like the Ball Game in this volume, having the children mention the color when the balls are distributed and collected or choosing own color and naming it, then starting with the first motion round and round and adding a new motion each time the game is played, gradually learn the whole game.

The two-inch wooden balls may be rolled to hit a target which may be a tower built of a cube, cylinder, and ball on top, or anything that will fall easily when hit.

With our crayons we will enjoy making pictures of our balls, using the free arm movement for the motion round and round. With the water colors, if the six different colored balls are made, the three colors red, yellow, and blue will be sufficient and the opportunity may be given to paint yellow on a red ball to make orange, yellow on blue to make green, and blue on red for purple.

The colored wooden beads used in Kindergarten are strung on shoe strings and arranged according to color, or when the colors are learned, according to any rhythmic design, as two of one color, and one of white, etc.

The sand table is used a great deal for free play this month, especially with sea shells which make fine gardens in the moistened sand.

The soap bubble gives us the ball again and since we can make it float, it is still more fascinating to us.

After we have played with our blocks and handled them freely, we will want to make the chairs and table that the three bears used. If we would like a table cloth we will get out paper and scissors and cut a fringe for the cloth, then perhaps the three bowls. With the plastilena we can make the three bears, and still better bowls.

The family plays and those of the carpenter lead us to want to build a house, so we set to work with a will, building different kinds of houses with our cubes and playing at housekeeping with our dolls and housekeeping toys.

Pegs are used a great deal at this time for color arrangement, red, orange, yellow, green, blue, and violet, or to make gardens.

The art instinct is developed by drawing pictures of the fall flowers that are brought in, with our crayons, being careful to have our flower in the middle of the paper and neither way up to the top nor down to the bottom. Wire grass grown to seed makes a good subject for our drawing.

OCTOBER

"October's bright blue weather
When on the ground red apples lie,
In piles like jewels shining,
And redder, still, on old stone walls,
Are leaves of woodbine turning."

Topic

PREPARATION FOR WINTER

How Mother Prepares.
How Nature Prepares.
How Animals Prepare.
Hallowe'en.

Mother's work, canning and preserving, gives us much to talk about. Where does she get fruit and vegetables? How do they grow? Have different kinds of fruit and vegetables and talk about shape, color, and growth. The making of jelly is a simple process which the children may help to carry out if there are facilities for it.

Nature's preparation as shown by the falling of the leaves which have put on different colored dresses at the touch of Jack Frost; the falling of flower seeds and their protection from the cold by the leaves, and later the snow; the protection of baby buds on trees and bushes with a thick coating of varnish; the flight of the birds to seek a warmer home for the winter; all interest us and we like to help by planting bulbs to sleep under the ground and on our excursions by gathering cocoons which the caterpillar has built for his winter home. These nature talks may be carried over into the month of November, but before October has gone we will be interested in watching.

The preparation of animals is shown by Mr. Squirrel and his family, who can teach us all the greatest lessons in thrift and industry. If possible we would like to watch him carrying the nuts to his pantry in his mouth, if not we may have pictures and tell stories. The thickening of his coat for winter, as well as that of Brother Bear, who sleeps in his cave during the cold weather may be mentioned, too.

Hallowe'en preparations will occupy all our attention the last few days of this month for we must make many preparations for our first party and our fathers and mothers must be invited to see the fun.

Stories.—The Big Red Apple.
The Seed Babies' Blanket.
The Lion and the Mouse, in *Æsop's Fables*.
The Squirrels' Harvest, in *Half a Hundred Stories*, are good stories for this month, to which may be added a Hallowe'en tale.

Songs.—The songs started last month still hold our interest but to them may be added some Mother Goose songs. Some of the best are: Baa, Baa Black Sheep, Diddle, Diddle Dumpling, Wee Willie Winkie, Bye Baby Bunting, Jack Be Nimble, Polly Flinders, and from *Ring Songs and Games*: Jack and Jill, and Bo-Peep.

If a few Mother Goose songs are quickly learned because the words are already familiar, a song about the falling leaves may be introduced.
October Has No Butterflies.
Falling Leaves.
Mr. Squirrel, in *Small Songs for Small Singers*, are some of the best to add this month.

Games.—In connection with the Mother Goose songs, dramatic plays like Humpty Dumpty, in this volume, or Jack and Jill, will be interesting.
The Sense game for hearing, in this volume. (*P. 38*)
The Squirrel, in this volume. (*P. 38*)
Hiding the Ball, a game in which the six colored balls are placed in a row and while the child is hiding his eyes, one ball is taken away, so he may guess which color has gone.

Rhythms.—Marching, flying like birds, running lightly, skipping, and for dramatization, trees blown by the wind, leaves falling and blowing about to fall asleep at last on the ground.

Manual Activities.—Mother's activities lead us to play about the fruit and vegetable man, who walks the streets singing his wares and we find that the colored balls make fine fruit and vegetables, as so many are shaped like the balls. An excursion to the grocery store or bringing vegetables and

AT PLAY

fruits to school encourages us to talk about their shape, size, and growth, which is especially well illustrated by cutting a cross section of the apple and showing the blossom form in the seed pockets. If we want to play preserving, as mother does, we will build the cellar and shelves for the cans with our cube blocks using the beads shaped like cylinders for the cans, the cube beads for boxes, and the larger cylinders for barrels of apples and potatoes. With our cube blocks we may also build the train that carries the fruit from one city to another, the telegraph poles along the road, and the railroad station.

With our clay or plastilena we may mould vegetables and fruit, with paper and scissors cut them out, free hand, or else paint them with crayons and then cut out for our market basket. Squash and carrots may be painted in mass on large sheets of paper.

With colored circles we may arrange a bunch of grapes on a card and paste it.

Beads are still popular and after an excursion to find nature material, we will enjoy making strings of hollow grasses and seeds, using seeds brought from home as squash, bean and pea, or rose-hips and berries.

Leaves collected may be pressed and pasted in designs, or a leaf marked on paper and colored and cut out by the children.

For Hallowe'en, pumpkins may be colored and cut out, with eyes, nose and mouth, for room decorations; also black cats and witches may be cut out of black paper and baskets made of construction paper for the nuts. The envelopes for the Hallowe'en invitations may be made by the children, and they may enjoy dressing in costume for the occasion.

NOVEMBER

"The valley is going to sleep,
The birds in their nests are still,
And the maple branches bend and break
Over the leafless hill."

Topic
THOSE WHO SERVE THE HOME

The Farmer.
The Cow.
The Baker and the Miller.
Thanksgiving.

The Farmer.—The city child may be interested in the farmer's Fall work by means of pictures, but the child in the country will readily tell how the farmer is cutting the grain, gathering fruits and vegetables to store for the Winter, or to sell to the grocer, and cutting hay for Lady Cow to eat.

The Cow.—Questions about our breakfast and where the milk and butter come from, will make us want to see how butter is made. The making of butter is a very simple process which can be carried out by the children with a little glass churn. When each child has turned the handle several times and the butter has come, they may watch the pressing and molding and taste the buttermilk, but the butter we will keep for our Thanksgiving party.

Lady Cow's food and how it is grown, makes us realize that she is not the only helper to make our glass of milk and our butter possible.

The Baker—is another interesting helper to the city child as mother with her bread board is to the country child. They love to visit the Baker and watch him make all his goodies, or look at pictures of him at his work.

When we inquire what he makes bread of, where flour comes from, where the Miller gets the grain, what the Farmer does to help, how it would be impossible to grow grain without sunshine and rain which God gives us, we realize the true Thanksgiving spirit, and are ready for a real Thank You day.

Biscuits are made if there are facilities, but the making may be postponed until the day we celebrate for Thanksgiving.

Thanksgiving.—The historical significance of the day is a bit beyond the little people, but they do enjoy dressing like Indians and Puritans for the Thanksgiving party, so a simple version of the story may be told to introduce the characters, who relish heartily the biscuits, butter and jelly we made.

Stories.—Pig Brother.
The Birthday Present.
The Johnny Cake.
Ole Man Rabbit's Thanksgiving Dinner.
Billy Bob-Tail.

Billy Bob-Tail learns the lesson of interdependence, when he goes out to seek his fortune. As he goes along he meets his different animal friends who ask him, separately, "Where are you going, Billy Bob-Tail?" To which he replies each time, "I am going out to seek my fortune." Then they ask, "May I go with you?" and he replies, "Yes, if you wish."

They all walk along until they come to the woods, when each one tells Billy Bob-Tail what he can do in case they hear a noise. When that danger is passed, they continued their journey until they reach a deserted house where each one begs to be allowed to stay with Billy Bob-Tail, all telling him, namely, the cow, the goat, the sheep, the dog, the cat, the turkey, the rooster, and the hen, what they can do to help him gain his livelihood.

Songs.—Mother Goose Songs.
Jack Frost.
The Mill.
Pat-a-Cake.
Song of Thanks.
Thanksgiving.

Games.—A Sense Game, in this volume. (*P. 38*)
A Skipping Game, in this volume. (*P. 37*)
The Muffin Man.
Ten Little Indians, in this volume. (*P. 37*)

Rhythms.—Skipping, galloping horses, and and Indian dance.

Manual Activities.—So far we have been using the sand table for free play with shells, making gardens, or just molding balls, but now we may be interested in building a group picture of the farm: the field for hay, and pasture for the cows, the barn of blocks, and anything they may suggest for use in the making of butter. The people and animals may be toys this time, but the buildings, fences, etc., are made by the children.

The sand table is again useful when we talk about the baker, for, with our different molds and moist sand, all kinds of cakes, pies, and bread may be made, and also the oven to bake them in.

With our blocks, we might like to play milk-man, making the wagon which we will fill with cylinder beads for the milk-cans, or else have a grocery store built of cubes, with large beads for the canned goods, and the larger cylinders for barrels, cutting out circles for paper money if we want to buy and sell, and perhaps a basket for our goods. To advertise our wares we can make a picture of a dish of fruit for Thanksgiving, by marking around patterns of fruit, coloring them, then cutting out and placing on a card with a white paper dish pasted over, that we have cut, free hand.

If simple weaving is to be used, the children should start early in the month, first learning the process by means of a game in which the children who represent the strip join hands and march in and out between other children who stand in rows several feet apart, then with wooden slats weaving in the heavy manila mats found in all packages of weaving, before using the other material.

When we talk about the Indians, another opportunity is given for a sand table picture for which tents, canoes and log-houses may be made.

DECEMBER

"Oh, holly branch and mistletoe,
And Christmas chimes wher'er we go,
And stockings hung up in a row,
These are thy gifts, December."

Topic
PREPARATION FOR CHRISTMAS

Loving and Giving.—Among the Mother Play pictures used by Froebel, the founder of the Kindergarten, is one called "The Flower Basket" which illustrates the Christmas thought better than any other It is a picture of a mother and her children picking flowers that they have cultivated with care in order to fill a basket for the father's birthday, showing their great love for the father who has done so much for them. When the children have seen this picture, or one similar to it, and told their stories about it, the teacher can lead up to the thought that Christmas Day, or Christ's birthday, is celebrated by us because Christ did so much for us. We are glad he lived, and because he lived and taught us to be loving and kind, we celebrate the day by giving gifts to those we love best. Since we love father and mother best, we will want to make something for each of them, as well as plan an entertainment for their benefit on the last day of school before the holidays.

When the children have this thought they will be most enthusiastic about doing things for others, and enter into the real Christmas spirit of Loving and Giving with a will, playing at being Santa Claus' helpers as Santa Claus does for them. The toyman is visited, his different toys talked about, and the Toyman Game is played in school, the children being the toys and imitating their mechanical movements when exhibited. Santa furnishes a great deal of amusement and entertainment, while "The Night Before Christmas" is practically learned thru constant repetition as well as dramatic play.

Stories.—Christmas Stories are many and varied, but some of the best are:
The Shoemaker and the Elves.
The Story of the Christ Child.
The Legend of St. Christopher.
The Christmas Stocking.
The Story of Gretchen.
The Three Little Christmas Trees That Grew on a Hill.

Songs.—Every Kindergarten song book has one or two attractive Christmas songs for individual children to sing or for the whole group. Some of the simple ones are:
Santa Claus.
Martin Luther's Cradle Hymn, "Away in a Manger."
Holy Night, Silent Night.

Games.—The Toyman.

Dramatize "The Night Before Christmas."

Dame Get Up and Bake Your Pies.

Rhythms.—Around the Christmas Tree, which is sung to the tune of Mulberry Bush. Each verse ends with the words "so early Christmas morning" and when we have gone thru the motion of reaching for some toy on the tree we will finish with the words "This is the way we blow our horns," or "beat our drums" and suit the action to the words.

Playing Jack Be Nimble, by running and jumping over the yard-stick which the teacher holds at various heights from the floor.

center, or let them cut out any simple design that is appropriate for Christmas, a tree, a bell, or some holly for the top; memorandum books with some design on the cover colored by their little hands, or the cover woven of linen mats; candle shades with the design on each of the four sides cut out and another colored paper for the facing; needle books with the cover design colored with crayons or watercolors; napkin rings woven or wound with raffia, and many other things that one's ingenuity may suggest. The invitations for the entertainment may be printed by the teacher with some design at the center top colored by the children, and the envelope made entirely by them. Little songs and

every day with clean hands and fingernails, some one else to remember to be polite and not interrupt others who are talking, some one else to brush his teeth every day, and still another, to come on time every morning. This leads us to discuss the importance of being on time for everything and what the clock does for us. A clock dial will help us to learn how to tell time, at least for the hours.

Natural Phenomena present new wonders to us at this time: the snow on the ground, icicles hanging from roofs, the frozen ponds, and the child is anxious to know how it all came about. If he has an opportunity to make a real snowman, the action of the sun on the snow will be shown

A THANKSGIVING PARTY

Manual Activities.—A sand table picture of Santa's Land with cotton for snow, his house built of blocks or cardboard and his sleigh filled with toys will keep some of the children busy while others are making their gifts.

The fireplace may be built with our largest blocks or large third and fourth gift boxes, paper stockings hung in it, or Santa Claus' sleigh with the reindeer drawing it, also boxes filled with toys. For room and tree decorations, we will make chains out of strips of paper, cut out bells of red cardboard; make lanterns of paper by folding a square paper like a book, cutting slashes from the folded end toward the open, then opening out to paste the sides together; tissue paper balls, by cutting circles of paper, folding twice for the center, then holding by the center crush toward the outside and string on white thread until when pulled together a fluffy ball is made; and for strings, spaghetti cut in short lengths and cranberries, or just fluffy popcorn. For our gifts, we may make calendars, by painting a little scene for the picture at the top, and place the calendar pad just a little below in the

verses are now being learned by the children in anticipation of the great day, but even though our brains and hands are busy nearly every minute we will take time to sit in front of the fireplace we have made and tell Christmas stories or play about "The Night Before Christmas" so we may not lose all the joy of the festival in the bustle of preparation for it.

JANUARY

"Summer fading, winter comes—
Frosty mornings, tingling thumbs,
Window robins, winter rooks,
And the picture story-books."

The Little New Year.
Natural Phenomena.
Community Life.

The Little New Year, who is, we learn, Old Father Time's messenger and has for companion, Sister January, with her gifts of ice and snow, is welcomed by the little people with a glad New Year song and New Year's resolutions. These resolutions may be as different as the little people are different, but hearing others tell about their faults may help us to realize ours. Some one may resolve to come to school

when he melts away, or, when cold water is put out for Jack Frost to kiss, the expansion of the water is clearly shown. The story "How the Cold Broke the China Pitcher" illustrates this very well.

We observe also the aspect of the sky these clear cold nights, the changing moon, growing from a tiny baby to the full round ball and then growing smaller every night, also the wonder of the stars, perhaps finding the little dipper of the pleiades.

Community Life. We have talked about the various food products and perhaps played grocery store, now we are ready to talk about the other buildings that make up the city or village. If we live in the city there will be churches, factories, office buildings, the armory, dwelling houses, stores and the post-office. If we live in the country there will probably be a church, a store, dwelling houses, a schoolhouse, and a mill in the village. After we have discussed what is necessary to make a city or village, we may concentrate on the furniture as our next project, and will ask: What shall we find there? What are they made of? Where does wood come from? How is it brought to mill? etc.

Songs.—The many pretty songs about The Little New Year, The Clock, The Snow, The Snowman, The Moon and Stars, keep us happy through this month. Some of them are:

The New Year.
Tick, Tock.
Storm and Sunshine.
The Moon Song.
Snowman.
Twinkle, Twinkle, Little Star.

Stories.—The Three Pigs.
Ten Little Fairies.
The Stars in the Sky.
Ludwig and Marlene.

paper, and the ice of cubes which we may cut and take to the ice-house.

Later we can make a snow picture on paper, representing the sky with blue crayon and leaving the ground white or tearing white paper to represent a hill and pasting it on; also the moon and a tree. The children will like to experiment with paper and scissors to see who can cut out the best tree and moon. Snowmen may be made with plastilena, of wet sand or with white chalk on paper. Pictures of snow-shovels may be made with sticks, or painted on paper with crayons.

When community life is discussed the problem will be to make the various buildings with our blocks, lay out streets with

FEBRUARY

"Step by step lifts bad to good
Without halting, without rest,
Lifting better up to best."

HEROES AND HERO WORSHIP

Topics

The Knights of Old.
The Postman.
St. Valentine's Day.
Lincoln's Birthday.
Washington's Birthday.

The Knights, of whom we have many interesting pictures, notably Sir Galahad, represent all the virtues: purity, truth, bravery, good cheer, and kindness, and

A GOOD STORY

Games.—The Snowman Game, in this volume. (*P. 39*)
A Skating Game.
Sense Games, in this volume. (*P. 38*)

Rhythms.—Sally Go 'Round the Stars.
Marching with a book placed on the head to gain poise.

Manual Activities.—After Christmas the inclination will be to talk about our gifts so we are allowed to bring one of our toys to school to show the other children and play with. When we have had a good time with them we will make pictures of the simple ones: the horns, engines, cars, or the Christmas tree, as we remember it.

When we talk about the clock we can make clocks with construction paper and paste on a dial after we have built clocks with our fourth gift blocks. When we talk about the snow, we may want to make another sand table picture using cotton for the snow, sleds made of construction

our square tablets, make trees with sticks and fringed paper, etc. These problems should be thought out by the children and executed by them with the different kinds of blocks they have learned to use at this time.

The furniture store may be made, at first, by each child, then, when the need is felt for it, a community store should be made in one corner of the room, which is screened off for this purpose. Now the little hands will be busy making furniture of heavy paper or, possibly, wood, and weaving rugs. If we are fortunate enough to have a doll house, we can paper the rooms with wall-paper made by painting with our crayons back and forth across the paper until it is covered with straight lines and making the borders with stencils. The rugs could be made of paper mats, of burlap with overcast edges, or, on the home-made looms, with strips of colored cloth. If we do not own a doll house, individual ones may be made of shoe boxes.

appeal strongly to the little people as the pictures show them with their gayly plumed hats and warlike aspect on their prancing steeds. They love to imitate them in their games and learn many valuable lessons in their worship of the ideal. The *Mother-Play* pictures by Froebel, show the Knights searching for a good child, and the mother who has one, comes out joyfully to show him to them. Another picture shows the Knights turning away from the home because the child is naughty and cannot come out to see them. Through these pictures and stories about the Knights, the children learn many lessons in obedience, and how necessary it is to have the approval of others. The Knights will have nothing to do with the naughty child, will not even take him for a ride. Here is a fine opportunity to appeal to public opinion about the individual child's behavior and discover whether he has learned to live with the larger group, giving and taking as he will have to, in the world of affairs. The penalty for his disobedience

in Kindergarten is that no child can be a Knight in the games who has not been obedient all the morning.

If the projects for January carry over into the month of February, it may only be possible to start the talks and stories of the Knights before we take up the Postman and our national Heroes, but we will have another week at the end of February to continue the thought for, after all, they are all Knights in the best sense of the word.

The Postman, too, is something of a Hero, coming as he does to serve us in all kinds of weather. We talk about him, sing a Postman song and play Postman just before Valentine's Day.

Lincoln's and Washington's birthdays are celebrated just because they are national Heroes, but very simple stories are told about their childhood, as little children are not ready to appreciate their real service to mankind.

Songs.—The Postman.
America.
Our Flag.

Stories.—The stories for this month, may include such stories as:
The Search for a Good Child, in *More Mother Stories.*
David and Goliath, in *The Bible.*
How Cedric Saved His Kitten.
A Little Lad of Long Ago.
Stories About George Washington.

Games.—The Knight Game, in this volume. *(P. 38)*
The Parade, in this volume. *(P. 37)*
A Sense Game, in this volume. *(P. 38)*

Rhythms.—A Soldier's March.
An Orchestra which is formed by the children with different kinds of toy instruments and one of their number to lead them with a stick for a baton, while the teacher plays the tune on the piano. The orchestra can hardly do more than keep the rhythm, but the effect is interesting and the practice very fine for rhythmic sense.

Manual Activities.—When we see pictures of the Knights' castle we may want to try our skill at making a castle with our blocks using both the cubes and the bricks; cut out flags and paste a red cross on them for the Knights to carry; model the Knights on horse-back with our plastilena or clay, make horse lines with heavy cord or roving, or else with our colored folding paper, fold the square into sixteen squares, as we did for our baskets, boxes, wagons, houses, etc., and cut out these squares to lay on a paper in the form of a castle and paste. The Knights' hats may be made by folding two squares on the diagonal and pasting the short edges together with paper strips for a plume at the top.

For the soldiers we may make a sand table picture, folding tents, cutting out soldiers and fastening them on wooden foundations so they will stand or parade, or else painting flags with our crayons to fasten on sticks and place on the fort we have made.

When we talk about Lincoln, we can construct a log cabin of sticks, then make one of construction paper to take home, with Lincoln's picture pasted on a card. The log cabin is made by folding sixteen squares, then cutting up the three creases from the front edge one square space, the same from the back edge and pasting the center squares on top of each other; for the roof, bring the outer squares just to lap about half an inch so the house will stand squarely on the table.

St. Valentine's Day is celebrated by making valentines, the envelope to contain them and perhaps the Postman's bag by sewing two pieces of paper together overhand.

For Washington's birthday we will want to fold soldier hats, paste his picture on a card, paint a flag with crayons, and draw pictures of soldiers marching. If it is desirable to keep some things in book form a Washington book may be made, and the work drawn or pasted on the leaves. The soldiers we draw may be just like the men we make with our sticks on the table but carrying a flag; and a soldier hat makes them real to us.

A BUSY MOMENT

MARCH

"The brook is brimmed with melting snow,
The maple sap is running,
And on the highest elm, the crow,
His black wings is sunning."

HEROES OF LABOR

Topics

The Fireman.
The Blacksmith.
The Policeman.

NATURAL PHENOMENA

Topics

Water.
The Wind.

A visit to *The Fireman* and *The Blacksmith* will serve to show us some Heroes of Labor and the little people re-live their experience by means of dramatization. Little boys are always attracted by spectacular callings like that of the Fireman and the Policeman but deep in their hearts they do appreciate the importance of their work.

The kindly man who helps us across the crowded busy streets when we go to town, who watches our home or store, so thieves cannot take our goods, but is also ready to punish the wrongdoer, is a true Knight to the children if ever there was one, and this is the attitude they should have toward *The Policeman.*

If we are not able to show him the real Policeman, Fireman, or Blacksmith, pictures will serve to acquaint the child with their good work.

Water. — The forces that bring about the rejuvenation of nature are noticed now, as Water and Wind play such an important part in Mother Nature's house-cleaning. Water in the streets or roads, the result of melting snow and the Spring rain washing away as it does some of the accumulated dirt of the Winter, leads us to ask: What does water do for us?" How it is used for bathing our bodies inside and out, by drinking one or two glasses of water before each meal, then by bathing our bodies regularly, cleaning our teeth and our hair. How we use it for washing our clothes, our dishes and our homes. How it sends the boats along the river that carry lumber and other goods for us, and how it makes everything grow.

The Wind's work is an interesting topic for the little people and at this stage we should expect them to tell all about the Wind's work, or about some picture illustrating the Wind's work, telling what they know by means of grammatical sentences even though simple and child like in form. The Wind, that mysterious unseen force which Mother Nature uses for her house-cleaning, by blowing the leaves and refuse about or to turn the windmill that pumps water from the ground, to dry the clothes on the line, to sail our boats, or our kites, is always interesting, and some day we will go out to watch the weathervane turn and hear the song Mr. North Wind sings while we wonder why we cannot see him when he takes our hat off our head.

"The Wind" by Robert Louis Stevenson, may be read to the children.

The bulbs we planted in the Fall may be brought out now and cared for by the children. If they are the white Narcissus bulbs, they may be put in individual glass jars, so the growth can be watched more closely.

Stories.—The Little Gray Pony.
The Wind's Work.
Aqua, the Water Baby.
The North Wind and the Sun.

Songs.—The Blacksmith
The Wind.
Who Has Seen the Wind?
Waiting to Grow.
I had a Little Pussy.

Games.—The Fireman, in *A Baker's Dozen for City Children.*
The Windmill, in this volume. *(P. 40)*
Oh, Where, Oh, Where Has My Little Dog Gone?, in this volume. *(P. 41)*
The Kitty and the Mouse, in this volume. *(P. 37)*

Manual Activities.—Of course, there will be the Fireman's hat to make, a ladder with sticks on the table, a real ladder with pieces of wood, if we have the tools for it, and perhaps a lantern of paper, to hang on the truck we make with our blocks. Now we may take time to make a picture book, making the cover of colored construction paper and the four pages of two sheets of drawing paper about nine by twelve inches large with the pictures cut out of magazines by the children and very carefully placed, one large one, or two small ones on a page. If some child has been out a long time we must be sure to make one for him.

"READY"

For the Blacksmith, we will enjoy the free cutting of horseshoes or wagon wheels, then making his shop with our blocks and the horses to go into the shop. Boats may be folded to sail on the sand table pond, the bridge that goes over the water constructed of blocks and possibly the steam engine to go over the railroad bridge; Dutch boys and girls cut out and their clothes colored; windmills constructed of paper, steamboats for the ocean built of blocks, or anything the children suggest to make the picture complete. Water scenes may also be made by coloring the sky and water, and pasting on the sailboat we have cut out.

When we talk about the wind we will paint pictures of kites, of children flying kites, make pin-wheels and construct real kites.

Rhythms.—The Hansel Gretel folk dance, a Victrola record.

APRIL

So soft and gentle falls the rain,
You cannot hear it on the pane;
For if it came in pelting showers
'Twould hurt the budding leaves and flowers.

Easter.
Sources of Clothing.
Farmer's Spring Work.

If *Easter* comes early in April, we stop now to devote a week to the Easter thought and preparations for an Easter party, as we would have, had the date fallen in March. If the season is advanced the grass is beginning to grow, the brooks are flowing merrily along, and the buds are beginning to open on trees and bushes. If we are fortunate enough to have chickens there may be some little ones ready to come out of the shell, that we can watch. The crocus flowers peeping out of the earth or the bulbs that we planted in the Fall waking from their long sleep make us realize the awakening of Nature, and when this thought is followed by the story of "The Caterpillar and the Butterfly" the children gain the spiritual significance of the day without any other reference to it. The week's work might well culminate in a party to which we may wish to invite our parents.

After Easter we will want to tell what we did that day. If we went to church, all about the glad music, the flowers, and the beautiful church building. Then we will surely be quite eager to tell when we hear the first Robin, and our Audubon bird chart will be brought out to see if we can find Mr. Robin on it. Each day we will be interested to hear about how the birdie builds her nest, what she builds it of, and where. When other birds come, or we listen to their songs on a Victrola record, if not in reality, we may learn to find them on the chart.

If we have dolls in Kindergarten, they will need new clothes, so we will begin to talk about where we will find materials. If it is possible to visit the dry goods store we may see how it is bought and from that lead to the *Sources of Wool and Cotton*, showing pictures of the farmer shearing his sheep and of the cotton growing. At this time of year the children should be ready to tell some interesting stories about their pictures, and if some child is away on a visit or ill at home, we may enjoy composing a letter to him telling about our new picture. The community letter gives us an opportunity to show how well we can compose sentences, and helps to increase our vocabulary by comparing our story with others.

The Farmer's Work in Spring, the preparation of the ground, the planting of the seed, interest us through pictures when not through actual experience. Excursions to see the planter working give us the best idea, of course, and we come back quite ready to imitate his activites in our small way.

Songs.—To Baby Land.
Happy Easter.
Nature's Easter Story.
The Robin.
Raindrops.
The Rainy Day.

Stories.—The Caterpillar and the Butterfly.
Little Half Chick.
Peter Rabbit Stories.
Patty's New Dress.

Games.—The Snail, in this volume. (*P. 39*)
The Farmer, in this volume. (*P. 41*)
The Swing, a dramatization of Robert Louis Stevenson's verse, found in "*A Child's Garden of Verse.*"

Rhythms.—O'er the High Hill, a folk dance.

Manual Activities.—For Easter we will be busy making Easter baskets, coloring Easter eggs, by marking around a pattern, and cutting them out, cutting and mounting Easter Rabbits, or making little chickens coming out of the eggs and coloring butterflies for room decorations. If we plan to invite the parents for an Easter party, we will have to fold envelopes and an Easter design on the invitation card. This party may be one for which the table is set and if there is time we may decorate doilies and napkins for the occasion, or make place cards. A little entertainment, an egg hunt, games and the lunch at the tables, will give us a happy time together. After the party the little people should be the housekeepers, clearing the tables, washing and drying the dishes, and putting them away, but if this is not possible because of numbers and lack of assistance, they should be given the opportunity after the daily lunch, or a birthday party, which is occasionally celebrated in this way.

After Easter we will build churches with our blocks, an organ for our church, boats to load with cotton and send down the river, or factories where cloth is made. With paper and watercolors we can make a fine church window by blending the different colors on an oblong paper, coloring a border and cutting out in the shape of a church window. Then when we have brought from home some pieces of cotton or woolen cloth we may make dresses for our dolls, cutting out the pattern first. A sunbonnet is easily made and is a welcome addition to the dolly's wardrobe.

For birds' nests there is plastilena or clay, blocks to build bird-houses with and sticks for the fence on which we may have a birds' store. Birds may be colored and cut out of paper and a slit cut in the body for the wings so when the bird is hung from a fine black thread he seems to fly.

A bath arranged in the school yard for the birds will make a fine place from which to observe their habits. The birds' store is merely a section of the fence devoted to things the birds may like to use in the building of their nests, with a bit of seed or other food to attract their attention.

Our pictures at this time should show great improvement. They should always have the sky and ground completely covering the paper and made with a much lighter stroke than at the beginning of the year; and the little boys and girls drawn may wear bright colored clothes while rolling their hoops, flying kites, or doing any of the activities the children wish to represent.

A rainy day may be celebrated by making umbrellas, cutting them free hand and mounting on a sheet, or drawing pictures of umbrellas.

MAY

"All the birds have come again,
Come again to greet us;
And a joyous song they raise
Chirping, singing merry lays;
Pleasant Springtime's happy days
Come again to greet us."

Topics

May Day.
Nurture of Growing Things.
Of Animals.

May Day.—When the season is early and the blossoms are already out the first week in May, we will have practised dancing around the Maypole in April and changed our program, but if blossoms are late in coming out we will begin now, to prepare for our May Day celebration. To dance around the Maypole is great fun, but since we are so small we are content to just wind the streamers around the Maypole instead of weaving them, having two circles of children skipping if there are too many for one circle, with one, the outside circle, skipping clockwise and the other counter-clockwise. To entertain our visitors we will learn little flower songs and verses and perhaps have a Queen of May to preside.

After May Day we observe the busy gardeners all about us and talk about their work and tools used. If we have the opportunity to make our own little garden outside, we can plant and care for something that is easy to grow, like lettuce or radishes. The entire care of a plant teaches the child one of the greatest lessons in life—that loving care brings its own reward; also that responsibility goes with service, for our plant soon droops and fades if neglected. Our talks will be about how to prepare soil, tools to use, what to do for growing plant, etc. If we cannot have a *Garden* out-of-doors, we will at least have a box for a few seeds in our room and encourage conversation through pictures, of a little gardener. How the sun and rain help the little plant to grow are brought to our attention by means of the stories. At this time, too, we will enjoy playing The Light-Bird game, making the Light-Bird by holding a piece of glass so the sun can shine upon it and send the reflection on the wall. When we try to catch the Light-Bird we will begin to realize that there are some things we may not grasp with our hands, but can hold the picture of in our eyes and hearts.

The Farmyard Animals bring great joy to the little people who usually have some opportunity to become acquianted with them, and questions about their habits, how they live, what they eat, etc., bring a ready response from them. In some Kindergartens a setting hen has been brought into the schoolroom, and the children have had an opportunity to see the chickens hatch out. They care for them, or some rabbits, or little kittens. Failing that, a visit to see some little chicks kust hatched will be next best.

Songs.—The Woodpecker.
My Garden.
The Tulip.
Daffy-Down-Dilly.
Daisies.
The Dandelion.
Little Yellowhead.
Buttercups.
Pansies.

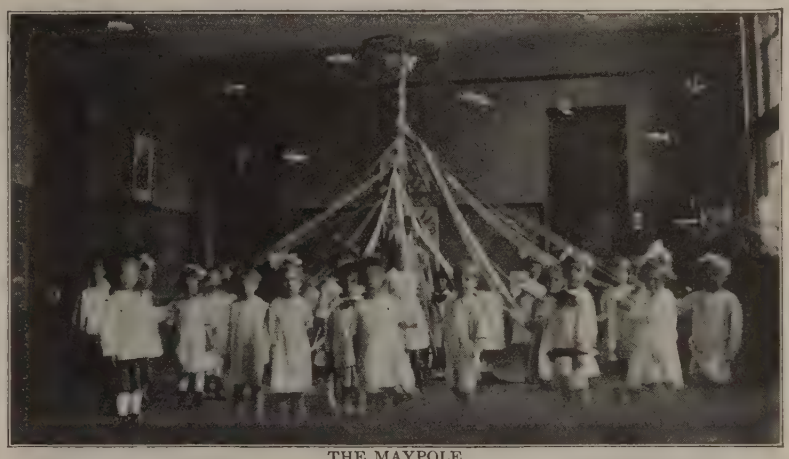
Good Morning Pretty Sunshine, are some of the best flower songs to select from, for individual children or groups of children to sing for the May Day.

Stories.—The Little Pink Rose, in *Stories to Tell to Children*, by Bryant.
Chicken Little.
The Kitten Who Forgot Kitten Talk.
Prince Harweeda.
The Line of Golden Light.

Games.—The Bird Game, in this volume. (*P. 40*)
The Farmyard Game, in this volume. (*P. 39*)
Dramatize Chicken Little or The Little Pink Rose.

Rhythms.—The Maypole Dance, which is really a skip for us.

Manual Activities.—May baskets for our May flowers, tulips colored and cut out, then pasted on a card as though they were growing out of a pot. Daffodils may be arranged the same way, or we may paint with our crayons from the real flower for May Day projects. The garden may be worked out in the sand table with shells for the borders, on our tables with sticks and seeds, or if we have half rings flowers may be made with those. The tools for use in the garden may be cut out of thin paper, freely, after we have made them on the table with our sticks, that is, tools like the rake, the hoe, the shovel. Pictures of the shovel or the hoe may be made with crayons, or pictures of children working with them. We take trequent walks these days and usually find some flower we like to make a picture of, unless lupine and other wild flowers are brought.



THE MAYPOLE

The Farmyard furnishes a project that we will enjoy working out in our sand table, where we can make paper animals for the pig pen, for the dog kennel, for the sheep fold, and for the barn. These animals will stand up if two animals are cut out and pasted together, leaving the legs free. Chicken coops, fences, etc., may be made of paper by the children.

If we have a chicken we can make a runway for the chickens with our blocks.

With our clay, we may make a flower pot, dry it, paint it with shellac, and plant a flower seed in it, which we will take home for mother.

JUNE

"Just to bloom beside your way
That is why the flowers are sweet;
You want fresh ones every day
That is why the flowers are fleet."

Topics

The Circus.
The Bees.
The Park.
Flag Day.

The Circus has come to town and our interest centers on that for a while. Now we tell about the different animals in the parade. Which are the wild animals? What are their names? What did the elephant do at the circus? Show us how he walks. How does the bear walk? Where do they like best to live? Tell about the clowns, the horses, etc.

When the circus has gone we will be out in the fields again watching the busy bees at work among the flowers. To gather under the shade of a tree and tell stories about how the Queen Bee gathers her family of workers and drones and allots to each his particular task, which is zealously performed, and then be able to watch the honey bees as we gambol over the fields makes us more eager to do our work well, when we return to our room, so we go out for all relaxation periods these days and tell our stories there, if possible. The lesson we learn from the bees and birds and flowers is that all are as busy as can be at their particular task, the bees making honey and caring for their household; the birds with their little ones and eating the insects that trouble the trees and plants, and the flowers gathering all the sunshine and dew they can in order to grow fast and give forth perfume. They are always busy, why should we play all the time.

Shorter periods of work and play are the rule this time of year, although it is always understood that we must not be kept too long at a task. After a change we will be glad to go back to our project, but little children cannot concentrate on any project very long at a time. The last project for the year may be:

The Park if we can visit one. We may find there a pond with ducks or swans in it that will attract our attention first; then buildings, flower beds, tennis courts, swings, and a Merry-Go-Round; also automobiles that drive through the big gate—all of which we may represent in our sand table or on the floor.

On *Flag Day* we will tell the story of the first flag made by Mrs. Betsy Ross and learn to salute our flag as the soldiers do.

The closing festivities for the year might be a Picnic at which we will serve lettuce sandwiches and radishes we have grown in our garden.

Stories.—Read Little Black Sambo.
The Baby Queen.
The Little Gray Grandmother.
The Coming of the King.

Songs.—The Kitten and the Dog.
Mr. Frog, in *Small Songs for Small Singers*.
Zoom, Zoom, Zoom.
Two Little Roses.
Away Among the Blossoms.

Games.—Merry-Go-Round.

Hide the Button.

A *Flower Game,* in which the gardener plants children for flowers, and names them as he plants. They curl up on the ground while the gardener waters them and the sunbeams shine on them, then some of the children represent birds and fly around waking the flowers which come up slowly and gradually unfold their blossoms, when other children representing bees and butterflies, fly among them. After a while the gardener picks a few of his flowers to sell or give to some one who is ill.

Rhythms.—Here We Go Up the Green Grass, or,

A Dolly's Dance which the children may do to music like that of the Dance of the Marionettes.

Manual Activities.—The Circus Parade will be eagerly made after we have talked about or, better still, really seen it. The wagons may be made of red cardboard, or of boxes turned so the open end is at the side, strips of cardboard for the bars, across the open end, and wheels cut out of the papers, or milk bottletops fastened on with brass paper fasteners. The horses and other animals may be cut out and pasted together so they will stand, and the horses harnessed to the wagons with strips of cardboard. Free drawing or a group product in which the animals and wagons are cut out and pasted on a large sheet upon which the background has been colored, may suit us better if we cannot make the real wagons. The Bradley *Picture Cut-Outs* make fine action figures for a circus border, as the arms and legs are cut out separately and fastened on with little fasteners.

Flowers may be made of parquetry circles, or free cutting and pasted for borders.

When we visited the park so many projects occurred to us that we will be kept busy, perhaps making the trolley that takes us there, with our blocks; making the Merry-Go-Round; the house where ice cream is sold; the flower-beds; the pond, which may be just a piece of glass for the toy ducks and swans, if we make our picture in the sand.

On Flag Day we will make a flag to place on the flagpole which is inside the big gate which we may make with out blocks.

Our last festivity, the Picnic for which we have grown lettuce and radishes, will be the occasion for a jolly good time under the trees, when we will sing the songs and play the games we like the best.

ATTAINMENTS

Through the topics discussed, we should gain much valuable information, through the exchange of ideas and suggestions by the teacher to feel a closer kinship with the environment, kindliness toward those who help to make our homes possible, toward animals, toward birds, and a definite feeling of responsibility for their care.

Habits of attention, of independent thinking, of closer observation, and ability to relate experiences by means of grammatical sentences, should have been acquired.

The stories and poems should make for a better appreciation of good literature, and through frequent repetition create better habits of attention as well as exercise the memory and increase the vocabulary. The power to dramatize simple stories and incidents should be increased because the feeling of self-consciousness has been overcome to some extent, also the ability to originate simple stories should have been fostered.

WAITING FOR WORK

The singing of songs in the Kindergarten should make for better voice control, the use of the head tones instead of the throat, ability to listen to and reproduce tones on the piano, or with the voice, and to change the pitch of a song if started too low. The group as a whole should have learned to sing a number of simple songs, and each child should be able to sing a few of these alone.

The games and rhythms should have given us better control of the muscles, more poise, and should correct some physical defects. With the games, they should have acquired the ability to play with the larger group in a spirit of fairness and co-operation; greater ability to dramatize situations brought out by other activities. And the power for leadership and organization should have been increased. The feeling that he is part of a great whole and that his part should be done as well as possible if we are all to have a good time is best gained through games and folk dances, or rhythms.

The manual activities we engage in should gain for us better ability to imitate the best forms, to create new ones, to concentrate on a particular problem, to express our thoughts by means of pictures, and to make associations with the subject matter by choosing our own projects to work out. Habits of neatness, orderliness, and artistic arrangement should have been gained and a feeling for color and form should have been developed with a better knowledge of the laws of growth, through the nature material used.

Habits of courtesy, such as: "Good Morning Miss ———, Thank you, Excuse me, or Pardon me, and If you please" should become second nature as should the habit for the little boys of removing the hat when in the house.

REFERENCE BOOKS FOR STORIES

The Teachers' Story-Tellers Book, by Alice O'Grady and Francis Throop, published by Rand, McNally & Co., Chicago.

Stories and Story-Telling, by Angela M. Keyes, published by D. Appleton & Co., New York.

Mother Stories, More Mother Stories, by Maud Lindsay, published by Milton Bradley & Co., Springfield, Mass.

For the Children's Hour, For the Story-Teller, by Carolyn Bailey and Clara M. Lewis, published by Milton Bradley & Co., Springfield, Mass.

How to Tell Stories to Children, Stories to Tell to Children, by Sara C. Cone Bryant, published by Houghton, Mifflin & Co., Boston.

Aesop's Fables, published by Macmillan & Co., London.

Half a Hundred Stories, published by Milton Bradley & Co., Springfield, Mass.

In Story Land, by Elizabeth Harrison, published by The Central Publishing Co., Chicago.

The Story Hour, by Kate Douglas Wiggin and Nora A. Smith, published by Houghton, Mifflin & Co., Boston.

BOOKS OF POEMS AND RHYMES

And Some Recommendations

From *A Child's Garden of Verse,* by Robert Louis Stevenson:

Bed in Summer.
The Swing.
The Rain.
The Wind.
My Shadow.

From *Memory Gems for Children,* by Jesse Carr Tyndall, published by Milton Bradley & Co., Springfield, Mass:

The Merry Brown Thrush.
All Things Bright and Beautiful.
Help One Another.
Three Little Rules.

From *Pinafore Palace,* by Kate Douglas Wiggin and Nora A. Smith, published by Grosset & Dunlap.

Do You Know How Many Stars?
Chicken in Trouble.
Pussy Willow.
One and One.

SONG BOOKS FROM WHICH SONGS HAVE BEEN RECOMMENDED

Ring Songs and Games, by Lucy Wheelock Graduates, published by Milton Bradley & Co., Springfield, Mass.

The Song Primer, Teachers' Ed., by Alys Bentley, published by A. S. Barnes & Co., New York.

Mother Goose Songs, More Mother Goose Songs, by Ethel Crowninshield, published by Milton Bradley & Co., Springfield, Mass.

Child Land in Song and Rhythm, by Jones-Barbour, published by Arthur Schmidt, New York.

First Year Music, by Hollis Dann, published by The American Book Co.

Song Stories for the Kindergarten, by Patty Hill, published by Clayton Summy, Chicago.

Small Songs for Small Singers, by Neidlinger, published by G. Schirmer, New York.

Songs of Happiness, by Carolyn Sherwin Bailey, published by Milton Bradley & Co., Springfield, Mass.

Song Echoes from Child Land, by Harriet Jenks and Mabel Rust, published by Oliver Ditson & Co., Boston, Mass.

Songs of the Child World, Nos. I and II, by Riley and Gaynor, published by The John Church Co., Chicago.

Finger Plays, by Emilie Poulsson, published by The Lothrop Publishing Co.

THE PARADE

Lillian M. Goetz

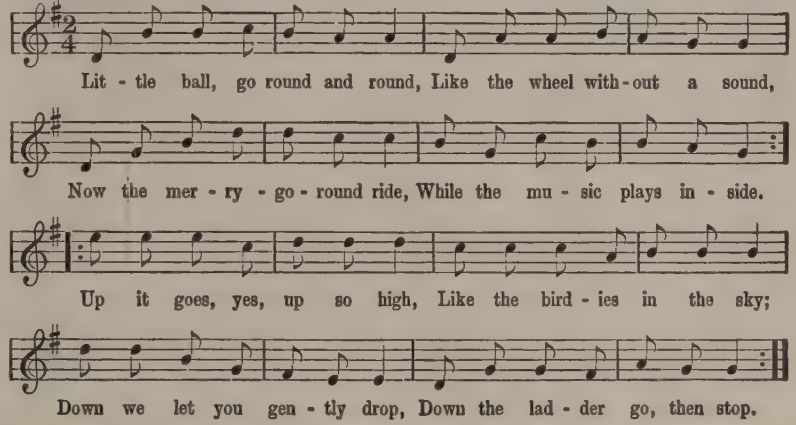
Sung to the tune of "The Five Knights."

Here comes Drum-major marching, marching, marching,
Here comes Drum-major marching, can you march, too?
Here comes a soldier marching, marching, marching,
Here comes a soldier marching, can you march, too?
Here come two soldiers marching, etc.
Here comes a bugler marching, etc.
Here come two buglers marching, etc.
Here comes a drummer marching, etc.
Here come two drummers marching, etc.
Here comes a fiddler marching, etc.
Here come two fiddlers marching, etc., until all are chosen.

Directions—The first child marches in front of the others until the words "can you march, too" when he salutes the one nearest him. That child then marches behind the Drum-major until time for him to choose a second soldier or a bugler according to the number of children playing. If there are enough children choose two of each kind to march together until all are in the line of march, then play some martial music while the band pretends to play.

BALL GAME

LILLIAN M. GOETZ — Mrs. JOHN D. KAY



2.

Right and left swing like the clock
As it softly says, "Tick, tock."

Tick, tick, tick, tick, tick, tick, so
Mother's little clock will go.

Forward, back, for big church bell,
Ding-dong, ding-dong, ding-dong, dell.

Quickly make our cradle here
Sing "Bye-low" to baby dear.

Play with colored worsted balls with string attached. If there is a loop on the string the children can hold and swing balls much more comfortably.

SKIPPING GAME

Tune, "Comin' Thru the Rye."
Words, Lillian M. Goetz.

On this bright and happy morning
Come and skip with me.
I will bow then take your hand,
And merry we will be.

Chorus.

Sing tra-la, la, la, la, la, la, la, etc.
(While the children skip.)

Now our happy skip is over,
Walking we will try,
'Till the lassie makes a curtsy,
Just to say, "Good-bye."

Directions—Let one child choose a partner and skip. When their skip is over let both go to other children and choose, making four to skip this time. Continue this way until all are chosen.

THE KITTY AND THE MOUSE

Kitty curls herself on a chair and goes to sleep, her pan for milk by the chair. Mouse creeps up on tiptoe to get pan, without waking kitty. If kitty hears the mouse she wakes and says "Meouw," scaring the mouse. If kitty does not waken and the mouse gets the pan, that mouse becomes the kitty for another game.

TEN LITTLE INDIANS

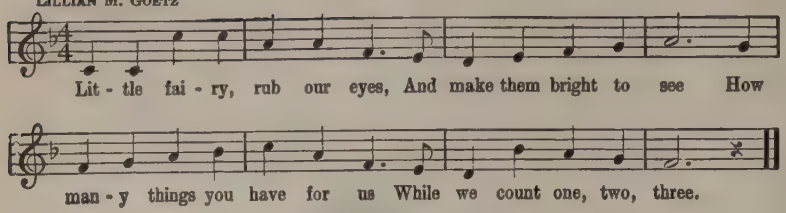
(A Game for Imitations)

One little, two little, three little Indians,
Four little, five little, six little Indians,
Seven little, eight little, nine little Indians.
Ten little Indian boys.

Directions—As the song is sung, the children stand up one by one, and form a long line. The next time the song is sung, each child will imitiate the motions made by number one who is always the leader. He may imitate the activities of the baker, the carpenter, the soldier, the musician, etc.

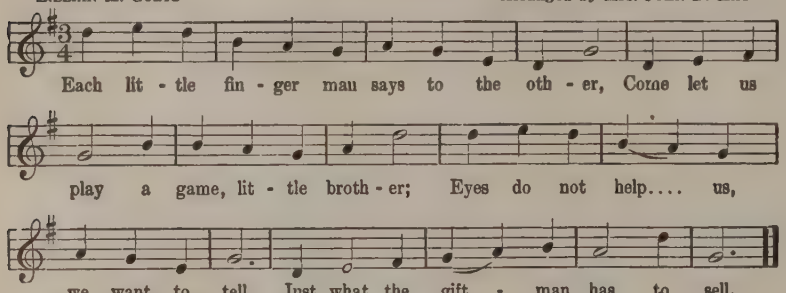
SENSE GAMES
1. SIGHT

LILLIAN M. GOETZ



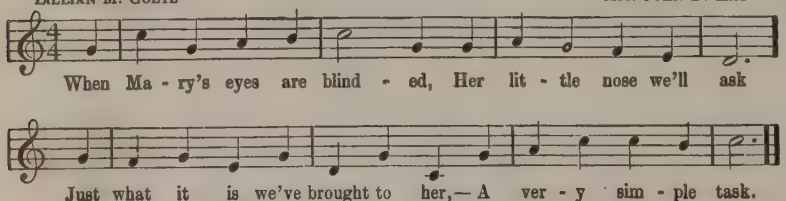
SENSE GAMES
3. TOUCH

LILLIAN M. GOETZ — Arranged by Mrs. JOHN D. KAY



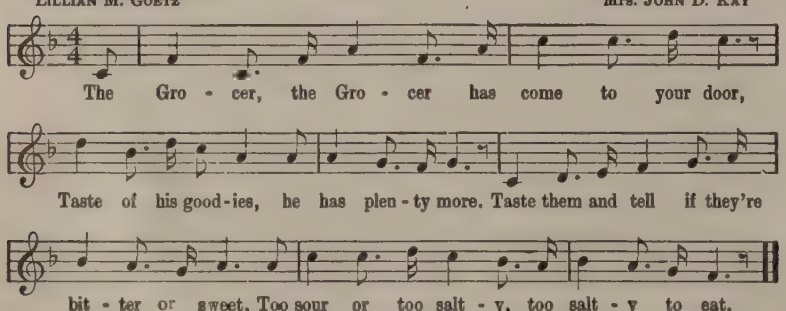
4. SMELL

LILLIAN M. GOETZ — Mrs. JOHN D. KAY



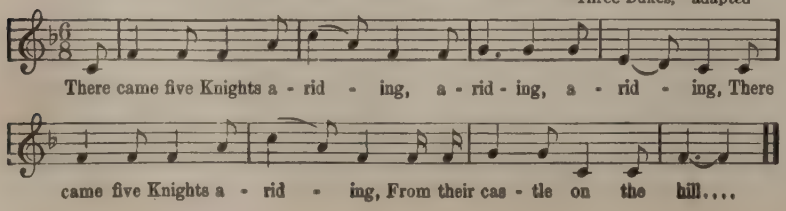
SENSE GAMES
5. TASTE

LILLIAN M. GOETZ — Mrs. JOHN D. KAY



THE FIVE KNIGHTS

"Three Dukes," adapted



SENSE GAMES

1. SIGHT

Directions—Place a number of objects in front of the children, who are standing in a row or circle with their eyes closed, and cover the objects with a cloth. When all is ready have them open their eyes and sing, lifting the cloth only during the last measure. When the cloth is on again let each one tell what he saw.

2. HEARING

One child sits in a chair with eyes blindfolded.

Another child tiptoes back of him and raps on the chair, saying, "Little sister who knocks?", or "Little brother who knocks?" When the first child guesses the name, the second child sits in the chair and some one else knocks at the door

3. TOUCH

Directions—The children stand with their hands behind them, while the gift-man walks up and down with his bag singing and placing some object in each pair of hands. When the children all have something, they feel of the object and tell its name or what it is like.

4. SMELL

5. TASTE

THE SQUIRRELS

Let two children represent the hollow tree by facing each other and joining hands as for London Bridge, stretching out arms shoulder high. A third child represents the squirrel and stands between the raised hands. When several trees are made, let another child stand in the center between the trees. At a given signal all the squirrels change trees and the odd child tries to find a tree to stand in. The squirrel who is left out stands in the center for another game.

THE FIVE KNIGHTS

O, what is it you wish, sirs, you wish, sirs, you wish, sirs,
O, what is it you wish, sirs, for your castle on the hill?

We've come to find a good child, a good child, a good child,
We've come to find a good child for our castle on the hill.

O, please take one of us, sirs, of us, sirs, of us, sirs,
O, please take one of us, sirs, to ride with you today.

The very best child that I see, that I see, that I see,
The very best child that I see, shall ride with me today.

And now we'll all go riding, a-riding, a-riding,
And now we'll all go riding to the castle on the hill.

THE FARMER

(Danish) '07

Music harmonized by Elizabeth D. Root

Would You Know the Farmer, etc.

Repeat for the succeeding verses, changing the words for the last two measures thus:

2nd time—Is cutting his wheat.
3rd time—Is gathering his wheat.
4th time—Is thrashing his wheat.
5th time—Is grinding his wheat.
6th time—Is baking his bread.
7th time—Is taking his ease.

Children join hands in a circle. As they begin to sing they move toward the left with long running steps for the first four lines of the song. The next four lines are sung more slowly to enable the children to demonstrate the words being sung, and children stand still during the action.

Verse 1. When the word "how" is sung, children take seed in their right hand from the bag they are pretending to carry on their left arm, and cast seed from right to left.

Verse 2. Cut the wheat by bending forward and forming the scythe by a bent right arm. The left hand is placed far up the right arm, as if for a scythe.

Verse 3. Form a wheel by bringing children close together with their hands on one another's shoulders. Step briskly on heels to imitate the sound a rolling wheel makes over the cobbles of a farmyard.

Verse 4. The right arm represents the flail which will thrash out wheat. This arm is stretched and bent alternately. At the same time stamping foot.

Verse 5. Grinding is done by turning "pancake". Couple join hands and turn under own arms.

Verse 6. Kneading is done by pushing clinched fists downward and forward.

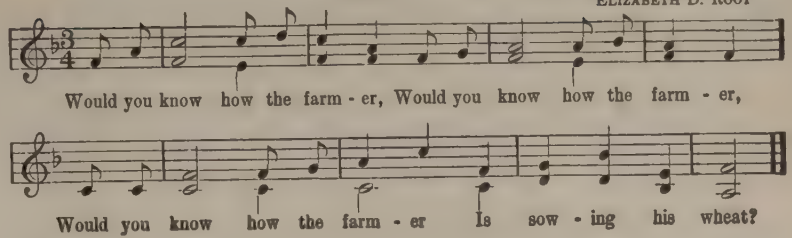
Verse 7. Baking bread: the right hand represents the long-handle shovel, upon which bread is placed in a big hot oven. Hold hand horizontally to keep bread from falling. Place left hand high on right arm to push shovel.

Verse 8. Children drop on left knee, put right hand under chin, rest elbow on knee and nod to child first on left then on right.

By permission, from *"Hinman Gymnastic and Folk Dancing," Vol.* III, published by A. S. Barnes, New York.

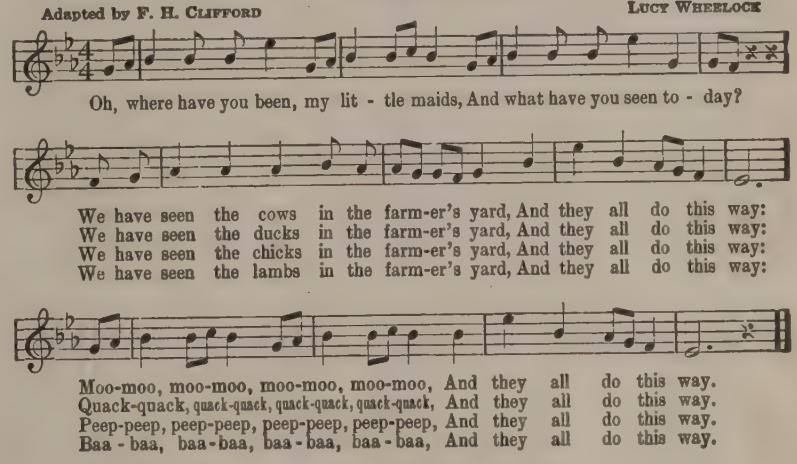
THE FARMER

(Danish, '07) Music harmonized by Elizabeth D. Root



THE FARM-YARD

Adapted by F. H. Clifford — Lucy Wheelock



THE FARM-YARD

By permission of authors and publishers, from *"Ring Songs and Games"*, published by Milton Bradley & Co., Springfield, Mass.

Directions—The children chosen to represent animals leave the room and decide what they would like to do. When they return the other children sing to them and they reply, imitating the action of the animals represented.

THE SNOWMAN

Lillian M. Goetz

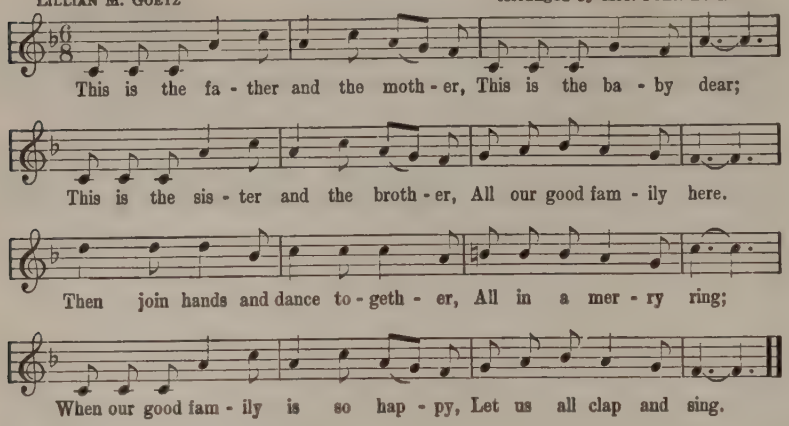
Snowstorm—Have all the children represent snowflakes and whirl softly about while some soft music is being played on the piano. After they have whirled about a bit they fall on the floor like sleeping snowflakes, then get up softly one by one until all are standing on the circle.

Snowman—All roll snow toward the center, where one is selected for the snowman and a hat is placed on his head.

Snowballs—When all are some distance away from the snowman each child will pretend to make a pile of snowballs. When each has a pile let them throw together knocking off the hat, first, then the arms, then all the snowman. When the snowman is down the children gather around while the sunbeams melt him. The fact that he joins the other children when they all drift back makes the melting of the snowman seem quite realistic.

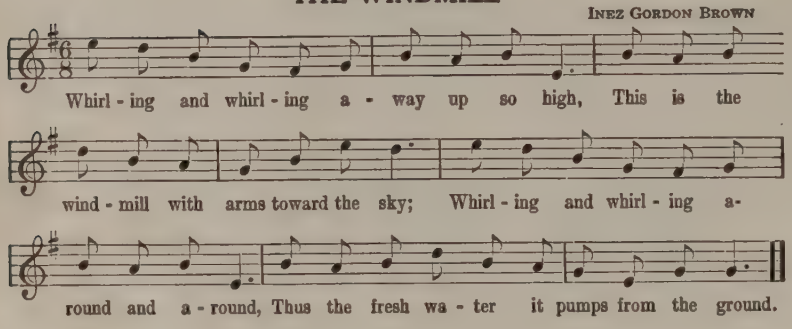
THE FAMILY

LILLIAN M. GOETZ — Arranged by Mrs. JOHN D. KAY



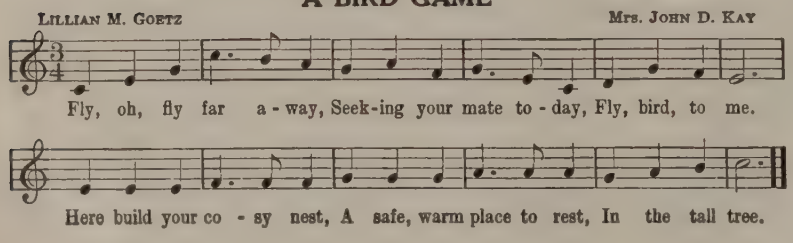
THE WINDMILL

INEZ GORDON BROWN

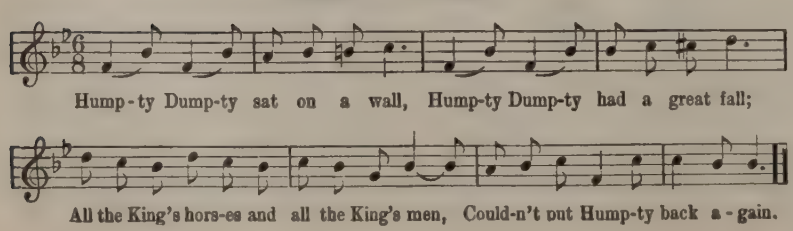


A BIRD GAME

LILLIAN M. GOETZ — Mrs. JOHN D. KAY



HUMPTY DUMPTY



THE WINDMILL

By Inez Gordon Brown

Directions—Two children stand in the center of the circle, back to back. Each extends arms, left high and right low. On accented words the right is lifted and left lowered, so there is an effect of whirling as the children's arms are constantly crossed. The other children in the circle sing the words of the song. After this, the music is repeated so that all have an opportunity to be windmills.

From *"The Kindergarten and First Grade"* magazine, published by Milton Bradley & Co., Springfield, Mass.

A BIRD GAME

2.

Mother-bird spreads her wings
Over two tiny things
Two wee blue eggs.
Some day she'll hear a call,
"Peep, peep, we're birdies all,
For food we beg."

3.

Fly, oh, fly far away,
Out of your nest to-day,
Wee birdies, too.
Follow the mother-bird,
"Peep, peep," her song is heard,
"I'll fly for you."

Directions—Choose a child for the father-bird who flies around looking for a mate. When the mother-bird has been chosen they select a place to build their nest then fly around finding imaginary straws and place in the nest. 2—When the nest is built, mother-bird finds two children to represent eggs and cuddles them by holding arms out straight from the shoulder and kneeling down to get close to the children who are curled up like eggs. While the mother-bird stays at home, the father-bird finds food for her. Soon the birds raise their heads calling "Peep, peep," and mother-bird assists in the search for food. 3—Finally the little ones are ready to fly, and follow the lead of the mother and father who show them how.

HUMPTY DUMPTY

By permission, from *"Mother Goose Songs for Little Ones,"* by Ethel Crowninshield, published by Milton Bradley & Co., Springfield, Mass.

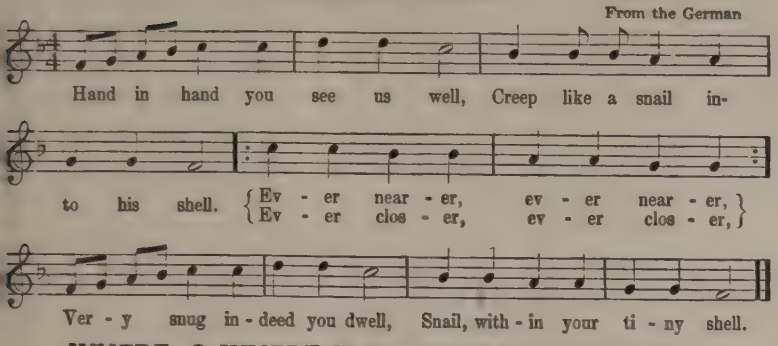
Lillian M. Goetz

Directions—Choose the King, his two horses and two men beside Humpty Dumpty. Have Humpty sitting on a table or chair for the wall. When he has fallen off the wall, have the King drive his horses and with the assistance of his men try to put Humpty back again. After they find that is not possible, let the King drive his horses about the room while the following verse is sung to the same tune as the above verse:

Galloping, galloping, gayly they come,
All the King's horses are galloping home,
All the King's horses and all the King's men
Who couldn't put Humpty back again.

THE SNAIL GAME

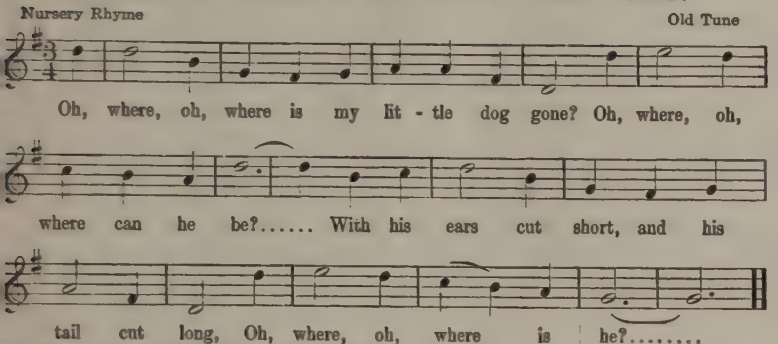
From the German



WHERE, O WHERE IS MY LITTLE DOG GONE?

Nursery Rhyme

Old Tune



WHERE, OH WHERE IS MY LITTLE DOG GONE?

Directions—A single circle is formed facing inward, with the hands clasped. One of the players, the master, is in the center of the circle. The circle moves around in line of direction, that is, the players slide sideways right. The master skips around the circle in the opposite direction, holding his hand to his forehead and looking from side to side as if to find his dog. At the end of the verse, the circle halts on the last "be" and raises clasped hands high. The master also halts at the same moment and the one before whom he stops is the little dog. The little dog immediately turns and runs away around the circle, or in and out the clasped hands. Wherever the dog goes the master must follow the same path in his efforts to catch him. After he has caught the dog the master may join the circle and the dog becomes the master, when the game begins anew. Should the master fail to catch the dog, after a reasonable chance, the dog resumes his former place in the circle and the game may begin as before with the same master.

This game helps to encourage the children to slide quickly and lightly and not to drag, as they are likely to do at first, for all the children desire to hurry past the master so that he will not stop in front of them.

By permission, from *Rhythmic Action Plays and Dances*, by Irene E. Phillips Moses, publishers, Milton Bradley & Co., Springfield, Mass.

THE SNAIL GAME

From the German

Directions—The children form a line and join hands. The leader then leads them toward the center making a spiral while all the children march and sing with him. When he is in the center and the line is wound about him, he turns to go back the same way he came and all the children sing the second verse. The children do not let go of hands during the progress of the game.

2.

Hand in hand you see us well,
Creep like a snail out of his shell;
Ever farther, ever farther,
Ever wider, ever wider.
Who'd have thot this tiny shell
Would have held us all so well.

THE TALE OF PETER RABBIT

Once upon a time there were four little Rabbits, and their names were: Flopsy, Mopsy, Cotton-Tail and Peter Rabbit. They lived with their mother in a sand-bank, underneath the root of a very big fir-tree.

"Now, my dears," said old Mrs. Rabbit one morning, "you may go into the fields or down the lane, but don't go into Mr. McGregor's garden, your father had an accident there—he was put in a pie by Mrs. McGregor."

Then old Mrs. Rabbit took a basket and her umbrella, and went through the wood to the baker's. She bought a loaf of brown bread and five currant buns.

Flopsy, Mopsy and Cotton-Tail, who were good little bunnies, went down the lane to gather blackberries; but Peter, who was very naughty, ran straight away to Mr. McGregor's garden.

First he ate some lettuces and some French beans; and then he ate some radishes; and then, feeling rather sick, he went to look for some parsley.

But round the end of a cucumber frame, whom should he meet but Mr. McGregor! Mr. McGregor was on his hands and knees planting out young cabbages, but he jumped up and ran after Peter, waving a rake and calling out, "Stop thief!"

Peter was most dreadfully frightened; he rushed all over the garden, for he had forgotten the way back to the gate. He lost one of his shoes among the cabbages and the other shoe amongst the potatoes.

After losing them he ran on four legs and went faster, so that I think he might have got away altogether if he had not unfortunately run into a gooseberry net, and got caught by the large buttons on his jacket. It was a blue jacket with brass buttons, quite new.

Peter gave himself up for lost, and shed big tears; but his sobs were overheard by some friendly sparrows who flew to him in great excitement and implored him to exert himself. Mr. McGregor came up with a sieve which he intended to pop upon the top of Peter; but Peter wriggled out just in time, leaving his jacket behind him, and rushed into the tool-shed, and jumped into a can. It would have been a beautiful thing to hide in, if it had not had so much water in it.

Mr. McGregor was quite sure that Peter was somewhere in the tool-shed, perhaps hidden underneath a flower pot. He began to turn them over carefully, looking under each.

Presently Peter sneezed—"Kertyshoo!" Mr. McGregor was after him in no time, and tried to put his foot upon Peter who

jumped out of a window, upsetting three plants. The window was too small for Mr. McGregor, and he was tired of running after Peter. He went back to his work.

Peter sat down to rest; he was out of breath and trembling with fright, and he had not the least idea which way to go. Also he was very damp with sitting in that can. After a time he began to wander about, going lippity—lippity—not very fast, and looking all around.

He found a door in a wall; but it was locked, and there was no room for a fat little rabbit to squeeze underneath..

An old mouse was running in and out over the stone doorstep, carrying peas and beans to her family in the wood. Peter asked her the way to the gate, but she had such a large pea in her mouth that she could not answer. She only shook her head at him. Peter began to cry.

Then he tried to find his way straight across the garden, but he became more and more puzzled. Presently he came to a pond where Mr. McGregor filled his watering cans. A white cat was staring at some goldfish; she sat very, very still, but now and then the end of her tail twitched as if it were alive. Peter thought it best to go away without speaking to her. He had heard about cats from his cousin, Little Benjamin Bunny.

He went back towards the tool-shed but suddenly, quite close to him, he heard the noise of a hoe—scr-r-ritch, scratch, scratch, scratch. Peter scuttered underneath the bushes. But presently, as nothing happened, he came out, and climbed upon a wheel-barrow, and peeped over. The first thing he saw was Mr. McGregor hoeing onions. His back was turned towards Peter, and beyond him was the gate!

Peter got down very quietly off the wheel-barrow, and started running as fast as he could go, along a straight walk behind some black currant bushes. Mr. McGregor caught sight of him at the corner, but Peter did not care. He slipped underneath the gate and was safe at last in the wood outside the garden.

Mr. McGregor hung up the little jacket and the shoes for a scare-crow to frighten the blackbirds.

Peter never stopped running or looked behind him till he got home to the big fir-tree. He was so tired that he flopped down upon the nice soft sand on the floor of the rabbit-hole and shut his eyes.

His mother was busy cooking; she wondered what he had done with his clothes. It was the second little jacket and pair of shoes that Peter had lost in a fortnight!

I am sorry to say that Peter was not very well during the evening. His mother put him to bed, and made some camomile tea, and she gave a dose of it to Peter. "One tablespoonful taken at bed-time!" But Flopsy, Mopsy and Cotton-Tail had bread and milk and blackberries for supper.

—*Beatrix Potter*

THE THREE BEARS

There lived once a little girl with her mother and father in a little house near a great, dark forest. She had such fine golden hair which hung in curls about her forehead that they called her Goldilocks. She was a very dear little girl, but liked to roam in the open, and often forgot that the time flies away from us just as a bird flies, and that you may lose your way, and much besides, if you do not think of going back home before it is too late.

She loved the dark green forest with all the lights of the sun playing in its depths, just as if there were fairies dancing all about. And the birds in the trees would sing to her and call her, she thought, and the squirrels would run up the tree trunks, playing hide and seek with her, and the little lizards would run across her path and then quickly glide away under the rocks. She loved to follow them as far as she dared, for her mother had warned her not to go too far into the woods as there might be wild beasts living there that would hurt her before she could run off home.

One day, when the sun was shining particularly bright, and the air was so balmy, and the birds sang so sweetly, and the green shadows of the forest looked so inviting, she strolled away, far, far into the woods, running now after a playful squirrel, and then picking a pretty blue, or red, or white flower she saw in the distance. At last, when she began to look around she found herself in a place quite unknown to her. And she was tired and hungry, too. Oh! wasn't she frightened! She remembered all her mother had told her, and cried, but it was too late. There she was, alone in the woods, lost and forlorn.

When she looked further she saw a little house in front of her. It looked queer, not like her own dear little home; but she went forward thinking somebody must live in there who could show her the way. But when she entered she found the house quite still and empty. No one seemed to be around. But in the middle of the room stood a table, and on the table there stood three bowls filled with porridge, and around the table there stood three chairs. The bowls and the chairs were of different sizes, one was large, the next one was middle-sized, and the third one was very small. Being tired, she first sat down in the big chair; but that was too high and uncomfortable for her. So she tried to sit in the tiny, wee chair; but that was too small for her, and, oh! when she tried to sit down in it, it broke right in two, and the pieces fell on the ground. Then she sat down in the middle-size chair, and it was just right.

Being hungry, she thought she would try the porridge. So she took a spoonful out of the great, big bowl; but that was too hot for her. Then she took a spoonful out of the tiny, wee bowl; but that was too cold for her. Then she tried a spoonful from the middle-sized bowl, and that was just right. So she ate it all up.

After she had eaten, she went around the house to find what else there was. She found a stairway that led up to a bedroom on the next floor. There stood three beds, all nice and white and clean, with soft pillows and covers. One was a great, big bed; another was a middle-sized bed, and the third was a tiny, wee bed.

Being sleepy, she tried first to lie down in the great, big bed. But that was too big for her so that she could hardly find herself when she wanted to get up again.

Then she tried the tiny, wee bed, but the was much too small for her. And then sh tried the middle-sized bed which was ju right. So she lay down and fell asleep.

Meanwhile, three bears—the father bea the mother bear, and the baby bear, wh lived in the house, came back from the walk to have their supper. The fa was a great, big bear; the mother a middle-sized bear, and the baby w tiny, wee bear.

When they came into the house, saw at once that somebody had been t The great big bear, in his great big v said, "WHO HAS BEEN SITTING MY CHAIR?" The middle-sized in her middle-sized voice, said, "*Wh been sitting in my chair.*" And the wee bear, in his tiny, wee voice, said, ' has been sitting in my chair, and oh! has broken it."

Then when they wanted to eat the ridge, the great big bear said, in hi big voice, "WHO HAS EATEN O PORRIDGE?" And the tiny, wee in his tiny, wee voice, said, "Who has of *my* porridge?" And the middle bear, in her middle-sized voice, said, *has eaten of my porridge, and has e all up!*"

So they went hunting through the to find who had been sitting in their and had eaten of their porridge.

they came to the bedroom, the great big bear said, in his great big voice, "WHO HAS BEEN LYING IN MY BED?" And the tiny, wee bear, in his tiny, wee voice, said, "Who has been lying in *my* bed?" And the middle-sized bear, in her middle-sized voice, called out, "*Who IS lying in my bed, fast asleep?*"

At that moment, Goldilocks woke up, and when she saw the three bears standing by her side, she jumped so quickly out of bed and ran to the window, opening it and leaping out, that the bears were taken by surprise. They ran quickly to the window to look after the fleeing girl, but she had already reached the trees which hid her from sight.

While the three bears were still wondering what it was all about, Goldilocks ran home where she shortly arrived out of breath, and badly frightened. After she had told her mother the story of her wanderings in the woods, and of the little house, and of the three bears, she promised never again to run so far away from home.

HÄNSEL AND GRETEL

Once upon a time there was a poor woodcutter living with his wife and two children in a little hut near the woods. One of the children was a little boy, named Hänsel and the other a little girl, named Gretel. They were very good children, but very small, indeed. Father and mother were working very hard, but could not earn much money. The father cut wood in the forest and sold it to the people in the village, and the mother had her hands full keeping her children and the house in good order.

After a very hard winter, when spring came again, the poor man was poorer than ever. The snow had been so deep that he could not go far into the forest, and the cold so great that they had to huddle up in the hut, burning up much of the wood the man had cut. So he could not sell much and when he counted over his money he found he would not have enough to buy food for his family.

Sorrowfully he talked with his wife, and she said, "The poor children will starve if we cannot buy them good food. We old people have been used to living on small rations, but the children need the best. What can we do?" Then the father said, "Good Father in heaven may take pity on them if I cannot feed their hungry mouths. Let us take them into the forest and leave them there, and the Good God may find food and shelter for them." With tears in her eyes the mother consented and they made up their minds to take their children to the forest in the morning and leave them there to the care of God.

The two children, however, had not gone to bed for very hunger, and so they overheard what father and mother were talking about. Gretel wept bitterly, and said to Hänsel, "What will become of us?" "Be quiet, Gretel," said he; "do not cry—I will soon help you." And as soon as their parents had fallen asleep he got up, put on his coat, and, opening the back door, slipped out. The moon shone brightly, and the white pebbles which lay before the door seemed like silver pieces, they glittered so brightly. Hänsel stooped down and put as many in his pockets as they would hold; then going back he said to Gretel, "Be comforted, dear sister, and sleep in peace; God will not forsake us." And so saying he went to bed again.

The next morning, before the sun rose, the mother went and awakened the two children. "Come," she said, "we are going into the forest to chop wood." But she could hardly speak for the tears which welled up in her eyes and nearly choked her. Yet, she smiled at the children and helped them dress. Then she gave them each a piece of bread, saying, "There is something to eat for your dinner; do not eat it before the time for there is nothing else." Gretel took the bread in her apron, for Hänsel's pockets were full of pebbles; and so they all four set out upon their way. When they had gone a little distance, Hänsel stood still and peeped back at the house; and this he repeated several times, till his father said, "Hänsel, what are you peeping at?" "Ah, father," said Hänsel "I am looking at my white cat sitting on the roof of the house, and trying to say good-bye." "You little fool," said the mother, "that is not the cat; it is only the sun shining on the white chimney." But in reality Hänsel was not looking at the cat; but every time he stopped he dropped a pebble out of his pockets upon the path.

When they came to the middle of the forest, the father told the children to collect dry wood, and he would make them a fire so that they would not be cold. So Hänsel and Gretel gathered together quite a little mountain of twigs. Then they set fire to them; and as the flame burnt up high, the mother said, "Now, children, lie down near the fire and rest yourselves, whilst we go into the forest and chop wood. When we are ready we shall come and call for you."

Hänsel and Gretel sat down by the fire, and when it was noon, each ate a piece of bread, and because they were tired they lay down to sleep. When they awoke it was quite dark, and Gretel began to cry. But Hänsel tried to comfort her by saying, "Wait a while till the moon rises, and then we shall quickly find the way home." The moon soon shone forth, and Hänsel, taking his sister by the hand, followed the pebbles which glittered like new coins of silver, and showed them the path. All night long they walked on, and as day broke they came to their parents' house, and knocked at the door. When mother opened it and saw the children, she broke out crying and hugged and kissed them, and the father came and hugged and kissed them, for both had been grieving about them.

But after a while, when hunger was again the daily guest in the man's house, and the children were fading away from lack of food, the children once more overheard their father saying to their mother, one evening, "Everything is again eaten up; we have only one half of a loaf of bread left, and then the children will starve. Shall we not try again to commit them to the grace of God, if he would feed them? We cannot keep them alive." And the mother said, with many sobs, "Yes, we shall take them deeper into the woods so that they may not find their way out."

Again the children had heard every word they said, as they lay awake from hunger. And as soon as the old people went to bed Hänsel slipped out thinking to find some more pebbles. But when he came out, there was no moon shining, and everything was dark, and he could not find any pebbles. So he went back, and comforting Gretel, he said, "Do not cry; sleep in quiet; the Good God will not forsake us."

Early in the morning the mother came as before, and took them out of bed, helping them to dress, and kissing them again and again, and gave them each a piece of bread, much smaller than the first time. On the way Hänsel broke his in his pocket, and, stopping every now and then, dropped a crumb upon his path. "Hänsel, why do you stop and look about?" asked his father, "keep in the path." "I am looking at my little dove," said Hänsel, "nodding a good-bye to me." "Nonsense," said the mother, "that is not a dove, but only the sun shining on the chimney." But Hänsel kept on dropping crumbs as he went along.

The father led the children deep into the woods, where they had never been before, and there making a big fire, he said to them, "Now sit down here and rest, and when you are tired you may sleep a while. When we have chopped down all the wood we need we shall come and fetch you."

When noon came Gretel shared her small piece of bread with Hänsel who had strewn his on the path. But they were very hungry, and they were so weak that they fell asleep. When they awoke in the dark night, and nobody had come to fetch them, Hänsel again comforted his sister, saying, "Only wait, Gretel, till the moon comes out, then we shall see the crumbs of bread I dropped, and they will show us the way home." At last, very late, the moon came out and shone brightly, but they could not see any crumbs. For the thousands of birds which had been flying about in the woods and fields had picked them all up. Hänsel kept saying to Gretel, "We will soon find the way;" but they did not, and they walked the whole night long and the next day, but still they did not come out of the forest; and they were so hungry, for they had had nothing to eat but the berries which they found upon the bushes. Soon they were so tired that they could not drag themselves along, so they lay down under a tree and went to sleep.

It was now the third morning since they had left their father's house and they still walked on; but they only got deeper and deeper into the forest, and Hänsel saw that if help did not come very soon they would die of hunger. All of a sudden they saw light gleaming through the dark forest, and when they went to follow its lead, they came to a clearing where the sun shone brightly. And the warmth of the sun's rays made them feel happier right away. And then they saw, right in the middle of the field, a little cottage, and when they went close up to it they saw that it was made of gingerbread and cookies, and the window-panes were made of clear sugar. Were the children not delighted! Think of what *you* would have felt if you would have come onto such a sweet kind of a cottage, all made up of cookies and candies! I don't think you would have to be very hungry to take a bite right away!

"Now," said Hänsel, "we shall have a glorious feast. I will eat a piece of the roof, and you can eat the window." So Hänsel reached up and broke a piece off the roof, in order to see how the gingerbread tasted, while Gretel stepped up to the window and began to break it. Then a voice called out of the cottage, "Tip-tap, tip-tap, mouse, who is eating off my house?" And the children answered, "The wind of the air, it does not care!" and they went on eating they were so hungry. Hänsel thought the roof tasted very nice, and so he tried a piece of the wall, and gave Gretel a piece of the roof to eat, and they sat down on the ground contentedly. Just

then the door opened, and an old woman, walking on crutches, came out. Hänsel and Gretel were so frightened they dropped the pieces of cake and gingerbread they had in their hands; but the old woman, nodding her head, said, "Ah, dear children, what has brought you here?" And when they had told her, she took them both by the hand and led them into her cottage. A good meal of milk and pancakes, with honey, apples and nuts, was spread on the table, and in the back room there were two nice little beds, covered with white, where Hänsel and Gretel lay down, and thought themselves in heaven. But the old woman was really a bad witch who wanted the children to serve her, and the woods around the cottage was an enchanted forest through which she lured children her way, and the little cottage was not really made of cakes and sugar, but changed back to wood and glass as soon as the children were asleep.

Early the next morning, the witch waked up the children with words as rough as they had been sweet the evening before. And she shook them, and said, "Get up, you lazy things, do you think you can sleep forever? Get up and into your clothes. Do you think that I will feed you and give you a bed to sleep in for nothing? I will show you! You will work for me for all you're worth!"

Now, the poor children, being so little, had never worked hard in their short lives. But before they had any breakfast, the old witch had Gretel make the fire, and sweep the rooms, and dust and do all kinds of things until she ached all over; and Hänsel had to chop and fetch the wood, and feed the chickens, and milk the cow, and gather the eggs, until he nearly dropped. Then, at last, she gave them something to eat, and it was not quite as good as the meal of bread and honey the evening before, believe me. But the children ate, and then had to go back to their work.

Well, indeed, the old witch made them work. Hänsel had to work in the garden, weeding the beds of flowers and vegetables, and hoeing the potatoes, and sifting the earth; and he had to take the cow out to the pasture, and drive her home, and feed her, and water her, carrying a big pail which was much too heavy for him. And poor Gretel had to keep the house clean, and scrub, and wash the dishes, and clean the vegetables, and peel the potatoes, and watch the fire in the stove, until she was so tired, just like Hänsel, that both just dropped into bed in the evening and fell asleep before they knew how to count one, two, three.

So this went on day after day, and week after week, and the children were very unhappy. They had plenty to eat, that was true, but they would rather be hungry, and home with their dear parents, than live here with the old witch, serving her like slaves. Yet, they did not know how to get out of the enchanted forest, and they thought they could not find the way home.

At last, they became so homesick that they resolved to try to get away, come what might. And so one morning, when the old witch was busy in the rear of the garden looking after her potatoes and berry-bushes, they slipped quietly out of the front door and began to run. They thought the witch, as she walked on crutches, would not catch them if they were running fast. But they had not run very far, when they looked back and saw the old witch coming after them, riding on one of her crutches as if it were a horse. And she came nearer and nearer and they became very much afraid. But they ran on, and soon came to a large piece of water. "We cannot get over," said Hänsel; "I can see no bridge at all." "And there is no boat either," said Gretel, "but there swims a white duck, I will ask her to take us over;" and she sang:

"Little Duck, good little Duck,
Gretel and Hänsel, here we stand;
There is neither boat nor bridge,
Take us on your back to land."

So the duck came to them, and Hänsel sat himself on, taking his sister in his lap, and both were happily carried over to the other side. But the witch had to stop when she came to the water, for this was the end of her enchanted forest, and she could not get across, and the duck would, of course, not carry her over; so she had to go back to her cottage and do her work alone.

But the children, when they had come to the other side, found that they were in a part of the forest which they knew. So they began to shout, "father, mother, we are here!" First there was no answer. But the parents had long been wishing they had not sent the children away; they were longing for them and could not be happy without them. And so they had gone every day into the woods, calling for them, and searching for them. But they could not find them, and they had to return home every night sadder than the night before.

But it so happened that they had just started out again to search for their dear children when they thought they heard someone call, "father, mother!" and they ran, but the sound was so faint and far away that they could not tell where it came from. But just then, Hänsel and Gretel called again, "father, mother, here we are!", and it sounded nearer. And then the father and mother began to shout, "Hänsel, Gretel, where are you?"—and the children answered, "Here we are!" And so, after much shouting and running, at last they came together, and you ought to have seen them rush into each other's arms, and the hugging and kissing and crying, and hugging and kissing and crying again, until they were too tired to do any more.

Then they went home in great happiness. And Hänsel and Gretel told them all about their stay with the old witch, and how they had learned to do so many things. And Hänsel, after this, was able to help his father, gathering up the wood father had chopped, and loading it on the wheelbarrow. So father could sell more in the village and earned more money; after a while, Hänsel even wheeled the barrow alone and sold the wood so that the father could stay in the forest chopping. And Gretel helped her mother in the house. By and by, they had some hens, and sold the eggs; and then they had a cow, and her milk, and sold butter and cheese. The children helped their parents in all this, and so they were not so poor any more, and their sorrows were ended. So they lived happily together for ever after.

THE FROG PRINCE

Once upon a time there lived a king and a queen who had a young daughter who was very beautiful. Near the castle of this king was a large garden, and in the midst of it stood an old, old oak tree, and beneath its branches splashed a little fountain. On a warm day, the young princess would like to run off to this garden and sit down in the shade of the old tree by the side of the fountain. With her she brought a golden ball which was her favorite plaything; and she would amuse herself by throwing the ball up in the air and catching it.

Now, one day it happened that this golden ball which the king's daughter threw up in the air, did not fall down into her hand but on the grass, and from there it rolled past the girl into the fountain. The water was so deep that no one could see the bottom, and when the princess saw that her ball had disappeared in the deep water she began to cry, and cried louder and louder. All of a sudden, a voice called to her, "Why do you weep, O king's daughter? What has happened to you?" She looked around to the spot whence the voice came and saw a big Frog stretching his ugly head out of the water. "Ah! you old water-paddler," said she, "was it you that spoke? I am weeping for my golden ball which has slipped away from me into the water."

"Be quiet, and do not cry," answered the Frog; "I can help you. But what will you give me if I fetch your plaything up again?"

"What will you have, dear Frog?" said she. "My dresses, my pearls and jewels, or the golden crown which I wear?"

The Frog answered, "Dresses, or jewels, or golden crowns are not for me. But if you will love me, and let me be your companion and playfellow, and sit at your table, and eat from your little golden plate, and drink out of your cup, and sleep in your little bed—if you will promise me all this, then I will dive down and fetch up your golden ball."

"Oh, I will promise you all," said she, rashly, "if you will only get me my golden ball." But she said to herself, "What is the silly Frog chattering about? How can he play and eat and sleep with me? Let him stay in the water where he belongs." But the Frog had dived under the water, and presently he swam up again with the ball in his mouth, and threw it on the grass. The king's daughter was full of joy when she again saw her beautiful plaything, and, taking it up, she ran off immediately. "Stop! stop!" cried the Frog, "take me with you! I cannot run as fast as you can." But all his croaking was useless; although he called loud enough, the princess did not hear it, she soon forgot the poor Frog and ran home to the palace.

The next day, when the king's daughter was sitting at the table with her father and mother and all his courtiers, and was eating from her own little golden plate, something was heard coming up the marble stairs, splish-splash, splish-splash; and when it arrived at the top, it knocked at the door, and a voice said, "Open the door, you daughter of the king!" So she rose and went to see who it was that called her; but when she opened the door and caught sight of the Frog, she shut it again quickly, and sat down at the table, looking quite pale. But the king saw that her heart was beating violently, and asked her whether it were a giant who had come to fetch her away who stood at the door. "Oh, no!" answered she; "it is no giant, but an ugly Frog."

"What does the Frog want with you?" asked the king.

"Oh, dear father, when I was sitting yesterday playing by the fountain, my golden ball fell into the water, and this Frog fetched it up again because I cried so much; but first, I must tell you, he pressed

me so much that I promised him he should be my companion. I never thought that he could come out of the water, but somehow he has jumped out, and now he wants to come in here."

At that moment, there was another knock, and a voice said:

"King's daughter, fairest,
Open the door!
Hast thou forgotten
Thy promises made
At the fountain so clear
'Neath the oak-tree's shade?
King's daughter, fairest,
Open the door!"

Then the king said, "What you have promised, that you must do; go and let him in." So the princess went and opened the door, and the Frog hopped in after her right up to her chair; and as soon as she was seated, the Frog said, "Take me up" —but she hesitated so long that at last the king ordered her to obey. And as soon as the Frog sat on the chair he jumped onto the table and said, "Now push your plate near me, that we may eat together." And she did so, but as everyone saw, very unwillingly. The Frog seemed to relish his dinner very much, but every bit the king's daughter ate nearly choked her. At last the Frog said, "I have satisfied my hunger and feel very tired from my long trip from the fountain; will you carry me upstairs now into your chamber, and make your bed ready that we may sleep together?" At this speech the king's daughter began to cry, for she was afraid of the cold Frog, and dared not touch him; and besides, he really wanted to sleep in her own beautiful clean bed.

But her tears only made the king angry, and he said, "He who helped you in the time of your trouble must not now be despised and cheated!" So she took the Frog up with two fingers, and put him in a corner of her chamber. But as she lay in her bed, he crept up to it and said, "I am so very tired that I shall sleep well; do take me up or I will tell your father." This speech made the princess only more afraid, and she became very angry and she picked up the Frog, and threw him with all her strength against the wall, saying, "Now, will you be quiet, you ugly Frog!"

But as he fell he was changed from a Frog into a handsome Prince with beautiful eyes. He told her how he had been changed into a Frog by an evil witch, and how he could only be saved by her alone when she took him into the palace and allowed him to come with her as her companion. On the morrow, they would go together into his own kingdom. So they were married and lived happily ever after.

THUMBLING

Once upon a time there lived a peasant who used to sit every evening by the hearth, poking the fire, while his wife spun. One night he said, "How sad it is that we have no children! Everything is so quiet here, while in other houses it is so noisy and merry."

"Ah!" sighed his wife, "if we had but only one, and were he no bigger than my thumb, I should be content and love him with all my heart."

After a time, a child was born to her who, although he was perfectly formed in all his limbs, was not bigger than a man's thumb. So they said to one another that it happened just as they had wished; and they called the child "Thumbling". Every day they gave him all the food he could eat; still he did not grow a bit, but remained exactly the height he was when he was first born. He looked about him, however, very knowingly, and showed himself to be a brave and clever fellow who would make the best of everything he did.

One morning the peasant was making ready to go into the forest to fell wood, and said, "Now I wish I had some one who could follow me with the cart."

"Oh, father," exclaimed Thumbling, "I will bring the cart. Don't you trouble yourself; it shall be there at the right time."

The father laughed at this speech, and said, "How shall that be? You are much too small to lead the horse by the bridle."

"That matters not, father. If mother will harness the horse, I can sit in his ear, and tell him which way to take."

"Well, we will try for once," said the father; and so, when the hour came, the mother harnessed the horse and placed Thumbling in his ear, and told him how to guide it. Then he set out quite like a man, with "Git up!", and "Hoah, boy!", and the cart went on the right road to the forest. Just as it turned a corner, and Thumbling called out, "Steady, steady!" two strange men met it; and one said to the other, "My goodness! what is this? Here comes a cart, and the driver keeps calling to the horse, but I can see no one." "That cannot be all right," said the other; "let us follow and see where the cart stops."

The cart went on safely deep into the forest and straight to the place where the wood was cut. As soon as Thumbling saw his father, he called to him, "Here, father; here I am, you see, with the cart; just take me down." The peasant caught the bridle of the horse with his left hand, and with his right took his little son out of its ear, and he set himself merrily on the straw. When the two strangers saw the little fellow, they knew not what to say for astonishment; and one of them took his companion aside and said, "This little fellow might make our fortune, if we could exhibit him in the towns. Let us steal him, for his father would never give him up."

So while Thumbling was asleep in the hay after his long ride, and his father was busy with his cart, the two strangers softly stole up to where the little fellow slept, and with a quick motion one of them slipped him into his pocket. Then they ran off. Thumbling woke up and shouted for his father; but his father could not hear him as the cart-wheels were squeaking and the boy's cries were muffled in the pocket. Towards evening, the two men sat down under a tree to rest. While they were sitting there, Thumbling quietly crawled out of the pocket and let himself down to the ground. Then quickly he ran off and crept into a mouse-hole where they could not see him. "Good evening, masters," said he, "you can go home without me;" and with a chuckle he crept into his hole still further. The two men poked their sticks into the hole, but all in vain, for Thumbling only went down further; and when it had grown quite dark, they were obliged to return home full of anger and disappointment.

As soon as Thumbling knew they were off, he crawled out of his hiding place, and said, "How dangerous it is to walk in this field in the dark; one might soon break one's head or legs!" So saying he looked around, and by great good luck he saw an empty snail-shell. "God be praised!" he exclaimed, "here I can sleep securely;" and in he went

In the morning, when he woke up, he made up his mind to go back to his home. But for his little legs the way was very long, and he did not walk very far before he was quite tired again. He saw a haystack in a meadow near by, crept in and fell asleep quite readily. He had had so many adventures, had he not? that we may understand why he was such a sleepyhead. Indeed, the hay was so soft and warm, and smelled so sweet, that he slept quite soundly. The empty snail-shell had not been so soft and cozy as you may well believe, and had not smelled so good, either. He slept all night through.

Now, the maid of the farm to which the haystack belonged, got out of bed at dawn the next morning to feed the cow. Her first walk was to the haystack from which she took a bundle of hay, and just the bundle where poor Thumbling lay asleep. He still slept so soundly, however, that he knew nothing about it, and only awoke when he was in the cow's mouth. "Ah, goodness!" exclaimed he, "how came I into this mill!" But soon he saw where he really was. Then he took care not to come between the teeth, but presently slipped quite down the cow's throat. "There are no windows in this room," said he to himself, "and no sunshine, and I brought no light with me." Overhead his quarters still seemed worse, and, more than all, he felt his room growing narrower as the cow swallowed more hay. So he began to call out in terror, as loudly as he could, "Bring me no more food! I do not want any more food!" Just then the maid was milking the cow, and when she heard the voice without seeing anything, she was so frightened that she slipped off her stool and overturned the milk-pail. In great haste she ran to her master, the farmer, saying, "Oh, master, the cow has been speaking!"

"You are crazy," he replied, gruffly; but still he went himself to the stable to see what was the matter, and scarcely had he stepped in when Thumbling began to shout out again, "Bring me no more food, bring me no more food!" This terrified the farmer himself and he thought an evil spirit had entered into his cow, and so he ordered her to be killed. As soon as that was done and they were cutting up the carcass, a fresh accident befell poor Thumbling. For a wolf who had been attracted by the fresh meat sneaked near, made a snatch at the cow, and tore away the part where Thumbling was stuck fast. However, the little man did not lose courage, but as soon as the wolf had swallowed him he called out from inside, "Oh, Mr. Wolf, I know of a fine meal for you!" "Where is it to be found?" asked the wolf. "In the house by the meadow; you must creep through the gutter, and there you will find cakes, and bacon, and sausages, as many as you can eat," replied Thumbling, describing exactly his father's house.

The wolf did not wait to be told twice, but in the night crept in and ate away to his heart's content, much to the discomfort of Thumbling whose quarters inside the wolf became more and more crowded, just as they had been inside the cow. But Thumbling made the best of it as he well knew he would soon be saved. When the wolf had finished eating he tried to escape by the way he had entered, but as he was now fat and full you may know that the hole was no longer large enough for him. He could not squeeze himself through, try as much as he might. Thereupon Thumbling who had reckoned on this, began to

make a tremendous noise inside the poor wolf, screaming and shouting as loud as he could. "Will you be quiet," said the wolf; "you will awake the people." "Eh, what!" cried the little man, "since you have satisfied yourself, it is my turn now to make merry;" and he set up a louder howling than before. At last his father and mother awoke and came to the room and looked through the chinks of the door; and as soon as they saw the damage the wolf had committed and the wolf crouching in a corner, they ran and brought, the man his axe, and the woman the scythe. "You stop behind," said the man as they entered the room; "if my blow does not kill him, you must give him a cut with your weapon and chop off his head if you can."

When Thumbling heard his father's voice, he called out, "Father dear, I am here, in the wolf's body." "Heaven be praised!" said the man, full of joy, "our dear child is found again;" and he bade his wife take away the scythe, lest it should do any harm to his son. Then he raised his axe and gave the wolf such a blow on his head that he fell dead; and taking a knife, he cut him open and the little fellow, his son, jumped out. "Ah," said his father, "what worry we have had about you!" "Yes, father," replied Thumbling, "I have been travelling a great deal about the world. Heaven be praised! I breathe fresh air again."

"Where have you been, my son?" he inquired.

"Once I was in a mouse's hole, once inside a cow, and lastly inside that wolf; and now I will stop here with you," said Thumbling.

"Yes," said the old people, "we will not let you get away from us for all the riches in the world;" and they hugged and kissed him in their great joy. Then they gave him plenty to eat and to drink as he was very hungry, and had new clothes made for him, for his old ones, don't you think so?—were worn out with travelling.

GULLIVER AND THE LILIPUTIANS

Once there lived a lad in England who was very fond of the sea. He would watch the ships come in and out of the harbor, and at last he hired himself out to be a sailor on one of the ships. In those times they had not steamships with choo-choo engines, and smokestacks, oh no! but only vessels that were driven by the wind blowing against their sails; and they were so much smaller than the big steamers you know that the winds often played with them and drove them hither and thither, and sometimes threw them on the rocks and smashed them all to pieces.

Well, this young man, Gulliver was his name, was on one of these little sailships when a big storm came and hurled the ship hither and thither, and at last broke it up against the rocks of a strange land. All on board, the captain, and the sailors, and the boys, perished in the sea. Only Gulliver escaped. A big wave threw him upon the land, and the shock was so great that he knew nothing of himself He lay on the shore like one dead. Yes, he did.

At last he awoke. But what was his wonder and fright when he saw the sun shining in his eyes, and knew he was alive, and wanted to rise up, to find that he could not move. No, not even his hand, or his little finger. He could not turn his head from side to side. He just had to lie quite still. Then he heard a strange whispering all about him, and at last he felt something crawling up his side. And then, would you believe it: he saw something, or somebody, he did not know what it was, standing on his chin, looking straight into his eyes—and he did not know whether he, or the little man he saw there, must have looked more frightened. The little man was not more than six inches tall, about as long as daddy's hand, from the wrist to the tip of his long man finger. But the little man had a real head and real eyes, and was dressed like a fine gentleman, only his coat, and his trousers, and his hat, were, oh, so tiny and small. And he spoke to Gulliver in a strange language which Gulliver did not understand, and his voice was so faint that he could hardly hear him anyway.

When Gulliver tried to say that he did not understand, and to ask what it all was about, and why he could not move, the little man looked so scared, oh, so scared, and held his tiny hands to his tiny ears—yes, he even fell back and nearly broke his little neck in his fall from Gulliver's chin. For you see, Gulliver's voice must have sounded like thunder to the little man, and the breath from Gulliver's mouth like a strong wind. And so Gulliver lay there, unable to move, and did not know what to make of it. He certainly had never seen such little people before.

Then, he heard a rip-rip-rip—and he felt that he could move his left arm. Then more of rip-rip-rip, and he could move his right arm. Then more and more of rip-rip-rip, and rip-rip-rip; and at last he could move his head, and raise his shoulders, and then his body, and finally he could rise up in his whole bigness The little people had thought they might find out what had come to them, in another way.

When Gulliver had stood up, he looked about him, but he could not see anybody or anything. Just the blue sky above him. Then he looked down on the ground; he saw bushes which looked like little trees, quite perfect, but oh, so much smaller than the trees he used to know. Of course, he could not see, at first, any of the little people one of whom had been scared off his chin by his words, for they had all hidden away when they saw that big giant of a man rise up like a huge mountain. In a little while, however, when they saw that Gulliver did not do anything wicked, or violent, but just stood there, they peeped out from behind the trees, and he could see little faces and little bodies which looked too funny for anything, just like little doll babies.

When he spied them, he sat down on the ground to see them better, and talked to them in the softest tone of his voice, and smiled at them. Of course, they did not understand what he said, but they thought he looked friendly and would do them no harm. So they ventured out and at last he saw so many of them, he could hardly count them: soldiers in gay uniforms, many on horseback, and fine ladies and gentlemen all dressed up in silks and gold, and women and children—oh, you ought to have seen those children! They were so very, very tiny, not larger, some of them, than your own little finger, and even smaller—those that had been brought there in their little go-carts. Gulliver wondered at them prodigiously, yes, prodigiously. For think of it, what tiny little heads they had, and such tiny little eyes, and such tiny little noses, and such tiny little mouths and lips, and such tiny little tongues, and such tiny, tiny, tiny little teeth! And their tiny little hands and tiny little fingers, and tiny little feet. And their clothes, such tiny little coats, and trousers, and skirts, and stockings and shoes!

And you ought to have seen the horsemen on their fiery steeds! Well, they were so small and tiny that it was quite a jump when one of them vaulted across Gulliver's left foot which he had moved too far over! A whole regiment of cavalry marched through between Gulliver's legs—as through a big, tall arch.

Then Gulliver saw what had bound him tight: millions and millions of little, fine threads, like silk, had been woven about him, and there was a little ladder on which the little man had climbed up to his chin, lying on the ground. And he saw that all the people of the land near by had come to see the big monster that had come to them from out of the sea, and he understood that they had been afraid, and had tied him while he did not know anything of himself, and was asleep, so that he might not hurt them. And he was thankful to them that they now trusted him for he knew he must look to them like a big, *big*, BIG giant. Well, he could pick up several of them in one hand, and put them into his pocket without feeling any weight, and if he was not careful he could walk over them with his big feet and crush a dozen of them at a time. Of course, they were afraid. But he was so careful that they soon knew he would not hurt them, and they showed him all around.

And what he saw was very wonderful. He saw their little houses, with the tiny little doors and windows; and their tiny little rooms smaller than those in your own doll's house, with tiny little beds, and tables and chairs, oh, so small! And think of the tiny little plates and cups and spoons and knives and forks. Well, the carpet in one of their biggest rooms was not any bigger than your little handkerchief!

And he saw their city which looked just like one made up of the toy houses you buy in the store. Their highest steeple was not any taller than the post of mamma's bed.

And then the tiny little cows they had! When the little milkmaid had milked one there was just enough milk to fill a fair-sized thimble. Now think, how many cows they had to milk to give Gulliver just one good glass full! And their tiny little dogs and cats! And the tiny little hens—oh! you will hardly believe how tiny their little eggs were. How big do you think they were? Well, just about like peas, and you may imagine how many Gulliver could eat for his breakfast.

Yes, they had a hard time, these little people, to feed their big giant guest, but they did their best. And they built him a house. Ten thousand workmen had to work at it for oh, so many days; and they had to cut down a hundred big forests with a thousand trees in each one of them, to make the walls, and the roof. And then the house was small for Gulliver. But he made the best of it.

And they thought that Gulliver might help them in their trouble. For by this time he had learned enough of their language to understand what they said to him. And they told him of their enemies, on an island across the sea, who were coming to attack them with their big fleet of ships. Gulliver laughed when he saw the great fear of these people who had told him that they were the Liliputians.

He made them describe to him where the enemy lived, that there was a big stretch of deep sea between their own land of Liliputia and the land of the enemy. Of course, the sea looked big and deep to them, but it was not much more than a pond to Gulliver.

So he asked them for a hundred pieces of their strongest rope. Their rope, indeed, was so thin that it looked more to Gulliver like cotton thread, such as mamma uses in sewing. But he twisted every two of the pieces together so that they made a stronger thread, and then started out.

He rolled up his trousers and waded into the sea. By the shore were collected all the men, women and children of Liliputia, watching their big friend on his trip across the deep sea. They were trembling after all for they had never seen anything like it, and they did not know whether the enemy would not kill him.

At first, the water only wetted his feet, then it came up to his knee, and finally it reached his waist. But it was not any deeper than that. After he had passed the deep stretch, and was out of sight of the Liliputians, he began to rise again out of the water, as it became more shallow towards the other shore. And so, his legs began to show above the water down to the knees, then his feet only were covered, and then he came quite close to the land on the other side.

And there he saw another crowd of little people assembled on the shore, shouting and screaming in terror. For they did not know what was happening to them, seeing such a big man mountain rising from the sea. And in the harbor of their city there lay fifty warships at anchor—big ships for them, but just like the toy boats you swim in the lake, to Gulliver. And everywhere were soldiers with bows and arrows, and spears. And when they saw Gulliver they shot their arrows at him and threw their spears at him. But their arrows were only as big as pins, and their spears as long as darning needles; and neither their arms nor their bows were strong enough to harm Gulliver. Whatever of their spears and arrows reached him felt only like little pin pricks, and he did not mind them.

Then he took out of his pocket the fifty pieces of twisted string and tied one end of each to one of the enemy's warships, holding the other end in his left hand. And when he had tied them all to the fifty pieces of string he started back again, dragging the fifty warships of the enemy with him Now you ought to have seen the startled faces of the distressed enemy; and their cries and shouts and screams when they saw their big fleet of fine warships pulled away, and the soldiers with all their bows and spears could not stop Gulliver. But it served them right, for the Liliputians had done no harm to them, and the enemy just wanted to sail over and take all their goods away from them. The Liliputians only wanted to live in peace.

And so Gulliver, with the enemy's fleet in tow, waded back to Liliputia. First the water reached to his knees, then up to his waist, and then, coming up on the other side, he saw the Liliputians waiting for him on the other shore, on roofs of buildings, on the docks, and everywhere. And when they perceived Gulliver coming home to them with the mighty fleet of the enemy dragging behind him they gave a big shout of joy and welcomed him gratefully. They came to meet him, and took the arms away from the enemy soldiers, and fastened their ships to their own docks, and were happy that they could now be without fear.

They never forgot Gulliver's help but made him live in comfort while he stayed with them, and did all they could to show him how much they thought of the great help he had given them.

DAVID AND GOLIATH

A long, long time ago, when the Jews still lived in their home land of Palestine, far beyond the sea to the East, and many lands between here and there, they were sadly worried by the tribe of the Philistines who lived near by. The Jews were tilling their land in peace, and were tending their flocks; but the Philistines set upon them to drive them away or at least to take their acres and cattle and sheep.

And so the Philistines came with a mighty army of soldiers, and among them was a giant, by the name of Goliath, as tall as the tallest tree, and as strong as ten oxen. And he challenged the Jews to send one of their best men to fight with him, and whoever should win against the other should rule the land. If the Jew should win then the Philistines would go home and leave the land of the Jews in peace, but if Goliath should win, the Jews and their land should be the property of the Philistines to do with them as they pleased. And Goliath thought, of course, that no one man, or a dozen men, from among the Jews could conquer him.

The Jews were sorely tried, for they had no man to fight with the cruel, mighty giant. No matter what reward they offered, no one would come forward to stand up against Goliath. And Goliath came forth day after day from the camp of the Philistines and shouted his challenge. When nobody came to fight him he mocked the Jews and called them cowards, and the Philistines laughed and were sure that the Jews and their land would soon be theirs.

The tidings of the giant's challenge had gone through the land, and everybody trembled. But there was a brave shepherd's boy, by the name of David. When he heard of the bold threat of the Philistines, he set out to the camp of the Jews and offered to fight Goliath. The general of the Jews took pity on the young lad and warned him, and said, "The evil-minded foe will kill you." But David said, "I trust in the Lord, the God of our Fathers. He will not let me perish in the fight for His people against the wicked foe!"

And so, when Goliath stepped forth the next day to challenge the Jews, David came from their camp and placed himself in front of the boastful giant. When Goliath saw the little lad, he laughed and mocked him, saying "Am I a dog that you come to me with a stick?" For David had his shepherd's staff in his hand. He also had a sling-shot such as he would hurl stones with at the wild foxes that would disturb his sheep. And David said, "You come with a sword, and a spear and a shield. But I come in the name of the Lord, and you shall know that the Lord saveth not with sword and spear, and that he will give you today into my hand."

And when Goliath strode forth, David put his hand in his bag and took out a stone, and slang it, and smote the Philistine in his forehead. And Goliath fell upon his face to the earth. Then David rushed forward, and stood over the giant, and took Goliath's sword in his two hands and slew him, cutting off his head. And when the Philistines saw their champion was dead, they fled.

But the Jews rejoiced, and shouted, and David took the giant's head and brought it before Saul, the king of the Jews. And his praise was great.

THE LITTLE FIR TREE

In a meadow, right by a forest of many, many trees, and on the side of a path which led through the meadow and through the woods, stood a little fir tree. It was very little, indeed, and quite alone, as there was no other fir tree near. On its tiny branches, there were many, many needles—for you know, fir trees wear a prickly kind of leaves. I am sure you have often pricked your little hands when you tried to pick a nut, or an apple, or some candy sticks, or a present, from your Christmas tree—for the fir trees make the nicest, sweetest, best smelling, Christmas trees. The leaves are just like needles, and they are a dark green, and do not fall off in winter time when all the other leaves fly off, dressing themselves in all sorts of nice colors: brown, and orange, and yellow, and red, and dance about, and at last lie on the ground, covering the earth and keeping it warm throughout the time of ice and snow.

Well, this little fir tree was proud enough of its fine, green needles which looked so pretty when the other trees in the forest were bare, and the snow was white on the ground. But in summer time, when all the other trees were green also, and the wind played with their leaves, rustling and singing, it thought how pleasant it would be to look just like them. So he wished and wished, and thought and thought. And what do you think, happened? You know that was the time when wishes came true. And one morning, when the little fir tree woke up, he found himself covered with leaves just like the other trees, and and he was very happy. But in the afternoon, there came a goat along the path; and when he saw the little tree all decked out in green, juicy leaves, swip, swap, crunch—he just gobbled them all up, tearing at the little tree's branches so that he almost pulled them off, too, and left the poor little tree all bare. You know, the goat could not reach up to the other big trees, but the little tree was just his size.

So the little tree had no leaves at all, and it was very unhappy. "Oh!" it said, "I wish I had leaves of gold; the goat would not eat them, I am sure, and they would be so glorious and beautiful, and I would be quite a wonderful tree." So, when it woke up the next morning—well, you would have been astonished to see the little tree all covered with leaves of gold. They were so finely shaped, with little notches along the edges, and tiny veins branching out from stem to point, that they looked as if the most skillful goldsmith had fashioned them. And the little tree was very happy and proud.

But in the afternoon, there came a man along the path, travelling through the country. And when he came to the little tree and saw the beautiful golden leaves, he said, "Oh! what a great treasure." And he picked the leaves off the tree, one and all, and stored them in his pocket, and in a bag which he was carrying, running away as fast as he could—well, not very fast, to be sure, for the gold was quite heavy to carry. And there was the little tree, without leaves, all bare, again. And it was very much distressed, you can believe me, and it thought and thought, and then wished and wished—and what do you think it wished for now? It wished that

it had leaves of glass. They would look so pretty, it thought, and clink and clank and tinkle together, making wonderful music when the wind would blow.

The next morning, when the little tree woke up, behold! it was covered with leaves of clear glass! And the glass leaves clinked and clanked and tinkled and made wonderful music when the wind blew, and when the sun shone on them they looked like diamonds, and were so brilliant that you could not look at them, the light would blind you so.

But the wind which had been playing with the glass leaves, found the game so pleasant that it blew harder and harder to make more music. And at last, it blew a storm that rushed across the meadow, and bent the trees in the forest all over. And the poor glass leaves were swept off their branches, one by one, and altogether, until they lay broken and shattered in the grass. Then the little tree had no more leaves, and stood as bare as before. And it was very unhappy.

Then it thought of the pretty dark-green needles it had had before, and how sweet they smelled, and how fine they looked in winter when all the other trees stood bare and shivering in the cold, and it thought and it thought, and it wished and it wished, "Oh, if I could only have back my needles!"

And the next morning, when it awoke, the little tree laughed and laughed and laughed. And why did it laugh? It had back all its needles and looked just as it had looked before it had been wishing for other kinds of leaves And it never grumbled again, and lived to be a big tree, with a tall straight trunk—and, who knows, some day Santa Claus may bring it to your house, all decked out in tinsel and goodies, and be your wonderful, lovely Christmas tree.

THE FROG AND THE OX

"Oh, father," said a little frog to a big frog, sitting by the side of a pool, "I have seen such a terrible monster! It was as big as a mountain, with horns on its head. It had a long tail, and hoofs divided in two."

"Tush, child, tush," said the old frog. "That was only Farmer White's ox. I can easily make myself as big; just you see." And he blew himself out. "Was he as big as that?" he asked.

"Oh, much bigger than that," said the young frog.

Again the old frog blew himself out, and asked the young frog if the ox was as big.

"Bigger, father," was the reply. "Much bigger."

Then the old frog took a very deep breath, and blew, and swelled, and swelled and blew—until he burst!

HORNS

One time a little boy went out on a farm with his mother. He had never been on a farm before, and everything seemed very strange to him. The sheep and the cows and the pigs were all very strange. He thought the cows were the strangest of all, because they had such queer things on their heads. He didn't know what they were, so one day he asked the old farmer about them. The farmer told him they were horns.

One evening soon after that the cows began to moo and bellow and set up an awful noise The little boy was very much excited. He ran to the house as fast as he could and called to his mother, "Oh, mother, mother, come and see the cows. They are all blowing their horns."

THE FOX AND THE CROW

A crow had stolen a piece of meat. She flew to a tree and perched on a high branch. A fox saw her and wanted the piece of meat. So he sat down at the foot of the tree and spoke thus to the crow: "How handsome you are! What a glossy black your feathers show! And what a beautiful shape! The crow was very much flattered and listened with pleasure to the words of the wily fox. "I am sure," the fox went on, "you have as beautiful a voice as you have a body Will you not sing a little song for me?" Anxious to please the fox the crow opened her mouth to sing—but, of course, she would only caw. But in opening her mouth she dropped the piece of meat which the fox quickly snapped up. He ran away laughing at the silly crow.

THE FOX AND THE GRAPES

A fox was very fond of grapes. One day he came to a garden where he saw bunches of beautiful, sweet, ripe grapes hanging from a vine which had climbed up a high trellis. His mouth began to water and he wanted those grapes. He tried to jump up to catch them with his mouth; but they were too high up. He tried to climb up the trellis, but he did not know how to climb. He simply could not reach them, trying whatever tricks he could think of. At last he turned away, disappointed, but comforted himself by saying: "Well, the grapes are sour, anyway."

THE SHEPHERD BOY AND THE WOLF

A shephered boy was watching a flock of sheep near the village where he lived. There lived some wolves in the forest near by, and he had been told to call for help as soon as he saw any wolves coming to steal a sheep. The boy thought he would try whether the men from the village would really come in answer to his call. So one day, he called out: "A wolf! a wolf!" And quickly the men came running with sticks and guns to drive the wolf away or kill him. Then the boy laughed and said, "Oh I only called out for fun; there is no wolf here—I wanted to see whether you would really come when I called!" The men shook their heads and went home.

As he had such fun the first time, as he thought, the boy tried the trick another time. Again he cried, "A wolf! a wolf!" This time the men came again, but not so fast, and not so many; and those that came were quite angry at having been fooled again.

Then one day, a wolf did come. But when the boy cried out, in distress, "A wolf! a wolf!", nobody came. The wolf broke into the flock, and when the boy tried to drive him away with his stick he was badly bitten. It was with great trouble that he could get his frightened sheep back to the village.

THE FARMER AND HIS SONS

A farmer was about to die. His sons were not so ready to work as he had been, and so he was afraid they would not pay attention to the farm after his death, thinking they had money enough. He called his sons to his bedside and said: "My sons there is a treasure hidden in one of my vineyards. Find it!" The sons, after his death, took their spades and carefully dug over every part of their land. They found no treasure of gold, but the land, well turned over, gave them a wonderful and rich crop. They now understood what their father had meant; the treasure had come to them through their work.

THE LION AND THE MOUSE

A lion was asleep in his cave. A mouse, running over his face, awakened him. He was angry, and rising up was about to kill the mouse, when the mouse begged him to spare his life. "If you will let me go, I will surely be thankful for your kindness and help you when you are in danger," he said. The lion laughed and let him go. But he did not believe that the small mouse could ever help him, the big lion.

But shortly after this it happened that the lion was caught in a net by the hunters who bound him with strong ropes to the ground. He roared in rage and anguish, and the mouse, recognizing his voice, ran toward him. When he saw the lion's plight, he gnawed the rope with his sharp teeth and set the lion free. The lion was very grateful. The little mouse had been able to repay the big lion's kindness.

The Dog and the Shadow.—It happened that a Dog had got a piece of meat and was carrying it home in his mouth to eat it in peace. Now on his way home he had to cross a plank lying across a running brook. As he crossed, he looked down and saw his own shadow reflected in the water beneath. Thinking it was another dog with another piece of meat, he made up his mind to have that also. So he made a snap at the shadow in the water, but as he opened his mouth the piece of meat fell out, dropped into the water and was never seen more.—*Beware lest you lose the substance by grasping at the shadow.*

The Town Mouse and the Country Mouse.—Now you must know that a Town Mouse once upon a time went on a visit to his cousin in the country. He was rough and ready, this cousin, but he loved his town friend and made him heartily welcome. Beans and bacon, cheese and bread, were all he had to offer, but he offered them freely. The Town Mouse rather turned up his long nose at this country fare, and said: "I cannot understand, Cousin, how you can put up with such poor food as this, but of course you cannot expect anything better in the country; come you with me and I will show you how to live. When you have been in town a week you will wonder how you could ever have stood a country life." No sooner said than done: the two mice set off for the town and arrived at the Town Mouse's residence late at night. "You will want some refreshment after our long journey," said the polite Town Mouse, and took his friend into the grand dining-room. There they found the remains of a fine feast, and soon the two mice were eating up jellies and cakes and all that was nice. Suddenly they heard growling and barking. "What is that," said the Country Mouse. "It is only the dogs of the house," answered the other. "Only!" said the Country Mouse. "I do not like that music at my dinner." Just at that moment the door flew open, in came two huge mastiffs, and the two mice had to scamper down and run off. "Good-bye, Cousin," said the Country Mouse. "What! going so soon?" said the other. "Yes," he replied;—*"Better beans and bacon in peace than cakes and ale in fear."*

The Wind and the Sun.—The Wind and the Sun were disputing which was the stronger. Suddenly they saw a traveller coming down the road, and the Sun said: "I see a way to decide our dispute. Whichever of us can cause that traveller to take off his cloak shall be regarded as the stronger. You begin." So the Sun retired behind a cloud, and the Wind began to blow as hard as it could upon the traveller. But the harder he blew the more closely did the traveller wrap his cloak round him, till at last the Wind had to give up in despair. Then the sun came out and shone in all his glory upon the traveller, who soon found it too hot to walk with his cloak on.—*Kindness effects more than Severity.*

The Swallow and the Other Birds.—It happened that a Countryman was sowing some hemp seeds in a field where a Swallow and some other birds were hopping about picking up their food. "Beware of the man," quoth the Swallow. "Why, what is he doing?" said the others. "That is hemp seed he is sowing; be careful to pick up every one of the seeds, or else you will repent it." The birds paid no heed to the Swallow's words, and by and by the hemp grew up and was made into cords, and of the cords nets were made, and many a bird that had despised the Swallow's advice was caught in nets made out of that very hemp. "What did I tell you?" said the Swallow.—*"Destroy the seed of evil, or it will grow up to your ruin."*

The Hares and the Frogs.—The Hares were so persecuted by the other beasts, they did not know where to go. As soon as they saw a single animal approach them, off they used to run. One day they saw a troop of wild Horses stampeding about, and in quite a panic all the Hares scuttled off to a lake hard by, determined to drown themselves rather than live in such a continual state of fear. But just as they got near the bank of the lake, a troop of Frogs, frightened in their turn by the approach of the Hares, scuttled off, and jumped into the water. "Truly," said one of the Hares, "things are not so bad as they seem:—*There is always some one worse off than yourself."*

The Fox and the Mask.—A Fox had by some means got into the store-room of a theatre. Suddenly he observed a face glaring down on him, and began to be very frightened; but looking more closely he found it was only a Mask, such as actors use to put over their face. "Ah," said the Fox, "you look very fine; it is a pity you have not got any brains."—*Outside show is a poor substitute for inner worth.*

The Jay and the Peacock.—A Jay venturing into a yard where Peacocks used to walk, found there a number of feathers which had fallen from the Peacocks when they were moulting. He tied them all to his tail and strutted down towards the Peacocks. When he came near them they soon discovered the cheat, and striding up to him pecked at him and plucked away his borrowed plumes. So the Jay could do no better than go back to the other Jays, who had watched his behaviour from a distance; but they were equally annoyed with him, and told him—*"It is not only fine feathers that make fine birds."*

Androcles.—A slave named Androcles once escaped from his master and fled to the forest. As he was wandering about there he came upon a Lion lying down moaning and groaning. At first he turned to flee, but finding that the Lion did not pursue him, he turned back and went up to him. As he came near, the Lion put out his paw, which was all swollen and bleeding, and Androcles found that a huge thorn had got into it, and was causing all the pain. He pulled out the thorn and bound up the paw of the Lion, who was soon able to rise and lick the hand of Androcles like a dog. Then the Lion took Androcles to his cave, and every day used to bring him meat from which to live. But shortly afterwards both Androcles and the Lion were captured, and the slave was sentenced to be thrown to the Lion, after the latter had been kept without food for several days. The Emperor and all his Court came to see the spectacle, and Androcles was led out into the middle of the arena. Soon the Lion was let loose from his den, and rushed bounding and roaring towards his victim. But as soon as he came near to Androcles he recognized his friend, and fawned upon him, and licked his hands like a friendly dog. The Emperor, surprised at this, summoned Androcles to him, who told him the whole story. Whereupon the slave was pardoned and freed, and the Lion let loose to his native forest.—*Gratitude is the sign of noble souls.*

The Bat, the Birds and the Beasts.—A great conflict was about to come off between the Birds and the Beasts. When the two armies were collected together the Bat hesitated which to join. The Birds that passed his perch said: "Come with us"; but he said: "I am a Beast." Later on, some Beasts who were passing underneath him looked up and said: "Come with us"; but he said: "I am a Bird." Luckily at the last moment peace was made, and no battle took place, so the Bat came to the Birds and wished to join in the rejoicings, but they all turned against him and he had to fly away. He then went to the Beasts, but had soon to beat a retreat, or else they would have torn him to pieces. "Ah," said the Bat, "I see now—*He that is neither one thing nor the other has no friends."*

The Hart in the Ox-Stall.—A Hart hotly pursued by the hounds fled for refuge into an ox-stall, and buried itself in a truss of hay, leaving nothing to be seen but the tips of his horns. Soon after the Hunters came up and asked if any one had seen the Hart. The stable boys, who had been resting after their dinner, looked round, but could see nothing, and the Hunters went away. Shortly afterwards the master came in, and, looking round, saw that something unusual had taken place. He pointed to the truss of hay and said: "What are those two curious things sticking out of the hay?" And when the stable boys came to look they discovered the Hart, and soon made an end of him. He thus learnt that—*Nothing escapes the master's eye.*

The Peacock and Juno.—A Peacock once placed a petition before Juno desiring to have the voice of a nightingale in addition to his other attractions; but Juno refused his request. When he persisted, and pointed out that he was her favorite bird, she said:—*"Be content with your lot; one cannot be first in everything."*

The Ant and the Grasshopper.—In a field one summer's day a Grasshopper was hopping about, chirping and singing to its heart's content. An Ant passed by, bearing along with great toil an ear of corn he was taking to the nest.

"Why not come and chat with me," said the Grasshopper, "instead of toiling and moiling in that way?"

"I am helping to lay up food for the winter," said the Ant, "and recommend you to do the same."

"Why bother about winter?" said the Grasshopper; "we have got plenty of food at present." But the Ant went on its way and continued its toil. When the winter came the Grasshopper had no food, and found itself dying of hunger, while it saw the ants distributing every day corn and grain from the stores they had collected in the summer. Then the Grasshopper knew—*It is best to prepare for the days of necessity.*

A LITTLE BOY'S WALK

A little boy went walking
  One lovely summer's day:
He saw a little rabbit
  That quickly ran away.

He saw a shining river
  Go winding in and out,
And little fishes in it
  Were swimming all about.

And slowly, slowly turning,
  The great wheel of the mill;
And then the tall church steeple,
  The little church so still.

The bridge above the water;
  And when he stopped to rest
He saw among the bushes
  A wee ground-sparrow's nest.

And as he watched the birdies
  Above the tree-tops fly,
He saw the clouds a-sailing
  Across the sunny sky.

He saw the insects playing;
  The flowers that summer brings;
He said, "I'll go tell mamma!
  I've seen so many things!"

(From "*Finger Plays*," by Emilie Poulsson. Music by Cornelia C. Roeslee. Lothrop, Lee & Shepard Co., Boston.)

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Little Boy Blue, come blow your horn,
The sheep's in the meadow, the cow's in the corn.

Where's the little boy that tends the sheep?
He's under the haystack, fast asleep.

Go wake him, go wake him. Oh! no, not I;
For if I wake him, he'll certainly cry.

******

Once I saw a little bird
  Come hop, hop, hop;
So I cried, "Little bird,
  Will you stop, stop, stop?"
And was going to the window
  To say, "How do you do?"
But he shook his little tail
  And far away he flew.

******

Peter, Peter, pumpkin-eater,
Had a wife and couldn't keep her;
He put her in a pumpkin-shell,
And there he kept her very well.

THE BUNNY

See the pretty Bunny
  With his big long ears!
He doesn't seem to see us—
  But don't you think he hears?
I should think he must,
  With his ears so long!
But I guess the reason he's so still
  Is 'cause he likes my song.

THE KITTEN AND THE BOW-WOW

The little kitten goes, "Me-yow;"
The little dog goes, "Bow-wow-wow!"
  If they should both together sing,
  Wouldn't it be a funny thing!
Me-yow!
Bow-wow-wow!
  What a funny, funny thing!

MR. ROOSTER AND MRS. HEN

Mister Rooster does nothing but crow,
He never lays an egg.
  But Mistress Hen lays an egg ev'ry day,
  And feels so glad because she can lay
  That she sings, "Cut, cut, ca-da-cut!"
And Mister Rooster joins the song
With "Cock-a-doodle doo!"

Little Jack Horner
Sat in a corner,
  Eating his Christmas pie;
He put in his thumb
And he took out a plum,
  And said, "What a good boy am I!"

THE FALLING LEAVES

Old Mother Earth has good children, the trees,
Who cover her up so she will not freeze;
  Steadily, steadily, day by day,
  They wrap her up in the warmest way,
By dropping their leaves for a thick, warm spread,
To cover her close in her winter bed;
  With brown ones, and red ones, and silver and gold:
  Surely this spread will keep out the cold.

******

"Jack Spratt could eat no fat,
  His wife could eat no lean,
And so betwixt the two
  They made the platter clean."

Old Mother Hubbard
Went to the cupboard,
  To get her poor dog a bone;
But when she came there,
The cupboard was bare,
  And so the poor dog had none.

******

What does little birdie say,
In her nest at peep of day?
  "Let me fly," says little birdie,
"Mother, let me fly away."

Birdie, rest a little longer,
Till the little wings are stronger.
So she rests a little longer,
  Then she flies away.

What does little baby say,
In her bed at peep of day?
  Baby says, like little birdie,
"Let me rise and fly away."

Baby, sleep a little longer,
Till the little limbs are stronger.
If she sleeps a little longer,
  Baby, too, shall fly away.
—Alfred Tennyson

******

There was a little girl
Who had a little curl
  Right in the middle of her forehead.
When she was good,
She was very, very good,
  But when she was bad—
  She was horrid.

THE ROBIN'S SONG

In a nest up in a tree,
Heigh-o!
Blow, wind, blow!
I have babies three,
Blow, wind, blow!
Blow, blow!
Rock my babies for me;
Blow, blow!
Swing the nest for me. * *

******

Mary had a little lamb,
Its fleece was white as snow;
And everywhere that Mary went
The lamb was sure to go.

WHEN I GROW TO BE A MAN

When I grow to be a man,
I want to be six feet tall;
So that when the circus parades along
I can see over the heads of all. * *

THE MOON

The moon is playing hide-and-seek,
But if you'll only watch,
You'll see that the clouds will run away
And out the moon will peep.
And the little star that's playing, too,
Will quickly cry, "I spy!"
And run away and hide all day
Behind the deep blue sky. * *

Three little kittens
Lost their mittens,
And they began to cry:
"Oh, mother dear,
We very much fear
That we have lost our mittens!"
"Lost your mittens,
You naughty kittens!
Then you shall have no pie."
"Mee-ow, mee-ow, mee-ow,
And we can have no pie!
Mee-ow, mee-ow, mee-ow!"

THE EVENING STAR

Out of my window at night
I see a bright little star;
He's waiting to see me go to sleep:
His bright little eye a watch will keep,
While a dear little bird
On a tree close by
Will sing me a beautiful lullaby. * *

FOOTPRINTS

I found little footprints in the snow,
And follow'd them up to see where they'd go:
They led to the foot of an old oak tree,
And near, a little brown rabbit I could see.
The little brown rabbit wouldn't play with me,
But ran away quickly right to the tree.
I followed his footprints, and what do you think I saw?
A little rabbit's house with a small front door. * *

MR. FROG

Mister Frog came out of the pond one day
And found himself in the rain.
Said he: "I'll get wet,
And I may catch cold!"
So he jumped in the pond again. * *

TICK—TOCK

The big, tall clock in the hall,
The grandfather clock of all,
Goes tick—tock; tick—tock;
Tick—tock; tick.

But mamma's little clock on the shelf
Goes dancing like a merry little elf:
Tick, tock; tick, tock;
Tick, tock; tick, tock;
Tick, tock; tick, tock;
Tick, tock, tick.

But the one I like more than all the rest
Is my papa's watch, it's very much the best:
Tick, tick, tick, tick,
Tick, tick, tick, tick,
Tick, tick, tick, tick,
Tick, tick, tick, tick,
Tick, tick, tick, tick,
Tick, tick, tick. * *

**Selections from *"Small Songs for Small Singers"*, by W. H. Neidlinger (New York, G. Schirmer).

THE BEES

The bees are flying and humming,
Why are they all coming?
Honey to seek,
Honey to seek.
Bz, bz, bzzzzzzzzz.

******

Wee Willie Winkie runs through the town,
Upstairs and downstairs in his nightgown,
Rapping at the window, crying through the lock,
"Are the children in their beds, for now it's eight o'clock?"
—William Miller

There was a crooked man, and he went a crooked mile,
He found a crooked sixpence against a crooked stile;
He bought a crooked cat, which caught a crooked mouse,
And they all lived together in a little crooked house.

******

Little Bo-peep has lost her sheep,
And can't tell where to find them;
"Leave them alone, and they'll come home,
And bring their tails behind them!"

Little Bo-peep fell fast asleep
And dreamt she heard them bleating.
But when she awoke, she found it a joke,
For they were still a-fleeting.

Then up she took her little crook,
Determin'd for to find them;
She found them indeed, but it made her heart bleed,
For they'd left their tails behind them.

******

I have just to shut my eyes
To go sailing through the skies—
To go sailing far away
To the pleasant land of play.
—Robert Louis Stevenson

******

As Tommy Snooks and Bessy Brooks
Were walking out one Sunday,
Says Tommy Snooks to Bessy Brooks,
"Tomorrow will be Monday."

SWEET AND LOW

Sweet and low, sweet and low,
Wind of the western sea;
Low, low, breathe and blow,
Wind of the western sea!
Over the rolling waters go,
Come from the dying moon and blow,
Blow him again to me,
While my little one,
While my pretty one
Sleeps.

Sleep and rest, sleep and rest,
Father will come to thee soon;
Rest, rest, on mother's breast,
Father will come to thee soon.
Father will come to his babe in the nest,
Silver sails all out of the west,
Under the silver moon.
Sleep, my little one,
Sleep, my pretty one,
Sleep!
—Tennyson

CRADLE SONG

Lullaby and good night!
With roses bedight;
Creep into thy bed,
There pillow thy head!
If God will thou shalt wake
When the morning doth break.

Lullaby and good night!
Those blue eyes close tight!
Bright angels are near,
So sleep without fear.
They will guard you from harm,
With fair dreamland's sweet charm.
(Music by Brahms, text from the German by Simrock.)

FIVE LITTLE CHICKADEES

Five little chickadees,
Peeping at the door;
One flew away,
And then there were four.
Chickadee, chickadee,
Happy and gay;
Chickadee, chickadee,
Fly away!

Four little chickadees,
Sitting on a tree;
One flew away,
And then there were three.
Chickadee, chickadee, etc.

Three little chickadees,
Looking at you;
One flew away,
And then there were two.
Chickadee, chickadee, etc.

Two little chickadees,
Sitting in the sun;
One flew away,
And then there was one.
Chickadee, chickadee, etc.

One little chickadee
Left all alone;
He flew away,
And then there was none.
Chickadee, chickadee, etc.

******

Politeness is to do and say
The kindest thing in the kindest way.

******

Kind hearts are the gardens,
Kind thoughts are the roots,
Kind words are the blossoms,
Kind deeds are the fruits.

******

Bow, wow, wow,
Whose dog art thou?
Little Tom Tinker's dog,
Bow, wow, wow!

******

Star light, star bright,
First star I see to-night;
I wish I may, I wish I might,
Have the wish I wish to-night.

THE EGG IN THE NEST

There was a tree that stood in the ground,
The prettiest tree you ever did see;
The tree in the wood, and the wood in the ground,
And the green grass growing all around.

And on this tree there was a limb,
The prettiest limb you ever did see;
The limb on the tree, and the tree in the wood,
The tree in the wood, and the wood in the ground,
And the green grass growing all around.

And on this limb there was a bough,
The prettiest bough you ever did see;
The bough on the limb, and the limb on the tree,
The limb on the tree, and the tree in the wood,
The tree in the wood, and the wood in the ground,
And the green grass growing all around.

Now on this bough there was a nest,
And in this nest there were some eggs,
The prettiest eggs you ever did see;
Eggs in the nest, and the nest on the bough,
The bough on the limb, and the limb on the tree,
The limb on the tree, and the tree in the wood,
The tree in the wood, and the wood in the ground,
And the green grass growing all around,
And the green grass growing all around.

Old King Cole
Was a merry old soul,
And a merry old soul was he;

He called for his pipe,
And he called for his bowl,
And he called for his fiddlers three.

Every fiddler, he had a fiddle,
And a very fine fiddle had he;
Twee tweedle dee, tweedle dee, went the fiddlers.

THE HOUSE THAT JACK BUILT

This is the house that Jack built.
This is the malt,
That lay in the house that Jack built.
This is the rat,
That ate the malt that lay in the house that Jack built.
This is the cat,
That killed the rat that ate the malt that lay in the house that Jack built.
This is the dog,
That worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.
This is the cow, with the crumpled horn,
That tossed the dog, that worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.
This is the maiden all forlorn,
That milked the cow with the crumpled horn, that tossed the dog, that worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.
This is the man, all tattered and torn,
That kissed the maiden all forlorn, that milked the cow with the crumpled horn, that tossed the dog, that worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.
This is the priest all shaven and shorn,
That married the man all tattered and torn, that kissed the maiden all forlorn, that milked the cow with the crumpled horn, that tossed the dog, that worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.
This is the cock that crowed in the morn,
That waked the priest all shaven and shorn, that married the man all tattered and torn, that kissed the maiden all forlorn, that milked the cow with the crumpled horn, that tossed the dog, that worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.
This is the farmer sowing his corn,
That kept the cock that crowed in the morn, that waked the priest all shaven and shorn, that married the man all tattered and torn, that kissed the maiden all forlorn, that milked the cow with the crumpled horn, that tossed the dog, that worried the cat, that killed the rat, that ate the malt that lay in the house that Jack built.

WHO STOLE THE BIRD'S NEST

"To-whit! to-whit! to-whee!
Will you listen to me?
Who stole four eggs I laid
And the nice nest I made?"

"Not I," said the cow, "Moo-oo!
Such a thing I'd never do.
I gave you a wisp of hay,
But didn't take your nest away.
Not I," said the cow, "Moo-oo!
Such a thing I'd never do!"

"To-whit! to-whit! to-whee!
Will you listen to me?
Who stole four eggs I laid
And the nice nest I made?"

"Bobolink! Bobolink!
Now, what do you think?
Who stole a nest away
From the plum-tree, today?"

"Not I," said the dog, "Bow-wow!
I wouldn't be so mean, anyhow!
I gave the hairs the nest to make,
But the nest I didn't take.
Not I," said the dog, "Bow-wow!
I'm not so mean, anyhow!"

"To-whit! to-whit! to-whee!
Will you listen to me?
Who stole four eggs I laid
And the nice nest I made?"

"Bobolink! Bobolink!
Now, what do you think?
Who stole a nest away
From the plum-tree, today?"

"Coo-coo! Coo-coo! Coo-coo!
Let me speak a word, too!
Who stole that pretty nest
From little yellow-breast?"

"Not I," said the sheep, "oh, no!
I wouldn't treat a poor bird so.
I gave wool the nest to line,
But the nest was none of mine.
Baa-baa!" said the sheep, "oh, no,
I wouldn't treat a poor bird so!"

"Caw! Caw!" cried the crow;
"I should like to know
What thief took away
A bird's nest to-day?"

"Cluck! Cluck!" said the hen;
"Don't ask me again.
Why, I haven't a chick
Would do such a trick.
We all gave her a feather,
And she wove them together.
I'd scorn to intrude
On her and her brood.
Cluck! Cluck!" said the hen,
"Don't ask me again."

"Chirr-a-whirr! Chirr-a-whirr!"
All the birds make a stir!
"Let us find out his name,
And all cry, 'For shame!' "

"I would not rob a bird,'
Said little Mary Green;
"I think I never heard
Of anything so mean."

"It is very cruel, too,"
Said little Alice Neal;
"I wonder if he knew
How sad the bird would feel?"

A little boy hung down his head,
And went and hid behind the bed;
For he stole that pretty nest
From poor little yellow-breast—
And he felt so full of shame,
He didn't like to tell his name.
—Lydia Maria Child

"To-whit! to-whit! to-whee!
Will you listen to me?
Who stole four eggs I laid
And the nice nest I made?"

"Bobolink! Bobolink!
Now, what do you think?
Who stole a nest away
From the plum-tree, today?"

"Coo-coo! Coo-coo! Coo-coo!
Let me speak a word, too!
Who stole that pretty nest
From little yellow-breast?"

Hey! diddle, diddle,
The cat and the fiddle,
The cow jumped over the moon.
The little dog laughed
To see such sport,
And the dish ran away with the spoon.

LEAVES AND NUTS

The leaves are green, the nuts are brown;
They hang so high, they will not come down;
Leave them alone till frosty weather;
Then they will all come down together.

THE LAND OF NOD

From breakfast on through all the day
At home among my friends I stay,
But every night I go abroad
Afar into the land of Nod.

All by myself I have to go,
With none to tell me what to do—
All along beside the streams
And up the mountain sides of dreams.
—Robert Louis Stevenson

THE ROCK-A-BY LADY FROM HUSHABY STREET

The Rock-a-By Lady from Hushaby Street
Comes stealing; comes creeping;
The poppies, they hang from her head to her feet,
And each hath a dream that is tiny and fleet—
She bringeth her poppies to you, my sweet,
When she findeth you sleeping!

There is one little dream of a beautiful drum—
"Rub-a-dub!" it goeth;
There is one little dream of a big sugar plum,
And lo! thick and fast the other dreams come
Of popguns that bang, and tin-tops that hum,
And a trumpet that bloweth!

And dollies peep out of those wee little dreams
With laughter and singing;
And boats go a-floating on silvery streams,
And the stars peek-a-boo with their own misty gleams,
And up, up, and up, where the Mother Moon beams,
The fairies go winging!

Would you dream all these dreams that are tiny and fleet?
They'll come to you sleeping;
So shut the two eyes that are weary, my sweet,
For the Rock-a-By Lady from Hushaby Street,
With poppies that hang from her head to her feet,
Comes stealing; comes creeping.
—Eugene Field

THE BIRTHDAY

I am six years old. It's my birthday.
When I stand by the knob of the door
You can see I'm a little bit taller
Than when I was measured before.
I shall have a cake with thick frosting;
Seven candles on top I shall see;
And because I am taller and older
A happier child I should be. ††

(Poems marked †† are from *"Songs of Happiness."* Words by Carolyn S. Bailey. Music by Mary B. Ehrmann, Milton Bradley & Co.)

*****

Two ears and only one mouth have you;
The reason, I think, is clear:
It teaches my child that it will not do
To talk about all you hear.

Two hands and only one mouth have you,
And it is worth while repeating:
The two are for work that you must do,
The one is enough for eating.

Two eyes and only one mouth have you;
The reason of this must be:
That you should see a good many things,
But not talk about all you see.

THE DUCK DANCE

I saw a ship a-sailing, a-sailing on the sea;
And oh! it was laden with pretty things for me.
There were comfits in the cabin, and apples in the hold;
The sails were made of silk, and the masts were made of gold.

Four and twenty sailors that sat upon the deck
Were four and twenty white mice with chains about their neck.
The captain was a duck with a packet on his back,
And when the ship began to move the captain cried, "quack! quack!"

THE UMBRELLA MAN

Umbrellas to mend! Umbrellas to mend!
A little old tinker, our rainy day friend,
With patches and wire, and needle and glue,
Will make our umbrella as useful as new.

Umbrellas to sell! Umbrellas to sell!
He carries a number of new ones as well,
That he himself made, and he has some fine canes,
Tucked under his arms ev'ry day when it rains. ††

THE POLICEMAN

The giants in the fairy books
Are daring as you please;
But Kelly is as big and brave
As any one of these.
He's six feet tall
He wears a tidy uniform of blue.
He's Kelly, our policeman:
Have you a Kelly, too?

He gives the tired horses drinks.
He clears the crowded way
When little children go to school
And hurry home each day
I wonder when he goes to bed,
For all the dark night through
We hear the beat of Kelly's feet.
Have you a Kelly, too? ††

THE SHOEMAKER

Rap-a-tap-tap, rap-a-tap-tap,
Rap-a-tap-tap, rap-a-tap-tap,
Here's the good cobbler
Who works in his lap,
With hammer, and needle,
And waxed ends and glue,
Making our old shoes
As pretty as new.

Rap-a-tap-tap, rap-a-tap-tap,
Tic-a-tac, tic-a-tac, tic-a-tac-tee.
Who could cut patches
As neatly as he?
And who could so quickly
Put patches together,
Making our leaky shoes
Tight for wet weather? ††

THE LITTLE LAND

Deep down among the grasses,
As small as small can be,
There lies a Land of Little Things
That any child may see
Where Katydids and fireflies
And snails so queer and slow,
And spider folks and friendly worms
Go softly to and fro.

No child should cross its borders,
Nor touch it with his hand,
But only kneel down in the grass
And watch this Little Land
Where Katydids and fireflies
And snails so queer and slow,
And spider folks and friendly worms
Go softly to and fro. ††

THE CARPENTER

See the cheery carpenter,
Peep inside the door!
Pretty blocks and shaving curls
Lie upon his floor.

Hear his cheery hammer's song,
Hammer, hammer away!
Hear his cheery hammer's song,
Hammer all the day.

With his saw and shining plane
Boards are made to fit;
Many holes for screws he bores
With his shining bit.
Hear his cheery hammer's song, etc.

See the cheery carpenter,
Busy as can be!
He it is who builds the house
Strong and high for me.
Hear his cheery hammer's song, etc. ††

JACK FROST

Oh, Jack Frost is a merry little elf,
And a merry little elf is he!
He calls for his coat, and he calls for his brush,
And he calls for his paint pots, one, two, three,
And he calls for his paint pots three.

He paints with glee on ev'ry window-pane
Things very, very fine to see:
A mountain high, and a lake close by,
And a mighty forest tree, tree, tree.
And a mighty forest tree.

Oh, Jack Frost plays so many, many tricks,
He is so very pert and bold:
He pinches the cheeks and he tweaks the nose,
And he turns us blue with cold, cold, cold,
And he turns us blue with cold.

—Riley and Gaynor, "*Songs of the Child World*," *I.* The John Church Co., Cincinnati.

THE BUSY ANTS

The ants are very, very small,
Almost too wee to work at all;
And yet they carry sand—until
Each ant has helped to build a hill.

The ants are very, very wee,
Almost too small for us to see;
But as they hurry through the grass
We will be kind and let them pass. ††

LITTLE THINGS

Little drops of water,
Little grains of sand,
Make the mighty ocean
And the pleasant land.

Thus the little minutes,
Humble though they be,
Make the mighty ages
Of eternity.

—Ebenezer Cobham Brewer

THE BLACKSMITH

Cling, clang, cling!
Cling, clang, cling!
Hammer and anvil so merrily ring.
Faithful old Dobbin must have a new shoe,
So, Master Blacksmith, we've brought him to you.
Light the forge fire,
The big bellows blow.
Dobbin will stand,
You needn't say, Whoa! ††

BUTTERCUPS AND DAISIES

Buttercups and daisies,
Oh, the pretty flowers;
Coming ere the spring time
To tell of sunny hours.
While the trees are leafless
While the fields are bare
Buttercups and daisies
Spring up here and there.

Ere the snowdrop peepeth,
Ere the crocus bold,
Ere the early primrose
Opes its paly gold,
Somewhere on the sunny bank
Buttercups are bright;
Somewhere 'mong the frozen grass
Peeps the daisy white.

—Mary Howitt

THE BLUE-BIRD

Blue-Bird, dear Blue-Bird,
We saw you to-day!
Just for a flash—
Then you floated away.
Hands could not hold you,
Our cage was too small.
Hark! from the sky comes
Your far-away call.

Blue-Bird, dear Blue-Bird,
We know what you say.
Happy the children
Who see you to-day.
Brighter the sunshine,
More blue is the sky,
Happiness follows
Wherever you fly. ††

THE BROWNIES

Hist! Hist! Be still!
On tiptoe now advance!
We've come to have a merry Brownies' dance.
We will form our circle here,
Stepping lightly, for we fear
We may waken all the sleeping world perchance.

Oh, we're as light
As thistledown or dew.
We're Brownies of the Brownie band so true.
And we dance the live-long night,
Vanish with the morning light,
Hiding safe from mortal vision and from you.

THE SEE-SAW

We made a see-saw yesterday,
The board was good and long;
And all the while we were at play
We sang this pretty song:
"See-saw, see-saw,
So we go up and down,
See-saw, see-saw,
Going to the town."

A SPRING PROMISE

A little bit of blowing,
A little bit of snow,
A little bit of growing,
And crocuses will show!
On every twig that's lonely
A new green leaf will swing,
On ev'ry patient tree-top
A thrush will stop and sing.

A little bit of sleeting,
A little bit of rain,
The blue, blue sky for greeting,
The violets again!
And ev'ry frozen hillside
Its gift of grass will bring,
And ev'ry day of winter
Another day of spring. ††

THE FIREMAN

Hark! The siren! Clear the street!
See the horses, big and fleet!
Hook and ladder, truck and hose,
Following fast the engine goes.
Holding on as best he can
Rides the daring fireman.

Wasting not a bit of time
Up the burning house he'll climb,
Till we see his helmet red
At some window overhead.
Oh, how wonderful to be
Such a hero man as he! ††

OLD MOTHER WIND

Old Mother Wind is out to-day,
She has her magic broom.
She sweeps the garden very clean
That daffodils may bloom.
Old Mother Wind we cannot see,
But by her broom we know it's she.

Old Mother Wind is out to-day,
We feel her magic hands.
They pull our kites and push the ships
To strange and diff'rent lands.
Old Mother Wind we cannot see,
But by her broom we know it's she.

Old Mother Wind was out last night,
Upon the chimney red.
She sat and sang a sleepy song
As we were put to bed.
Old Mother Wind we cannot see,
But by her broom we know it's she. ††

MASTER ROBIN

If I could change places with you, Master Robin,
And live in your nest in the tree,
So snug and so high
With no roof but the sky,
Oh, Robin, what fun that would be!
Cheer-ee! Cheer-ee!

I'd swing and I'd sing and I'd carefully bring
Some food to your babies so wee,
And then, by and by,
I would teach them to fly,
Oh, Robin, what fun that would be!
Cheer-ee! Cheer-ee!

The beautiful world and the clouds softly curled
I'd reach with my wings, strong and free;
And I would be dressed
In a bright orange vest,
Oh, Robin, what fun that would be!
Cheer-ee! Cheer-ee! ††

TRACKS IN THE SNOW

Do you see these tiny tracks in the snow?
Don't you wonder what they are, where they go?
I think a Bunny Rabbit white
Has hopped across the snow last night.
Oh! What funny little tracks in the snow!

THE GIANTS

We'll play we're giants tall,
As tall as tall can be.
And when we reach clear up to the sky,
The moon and stars we'll see.

We'll bump our heads against the clouds;
Our hands we'll stretch so high
That we'll feel the points of the tiny stars
That hang up in the sky.

(All three from Riley and Gaynor's "*Songs of the Child World*," I. Pub. by The John Church Co., Cincinnati.)

IMITATION SONG

This is the way we clap our hands,
We clap our hands, we clap our hands;
This is the way we clap our hands,
As merrily we play.

This is the way we show our hands, etc.
In beautiful array.

This is the way the clock does tick, etc.
And tells how time does fly.

This is the noise the guns do make, etc.
On celebration day.
(With appropriate motions, etc., can be continued.)

******

When I was a shoemaker,
And a shoemaker was I,
This way, and this way,
And this way went I.

When I was a gentleman,
And a gentleman was I,
This way, and this way,
And this way went I.

When I was a lady,
And a lady was I,
This way, and this way,
And this way went I.

(To be continued indefinitely. Old game.)

HAND-EXERCISE SONG

Roll your hands, roll your hands,
As slowly, as slowly, as slow can be.
Then fold your arms like me!

Roll your hands, roll your hands,
As swiftly, as swiftly, as swift can be.
Then fold your arms like me!

Clap your hands, clap your hands,
As softly, as softly, as soft can be.
Then fold your arms like me!

Clap your hands, clap your hands,
As loudly, as loudly, as loud can be.
Then fold your arms like me!

HOP, HOP, HOP

Hop, hop, hop!
Nimble as a top,
  Where 'tis smooth and where 'tis stony
  Trudge along, my little pony!
Hop, hop, hop, hop, hop,
Nimble as a top!

Whoa, whoa, whoa!
How like fun you go!
  Very well, my little pony,
  Safe's our jaunt though rough and stony.
Spare, spare, spare, spare, spare,
Sure enough we're there!

Here, here, here!
Yes, my pony dear;
  Now with oats and hay I'll treat you,
  And with smiles will ever greet you,
Pony, pony dear!
Yes, my pony dear!

RING GAME

It snows and it blows, and it cuts off my nose,
  So, pray, children, let me in;
I'll light my pipe, and warm my toes,
  And then I'll be gone again.

ROUND

Ring a ring a rosie,
A bottle full of posie,
All the girls in our town
Ring for little Josie.

(First published in *"Games and Songs of American Children,"* collected by Wm. Wells Newell, Harper & Bros.)

******

Oats, peas, beans, and barley grows,
Oats, peas, beans, and barley grows,
How, you, nor I, nor nobody knows,
Oats, peas, beans, and barley grows.

Thus the farmer sows his seed,
Stands erect and takes his ease,
Stamps his foot and clasps his hands,
And turns about to view his lands.

(Old Ring Game)

BLOCK CITY

What are you able to build with your blocks?
Castles and palaces, temples and docks.
Rain may keep raining, and others go roam,
But I can be happy and building at home.

Let the sofa be mountains, the carpet be sea,
There I'll establish a city for me:
A kirk and a mill and a palace beside,
And a harbor as well where my vessels may ride.

Great is the palace with pillar and wall,
A sort of a tower on the top of it all,
And steps coming down in an orderly way
To where my toy vessels lie safe in the bay.

This one is sailing and that one is moored:
Hark to the song of the sailors on board!
And see on the steps of my palace, the kings
Coming and going with presents and things!

Now I have done with it, down let it go!
All in a moment the town is laid low.
Block upon block lying scattered and free,
What is there left of my town by the sea?
Yet, as I saw it, I see it again,
The kirk and the palace, the ships and the men,
And as long as I live and where'er I may be,
I'll always remember my town by the sea.

—Robert Louis Stevenson

BED IN SUMMER

In winter I get up at night
And dress by yellow candle-light.
In summer, quite the other way,
I have to go to bed by day.

I have to go to bed and see
The birds still hopping on the tree,
Or hear the grown-up people's feet
Still going past me in the street.

And does it not seem hard to you,
When all the sky is clear and blue,
And I should like so much to play,
To have to go to bed by day?

—Robert Louis Stevenson

THE WIND

I saw you toss the kites on high
And blow the birds about the sky;
And all around I heard you pass,
Like ladies' skirts across the grass—
  O wind, a-blowing all day long,
  O wind, that sings so loud a song!

I saw the different things you did,
But always you yourself you hid.
I felt you push, I heard you call,
I could not see yourself at all—
  O wind, a-blowing all day long,
  O wind, that sings so loud a song!

O you that are so strong and cold,
O blower, are you young or old?
Are you a beast of field and tree,
Or just a stronger child than me?
  O wind, a-blowing all day long,
  O wind, that sings so loud a song!

—Robert Louis Stevenson

Little Miss Muffet
  Sat on a tuffet,
  Eating her curds and whey;
There came a spider
  And sat down beside her,
  And frightened Miss Muffet away.

TWINKLE, TWINKLE, LITTLE STAR

Twinkle, twinkle, little star—
How I wonder what you are!
Up above the world so high,
Like a diamond in the sky.

When the glorious sun is set,
When the grass with dew is wet,
Then you show your little light,
Twinkle, twinkle all the night.

In the dark blue sky you keep
And often through my curtains peep;
For you never shut your eye
Till the sun is in the sky.

As your bright and tiny spark
Lights the traveller in the dark:
Though I know not what you are,
Twinkle, twinkle, little star.

MY SHADOW

I have a little shadow that goes in and out with me,
And what can be the use of him is more than I can see.
He is very, very like me from the heels up to the head;
And I see him jump before me, when I jump into my bed.

The funniest thing about him is the way he likes to grow—
Not at all like proper children, which is always very slow;
For he sometimes shoots up taller like an india-rubber ball,
And he sometimes gets so little that there's none of him at all.

He hasn't got a notion of how children ought to play,
And can only make a fool of me in every sort of way.
He stays so close beside me, he's a coward you can see;
I'd think shame to stick to nursie as that shadow sticks to me!

One morning, very early, before the sun
was up,
I rose and found the shining dew on every
buttercup;
But my lazy little shadow, like an arrant
sleepy-head,
Had stayed at home behind me and was
fast asleep in bed.
—Robert Louis Stevenson

DAISIES

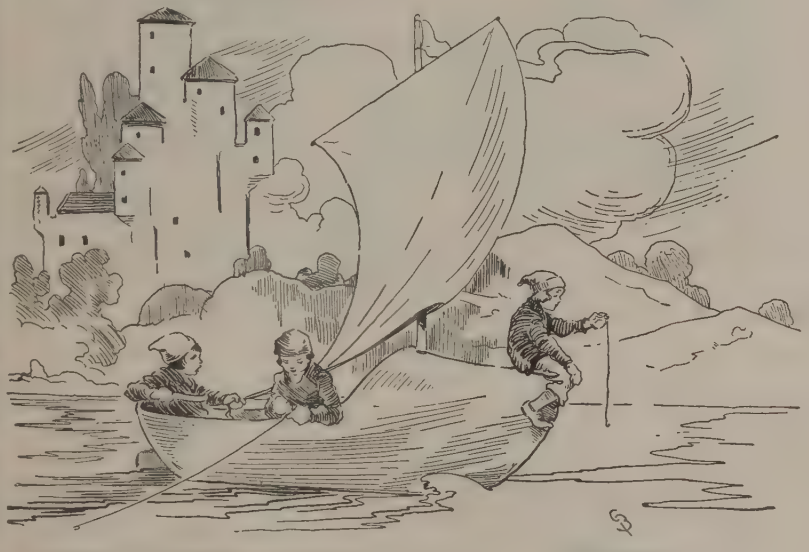
At evening when I go to bed
I see the stars shine overhead;
They are the little daisies white
That dot the meadow of the night.

And often while I'm dreaming so,
Across the sky the Moon will go;
It is a lady, sweet and fair,
Who comes to gather daisies there.

For, when at morning I arise,
There's not a star left in the skies;
She's picked them all and dropped them
down
Into the meadows of the town.
—Frank Dempster Sherman

All night long their nets they threw
To the stars in the twinkling foam—
Then down from the skies came the wooden
shoe,
Bringing the fishermen home;
'Twas all so pretty a sail, it seemed
As if it could not be;
And some folk thought 'twas a dream
they'd dreamed
Of sailing that beautiful sea.
But I shall name you the fishermen three:
Wynken,
Blynken,
And Nod.

Wynken and Blynken are two little eyes,
And Nod is a little head,
And the wooden shoe that sailed the skies
Is a wee one's trundle-bed;
So shut your eyes while mother sings
Of wonderful sights that be,
And you shall see the beautiful things
As you rock on the misty sea
Where the old shoe rocked the fishermen
three—
Wynken,
Blynken,
And Nod
—Eugene Field



WYNKEN, BLYNKEN, AND NOD

Wynken, Blynken, and Nod one night
Sailed off in a wooden shoe—
Sailed on a river of crystal light
Into a sea of dew.
"Where are you going, and what do you
wish?"
The old moon asked the three.
"We have come to fish for the herring fish
That live in this beautiful sea;
Nets of silver and gold have we,"
Said Wynken,
Blynken,
And Nod.

The old moon laughed and sang a song,
As they rocked in the wooden shoe;
And the wind that sped them all night long
Ruffled the waves of dew;
The little stars were the herring fish
That lived in the beautiful sea.
"Now cast your nets wherever you wish—
Never afeard are we!"
So cried the stars to the fishermen three,
Wynken,
Blynken,
And Nod.

THE SWING

How do you like to go up in a swing,
Up in the air so blue?
"Oh, I do think it the pleasantest thing
Ever a child can do!"

"Up in the air and over the wall,
Till I can see so wide,
Rivers and trees and cattle and all
Over the countryside—

"Till I look down on the garden green
Down on the roof so brown—
Up in the air I go flying again,
Up in the air and down!"
—Robert Louis Stevenson

NONSENSE ALPHABET

A was an ant,
Who seldom stood still,
And who made a nice house
In the side of a hill.
Nice little ant!

B was a bat,
Who slept all the day,
And fluttered about
When the sun went away.
Brown little bat!

C was a camel;
You rode on his hump;
And if you fell off,
You came down such a bump!
What a high camel!

D was a duck
With spots on his back,
Who lived in the water
And always said, "Quack!"
Dear little duck!

E was an elephant,
Stately and wise:
He had tusks and a trunk,
And two queer little eyes.
Oh, what funny small eyes!

F was a fish
Who was caught in a net;
But he got out again,
And is quite alive yet.
Lively young fish!

G was a goat
Who was spotted with brown:
When he did not lie still
He walked up and down.
Good little goat!

H was a hat
Which was all on one side;
Its crown was too high,
And its brim was too wide
Oh, what a hat!

I was some ice,
So white and so nice,
But which nobody tasted;
And so it was wasted.
All that good ice!

J was a jug,
So pretty and white,
With fresh water in it
At morning and night.
Nice little jug!

K was a kite
Which flew out of sight,
Above houses so high,
Quite into the sky.
Fly away, kite!

L was a lily,
So white and so sweet!
To see it and smell it
Was quite a nice treat.
Beautiful lily!

M was a man,
Who walked round and round;
And he wore a long coat
That came down to the ground.
Funny old man!

N was a net
Which was thrown in the sea
To catch fish for dinner
For you and for me.
Nice little net!

O was an orange
So yellow and round:
When it fell off the tree
It fell down to the ground.
Down to the ground!

P was a polly,
All red, blue and green—
The most beautiful polly
That ever was seen.
Poor little polly!

Q was a quail
With a very short tail;
And he fed upon corn
In the evening and morn.
Quaint little quail!

R was a rabbit,
Who had a bad habit
Of eating the flowers
In gardens and bowers.
Naughty fat rabbit!

S was the sugar-tongs,
Nippity-nee,
To take up the sugar
To put in our tea.
Nippity-nee!

T was a tortoise
All yellow and black;
He walked slowly away
And he never came back.
Torty never came back!

U was an urn
All polished and bright,
And full of hot water
At noon and at night.
Useful old urn!

V was a veil
With a border upon it,
And a ribbon to tie it
All round a pink bonnet.
Pretty green veil!

W was a watch,
Where, in letters of gold,
The hour of the day
You might always behold.
Beautiful watch!

Y was a yew,
Which flourished and grew
By a quiet abode
Near the side of a road.
Dark little yew!

Z was a zebra,
All striped white and black;
And if he were tame,
You might ride on his back.
Pretty striped zebra!

FROM HIAWATHA

Then the little Hiawatha
Learned of every bird its language,
Learned their names and all their secrets:
How they built their nests in summer,
Where they hid themselves in winter;
Talked with them whene'er he met them,
Called them "Hiawatha's Chickens."

Thus the birch canoe was builded
In the bosom of the forest.
All the forest life was in it,
All its mystery and its magic,
All the lightness of the birch-tree,
All the toughness of the cedar,
All the larch's supple sinews—
And it floated on the river
Like a yellow leaf in autumn,
Like a yellow water lily.

—Henry Wadsworth Longfellow.

LET THE BUMBLE BE

One day I saw a bumblebee, bumbling on a rose,
And as I stood admiring him he stung me on the nose.
My nose, in pain, it swelled so large it looked like a potato,
So daddy said, though mother thought 'twas more like a tomato.
And now, dear children, this advice I hope you'll take from me,
And when you see a bumblebee just let that bumble be.

—Winifred Sackville Stoner, Jr. "*Facts in Jingles,*" Bobbs, Merrill Co.

Over the river and through the wood,
To have first-rate play:
Hear the bells ring,
"Ting-a-ling-ding!"
Hurrah for Thanksgiving Day!

Over the river and through the wood,
Trot fast, my dapple-gray!
Spring over the ground
Like a hunting hound!
For this is Thanksgiving Day.

Over the river and through the wood,
And straight through the barn-yard gate
We seem to go
Extremely slow—
It is so hard to wait!

SLEIGHING SONG

Jingle, jingle, ring the bells,
Snow is on the ground,
The horses prance, the sleigh-bells ring,
Hark the merry sound!
Jingle, jingle, jingle, on the frosty air,
Jingle, jingle, jingle, sleigh-bells ev'ry-where,
Jingle, jingle, jingle, hear the merry cry,
Jingle, jingle, jingle, see the sleighs dash by!

Jingle, jingle, ring the bells,
Happy throngs dash by,
The air is full of noisy shouts,
See the cutters fly!
Jingle, jingle, etc.

—From Riley and Gaynor, "*Songs of the Child World,*" *I.* The John Church Co., Cincinnati.

THANKSGIVING DAY

Over the river and through the wood
To grandfather's house we go;
The horse knows the way
To carry the sleigh
Through the white and drifted snow.

Over the river and through the wood—
Oh, how the wind does blow!
It stings the toes
And bites the nose
As over the ground we go.

Over the river and through the wood—
Now grandmother's cap I spy!
Hurrah for the fun!
Is the pudding done?
Hurrah for the pumpkin pie!

******

See a pin and pick it up,
All the day you'll have good luck!
See a pin and let it lay:
Bad luck you'll have all the day!

******

Peter Piper picked a peck of pickled peppers;
A peck of pickled peppers Peter Piper picked;
If Peter Piper picked a peck of pickled peppers,
Where's the peck of pickled peppers Peter Piper picked?

******

Elizabeth, Lizzy, Betty and Bess,
They all went together to seek a hen's nest.
They found a hen's nest with five eggs in,
They all took one and left four in.

THE HARE AND THE TORTOISE

The hare was very proud of his swift feet. When he met the tortoise, he made fun of her short legs and slow walk. But the tortoise said to him, "Even if you were as swift as the wind, I can beat you in a race." The hare laughed at this talk and agreed he would run a race with her. The fox was chosen to lay out the course and to fix the goal.

Both started together. The tortoise did not stop for one moment, but went on her way, slowly but steadily. But the hare, who thought that the race was a foolish thing anyway, did not care to make an effort. After he had run a little way, he lay down to sleep, trusting to wake up long before the tortoise had gone half the course. But he slept too long, and when he woke up and ran to the goal he found that the tortoise was already there, comfortably resting after her long and hard walk.

THE WIND

Whichever way the wind doth blow,
Some heart is glad to have it so;
Then blow it East or blow it West,
The wind that blows, that wind is best.

******

One, two, buckle my shoe!
Three, four, shut the door!
Five, six, pick up sticks!
Seven, eight, lay them straight!
Nine, ten, a good, fat hen;
Eleven, twelve, on the shelf.
One, two, three, four, five, six, seven, eight, nine, ten, eleven, twelve.

CHILD RIDING ON MOTHER'S KNEE

This is the way the ladies ride:
  Tri, tre, tre, tree,
  Tri, tre, tre, tree!
This is the way the ladies ride,
  Tri, tre, tre, tree;
  Tri, tre, tre, tree!
    (Swinging leg gently)

This is the way the gentlemen ride:
  Gallop-a-trot,
  Gallop-a-trot!
This is the way the gentlemen ride,
  Gallop-a-gallop-a-trot!
    (Moving leg up and down with more rapid motion)

This is the way the farmers ride:
  Hobbledy-hoy,
  Hobbledy-hoy!
This is the way the farmers ride,
  Hobbledy-hobbledy-hoy!
    (Jerking leg up and down)

******

There was an old woman who lived in a shoe,
She had so many children she didn't know what to do;
She gave them some broth without any bread,
She whipped them all soundly, and sent them to bed.

Hush-a-bye, baby, on the tree-top,
  When the wind blows the cradle will rock;
When the bough breaks, the cradle will fall,
  And down comes cradle and baby and all.

THE WEATHER VANE

  This way, that way,
  Turns the weather vane;
  This way, that way,
  Turns and turns again.
Turning, pointing, ever showing
How the merry wind is blowing.
—*Emilie Poulsson, after Friedrich Froebel.*

IMITATION GAME

When I was a lady, a lady, a lady,
When I was a lady, a lady was I;
'Twas this way, and that way,
  And this way, and that way,
And this way, and that way,
  And this way went I.

(For lady, substitute other words, with corresponding gestures, like gentleman, fairy, blacksmith, baker, postman, cook, laundress, etc.)

THE PIGEON HOUSE

My pigeon house I open wide
And set the pigeons free;
They fly o'er the fields on every side
And light on the tallest tree;
But when they return from their merry flight
We close the door and say, "Good night!":
  Coo-roo, coo-roo, coo-roo, coo-roo,
  Coo-roo, coo-roo, coo-roo.

(From "*Songs and Games for Little Ones*," Gertrude Walker and Harriet S. Jenks; Curwen & Sons.)

THE LITTLE PLANT

In the heart of a seed,
Buried deep, so deep,
A dear little plant,
Lay fast asleep.

"Wake!" said the sunshine,
"And creep to the light!"
"Wake!" said the voice
Of the raindrops bright.

The little plant heard,
And it rose to see
What the wonderful
Outside world might be.
—Kate L. Brown

THE RAIN

Pitter-patter goes the rain,
Oh! so many hours;
But though it keeps me in the house
It's very good for flowers.

******

Do all the good you can,
By all the means you can,
In all the ways you can,
In all the places you can,
At all the times you can,
To all the people you can,
As long as ever you can.
—John Wesley

******

Baa, baa, black sheep,
  Have you any wool?
Yes, marry, have I,
  Three bags full:
One for my master,
  And one for my dame,
And one for the little boy
  Who lives in the lane.

Jack and Jill went up the hill
To fetch a pail of water;
Jack fell down and broke his crown,
And Jill came tumbling after.

PLAY WITH THE TOES

This little pig went to market;
This little pig stayed at home;
This little pig had roast beef;
And this little pig had none;
And this little pig cried,
  "Wee, wee, wee,
  I can't find my way home!"

PLAY WITH THE FINGERS

This is the thumb;
He picks a plum;
He carries it in;
He puts it in the bin;
And the little fellow
  Eats it all up.

THE BOBOLINK

The bobolink is a jolly bird,
And a jolly bird is he;
A mother-olink has this bobolink,
And his chicky-olinks are three.

The bobolink, he wears a knob,
All black and white is he;
The mother-olink has a gown of brown,
And gray the babies three.

The bobolink has a merry song,
A merry song has he;
But when his babies try to sing
They just say, "Chee! Chee! Chee!"

—Riley and Gaynor, "*Songs of the Child World*," *II*. The John Church Co., Cincinnati.

Bye, baby bunting,
Daddy's gone a-hunting,
To get a little rabbit skin
To wrap the baby bunting in.

CHRISTMAS SECRETS

The air is full of mystery,
And secrets are a-wing;
And if you happen on one:
Don't you tell a single thing!
  And perhaps we've something hiding
  For each loved one dear,
  For Christmas day is coming
  And will soon be here.

Then Santa Claus will fly around
With heavy laden sleigh,
And down the chimney hasten
In his usual happy way.
  Oh, he brings such loads of presents
  To the children dear,
  And Christmas day is coming
  And will soon be here.

—Riley and Gaynor, "*Songs of the Child World*," *II*. The John Church Co., Cincinnati.

MULBERRY BUSH

As we go 'round the mulberry bush,
The mulberry bush, the mulberry bush,
As we go 'round the mulberry bush,
  So early in the morning.

This is the way we wash our clothes,
Wash our clothes, wash our clothes,
This is the way we wash our clothes,
  All of a Monday morning.

This is the way we iron our clothes, etc.,
  All of a Tuesday morning.

This is the way we scrub our floor, etc.,
  All of a Wednesday morning.

This is the way we mend our clothes, etc.,
  All of a Thursday morning.

This is the way we sweep the house, etc.,
  All of a Friday morning.

This is the way we bake our bread, etc.,
  All of a Saturday morning.

This is the way we go to church, etc.,
  All of a Sunday morning.
    (Old Game)

Tread, tread the green grass,
  Dust, dust, dust,
Come all ye pretty fair maids
  And walk along with us.

If you be a fair maid,
  As I suppose you be,
I'll take you by the lily-white hand
  And lead you across the sea.
    (Old Dancing Game Rhyme)

******

"Will you have a paper of pins?
For that's the way my love begins—
  And will you marry me, me, me,
  And will you marry me?"

"No, I'll not have a paper of pins,
If that's the way your love begins."

"Will you have a little lap-dog
Who may follow you abroad?
  And will you marry me, me, me,
  And will you marry me?"

"No, I will not have a little lap-dog
Who may follow me abroad!"

"Will you have a coach and four,
Footman behind and footman before?
  And will you," etc.

"No, I will not have," etc.

"Will you have a dress of red,
All trimmed 'round with golden thread?" etc.

"Will you have a satin gown,
All set off with a golden crown?" etc.

"Will you have the key to my chest,
To draw out gold at your request?" etc.

"Will you have the key to my heart,
That we may love and never part?" etc.

"Yes, I will have the key to your heart,
That we may love and never part,
  And I will marry you, you, you,
  And I will marry you."
    (Children's old Love Game)

THE FARMER IN THE DELL

The farmer in the dell,
The farmer in the dell,
  Heigh ho! for Rowley O!
The farmer in the dell.

The farmer takes a wife, etc.

The wife takes a child, etc.

The child takes a nurse, etc.

The nurse takes the dog, etc.

The dog takes the cat, etc.

The cat takes the rat, etc.

The rat takes the cheese, etc.

The cheese stands alone, etc.
    (Old Game)

COUNTING APPLE SEEDS

One, I love,
Two, I love,
Three, I love, I say,
Four, I love with all my heart,
And five, I cast away.
Six, he loves,
Seven, she loves,
Eight, they both love;
Nine, he comes,
Ten, he tarries,
Eleven, he courts,
Twelve, he marries;
Thirteen wishes,
Fourteen kisses,
All the rest little witches.

THREADING THE NEEDLE

  The needle's eye
  You can't pass by,
The thread it runs so true;
  It has caught many a smiling lass,
But now it has caught you.
    (Old Game)

******

It rains, it hails, it's cold, stormy weather;
In comes the farmer, drinking all his cider,
I'll be the reaper, who'll be the binder?
I've lost my true love, where shall I find her?
    (Another old Circle Game)

HAND-SLAPPING GAME

Pease porridge hot,
  Pease porridge cold,
Pease porridge in the pot,
  Nine days old.

RIDDLE

Two legs sat upon three legs
With one leg in his lap;
In comes four legs
And runs away with one leg;
Up jumps two legs,
Catches up three legs,
Throws it after four legs,
And makes him bring back one leg.
(Man, stool, leg of lamb, dog)

THE BULLDOG

Oh! the bulldog on the bank,
And the bullfrog in the pool!
The bulldog called the bullfrog
A green old water fool!

Oh! the bulldog stooped to catch him,
And the snapper caught his paw,
The pollywog died a-laughing
To see him wag his jaw.

Says the monkey to the owl:
"Oh! what'll you have to drink?
"Why, since you are so very kind,
I'll take a bottle of ink."
(College Song)

JOLLY OLD ST. NICHOLAS

Jolly old St. Nicholas,
Lean your ear this way!
Don't you tell a single soul
What I'm going to say!
Christmas Eve is coming soon,
Now, you dear old man,
Whisper what you'll bring to me,
Tell me if you can.

When the clock is striking twelve,
When I'm fast asleep,
Down the chimney, broad and black,
With your cap you'll creep.
All the stockings you will find
Hanging in a row;
Mine will be the shortest one,
You'll be sure to know.

Johnny wants a pair of skates,
Susy wants a dolly,
Nellie wants a story book,
She thinks dolls are folly!
As for me, my little brain
Isn't very bright;
Choose for me, Old Santa Claus,
What you think is right.

THE NIGHT BEFORE CHRISTMAS

'Twas the night before Christmas,
When all thru the house
Not a creature was stirring,
Not even a mouse.

The stockings were hung
By the chimney with care,
In hopes that St. Nicholas
Soon would be there.

The children were nestled
All snug in their beds,
While visions of sugar-plums
Danced through their heads.

Mamma in her 'kerchief,
And I in my cap
Had just settled our brains
For a long winter's nap.

When out on the lawn
There arose such a clatter:
I sprang from my bed
To see what was the matter

Away to the window
I flew like a flash,
Tore open the shutters
And threw up the sash.

The moon on the breast
Of the new fallen snow
Gave a lustre of mid-day
To objects below:

When what to my wondering eyes
Should appear—
But a miniature sleigh
And eight tiny reindeer!

With a little old driver,
So lively and quick:
I knew in a moment
It must be St. Nick

More rapid than eagles
His coursers they came,
And he whistled and shouted
And called each by name:

"Now, Dasher, now, Dancer,
Now, Prancer, now, Vixen!
On, Comet! On, Cupid!
On, Donner and Blitzen!

To the top of the porch,
To the top of the wall,
Now, dash away, dash away,
Dash away, all!"

He was dressed all in fur
From his head to his foot,
And his clothes were all tarnished
With ashes and soot;

A bundle of toys
He had flung on his back,
And he looked like a peddler
Just opening his pack.

His eyes, how they twinkled!
His dimples, how merry!
His cheeks were like roses,
His nose like a cherry.

His droll little mouth
Was drawn up like a bow,
And the beard on his chin
Was as white as the snow.

The stump of a pipe
He held tight in his teeth,
And the smoke, it encircled
His head like a wreath.

He had a broad face,
And a little round belly
That shook when he laughed
Like a bowl-full of jelly.

He was chubby and plump—
A right jolly old elf,
And I laughed when I saw him
In spite of myself.

A wink of his eye,
And a twist of his head
Soon gave me to know
I had nothing to dread.

As dry leaves before the wild hurricane fly,
When they meet with an obstacle, mount to the sky:
So up to the house-top the coursers they flew,
With the sleigh full of toys, and St. Nicholas, too.

And then, in a twinkling,
I heard on the roof
The prancing and pawing
Of each little hoof.

As I drew in my head,
And was turning around,
Down the chimney St. Nicholas came
With a bound!

He spoke not a word
But went straight to his work,
And filled all the stockings,
Then turned with a jerk—

And, laying his finger
Aside of his nose,
And giving a nod,
Up the chimney he rose.

He sprang to his sleigh,
To his team gave a whistle,
And away they all flew
Like the down on a thistle.

And I heard him exclaim
Ere he drove out of sight:
"MERRY CHRISTMAS TO ALL,
AND TO ALL A GOOD NIGHT!"

This pig went to market;
This pig stayed at home;
This pig had roast meat;
This pig had none:
This pig went to the barn door.
And cry'd, "Week, week," for more.

******

Lying lips are an abomination to the Lord,
But they that deal truly are his delight.

My son, hear the instruction of thy father,
And forsake not the law of thy mother.

Children's children are the crown of old men;
And the glory of children are their fathers.

A soft answer turneth away wrath,
But grievous words stir up anger.

The eyes of the Lord are in every place,
Beholding the evil and the good.

Even a child maketh himself known by his doings,
Whether his work be pure, and whether it be right.

A word fitly spoken.
Is like apples of gold
In pictures of silver.

"The Proverbs"

Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall,
All the King's horses and all the King s men,
Couldn't put Humpty together again.

BOOK II.

LANGUAGE AND GRAMMAR

WINIFRED SACKVILLE STONER RICHMOND H. KIRTLAND

CORRECT SPEECH

Easy Ways of Learning How to Speak Correctly

If all mothers realized the truth of Herbert Spencer's words: "Teach a child good English in the cradle and he will speak good English to the grave" I am sure that baby talk and slovenly speech would become obsolete. Well-meaning mothers are eager to give their children the right start in life but some of them do not realize that the so-called "Baby Talk" that is often used in talking to babies, puts a stumbling block in the way of children's progress If grown people were taught two words for each object when they were trying to study a new tongue they would find themselves unable to know which word to use when trying to call an object by its name. The Baby comes into this world with impressions of millions of ancestors back of him but without any language medium to express thoughts that may come to him concerning the new world in which he lives. He is the most wonderful piece of machinery that has ever been created but he is the most helpless of young living things. The kitten, the little pup, the young colt all learn to walk and to express themselves long before the baby can perform these natural acts. Mother Cat has taught her young kitten how to converse in cat language and how to make its own living long before a baby can hold a rattle or say one word.

However, the baby is not an animated vegetable. It has more thoughts in its first days of babyhood than the kitten has in its entire life time. The baby is God's most wonderful creation. It has come not only into this world to live but it must live in a life to come and every parent should realize the great responsibility of parenthood and should strive in every way to give BABY a strong foundation upon which to build his life's character that leads him to Success or to Failure. Early impressions are lasting. The baby is but clay in the hands of the potters—his father and mother Upon them depend his health, his happiness, his efficiency when he grows to maturity.

It is my belief that people in this world are judged by the way they dress, the way they talk, and the way they eat. I am sorry to call attention first to the manner of dress but I am sure that I am right in believing that when people first meet an individual they judge that one by the clothes he or she wears. The dress worn by anyone seems to indicate whether that person is rich or poor, slovenly or orderly, possessed of good or bad taste, thoughful or careless, stingy or generous. In fact a thousand thoughts come into the mind when we look at a person and the frame surrounding that person, which we call dress. In the same way we judge people by the way they eat, standing for a knowledge of good manners. If people know how to eat correctly they generally know how to act in good company. "Having passed the eating ordeal, I judge a man a gentlemen", said Chesterfield, who believed that manners would take a man where knowledge could not lead him in ways of success.

And correct SPEECH is the dress in which we clothe our thoughts If we use coarse or slovenly speech we indicate that we have coarse or slovenly minds. If we "murder English", the term applied to using incorrect forms of speech, we are adjudged by those who know the English language, either as careless beings who do not make use of the knowledge we possess or as poor ignorants who have not had the opportunity of learning how to speak correctly. Incorrect speech very often makes us distasteful to high-class people just as ragged clothes bar us from going to beautiful receptions. A person with a cultivated ear for correct English actually suffers when hearing the beautiful English tongue mutilated just as one who loves a beautiful picture or object does not like to see it marred in any way. Using "I SEEN" and "I HAVE SAW" "I DONE IT", "AINT IT SO?", "BETWEEN YOU AND I", "THAT'S HIM", "I FEEL BADLY", "I LAID DOWN", "I'VE GOT A BOOK", "I was TALKIN' TO HER", "SEZ I", and similar expressions cause pain to the lover and user of CORRECT ENGLISH.

The foundation of a house is the most important part of that structure but there are many people who begin at the chimney to mend or to improve the house. The foundation stone, which should be laid through parental training even before the baby is born, is the most important part of the body house. Parents should try to make themselves well-informed parents upon all matters that lead to success before the baby comes. If the young husband and wife strive to help each other to speak good English and read good books that give them this help, the baby's first acquaintance with the English language will be that which is correct and with this impression he will go through life. But there are some mothers and a few fathers who think that it is necessary to talk ITSIE OOTSIE LANGUAGE when addressing a baby. In this respect they give the baby a worse reputation as a creature of understanding then they give to a pet. The man does not say to his dog: "Dear Ittle Bow wow Buster, do ooh lub me a ittle?" Instead he uses sensible language in talking to his dog and says "Buster, old boy, I know you're my friend and you will always love me."

When my little daughter was seven years of age she listened to a mother talking baby talk to her child and then she said "Dear mother, is it any wonder that the poor baby cannot talk English? Suppose you told me that the name of our milk giving animal was 'MOO MOO' and my father said "That is a cow", how would I know which was the correct name for the milk giver? In the same way, if you told me that the name of the machine that pulls cars is a 'Choo Choo' and my father called it "Locomotive" wouldn't I be puzzled as to the name that was proper for this piece of machinery?"

I agree with Winifred that nothing is more harmful as regards teaching a child how to talk than this baby talk.

The following jingle written by Winifred after our discussion expresses my sentiments:

Him is his muvver's Ootsie OOh
And muvver lub him yes she do.
Does him see de big moo moo
And the great big choo, choo, choo?
Hear him talk and say "Goo Goo!"
Watch him tiss his muvver, do,
Is him fraid ob big BOO BOO
Dat will catch him OOH! OOH! OOH!"
Thus some mothers talk each day
When with little ones they play
Then wonder WHY the babes don't say
English words in the proper way.

I have been accused by some mothers of taking the very joy out of their lives through ridiculing Baby Talk. It is their contention that the greatest happiness a mother has is in talking the ITSIE OOH Tongue. Nevertheless, even if I am depriving mothers of pleasure, I am pleading with parents to speak the best English that they know when they are in the presence of HIS MAJESTY, THE BABY.

In the first place they should cultivate gentle voices, for babies are very sensitive to harsh sounds and besides real language is intended to be spoken in a musical way. The Road to success is led, as someone has said, by musical tongues. We cannot all be Jenny Linds or Adelina Pattis but we can have pleasing voices which attract people to us rather than harsh, ear-splitting voices that drive folks away. If our parents give us, through hearing modulated voices, the proper foundation, it will be easy for us to speak gently and kindly. But even if we have not had this foundation it is the duty of every parent to train himself and herself for the benefit of the next generation.

Parents should be careful not to make contractions in speech. They should listen to themselves and hear if trying to be speedy has given them the tendency to say "Walkin", "Talkin", "Eatin", etc. When speaking to the baby it is wise to accentuate the ING. When Baby is learning to walk, hold out your arms and say; "Come walkING to me." When baby says something, the parent says "Baby is talkING to me." When the child is taking his food, say "Baby is eatING his dinner." In order to keep this in mind it might be well to put up a little motto BE CAREFUL OF THE INGS. Mottoes in times past were hung in every home but unfortunately most of them suggested death or punishment. I remember seeing in one home "BE SURE YOUR SINS WILL FIND YOU OUT." Naturally the children were haunted by these words. But cheerful mottoes that help us to speak better English, remind us of our duties, or suggest a smile are most helpful in every home.

In the Literary Digest published by Funk and Wagnalls, New York City, there is a lexicographer each week giving helpful suggestions in speech and answering questions that are asked by readers of

The Digest. This column has been helpful to many parents in knowing what is correct and what is not correct. Josephine Turck of Evanston, Illinois publishes a number of up-do-date books on "Your Every Day Vocabulary", "Correct English", "The Art of Conversation", and also a magazine called "Correct English; How To Use It". Her publications are most helpful and keep one up to date in the forms of speech since we must remember that language, just as dress, changes its style. Chaucer wrote beautiful English in his day but we no longer say "When that April with its showers swootie." Men like Huxley, Wooster, Webster, Roosevelt, etc., give us new words through explosions of speech and also through putting into books new word-forms that have been made in moments of excitement or through new inventions. At least 2,500 words, it is said, were coined during the last war and some of them are already in the new dictionaries.

THE DICTIONARY is our best friend in teaching us to speak correct English and in giving us an understanding of the words in this language. People may laugh at the old lady who said that "she read the dictionary from A to Z while her husband read the Bible from The World's creations to its end," but there is no better way to acquire flowing and rich robes in which to dress our thoughts than through seeking the dictionary's aid each day. When we read and find a new word or when we hear a new word spoken, to the dictionary we should go. And we should give the dictionary habit to our children. I believe in putting the dictionary on a low window seat so that it will be handy for every one in the house to seek for information. And I would suggest also that The Volume Library be placed next to the dictionary, making it easy of access. In the home equipped with these two good books in addition to the book that has always been called "The Good Book" there will be no need of a "cramped vocabulary" or of ignorance concerning the world's doings.

Some of us may suffer because we do not have many dollars but there are few people who need to suffer for lack of words in which to clothe their thoughts if they will only seek for new words each day to express thoughts. Instead of saying "AINT IT GRAND?" for everything that looks beautiful, husband and wife might amuse themselves by seeing who can find the greater number of adjectives to express the thought of beauty. Children can join in this game and thus expand their stock of words so that they will not get into the habit of depending upon a few very much overworked words to express their ideas. A little girl who played this game with me gave me the following list of words expressing grand:

Beautiful, handsome, pretty, lovely, graceful, elegant, delicate, dainty, refined, brilliant, splendid, rich, gorgeous, superb, magnificent, fine, sublime, enchanting, becoming, glorious, remarkable, radiant, great, noble, imposing, majestic, good, superior, choice, select, rare, priceless, exquisite, and precious.

I know of one mother who plays a game with her children called FAIRY WORDS. Each day she gives the children in the morning one or two new words, words that they have never heard before and asks them to see how often they can use the words during the day. These young children have started the very sensible plan of keeping diaries and each day they attempt to bring the NEW FAIRY WORDS into the diary. The mother reads what the children have written and corrects the sentences if Fairy Words have not been used correctly. We have all heard the story of the man who was told by a joking friend " He fell notwithstanding". The man went home and said to his wife "Oh I have such a funny joke—(Ha Ha). He fell nevertheless." People who do not have a thorough understanding of words are constantly making what the old lady who tried to talk French called FOX PAWS (Faux pas) or mistakes. Parents who correct their children not only for using blasphemy but also for making mistakes in English are giving the little ones a right start in life. There is a certain store in New York where I go to do all my shopping because the salespeople in that store speak good English. It is so much more pleasant to hear people use good English than to hear vulgarisms and lame constructions that I would walk ten blocks out of my way to buy from salespeople who are polite and well spoken. In the educational room of this store a short time ago I saw the following:

TEN DO NOTS

Do not say—Aren't they nice? SAY; Are they not nice?

Do not say—What did you come for? SAY; For what did you come?

Do not say—Tomorrow is Wednesday. SAY; Tomorrow will be Wednesday.

Do not say—Can I show you? SAY; May I show you.

Do not say—To who shall I send this? SAY; To whom shall I send this?

Do not say—These kind of lace. SAY; This kind of lace.

Do not say—There are none. SAY; There is none.

Do not say—We haven't got any lace. SAY; We have not any lace.

Do not say—I only have these. SAY; I have only these.

Do not say—She don't like it. SAY; She doesn't like it.

DONT'S like these might be used on A HOME SLATE EACH DAY, pointing out to the children the CORRECT and INCORRECT FORM of words. It is always better to use the positive than the negative, teaching the child that he should say "May I show you" and saying nothing about "Can I show you." But when the child hears other children using CAN for MAY then it is necessary to tell him why he should use the polite MAY that suggests asking permission rather than the determined CAN that denotes he can do what he chooses. Sometimes in my own home I have used Winifred's Chautauqua Desk for one word each day. In the morning we would select one word such as DON'T or DOESN'T and during the day we listened attentively to hear if anyone in our house used don't for doesn't. Winifred kept score and at night we had a great deal of fun seeing if Daddy, Mother, or Winifred had been guilty. By being particular about the use of this word for only a single day it is surprising how we trained ourselves to be on the qui vive in keeping DON'T for DOESN'T out of our conversation on other days.

TEACHING CHILDREN TO READ AND TO SPELL AT AN EARLY AGE HELPS TO GIVE A GOOD COMMAND OF THE ENGLISH LANGUAGE

There are some educators who warn parents not to teach their children how to read at an early age, but from an extensive study of children both, from the physical and mental viewpoint, I am convinced that the muscles of the eyes are not injured by early reading and that the sooner a child finds the companionship of book friends, the sooner he will gain practical knowledge along all lines. I am not, however, advocating the old-fashioned or some of the modern methods of teaching reading. I use FAIRY TYPEWRITER to give children the open sesame to knowledge through the reading art. The typewriter, in my opinion, is the most helpful tool in teaching correct English and in helping the child to teach himself to read. My method of giving him this instruction is through showing three-year-old John or Mary the word CAT accompanied by a picture of the cat. I point to the letter C and ask the child if she can find this letter on the typewriter. The observing child soon discovers C and with one finger she strikes C and sings to the air of Twinkle, Twinkle, Little Star. "CCCCCCCCCCC CCC". The song helps her to strike rhythmically and not to jar herself or the machine. Then I show her the letter A and she makes a row of A's in the same way. A row of T's follows. Her eye is being trained and at the same time her sense of rhythm. By the time that she has made several rows of C's and A's and T's she is familiar with these letters. Then, to the air of an old Folksong which is now used in the United States to sing "We Won't Get Home 'Till Morning", the child sings and writes C-A-T cat, C-A-T cat, C-A-T cat, C-A-T cat. As she says "cat" she strikes the space bar, and after singing C-A-T cat for twelve times she has a picture of cat on Memory's walls that will remain through life. In the same way large words make impressions and the visual memory is developed while the child learns when to use the different punctuation marks, and gains some knowledge of what is good English through copying classics. Dr. M. V. O'Shea's Six Nursery Classics is an ideal book to use in giving children their first reading lessons. Through copying The House that Jack Built, the child recognizes the words that are used repeatedly and keeps these words for his own. As a mimic he copies punctuation marks and with a little help from his parents he learns when to use commas and when to use semicolons. Little Billy Walsh of Pittsburgh when but four years of age had a knowledge of all punctuation marks and rarely made a mistake in their use. He gained this knowledge through copying the classics on the typewriter and at the same time he gained a wonderful vocabulary and memorized beautiful thoughts of the masters. Carlyle has told us that we should make for ourselves "nests of pleasant and restful thoughts that cannot disturb, nor pain make gloomy nor poverty take away from us. Houses not built with hands for our souls to dwell in." And these nests of beautiful thoughts cannot be given to children too early nor through a more helpful instrument than the good Fairy Typewriter. The child who writes upon the typewriter, copying rhythmically good English, will not say CHUNE for TUNE, INDIAN and ENGINE, INJUN, TER for TO, DULLICATE for delicate, CONSTITOOTION for constitution, CORNFEDENSHALL for confidential, TELLAPHONE, and he will learn to spell correctly. The modern child does not spell correctly. Fairy Typewriter helps him to spell words as they should be spelled and to speak good English by learning to have a mental picture of what is good English.

A wise man once said: "Your morals are your own but your manners belong to the public," and when manners are mentioned "manner of speech" comes first. Few people are consciously vulgar or unkind, but so often an impression of crudity and rudeness is given simply because one is in ignorance of the right thing to do or to say. There are certain expressions and words which mark a man or woman as an uncultivated person. The woman who says: "Yeh" for "Yes" or shakes her head in the savage way of saying the positive, betrays lack of culture. In the same way when she says: "I am through" for I have finished, "Where is he at?" for "Where is he?", "I done it" for "I did it," "I ast her" for "I asked her," etc., she shows that either she did not receive the proper training in her youth or she has associated in her adult life with people who lack refinement. It is best to give our children good educational foundations in the way of providing them with words that will help them through life so that they may not suffer from Word Poverty. Man is literally what he thinks, and words express his thoughts. If he alters his words he changes his character. When he is very young teach the baby through setting him a good example, through allowing him to teach himself by writing good English on the typewriter that the English language is one of the most precious possessions of a liberty loving people. This composite language which embodies the history of the race should be cherished in its purity by everyone who uses it; and it should be each American's duty to guard it by precept and example from misuse.

GAMES TO TEACH CHILDREN CORRECT ENGLISH

It may seem ridiculous to some parents and teachers but I believe in teaching very young children something of the science of ETYMOLOGY and of PHILOLOGY. I tell the little ones that WORDS have mothers just as children have parents and that they have also cousins. Etymology, I tell them, is the name of a very interesting study that tells us about the words' mothers. Philology tells about the relatives. The simple international language, Esperanto, is perhaps the best medium through which to give this information because it is founded upon many Latin roots. I have used the following jingle written by my little daughter when she was five years of age, as a first lesson in etymology and philology:

HUNDIDO krias bow! wow! wow!
KATIDO krias meow! meow!
BOVIDO krias moo! moo! moo!
KOLOMBO krias coo! coo! coo!
SHAFIDO krias baa! baa! baa!
INFANO krias ma! ma! ma!

I tell the child that Hundido has a German mother Hund. Katido has also a German mother Katze, and Shafido has the same kind of a mother named Shaf. Bovido has a Latin parent named Bovus, Kolombo, a Latin parent named Columba, and Infano has a Latin mother Infans.

By using pictures with this chart and also representing the sounds of the animals children have little difficulty in learning that Hundido stands for dog in Esperanto. A knowledge of the origin of words is most helpful to anyone. In fact I believe that parents should teach very young children the names of various foods and objects in the home in Latin. This knowledge will be very helpful in years to come. The pre-school age is the most active of all ages and little three-year-old Mary will be interested in learning that long ago the little Roman children called Language LINGUA, or tongue, and that is how we got the word language.

The mother who has some knowledge of Latin can help to give her child a firm foundation upon which to build his English by teaching him the names of Latin mother-words and she can play tea party or various games to give him this knowledge. In the little Esperanto jingle that I have just given you, she can ask the children how many Latin mothers and how many German mothers they can find. After playing the game a few times the little ones will never forget that INFANO' or Infant, has a Latin mother word. The word mensa for table, sella (chair), pila (ball), rosa (rose), simia (monkey), puella (girl), puer (boy), mater (mother), pater (father), ursa (bear), luna (moon), animal (animal), sol (sun), domus (house), manus (hand), are easy to be remembered and help the child in his studies as he grows older.

The following Latin and English jingle may be used as a game and helps to give the child his proper language foundation:

Leo for lion the great king of beasts,
Tigris for tiger, on bones he feasts;
Simia, monkey; ursus a bear
Elephas, elephant; lepus, a hare.

Give each child the name of one of these animals, leo, tigris, simia, ursus (masculine bear), elephas, lepus. After each child tells what animal is represented call out suddenly: "Elephas chase simia!" "Ursus catch lepus!" "Leo chase tigris!" Each one must be on the qui vive for his or her name and this game trains the observation as well as the language memory. It also gives amusement to the children. Little two-year-old children have learned to know that elephas is the Latin for elephant and that simia stands for monkey.

ANAGRAMS

Anagrams are useful in teaching children their letters, in showing how words are spelled and in building Language Houses with correct English. Very little children may not know how to construct sentences but they can play with little boxes pretending that the boxes are cars in which they can load all the A's, B's, C's, etc., and let these cars travel to Language house which we may call AT, IT, OG, EN, AM, etc. Children can make bat, cat, fat, gat, hat, mat, nat, rat, sat, tat, vat, with AT. Using IT they can form bit, fit, hit, It, kit, lit, mit, pit, sit, wit, With EN they can make Ben, den, fen, hen, men, pen, ten. With AM dam, ham, ram, Sam, tam. With OG bog, cog, dog, fog, hog, jog, log.

Very often new words may be learned through playing this game. The word GAT is not well known but it is a word in the dictionary standing for a break in the river's bank. Spelling may be made a delight to children through the use of the typewriter, spelling with blocks and anagrams, and through having old-fashioned spelling BEES giving the young folks only the simplest words to spell and singing songs to them before they spell.

To air of Farmer in The Dell, sing:

G-O-O-D good, G-O-O-D good
We are always happy when we're
G-O-O-D good.

F-L-A-G flag, F-L-A-G flag
Three cheers for the U. S. A. F-L-A-G flag.

To air of Go Tell Aunt Betsy three children can play CAT and RAT. With cards C, A, T—one hung from each child's neck—the kiddies hold hands and dance around asthey sing:

C-A-T cat, C-A-T cat, C-A-T cat
C-A-T spells CAT.

Three other children with letters R-A-T, one letter hung around the neck of each child, join hands and sing to same air:

R-A-T rat, R-A-T rat, RAT- rat,
R-A-T spells rat.

Then the C-A-T, still holding hands, tries to chase the R-A-T, also still holding hands, so as to form a circle. The children think that this game is great fun. The Cat may be chased to Pat or any other word in the AT family.

WHAT DOES THE CAT DO?

Another game to teach spelling and to impress upon the child what a cat can do, while adding new words to said child's vocabulary and helping in flow of speech, is the following:

Mother begins by telling one thing that C-A-T can do. C-A-T laps M-I-L-K milk. Then the baby tries to tell something that C-A-T can do. The C-A-T meows! The C-A-T catches rats. The C-A-T purrs. The C-A-T plays with a ball.

When the child knows his friend from every angle the mother can introduce new animal friends into the nursery through pictures or she can take the child for a walk and show him these animals. So many of us go through the world with "Buttons for eyes" that we know very little about our animal friends. Recently I met a well educated man who would not believe me when I said that a cow did not have teeth in her upper jaw. The well trained baby can be taught all of these interesting facts in babyhood days, the days that make the greatest impression upon him. He can learn to spell about the Cow and make simple but correct sentences: The C-O-W cow gives milk. The cow eats grass. The cow says "Moo!" The cow is red.

By putting large red letters of the alphabet as a frieze around the nursery wall and talking about these letters or singing this little song to air of Twinkle Twinkle Little Star, the child is helped towards a knowledge of the signs that the Phoenicians gave us to express language or thought in written form:

A, B, C, D, E, F. G—H—I. J—K—L, M, N, O, P.—Q—R—S—T—U—V—W—X, Y, Z

I'm as happy as can be because I know my A. B. C.

By talking about LETTER A and comparing it with other letters A, the baby soon learns to know A for all time. Then teach him about B—and so through the alphabet.

PLAYING PUZZLES

Let the mother draw some letters and then ask the child to make these letters. Use the following jingle:

Make a letter which looks like a tent——A
Make a letter with its back bent——B
Make a letter with a round nose——P
Make a letter with tail and not toes——Q
Make a letter with humps on its back——B
Make a letter like a snake's track——S
Make a letter that's round as a ring——O
Make a letter that's straight as a string——I.

Reading from the classics to children and telling them stories help in giving good language foundations. After telling the

story ask the children to tell you the tale. The Peter Rabbit Tales, Jatakas Stories of India, are excellent stories that always interest little folks. The Jatakas Tales have been told in India to children for many generations in order to teach the young folks morals. They have been recently translated into English by Ellen C. Babbitt, and Felix Adler says: "'The Jatakas Tales' contain deep truths, and are calculated to impress lessons of great moral beauty," and best of all, as Miss Babbitt gives them, they are expressed in excellent English.

Long ago John Locke in his book "How to Bring Up Children" tells mothers "To instill sentiments of Humanity, and to keep them lively in young folks, will be to accustom them to Civility in their Language and Deportment towards their inferiors. He suggests also in teaching children how to command the English language that parents should begin with the home and talk with their young students about everything in the home. In the same way go to the forest and get acquainted with the forest. This plan has been adopted in our times by the A. S. Barnes Company in some of their spelling books that give the child big and little words concerning parts of houses, stores, etc. The words portico, arcade, porch, balcony, piazza, vestibule, veranda, mantelpiece, chandelier, baseboard, threshold, transom, skylight, eaves, shingles, rafters, chambers, dining room, sitting room, corridor, library, reception room are given in a HOUSE GAME. Children have been known to live in up-to-date houses until six years of age and to be ignorant of the meaning of transom, baseboard, etc. No wonder that they go through life without seeing ears and tongues that express thoughts readily.

WORDS TO BE USED FOR EXPRESSING THOUGHTS ABOUT THE STORE

Merchant, buyer, cashier, clerk, show case, show window, counter, shelf scoop, scale, barrel, bin, piece, dozen, quart, pint, gallon, ounce, bushel, peck, pound, piece, cheap, cord, wrap, loss, gain, package, parcel.

WORDS USED IN DESCRIBING THE FOREST

Trees, tall, low, briars, brambles, leaves, flowers, green, red, brown, colors, root, trunk, bark, twigs, limbs, branches, boughs, cedar, oak, chestnut, bamboo, cocoanut, elm, maple, pine, sycamore, earth, birds, animals, spring, summer, autumn, fall, winter.

In the same way parents can make lists of the things to eat, the objects in various rooms, the animals, birds, insects, etc. Each week select one subject and talk about that subject for an entire week, giving the child information about said subject, encouraging him to increase his vocabulary through spelling, writing, and recognition, both by eye and ear, of new words. In this way a parent can at least give his child a rich vocabulary if he cannot give him wealth in money, houses, and lands.

When foreigners study English they are often greatly confused because so many English words are pronounced the same but have different meanings. The young child is also confused by such words as pain, meaning an ache, and pane, standing for a glass window pane. A game played by a mother who has the dramatic instinct to show her children the meaning of words pronounced alike will be very helpful in giving new words to the gold mine of language and will assist in spelling.

Let us take the words bell and belle. She can ring the B-E-L-L and then show the picture of a fine lady called BELLE by name and acting as a belle in society. The following list of words may be used by parents in trying to show the meaning of similar sounding words:

Be, Bee; stile, style; hole, whole; blew, blue; bad, bade; him, hymn; knot, not; but, butt; made, maid; hear, here; time, thyme; wrote, rote; knew, new; rap, wrap; cent, sent, scent; in, inn; plum, plumb; ate, eight; jam, jamb; hart, heart; all, awl; stare, stair; read, reed; read, red; die, dye; knit, nit; fore, four; forth, fourth; to, too, two; threw, through; hew, hue; sun, son; wood, would; fir, fur; earn, urn; gait, gate; grate, great; hail, hale; mail, male; bare, bear; fair, fare; hair, hare; pair, pare, pear; their, there; meat, meet; berry, bury, etc.

A long list of these words will be found in Word Lessons by Alonzo Reed. I have found them very useful in helping children to understand the meaning of words with similar pronounciations and also to teach spelling. Professor Reed believes also in teaching quotations that are worth while and in using the words that we wish the children to understand. Note the following examples:

BE just and fear not—Shakespeare.

The BEE hive's hum shall soothe my ear.—Shakespeare.

Thine own true KNIGHT by day or NIGHT.—Shakespeare.

FOUL deeds will rise.—Shakespeare.

Behold the FOWLS of the air.—Bible.

Quotations may also be given with the words omitted that are to be featured. The mother may either write these quotations for the larger children or repeat them for the little folks. These language lessons are being written to help both little and big children. We must remember that there are one hundred and sixty eight hours in each week and the children are in school not over thirty hours, leaving one hundred and thirty eight hours for the education of home, church, and street. The church plays a very unimportant part as regards number of hours devoted to the child's education but the home and the street play a most important part. If the child hears his parents use bad English or the children in the street using slang and incorrect forms of speech he will use incorrect English despite all the rules that he learns at school. I met a little girl in Pittsburgh, a few years ago, who made ninety eight per cent in her language work at school. She could diagram, parse, and repeat like a polly-parrot every rule in her text book but when she came to one of my play classes she would call out "I seen Johnnie", "I've got ter git you", etc. It was apparent that she heard this language in her home and when she played in the public play grounds and in the streets. How to speak good English should be taught in the playgrounds as well as in the schools and parents should do everything to make children proud of English, the noble tongue, and glad to protect it by speaking correct English.

Some of the sentences that may be used to teach meanings of words that are pronounced:

They never fail who ( ) in a great cause.—Byron.

A beautiful red ( ) is made from the body of insects.

The shoemaker uses an ( ).

( ) the world's a stage—Shakespeare.

Bend under any ( )—Shakespeare.

Learn to labor and to ( ).—Longfellow.

The glorious ( ).

Go ( ) under the open sky.—Bryant.

It ( )a gale.

The ( ) sky bends over all.—Carlyle.

Sweet is pleasure after ( ).—Dryden.

The face against the ( ).

MAKING PICTURE WORDS

The English language must be taught, as far as spelling is concerned, chiefly through the eye. I encourage children to look at a word and to be sure that they know what that word looks like and then to shut their eyes and describe the word. In words like receive, relieve, separate, etc., words that I call THE TROUBLESOME words, I attempt to make pictures that children will never forget. When writing separate I use sepArate showing the A in the middle. As we know E is often used incorrectly in spelling this word. In the same way I write the words reEive, relleve, nIece, pIece, sIege, thIef, concEive, percEive, recEipt, hEight, nEighbor, wEigh. Writing words in this way trains the visual memory. If children are taught that i follows L and e follows C as in the not very elegent word LICE they will remember how to spell the words through life. Sometimes when it is difficult to remember whether there should be one or two letters l at the end of a word I spell the word incorrectly and cut off one L leaving the picture of this cancellation in the child's mind. Example: UntilL.

A game may be played by all members of the family with TROUBLESOME WORDS. Typewrite a number of words that bother any one in the family and put them into a box. In the evening let each member of the family draw one by one from the box and see if the others can spell these words. If not any one makes a mistake the so-called TROUBLESOME WORD may be transferred to a box called WORD FRIENDS. Some of the words that I have used in this game are:

Achieve, aggrieve, belief, believe, brier, brief, brevier, chief, field, fiends, fierce, frieze, frontier, grief, lief, liege, lien, mien, niece, pier, pierce, piece, priest, relief, relieve, reprieve, retrieve, series, shield, shriek, siege, sortie, thief, thieve, tierce, tier, wield, yield, die, lie, tie, vie, kerchief, mischief, sieve, friend, deign, eight, feign, feint, freight, heinous, heir, inveigh, neigh, neighbor, obeisance, reign, rein, reindeer, skein, sleigh, their, veil, vein, weigh, conceit, conceive, ceil, ceiling, deceit, deceive, perceive, receipt, receive, either, neither, leisure, inveigle, seine, seize, weird, heifer, nonpareil, sleight, height, kaleidoscope, counterfeit, forfeit, surfeit, foreign, soverign, mullein, center, meager, meter, scepter, sepulcher, somber, theatre, acre, lucre, massacre, mediocre, phthisic, carouse, espouse, nasturtium, propel, ecstasy, plausible, assuage, naive, naivete, negligee, moralize, supervise, paralyze, idolize, chastise, magnetize, harmonize, celibacy, hypocrisy, privacy, spicy, tipsy, heresy, courtesy, decency, ruffian, precede.

The troublesome terminations are ar, er, or, cy, sy, ise, ize, yze, able, ible, eous, ious, ant, entcious, tious, ance, ence. And the only way to be sure of one's spelling is to have a picture of the word in mind. It is wise also to pronounce each word distinctly. Particularly is this necessary if we use words derived from foreign languages. Some of these words express a thought that no English word

can express and they are helpful in making word pictures but unless we are sure of ourselves it is wise not to use the foreign words in talking with our children. Among words that are in constant use we find: Ap-ro-pos, at-ta-che, bou-quet, chauf-feur, cor-tege, co-te-rie, cui-sine, de-bris, de-but, e-clat, e-lite, en-nui, ga-rage, ma-de-moi-selle, mes-dames, mon-sieur, messieurs, mi-rage, mo-rale, neg-li-gee, qui-vive, re-gime, ren-dez-vous, re-su-me, so-bri-quet, soi-ree, trous-seau.

In the same way that we play with TROUBLESOME WORDS we may use HOMONYMS or words having the same sound as other words but differing in meaning, and also MISUSED WORDS.

The word LOVE is misused by most people. We hear educated parents say: "O how I love fried chicken!" "Oh how I love ice cream" when the thought to be conveyed is: "I like fried chicken and I like ice cream but I love my father and I love my mother." The word AWFULLY is used very often for VERY. Enthusiastic young girls say: "I had an AWFULLY good time". In the same way the word ELEGANT TIME is used instead of delightful. Everything is LOVELY to the enthusiastic young flapper. She has a lovely hat, a lovely time, and finds the weather as well as the people lovely. She might call her hat pretty and say that she had a pleasant time and call the weather "pleasant" instead of "lovely." The word "funny" is often used for strange. We hear girls say: "Isn't that the funniest thing! Isn't it funny that I cannot remember."

OTHER MISUSED WORDS

I propose (PURPOSE) to write a story.

He is a contemptible (CONTEMPTUOUS) being.

I would recommend (ADVISE) you to try this remedy.

I have spent most (ALMOST) all my money.

I am most (ALMOST) ready.

Her death is hourly anticipated (EXPECTED).

I expect (SUPPOSE) you went to the theater last evening.

He intends to locate (SETTLE) in Canada.

I calculate (INTEND) to go to NEW York.

I reckon (BELIEVE) she will come.

The gentlemen (MEN) and ladies (WOMEN) came.

She is perpetually (CONTINUALLY) annoying me.

This teacher keeps herself well posted (INFORMED).

We shall reside (LIVE) in New York.

Weeks have transpired (PASSED) and nothing has been done.

I guess (THINK) you can come.

I am stopping (STAYING) at The Ritz.

He learned (TAUGHT) me to play golf.

Can (MAY) I come to see you?

Tom is very ill but not dangerous (IN DANGER).

Do like (AS) your friend.

Prizes are often offered by advertising companies for the greatest number of words that can be made out of a single word, standing perhaps for the name of the company. Children will work diligently, looking through the dictionary for words to add to their collection, when such a prize is offered. Mothers will help their children by offering some reward for the largest number of words made out of any word either with anagrams or by writing the words on the typewriter. In the same way HOW MANY HOMONYMS and HOW MANY SYNONYMS may be goals for children who like to compete in games that mean something?

One of my little natural education kiddies showed me two boxes a few days ago. In one she had her HOMONYMS and in the other her SYNONYMS and she used these large words in the same way that a child would talk about a doll or a ball. In the HOMONYM collection I found words like (ho-hoe), (lo-low), (hail, hale), (beat-beet), (cellar-seller), (been-bin), (dew-due), (beach-beech), (piece-peace), (seam-seem), (tale-tail) (so-sow-sew).

Although this little girl was but seven years of age she understood the meaning of both HOMONYM and SYNONYM and had put together in her SYNONYM box such words as (Ache, pain, suffering, smart, pang, anguish, agony, to grieve, to suffer), (Banquet, feast, party, entertainment, festival,) (Cold, chill, frigid, wintry, frosty, raw, biting, nipping, chilly, unsympathetic) (Toy, plaything, gewgaw, trifle, bauble, trinket, gimcrack, club).

The same plan of teaching parts of speech has been tried by another friend. In one box her little boy keeps pictures of different objects that are marked with their names and sometimes with little jingles. "Let us play NOUNS" says little Tommy, with as much interest as some children say: "Lets play catchers."

He calls his Box of Interjections—NOISY WORDS. Some of the words in his box are: Ah! Aha! Ahoy! Alas! Alack! Bah! Bravo! Fie! Ha! Ho! Hulloa! Hurrah! Lo! O! Oh! Pshaw! Ugh! Ouch! Whew! Whist!

BUILDING LANGUAGE HOUSE out of correct phrases and sentences is another helpful way of teaching children to be on the qui vive for incorrect forms of speech. The correct sentences are written on straight pieces of cardboard resembling perfect bricks. The incorrect sentences are written upon crooked cards with corners missing, cards that cannot help to build a nice, straight house. Both crooked and straight cards are put into one box and all the children playing this game draw cards from the box. The child who draws a straight card reads his sentence and places the card as a foundation of his house. The child who draws a crooked card reads the sentence and tells why the building block of Language House is crooked.

The following are some of my CROOKED BRICKS:

I done it. I haven't did it. I seen it. I have saw it. Lay down and sleep. The cat laid down. The hen sets on eggs. I brung you somethin. I drawed a picture. Baby et a apple. You was naughty. Ten times two is twenty. If I was you I would be good. I feel good. Say, did you hear the news. Say, listen! I just hatter laff. I gotto go. I am pleased to meet you. Gimme a piece. Lemme see. Leave it lay. Leave me do it. I haven't got a dog. There's five dogs. I'm most ready. My heart is broke. My pants is tore. I kin ketch you. Will you come to dinner? I sure will. The baby looks like I do. Do you want off? I must of lost it. Its him. Its them. Give ot to him and me. Us girls want it. The plums are yourn The flowers are ourn. You hadn't oughter do it. Where is he at? That's all the farthern I can go. I'm goan to do it. I can't wait on you any longer. John and Mary, they're comin. These kind are lovely. I only have two oranges. Do like your friend does. He extends kindness to me. I love a good breakfast. John laid down to rest I disremember the date. We have a mutual friend. She is a nice talker. I grow vegetables. Here is a house to let. All over the land. Her work is poor at best. I shall fall down. Do you mean to come? Is Mr Jones in? Will I do this for you? What will I do? I don't choose to. We called at William's. By this means. All that was wanting I am going over the bridge. I saw him not long since. My father has improved since. A couple of boys went to school Directly as he came to town The streets are nicely decorated. Her dress was perfectly awful. No one was there. No gold or silver. There were three persons present. He partook of refreshments. He settled the account. Yesterday's Times has come He got onto the roof. They only sent me. The river has overflown its banks. You will not succeed without you study The house cost more than you think for. An accident transpired yesterday. From whence did she come? Have you got money?

Parents may play a game with their children pretending that Queen Minerva rules over one realm and King Stultus (standing for the fool) rules over another. Sentences correct and incorrect should be placed in a large box and the children allowed to draw one at a time. When a correct sentence is drawn the child who draws it presents the sentence to wise Queen Minerva. When an incorrect sentence is drawn the card is presented to King Stultus, who inquires of Wise Minerva what is the matter with this sentence? Queen Minerva tells him and suggests how he can change the sentence

Another way to show the children WHAT TO SAY and WHAT NOT TO SAY is to place the NEVER SAYS (or incorrect sentences) in one box and BETTER SAY in another. Some of the incorrect sentences that I have already given will be helpful for the NEVER SAY box. Here are a few NEVER SAY and BETTER SAY as I sometimes arrange them.

NEVER SAY

Anyways, anywheres.
Authoritive.
Anyhow, anyway.
He is apt to fall.
Any manner of means.
Aren't you.
Ast.
Avocation for a calling.
Talked among one another.
Swim any.
He lives at Chicago.
The truth is apparent.
I have all of them.
I have loaned.
I know that party.
I have proven it.
At auction.
Its me.
Between you and I.
Who is the letter for?
Is it about done.
I love potatoes.
I am mad.
It is most interesting
An historian.
Both are alike.
I am afraid it will rain.
He went around the world.
He was beaten
He is bound to go
I differ with you upon that point.
I have every confidence in him.
I have no other purpose than this.
He acted like the rest.

I hold the lines.
He loaned me money.
Mrs. Dr. Jones.
A near by house.
No place.
Nowhere near.
Keep off of the grass.
A child of two years old.
Not a one was hurt.
He is no good.
I have a child of two years old.
Neither the one or the other.
The play is over with
I'm not overly anxious.
I am anxious to see you.
Wheat is plenty.
It is plenty good enough.
Did you take in the show?
I shall try and go.
Wait on me.
Do you want in?
I hope he arrives on time.
I'm a new beginner.
Providing he has.
Will you repeat that again?
How do you do.
A large enough house.
The box fell on the floor.
We conversed together on the subject.
I am coming to your house.
I expect so.
Equally as well.
I have every confidence in him.
He called upon me.
He died with fever.
I donate ten dollars.
I have a date.
Different than me.
Do away with.
He don't know.
He is home.
He was hung.
I don't know if I can.
He is back of me.
It will change inside of a week.
Keep me posted.
I raised my children.
I sized him up.
He started to cry.
I took French.
Let me say right here.
I saw him not long since.
Peaches are a healthy fruit.
If I am not mistaken—
Because I don't choose to.

SAY

Anyway, anywhere.
Authoritative.
In any event, at any rate.
He is likely to fall.
Any means.
Are you not?
Asked.
Vocation.
Talked with
Swim at all.
He lives in Chicago.
The truth is obvious.
I have them all.
I have lent.
I know that person.
I have proved it.
By auction.
It is I.
Between you and me.
For whom is the letter?
It is almost done.
I like potatoes.
I am angry.
It is very interesting.
A historian.
They are alike.
I fear it will rain.
He travelled around the world.

He was defeated.
He is determined.
I differ from you.
I have the greatest confidence.
I have no purpose other than this.
As the rest.
I'll hold the reins.
He lent me money.
Mrs. Jones.
A neighboring house.
He is worthless.
No where near.
Keep off the grass.
I have a child of two years.
Not one was hurt.
Neither the one nor the other.
The play is over.
I'm not over anxious.
I am eager to see you.
Wheat is plentiful.
It is quite good enough.
Did you attend the show?
I shall try to go.
Wait for me.
Do you want to come in?
I trust he arrives.
I'm a beginner.
Provided he has.
Will you please repeat?
How are you?
A house large enough.
The box fell to the floor.
We conversed on the subject.
I am going to your house.
I believe so.
Equally well.
He called on me.
He died of fever.
I give ten dollars.
I have an engagement.
Different from me.
Abolish.
Doesn't know.
He is at home.
He was hanged.
Whether I can.
He is behind me.
Within a week.
Keep me informed.
I reared my children.
I judged him.
He began to cry.
I studied French.
I saw him not long ago.
Wholesome.
If I mistake not.
Because I would rather not

Alice E. Ball has written a very clever book called "The Child's Own English Book" which described a number of games that mothers and teachers can play with children in order to impress upon the childish mind that which is correct and that which is incorrect. This book is published by Lippincott Publishing Co. Names of the parts of the body, of different animals, of toys, names of places, and of people are used in games. MY GRANDMOTHER'S CAT is suggested as a fine game to teach adjectives. One child begins: "My grandmother's cat is a good cat." The next child says: "My grandmother's cat is a white cat." Such words as ugly, beautiful, black, yellow, cross, etc., may be used.

In teaching children about verbs the game of LET US PRETEND will be very helpful. One child pretends to be Santa Claus and tells what he can do. Another child is an Indian, a third represents a sailor, etc. Each action expresses a VERB. "March," says the teacher, and the child marches, expressing action, and therefore march is a verb. Go! Stop! Look! Listen! Speak! Halt! Walk!

I have suggested the teaching of SYNONYMS and HOMONYMS to very young children. There is no reason why ANTONYMNS should not be taught. As we know words with opposite or nearly opposite meanings are called ANTONYMS. The mother may use a word conveying one idea, and the child follow with a word that expresses the opposite idea. If the mother says: "I shall free you." The child may reply: "I shall bind you." Mother says: "The water is deep." Child says: "The water is shallow." Mother says: "The sky is clear." Child says: "The sky is cloudy." Mother says: "The boy is rough." Child says: "The boy is gentle." Mother says: "The boy is polite." Child says: "The boy is rude."

If big people as well as little people could be taught to remember the meanings of various Latin stems used in English words they would have little trouble in understanding the meaning of words. Whenever we see ACT we know that something to do is implied. ACT or FER means to carry. Ferry is a carrying boat. MOV. and MOT. means to move, movement, movable, motor, locomotive. RUPT means to break. Bankrupt, Interrupt. SPIR means to breathe. Inspire, expire, (spirit). VOLV and VOLT mean to turn. Revolve, revolt, revolving, revolution.

ABBREVIATIONS

Abbreviations bother grown people as well as little folks. I have written many games to teach children these abbreviations but perhaps the quickest way that they can be learned is through writing the abbreviaton and its meaning on the typewriter. Another game with the same purpose is to have a box containing abbreviations that stand for various degrees, months of the year, people, and general terms used in business. Give each child one or two of these names, draw the abbreviation from its box and the child who is supposed to represent the abbreviation should stop forward and claim his title. The M. D. is taken by the doctor. The COL. by the COLONEL, the Pres. by the President. The Gov. by the Governor.

HOW MANY PERSONS AM I?

This is a game that may be played with such abbreviations as Mlle., Mme., LL.D., Esq., Ph.D., A.B., B.S.

OTHER ABBREVIATIONS THAT ALL CHILDREN SHOULD KNOW

A. D. (anno Domini, in the year of our Lord). A. M. (before noon). P. M. (after noon). ANON. (anonymous). Ans. (answer). AV. or Ave. (Avenue). B. C. (before Christ). Co. (company). Etc. (et cetera) and so forth. Ex. (example). Id (idem) the same. i. e. (id est) that is. Jr. (junior). N. B. (nota bene) note well. Pro tem (for the time being). P. S. (postscript). R. R. (railroad). Vs. versus (against). C. O. D. (Collect on delivery). Yd. (yard). $ (dollar). Qt. (quart). % (per cent). Doz. (dozen). Mr. (Mister). Mrs. (Mistress). Prof. (Professor). Hon. (Honorable). @ (at). Jan. (January), Feb. (February). Mar., Apr., Aug., Sept., Oct., Nov., Dec., represent other months of the year, while Sun., Mon., Tues., Wed., Thurs., Fri., Sat., stand for the days of the week. Names of the states are also abbreviated. Ala., Ark., Cal., Colo., Conn., Del., Fla., Ga., Ill., Ind., Kans., Ky., La., Md., Mass., Mich., Minn., Miss., Mo., Mont., Nebr., Nev.,

N. H., N. J., N. Y., N. C., N. Dak., Okla., Pa., R. I., S. C., S. Dak., Tenn., Tex., Vt., Va., Wash., W. Va., Wis., Wyo.

It is difficult to teach young children the correct use of punctuation marks but the typewriter and multiscope are very helpful. Through copying words on the typewriter the child recognizes the little mark . ; : ? ! " - —, and gradually learns when to use them. I have printed these marks upon small cards which I put into the multiscope. They make beautiful designs and one may hear little four-year-old Alice say to her playmate: "Please give me another quotation mark to put into my multiscope." "Please lend me one of your semicolons." All children love to make designs, and punctuation marks make wonderful designs. Some of my children love to make flags, boats, houses, etc., on the typewriter through use of these marks. These games do not teach the correct use of punctuation but it familiarizes the child with marks that are used to give expression to sentences and phrases and after writing for a short time on the typwriter little Tom discovers that a period always comes at the end of a sentence that tells something, while a question mark comes when he asks a question. It is easy to know when to use exclamation points and quotation marks but it takes study and practice to know when to use commas, semicolons, and colons. The sooner we begin to gain this knowledge the better for us, as children are very observing and will take more interest in punctuating correctly when they are very young than when they grow older.

There is no better way to teach correct English, both spoken and written, than through encouraging children to write letters to their friends. My daughter Winifred began keeping a diary when she was three years of age and at this age she wrote a number of letters to various friends. Every time she wrote a letter it was for a purpose. She did not feel (as some children must feel) that she was writing exercises. She knew that what she wrote would reach some one. This gave her intense interest in her writing. She tried to spell correctly, to tell something worth while, and to express herself in her best style.

Keeping a diary each day is very helpful to children who are learning to write and to express thoughts. These diaries should be kept and pride taken in them so as to encourage the young folks to continue writing diaries through life. But books, our best friends, "that fill us with sunshine and gladness," giving us the best thoughts of all ages, are the best helpers in providing children with knowledge clothed in best language. A house may be provided with every other comfort and luxury. There may be elegant furniture, luxuriant baths, wonderful draperies, etc., but unless the house contains BOOK FRIENDS, it remains a house and not a home and it is a calamity in anyone's life if that one has no appreciation of books that prove a boon to their lovers, cheering them in sadness and giving them thoughts that inspire to the accomplishment of great deeds.

Making beautiful thoughts their own through help of parents singing beautiful songs and repeating classical sayings and poems give children real storehouses of worth-while thoughts to help them in every trouble. Children should also be encouraged to try to write jingles and short stories. Through attempting to put their thoughts into either poetic or good prose form they gain a wonderful knowledge of the technique of the English language.

There are a great many so-called children's books which are wholesome, entertaining, and educative; books that are genuine, vital and human. These books should be where children can read them. But many of the books called Children's books are innocuous, sentimental, cheap and silly in sentiment. It is a waste of time for children to read them. And the child who hears the talk of a cultivated father and mother, who explores with them the book friend's pages, has the finest opportunity to gain the larger aspects of life and to be well grounded not only in general information but in the forms of good language that express good thoughts.

Activity is a constant factor in mental growth. Children all want to do something and before reaching the adolescent period, they are rarely lazy and always eager to discover the wherefore of every why. And that is the time to interest them in correct English—not through learning rules of speech but through making word paintings for the child, and connecting these word pictures with his own experiences.

Habit is achievement—given the habit of speaking correctly, and of being particular about the words one uses—the child has an asset that will help him through life.

Probably there is no one time during the school day to which young pupils look forward with the same eagerness as Story Hour. Story Hour in the home can be made just as attractive. In this hour the parents as well as the children can tell stories. Story telling gives the child a good command of English and accustoms him to expressing his thoughts. THE OPEN FORUM both for home and school in which a subject is selected each day and one child leads the discussion, while the others take part, is ideal for thought expression. The Open Forum was used by the Romans years ago and it is the best means of giving information, getting people together, and of aiding in public speaking that has been invented by man.

At the present time I have sixty-two of these forums in the City of New York. New York has been accused of being a cold city. I know that there is no kindlier city in the world. All that is needed is the getting together of people. For that reason I started Open Forums, called "Neighborhood Forums" in every section of the city and they are doing good. Such forums started in rural districts or in small towns would be very helpful for readers of The Volume Library. This volume of useful information might be taken as a text book or a guide and the various subjects treated in this book used for topics of discussion by both big and little people.

Some of the subjects that ought to be discussed (in addition to general topics and current events) are ambition, bad company, beauty of character, chivalry and courtesy, conceit and vanity, cowardice and cruelty, discontent, bad temper, dishonesty, deceit, envy, love, frankness, friendship, generosity, honesty, honor, humanity, inhumanity, humility, modesty, justice, injustice, kindness to animals, laziness, observation, patriotism, perseverance, philanthropy, self control, self reliance, truth, thrift, fairy tales, nature stories of all countries and stories of famous people.

Some of the books that seem to be enjoyed by all children and that I have found most helpful in giving material for story telling in "Story Hour" or for discussion in "The Home Forum" are: In the Days of Giants by Abbie Farwell Brown; Heroes of Asgard, Annie and Eliza Keary; Stories from Wagner's Operas, A. A. Wagner; Old Greek Folk Stories, Josephine Peabody; Heroes, or Greek Fairy Tales, Charles Kingsley; Heroes and Kings, A. A. Church; Famous Legends, Emmeline G. Crommelin; A Child's Own Book of Verse (one-two-three), Ada Skinner; A Child's Book of Verses, Robert Louis Stevenson; Stories the Iroquois Tell their Children, Mabel Powers; Flower Fables, Louisa May Alcott; Child Stories from the Masters, Maud Menefee; Old Ballads in Prose, Eva March Tappan; Stories from the Fairy Queene, Mary Macleod; Book of Nature Myths, Florence Holbrook; The Bird Kindgom, Educators' Association; The Animal Kingdom, Educators' Association; Stories of Little Fishes, Leonore Mulets; Stories of Trees, Leonore Mulets; English Fairy Tales, Joseph Jacobs; Wonder Stories for Children, Hans Christian Andersen; Historical Girls, E. S. Brooks; Child Life in Many Lands, D. A. and M. Blaisdell; Showland Folks, Robert Peary; My Dark Companions and Strange Stories, Henry M. Stanley; Just So Stories, Rudyard Kipling; The Story Hour, Kate Douglas Wiggin and N. A. Smith; Dream Children, Horace E. Scudder; Christmas Every Day, William Dean Howells; Bimbi and Other Stories, Mary E. Wilkins; The Golden Windows, Laura E. Richards; The Book of Knight and Barbara, David Starr Jordan; A Book of Saints and Friendly Beasts, Abbie Farwell Brown; Nursery Rhymes and Tales of England, J. O. Halliwell.

Children not only love to hear stories and to tell them, but with the use of the typewriter or a box of anagrams they can make stories by copying from story books. Copying words trains the power of observation and helps in spelling and in English construction. My daughter Winifred knew many classics when she was but five years of age through copying short poems on the typewriter. At the present day rapid pronounciation of words is called "reading" but real reading as I see it, means a knowledge of spelling and even of etymology and a comprehension of the word's meaning.

When my daughter was in the preschool age she found great enjoyment in seeking for Baby Words as she called the words derived from various stems. In her BABY WORD BOOK Number One, which is on my desk at this moment, I find the first Mother Word as MAGNUS and beneath Mother Magnus, I find fifteen baby words and each defined. When Winifred Stoner was fifteen years of age, she was able to appear on the platform with such men as Sir Oliver Lodge, John Drinkwater, Gilbert K. Chesterton, Vilhjalmur Steffanson and other noted speakers and she found no trouble, not only in lecturing but in entering into discussion with other speakers and I attribute her ability to express herself so readily, not only in speaking but in writing, to her study of words when she was a baby. I would give her a certain Latin word and she sought for the words derived from the Latin root in the dictionary. This was her writing and her spelling lesson. Looking through her first book on Etymology, I find the following words: Magnus (large), Bellum (war), Donum (gift), Memoria (memory), Regina (queen), Parva (small), Virtus (virtue), Liber (liberty), Post (after), Amo (love), Servus (servant), Ardere (to burn), Putare (to clean),

Circulare (to make round), Bonus (good), Dominus (master), Aqua (water), Epistula (letter), Cara (dear), Pecunia (money), Vocat (he calls), Hortus (garden), Amicus (friend), Diligentia (diligence), Nauta (sailor), Femina (woman), Narrare (to narrate), Albus (white), Malus (bad), Latus (broad), Puer (boy), Verbum (word), Longus (long), Superus (superior), Simia (monkey), Timeo (I am afraid), Lateo (I hide), Multus (much), Herba (herb), Pupa (doll), Tabula (tablet), Cauda (tail), Silva (forest) Sanus (healthy), Liber, Libri (book), Extra (outside of), Preter (beyond), Audire (to hear), Semi (half), Corona (crown), Corpus (body), Credere (to believe), Forta (strong), Felix (happy), Grossus (fat), Hora (hour), Phonos (sound), Plenus (full), Quadra (square), Quietus (quiet), Radiare (to emit rays), Sal (salt), Stella (star), Ars (art), Tempus (time.)

This list of words has been very helpful to many mothers in giving their children an insight into the meaning of words and in encouraging them to study the dictionary. In Winifred's book I find 102 babies belong to MOTHER MULTUS and 225 belonging to Super. It was through playing games of this kind that Winifred became interested in seeking for all the ologies she could find in the dictionary, and later finding their meanings, to put them into jingle form. The following jingle, written when she was twelve years of age, has been used by teachers in a number of schools to give simple definitions for the various sciences:

SONG OF THE OLOGIES

By Winifred Sackville Stoner, Jr.

If we little kiddie kids would be wise and great,
Let us all begin right now, why should we all wait
Until we are quite grown up ere we learn so well
What is meant by OLOGIES so we all can tell?
ASTROL'OGY is known by men who tell our horoscopes,
ZOOL'OGY all children love, it tells about the goats.
And every sort of animal which we see in the ZOO,
The elephant and tiger cat and jumping kangaroo.
BIOL'OGY the students say is science of all life,
Concerning every living thing within this world of strife.
While AETIOL'OGY explains the cause of everything
And IDEAL'OGY to us so many thoughts will bring.
Old GEN-E-AL'-O-GY is great to tell our pedigree
AND SO-CI-OL'-OGY attempts to show what we should be.
CHRO-NOL'-O-GY will gladly tell of happenings long ago.
COS-MOL'-O-GY tells of the laws which cause our world to go,
PSY-CHOL'-O-GY is wisely called the science of the soul
And PHYS'-I-OL'-O-GY shows how to keep our bodies whole.
GE'-OL-O-GY most wisely tells about our good earth mother.
PHI'-LOL-O-GY relations shows 'twixt one tongue and another.
Good ET-Y-MOL'-O-GY explains the origin of words,
While OR'-NI-THOL-O-GY expounds much knowledge of the birds.
ETH'-NOL-O-GY some wise folks love, it tells of every race.
MES'-OL-O-GY explains to us effects of every place.
PHRE-NOL'-O-GY tells character from bumps upon the head.
NE-CROL'-O-GY, a science drear, treats about the dead.
And O-DON-TOL'-O-GY will tell just how our teeth to use,
MI-CROL'-O-GY of tiny things, will tell us all the news.
PA-THOL'-O-GY the doctors say is study of disease.
Explaining almost everything from cancer to a sneeze.
While OS-TE-OL'-O-GY will tell about our body's bones
And MIN-ER-AL'-O-GY explains about the rocks and stones.
If we would learn about the ape who was our grandpapa
Then AN-THRO-POL'-O-GY will tell exactly what we are.
CA-COL'-O-GY tells how to use our voices when we talk.
MY'-OL-O-GY to muscles points which help us chew, see, walk.
Strange OPH'-I-OL'-O-GY will tell about the hated snakes,
SEIS-MOL'-O-GY explains to us just why there are earthquakes.
TO-POL'-O-GY shows how to keep the facts we all should know,
And TOX-I-COL'-O-GY will tell of POISON, man's dread foe.
Wise PNEU-MA-TOL'-O-GY explains the science of the air
And HER'-PE-TOL'-O-GY will tell of reptiles everywhere.
ICH'-THY-OL-O-GY of fish gives information wise
And OP'-THAL-MOL'-O-GY explains all about the eyes.
CY'-TOL-O-GY tells us of cells which cause us all to live.
THE-OL-O-GY religious truths to erring mortals give.
HY-DROL'-O-GY of water tells if it be good and pure,
O-ROL'-O-GY of mountains great, the monarchs which endure.
Of insects EN-TO-MOL'-O-GY tells us so many things
And HA'-GI-OL-O'-GY of saints wearing snowy wings.
Queer HEL'-MIN-THOL'-O-GY explains about the wiggling worms,
BAC-TER-I-OL'-O-GY assists in learning about germs.
MUS-COL'-O-GY'S the science wise which tells about the mosses.
ME-TROL'-O-GY of measure shows our gains and losses.
TAU-TOL'-O-GY is what we kids are often prone to do
In using words which mean the same as if they were quite new.
Big E'-LEC-TROL-O-GY'S about the great electric sea.
PE-NOL'-O-GY of punishments — not meant for you and me.
PA'-LE-ON-TOL'-O-GY will tell of fossils in the earth
And AR'-CHAE-OL'-O-GY of things so long before our birth.
PAN-TOL'-O-GY is something great that none of us can gain
E'en though forever we should work with all our might and main,
'Tis universal knowledge wealth—we cannot get that lore.
But we can add from day to day rich treasures to our store.
And now with one more OLOGY we'll end this tale so long.
Singing the DOX-OL'-O-GY, that glorious Christian song.

Let the child sing to the air of Auld Lang Syne or Old Grimes Is Dead, one of those definitions each day and he will soon acquire a knowledge of the well known sciences in so far, at least, as knowing what each science teaches. The jingle will not be forgotten whereas a definition in prose is hard to be remembered.

Games played with words may be made most interesting if parents know how to dissect words and give the children ideas of the word's meaning. The parent who knows that the prefix A stands for WITHOUT can help the child to understand the meaning of many words. When he sees the word ABYSS he knows that A means without and byss is bottom. Therefore ABYSS means without bottom. The ATHEIST, means without God. "Ad" means to and "vance" stands for go. Therefore advance means to go to. "Gymn" means naked and "asium" place. Gymnasium (a place to be naked), HEPTA (seven), GON (angle), HEPTAGON (seven angles).

Other prefixes to help children in word building: AFTER (following), CON (together, with), DE (down, from), DIS (not, apart, separate), IN (in, into, on, upon, not), UNDER (below, beneath), UP (above), AUD (hear), BAT (beat), ATE (shaped), ANIM (breath), ALB (white), DORM (sleep), DENT (tooth), FLOR (flower), RE (back, again), PRE (before, forward, forth), POLY (many),

Useful suffixes: IST (one who practices an art), such as dentist, (tooth artist), oculist (eye artist), florist (flower artist), OR means one who—the agent: actor, doctor, instructor, author, director, tutor, conductor.

Giving children lists of words that rhyme and encouraging them to compose jingles helps them to gain a knowledge of words and their spelling while aiding them in expressing thoughts in the best form of speech, since poetry or even jingle seeks to place words in the position that makes them most pleasing to the ear. With words already given in the AT, IT, ET, AN, EM families the child can make rhymes about familiar objects Some of our greatest poets made their first rhymes with simple subjects as the cat, the dog, the turnip, etc Once given the love of speaking rhythmically, that love will continue through life. Spelling words and making jingles with letters may be also done while playing on the piano. I knew one little girl who was able to spell over a hundred words with the letters of the keys on the piano—c-d-e-f-g-a-b. Even long words such as baggage, cabbage may be spelled on this musical instrument. Words that rhyme with bay, cap, caw, bug, had, lag,nap,mug, dip, big, bid, fly, bow, cot, bun, bob, bog, fop, cod, bet, den, dew, bar, am, cub, up, ax, bed, beg, boy, gum, bud, ox, fix, dim, ate, are useful in giving a rhyming vocabulary.

If a child writes all the words of the BOY family on small cards and places them in a box, he can have these words handy when he is inclined to make a rhyme or he can add to his vocabulary when he hears a new word that rhymes with boy.

A game that my children have always enjoyed is that of FAIRY E. I give the children a box full of anagram E's and also simple words. It is the object of the game to see how often Fairy E can be used to change words. Given the word CAN

and Fairy E, changes it to CANE. The word TAP changes to TAPE, hat to hate, mad to made, cap to cape, pan to pane, pin to pine, hid to hide, dim to dime, fin to fine, rid to ride. Take the following words and see what E will do for them: Din, hop, rod, not, mop, rob, pop, slop, tub, cut, cub, ton, us, plum.

Children who are taught to play with letters and to analyze words never have trouble in spelling when they reach high school. The memory period (that is the keenest memory period of life), closes at the age of twelve years when the adolescent period of life begins—the sluggish time of life. Children should be made good spellers, good readers and good commanders of correct English, before the age of twelve years and it is only through much practice with speaking, singing, and playing with words as friends, that they will acquire this knowledge. Some mothers fear to teach their children how to spell before going to school as they think that they may interfere with the mechanical way of teaching spelling in the schools but it is my advice to every mother: Encourage your child to spell any word he sees, on the street car, in books, on sign posts, on bottles and cans. Teach him to use his eyes as eyes and to discover the meaning of words and combination of words that he sees. He must be taught also how to pronounce, to enunciate, and to hear words as they are pronounced. I agree with Ella Frances Lynch, who in her book "Educating The Child At Home," says: "The child who is not a good speller for his age at ten years of age is not likely to be a good speller for his age at twenty," and I would add at forty. I would plead with mothers also not to listen to so-called educators who believe in keeping children away from books until the tenth year. A child who has not learned to love books, our best friends, before the age of ten years, will never love books. Eyes will not be injured if children are given books with large print and the method of teaching reading through the use of the typewriter cannot injure any child. When once the doors of knowledge are opened to the child through his ability to read, that child will be a better and a happier child. He will find true book friends that will teach him the big lessons of life just as he finds friends in the living world. He will not have to grope in ignorance when he is eager to know the wherefore and the why of this and that. He can go to his book friends and gain the information he seeks.

Real education fits a child for life and the earlier we begin to give him the tools with which he is to make himself an active part of the great cosmic system, the better for that child and the better for his teacher. He should not be forced to study for so many hours each day. He should not be told "You must spell so many words this morning. You must read so many pages this afternoon." But he must be initiated into the mysteries of words and their meaning and shown how words put into various groups express different ideas. The younger the child, the more eager to learn he is and with a tactful teacher, the more readily he learns

I know one mother who tells me that she does not want her child to learn how to spell because she and her husband spell words when they wish to conceal certain things from this child. The little girl is aware that her parents are not open and above board with her and recently she told me: "Oh, they are spelling words on me all of the time. Goodness knows what they are going to do to me." This three-year-old child is suspicious of her parents, and she has a right to suspect that they are not what parents should be to her. Such parents are selfish and not worthy the name of father and mother. In the home where there is love and trust, the grown people do not use language that children cannot understand and they do not keep knowledge from their children in order to retain a medium of communication for grown folks only.

It is not necessary to say to a child, "Now we must have twenty minutes of language study, twenty minutes of reading, and twenty minutes of spelling." A knowledge of correct English and of literature may be given to the child while he takes walks, goes to the woods, learns about plants, different countries or people. I think that many teachers make a mistake in teaching children by presenting facts to the child as Geography, History, Spelling, etc. In every game that a child plays he should be taught to express himself in correct English and it is just as important to know how to spell Japan, as it is to know where Japan is located. Correct English as it is written and spoken, should be studied with every lesson and in the home each parent should have this big aim—to give the child a command of the English tongue.

All children love to ask questions. Little folks are human interrogation points and the questions should be answered—if possible. Of course there are questions asked by very small children that sometimes cannot be answered by very wise parents but parents should attempt to answer questions when they are asked. The game of CYCLOPAEDIA may be helpful to both parents and children. The little folks can put questions into a box and the parents may do likewise. In the evening, after dinner, each member of the family draws a question from the box, mounts the rostrum (which may be a real platform or a covered box), and tries to answer the question either by a short or long speech.

Parents may enclose in the box questions that will lead to interesting stories about birds, animals, etc. They may have to answer these questions themselves but the children will remember facts worth knowing about birds, animals, etc. Some questions that Winifred used in one of her games were:

What bird is called King of Birds? What bird sings "Cheerily Cheer Up." What bird is as black as night? What bird can turn its head all around? What bird is so powerful that he can hold two men on his back and can kick with greater force than a mule? What bird has the most beautiful suit of feathers. What bird has fur instead of feathers? What bird sings beautifully at night? Answers to all of these questions may be found in THE BIRD KINGDOM, published by The Educators' Association. Many interesting questions about animals may be made from THE ANIMAL KINGDOM books published by these same publishers. If children are trained to talk intelligently about their brothers, the birds and animals, they will feel more kindly to the bird and animal kingdoms and they will express themselves in correct English.

A knowledge of etiquette may be taught also in giving a knowledge of correct English. Mothers may pretend that they are going to a ball with their children. Each child will select a certain color for her dress and she must know how to spell that color. If the color happens to be pink then that child sticks to the color p-i-n-k during the game. All of the colors are brought into the game so that each child becomes familiar with the names of all colors. Next; each one selects a certain material to wear to the ball and the name of that material must be spelled correctly. Thus silk, woolen, velvet, chiffon, serge, linen, cotton, lace, organdie, etc., are mentioned and not only spelled but comments made concerning these materials. When convenient, samples are shown. Then each one selects some kind of trimming for the ball dress, such as embroidery, stitching, lace, gold braid, beads, ribbon, etc. Names of the jewels that will be worn such as diamonds, rubies, pearls, can be added with comment concerning the countries from whence the jewels have come. Footwear adds more words to the game and there may be comment concerning the music that will be heard. In a game of this kind, the child is constantly using his imagination and adding to his store of words and their meanings.

A home NEWSPAPER is another help in teaching and in inspiring children to seek for knowledge. When the little folks are pre-school age the newspaper will have to be very small but when there are larger children and a number of members in the family, a good sized budget can be typewritten each day. I know one family in which the youthful members publish a newspaper each week, setting the type and printing it without assistance from their parents. But in our home, Winifred and I used the typewriter and the "paste pot." We had a society column, a home making department, news items, general information, etc. When we first began our newspaper Winifred wrote only a few sentences each day on the typewriter but after a time she did most of the writing This newspaper was read in the evening by Winifred and after she became the editor, her father and I found great amusement in listening to the descriptions of our various doings. Sometimes they were not exactly complimentary to us, but they made us see ourselves as others saw us and through editing this little sheet my young daughter gained useful information and learned how to express herself in correct English.

In taking walks, at the table, and even in the bath tub, mothers may give information that the child needs through play to a purpose. Children will not object to being bathed if the bathing process is not painful. Sometimes mothers and nurses are careless and fill the tub with too hot or too cold water but usually the reason that a bath is not looked upon as something pleasant is because the child is made to bathe and nothing more. I tried teaching my little daughter to recite Hiawatha when she was having her evening warm bath. I used a little birch bark canoe and a tiny celluloid doll for Hiawatha and by reciting the poem to her she made the words of Longfellow's classic her own and found enjoyment in taking a bath.

Question and Answer games help children to gain information and to learn to express themselves easily and clearly. Sometimes I sing jingles to children and then let them sing with me. After singing the jingle and dramatizing it, I ask the children questions and give them an opportunity to tell me how much they know about the jingle we have sung.

At other times I arrange games along the lines of old-fashioned Authors and with the addition of First Chance to tell certain stories marked on different cards. I play with the children, letting them ask questions which I answer, but I always give them an opportunity to express themselves. This game process of teaching children how to speak English and at the same time gaining practical information, I believe is one of the best ways to teach language. In these games I try to select the most interesting facts and I tell stories while playing the game. For children who go to school, questions like the following may be used on cards for a language game:

What is language?

Language is spoken and written signs to express thought.

From what word is language derived?

From Latin LINGUA, meaning tongue.

What signs were first used to express written thoughts?

Hi-e-ro-glyph-ics.

Who invented letters?

The Phoenicians.

What is grammar?

Grammar is the science which teaches the correct use of spoken and written speech.

How many parts of speech are there?

There are eight—noun, pronoun, adjective, verb, adverb, preposition, conjunction, interjection.

Both children and mothers can make questions and answers for the language game, adding to it each day and by playing the game frequently children will know all the parts of speech and the principal rules of English grammar.

FISH POND GAME

Cut out a number of pieces of paper of various colors in the shape of different fishes. Print on the back of each fish a correct or incorrect sentence. Let the children fish for these paper fish with small hooks like those used in playing jackstraws. The object of the game is to see how many good fish can be caught. The fish marked with correct phrases or sentences are called "good" and the others "bad." If a child does not know if his fish be good or bad, he must throw it back into the pond and wait until his turn to catch another. I have used this game in various languages, for both big and little people and the players have found it amusing, exciting, and instructive.

SEEKING NOUNS, PRONOUNS, Etc.

Give the children each a card with a sentence or verse printed on it and a command such as FIND A NOUN, FIND A PRONOUN, etc. The child reads the sentence and mentions the NOUN or PRONOUN. If he names the Noun or Pronoun correctly he keeps the card. If not, his right hand neighbor has first chance to mention Noun or Pronoun.

CHILDREN MAKE OWN LANGUAGE GAME

Tell the children that a noun is the name of anything. Each one writes or prints the name of an object on a piece of paper and puts the paper into LANGUAGE BOX. Explain that whatever we do is action and all action is represented by verbs. Let the children walk, talk, eat, run, jump, skip, see, hear, dance, sink, etc., so as to realize that these actions are called verbs. Then each child writes the name of his action upon a piece of paper and puts the paper in Language Box.

Then show the qualities of objects in the room. The picture is pretty. The table is round. The rug is soft. The carpet is square. The paper is white. The book is red. The curtain is soft. Each child writes the name of a quality of anything which signifies an ADJECTIVE upon a piece of paper and puts it into LANGUAGE BOX. Then let each child draw out a slip of paper and try to tell the part of speech to which the written word belongs. Very young children soon learn the different parts of speech by playing this game. After the noun, verb, and adjective, are well understood conjunctions, interjections, prepositions, adverbs, pronouns and articles are introduced and become familiar words to young students.

LANGUAGE BEE instead of SPELLING BEE

Mother mentions words and child tells the part of speech rather than spelling the word. The game is a little more interesting if there are captains, just as in spelling bees, and if some one holds a box full of words. The box is presented first to one side and then to the other to let the players draw a word. As soon as the word is drawn the player must say which part of speech and if he makes a mistake, or is not speedy in giving the word its correct name, the other side has the chance and the slow or incorrect player must be seated.

SINGING BEES

Singing bees are even more interesting. Use airs like Farmer in The Dell, We Won't Get Home Till Morning, Twinkle, Twinkle, Little Star, Go Tell Aunt Betsy, Here Comes The Duke A Riding, Long Long Ago, Upidee, and other folk and college songs that are easily sung. Select words that rhyme and write them on the blackboard. The children sing the song while spelling the words. There is nothing like rhythm to help one in spelling. In the same way teach very young children to write. Ask them to make a row of straight dots or if you have a conductor's ticket punch let the child punch a row of these dots in white paper. Using the dot as the aiming point let him sing—E-E-E-E-E-E-E-E-E-E-E-E-while making the written letter around the dot. In this way he has something for which to aim. The singing helps him to write rhythmically and to gain co-ordination of mind and muscle. After writing a row of the letter "E", he can try the letter L, which is only a little taller than E and very easily made and soon he can write all the letters of the alphabet. The history of the use of music as an adjunct to the alleviation of human ills dates back for ages. But music as a teacher of all the sciences has only recently been appreciated. I am now using records made by Frances Clarke, of beautiful old-time airs while the children sing their spelling lessons. I have tried a spelling lesson with the ampico also and found that the Fairy Music made lessons seem as play. The secret of all successful teaching lies in keeping the Fairy Interest at hand through play that instructs. There is no need to make lessons seem like drudgery. With love and eagerness to interest the child, any parent can inspire the young student with a desire to gain knowledge.

THE JINGLE FAIRY HELPFUL IN TEACHING YOUNG CHILDREN TO SPEAK GOOD ENGLISH

Who is there who does not consider the jingle "Thirty days hath September" as most useful in helping one to remember the number of days in each month? If this simple jingle has been such a great help to many people for many years why should we not try other jingles as Memory Helpers? To forget is not to get. Anything that we have really made our own, particularly through rhythmic form, remains with us. The child who learns a rule of grammar or any fact worth remembering in a jingle will not forget the rule or the fact.

When Winifred Sackville Stoner, Jr. was six years of age she wrote the following jingle to help her remember the parts of speech. Teach this little jingle to your children, singing with them to the air of Auld Lang Syne:

GRAMMAR IN A NUTSHELL

THE ARTICLES are oh so wee,
These little words are A, AN, THE.
The NOUNS are names of anything
As BOOK or PLAYGROUND, BALL or RING.
PRONOUNS are used for nouns instead—
MY face, HER hand, YOUR feet, HIS head.
All adjectives just tell the kind
Of everything that we may find
As GOOD and BAD and SOFT and SWEET
RUDE and NAUGHTY, WISE, and NEAT.
While of manner ADVERBS tell
AS SWEETLY, NEATLY, ILL, or WELL.
THE PREPOSITIONS help each day
IN our work or AT our play.
When relationship is shown
They must do the work alone.
Good CONJUNCTIONS join together
Men AND women, plume OR feather.
INTERJECTIONS will exclaim—
OH! ALAS! AH! What a shame!
But we cannot get along
In conversation or in song
Without the VERB, the subject's fate
Expressing action, being, state.
You ARE good and I LOVE you
Without these VERBS what would we do?

Even young children who cannot read, may be helped to understand the different parts of speech if they are taught this little song. The song tells them that the NOUN is the name of anything. In order to impress this fact upon the children's minds it is well to play the game of

FINDING NOUNS.

Mother and children go on a NOUN HUNT and see how many nouns can be found in the nursery. This is a very easy game because the noun being the name of anything is the name of everything. The child soon learns that the carpet, chair, picture, window, book, cradle, toy, etc., is a NOUN. When the meaning of a NOUN is clear to the child it is not difficult to explain the difference between a common and a proper noun, showing him that the common noun is the name of anything but the proper noun is the name of a real person like himself, a big town or city in which he lives, his native land, other countries, and the name of God whom he worships. In other words, PROPER should sound big and important to him.

In teaching him the names of PRONOUNS and their meaning play a game of telling a short story full of PRONOUNS like the PLUM PUDDING of Jack Horner that was full of plums. Tell a very brief story full of the words I, thou, he, she, it, we, you, they, my, thy, his, her, our, your, their. Then pause and see if the children can tell you the names of the PRONOUNS you have used. If they have

memorized the jingle GRAMMAR IN A NUTSHELL they will remember that MY, HER, YOUR, HIS are pronouns and you can easily show them that I stands for the proper noun — YOURSELF. HE stands for a proper noun—BOY or MAN, and SHE for a proper noun GIRL or LADY. With children who can read, many other games may be played, particularly that of THE LANGUAGE HOUSE which I shall explain later on in this chapter

The game of WHAT IS IT, I have always found helpful and amusing This game is played with small words that any mother can print on bits of cardboard. Use white cardboard and the seven colors of the rainbow to represent eight parts of speech with black for the INTERJECTION. Print the little articles A, AN, THE on white cards with VIOLET colored crayon Use Violet and Indigo for the NOUN, and the PRONOUN. BLUE for the ADJECTIVE, GREEN for the ADVERB, YELLOW for the PREPOSITION; ORANGE for the CONJUNCTION, RED for the VERB (the life of the sentence) and BLACK for the wild INTERJECTION.

In making this game use nouns, pronouns etc., that are familiar to the children. Throw the cards all around the room and let the children scramble for them. Then mother and children sit in a ring First the children count the number of cards each one has and the one who has the most cards begins the game. He separates his nouns, pronouns, etc , and tells what each word is and how many parts of speech he has for his LANGUAGE STORE. If he makes a mistake in calling a noun a noun, an adjective an adjective, etc., the other children may correct him and take away the card containing a misnamed PART OF SPEECH The winner in this game is the child who holds the largest number of cards standing for different parts of speech that have been correctly named.

Through using the different colors the child becomes accustomed to the VIBGYORS, or colors of the prism and he realizes that the strong colors stand for important parts of speech, the verb being the most important in giving life to a sentence.

To impress this further upon his mind try this game: Use

THE HUMAN SLATE

Use large white cards with red ribbons attached so that the cards may be hung around a child's neck In one pile place a number of cards with red lettered nouns painted or pasted upon them. In other piles place verbs, adjectives, adverbs, etc. Begin the game by allowing three children to select one card each from the NOUN, VERB and ADJECTIVE piles. As Tommy selects a noun, he hangs the card around his neck and stands with toes out, stomach in, chest out, chin in—waiting for FRIEND VERB to join him. The child who draws a verb takes his place with card around neck standing next to Tommy. And the child drawing an adjective stands third in line displaying his adjective as suspended from his neck. The other children then read what they see. Let us suppose that the three figures in the human slate make this sentence: JOHN IS GOOD. The mother then takes JOHN out of line, leaving the two words IS GOOD and the children realize how important JOHN was to the GOOD SENSE LINE So back comes Mr. PROPER NOUN to make the sense complete. Then Mother removes the verb IS, leaving JOHN and GOOD. The children realize at once that the little word IS—the VERB, is most important so back comes VERB IS to complete common sense line Then she takes away GOOD and again the children see that the ADJECTIVE GOOD is needed to make good sense GOOD tells what John is And John would not be anything without IS, whereas nothing would be said if the NOUN JOHN did not appear. Articles and other parts of speech may be added in playing this game and much amusement given while showing clearly the meaning of various words in the English language. This same game I have also played in teaching Latin, using simple words to teach children the meaning of Latin words and their position Sometimes playing the game in Latin helps the children to understand English. Use words that are familiar to children such as Pupa, (doll), mensa, (table), and adjectives that apply to these objects. Pupa est alba (Doll is white) Mensa est magna (table is big) Simia est mala (Monkey is bad)

In the same way one can teach English through the use of Esperanto (Pupo estas blanka), (Tablo estas granda), (Simio estas malbona), giving the child an insight into etymology and at the same time showing him how sentences are built.

Many games may be played to teach the meaning of adjectives and to help children acquire a larger vocabulary. At the dinner table mother and children can play HOW MANY ADJECTIVES CAN WE SAY ABOUT THE DINNER. The meat is good or bad, tough or tender, thick or thin. The vegetables are hard or soft, green, yellow, white, red or orange. They are firm or mealy, delicious or unpleasant in taste. The same adjectives and many others may be applied to the fruits that have many colors and are sweet or sour, juicy or dry, ripe or unripe, etc. If parents could only find time to analyze speech while talking with little folks, children would have little trouble in understanding the rules of grammar when taught in school.

Children who can write on a typewriter (and little children three years of age have no difficulty in learning to use this fairy machine) gain a knowledge of the various parts of speech as well as how to spell words through writing these words on the typewriter. When Mother offers a reward to Johnnie if he can write a certain number of adjectives, nouns or pronouns on the typewriter, Johnnie gets busy and works with real interest and energy writing the words that he believes should be called nouns, pronouns, etc. I have in my possession a list of 25 adjectives written by little William Walsh, aged four years, a Pittsburgh boy whose mother encouraged him to gain a vocabulary through playing this game that develops the visual memory and that makes the child analyze sentences to see if a word is a noun, pronoun, etc.

The observing child notices that most prepositions are small words and that they are used to help other words. A child taught to see the real use of a conjunction will not make the mistake made by a poor school boy in one of the school rooms recently. He was asked to write a sentence with a conjunction in it and he wrote: "I hitched the horse with a halter to the fence. Halter is a conjunction because it joins the horse to the fence." The child who thoroughly understands WHAT IS A NOUN? will know that HALTER is the name of something and he will realize that a conjunction connects WORDS not tangible things.

It is very easy to make a child understand what is an interjection through making exclamations. I have often played games with the children representing various animals and each animal giving out a peculiar sound or exclamation. The little boy would go OH! The bear COOH! The cat MEOW! The dog BOW WOW! To kill two birds with one stone sometimes I give diaphramatical breathing exercises while teaching the child WHAT IS AN INTERJECTION. Standing erect and firmly on both feet we give

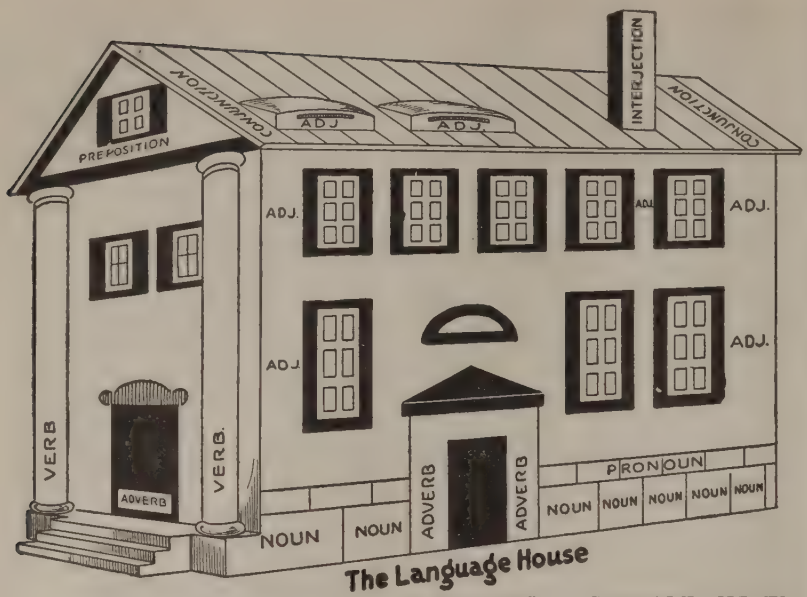
An Interjection Speech—with much gusto, expelling breath at each word:

HI! HI! HI! FI! FI! FI!
ALAS! ALAS! OH MY! OH MY!

Children who play these games that I have suggested frequently cannot fail to understand the meaning of the various parts of speech but all children like variety in games. OUR LANGUAGE HOUSE is a game that always interests. Draw the picture of a large house on a piece of Manila paper. Make an exact duplicate on another piece of paper. In the picture represent the foundation of the house with large stones standing for nouns and bricks for pronouns. The props of the house are verbs. The doors and windows are adjectives and adverbs because they let the light into the house just as adjectives and adverbs give light to the meaning of words in a sentence. The gables stand for prepositions as they show relation to each other. The shingles are conjunctions because they join together. Needless to add the CHIMNEYS are interjections, the places that let out explosives. On the foundation stones print the names of nouns, on the brick, put names of pronouns, on the house supports, verbs, etc but make your markings only on the duplicate, leaving picture of house number one just as a house. Then cut out number two, putting all the parts into a box. First explain to the child that the noun is a foundation of Language house It is big and powerful and that is why we represent it with a foundation stone. But if we have no nouns then we use pronouns instead, which are represented by bricks. Without the props of the house it would fall down and without the verbs the language house could not exist. Any house would be dark and dreary without doors and windows and so would a sentence without adjectives and adverbs. Little fairy tales about parts of speech make them interesting to children. Even three-year-old children can play this game and learn through observation to pick out the parts of the house that stand for nouns and those that are pronouns, etc. The game develops observation and concentration as well as teaches facts worth knowing about words.

The baby can put NOUN BLOCKS on the foundation part of the big language house NUMBER ONE. He can build the house putting the chimneys in place, etc. His bigger brothers and sisters soon see the thought behind language house and by playing with the paper stones, bricks, etc., each bearing the name of a part of speech, they have little difficulty in knowing nouns, pronouns, etc., at meeting. These words become friends easily recognized when they hear them or see them under other circumstances.

The following jingle was written by my daughter to help some of her young friends understand the meaning of various words as parts of speech. If mothers will teach this jingle to their children, singing it to the air of AULD LANG SYNE, I am sure that they will find it a help to the little folks:



The Language House

OUR LANGUAGE HOUSE

In our good English Language House
No troublesome bad Error Mouse
Will cause the house to tumble down
From the foundation—a good NOUN.

In case strong nouns we cannot find
Good PRONOUN bricks help us to bind
The language house so firm and well
So we can read, write, talk, and spell.

For props we use the good VERBS strong
So full of action and of song
And for our windows to give light
The ADJECTIVES so clear and bright.

As ADJECTIVES, the ADVERBS fair
Let in the light, let in the air,
Through LANGUAGE HOME'S great open doors
Where of good knowledge we find stores.

For shingles in our roof we use
CONJUNCTIONS which we ne'er abuse
And each good gable we may name
A PREPOSITION in this game.

When we would call to passers by
Up to the chimney let us fly
As INTERJECTIONS there to cry
ALAS! ALAS! OH MY! OH MY.

In a large room or on a sandy play ground this game may be played with the children to represent the various parts of speech, holding up the roof or flying to the chimney as they utter exclamations.

Another of Winifred's jingles written to the same favorite air of Auld Lang Syne speaks of the EIGHT PARTS OF SPEECH, not counting the ARTICLES.

This jingle may be sung while pointing to THE LANGUAGE HOUSE just described.

THE PARTS OF SPEECH WE KIDDIES NEED

Eight parts of speech we kiddies need
When we talk or write or read
These are the NOUNS as JOHN, HOUSE, TEA
The PRONOUNS—I, THOU, HE, SHE, ME.

The VERBS—as TALK, WALK, EAT, LOVE. TELL.
ADVERBS as SWEETLY, NEATLY, WELL.
THE PREPOSITIONS—FROM, TO, AT
CONJUNCTIONS—AND, BUT, NOR, OR, THAT.

The ADJECTIVES—SWEET, GOOD, HIGH, LOW
The INTERJECTIONS—OH! Hey! Hoy!
These parts of speech we need each day
When we study, when we play.

A mother recently wrote to my daughter asking her to write a jingle that would be helpful in pointing out to children the use of

BAD, BADLY, NICE, NICELY.

This song may also be sung to the air of AULD LANG SYNE.

I know a naughty little lad,
Who never makes his mother glad
And all his work is BADLY DONE
And so we call him "A bad son."

I know a little maiden too
Who is so nice and good and true
And all her work is NICELY DONE
So she is loved by every one.

Unfortunately even grown people do not seem to understand the use of the word badly. How often do we hear those who have made an extensive study of the English language—or are supposed to have made this study, say "I feel badly." In order to impress the bad use of badly upon youthful minds Winifred has written a verse which may be sung to her favorite air or to the air of Forty Little Urchins. This verse is used with a number of other verses in a jingle called

BAD FORMS OF SPEECH

We cannot feel L-Y-LY in our work or play.
"Oh but I feel badly!" never, never say.
"I feel gladly, sadly, I feel illy too!"
Don't these words sound very, very queer to you?

This little verse is being used in a number of fashionable seminaries and in several colleges at the present time to impress upon the minds of students how ridiculous it is to say that they feel badly. Even young children smile when we say "I feel illy" and when they once have the right ear training as to the correct form of bad and badly they will not make the mistake of using an adverb when they should use an adjective.

The other verses to this song will also prove helpful to parents in giving children reasons for using certain words.

"Susanna arrived safe" a telegram should read.
In this little sentence no L-Y we need.
Susan is quite safe, is what we want to say
And not how she traveled all along her way.

The mistake of using an adverb to describe safe arrivals is a very common error made by so called educated people, who do not seem to realize that they want to describe their condition, and not the manner in which they have traveled.

"Johnnie don't like lessons in the school each day."
If we speak quite plainly this is what we say;
"Johnnie do not like his lessons every day"
DOES NOT, I am sure, is what we mean to say.

Many people, big and little, are guilty of using DON'T for does not. If we train our children to avoid the use of DON'T, WON'T, CAN'T, SHAN'T etc., we shall be putting up a strong bulwark to prevent making this common "slip in speech."

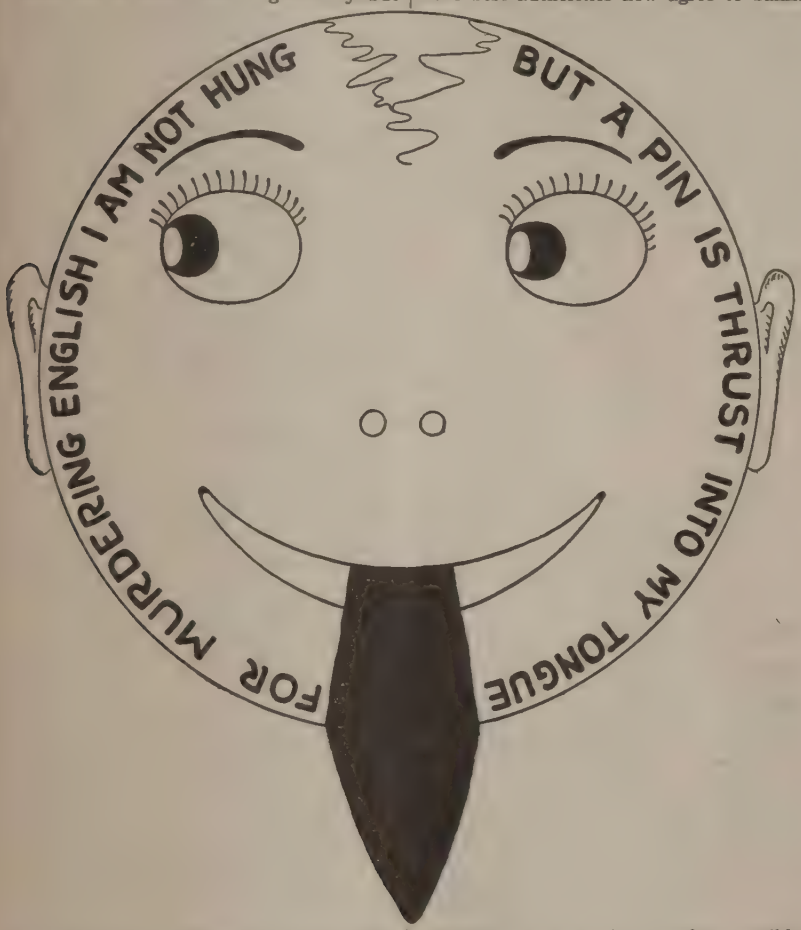
We have always used in our home what I call a TONGUE SLIP CHART. The chart is made to look funny so that each one in the home is inclined to laugh rather than to feel hurt when corrections are made. I draw the chart to resemble a funny round face with big ears and a long tongue hanging over the lower lip. Around the face I print this nonsense rhyme:

For murdering English I am not hung
But a pin is thrust into my tongue.

Each menber of our family has a fresh TONGUE SLIP for each week. The charts hang on the back of a door in our den with the object of helping the members of Stoner family to be careful about words as to pronounciation and manner of use. When Daddy Stoner is heard to make a mistake in English his attention is called to the error supposed to have been made. If he thinks that he has not erred we consult some of the best authorities on English so as to prove whether he is right or wrong. If he is found to have broken the rule he is then punished by having a real pin put into the tongue of his FUNNY FACE Chart. The same punishment is meted out to each member of the family. It keeps us on the qui vive and we are rarely guilty of using what one might call "sloppy English." We cannot say, however, that we are never in the habit of using what some people call slang—forceful expressions that have been invented by such men as Huxley and Theodore Roosevelt. Personally I believe that the English language needs new words and new styles of speech just as we need new styles in dress. The word "KIDDIES" I hope has come to stay but I can remember when I was criticised for using this word and allowing my daughter to use it. I would not, however, recommend the use of what is termed as "slang". People who are lazy mentally generally use words that require the least thought. Such people are prone to swear. The word DAMN is used by many well educated people, as they say, "for emphasis". I have been guilty of this myself but I believe that there is no excuse for parents

indulging in the use of blasphemous language. The word DAMN may be an innocent word in some uses but it has been used for blasphemy and therefore we should avoid it. The Tongue slip chart is a great aid in curing people of swearing as well as in teaching them to be thoughtful in selection of words that convey thought.

As a believer in rewards for those who do well, I have adopted the plan in my own home of making the owner of TONGUE SLIP CHART with the largest number of pins, do the honors on Saturday evening to the theatre, to candy, or magazines. In this way the Stoners use Saturday night for a sort of holiday. Some one is certain to make at least one slip during the week and so we are sure of some treat. The one who has to treat does it gracefully but



avowing not to be "the goat" on the following week and I notice that in the years that have passed since we first began playing this game, the number of pins for each member of the family becomes fewer and fewer. Perfection has not yet been reached. We may never reach that stage. But we are gaining more and more knowledge of the English language.

Now let us return to the jingle BAD FORMS OF SPEECH and discover a few more mistakes that are commonly made in every day speech.

Once I heard a soldier who had joined the band,
Say "I've got an uniform oh so very grand."

HAS and GOT are just the same so throw GOT away
And with YOU sound of good U use the letter A.

Children as well as big folks often get confused in the use of A and AN. They know that AN is used before a word beginning with a vowel sound such as AN APPLE, AN HOUR, AN ACORN and A is used before a word beginning with a consonant sound such as A DAY, A BOAT, A TOY. But when using words like UNIT and UNIFORM that are spelled with a vowel but have the consonant sound of Y they sometimes make mistakes. We say A UNIFORM, A UNIT, A UNIVERSE.

There have been many controversies concerning the use of the word GOT but the best authorities now agree to banish GOT from our speech as much as possible. If we have anything, we have it and GOT is a word that I tell my kiddies can be thrown out of the window. Sometimes we hear parents say: "YOU'VE GOT TO GET YOUR LESSONS." This is not good English. Got is used properly only in the sense of "acquired" or procured," or "secured." It is correct to say "I went to get a book and I got it. Mary got a position." But it is not correct to say "I have got an apple. Have you got a book? Tommy has got blue eyes."

In order to impress the use of HAVE and got upon the minds of your children play games with them, telling stories in which you use the word GOT where it should not be used and asking the kiddies to catch all of the superfluous GOTS and throw them out of the window.

Johnnie has been naughty. To-day he told a lie
And confessing to me, he said: "TWEEN YOU AND I".
"BETWEEN YOU AND ME" is what he meant to say
For an object follows preposition's way.

So many children have been scolded for saying "Me" instead of I that some little folks go to the opposite extreme and use I when they should use me. We hear grown folks make this same mistake, especially when they are trying to put on airs. Between is a preposition and the object of a preposition is always in the OBJECTIVE CASE. It might be well to have the children write a number of sentences on the typewriter using between. Printing "Between you and me," or using it for a writing lesson, also impresses this correct form of speech upon the child's mind. Seeing the correct form trains the visual memory, which helps the oral. Some people say, "This sentence does not look right." Others say, "This sentence does not sound right." It is wise to train both the eye and the ear when one is attempting to gain a knowledge of correct English.

Let the child write these expressions a number of times and give him also the prepositions "From, by, with, in, at" to use in sentences but never at the close of these sentences.

Between you and me. For you and me. Unto you and me.
Between him and me. For him and me. Unto him and me. For her and me. Unto her and me. Among them. With him. From him.

Play the game of SOLDIERS IN CORRECT FORM

Write sentences using the preposition at the end of the sentence and see if the children discover PREPOSITION out of place. Perhaps it would be better to play the game as parts of LANGUAGE as the trend of modern times is to get away from soldiers and to talk more of the constructive genius. I suggest soldiers because most children are interested in playing games of marching. Whether soldiers or builders the game can be made interesting by writing the words on separate pieces of paper and arranging them in line. Suppose we have these words:

WHAT DID GEORGE WASHINGTON CUT THE CHERRY TREE WITH?

The clever child picks up the preposition WITH and carries it from the last part of the sentence to the first part so that the sentence reads "With what did George Washington cut the cherry tree?"

I knock on the door and Bess says: "Who is there?"
I reply: "Its only me, your little sister Claire."
Bess says: "Verbs intransitive an object cannot own."
"IT IS I" I should have said in a gentle tone.

It is easier for a very little child to say ME rather than I and perhaps that is the reason why so many young children use the objective rather than the nominative. Perhaps the blame may also be laid to mothers who are fond of using "ITsie Ootsie language with babies" such as "Him is his muvver's Ootsie Oooh, And Muvver lub him yes she do." When the baby says "Me is so good". The mother

smiles and thinks that this baby talk is oh so cunning. As a consequence he suffers from his first impressions of right and wrong in using the English language. How often do we hear not only "It is me" but "That is her, That is him. Yes, it's them." And still oftener are heard the contractions "It's me, That's her, That's him, That's them." And I may be mistaken but from my experience the louder people talk the more prone are they to use the ME, HER, HIM, and THEM in preference to I, she, he, and they. A big lesson that all mothers should teach to their children is that of voice modulation. "A low soft voice is an excellent thing" not only in a woman but in a man and it is particularly pleasing in a child. It helps to make music out of speech. And surely we need more music in our every day speech, more rhythm, which is the very synovial fluid of existence—that which makes the wheels of life run more smoothly. We all know that a soft answer will turn away wrath and we know also that we prefer to hear a sweet low voice to a loud rasping one. Loud voiced people are never very popular at home or abroad. Therefore, it behooves us to train our children to be male and female Cordelias with voices "ever gentle, soft, and low" showing that the owners of the voices have control of their body machines. And the best way to teach children "The lesson of proper speaking" is to give them the example in speaking as we would have them speak, in showing them that we "can keep an even temper no matter what happens" and that we will never lose our own self respect by yelling or talking in a loud rasping voice. The nagging mother with a rasping voice, who fills her home with "DON'TS and MUST NOTS" is the mother who drives her children from home.

"I SEEN PIGS!" cries Tommy in a loud, loud tone.
SEEN is such a weak verb it can't stand alone.
So he should say "HAVE SEEN" or use SAW so strong
Which without another verb always gets along.

When children have difficulty in knowing when to say "I SEEN" and when "I SAW" TELL THEM THAT SEEN is a weak little verb that can never stand alone without an auxiliary or helping verb. Then let them write ten times on a typewriter "I have seen a pig. I have seen a dog. I have seen a man, I have seen a bird. I have seen a fly." There is no better tool or toy by means of which a child can learn to speak good English and to spell correctly than the typewriter. At the present time I am using the little portable Underwood typewriter in all of my schools because it is cheap, durable and attractive to children. Through using the typewriter a child gains co-operation of mind and muscle, he develops the muscles of his fingers so he can more easily play on the piano or violin, he finds pleasure in gaining knowledge, he can teach himself to read and to spell, and he develops his visual memory so that he becomes a good speller. It is not necessary for parents to expend large sums of money on buying new typewriters for the home. Instead of selling the old typewriters used in offices, I would suggest that Father bring home the typewriter and give Mother a chance not only to save time,—which means "save life"—in typewriting letters and matters pertaining to the home, but also gives her an opportunity to help little Tom and Mary gain information in reading, spelling, punctuation and good English. A typewriter, as I said in some of my pleas for education fully twenty years ago, is a sine qua non in the home. It is more important than the piano and the sewing machine. We have good canned music supplied to us through inexpensive phonographs. We can buy wonderful garments such as the pidgie-panties for little money. Therefore the mother needs the typewriter more than she does these other tools.

The mother who is supplied with a typewriter will have no difficulty in one lesson, to teach little Tom the use of SEEN and SAW. After he has written ten sentences with the weak verb SEEN, using it each time with some helping verb, she will show him that SAW is a strong verb that always stands alone, and ten times he will write on the fairy machine I SAW A PIG. After writing this sentence ten times he will see the verb SAW at all times standing alone and he will not say "I have saw a pig." Both his eye and his ear will be trained to know that SAW stands alone.

Of course, if the mother is not so fortunate as to have a typewriter in the home she can teach her child by having him print or write sentences with SAW, using the word SAW in larger print than the other words.

"I thank you" said Betty to her good friend Paul
SHE meant she was welcome, but said, "NOT AT ALL."
"CAN I COME TO SEE YOU? Betty dear," said Pete
"Will we go to dinner? Don't you wanter eat?"

The expression "Not at all" in answer to "Thank you" is certainly silly but it is often used by grown people as well as young folks. The true answer to "I thank you" is "You are welcome." In the same way it is silly to say "The pleasure is all mine." This sounds as if the person for whom you did a kind deed, reaped no benefit from the deed.

The use of CAN for MAY is another way of murdering English and it has been the cause, to my knowledge, of keeping several people from securing good positions. I know of two business men who refused to employ young ladies that I sent to their offices because these young ladies said "Can I come in?" CAN implies power. It suggests "Of course I can come in" whereas MAY has the polite and humble spirit. It indicates request for permission. In asking any favor children should be taught at all times to say "May" and before requests are granted the children should be requested to use THE FAIRY MAY rather than the BOASTFUL—CAN.

Writing sentences on the typewriter with CAN and MAY or playing games with sentences, either written or spoken, using these words, helps the children to understand when to use CAN and when to use MAY. Let the child knock on the door and say "May I come in." Give him a box of candy. Let him bring it to you and say "Mother may I have a piece?" Pretend that he is going to different places and let him ask "Mother may I go to the store? Mother may I go to the circus?" etc. "Mother may I borrow your pencil? Mother may I go with Susan? Mother may I have a piece of pie?"

MIGHT is also a potential verb, which expresses possibility or privilege. It may also be used in asking permission. "Mother, might I have a glass of water? Mother, might I have another cookie?"

CAN and COULD express ability and power. Harry CAN ride a horse. I COULD work for you. COULD you go with me? Yes I COULD go with you.

"EACH ONE LIKES THEIR OWN WAY" Peter loved to say
When he made long speeches almost every day.
"And I love you truly with all of my heart,
From you, darling Betty, I hadn't oughter part."

At one time I was introduced by the President of a great university with these words: "Every one likes their own way." This man had written a book on the English Language but apparently he had not learned to put into practice what he could preach in books. Early impressions are lasting and I learned from inquiry that his parents were not educated people and as a child he did not learn to speak good English. Perhaps there is no commoner mistake than this use of singulars with plurals in the conversation of educated people and in lectures delivered from public platforms. If the child's ear be trained to use each, every, either, neither, some one, somebody, anyone, anybody, every one, everybody, no one, nobody, one, and a person with singular, not plural verbs and pronouns he will continue to use these correct forms through life and to say "Each one likes his or her way" rather than "Each one likes their own way."

When Peter says "I love you truly with all my heart" he is using unnecessary words. He is a tautologist or one who makes needless repetition. If Peter loves he must love with his whole heart, not with a part of it.

Again when Peter asks "Will you go to dinner?" he expresses determination. Instead, he should say "Shall we go to dinner?" to represent simple expectation.

Give the child sentences like the following to impress upon his mind simple futurity and determination.

FUTURITY: I shall go to London next summer. I shall see you on Tuesday. I hope you will go with me. He will see you next week.

DETERMINATION: I will never leave you. I will not go with you. You shall go with him. He shall be punished.

A simple rule that may be followed tells us that in general simple futurity is expressed by SHALL in the first person and WILL in the second and third, while determination is expressed by WILL in the first and shall in the second and third. I would suggest to all parents the use of a good grammar or dictionary for consultation when in doubt as to how to use shall or will.

Should and would are used very much as shall and will. The following sentences with the correct use of shall, will, should, and would may help parents in teaching their children the correct use of these words:

Shall I go tomorrow? Shall I come to your house? Shall I go to the store? Shall we go to the movies? Shall we have some candy? He said to me: "You shall go." I shall pass the house this afternoon. Shall I ring the bell? You shall not escape. He shall receive a reward. I shall go away tomorrow and no doubt you will have a pleasant time. I shall have a party on Wednesday and I hope that you will come. I shall go to church. Will you go with me? I should like to have a nice cake for

supper. Yes, dear, I am sure you would enjoy one. Mother, I should like to have a new blue dress. Yes, Mary I am sure you would enjoy a new blue dress. Shall I descend and will you give me leave?—Shakespeare. Hear me, for I will speak—Shakespeare. Will you be patient? Will you stay awhile?—Shakespeare. Take care of your spirit and conduct and your reputation will take care of itself—Hamilton.

It may seem ridiculous to call one's attention to the expression—"DONT YOU WANTER EAT?" but if we listen as we walk on the public streets or ride in public conveyences we will hear well-dressed people using just such expressions and little urchins seem to take delight in saying "DONCHER." Our children must encounter people who use such expressions and it is well to call their attention to these vulgarisms in this amusing way so that they will be careful not to be guilty of using DONCHER, WANTER, LIKTER, KINDER, HADN'T OUGHTER, etc.

Peter found some flowers in a lovely nook.
He brought them to Miss Betty sleeping by a brook
And said "I LIE my gifts here while you're laid out there
With the sunbeams shinin' on your golden hair."

Rules for using LAY and LAID and for LIE, LAY, LAIN,
Save so many mortals from inflicted pain;
For it is not pleasant to a well-trained ear
LIE for LAY and LAY for LIE anytime to hear.

I have found my best success in impressing the right use of these words upon the minds of young children by playing games with them. I would lie down and say "I lie down." Very young children cannot understand the difference between a transitive and intransitive but you can show them that lie means to recline. No object is required. We do not LIE anything. But we do lay the book on the table. We lay a pencil on the book. We lay an apple on the book. We lay the rugs on the floor. But in speaking of the rug we say "The rug lies on the floor." The book lies on the table. The pencil lies on the book. I lay the key on the desk. The key lies on the desk. The soldiers lie down at night. The cat lies by the fire. The soldiers lay their guns down. The cat lays her mouse at my feet.

The following sentences may help mothers in talking to their children and in making games to teach the little folks when to say LIE and when to say LAY:

Tommy, please lay this book on the table and then lie down and rest. Mary, will you please lay aside your work and lie down for a few minutes. Charlie was a good boy and laid the candy on the shelf. Where is the book lying? It is lying on the table where Johnnie laid it.

If the mother remembers that to recline is used as LIE in the present and LAY and LAIN in the past participle—while LAY to place, in the present, has LAID and laid for both past and past participle, she will not be likely to make mistakes with the use of LIE and LAY. He has LAID the candy on the table. But he has lain down to rest.

Contractions such as Peter uses in saying SHININ' for shining should never be used by any one. People in the United States, so say foreigners, are in such a hurry that they sometimes do not finish the ends of their words when they are speaking. They say "Commin, walkin, talkin, eatin" instead of coming, walking, talking, eating.

When Peter used the telephone, Mary heard him say:
"Who is it yer want? I'll call them right away,
But I believe there's two folks in this house named Bess
And you want the youngest of the two I guess."

Many people, who use good English in ordinary conversation are prone to make mistakes in speaking over the telephone. At one time when I was visiting a school for girls I heard these girls, who recited rules in English each day, use the same language that Peter used in the above jingle substituting WHO for whom, using plurals with singulars, and making contractions in speech the School style. Mothers should be very particular in talking over the telephone and use WHOM do you wish? rather than WHO do you wish. YER is not English. When it is heard in the home, the children should play the game of "Throwing it out of the window" and never letting it come in again because it is a naughty lazy GNOME that spoils Good English Speech.

In talking of any two objects we compare the two as BETTER not best. If there are but two apples we say: "This apple is the better of the two." But if there are many apples we say: "This apple is the best."

Sentences.—To help keep these rules in mind:
Who is he? Who gave you the book? To whom did you give the book? Who do you think he is? From whom is the book? The girl, whom I saw, was Mary. Longfellow is an author whom I enjoy. Whom did you see when you were in Paris? To whom do you refer? Of the two teachers I like Miss Jones the better. Of the two houses I like the green one much the better. This apple is the best of all the dozen. Of all these books this one is the best. Of my two children Mary is the elder.

The following verses of BAD FORMS OF SPEECH may be recited verse by verse to the children each day so that they may try to find the mistakes that poor Peter made when he talked English.

Now each little kiddie use your clever mind.
And in Peter's talking surely you will find
Rules of grammar broken and many bad mistakes
That a clever kiddie never, never makes.

This is what Poor Peter says:
Last night ter me Jane says: "Must go ter town
Fer I haven't even got a single decent gown"
And I sez, sez I to she "You oughter wait a while
Soze to git a cheaper price and some better style."

I see by the paper a auto has been bought
By young Smith, oh yes its him by which we'uns wuz tot.
Guess he's made a fortune by teachin' public school
But he learned me nothin'—I thot him a fool.

The rule wuz wot this teacher learned his pupils by
No wonder that we hated school and people heard us sigh
When he axed the question "Where is London at?"
Each of us wud tremble like old Tommy Cat.

Peter on a visit cried—"Quick open up that door
And I'll sit this basket here right upon the floor
While I'm settin restin' because I'm kinder weak
Different from usual when I'm fat and sleek.

No wonder I feel badly, I've tuk two spoon of oils
These kind mixed in a bottle prescribed by Dr. Hoyles
But I'm sure they'll cure me before I traveling go
Arrivin' in old Paris and livin' at Bordeaux.

There I'll raise some children and rear lovely dogs
Now I only have some cats and a couple hogs.
Life without some live stock 'taint no life we know
This is really gospel, good friend, haint it so?"

Peter sailed for France but ne'er fulfilled his dream,
He fell overboard and some one heard him scream
As he sank from out of sight "I will, I will, will drown
Not a soul shall help me put my feet on ground."

Using the nonsense verse about Poor Peter, repeat it for the kiddies and see how many BAD GNOMES or mistakes Peter made. Through this jingle the child learns not to say TER for to, fer for for, soze for so as, git for get, oughter for ought to, sez for said. Point out to him that the little lady or knight who tries to keep English pure never says "Says I." Neither does the good grammarian say "To she" because the preposition *to* is followed by an objective like him, her, them, etc. In a previous talk it has been suggested never to use HAVE and GOT together.

If the children in any home are too young to appreciate, the foolishness of Peter's conversation, the parents may use this jingle just the same to keep them on the qui vive in not making the same errors that poor Peter made. In this jingle are nearly all of the mistakes that are made by people, both educated and uneducated, in every day conversation. There are some people who talk very quickly and do not realize that they make contractions of syllables ending in ING and neither do they realize that they say "Fer for for." Constructive criticism made by various members of the house and the tongue chart that I have suggested will help to drive away the FERS, TERS, etc. and keep the good clean English words always in the home.

In verse fifteen Peter makes mistakes which I am sure all of the readers of these pages have heard. We often hear people say "I see by the paper" when they intend to say "I have read in the paper" or "I saw in the paper" "I have a auto" said a well to do man to me just yesterday. To impress upon children the use of A and An give them certain words that begin with vowels and consonant sounds and ask them does A or An belong with apron. Does A or An belong to ant? Other useful words

are aster, elephant, oak, elm, olive, almond, apricot, alligator, eagle, hat, desk, tiger, lion, bear, monkey, etc. These little articles are very important and if the ear is trained properly in childhood to use A with consonant sounds and AN with vowels the child will not make mistakes in use of the articles when he grows to be a man.

"It's him" is not often used by people who have studied the principles of grammar, but children who go to public school may hear such expressions and it is well to guard them from using an objective with is. *Who* refers to persons, *which* to things, and *that* to both persons and things. I have always suggested to children that they will be on the safe side by using *that*. The dog that I had last summer is dead. This is the book that I love best of all. Mary is the girl who won a prize. The pen which I hold was given to me by a king.

WE UNS is not English. We cannot say, "we wuz tot." We should say "We were taught" pronouncing taught as it is spelled and not as so many people from different parts of the United States say —TOT.

GUESS , I believe, is used in the north just as RECKON or CALCULATE is used in the south. It is much better to say "I suppose" or "I think."

Peter in this verse made some more contractions—teachin' and nothin'. He used He's for he has, and spoke of his teacher learnin' him. LEARN means to acquire knowledge. I expect to learn how to swim. I shall learn my lesson. I am eager to learn how to cook. TEACH means to impart knowledge. Let me teach you how to swim. Please teach me how to darn my own stockings.

In the sixteenth verse Peter makes some of the mistakes made in other verses and he puts his prepositions at the end of his sentences. "Learned his pupils by" and "Where is London at?" It is sometimes difficult to avoid putting prepositions at the end of sentences as the little boy who wrote a rule in grammar: "You should not use a preposition to end the sentence with" but parents who want to teach their children to use the best English will avoid the use of prepositions at the end of sentences.

AXED for asked and sometimes AST are heard and so is wud for would. If we use the broad sound of a as the English use it we are not so prone to give people the impression that we have said "AST." In the same way if we try to talk slowly and distinctly we will not say WUD for would any more than we will say Ter or TUh for TO.

In verse seventeen Peter cries "Open up the door." If one opens the door it is not necessary to say OPEN UP. In the same way when we ask our visitors to be seated we need not say "Sit down." I am sure that they cannot Sit Up. The vulgar expression SHUT UP YOUR MOUTH, is as incorrect in English form as it is in good manners. The French say "Fermez la bouche," close the mouth—and that is what we mean to say when we use the vulgar "Shut up your mouth." We hear also "Shut up the window," "Shut up the door."

"LEMME" belongs in the same class with Doncher, Whatyer, Gonna, Gimme and we should never allow this lazy, vulgar gnome to enter our homes. It stands for "Let me" and when one is about to use these two words he should be a little careful in saying them—Let me give you some water. Let me help you with your work. The same care must be exercised when one is going to say "DON'T YOU," "Going to," "What do you," and "Give me."

The next verb that seems to trouble poor Peter and sometimes troubles many other people is the verb set. He gets it mixed with sit. He should say "Set the basket" because set is a transitive verb that means to place something. Sit is always intransitive. To sit means to seat one's self. But the hen sits to cover and warms her eggs. The verb set, however, is also an intransitive verb when it means to decline, to go down. That is why it is correct to say "The sun sets."

We often hear the expression used by Peter, "Different than" — this rose is different than that rose, this doll is different than that doll. We should say different from since we mean to say that one thing is different from the other.

We have already spoken of the use of BADLY for bad. Sometimes it is used to mean very, very much as we hear people say "The carpet needs beating badly. I shall miss you oh so badly." This word is certainly much abused both in the sense of feeling LY—ly and in these colloquialisms.

From the days of old Squeers down to the present day children have heard the expression "You must take two spoonsful." Surely we do not take two spoons, but rather one spoon that is filled twice.

THESE KIND we hear every day. This kind is what we mean to say. THESE SORT sometimes we hear but not so often, for this sort. Such expressions as "People who kind of chill you. The man who gets sort of dull. I kind of felt my way at first. What kind of a house is it? It is a sort of a castle" should be avoided. The more elegant expressions are: "People who somehow chill you. The man who gets rather dull. I felt my way at first. What kind of house is it? It is a sort of castle."

Peter tells us that he ARRIVED IN PARIS and will LIVE AT BORDEAUX. We arrive AT a place but live IN it.

He informs us also that he will RAISE some children and REAR some dogs. He is not the only person who has made such an erroneous statement. Almost every day we hear the expression "I was raised in this or that place." PIGS are RAISED but children are REARED. I ONLY HAVE is another bad mistake. If we analyze this phrase we see that it means I am the only one that has anything, whereas the speaker means to say I have ONLY some cats and a couple of hogs. TAINT and HAINT are not included in the English language but we hear them each day along with such words and expressions as:—"Them's my sentiments. He don't love me. I love taters. I am mad at him. Let me sit besides you. You look good. Loan me some money. He has lots of money. I shall be back. I kin tell you. I done it. If its convenient for you. I have heaps of friends. She thinks like I do. I don't believe in them no how. There are none. It was no use to argue with him. Why blame it on me? I love cake. Its awfully nice. I was only saying the other day. It is overly nice. Sure, I'll be there. Don't blame that on me. They are both alike. I expect it is. Firstly, I remark. I hope he arrived in time. In our midst. I am stopping in Washington," etc.

Perhaps few people come to such a bad end as Peter, who fell overboard and using bad English to the last cried: "I will drown, no one shall help me" but I am sure that many people have lost fortunes, prestige, friends, peace of mind. and countless pleasures because they have been guilty of murdering good English. It is very painful to those who have been reared in an atmosphere of pure English to hear this language roughly treated by those who are either ignorant or careless. A knowledge of good English is a veritable gold mine for anyone who has it and it is the duty of every parent to lay the foundation for this "bonanza" in the cradle. Herbert Spencer spoke truly when he said "Teach a child to speak good English in the cradle and he will speak good English to the grave." Early impressions are lasting and if parents use the English language in the way that the masters of English tell us it should be used, then the children who inherit the Simian trick of imitation, will do likewise. Equipped with this best foundation stone upon which to build their education they will climb far more quickly and more surely to The Tower of Success than the unfortunate children who hear bad English in the cradle and who despite struggles to reform, even when they know all the rules of the English Language, are often guilty of "bad slips in speech."

GRAMMAR

RICHMOND H. KIRTLAND

In our day, the chief values of English grammar come through analysis and syntax. The analysis of sentences shows how ideas hang together, and so quickens our understanding of what we read, even bringing out meanings we should otherwise miss altogether. Mastery of analysis, applied as a habit in reading things worth while, presently becomes clear thinking. Every sentence we read is found to be made up of parts which belong to each other in interesting ways. Even the finest lyric poetry must be *understood* before it can be *felt*, and readers, who have trained themselves to the quick grasp of thought relations, find analysis the servant of poetry; not its enemy. The objections to analysis of literature are due in the main to bad preparation; we analyze the right thing at the wrong time—before we are ready for it—and so our tool becomes our tyrant. The remedy is not less analysis, but more, and better planned.

Syntax teaches the correct form which a word should take in serving one or another purpose in the sentence. Syntax may go far toward curing the blunders which mark careless or uncultivated speakers. But like analysis, syntax must become second nature if it is to be of much use in practical English.

Sentence Analysis.—"We think in words, and when we lack fit words, we lack fit thoughts." But thoughts are not higgledy-pigglely words. *Bandit, skid, stenographer, Ford, turtle, chauffeur, policeman, Packard* are promising high spots, but they tell no tale. One guess is as good as another, until we find *why, who, did, what, when, which, was, where.*

The *subject* of a sentence points out what we are talking about.

The *predicate* says what we have to say about the subject.

Modifiers narrow, enlarge, explain, or otherwise change the meaning of the notions they tie to.

The little tin brute skidded on the slippery corner, and in spite of all the pretty stenographer could do, turned turtle under the wheels of the Packard carrying the bandit on his get-a-way.

The simple subject is brute.

The simple predicate or predicate verb is *skidded and turned turtle*

Everything else in the sentence is *modifier*.

Complements.—The assertion made by the sentence verb is often incomplete. The expressions:

John was
Velvet feels
Old age seems
Locomotives burn

are without meaning until the idea of the verb is finished by some complement. If we say *John was president*, or *John was tall*, the words *president* and *tall* are *attribute complements* (*or subjective complements*) since they complete the verb and describe the subject. The first is also commonly named *predicate noun*, the second *predicate adjective*.

Again, in *Bring me a chair*; *The tailor made John a coat*; the words *me* and *John* seem to receive action, and yet they are also the principal words in phrases from which the prepositions *to*, and *for* have been left out. Bring *to me*, Made *for John*. Such complements in phrases without *to* or *for* are called *indirect objects* (or dative objects.)

A few of the verbs most frequently using indirect objects are: *bring, build, do, get, hand, make, offer, pay, play, promise, read, sell, send, show, teach, tell, throw, wish*.

The principal sentence elements are those which have been named: subject, predicate, complement, and modifiers. In addition, there are independent, parenthetical, and connective elements.

If we say:

Locomotives burn coal,
We heard a thrush,
Strikes cause suffering,

the words *coal, thrush, suffering* are *object complements*. Each completes its verb, by naming the receiver or result of action, without modifying the subject.

A third type of complement is shown in: The President appointed Bryan *Secretary of State*.

Training made our soldiers efficient.

Here the terms *efficient* and *Secretary of State* are *objective complements*, having the double use of completing the action and modifying the object complement.

Subjects, Predicates, Complements, Modifiers are so named because of their parts in telling the thought. Sentences may be analyzed from another viewpoint, their *structure*. Sentences, of course, are made of words, but there are combinations of words which hang together and act as one. The sentences

Come *now*, (word modifier)
Come *at this moment*, (phrase modifier)
Come *before any grass grows under your feet* (clause modifier)

are all alike in meaning. Phrases and clauses may do the work of subjects, complements, modifiers, parentheses, or independent elements.

A *phrase* is a group of related words making no assertion.

A *clause* is a statement forming part of a sentence.

Sentences may be analyzed from a third viewpoint. *Each word* may be examined and classified.

At Smithville yesterday, with two men out and the bases full, Lefty White swung hard for another four-bagger; but Great Scott! he couldn't find what was on that ball for a decent foul strike!

Noun.—*Smithville* is the name of a place. *Lefty White* is the name of a person. In this sentence, *bases, bagger, breaks, strike* are names of things. (Names like these are called nouns.)

Pronoun.—*He* is used in place of the noun Lefty White

What stands for the speed, the break, the deceptive curve of the pitching. (Words which stand for nouns are pronouns.)

Verb.—*Swung, find, was* make the assertions, actually tell the story of the sentence. (Verbs are words which tell the story, make the assertion of the sentence.)

Adjective.—*Decent, two, that, another* are words which point out, show quantity or quality. (Adjectives limit or describe nouns and pronouns.)

Adverb.—*Hard* tells how something was done. (Adverbs modify verbs, adjectives, or other adverbs, to tell *how, when, where, why, how much*, and the *like*.)

Conjunction.—*And, but*, are connecting words. (Conjunctions connect words, phrases or clauses.)

Preposition.—*At, with, on, for* show the relation of Smithville, men, ball, four-bagger to swung, was, find.

In the hat is *on* the table
The cat is *under* the table
The lamp hangs *over* the table

the idea of relationship may be clearer. (A preposition introduces a phrase, and shows the relation between two ideas.)

Interjection.—Great Scott! does not really belong to the sentence; is used to let off steam. (An interjection is a word thrown in to show feeling.)

The eight terms foregoing—noun, verb, adjective, adverb, pronoun, preposition, conjunction, interjection—are called *the parts of speech*. In the examples above, single words are named. But phrases and clauses also serve as parts of speech.

I will go *home*,
I will go *to my house*,
I will go to the place *where* I *live*,

are respectively adverb, adverbial phrase, adverbial clause.

Phrases and clauses may thus take the place of nouns, adjectives, or adverbs.

Nouns — Subdivisions. — Most parts of speech may be sub-divided. For example, it is easy to see that such nouns as *Detroit, Patrick Henry*, are unlike the names *river, man*. A *common noun* is a general or class name. A *proper noun* is a specific or individual name. The common noun names a whole group of things, the proper noun names an individual thing.

Some grammarians use a third class of nouns, called *abstract*, a term easier to illustrate than to define. *Ice* is a substantial, material thing. It can be seen, handled, weighed, broken into parts. But *iciness*, though clearly enough a noun, has none of these concrete qualities of *ice*. The concreteness has been abstracted (taken away). Temperance, ugliness, beauty, blackness, are *abstract nouns*. It is better to regard them as special forms of the common or class name.

Another form of common noun is the collective noun, so called because it gives one name to a group of persons or objects taken together. *Committee, congress, congregation*, are collective nouns.

Nouns—Uses in the Sentence.—As Subject of Verb—*Airplanes* fly.

Object Complement—Automobiles multiply *accidents*.

Predicate Noun—Senators are *representatives*.

Objective Complement—The Americans elected Harding *president*.

Objective Adverbial—We walked a *mile*.

Object of Preposition—Three Men in a *Boat*.

Indirect Object—Give *Jim* the ball.

Appositive—Sheridan, the *Commander*, was at Winchester.

Independent by address—*Fred*, will you shut the door?

Independent with Participle—The *captain* being wounded, the lieutenant took command.

Independent with following adjective, adverb, or phrase—*Hat* in hand, he stood waiting. *Face* dirty, *clothing* ragged, *feet* bare, he played in the streets all day.

Possessive—The *alligator's* hide is tough.

(Mixed and doubtful cases will be found in the Section of *Puzzling Constructions*).

Verbs—Subdivisions.—General viewpoints are possible in subdividing verbs. Consider the following sentences:

(1) Radium exists (is).
(2) Gunpowder explodes.
(3) Gold is a metal.
(4) Rifle balls kill game.

With regard to the completeness of the assertion: Exists and explodes are verbs requiring no complement (*Complete predication*).

Is and kill are verbs requiring complements (*Incomplete predication*).

With regard to the nature of the thing asserted:

Exists and *is* are verbs of being (Static).

Explodes and *kill* are verbs of action (*Kinetic*).

With regard to the presence of a recipient or result:

Kill names an action which reaches an objective (Transitive).

Exists, explodes, is have no such recipient or result of action (Intransitive).

The third of these sets, transitive-intransitive, is the standard division, always difficult to defend, and now giving place to the first set. The terms static—kinetic are more useful in logic than in grammar.

Verbals.—A verbal is a hybrid of verb and some other part of speech. In *Skating on one foot is difficult*, skating resembles a verb—there is action in it, and it has a phrasal modifier; but its action is *implied*, not *asserted;* the word skating is also the name of something, actually used as subject in the sentence. So, here, skating is plainly a composite of verb and noun. Such a composite is called a verbal.

If the foregoing type-sentence had read *To skate on one foot is difficult*, precisely the same discussion might have been applied to the words *to skate*. That expression is also a verbal noun; or verbal. In

The brook came tumbling,
He fell whirling,

the words *tumbling, whirling* are pretty clearly adverbial—verbal combinations. There can be no objection to admitting a possible modification of the subject, in each case, but it seems that the words tumbling and whirling tell us how the brook came and how the man fell. So if we say

Fools came to scoff,

to scoff is also a verbal adverb, answering *why*.

Subdivision of Verbals.—All old grammars, and most modern ones, define an Infinitive as a verbal noun, and a participle as a verbal adjective. The foregoing examples would seem to overthrow these standard definitions. The old treatment of verbals leaves us "all in the foggy dew."

If we must divide verbals into classes, the only distinctions easy to maintain will be formal. Such expressions as *to see, to have known, to be heard*, may be called *infinitives;* they are verbal combinations with *to* (expressed or understood). Such expressions as *seeing, knowing, seen, known, being heard, having been heard*, may commonly be called *participles*. They are

verbals without the infinitive sign *to*.

It is well enough to know that standard practice still gives the name *Gerund* to a verbal noun having the form of a participle, as in the sentence.

I am surprised at your *knowing* that.

Some day, we may drop this troublesome word gerund from our English grammar and admit that participles may be used as nouns.

Verbals—Uses of Infinitives.

1. Noun, Subject.
   To compute the age of the earth is difficult.
   It is pleasant *to have* spending money. (Logical Subject).
2. Noun, Object Complement.
   Hounds like *to track* game.
3. Subjective Complement.
   To profiteer is *to overcharge*.
4. Following a Preposition.
   We can do nothing but *wait*. (Infinitive without to).
   It will be impossible for him *to get* back. (Infinitive phrase).
5. In Apposition.
   To define, *to classify accurately*, is often difficult. (The second infinitive is here a definite equivalent of the first.)
   A tough undertaking, this, *to reach* the South Pole!
6. In the Adjective Relation.
   A time *to speak* and a time *to hold* your peace.
7. As an Adverb.
   Fools came *to scoff* and remained *to pray*.
   He so far forgot himself as *to resist* an officer. (Phrase of Degree.)
8. In an Independent Phrase.
   To tell you the truth, it is too late.

Verbals—Uses of Gerunds.—(Verbal nouns without *to*).

1. Subject.
   The *finding* of America required heroism.
   There's no *telling* how it will end.
2. Object.
   When does he intend *going* to Boston?
3. Subjective Complement.
   The most difficult part of detection is *finding* sufficient clues.
4. Objective Complement.
   Do you call that *playing* the game?
5. Object of Preposition.
   I never heard of *making* it in that way.
6. Appositive.
   We found it good fun, *rounding* up the jack rabbits.
7. Adverbial.
   That fact is worth *finding* out. (Adverbial only in the sense of degree or measure of value.)

Verbals—Uses of Participles.—

1. Adjective.
   In Boston, stands a monument *built* to commemorate the battle of Bunker Hill.
2. Adverb.
   We went slowly, *looking* ahead for danger.
3. Subjective Complement.
   He seemed *spoiling* for a fight.
   The thread of his life seemed *broken*.
4. Objective Complement
   He kept the wheels *moving*.
5. After a preposition.
   They captured the city without a man *being* lost. Such cases as this argue for the nounal use of participles. Without a man being lost—without losing a man,—without loss of a man. Whether we say
   without *a man being lost*, or
   without *a man's being lost*, the verbal phrase is a nounal object of a preposition.
6. In a Grammatically Independent Phrase or Clause.
   The governor *being* what he is, reform is to be expected.

Adjectives—Subdivisions.—All adjectives limit the words they modify.

That one clever swordsman held the bridge.

The word *that* seems to point a finger, is demonstrative; pointing a finger at one man limits the number of men. The numeral *one* obviously limits. The word *clever* also limits or selects among swordsmen, since not all are clever. Even the word *all* in the expression *all adjectives limit*, tells us the number or quantity of the subject, and so fixes its limits. But two of these three adjectives merely limit or point out, while the third, "*clever*," also describes, shows quality. *Limiting adjectives merely point out or limit. Descriptive adjectives limit and qualify*

Special Types of Limiting Adjectives.—Demonstratives and numerals have been mentioned above. *Cardinal numerals* tell how many, as *ten* men; ordinal numerals name a place in a series, as the *tenth* man. *The, a, an, are articles.*

In

Some gossip causes *much* trouble,

Some and *much* are indefinite limiting adjectives.

In

What book have you?

What is an *interrogative* limiting adjective.

Adjectives — Uses Of. — Direct Modifier, commonly preceding its noun.

Ripe melons, *low-hung* speedsters.

Detached Modifier, parenthetical.
Our beagle, *eager* enough to hunt for himself, was gun-shy.

Subject Complement.
The proof is *difficult*.

Adverbial Predicate Adjective.
The sun shines *warm*. In this case, *warm* is an adjective, or an adverb, or both, as you please to think it.

Objective Complement.
They found him *teachable*.

Substantive (Nounal).
"Only the *brave* deserve the *fair*."

Adverbs — Kinds Of. — Simple adverbs merely modify. Come *here*.

Conjunctive adverbs modify and connect.

Go *where* glory waits thee.

The terms simple and conjunctive have regard to the part which the adverb plays in the structure or framework of the sentence.

If we think of the ideas conveyed by the words themselves, that is, if we think of adverbs for their content, rather than for their part in sentence structure, we find several types. For instance, there are

1. Adverbs of *time*, and *time-order*.
   Do it *to-day*. Let John go *first*.
2. *Place*, and *place-order*, answering the question where.
   Put it *there*. Look *beyond*.
3. *Manner*, answering the question how.
   Booth acted *superbly*.
4. *Cause* or *Purpose*, answering why.
   He resigned for a woman's reason, *because*.
5. *Quantity*, answering how much.
   He is *little* better to-day.
   Our provisions were *almost* gone.
   The audience became *greatly* excited.
6. Mode of assertion, including assurance, doubt, affirmation, denial, contingency, concession, possibility, probability, logical source, and other like ideas.
   Assurance: There will *certainly* be another war.
   Doubt: *Perhaps* there may be, I admit it, *provisionally*.
   Negation: *No*, I think it will *not* be soon.
   Affirmation: *Yes, indeed!*
   Comtingency: I will go *if* you will.
   Concession: That part is *admittedly* an error.
   Possibility: *Possibly* the plan will succeed.
   Probability: But *probably* not.
   Connection with Reasoning: *Therefore, hence, since, because, consequently, accordingly, however*.

Prepositional Adverb.—

In

Think it *over;* worth attending *to;* that is the horse he was riding *on;* I saw the tree he was standing *by*, the words *over, to, on, by* have prepositional sense of relationship, but also a pretty clearly adverbial sense of place or manner. Historically, there is defense for such a construction, since words of this sort were originally adverbs.

Adverb, Uses of—

To modify a Verb, an Adjective, or another Adverb.

Drive SLOWLY.

A *very* weak case.

He came *somewhat* reluctantly.

Complement.

The manager is *out*. The curtain is *up*. The sun hangs *low*. The words *out, up, low* are adverbs of place or position. But it is hardly satisfactory to call them mere modifiers of the verb. They seem to complete the assertion of the verb and qualify the subject, as well.

Substantive after a Preposition.
Since *when; from thence;* till *now*.

Adjective.
The *then* Mrs. Brown; the *upward* motion; a *one-time* hero.

Conjunctive.
We will come *when* we can.

Interrogative.
Why do you do that?

Expletive, or Introductory.
There is no need for haste.
There comes a day of reckoning.

The term *expletive* means not necessary to the thought, but thrown in for the sake of smoothness, emphasis, and the like.

Responsive.
Yes, no, yea, nay.

Pronouns, Kinds Of—

A personal pronoun, even when standing by itself, shows whether it refers to the speaker, the person spoken to, or the person or thing spoken of. e. g. in

I think so, *we* will be there, *I* and *we* are words indicating the speakers.

You see, don't *you?* Here you are addressed.

They came, *It* is mine, Let me see *them*. *They, it, them*, are neither speaking nor spoken to, but are spoken of.

Only personal pronouns have this quality of distinguishing the speaker, the person addressed, the person or thing spoken of.

Demonstrative Pronouns point out or direct attention to some person or some thing.

This is my book. *These* are good actors. *That* was his last act. I will take *those*, please.

Herewith, Therewith are equivalent to the prepositional phrases *with this, with that*, in which demonstrative pronouns are objects of the preposition.

The **Interrogative Pronouns** are *who, which*, and *what*, used in asking questions.

What is your name? *Who's* your friend?

In general, *who* refers to persons, *what* to animals, plants or inanimate things, *which* to either persons or things.

Which and *what* may lose their pronominal quality, and become interrogative adjectives, e. g. in *Which* hat is mine? *What* book are you reading?

Relative Pronouns stand for nouns or pronouns, and connect or relate a modifier to the expression it modifies. e. g. in This is the cat *that* caught the rat, *that* is a relative pronoun, standing for the noun *cat*, and connecting the adjective clause *that caught the rat* with the noun cat. So, in What is he *who* speaks to me? Who is a relative pronoun, representing the pronoun he, and introducing the clause *who speaks to me*.

The word for which a pronoun stands is its *antecedent*.

Relative pronouns always connect, and in addition have various other uses. e. g.

(1) *Subject of verb in a clause.* There is the man *who* sold me the gold brick.

(2) *Object of verb in a clause.* The stone *which* the builders despised is become the head of the corner.

(3) *Object of Preposition.* Here comes a man on *whom* we can lay the blame.

The entire clause introduced by a relative pronoun is called a *Relative Clause*. When the clause does the work of an adjective it is a Relative Adjective Clause, as in the three examples just given. If its value is substantive, it is a Relative Noun Clause, as in I know *whom I have believed*.

Distributive Pronouns indicate that the object or objects for which they stand are to be considered *one at a time*, for instance, Each (man) may have three shots. The distributives are *each, either, neither*.

Indefinite Pronouns.—Standard text-books in grammar apply the term *Indefinite Pronoun* to such words as *some, any, few, all, many*, when used for nouns. It is easy to see that these words do indicate indefinite numbers or quantities. But when grammarians speak of *Distinctives* and *Reciprocals* as Indefinite Pronouns, the present writer is unwilling to follow them.

Reciprocal Pronouns are rather idiomatic phrases than pronouns. In the expressions *each other, one another*, whatever is declared about one of two things is true of the other also, hence the terms are reciprocal.

The gingham dog and the calico cat ate *each other*.

They did not love *one another*.

Compound Pronouns are, as their name shows, built up of several words.

Compound Personal Pronouns, *Myself, themselves*—also called *Reflexives*, since in them the action often turns back toward the subject—I hurt *myself;* and called *Intensives* because of their emphasis, myself, e. g., being a stronger word than *me*.

Compound Relative Pronouns.—Whosoever, whomsoever, whatever, whatsoever, are compound relatives, emphatic in meaning.

Prepositions, Kinds of—In form, prepositions are simple, compound, phrasal.

Simple: at, by, for, from, in, of, off, on, through, till, to, up, with, etc.

Compound: alongside, athwart, notwithstanding, throughout, underneath, etc.

Phrasal: on this side, out of, away from, according to, on account of, etc. He lives *on the other side of* the river equals *beyond* the river. So these phrasal prepositions, though they may be broken up into parts, yet seem to hang together with single meanings.

With regard to the source from which they have come, prepositions may be traced to *adverbs, nouns, verbs*, or *other prepositions*.

From *adverbs and other prepositions*: *into, until, upon, underneath, behind, before, above, toward, within, without, throughout*.

From *nouns and adjectives*: *athwart, aslant, around, below, despite*.

From *verbs*: *concerning, during, except, excepting, notwithstanding, past, save*.

Prepositions, Uses of—Technically, prepositions always introduce phrases, though the object of the preposition may itself be a phrase or a clause. Prepositional phrases may serve as

Nouns: *To the fort!* is our next order.

What he really said was *"over there."*

Adjectives: Ribs *of steel*, puss *in boots*.

Adverbs: Look *in your pocket*.

Come *in the morning*.

The *Object* of a Preposition may be any word, phrase, or clause having a nounal sense:

On the *hill;*

"Geordie Hoo" is a character in *"Beside the Bonnie Briar Bush."*

We are looking for *whatever is wrong here*.

Conjunctions, Kind of—In discussing conjunctions, it will be necessary to distinguish between the customary treatment and the logical one. Text-books of grammar invariably divide conjunctions into two classes, Co-ordinate and Sub-ordinate. They hold that co-ordinate conjunctions connect words of equal rank, phrases of equal rank, clauses of equal rank.

as:

William *or* his brother may go.

Look in the cupboard *and* under the dish pan.

Whether we go *or* whether we stay, the same difficulty awaits us.

The meaning of the term Co-ordinate is clear. We have no quarrel with it.

But Sub-ordinating Conjunctions are not so readily approved. The following list is taken from one of the most popular high school text-books of grammar:

(a) *Place:* where, whither, whence, etc.
(b) *Time:* while, when, as soon as, etc.
(c) *Manner:* as.
(d) *Cause:* as, because, for, since, etc.
(e) *Condition:* if, unless.
(f) *Concession:* though.
(g) *Result:* that, so that.
(h) *Purpose:* that, in order that.
(i) *Degree and Comparison:* as, than.

It would seem that nearly all these terms answer one of the tests for adverbs: *where, when, how, why, how much, in what mode* or *under what conditions?* Wherever the adverbial function is so clearly felt as to indicate that the connective is also a modifier, we should call the term a conjunctive adverb, rather than a sub-ordinating conjunction. For example, *in order that* is classed above as a sub-ordinating conjunction. But in the sentence

We disguised ourselves *in order that* we might escape, *in order that* is an adverbial modifier of the verb disguised, as well as a sub-ordinating connective.

The distinctions among prepositions, relative pronouns, sub-ordinative conjunctions, and conjunctive adverbs are not easy to make. In any case, to discover all the parts a word is playing in the sentence should be more important than to provide a conventional name for it.

Types of Co-ordinating Conjunctions are—

Copulatives: and, also, besides, likewise, too; so called because they do little more than join together like elements—they are nearly pure connectives.

Alternatives: Else, neither, not, or.

It is advisable to go carefully here, *else* there may be a mishap.

We cannot go ahead, *neither* can we turn back.

There seems little hope of averting world war, *or* of achieving desirable ends by war.

The alternative conjunctions imply a choice between two things.

Adversatives: But, however, nevertheless, notwithstanding, only, still, yet.

"Wilson Democrats sought to bring the United States into the League of Nations, but a certain group of Republican senators defeated the project." Here the second clause is in opposition to the first; it names an adverse fact. Hence the name adversative for all such conjunctions.

Causal: For, hence, so, then, therefore. Such conjunctions join two ideas related as cause and effect, or data and inference; that is, they are used in reasoning.

There can be no permanent political prosperity without economic prosperity: *hence* the great nations must be helped back to financial soundness.

Correlatives: When a pair or pairs of words are used as connectives, such pairs are called correlatives.

Either—or, neither—nor are correlative co-ordinating conjunctions.

Copulative as well as alternative conjunctions may go in correlated pairs: *alike—and, as well—as, at once—and, both—and, not only—but also, whether—or. Not only* bad intention works havoc, *but* bad judgment *also*. Here, the two ideas are taken one at a time, hence the connective is *disjunctive:* the ideas are of equal rank—the connection is co-ordinating: the function of the connecting words is little other than to connect—they are therefore copulatives.

Inflection.—Inflection is a change in form of a word which goes with a change in meaning or use in the sentence.

Nouns, for instance, commonly make some change in the form of a word to show whether one thing or more than one is meant.

Mouse, mice; box, boxes; loaf, loaves, etc.

This inflection is called *Number*.

The commonest indication of number is made by the addition of the letter s to the singular to form the plural:

boy, boys; girl, girls; boat, boats; train, trains.

Nouns ending in *s, sh, z, x, ch, soft*, and *o* preceded by a consonant, add *es* to the singular to form the plural:

lens, lenses; rush, rushes; waltz, waltzes; hoax, hoaxes; church, churches; hero, heroes.

Common nouns ending in y preceded by a consonant change the *y* to *i* and add *es* for their plural:

lady, ladies; city, cities, shanty, shanties.

Some nouns ending in *f* or *fe* form their plural by changing the *f* or *fe* to *v* and adding *es*.

wolf, wolves; loaf, loaves; sheaf, sheaves.

There are nouns which have no inflection for number, in which cases the form of some other word in the sentence will show the number of the noun. The word *were*, in the sentence *Deer were feeding* in the orchard, shows that there was more than one deer. Such words are *cod, grouse, sheep, salmon, swine, trout*.

Other nouns have either no singular or no plural number: scissors, shears, news, athletics, eaves, trousers, tongs, victuals, suds, tweezers, pliers, e. g., have no singular.

Pride, flax, show that some nouns have no plural. Other nouns have *two* plurals usually unlike in meaning.

brother, brothers (in a family), brethren (in a society).
fish, fishes (one by one), fish (all together).
shots, (discharges), shot (the balls discharged).

Nouns like measles, mumps, mathematics, politics, seem plural, but are singular.

Tidings, alms, means, are examples of nouns used as either singular or plural, without change of form.

The words foot, tooth, goose, ox, mouse, man, woman, child, furnish examples of irregular plurals, survivals of old endings in *en*, or of plurals by internal change.

The plural of Mr. Brown is Messrs. Brown. (Pronounce Messrs. mes yerz.)

Miss Black has for plural the Misses Black, or the Miss Blacks. Best usage seems to prefer the first of these for members of one family, the second for less closely related holders of the name Black.

Mrs. Browning—plural the Mrs. Brownings.

Compound nouns in *ful* generally add *s* to the last syllable:

pailful, pailfuls; spoonful, spoonfuls.

Other compound nouns make their principal words plural:

man-at-arms, men-at-arms.
mother-in-law, mothers-in-law.

Letters, Figures, and other Symbols form their plurals by adding the regular possessive sign: You skate your letter *s's* better than your figure 8's.

Foreign Plurals.—English has taken over the plurals of many foreign words, along with the singular. Both in spelling and pronunciation, the English fashion is to be preferred, where a choice is given.

Singular	Plural
alumnus, (mas.)	alumni
alumna, (fem.)	alumnae
analysis,	analyses
animalculum,	animalcula
antithesis,	antitheses
appendix,	appendixes, appendices
automaton,	automatons, automata
axis,	axes
bacillus,	bacilli
bacterium,	bacteria
bandit,	bandits, banditti
basis,	bases
beau,	beaus, beaux
cactus,	cactuses, cacti
cherub,	cherubs, cherubim
crisis,	crises
curriculum,	curriculums, curricula
datum,	data
dilettante,	dilettanti
erratum,	errata
focus,	foci
formula,	formulas, formulae
fungus,	fungi
genius,	geniuses, genii
genus,	genera
gymnasium,	gymnasiums, gymnasia
hippopotamus,	hippopotamuses, hippopotami
hypothesis,	hypotheses
index,	indexes, indices
larva,	larvae
madame,	mesdames
medium,	mediums, media
memorandum,	memorandums, memoranda
monsieur,	messieurs
nebula,	nebulae
oasis,	oases
phenomenon,	phenomena
radius,	radii
seraph,	seraphs, seraphim
stimulus,	stimuli
tableau,	tableaus, tableaux
terminus,	termini
thesis,	theses
vortex,	vortexes, vortices

Number in *personal pronouns* is commonly shown by a complete change of the singular form: the plural of *I* is *we;* the plural of *she* is *they*, etc. The inflections of pronouns will appear presently in a summary.

Gender.—Nouns and pronouns indicate sex (gender) in various ways.

By word endings:

abbot, abbess	baron, baroness
actor, actress	gentleman, gentlewoman
administrator,	administratrix

By changing a word in a compound name:

father-in-law,	mother-in-law
man-servant,	maid-servant

By substituting another word altogether:

son, daughter; monk, nun; boy, girl.

He, she, it—it being of unknown or neuter gender; he, masculine gender; she, feminine gender.

Personal pronouns change their form to show whether they stand for the speaker, the person addressed, or the person or thing spoken of. They are, therefore said to be *inflected* for *first, second,* and *third persons.*

In English grammar, nouns are also said to be in first, second, or third person, but since the noun itself does not change its form to name the person talking, talked to, or talked about, it is rather absurd to lumber up the place with *person in nouns.* The shell is empty.

Case of Nouns, Pronouns.—*Case* is always defined as a modification of nouns and pronouns to show their use in the sentence. For instance, a noun used as subject of a verb is said to be in the nominative case; a noun object of a verb is in the objective case, and so on. Latin grammar recognizes *seven* cases. English keeps three of the seven—nominative, possessive, and objective. But again, there is little excuse for the word *Case* in our grammar, for only one of all the uses of nouns has a form to match. Note this series:

1. The President is in town.
2. I saw the President.
3. I helped elect him President.
4. Give the President three cheers!
5. And three more for the President's wife!
6. America's chief, the President, will speak.
7. Mr. Harding is President.
8. The President having finished, we arose.
9. The President actually before his eyes, the visitor was satisfied.
10. We believed the President to be in error.
11. Mr. President, I arise to object!

Only in No. 5 does the noun show any change in form to mark its use in the sentence. What more need be said about the absurdity of teaching *Case* of nouns in English grammar?

But while our teachers and textbooks are so docile in accepting the notions handed down to them, we shall need to know the conventional cases of nouns.

In sentences 1, 6, 7, 8, 9, 11 the noun President is said to be in the *Nominative Case.*

Sentence 5 shows the *Possessive Case.*

Nos. 2, 3, 4, 10 use the word President in the *Objective Case.*—Since these notions are not reasonable, yet must be memorized for policy's sake, it is well to state them clearly.

A noun used as the subject of a verb is in the nominative case.

A noun in apposition with another noun or pronoun takes the case of the noun it is joined to.

A noun used as attribute complement is in the nominative case.

A noun used independently with a participle or prepositional phrase is in the nominative case.

A noun used as a term of address is in the nominative case.

Nouns used to show possession or ownership are in the possessive case.

The object of a transitive verb is in the objective case.

An objective complement is in the objective case.

An indirect object is in the objective case.

The subject of an infinitive is in the objective case.

To these we may add:

The attribute complement of an infinitive is in the objective case. I believed it to be *him.*

A noun used adverbially is in the objective case. We followed him a *mile.*

The Case of Pronouns agrees with that of nouns, but pronouns have a fairly complete set of forms to indicate their case.

Declension of Nouns.—*Declension* is an orderly arrangement of the inflections which show *person, number, gender,* and *case of substantives,* that is, of all words used as nouns.

The only changes of form in nouns are to show number and case. Sample Declensions:

Case	Singular	Plural	Singular	Plural
Nominative	man	men	lady	ladies
Possessive	man's	men's	lady's	ladies'
Objective	man	men	lady	ladies

DECLENSION OF PERSONAL PRONOUNS

First Person

	Singular	Plural
Nom.	I	we
Poss.	my *or* mine	our *or* ours
Obj.	me	us

Second Person

	Singular	Plural
Nom.	you	you
Poss.	you *or* yours	your *or* yours
Obj.	you	you

Third Person

	Singular	Plural
	Masculine, Feminine, Neuter	**All Genders**
Nom.	he, she, it	they
Poss.	his, her *or* hers, its	their *or* theirs
Obj.	him, her, it	them

Old Style

	Singular	Plural
Nom.	thou	ye *or* you
Poss.	they *or* thine	your *or* yours
Obj.	thee	you

Relative and Interrogative Pronouns have a very simple declension:

	Sing. and Plural	Sing. and Plural
Nom.	who	which
Poss.	whose	whose
Obj.	whom	which

Possessive Forms.—The *possessive singular of nouns* is commonly formed by adding the apostrophe and letter *s* ('s).

Examples: lady's, girl's, James's

An optional form when too many *s* sounds come together uses the *apostrophe only* for the possessive singular:

For *conscience'* sake! *Ulysses'* boat.

Usage favors a *possessive phrase* for inanimate things, though the regular sign of possessive can seldom be called incorrect.

Leaves of the book, legs of the tripod, color of the apple, bottom of the boat

Joint ownership is indicated by using the possessive sign with only the last noun in the series; if Brown and Stratton own a

camp together, the possessive form will be *Brown and Stratton's* camp.

Separate ownership requires the sign of possession with each noun of the series; if White, Gray, and Green each furnished a picture for the photographic contest, the story will read: *White's, Gray's,* and *Green's* pictures were all approved.

Compound nouns and *groups of nouns in apposition* with each other add the possessive sign to the last word only:

Richard the Third's deformity
my brother-in-law's house
the King of England's power
Peter the Fisherman's loyalty

Double possessives are not uncommon:

that beau of Mabel's
that horse of Fred's

Modifications of Verbs.—*Voice* shows by a change in the form of the verb whether the action is coming toward the subject or going away from it. Not all verbs have voice.

An Indian shot a deer

Action *going out* from subject to object. Active voice *shot*

Deer was shot by Indian

Action coming in toward subject. Passive voice *was shot*

(With acknowledgments to Buehler's Modern English Grammar)

Verbs in the active voice take an *object.* In the passive voice, the former object becomes *subject.* Hence *only transitive verbs* have voice.

In the sentence *They called him a fool,* the verb called is in the active voice. The passive form will read *He was called a fool by them.* Here the word *fool* is a Predicate Noun, (Attribute Complement), since it completes the verb and refers to the subject.

(a) *His friends gave him an automobile,* becomes in the passive form.

(b) *He was given an automobile by his friends,* or

(c) *An automobile was given him by his friends.*

When the direct object from a sentence of the active form is also an object in the passive form, as in Sentence (b), it is called a *retained object.* In sentence (c) *him* is still an indirect object, as it was in sentence (b).

Mood or Mode.—The word mode means *manner.* As a modification of verbs, the word mode is interchangeable with *mood*—a term for state of mind, mental attitude, condition of the speaker's feelings. We speak of moods of certainty, uncertainty, doubt, command, and the like. In one way or another, our language shows these moods or modes of assertion. Verbs have forms for several moods. Observe the different moods in which the word *know* is here used:

I *know* it is true. (Assurance.)

If it *were* true, we couldn't be sure of it. (Doubt, unfavorable bias.)

Know your lesson to-morrow, I command you. (Command.)

He *may know* more than he admits. (Possibility.)

In grammar, the word *Mood* is used to point out states of feeling which are shown by the form of the verb. Mood is therefore a modification of verbs, marked by inflection.

Indicative Mood.—The *Indicative* is the mood of fact, or matter regarded as fact.

Your brother *has been* here. (Simple fact.)

If he was here, it is strange I did not meet him. (Not a denial of his being here; we think of him as here, but wonder about it.)

Subjunctive Mood.—*If my brother were here now,* we could play hockey.

In this sentence it is clearly understood that my brother is *not* here now. The verb *were* shows that the speaker does not regard the idea as fact.

May he come soon! expresses a wish, and of course implies that he is not here now.

The Subjunctive Mood expresses a wish, or a condition contrary to fact.

Come out of that! is an order, imperative. You are not yet "out of that". My mood is commanding something to be which is not.

The *Imperative Mood* expresses a command.

Verbals are sometimes spoken of as in the *Infinitive Mood,* since they do not go so far as to really declare anything; they indefinitely (in-finite-ly) imply, assume something.

We *go* fishing in Maine every summer.

It is fun *to go* fishing in Maine.

The first word *go* really *declares* the action of going; the second *implies* the action.

Many *verb phrases* show mood, or *manner of assertion.*

I *may go* indicates possibility;

You *may go* shows permission;

We *must go* shows necessity, and so on.

Not many years ago, all grammarians spoke of a *potential* mood, whose "auxiliaries" were *may, can, must, might, could, would,* and *should.* The word potential was well chosen, since it means something not yet fact, but which has the possibility of becoming fact. Nowadays, the potential mood has gone out of fashion, probably because the statement of potentiality is in itself a fact. It is true that *I may go,* etc. So we speak now of *Potential Verb Phrases,* not *Potential Mood.*

An *auxiliary verb* helps another verb to make an assertion.

Auxiliaries in present time are *do, be, have, shall, will, may, can, must.* The first three of these have many forms; all but the last have forms for past time.

Present	Past	Present	Past
do	did	shall	should
be (am)	was	will	would
(are)	were	may	might
have	had	can	could

Tense is a modification of verbs to indicate *time.*

The *Present Tense* indicates action or being *now.*

Here we *are.*

Westward the course of empire *takes* its way.

The *Past Tense* of verbs indicates action or being in past time.

Milton *became* blind.

I *shot* the albatross.

The *Future Tense* places action or being in the future.

There are two forms of future tense in English—one the simple assertion of what is to be, the other the strong assertion of the speaker's will that something shall be. The latter takes the form of a promise or the statement of determination.

Simple Futurity

I shall go	We shall go
You will go	You will go
He will go	They will go

Determination

I will go	We will go
You shall go	You shall go
He shall go	They shall go

The *Present Perfect Tense* or simply the Perfect Tense, regards an action or state as finished at the present time.

We *have made* a discovery implies that the discovery is now finished.

If this sentence were "Before you left, we *had found* the trouble in the battery circuit," the verb *had found* would point out an action finished some time ago, in past time.

The *Past Perfect Tense* relates to action or being wholly finished in past time.

Again, in the sentence "The president *will have been* out of office before then," action is thought of as finished at a date still in the future.

The *Future Perfect Tense* expresses action or being completed at a time still in the future.

The *Perfect* and *Past Perfect Tenses* do not use the past tense of the verb, but the past participle. We do not properly say I *have saw,* or I *have went,* but I *have seen,* I *had gone.* It is important that we should know thoroughly the forms of all verbs commonly used. Three of these forms furnish material for nearly all changes among verbs, and are therefore called *Principal Parts.*

The *Principal Parts* of a verb are the *First Person Singular of the Present Indicative* and of the *Past Indicative,* and the *Past Participle.*

Regular verbs form their past tense and past participle by adding *ed* to the *root,* that is, to the First Person Singular of the present indicative.

But irregular verbs blow whithersoever the winds of the past have listed; there is no way to a correct English speech without learning their principal parts.

Principal Parts of Common Irregular Verbs,—As supported by good usage. Good dictionaries contain other forms for many of these words. Only verbs commonly misused appear here.

Present	*Past*	*Past Participle*
arise	arose	arisen
am	was	been
awake	awoke	awakened
beat	beat	beaten
begin	began	begun
bite	bit	bitten
blow	blew	blown
break	broke	broken
bring	brought	brought
catch	caught	caught
choose	chose	chosen
come	came	come
creep	crept	crept
do	did	done
draw	drew	drawn
drink	drank	drunk
drive	drove	driven
eat	ate	eaten
fall	fell	fallen
fight	fought	fought
fly	flew	flown
forget	forgot	forgotten
freeze	froze	frozen
get	got	got or gotten
give	gave	given
go	went	gone
grow	grew	grown
hew	hewed	hewn
hide	hid	hidden
lay	laid	laid
lie	lay	lain
ride	rode	ridden
ring	rang	rung
rise	rose	risen
run	ran	run
see	saw	seen
sing	sang	sung
speak	spoke	spoken
spin	spun	spun
spring	sprang	sprung
steal	stole	stolen
stink	stunk	stunk
swim	swam	swum
swing	swung	swung

take	took	taken
tear	tore	torn
throw	threw	thrown
write	wrote	written

Verbs—Person and Number,—Like nouns, verbs make certain changes in form to show *how many* things are spoken of; and like pronouns, verbs have a few changes of form which go with the first, second, or third person of their subject.

The bird *flies;* the birds *fly.*

Leaves *fall;* the leaf *falls.*

These sentences illustrate what we might call *regular plurals* of verbs. Rather oddly, they reverse the way in which nouns show plural number, taking away an *s* where nouns would add *s.*

There are also bothersome irregularities in forming the plurals of verbs.

He is; they are.

I go; they go; he goes.

Again, there is no way to be surely right about these things but to learn the forms so well that they come naturally to mind when we need them.

In general, verbs give no sure indication of person. The verbs *walked, ran, saw, had been,* for example, will fit equally well the subject *I, you, he, we, they.* But English grammar declares that *verbs agree with their subjects in person and number.* A study of the following conjugations will show where this theoretical agreement has inflected forms to match. Again, it is useless to seek for reasons—*What is, is, because what has been, has been.*

Conjugation of the Verb "Be"

Principal Parts

Present Infinitive: to be
Past Tense: was
Past Participle: been

INDICATIVE MOOD

Present Tense

Singular	Plural
1st Person, I am	We are
2nd Person, You are	You are
3rd Person, He is	They are

Past Tense

I was	We were
You were	You were
He was	They were

Future Tense

I shall be	We shall be
You will be	You will be
He will be	They will be

Present Perfect Tense

I have been	We have been
You have been	You have been
He has been	They have been

Past Perfect Tense

I had been	We had been
You had been	You had been
He had been	They had been

Future Perfect Tense

I shall have been	We shall have been
You will have been	You will have been
He will have been	They will have been

SUBJUNCTIVE MOOD

Present Tense

I be	We be
You be	You be
He be	They be

Past Tense

I were	We were
You were	You were
He were	They were

Present Perfect Tense

I have been	We have been
You have been	You have been
He have been	They have been

Past Perfect Tense

I had been	We had been
You had been	You had been
He had been	They had been

IMPERATIVE MOOD

Present Tense

Singular	Plural
Be (you)	Be (you)

Infinitives

Present	Present Perfect
To be	To have been

Participles

Present	Past or Perfect	Present Perfect
Being	Been	Having been

Gerunds

Present	Present Perfect
Being	Having been

CONJUGATION OF THE VERB "SEE"

Principal Parts

Present	Past	Past or Perfect Participle
See	Saw	Seen

ACTIVE VOICE

INDICATIVE MOOD

Present Tense

Singular	Plural
1st Person, I see	We see
2nd Person, You see	You see
3rd Person, He sees	They see

Past Tense

I saw	We saw
You saw	You saw
He saw	They saw

Future Tense

I shall see	We shall see
You will see	You will see
He will see	They will see

Present Perfect Tense

I have seen	We have seen
You have seen	You have seen
He has seen	They have seen

Past Perfect Tense

I had seen	We had seen
You had seen	You had seen
He had seen	They had seen

Future Perfect Tense

I shall have seen	We shall have seen
You will have seen	You will have seen
He will have seen	They will have seen

SUBJUNCTIVE MOOD

Present Tense

(If) I see	(If) We see
You see	You see
He see	They see

Past Tense

(If) I saw	(If) We saw
You saw	You saw
He saw	They saw

Present Perfect Tense

(If) I have seen	(If) We have seen
You have seen	You have seen
He have seen	They have seen

Past Perfect Tense

(If) I had seen	(If) We had seen
You had seen	You had seen
He had seen	They had seen

IMPERATIVE MOOD

Present Tense

See (you)	See (you)

Infinitives

Present	Present Perfect
To see	To have seen

Participles

Present	Present Perfect
Seeing	Having seen

Gerunds

Present	Present Perfect
Seeing	Having seen

PASSIVE VOICE

INDICATIVE MOOD

Present Tense

1st Person, I am seen	We are seen
2nd Person, You are seen	You are seen
3rd Person, He is seen	They are seen

Past Tense

I was seen	We were seen
You were seen	You were seen
He was seen	They were seen

Future Tense

I shall be seen	We shall be seen
You will be seen	You will be seen
He will be seen	They will be seen

Present Perfect Tense

I have been seen	We have been seen
You have been seen	You have been seen
He has been seen	They have been seen

Past Perfect Tense

I had been seen	We had been seen
You had been seen	You had been seen
He had been seen	They had been seen

Future Perfect Tense

I shall have been seen	We shall have been seen
You will have been seen	You will have been seen
He will have been seen	They will have been seen

SUBJUNCTIVE MOOD

Present Tense

I be seen	We be seen
You be seen	You be seen
He be seen	They be seen

Past Tense

I were seen	We were seen
You were seen	You were seen
He were seen	They were seen

Present Perfect Tense

I have been seen	We have been seen
You have been seen	You have been seen
He have been seen	They have been seen

Past Perfect Tense

I had been seen	We had been seen
You had been seen	You had been seen
He had been seen	They had been seen

IMPERATIVE MOOD

Present Tense

Be (you) seen	Be (you) seen

Infinitives

Present	Present Perfect
To be seen	To have been seen

Participles

Present	Past	Present Perfect
Being seen	Seen	Having been seen

Gerunds

Present	Present Perfect
Being seen	Having been seen

PROGRESSIVE FORM, VERB "SEE"

(Action thought of as continuing or "progressing")

ACTIVE VOICE

INDICATIVE MOOD

Present Tense

1st Person, I am seeing	We are seeing
2d Person, You are seeing	You are seeing
3d Person, He is seeing	They are seeing

Past Tense

I was seeing	We were seeing
You were seeing	You were seeing
He was seeing	They were seeing

Future Tense

I shall be seeing	We shall be seeing
You will be seeing	You will be seeing
He will be seeing	They will be seeing

Present Perfect Tense

I have been seeing	We have been seeing
You have been seeing	You have been seeing
He has been seeing	They have been seeing

Past Perfect Tense

I had been seeing	We had been seeing
You had been seeing	You had been seeing
He had been seeing	They had been seeing

Future Perfect Tense

I shall have been seeing	We shall have been seeing
You will have been seeing	You will have been seeing
He will have been seeing	They will have been seeing

SUBJUNCTIVE MOOD

Present Tense

I be seeing	We be seeing
You be seeing	You be seeing
He be seeing	They be seeing

Past Tense

I were seeing	We were seeing
You were seeing	You were seeing
He were seeing	They were seeing

Present Perfect Tense

I have been seeing	We have been seeing
You have been seeing	You have been seeing
He have been seeing	They have been seeing

Past Perfect Tense

I had been seeing	We had been seeing
You had been seeing	You had been seeing
He had been seeing	They had been seeing

IMPERATIVE MOOD

Present Tense

Be (you) seeing	Be (you) seeing

Infinitives

Present	Present Perfect
To be seeing	To have been seeing

Participles

Present	Present Perfect
.....	Having been seeing

Gerunds

Present	Present Perfect
.....	Having been seeing

THE CONJUGATION OF A REGULAR VERB

Conjugation of the Verb Move in the Active Voice

Principal Parts

Present Tense	Past Tense	Past Participle
move	moved	moved

INDICATIVE MOOD

Present Tense

Singular	Plural
1st Person, I move	We move
2d Person, You move (thou movest)	You move
3d Person, He moves	They move

Past Tense

I moved	We moved
You moved (thou movedst)	You moved
He moved	They moved

Future Tense

I shall move	We shall move
You will move (thou wilt move)	You will move
He will move	They will move

Present Perfect Tense

I have moved	We have moved
You have moved (thou hast moved)	You have moved
He has moved	They have moved

Past Perfect Tense

I had moved	We had moved
You had moved (thou hadst moved)	You had moved
He had moved	They had moved

Future Perfect Tense

I shall have moved	We shall have moved
You will have moved (thou wilt have moved)	You will have moved
He will have moved	They will have moved

SUBJUNCTIVE MOOD

Present Tense

If I move	If we move
If you move (if thou move)	If you move
If he move	If they move

Past Tense

If I moved	If we moved
If you moved (if thou movedst)	If you moved
Ifhe moved	If they moved

IMPERATIVE MOOD

Present Tense

Move (you or thou)	Move (you)

Infinitives

Present	Perfect
To move	To have moved

Participles

Present	Perfect
Moving	Having moved

PASSIVE VOICE

INDICATIVE MOOD

Present Tense

1st Person, I am moved	We are moved
2d Person, You are moved (thou art moved)	You are moved
3d Person, He is moved	They are moved

Past Tense

I was moved	We were moved
You were moved	You were moved
He was moved	They were moved

Future Tense

I shall be moved	We shall be moved
You will be moved (thou wilt be moved)	You will be moved
He will be moved	They will be moved

Present Perfect Tense

I have been moved	We have been moved
You have been moved (thou hast been moved)	You have been moved
He has been moved	They have been moved

Past Perfect Tense

I had been moved	We had been moved
You had been moved (thou hadst been moved)	You had been moved
He had been moved	They had been moved

Future Perfect Tense

I shall have been moved	We shall have been moved
You will have been moved (thou wilt have been moved)	You will have been moved
He will have been moved	They will have been moved

SUBJUNCTIVE MOOD

Present Tense

I be moved	We be moved
You be moved (Thou be moved)	You be moved
He be moved	They be moved

Past Tense

I were moved	We were moved
You were moved	You were moved
He were moved	They were moved

Imperative Mode

Be (you, thou) moved	Be (you) moved

Infinitives

To be moved	To have been moved

Participles

Present	Past	Perfect
Being moved	Moved	Having been moved

Synopsis of a Verb.—A table of all forms of verb in a given person, number, voice and mood is called a *synopsis.*

Third Person, Singular Number, Active Voice, Indicative.

Third Person, Singular Number, Active Voice, Indicative.

Mood of verb "See"

Present Tense	He sees
Past Tense	He saw
Future Tense	He will see
Present Perfect Tense	He has seen
Past Perfect Tense	He had seen
Future Perfect Tense	He will have seen

Subjunctive MOOD

Present Tense	He see
Past Tense	He saw
Present Perfect Tense	He have seen
Past Perfect Tense	He had seen

In the Third Person, Singular Number, Passive Voice

INDICATIVE MOOD

Present Tense	He is seen
Past Tense	He was seen
Future Tense	He will be seen
Present Perfect Tense	He has been seen
Past Perfect Tense	He had been seen
Future Perfect Tense	He will have been seen

SUBJUNCTIVE MOOD

Present Tense	He be seen
Past Tense	He were seen
Present Perfect Tense	He have been seen
Past Perfect Tense	He had been seen

Comparison.—Many adjectives and ad verbs are modified to show *degree;* as, tall, taller, tallest; rapidly, more rapidly, most rapidly. This change of form is called *Comparison,* and its three degrees illustrated above are called *positive, comparative, superlative.*

Few limiting adjectives can be compared, nor do all descriptive adjectives admit of degrees. For example, perfect is a superlative without weaker forms; unanimous has no comparison; so the words, round, square, equi-angular, vertical, and a multitude more admit no change of degree. There is a kind of substitute for comparison in such cases. A thing which is round cannot of course be rounder, but some second object may be *nearly round;* and some third may be *more nearly* round than the second. In this sense nearly all adjectives and adverbs may be modified in degree by adverbial addition or subtraction.

The two standard means of comparison are (1) the use of the inflection *er* for comparative, *est* for superlative; (2) the prefixing of *more* for the comparative and *most* for the superlative. The *more—most* form is used in comparing long words, and words which do not sound well with the addition of *er—est.*

The following are examples of irregular comparison:

Positive	Comparative	Superlative
Ill, badly	worse	worst
well	better	best
little	less	least
much	more	most
far	farther	farthest

Prepositions, Conjunctions, and Interjections have no inflected forms.

SUMMARY OF SYNTAX

Definitions, Uses, Formal Rules, Examples

(Rules are numbered for Reference.)

A *noun* is the name of a person, place, object, or idea.

A *pronoun* is a word used in place of a noun.

Nouns and pronouns are called *substantives.*

1. The *subject* of a verb is in the *nominative case.*

Transitive verbs express action upon an object or product.

2. The direct *object* of a transitive verb is in the *objective* (accusative) case.

Whom shall I fear?

Intransitive verbs are often followed by substantives which rename their subject. Such complements are called *predicate nominatives, predicate nouns,* or *attribute complements.*

3. A substantive used as *attribute complement* agrees in case with the subject to which it refers.

It is *I. Whom* do you take me to be?

A substantive which helps to complete a verb but renames the object of the verb is called an *objective complement.*

4 An *objective complement* is in the *objective case*

The class elected him president.

5. The *object of a preposition* is in the *objective case.*

Give it to *me.* The cat is under the *stove.*

The receiver of an action may sometimes be thought of as the principal word in an adverbial phrase from which the preposition *to* or *for* is omitted. Such a complement is called an *indirect object.*

6. An indirect object is in the *objective case.* (Dative object.)

Bring *me* a chair.

Infinitives and participles do not really assert action or being, but they imply it, and in this sense may have subjects

Verbs of wishing, desiring, commanding, believing, declaring, perceiving, etc., are likely to be followed by objects which are at the same time *subjects of verbals.* It is this objective relation which justifies Rule 7, as commonly given:

7. The subject of a verbal is in the *objective case,* (Except in independent phrases)

She has *me* to protect her.

We thought *him* to be honest.

8. Substantives used with verbals in independent phrases are in the *nominative case.* ("Absolute".)

His *friends* advising it, he resigned

An appositive is a noun or pronoun used as explanatory of or equivalent to another noun or pronoun.

9. An appositive takes the case of the substantive to which it is attached.

The book was his, *Peter's.* (Possessive)

'Tis I, *Hamlet,* the *Dane* (Nominative.)

Give it to me, your *brother* (Objective.)

10. A noun or pronoun *independent by address* is in the *nominative case.* ("Vocative".)

"*Men of Athens,*————Him declare I unto you."

Mr. President, I rise to a point of order.

11. A noun or pronoun used *independently with a following adjective, adverb, or phrase* may best be regarded as in the objective case, since it is virtually the object in a prepositional phrase from which the preposition is omitted.

Hat in hand, he stood waiting.

Beard unkempt, clothes threadbare, he looked down and out.

Fences down, weeds everywhere, the place was desolate.

12. Nouns or pronouns showing ownership are in the *possessive case.*

John's farm, *your* shoes.

13. When an inanimate thing is personified, the *gender* of its noun or pronoun is *determined by custom.*

She's a good old boat! (Feminine.)

The *sun* is hiding *his* head. (Masculine.)

14. *Collective nouns* are *plural* when their units act separately as individuals; *singular* when the units act together as one. *Plural titles* are in this sense *singular nouns.*

The class has had its picture taken. (All together.)

The class have had their pictures taken. (Each person by himself.)

"The Newcomes" is by Thackeray.

15. *Nouns used adverbially* to measure time or distance are in the *objective case.* (*Adverbial objective.*)

We walked an *hour,* travelled four *miles*

16. A *substantive* used as an exclamation is commonly held to be *nominative.* But if the exclamation repeats an idea already used, it will take the case of the term repeated.

We shall be rich We! think of that!

"We'll make you do it!" *Me!* I guess not!

17 A *pronoun* must agree with its antecedent in *number, gender,* and *person.* Collective nouns take singular pronouns when the units act separately.

The Ship of State has refused to obey *her* rudder.

That is *he whom* you seek. (All three are in 3d Person, Masculine Gender, Singular Number.)

The *case* of a pronoun does not depend upon its antecedent, but upon its use in the sentence

A *verb* is a word which *asserts.* (Tells something of its subject)

18. A verb agrees with its subject in person and number.

I *am*	She *goes*
You *are*	They *go*
He *is*	

19. A compound subject with *and* takes a singular verb if the idea of the combined subject is of *one* thing; if the compound subject is made of parts acting separately, the verb is *plural.*

Roosevelt and Wilson *were* of opposing parties.

The sum and substance of the matter *is* this.

20. A *distributive* subject with *each, every, everyone, either, neither,* etc. requires a verb in the *singular:* a *disjunctive* subject with *either-or, neither-nor* takes a verb in the *singular* if the substantives are singular

Either the book *or* the teacher *is* wrong.

Each of us must use *his* own judgment.

21. *Nouns plural in form* but singular in meaning commonly take a verb in the *singular.*

Hydraulics *is* a practical study nowadays.

Mumps *is* contagious.

The news *is* discouraging.

22. When the subject acts upon an object, the verb is in the *active voice.* when the subject is a receiver or product of action, the verb is *passive.*

The hunter *shot* the deer. (Active.)

The deer *was shot* by the hunter. (Passive)

23. The *indicative mood* is used in questions and in simple assertions of facts or matter thought of as possible fact.

Were you there?

You *were* there.

If you *were* there, I did not see you. (See subjunctive mood, rule 24.)

24. The *subjunctive mood* expresses a *wish,* or a *condition contrary to fact.*

Would he *were* here!

If he *were* here, we would know about it.

(Implying denial. He has not been here.)

25. The *imperative* mood states a *command* or request.

Please *go* at once.

The subject of an imperative verb is *you* understood; the you is seldom expressed, unless the mood is emphatic.

26. *Infinitives* may be used as *subject, object* of verb, *attribute complement, object of preposition, appositive, adjective modifier, adverbial modifier,* or in an *independent phrase*

For examples, see discussion of *Verbals* in this article

27. Gerunds (Verbal nouns in *ing*) have the *uses of nouns* together with the power of implying action, being, or condition.

Examples have been given under *uses of Verbals*

28. *Participles* may be used as *adjectives, adverbs, subjective complements, objective complements, following a preposition,* or in *absolute phrases.*

See example under Verbals.

29. The comparative degree of adjectives and adverbs, not the superlative degree, is used in comparing two persons or things.

He is the *taller* of the two; in fact, the tallest of the three.

30. A *co-ordinating conjunction* connects words, phrases, or clauses of like rank, grammatically independent of each other.

I will come if I can *and* if the weather is good.

31. A sub-ordinating conjunction joins a dependent clause to a principal one.

Make hay *while* the sun shines

32. Interjections commonly have no grammatical relations in the sentence. In certain constructions, however, the interjection seems to have a phrasal modifier.

"Ah! for the pirate's dream of fight!"

33. Verbs *become, feel, look, seem, smell, taste, sound, grow* may take an *attribute complement* to describe the subject, or an adverb to modify the assertion of the verb.

He grew *tall:* poisonous mushrooms taste *good.*

He looks *well* may describe his own condition, and so the word *well* may be a predicate adjective relating to the subject; or the sentence may mean that he *searches thoroughly,* in which sense *well* is an *adverb* modifying looks.

34 Assertions of Simple Futurity take the form.

I, we	shall
You	will
He, they	will

Assertions of Strong Purpose, Promise, Threat, Consent

I, we	will
You	shall
He, they	shall

35 Adjectives should not take the place of adverbs, nor adverbs the place of adjectives.

36. The six tenses of English verbs in the Active Voice, Indicative Mood, are built up from the "principal parts" as follows:

Present Tense, Past Tense as in *Principal Parts. Future Tense, shall* or *will* (Rule 34) with *Present Infinitive* (less "to").

Present Perfect, have or *has* with *Past Participle Past Perfect, had* with *Past Participle*

Future Perfect, shall or *will* (Rule 34) with *Present* Perfect, the "have" form.

See Tables of Conjugation for Examples, and Table of Principal Parts.

37. The six tenses of English verbs in the Passive Voice, Indicative Mood, invariably use the past participle of the given verb, preceded by an appropriate form of the verb "*be*".

See Table of Principal Parts, and of Conjugations.

38. *Gerunds,* being verbal nouns, are modified by *adjectives* and *possessive pronouns.*

Now do it without *my* watching you.

Parsing.—To parse a word is to name its *class, subdivision, modification,* and *use in the sentence,* according to the following general scheme:

Nouns,—Common or Proper; Pronouns, Personal, Relative, Interrogative, Demonstrative.
1st, 2d, or 3d Person.
Masculine, Feminine, or Neuter Gender.
Singular or Plural Number.
Nominative, Possessive or Objective Case.
Use in Sentence (as indicated in rules above).

Verbs,—Transitive or Intransitive.
Active or Passive Voice (if transitive).
Indicative, Subjunctive, or Imperative.
Mood—Present, Past, Future, Present Perfect, Past Perfect, Future Perfect Tense.
1st, 2d, 3d Person.
Singular or Plural Number.
Subject, if a finite verb.
Use in the sentence, if a verbal.

Adjective,—Limiting, Descriptive, Positive, Comparative, Superlative Degree (if any).
Use, as Modifier or Complement.

Adverbs,—Simple, Conjunctive, Positive Comparative, or Superlative Degree (if any).
Use, as Modifier, or Connective, or Both.

Prepositions—Class Name, Use in introducing phrase.

Conjunctions—Co-ordinate or subordinate.
Use

Interjection—Class name.

Table of Parsing, Using Various Rules of Syntax.

1. Strikes bring trouble to three parties.
2. Consuls are representatives.
3. The Mexicans elected Gonzales president.
4. We drove twenty miles before we stopped.
5. John, throw me Fred's hat.
6. Shakespeare, the actor, was inconspicuous, but Shakespeare, the dramatist, was supreme.
7. Sheridan being at Winchester, the troops fought badly.
8. Swords drawn, they rushed up the hill—Hurrah!
9. We watched the bakers making bread.

WORD	CLASS	SUB-CLASS	MODIFICATIONS	USE
1. Strikes	Noun	Common	3d Person, Plural, Neuter, Nominative	Subject of "bring"
1. Trouble	Noun	Common	3d Person, Singular, Neuter, Objective	Object of "bring"
1. To	Preposition	.....	.....	Introducing phrase "to parties"
1. Three	Adjective	Numeral	.....	Modifies "parties"
2. Representatives	Noun	Common	3d Person, Plural, Masculine, Nominative	Agreeing with "Consuls"
3. President	Noun	Common	3d Person, Singular, Masculine, Objective	Objective Complement
4. Miles	Noun	Common	3d Person, Plural Neuter, Objective	Objective Adverbial
5. John	Noun	Proper	2d Person, Singular, Masculine, Nominative	By address
5. Fred's	Noun	Proper	3d Person, Singular, Masculine, Possessive	Ownership
6. Actor	Noun	Common	3d Person, Singular, Masculine, Nominative	apposition
7. Sheridan	Noun	Proper	3d Person, Singular, Masculine, Nominative	absolute
7. Badly	Adverb	Simple	Positive degree	modifies "fought"
8. Swords	Noun	Common	3d Person, Plural Neuter, Objective	phrase understood
9. Bakers	Noun	Common	3d Person, Plural, Masculine, Objective	subject of Verbal
8. Hurrah	Interjection	.....	.....	.....
1. Bring	Verb	Transitive	Active, Indicative, Present, 3d Person Plural	subject is "Strikes"
4. Before	Adverb	Conjunctive	.....	introduces clause
6. But	Conjunction	Co-ordinate	.....	connects clause

Common Errors in Syntax.—(Numbers refer to rules in the preceding summary. Correct forms are given first.)

This is the *better* of the two—not this is the *best* of the two. (29)

You and *I* did it—not *you* and *me* did it, nor *me* and *you*. (1)

We boys will be there—not *us* boys will be there. (1)

It was *I, she, he, they*—not *me, her, him, them*. (3)

We believed it to be *her, him, them*—not *she, he, they*. (3)

Between you and *me*—not between you and *I*. (5)

She is taller than *I* (am)—not she is taller than *me*. (1)

It was known to be *he*—not *him*. (3) He agrees with "It".

We were sure of its being *him*—(usage divided) (3) (5).

Let *everybody bring his* own lunch—not *their* own. (14) (24) (17).

We should all bring *our* lunches. (Action concerted.) (17)

Every boy and girl should do *his* best. (17) *Their* would be incorrect. *His* or *her* is correct, for formal.

Each of us *has his* problems—not *have their*.

The actor *whom* you saw was Otis Skinner—not *who*. (2)

Whom did you call for?—not *who*. (5)

Whom did you select?—not *who*. (2)

Who do you suppose it is? (3) Who agrees with it.

Who do you think I am? (3) not *whom*. Agrees with *I*.

Whom did you take me to be? (3) *whom* agrees with *me*.

The tree looks *beautiful*—not *beautifully*. (33)

The apple tastes *good*—not *well*. (33)

The tune sounds *harsh*. (33)

Roses smell *sweet*—not *sweetly*. (33)

She looks *charming*—not *charmingly*. (33)

We *shall* be drowned if we go there—not *we will be*. (34)

I *shall* be pleased to help you—not *will* be. (34)

The senate *has* adjourned—not *have* adjourned. (14)

There *are* all sorts of graft in town—not there *is* all sorts. (18)

Here *are* wealth and beauty—not here *is*. (Unless taken separately.) (18)

Neither of the men *shows* signs of giving in—not neither *show*. (18)

In both cases, there *are* bad birth and misfortune—not there *is*. (Unless taken separately.) (18)

One class of poets *believes* in symbolism—not *believe*. (18)

He is one of the best *actors that have* ever been here—not *has*. (17) (18)

Let *him* who will, come—not let *he*. (2)

The congregation *were* free to *express their opinions*, or *was* free to express *its* opinion. (14).

I *saw*—not I *seen*. (36)

I *did*—not I *done*. (36)

We *have gone*—not *have went*. (36)

We *were*—not we *was*. (18)

You *began* it—not you *begun* it. (36)

The wind *blew*—not the wind *blowed*. (36)

The glass is *broken*—not *broke*. (37)

I *caught, have caught*—not *catched, have catched*. (36)

Have been *chosen*—not have been chose. (37)

We *came* along,—not we *come*. (36)

We *have come*,—not *have came*. (36)

The baby *crept*,—not *creeped*. (36)

You've *done* it,—not you've *did* it. (36)

We *drew*,—not we *drawed*. (36)

He *has drunk* a glassful,—not *has drank*. (36)

Have driven,—not *have drove*. (36)

Have *eaten*,—not have *ate*. (36)

I *ate* my dinner,—not *eat*. (36)

Has *fallen*,—not has *fell*. (36)

The boys *fought*,—not *fit*. (36)

Has *flown*,—not has *flew*. (36)

I've *forgotten*,—not *forgot*. (36)

It *grew*,—not it *growed*. (36)

You *lie* low,—not *lay* low. (Lie, to recline; lay, to put down.)

Have *ridden*,—not have *rode*. (36)

We *rang* the bell,—not we *rung* it. (36)

Had *risen*,—not had *rose*. (36)

And then I *ran* away,—not then I *run* away. (36)

We *sang* a song,—not we *sung* it. (36)

Have *spoken*,—not have *spoke*. (36)

Troubles *sprang* up,—not troubles *sprung* up. (36)

Somebody *has stolen* my hat,—not has *stole*. (36)

The place *stunk*,—not *stank*. (36)

We *swam* a mile,—not we *swum*. (36)

Who's *taken* my bat?—not who's *took*? (36)

Have *torn*,—not have *tore*. (36)

Have *written*,—not have *wrote*. (36)

Say it *slowly*,—not *slow*. (35)

We can do that as *easily* as you please,—not as *easy*. (35)

The horse threw my brother and *me* out,—not my brother and *I*. (2)

We chose the foreman *who* we thought could handle the men,—not *whom*. (1)

I never saw a taller man than *he*,—not *him*. (1)

There isn't another girl in town so handsome as *she*,—not *her*. (1)

Mosses from an old Manse is a collection of essays and stories,—not *are* a collection. (14)

Now skate without *my* helping you,—not *me* helping. (38)

We ought to keep still about *his* being here,—not *him* being. (38)

PUZZLING CONSTRUCTIONS

A as Numeral.—

The article *a* often has the force of one (*1*).

A hundred men; a pound of cheese.

A, The as Distributives.—

Ten dollars *a pair*.

Fifty cents *an ounce.*
Fourteen dollars *the ton.*
"A", "an", and "the", above, all imply separation, singleness. *Each* pair, *each* ounce, *each* ton is priced by itself.

A With Plural Groups.—
A few more years will end it.
The group is plural in form, but singular in sense.

About.—
Come over *about* six o'clock.
Come *at* six.
About and *at* are much alike in function, though *about* is more strongly adverbial than *at.*
See heading "Prepositions", in this section.

"About" in Future Tense.—
(1) We are *about* to start for Saratoga.
(2) They are *about* leaving for the coast.
(3) He was *about* to pull the trigger.
The first two of these forms indicate action in the very near future, from a present viewpoint; the third sentence shows action which was in the very near future from a past view point.
Is the "about" in these phrases an adverb or a preposition?
(1) He is *about* six feet tall,—adverb of measure.
(2) He is *about* the house somewhere,—preposition.
(3) We are *about* ready,—adverb of measure or degree.
(4) They are *about* giving up,—equals almost (?).
(5) I must be *about* my Father's business,—preposition.
(6) I am *about* to show you.
In the six sentences above, there is doubt about (4) and (6). *About giving up* may mean almost giving up, in which case about is an adverb. But it may mean, like (5) that the thing which I am about is *giving up,* or *to show you.* If this is the meaning, *about* is a *preposition.*

Above, Below—Adjective or Adverb.—
(1) "Nor in the heavens *above* nor in the earth *beneath* shall exist thy image."
(2) In the examples *above.*
(3) Go *below* now.
(4) That book *above,* on the top shelf, is the one.
The idea of place is in each of these italicized terms, though all but one of them modify nouns. Yet place is not the only notion in these words. They also select or limit, like adjectives. We seem to need for them the term, adverbial adjective.

Adherent Appositive.—
Cousin Mary
Brother Edward
furnish examples of nouns very closely adherent, so closely that the expression *Cousin Mary* seems one title. The nouns *Mary, Edward* have a selective quality like adjectives; "Mary" picks out the cousin, as well as repeats the nounal idea.
We men must attend to it.
You fellows go.
In these expressions the selective quality of *"we", "you"* is very evident. Not *all* men, *all* fellows, but *we* men, *you* fellows.

Adjectives from Adverbs.—
Out-of-the-way nooks and corners.
Far-off times and places.
Our *erstwhile* neighbor.
Roosevelt, the *then* President, set the machinery going.
These are adjectives in their limiting and descriptive function, though the ideas of place and time are still present. In fact they describe by locating in place and time.
"A *very* fiend!" is an example of an adverb equivalent to an adjective.

Adjective Pronouns, Pronominal Adjectives.—An adjective pronoun is a word which is commonly an adjective but is in a given case used instead of a noun, e.g.
Enough has been said.
A *pronominal adjective* is a word which is commonly a pronoun, but is used as an adjective in the given case.
Tell me *which* color you prefer.
Say *what* horse I shall drive.

Adjectives Used as Nouns.—
Ten of the men.
The *tenth* was the lucky one.
He gave us *double* what we asked for.
See also *"For granted,"* in this Series.

Adverbial Nouns.—
A *great deal* better. (Degree, how much)
Potatoes worth *50c a peck last week.* (How much value, how much quantity, when.)
One twin was *half a head* taller than the other. (How much distance)
Encored *nine times.* (How much, numerically)
Somewhat dissatisfied. (How much, indefinite)
Nothing daunted.
It is five years since. (How much time)

Adverbs as Nouns.—
Come out of *there.* (—that place)
From *then* (—that time) till *now* (—this time)
This *once* } — This time)
At *once.* }
"Their Yesterdays."

Adverbs, Conjunctive, Introducing Adjective Clauses.—
"I remember, I remember
The house where I was born." (—in which)
This is the hill *where* the old tree stood. (—on which)
There came a day *when* he did not leave his couch. (—on which)
He told us the reasons *why* he did it. (—on account of which)
The casket *wherein* lay Portia's picture. (old form for *in which*)
The book *whereof* I speak. (old form for of which)

Adverb or Adjective.—
(1) The concert is *over.*
(2) Is he *through* with his speech?
(3) The enemy's flag is *down*; ours is *up.*
(4) The tide is *out.*
Apparently we may take our choice between calling these *adjective complements* describing their subjects, and adverbs modifying the verb *is.* To test the latter, compare:
"He is in the back room," which appears to furnish a purely adverbial phrase. There seems to be little beside the adverbial idea of place, in (3), (4); but the words *over* and *through* seem more descriptive of their subjects.

Adverb or Independent Phrase.—
(1) You will be there, *of course.*
(2) I am *surely* going.
(3) *To be sure* I will be there.
(4) The Shipping Board, *in fact,* did a great work.
It is hard to tell whether these italicized expressions are adverbs, or absolute phrases. If the feeling of a separate pulse of assertion is strong, the idea of independence will win; if the phrase seems to condition the verb in some way, it is adverbial. On these grounds, it may be well to call "surely" in (2) an adverb, and the other three independent phrases.

Adverbs Modifying Prepositions.—
We were *miles above* the clouds. (Adverbial noun.)
Come on! We're *almost through* the woods now.
His success was *far beyond* expectations.

Adverbs Which Modify Whole Clauses.—
Hardly, indeed not, perhaps, possibly scarcely, surely.
Perhaps we may be there.

Adverbs Without —*ly*, or Objective Complement.—
(1) The machine is set to cut *fine.*
(2) "Though the mills of God grind slowly,
Yet they grind exceeding *small.*"
(3) Grind my meal *coarse.*
Does "coarse" in (3) serve the same use as "fine" in (1)?
We think the absence of an object makes a difference. The word "fine" really tells how the machine cuts; the word "coarse" in (3) has this adverbial sense, if you choose to think it in that way, but it also *describes the meal.* It appears that some adjectives are thus *strongly adverbial.*
She cried her eyes *out* is clear case of an adverb used as objective complement in place of an adjective.
Ago, Years Ago.
He died *years ago.*
Ago is an adverb of time. *Years* is an adverbial noun measuring the degree of *ago.*
A Great Many; A Few. Best treated as single limiting adjectives.
All But—
Our ship was *all but* lost. (—*nearly* lost)
All but means *all except;* our ship was lost all except the margin that saved her. Idiomatic, of course, and the explanation of an idiom is seldom wholly satisfying. An appeal to the ancient history of the English language is quite likely to be more misleading than a careful analysis of present meanings in such cases.
All three, etc.
All six were caught.
All is here a limiting adjective.
None of the six got away.

"Appositive" Adjectives.—
A chasm, *sheer and impassable,* lay before them.
Adjectives may precede their nouns, follow immediately after their nouns, or follow intransitive verbs as complements. In each case the adjective really modifies the thought of the noun it relates to. The second of these three positions illustrated above, is sometimes called the appositive position.
Two cars, *John's and mine,* were stolen.
Socialism, so *rich* in many desirable ways, is poor in practicability.
Friendless and alone, he waited a better day.
In the last two sentences, it would be difficult to choose between calling the italicized words appositive adjectives, or grammatically independent.

Appositives and Compounds.—As commonly used, the terms *Peter the Hermit, Paul the Apostle,* are compound names. But if we say Paul the Apostle was aggressive, while Paul the Roman citizen stood on the defensive, the words apostle and citizen are appositives. The difference is in this case is properly indicated by the capitalization.

Appositives of Limitation.—His trouble was *much of it* imaginary, especially the *slights* of his friends.
"Much of it" may be called a deferred appositive limiting trouble, or the phrase "much of it" may be considered equal to "largely", and thus an adverbial noun with the adjective "imaginary." "Slights" is another selective appositive with trouble.
Our apples are *many* (*most*) of them Baldwins;
They *all* believed in him;

We *three* will come.—*as* further examples of limiting appositive.

As—"than very puzzling."

A noise or of thunder rolled in. Possible equivalents *are*

1. A noise like that of thunder rolled in.
2. (Such) a noise as (is that) of thunder, etc.
3. A noise (apparently) of thunder, rolled in.
4. A noise (seeming) of thunder, rolled in.

These are really several possible shades of meaning. One who speaks the original sentence may have in mind that the noise resembles thunder, and may be thinking that it resembles thunder, but probably isn't; or that is pretty nearly as thunder. The choice of the word *as* varies accordingly, from a mere particle introducing the phrase of manner, to a strong adjectival form with an adverbial phrase as modifier. It depends on what is in the speaker's mind when he uses the original sentence.

As, Almost a Preposition.—

They built a fort—*as* a headquarters.

This *as* is about equal to *for*, a true relation word.

A second, less acceptable disposition is to call headquarters an objective complement, introduced by *as*.

As, introductory.—They were regarded *as* friends. Friends is really an attributive complement. For consider:

They were friends.

They were considered friends.

In each case, the word friends refers to the subject, means the same thing as the subject. The word *as* is therefore a merely introductory term.

As—Simple Adverb: *As* tall.

Conjunctive adverb: As tall as you are.

Preposition: We like the Montgomery as a summering ground. (As nearly equal to *for*.)

Pronoun: Such as keep my commandments.

As, Adverb, Preposition or Introductory Particle.—

"I hold you *as* a thing enchanted," equals, I considered you something sacred.

As in "I vote you *for* a friend," there are three possible constructions, and a fourth which admits all three:

1. *As* is a mere introductory term bringing in the objective complement.
2. *As* is a preposition, equal to *for*.
3. *As* is a conjunctive adverb, introducing the clausal clause as a thing *esteemed* would be held.

As—*As*—

The manner is as long as it is short.

The first "as" is an adverb; simple; the second an adverb conjunction.

As, in clause—

"God, I thank Thee that I am not as *other* men are, extortioners, unjust," etc.

As other men are is either an adverb or an adjective. Adverb, if it answers how, or the like; adjective, if, like unjust, it serves as attribute complement to describe the subject. In either case, it is here a comparative.

As Phrases, Appositive.—

Mantell as *Hamlet* is perhaps a bit hearty; Mantell as *Lear* is marvelous.

It seems that the idea here is not so much to make an adversial limitation as to characterize Mantell: Mantell is now Hamlet now Lear. We call Hamlet and Lear appositives introduced by *as*.

As Phrases, Adverbial or Complementary.—

1. He doesn't amount to much *as a citizen*.

2. *As fiction*, his novels are poor: they are great *as psychology*.

3. He left home a poor day *laborer*, and came back a rich *employer*.

Laborer and *employer* are best treated as attribute complements. He really was laborer, and when he came back he was employer.

In sentence (1) "as a citizen" is *almost* if not quite an adverbial phrase. If we substitute "*in the capacity of citizen*", the adverbial function is clear.

In sentence (2) "*as fiction*" and "*as psychology*" are similarly adverbial. The Standard Dictionary is authority for calling "*as*" "almost a preposition" in such cases.

As Phrases After a Verb.—

1. Magna was considered *as friendly*.
2. The Hurons were regarded *as dependable*.
3. The Delawares were thought of *as just*.

"Friendly" may well enough be called a predicate adjective introduced by "as". But the other "as" verbs of exactly the same meaning as "considered" do not seem to require or admit complements; they take adverbial modifiers. If we supply the word being in each case—*as being friendly*, etc. all these phrases are pretty clearly adverbial, if clausal.

As Phrases, Independent.—

As for the matter you suggest, it doesn't interest me.

Of course there is a thought relation between the opening phrase and the sentence proper, but it would be hard to find a close grammatical relation. The "as" phrase is here introductory and absolute".

As Well As, Either Collective or Distributive.

The poor man as well as the rich are benefited.

The poor man as well as the rich is benefited.

Both forms above are correct. The first takes the poor man and the rich together to make a plural idea, the second takes each man by himself.

As Well As—

Equivalent to *also*, *like*, *besides*, etc.

Artists must know how to mix paints, as well as admire sunsets.

As Yet—

He hasn't been here, *as yet*.

As yet equals *up to now*. But so does the word *yet* mean *up to* or *until now*. *As* is here of little value. It may be called a mere introductory term.

At All, In the least—

It is not at *all* necessary. *At all* is adverbial, exactly equivalent to *in the least*, in the given sentence. It will be well enough to call such an idiomatic adverbial phrase, with an adjective pronoun as object of the preposition.

Bad, Badly—

I feel bad, or I feel badly?

It depends on whether you wish to describe the state you are in, or the way in which you feel, the manner of your action in feeling. If this is a fair way of putting the case, it carries its own answer—the predicate adjective is required rather than the adverb. *I feel bad* equals I feel sick, or *uncomfortable*, or *chagrined*, or *hurt*—all adjectives.

Because—*Therefore*—

Therefore, because the weather was bad, we stayed in.

Because all my friends are gone, I would therefore go too.

Therefore—*because* are correlatives and when used together, they introduce subordinate clause. If *therefore* were used alone, the clauses would probably be grammatically co-ordinate and independent though still logically one would depend upon the other.

Between—Preposition or Adverb ?—

"The hills,
Rock-ribbed and ancient as the sun,
—the vales
Stretching in quiet pensiveness *between*."

Between may be called a *preposition*, its object hills, understood; or may be called an adverb, answering the question *where*. In this case, the adverbial construction seems rather simpler.

But as a Preposition.—When but means except, it is a true preposition, to be followed by the objective case.

He spoke to every one *but* me.

"All of them writing but I"—Newman's is saved from incorrectness, if saved at all, only by the imperial prerogative—the king can do no wrong.

Yet see "*none but*," in this series.

But as a Substantive.—

There are none here *but* will believe you.

But here equals *who not*. There are none here who will not believe you. An idiomatic pronoun, with three uses: substantive, connective, negative adverb.

But—*That not*, or *When not* [*in which not*]—

Never a day came but she watched on the hill.

By the side of.—

Equals "beside".

By the side of the brook. There is however no objection to regarding the phrase as a tandem series:

(1) By the side	(2) of the brook.
(1) Because	(2) of the accident
(1) On account	(2) of the strike
(1) By reason	(2) of his mistake, etc.

Can, May.—

See *May* in this series.

But.—

Preposition: There is no one here *but* me.

Conjunction: It would be a good thing, *but* we can't manage it.

Pronoun: Not a man *but* felt chagrined

Adverb: "Give her *but* the least excuse to love me."

We have *but* six.

Certainly.—

"*Pardon me!*"—"*Certainly!*"

It is well enough to call this *certainly* an adverb, but the verb it modifies must be supplied. Such condensations are very common, e. g. *of course*, *to be sure*, *quite the contrary*, *by no means*, etc.

Clause, Adverbial or Substantive.—

(1) We are glad *that you could come*.

(2) Your friends are anxious *that you accept the nomination*.

To say that these clauses are substantive with the omission of an introductory preposition, is of course a possible construction, but we call it rather far-fetched. If I say Give me the book, there is no change or forcing of meaning by adding the "omitted" preposition; *Give the book to me*. But try supplying the omitted preposition "of" in sentences (1), (2), above. *We are glad of that you could* come is not quite the original idea. We prefer to call the clause *adverbial*.

(3) There is no evidence *that he did the deed*.

(4) I warn you *that it must not be*.

In (3) we are describing evidence.

In (4) there appears to be a genuine nounal function, object of the verb warn.

Clausal Antecedents.—

We must swim across without wetting our ammunition, which is no easy matter.

The antecedent of *which* is the entire clause preceding.

Clauses Modifying Adverbs.—

She lies *there where* the myrtle blooms.

Where the myrtle blooms is an adverbial clause modifying *there*. *Where* is really correlative with *there*, expressing the same idea.

Compound Connectives.—

As long as, as far as, as soon as, inasmuch as, in order that, in proportion as, no longer than, no sooner than are all adverbial in some sense,—time, space, cause, degree, etc.

Either—or, neither—nor, whether—or, are disjunctives, taking ideas one at a time.

Both—and, but—also, alike—and, at once —and are copulative conjunctions.

"Compound Reciprocals", Each Other, One Another Reciprocals.—

They love *each other*. *Each other* may be regarded as a compound word, one word, written in two parts. This is the idea of the "Compound Reciprocal." Or the relationship may be expressed as:

They (each) love (other).

The first treatment is probably clearer.

Conjunction Connecting Sentences.—

I will go, to be sure I will! *But* you must come too!

"Send them away, that they may go into the country and villages round about, and buy themselves somewhat to eat. *But* He answered and said unto them, Give ye them to eat. *And* they say unto Him, Shall we go and buy two hundred pennyworth of bread?

In literature and in common speech, sentences very often begin with a conjunction which connects the matter now coming with ideas expressed or understand before.

Conjunction or Adverb Introducing Clauses. The difficulty of deciding whether certain expressions are adverbial connectives or mere subordinating conjunctions has led a few grammarians to abolish one or the other of these terms. There appear to be three types of connectives introducing subordinate clauses: relative pronouns—this is the cat *that* caught the rat; conjunctive adverbs—I will come *when* you call; subordinate conjunctions—This is better *than* any other we have. If we test connectives for their possible use as nounals, and for the adverbial notions of time, place, manner, etc., it should become fairly clear that all three types of connectives exist, and that all three names should be mastered. The word *than*, for example, has no apparent nounal quality, nor has it in itself any adverbial force. Therefore, since it introduces a clause, we may call it a subordinating conjunction.

Co-ordinate Clauses With Subordinating Connectives.—

(1) He told me he did not recall, *which* was his way of saying he would not tell. (—*and this*)

(2) A parallel case is on page **00**, which see.

(3) "One Almighty is, *from whom* All things proceed, and up to Him return."

The three verbs of number (3) are equally important, though the form of the sentence does not show it. This is a case where thought relations overrule grammatical forms.

"My cargo was a great part of it lost, especially the iron, *which* I expected would be of great use to me."—Robinson Crusoe.

The relative *which* of the sentence pretty clearly equals *and this;* and the clause thus introduced is perhaps fully as important in thought as the "main" clause.

Correlatives.—Pairs of conjunctions are sometimes required for off-setting one idea against another:

Both Will *and* Tom fell in.

As well go *as* stay.

Neither black *nor* white.

Not only carelessness, *but also* criminal intent.

It is *at once* dubious *and* promising

Most of these are pretty genuinely compound conjunctions. There may be doubt about the last one.

Do—, Uses.—

(1) For emphasis: *Do* come I *do* say just that.

(2) Colloquial past tense: I *did* not see you.

(*I saw you not* would be very stiff.)

(3) In questions: *Do* you believe me? (*Believest thou* is of course out of form now.)

(4) To avoid repetition: He makes friends more easily than I *do*.

Double Attribute Complement.—

"Most men are *like* an egg, too *full* of themselves to hold anything else."—Josh Billings.

"Like" and "full" are both predicate adjectives, describing the subject men; but the second complement, "full" also explains how men are *like an egg*. In thought one of these complements modifies the other. Grammatically, they are independent of each other.

Ellipses in Complex Sentences.—

This is harder than it seems (hard).

The case is not so clear now as (it was) formerly.

There are more stars than (the stars are that) can be counted.

More came than (many) were asked.

He is as well as (is) usual (with him).

I like the Hamlet better than ever (I liked it before).

John was orphaned when (he was) a mere lad.

Will you come? I think (I will) not (come)

Pausing as if to consider, may read: Pausing as (he would pause) if (he were) to consider.

Else.—

Adjective in *Something else.*

Adverb in How *else* can we do it?

Exclamations and Exclamatory Sentences.—Interjections and exclamations are not commonly a part of the sentence with which they may occur. They are grammatically independent.

Exclamatory sentences are not ordinarily sentences at all. They may suppress a subject, a verb, or other sentence members. There are seldom many modifiers. Though of course the idea of a full rounded sentence may be so emphatic as to warrant classing the sentence as exclamatory.

"Alas! what a good outside falsehood hath!"

An interjection begins this remark, and a complete exclamatory sentence follows.

"Half a league! Half a league onward!"

Here is only an object complement, with two or three short modifiers.

For, a weakened Preposition in certain cases.

I took you *for* a friend is practically equivalent to I considered you a friend. If *for a friend* is an adverbial phrase. it is a very weak one, modifying *you* and *completing* the verb as surely as it tells the manner of taking. Here are three grammatical uses joined in one expression. Sound analysis will recognize *all three.*

"For Example", Introducing Appositive.—

Some "impractical" subjects are well worth studying; *for example, geometry.*

"Geometry" explains, illustrates, "Some difficult subject"; geometry *is* one of the difficult subjects. For example is an introductory expression, like *as, in other words, namely, that is, to wit.*

"For Granted", "For Sure", "For Certain."—

(1) We took that *for granted.*

(2) We considered that *self-evident.*

(3) We took that *for a waste* of effort.

(4) That was taken *for granted.*

(5) That was considered *a waste* of time.

(6) Let's try again, *for sure.*

(7) I can't tell *for certain.*

The adjectives *granted, sure, certain* appear to be used as nouns. Sentences (1) and (3) have "for" phrases as objective complements. Sentences (4), (5) show how the objective complement becomes an attribute complement in the passive construction. The "for" phrases of (6), (7) are adverbial.

Fractions.—

One-tenth of twenty is two.

"One-tenth" is a substantive in this case. If the statement were "one-tenth part of twenty is two", the fraction would be an adjective, numeral, indicating quantity or number, like *"two parts."*

Future Tense by a "Be" Phrase.—

(1) We *are* to go by the east road.

(2) They were *to be* here by this time.

(3) He *was* to have come to-day.

(1) Simple future.

(2) Future from a point of view in time past.

(3) In past time, we looked forward to an action which should have ended to-day.

Gerund, or mere noun.—

(1) They practised *piano-playing* and tennis. (A mere noun—no assertion implied.)

(2) The *finding* of the continent was credited to Vespucci. Probably *finding* is a noun, though it is possible to think action into it, in which case it becomes gerund, or near-gerund.)

(3) Dividing the proceeds justly was difficult. (Real gerund, as proved by the adverb justly.)

"Going" in Future Tenses.—

(1) I am *going* to be there.

(2) I am *going* to take back my promise.

(3) I was *going* to help you, but I can't do it.

(4) I have been *going* to call on you for a long time.

(1) and (2) are simple future tenses.

(3) Was future, from a past view point.

(4) Has been future up to the present time.

Groups Acting as Single Words.—

I shall be here *in case* you need me.

Save, *in order that* you may not want.

Yes, *on condition that* you come, too.

Well, *considering that* I have been so sick.

Inasmuch as you think so.

These are, in each case, equivalent to single connectives, adverbial, though it would often be difficult to supply a single word to act as substitute.

Had Rather—than.—

I *had rather* go *than* stay.

Idiomatic for *I prefer to go rather than (I prefer) to stay.* Here "had" really equals the present tense of prefer. *Than* is a subordinate conjunction introducing the clause (*I prefer*) *to stay*, through the adverb *rather.*

Hand in hand, Head over Heels.—

John is *head over heels* in debt.

Colloquial idiom, nouns used adverbially.

Similar expressions are: *day by day, word for word, three in a row, one behind the other.* Perhaps these expressions may be "absolute"; we think they seldom are so.

Hardly—When or *Scarcely—Before.*—

Hardly had the bell sounded *before* the hose-cart appeared.

Rearranged, this sentence reads: The bell had sounded *hardly before* the hose-cart appeared. This seems to indicate that *before* modifies *had sounded*, and *hardly* modifies *before*. *Before* introduces the time clause.

Himself, Appositive.—

The king *himself* was there. "Himself" is emphatic appositive.

Himself, Itself, as *Appositional Intensives.*—

It is the boss *himself*.

The bridge *itself* was strong enough.

Appositives, since they refer to the objects boss and bridge. *Intensives,* since they call special attention to the words they accompany. But not reflexives—there is no bending back of action upon the subject.

Infinitive Adverbs.—

Fools who came (why)? *to scoff*, remained *to pray*.

I'll be glad *to do* it; sorry *to disappoint* you.

That news is too good *to be* true.

An adverb commonly modifies a verb, an adjective, an another adverb. Here are all three sorts.

Infinitive as Objective Complement.—

(1) They chose him *to be* their president.
(2) They elected him *to represent* them.
(3) They chose him president.
(4) They elected him representative.

Sentence (1) clearly equals sentence (3). It doesn't much matter whether we call *to be* an introductory infinitive, or the verbal in an infinitive phrase used as objective complement.

But sentence (2) is not so clearly equivalent to (4). The option in this case recognizes the adverbial purpose of *to represent*, telling why they elected.

Infinitive in Apposition.—

To be or not *to be*: that is the question.

(*That*—to be or not to be.)

In order that.—

"Do evil *in order that* good may come."

In order that may be regarded as a compound conjunctive adverb, or may be broken into its parts.

In So Far As.—

In so far as that goes, the reasons are good.

I know nothing about it, except *in so far as* regards the original bargain.

Far is an adverb used as a noun, object of preposition *in*. *So* is a simple adverb modifying *far*. *As* is a subordinate conjunction, correlative with *so*. *In so far* modifies *are* (good); *as that goes* modifies *so far*.

In the Same Way In Which.—

You have done this *in the same way in which* I did it.

The expression *in the same way in which I did it* is adverbial, modifying the main verb *have done*. But the connecting phrases modify the verbs of both clauses alike.

It, Expletive or Anticipatory Subject.—

(a) *It* is fun coasting down a long, steep hill.

(b) *It* seems good to see you here.

(c) *It* is strange that here should be no footprints.

In (a), the real subject is the verbal phrase *coasting down a long, steep hill*.

The actual subject of (b) is *to see you here*.

(C) has a *clause* for subject.

In all three, the word "it" is a make shift of speech to delay naming the real subject.

It, Impersonal Object.—

Lord *it* over the nations;

"Come, and trip *it* as you go;"

Current slang: "Beat *it*!" "Whoop *it* up!"

All are examples of impersonal objects. So impersonal and idiomatic is this construction, that grammarians sometimes call these verbs intransitive. We prefer to call them transitive, with the object it.

It, Impersonal Subject.—

It happened so. *It* appears so. *It* thunders. *It* rains.

In all such cases, the word *it* has no clear antecedent, and hence cannot be called personal.

It Is—That, It Was—That.—

(1) *It is* money *that* makes the mare go.
(2) *It was* Wilson *who* brought to pass the League of Nations.

The idea is substantially unchanged if we omit the *It is—that, It was—who*. These phrases seem to call special attention to the subject of the sentence.

Kind Of, Sort Of.—

(1) "Dwarf Giant" is a *kind of* tomato.
(2) "Now by this hand, I gave it to a youth, a *kind of* boy, a little scrubbed boy."
(3) Just act *kind o'* natural like
(4) He *kind o'* mumbled in his teeth

In (1) Kind is a *bona fide* noun, modified by an adjective phrase. In (2) "*Kind of boy*" is not to be taken so literally; *kind of* has adjectival force. In (3) and (4), *kind o'* is adverbial.

Lest.—

(1) "Take heed *lest* ye fall."
(2) We feared *lest* the ship should sail without us.
(3) Be careful *lest* you go too far!

The clause in (2) is best called object complement. It certainly comes nearer telling *what* we feared than *how* we feared. Probably the first clause is adjective, and the third adverbial.

"Let" in *Commands.*—

Let the prisoner go free.
Let there be light!
Let the music play.

The old force of *let* as an active verb meaning *allow, cause*, and the like, is nearly gone. But grammatically, let, in the sentences above, is a present imperative addressed to *you*. The form is well enough described as a *weakened imperative*.

Like.—Adjective, Adverb, or Preposition?

(1) A book *like* its author, hard to understand.
(2) The boy ran *like* a deer.
(3) Thomas, *unlike* John, had doubts.

The standard objection to calling *like* a preposition is in the conventional ruling that prepositions can under no circumstances be compared. The word *like* may become *more* like, or *most* like. This objection seems rather arbitrary, when we remember that prepositions were once adverbs, and still have adverbial quality.

There are three possible dispositions of such "like" phrases:

(a) Like is an *adjective* in Nos. (1), (3), and an *adverb* in (2).

A book *like unto* its author; ran *like unto* a deer, etc.

(b) *Adjective or Adverb: like* its author (is); *like* a deer (runs).

(c) *Preposition*, indicating relationship of similarity.

Long.—

He slept all day *long*.

The word *long* makes here a sort of idiomatic repetition of the "all". The meaning is not that the day he slept was a long day, but rather that he slept through the day *from beginning to* end. "All day long" equals *the livelong day*, in which case the same intensification of *long* is secured.

Many A.—

A limiting adjective, of peculiar quality. The word *many* requires at least several individuals, but the word *a* takes these individuals one at a time. The verb with *many a* must be singular. *Many a* man *has* found that costly.

May, Can.—(The Potential Auxiliaries, with *Might, Could.*)

May has two meanings (1) permission and (2) possibility.

(1) I may go. (I have permission to go.)

You may go. (You have permission to go.)

(2) I may go. (Perhaps. It is possible, but rather doubtful.)

Can indicates power or ability.

He *can* do it. (He is able to do it.)

May and can are often improperly interchanged.

Me, Myself as Reflexives.—

I bought *me* a gun.
Now I lay *me*.
I will build *me* a nest.
Come here! I have hurt *myself*.

To reflex is to bend back. Reflexive pronouns indicate that the subject acts upon itself in some way.

Modifiers of an Entire Clause.—

(1) The Egyptians knew how to handle great blocks of stone—a secret which died with them.

(2) She failed to appear, which troubled us greatly.

In (1) the word secret is descriptive of the entire clause preceding it—a noun in apposition with a clause.

In (2) the antecedent of which is a clause; the second clause modifies the first.

Most—That.—

We found a garden the *most* beautiful *that* one could imagine. The adjective clause *that one could imagine* modifies *the most beautiful garden*.

Myself, doubtful in place of *I, Me.*—

"John, Mary, and *myself* were there" is not in best form.

"He handed the book to *myself*" is in still more doubtful taste.

Nearly.—

A giant *nearly* eight feet tall.

Feet is an adverbial noun modifying tall. *Eight* is a numeral adjective modifying feet.

Nearly is an adverb modifying eight.

Neck and *Crop.*—

He fell, *neck and crop*.

Colloquial idiom, nouns used adverbially.

Needs, as an Adverb.—

You must *needs* come just because I did!

"Needs" equals *of necessity*.

"Nice And".—

"Good And".—

Make my living room *nice and big*.

Pick out a car that's *good and* speedy.

Colloquial idiom, with the force of an adjective.

None But.—

(1) There is no one here *but* me.
(2) None but the brave deserve the fair.
(3) None but he can do it.

In (1), the word *but* is a preposition with the force of *except*. In (2) and (3), the expression *none but* seems to serve as one word, equivalent to *only*. This accounts for the nominative "he".

Objective Complement Transposed.—

He made *good* his threat.

Think best, See fit, Make good are similarly

used, with the objective complement before the object instead of after it.

Objects, Double.—

1. Strike *Robin*. Strike a *blow*. Little John struck *Robin* a *blow*.

2. Ask *him*. Ask a *question*. Ask *him* a *question*.

3. Tell *him*. Tell a *story*. Tell *him* a *story*.

Compare:

4. The pirates elected *Silver captain*.

5. I will build *me* a *house*.

The word *me* in sentence 5 is very unlike the other nine objects. It cannot stand alone with its verb. I do not build *me*. I build *for* me. The *me* is an indirect or dative object.

Again, the noun *captain*, though it does fill the test of a real object complement, also points to the object Silver: The action of electing captain fell upon Silver. Captain is an *objective complement*.

Of Phrases, Adjective or Adverbial.—

"Give me *of* your bark, O Birch-tree!" —H. W. L.

Of course it is possible to supply the word *some*, and so to call *of your bark* an adjective phrase.

But how of the following:

We are to share *of his riches*.

Come drink *of this spring*, John.

If these are parallel cases, the phrases in question are adverbial. This is at least a permissible alternative opinion.

One as Pronominal Adjective.—

One Jones is waiting to see you.

Here we do not imply that the number waiting is one rather than two or three; "one" here means *a person by the name*. It is a pronoun used as an adjective.

One by One.—

The petals dropped off *one by one*.

One by one the stars came out.

We think of *one by one* as a single term, and as such it is clearly adverbial of manner. If the expression itself is to be broken up, the first "one" is substantive adverbial followed by the phrase *by one*.

Opposite, in the phrase.—

Opposite me, preposition, relating *me* to something else, but *strongly adverbial;* but in *opposite to me*, adverb or adjective, depending on the context.

See *Preposition*, in this section.

An exact parallel: *Off the ice, off from the ice*.

Optative Phrases.—

Various forms expressing wish or desire are called optative, e.g.

Let's go now.

Let me never forget this day.

"*May there be* no moaning of the bar
When I put out to sea."

Would there were no winter!

Or, Introducing an Appositive.—

He is to speak on Pictorial Photography, *or* the Art of Making Real Pictures with the Aid of a Camera.

"Art", etc. is really an appositive phrase, explaining the meaning of Pictorial Photography.

The snow-apple, *or Famense*, is a fall variety.

"Famense" is an appositive, meaning the same as snow-apple, and introduced by "or".

Or Rather.—

(1) I direct, *or rather* request, you to be there.

(2) His work has this defect, *or rather* disadvantage.

(3) He has this fault, *or perhaps* one should say misfortune.

These three "or" groups are alike in several respects: Each is parenthetical, each is thrown in to qualify or displace a preceding term. We have to choose between calling them appositives, or coordinates;—e. g., in (1) the subject "I" may have two verbs, "direct" and "request", or the verb "request" may be thought of as an appositive with the verb "direct." Really there is nothing to hinder holding *both* opinions.

Out, Out of (See also Preposition, Double.—

(1) Careful! I am *out of* humor this morning!

(2) "For though from *out* our bourne of time and place."

(3) That bullet came from *in* this house.

The first *out* may mean empty, devoid, ill-conditioned—in which case *out* is an adjective.

The second *out* has a very different meaning, quite close to the meaning of *in* in sentence (3). The object of *from* appears to be the prepositional phrase *out our bourne*.

Over—Adverb or Preposition?—

(1) The operation cost *over* five hundred dollars.

(2) We travelled *over* a thousand miles.

(3) Throw the ball *over* the house.

(4) We roamed *over* a great area.

The first two sentences use *over* in the sense of more than, a measure, and therefore *adverbial*.

The second two cases, sentences (3), (4) use *over* to express physical relationship—prepositional.

Own.—

An adjective, with a peculiar suggestion of intensifying possession.

My *own* car.

Own may become pronominal—May not a man do what he will with his *own*?

Participle as Objective Complement.—

She kept the talk *going*.

Participles Become Adjectives or Adverbs.—Words participial in form often lose even the hint or assumption of action contained in a verbal, and become mere adjectives or adverbs. Note the difference between

A *stinging* cold day, and

The wind came *stinging* our faces and hands.

The first "stinging" is a pure adverb, giving the measure or degree of *cold*.

Participle, or Mere Adjective—Adverb?

His work makes him very *tired*.

The house stood in a *sheltered* nook.

The wind is *stinging* cold.

Two adjectives and an adverb, no participles. Even the implication of action is gone from the words *tired, sheltered*, stinging; though the last word has of course a very intense descriptive quality.

Phrasal Complement.—

His manners are *of the best*. (Attribute.)

He is *about my age*.

She worked herself *to death*. (Objective.)

Phrases in Apposition.—

There are two best places to live,—*in New York*, and *on the farm*, where I was born.

These two phrases are substantives, together equivalent to *two best places*.

Phrase Modifying an Adverb or Adjective.—

John is taller by *several inches*.

This gun shoots farther *by a mile*.

Phrasal Object.—

(1) "Give me *of your bark*, O Birch Tree!"

(2) He sang "*In the Gloaming*."

Of your bark is not a mere adverbial phrase describing the manner of giving. Something was actually given.

Phrasal Subjects.—

On the track is an unsafe position.

In my house is *in my castle*.

Phrases May Be Compared.—Hobble skirts are *little in fashion* among college girls, *less* among professional women, *least* among busy house wives. The phrase *in fashion* is really given three degrees of scope. The three might have been positive, was well as negative (much, more, most.)

Pleonasm.—(Repetition or "Padding", for effect.)

Thy rod and thy staff, they comfort me.

The smith, a mighty man is *he*.

The boy—Oh, where was *he*?

In a grammatical analysis, probably the opening term in each of the above sentences should be called *independent*. Alternatives: Give two subjects, or call one explanatory of the other.

Plurals, difficult, inconsistent, or exceptional.

Chief, chiefs; gulf, gulfs; thief, thieves; elf, elves; buffalo, buffaloes; canto, cantos; court-martial, courts-martial; major-general, major-generals; Knight - Templar, Knights-Templar; son-in-law, sons-inlaw; commander-in-chief, commanders-in- chief; roof, roofs; hoof, hoofs or hooves; proof, proofs; skiff, skiffs; muff, muffs; scarf, scarfs; man-of-war, men-of-war; attorney-at-law, attorneys-at-law; passer-by, passers by; woman-servant, women-servants;3 percent, 3 per cents.

Possessive Appositives.—

His brother John's hat fell over board.

The word John's modifies hat, yet at the same time also relates to brother. Really the expression "*His brother John's* acts as one word.

Predicate Adjective or Adverb.—

(1) The boy came *running* pell mell.

(2) The boy came *smiling*.

(3) The boy stood *defiant*.

We prefer to call "running pell mell" an adverbial phrase describing how the boy came. But "defiant" in (3) describes the *boy*, rather than the manner of his standing. "Smiling" in the second sentence, is either adverb or complement or both, as you please to direct your attention.

"Shadows dark and sunlight sheen
Alternate come and go."—H. W. Longfellow.

Either admit that Mr. Longfellow meant *alternately*, or call alternate a *predicate adjective*.

"They descended *fearless* into all gulfs and bedlams."

Fearless, like *alternate*, is either a Carlylian adverb, or a predicate adjective.

For this perplexing combination of adverb and predicate adjective, Whitney uses the name Adverbial Predicate.

Preposition, Double (See "Out", in this Series.)

(1) *Out of* may sometimes roughly equal *from*.

(2) *Instead of* may roughly equal *for*.

(3) *According to* may roughly equal *by*.

If *in consequence* should be common practice become one word, then such an expression as *in consequence of* would equal the single preposition through. See (2), (3) above.

Prepositions Following Their Objects.—

Whom is this *for*?

This is the book you called *for*.

"Pleasant it was when woods were green
And winds were soft and low
To lie amid some sylvan scene
Where, the long drooping boughs *between*", etc.

The deferred preposition is common in questions, and in poetry, (though 20th century poets take fewer licenses of this sort.)

Prepositions, formerly **Adverbs,** become **Conjunctions.**—

Pass *on*, pass *by*, shut the door *to*, go *to*, etc., are adverbial survivals. The adverbial quality is still present in all prepositions, along with the acquired function of connecting or *relating* ideas.

If the object of one of these relating words is a substantive word or phrase, the connective is called a *preposition*: as in *before my election;* but if the object is a clause, the same word is rather arbitrarily called a conjunction or a conjunctive adverb: *before I was elected.*

Preposition Of Omitted.—

Half the profits.

This side, inside, outside, beside the gate.

On board ship, worthy a better fate.

Preposition suppressed, or old genitive form which has omitted the sign "of".

Quoth.—

Equivalent to *said.* Past tense only.

Same as, Such as, So much as, As many as.—

(1) My car has not the *same* motor *as* yours. (has).

(2) We are not likely again to have *such* good times *as* those were.

(3) He does not care *so much* for fishing *as* for hunting.

(4) Give me *as many as* you take.

There is good reason for holding that *as* in such constructions was formerly a relative pronoun, but it is doubtful if much of this old pronominal force remains. If *as* were a relative pronoun, note that in sentence (1), it would be object of "has"; in (2), predicate nominative of "were"; in (3) object of "does care"; in (4) object of "take". Perhaps in the first sentence the substantive value of "as" may be optionally accepted. We prefer to call it a subordinating conjunction throughout.

So, as Adjective.—

You can hardly be surprised at his being boorish, for his parents were *so.*

So equals *boorish.*

So—That.—

We will manage *so that* you can stay over the week-end.

"So teach us to number our days *that* we may apply our hearts unto wisdom."

These clauses introduced by the subordinate conjunction that are both adverbial, modifying *so.*

Subject as Complements With Other Verbs Than Be.—

The prison doors *stood* wide *open.*

After the storm, the grain *lay flat.*

In that solemn place, the garrulous *stood silent.*

America promises that the poorest may *become rich.*

Milk *turns sour.*

Pigs *grow fat* on it.

Get busy.

I shall *go mad.*

My matches *have kept dry.*

Why should any man *remain ignorant?*

Do you *feel dizzy* up here?

"A rose by any other name would *smell as sweet.*"

"Such and Such," "So and So."—

He said he would see me at *such and such* a time.

In *such and such* a case, you will do *so and so.*

In these uses, we prefer to call *such and such* a compound demonstrative adjective, *so and so* a compound or phrasal adverb.

Than.—

A subordinating conjunction, used in comparison of a principal or preferred idea with a secondary or inferior idea.

This is better *than* that (is good).

Baldwins are sourer *than* russets (are sour).

Than.—

Conjunction: We can sooner make a new one *than* we can find the one we lost.

Preposition: *Than whom*—However the grammarians may object, good writers use the *than whom* phrase as freely as they use *of whom*, or *for whom.*

This rod is of vanadium steel, *than which* there is nothing better. *Than which* modifies better.

That for *When, Where, Why.*—

"On the instant *that* the clock struck twelve, light flashed in the room." (—when — in which) etc.

See Adverbs Introducing Adjective Clauses, in this series.

"That", "This" with plural noun.—

We have had no war with England *this hundred years.*

The "hundred years" is plural in form, but really singular in sense. It is thought of as a stretch of unbroken time.

That five dollars was soon gone.

Another illustration of a single idea in a plural form.

That—Subordinate Conjunction or Relative Pronoun?—

(1) I am not sure *that* you had better go.

(2) He said *that* he would be home for supper.

(3) "When the hours of day are numbered,
And the voices of the night
Wake the better soul, *that* slumbered,
To a holy, calm delight."

(4) "When *that* the poor have cried, Caesar hath wept."

(5) Now *that* spring has come.

The word *that* in No. 3 is clearly a *relative pronoun.*

In (4), (5) that has no discoverable nounal force; it is a subordinate conjunction.

The "that" of sentences (1), (2) appears to be intermediate. If you see marked nounal quality in it, call it relative pronoun, otherwise, say subordinate conjunction. We favor the latter.

You blundered in *that* you did not ask for help.

Here, *that* has pronominal meaning.

That With Three Functions.—

I fired on the instant *that* the latch clicked.

"That" equals *in which*, and this phrase here *modifies instant*, as an adjective; *modifies clicked*, as an adverb, and *connects*, as a sort of demonstrative relative pronoun.

That Is, To Wit, Namely.—

See "For Example" in this series.

The More, the Less, etc.—

The more he tries, *the less* he seems to accomplish.

The harder the task, *the greater* the triumph.

In both these sentences, the word "the" carries an idea of exact quantities in comparison. By so much as the task is more difficult, by that much is the conquest more to be gloried in. The word "the", since it *measures degree*, may well be called an adverb.

Then—When.—

Then, *when* we were almost defeated, help came.

The clause *when we were almost defeated* modifies *then. When* is correlative and identical in meaning with *then. Then* modifies the main verb came.

Other such pairs are *there—where, therefore—because.*

There, Expletive.—

There was no need of your being *there,*

The second *there* really serves as an adverb of place, but the first *there* merely starts the sentence going, delaying the appearance of the real subject. This expletive use is not confined to the subject position, however: Only in instant flight is *there* any hope for you. "Let *there* be light!"

"The which."—

The which task fell to me. An old compound pronominal adjective, now out of date.

This once.—

Just *this once!*—"Once" is here a substantive, equivalent to *one time.* "This" is a demonstrative adjective, pointing out which one time. There seems also to be some pronominal force in the word this,—something more than in *this apple.*

Though—Yet.—

Though he slay me, *yet* will I trust him.

Rearranged, I will trust him yet, though he slay me.

Though and *yet* do not appear to be associated like *so—that* or *then—when.* The clause *though he slay me* appears to set forth conditions under which I will trust him. We call yet a simple adverb, and though a subordinate conjunction.

Times.—

Three times one are three.

Times is an adverbial noun, showing the number or degree in which "one" is to be considered.

To be—Complement or Introductory Term?

1. He was thought to be a swindler.

2. He was thought to have secret resources.

If we call *to be*, in the first of these sentences, a merely introductory term, what shall we say of *to have* in the second? It seems much safer judgment to call both these infinitive phrases *attribute complements.*

'Used", with an Infinitive, to Show Repetition.—

(1) He used to come every day. (—He came)

(2) He was accustomed to come every day.

(3) He practiced coming every day.

What is the construction of to come? The expression is so idiomatic that we can hardly think of *to come* as either an adverb or an object complement, in the first sentence. The choice seems to favor the later idea. Such phrases are sometimes called *Frequentative.*

Verbal Absolute, or Subject of Sentence.—

(1) *To-day being* Sunday, we must be decorous.

(2) To-day being Sunday compels decorum.

(3) To-day's being Sunday, etc.

In (1) *To-day being Sunday* is an absolute participial phrase.

In (2), (3) the same phrase is a gerund. To-day is subject of the verbal in (2).

What a, What, in Exclamations.—

What a charmer she is!

What color! *What* grace!

What a pity!

All these italicized terms are descriptive; most of them imply both quality and degree. They are adjectives.

What, an adverb (?)

What a good time we had!

What delicious grapes!

There is sense of *degree* in these uses of what.

Which, what as Adjectives.—
Two red, three white, six brown, *which* last are mine.

A pronominal adjective; there is still in the word some *nounal* idea, but the main use is here selective.

The interrogative pronoun *what* may be similarly used.

What boat is that?

What as a Relative.

I will tell you *what* is the matter.

What—that which. Unquestionably used in place of a noun, and just as surely a connective. But these two functions make it a *relative pronoun.* Its antecedent is unexpressed. The word "thing" may be supplied as antecedent, if one is demanded.

What with.—
What with sickness and *what with* lack of work, they were in a bad way.

If *what with sickness* means *on account of, because of, through,* sickness, the phrases are adverbial, modifying *were.* No doubt this is pretty nearly the idea conveyed. But the *what with* phrases, while logically related, seem grammatically set apart. We prefer to call them absolute idioms.

Whether.—
A subordinating conjunction introducing a nounal idea. I don't know *whether* to go or stay. We haven't decided *whether* we shall buy or not.

Which, antecedent of—
The dentist said he must take an X-Ray picture, which operation seemed at first rather disquieting.

The antecedent of which is *must take an X-Ray picture;* or, if preferred, the noun operation, modified by the demonstrative which, is appositive with the whole predicate *must take,* etc.

Which may even refer to an adjective. He claimed to be *competent, which* he certainly was not.

Which an Adjective (?)
They have made up their minds to invest all they have in the venture, *which* decision will either make or break them.

Which is here a demonstrative term, pointing out the decision. It is also a connective, equal to *and this,* for the clause is rather of added information than of subordinate modifying quality. Little, if any, pronominal quality is found in the "which" of this sentence.

While—So.—
While you avoid slang in careful speech, you will not object to it in colloquial English, *so* the slang be effective. Here, the word *while* introduces a concession, the word *so* a *condition.* Each of the two has an adverbial sense, and a connective function. It is immaterial whether they be called conjunctive adverbs, or adverbial conjunctions, though we prefer the latter, since the connective idea seems the stronger.

With May Be Almost a Conjunction.—
Bring cups, saucers, and plates, *with* as many spoons as you can spare.

With, together with, in such constructions have rather the force of *and* than the relating force of prepositions.

Worth Doing.—
What is *worth doing* is *worth doing* well.

Worth is an adjective, doing is a verbal noun used adverbially to measure the degree of worth.

Yes, No, Really Elliptical.—
Commonly called adverbs, are not really so.

Will you be there? *Yes.* (I shall.)

Yes and *no* are rather abbreviated clauses than parts of speech.

DIAGRAMS

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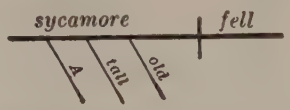
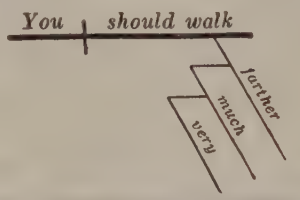
Subject, Predicate, and Sentence Line.

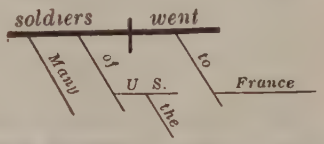
Adjectives.—A tall old sycamore fell.



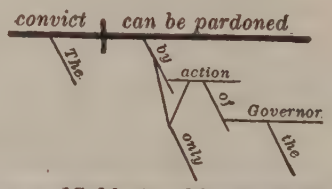
Adverbs.—You should walk very much farther.



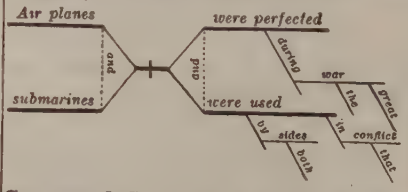
Phrases, Adjective and Adverbial. — Many soldiers of the United States went to France.



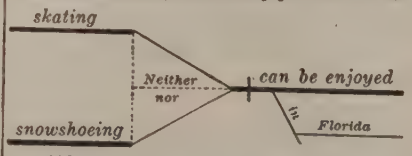
Adverb Modifying a Phrase.—The convict can be pardoned only by action of the governor.



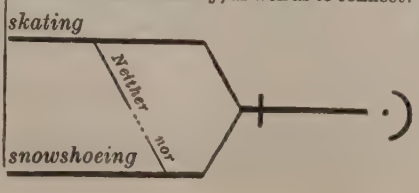
Compound Subject and Compound Predicate.—Airplanes and submarines were perfected during the great war, and were used by both sides in that conflict.



Compound Connective.—Neither skating nor snowshoeing can be enjoyed in Florida.

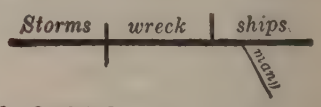


(Alternate diagram, in case neither and nor are held to modify, as well as to connect:

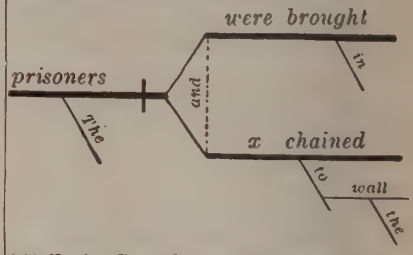


Phrases Connected.—The pony ran down the lane and into the barn.

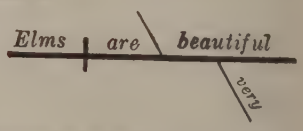
Object Complement.—Storms wreck many ships.



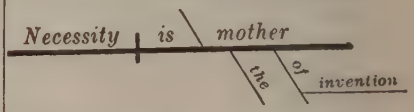
Words Omitted. — The prisoners were brought in and chained to the wall.



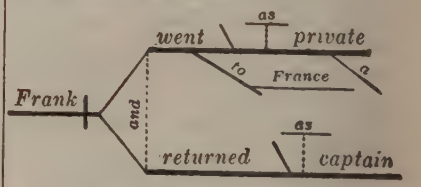
Attribute Complement.—Elms are very beautiful.



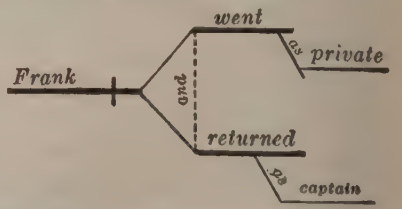
Necessity is the mother of invention.



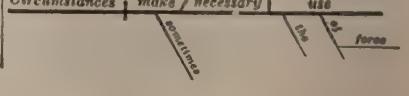
Particle.—Frank went to France as a private and returned as captain.



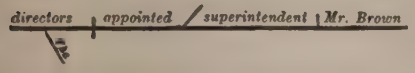
(Alternate diagram in case **as** is held to be a preposition:



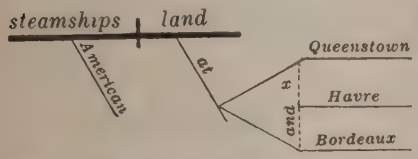
Objective Complement, (Adjective). — Circumstances sometimes make the use of force necessary.



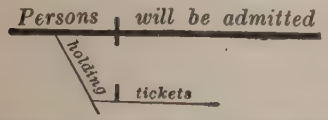
Objective Complement, (Noun). — The directors appointed Mr. Brown superintendent.



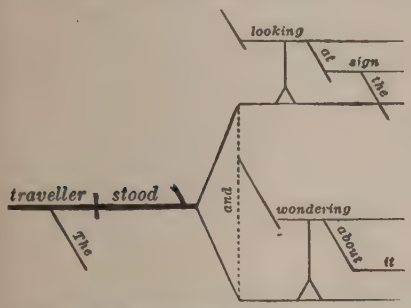
Several Objects of a Preposition.—American steamships land at Queenstown, Havre, and Bordeaux.



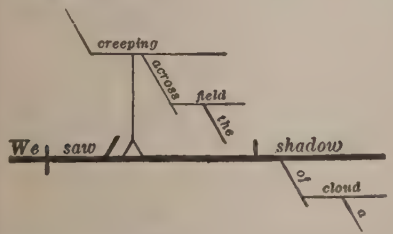
Participle, (As Adjective).—Persons holding tickets will be admitted.



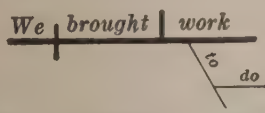
Compound Participial Complement, (Attribute).—The traveller stood looking at the sign and wondering about it.



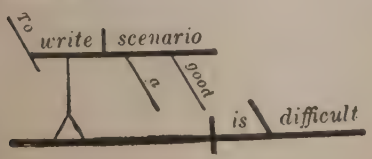
Participle as Objective Complement. — We saw the shadow of a cloud creeping across the field.



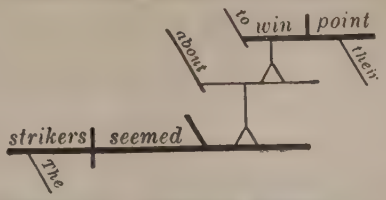
Infinitive as Adjective.—We brought work to do.



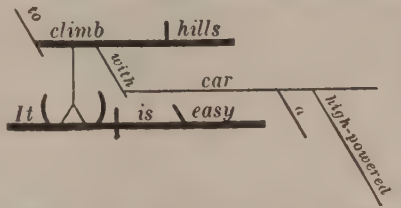
Infinitive as Subject.—To write a good scenario is difficult.



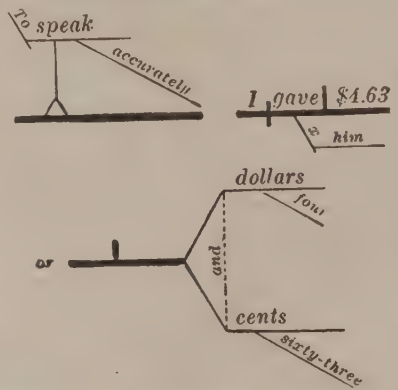
Infinitive in Phrasal Complement.—The strikers seemed about to win their point.



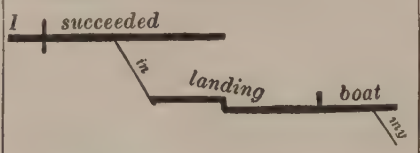
Infinitive as Appositive Subject.—It is easy to climb hills with a high-powered car.



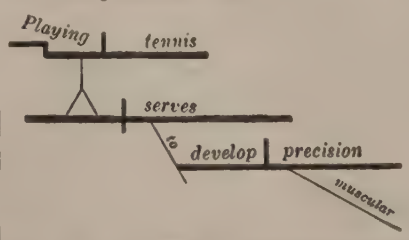
Indirect Object; Independent Infinitive. —To speak accurately, I gave him four dollars and sixty-three cents.



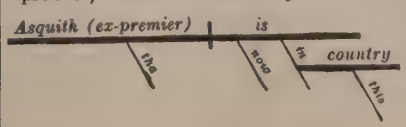
Gerund in Prepositional Phrase. — I succeeded in landing my boat.



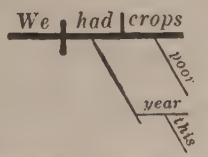
Gerund as Subject.—Playing tennis serves to develop muscular precision.



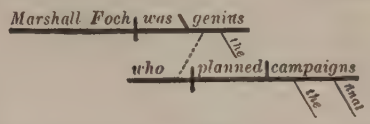
Noun in Apposition.—Asquith, the ex-premier, is now in this country.



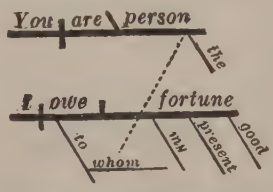
Adverbial Noun.—We had poor crops this year.



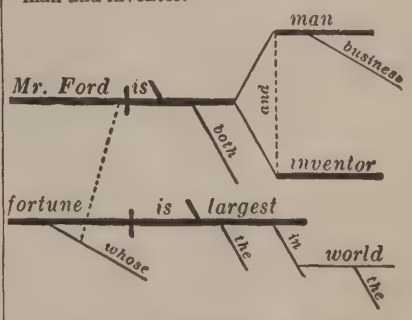
Adjective Clause.—Marshall Foch was the genius who planned the final campaigns.



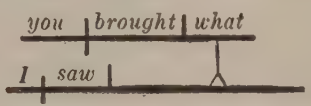
Connection Through Object of Preposition.—You are the person to whom I owe my present good fortune.



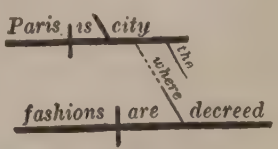
Connection Through Possessive Relative Pronoun.—Mr. Ford, whose fortune is the largest in the world, is both business man and inventor.



Connection Through Object in Clause.—I saw what you brought.

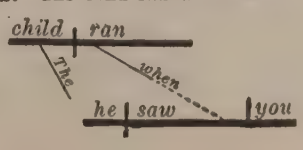


Connection Through Adverbial Relative. —Paris is the city where fashions are decreed.

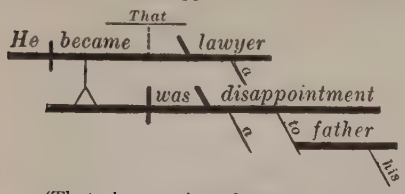


(The word **where** both connects and modifies.)

Connection Through Conjunctive Adverb.—The child ran when he saw you.

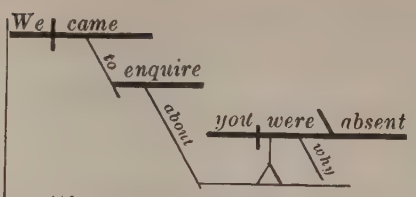


Clause as Subject.—That he became a lawyer was a disappointment to his father.



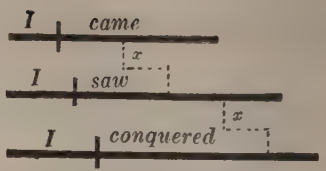
(That is an introductory word, or "particle.")

Clause as Object of Preposition.—We came to enquire about why you were absent.



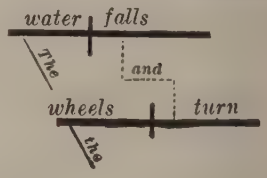
(Absent seems to be both adjective and adverb.)

Compound Sentences.—I came, I saw, I conquered.



(No connectives expressed or understood.)

The water falls and the wheels turn



LANGUAGE

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Language is the whole spoken and written body of words and methods of combining words used by a nation, a people, a race.

Classification of Languages.—The researches of philologists have resulted in the classification of the languages of the world into the following families and branches.

The Indo-European or Aryan Family.—This family is of greatest interest to us because our own tongue belongs to it, and the races speaking these languages are the foremost nations in the history of the world. They have produced the greatest and richest literatures; their languages have a great wealth of words; and because of these things philologists have made a more thorough study of these languages than of any other group, and a study of them is at the basis of our modern science of comparative philology. This family has eight branches.

The Indian or Sanskrit Branch has been used in India since 2000 B. C. or earlier. The oldest form is the Sanskrit, in which are written the Songs of the Veda. The Sanskrit, Prakrit, and Pali are now dead; the Hindi, Bengali, and Mahratti are the modern representatives, and are spoken by 225,000,000 people.

The Iranian Branch occupies the great plateau of Iran and the valleys of the Euphrates and the Tigris. The dead dialects of this branch are the Old Persian, handed down to us in a few cuneiform inscriptions, and Zend, or Old Bactrian. The chief modern representatives are New Persian (in part), Kurdisch, Baluchi, Afghan, and Ossetic.

The Armenian Branch consists of the living dialects of the Armenian, the written form of which has been changed little since the fifth century of our era. It is used by the people of the Caucasus and south of the Black Sea.

The Greek Branch comprises the ancient and modern Greek literary languages and dialects. Our own civilization owes much to the Greek language, since it was the means of transmitting to us the wonderful civilization of the ancient Greeks. Much that is best in the literature, philosophy and art of modern Europe is due to Greek influence. The modern Greek is used in Greece, the Balkan states, Constantinople, along the cost of Asia Minor, Crete and Cyprus. It is the commercial language of the east Mediterranean.

The Italic Branch includes the ancient Latin, Umbrian, Sabellian, and Oscan, the Latin having in time entirely absorbed the other three. The Latin was the language of the Roman republic and empire and was used in western Europe and in the Mediterranean basin. In spite of the break-up of the Roman empire Latin continued to be the language of the literary and scholarly classes for many centuries. Even today the Catholic church uses Latin as its official language. With the coming of the barbarians the Latin was gradually modified and with it as a basis there were formed ultimately a number of new languages called Romance languages. They are Italian, French, Provencal, Spanish, Portuguese, Roumanian, and Rhaetian.

The Celtic Branch is more closely related to the Italic branch than to any of the other branches of the Indo-European family. At one time it was dominant in all of western Europe, but in the course of centuries it was gradually crowded toward the west and is now used only in the northwestern part of France and in the British isles. There are two groups: (1) the Northern or Gaelic, including Irish, Gaelic or Scotch, and Manx, and (2) the Southern or Britannic, including Welsh or Cymric, Cornish (extinct since the eighteenth century), and Armorican or Bas Breton in Brittany.

The Slavonic or Slavo-Lettic Branch is found in eastern Europe and has two groups: (1) the Slavic, to which belong the Russian, Bulgarian, Servian, Polish, and Bohemian; (2) the Lettic, comprising Lithuanian, Lettish, and Prussian (now extinct). This branch is spoken by about 150,000,000 people.

The Germanic or Teutonic Branch is divided into three groups: (1) the Gothic or East Germanic, (2) the Scandinavian or North Germanic, (3) the West Germanic.

The Italian Language in its literary form was the old Tuscan dialect, and was given its literary preeminence through the writings of Dante, Petrarch and Boccaccio in the fourteenth century. Although the literary Italian is read and spoken by all the educated people of Italy there still remain numerous dialects throughout the peninsula, and it is impossible for a native of southern Italy to understand the dialect of northern Italy. The Italian is spoken in the various dialects by at least 35,000,000 of people in Italy, Sicily, Corsica, Sardinia, Malta, southern Switzerland, southwestern Austria, a small region in southeastern France, in Argentine Republic, Brazil, and the United States.

The French Language assumed something like definite form in the middle of the ninth century. There were various dialects in different parts of France, but soon two supplanted all others; the langue d'oil, which is the language of the north of France, and the langue d'oc, the language of the south of France, which became the modern Provencal. These are thus named because the word *"yes"* was *oil* and *oc* in northern and southern France respectively. The langue d'oil had its origin in the dialect of Paris and the surrounding country, the Ile de France of Capetian times. Modern French was well formulated by the seventeenth century, and is known for its polish, clearness, conciseness, and logicalness. It has a rich literature and has been the diplomatic language of the world since the sixteenth century and is still largely used for that purpose. Outside of France the language is spoken in Belgium, western Germany, Switzerland, and eastern Canada, being used by about 65,000,000 people.

The Provencal takes its name from the region in which it originated, Provence, originally a Roman province. It was the language of the troubadours and the Albigenses and is still spoken by 8,000,000 people.

The Spanish Language arose in different dialects in the small states of the Iberian peninsula, but ultimately the Castilian dialect became the literary language. Spanish is very important, inasmuch as it is spoken by the people of Mexico, Central America, the southwestern part of the United States, all of South America except Brazil, many islands of the West Indies, and the Philippine islands. In

all about 50,000,000 use the Spanish tongue; of these 20,000,000 live in Europe.

The Portuguese Language resembles Spanish more than any other of the Romance languages. It is spoken in Portugal, the Spanish province of Galicia, the Cape Verde islands, Brazil, Portuguese Guinea, Angola, and Portuguese East Africa. In all between 15,000,000 and 20,000,000 people speak Portuguese.

The Roumanian Language is spoken by about 10,000,000 people in Roumania, southeastern Hungary, Bessarabia, Macedonia, Albania, Thessaly, Epirus, and Istria. The origin of the language dates back to the second century of our era, in which the Emperor Trajan conquered Dacia and colonized it with Romans.

The Rhaetian Language is spoken by about 100,000 people in the eastern part of Switzerland, especially in the canton Grisons.

The Gothic Group has long been extinct, and we know it largely through the work of Ulfilas, who in the fourth century of our era translated the bible for the Goths who lived in the Danube valley and north of the Black Sea. The language ceased to be used when the Gothic kingdoms fell, with one exception; a small remnant of the Goths found refuge in the Crimean peninsula and partially maintained their language until the eighteenth century.

The Scandinavian Group comprises four languages, Danish, Swedish, Norwegian and Icelandic. Until the eleventh century these languages differed very little from each other.

The West Germanic Group is the most widely spread of all the Teutonic languages and is divided into High German, Low German, and Anglo-Saxon or English. From earliest times there were several dialects of the German language, all having sprung originally from one common tongue. These dialects tended to increase in number and each had its own written form. From the configuration of Germany the various groups of languages take their name, High German from the upper, or higher, part of Germany and Low German from the coastal plain. The modern literary German originated in the fourteenth century. At that time the imperial chancery and many of the lesser courts in Germany adopted German for Latin as the official language. Naturally in the intercourse between the imperial and other courts the imperial dialect was adopted. The imperial dialect was, of course, that used by the local court of the emperors, who at that time were living at Prague. So a High German dialect (Franconian) became *the kanzlei-sprache* or official language of Germany. By the end of the fifteenth century this language was used not only for private correspondence but was used by some of the universities. Through the work of Luther this language was given its greatest impetus toward widespread usage. In his translation of the bible he used the language of the Saxon chancery because it was the most widely used dialect. The bible and Luther's numerous writings were read throughout Germany. Gradually one part of Germany after another adopted this as the written language. The German language is spoken by about 90,000,000 people in Germany, Switzerland, Austria, the United States, Brazil, Argentine republic, and in the German colonies. German is a very expressive and forceful language and its great writers and thinkers have produced literary, philosophical, historical and scientific works which are unexcelled.

In the Netherlands a Low German dialect is the literary and official language, and is known to us as Dutch. About 5,500,000 speak this language. The Flemish, a language closely resembling the Dutch, is used in Belgium by about 3,000,000 Flemish people.

The Anglo-Saxon, or English, Language was introduced into the British isles in the fifth century (A. D. 449) by Teutonic tribes—Angles, Saxons and Jutes—coming over from the Danish peninsula and northwest Germany. One of the most striking features of the English language is its composite nature; no other language is made up of such diverse elements. The English have been the greatest word-borrowers of all nations. When the Anglo-Saxons came to England they adopted some of the expressions of the Celts whom they conquered. In the sixth century, when England was opened up to the Roman Catholic church, various Latin words were introduced. During the ninth and tenth centuries, while the Danes controlled England, and afterward, many Scandinavian words were brought into the language. The Norman conquest (1066) caused the introduction of the great bulk of the French element, which of course was originally Latin. The era of the crusades brought in several Arabic words. The trade and maritime relations with Holland caused Dutch words to be introduced. The Renaissance added many Italian words. Many literary and scientific terms were borrowed from the Greek, especially since the sixteenth century. All the countries and peoples with whom the English had any political or commercial relations in modern times were made to contribute to the English vocabulary—French, Spanish, Portuguese, Germans, Persians, Chinese, Russians, Malays, Tartars, Hindus, American Indians, and Australian aborigines. Because of this cosmopolitan character of our language it contains more words than any other language, variously estimated at from 150,000 to 300,000. English is spoken by about 150,000,000 people in the British isles, the United States, Canada, Australia, New Zealand, South Africa, and extensively in all the dependencies of England, such as Egypt and India. English is the commercial language of a large part of the world to-day and its influence in this field is steadily growing.

The Semitic Family.—This is second in importance because some of the Semitic people (Hebrews, Phenicians, Carthaginians, Assyrians, and Arabs) have played very prominent parts in the world's religious and commercial history and have made great literary contributions. It has two groups: (1). The northern group comprises the Assyrian and Babylonian, known to us through cuneiform tablets, Hebrew, Samaritan, Phenician, Punic or Carthaginian, Chaldean, and Aramaic or Syriac. All of these are now practically extinct, Hebrew being used to a certain extent for religious purposes. The Old Testament of the Hebrews is of great importance to us because on it our religion is partly based. (2). The southern group comprises Arabic and numerous dialects of little importance. The Arabic was the language of Mohammed and is now used, for religious purposes at least, in all the Mohammedan countries—northern Africa. including Egypt, all of the Turkish empire, and by about 50,000,000 in India.

The Hamitic Family has been sometimes classed with the Semitic, but insufficient proof of its connection has been produced. It has three groups: (1) The Libyan or Berber in northern Africa; (2) the Ethiopian, spoken from the southern part of Egypt south to the equator, the most conspicuous members being the Galla and Somali; (3) the Egyptian, the hieroglyphic language found on the old Egyptian monuments and papyrus remains. It had a modern representative, the Coptic, which, however, was overpowered by the Mohammedan conquests.

The Ural-Altaic or Scythian Family, like the Indo-European, is found in Europe and Asia, and has five branches. (1) The Finno-Hungarian is spoken by the Finns, Lapps, and Hungarians or Magyars. (2) The Samoyed is spoken in the northern part of Russia and Siberia, there being five dialects. (3) The Turkish is spoken from Turkey in Europe with interruptions as far east as the Lena. (4) The Mongolian is spoken still farther east but does not reach to the Pacific. (5) The Tungusic is spoken by the Tunguses and Manchus in the northeastern part of Asia. The grammar of this family is very simple; each word has an unchangeable root and one or more suffixes are attached, making it an agglutinative language. The western branches have a resemblance to the Indo-European family.

The Monosyllabic Languages of Southeastern Asia (Indo-Chinese).—Here belong Chinese with all its dialects, Siamese, Burmese, Tibetan, and all the Himalayan dialects. These languages consist entirely of monosyllables which can undergo no change. Each word or root can have the properties of various parts of speech according to its position in a sentence. The most important of all of these languages is the Chinese, it being the greatest in the world. The number of people speaking it is variously estimated at from 270,000,000 to 433,000,000.

The Malay-Polynesian Family is found in the islands south and east of Asia in the Pacific and Indian Oceans. It has three divisions: (1) The Malayan division is spoken on the islands extending from Formosa south to Australia and west to Madagascar, including Sumatra, Java, Borneo, the Philippine islands, the Celebes, the Moluccas, Formosa and Madagascar. (2) The Melanesian division is spoken on the Solomon islands, the New Hebrides, and the Fiji Islands, and probably by the people of New Caledonia, the Marshall islands, and other small islands north and east of Australia. (3) The Polynesian division is spoken on New Zealand (Maoris), the Samoan islands, the Tonga islands, the Marquesas islands, the Society islands, the Hawaiian islands, and Easter island. These languages have a very simple structure, having many vowels and very few consonants. The Polynesian dialect is the simplest of the whole group.

The Dravidian Family of Southern India and Ceylon is spoken by 56,000,000 people and has no known relation to other languages. In the cultivated dialects the influence of the Sanskrit is very noticeable owing to geographical proximity.

The Bantu Family occupies the southern part of Africa from the equator south to Cape Colony, with the exception of a region almost coterminous with German Southwest Africa, which is occupied by Hottentots and Bushmen. This language has numerous dialects, and is characterized by its uses of prefixes instead of suffixes.

The Central African Languages.—Between the Bantu family and the Sahara desert is a large group of dialects, numbering hundreds. These vary in structure, but philologists have not studied them sufficiently to come to any definite and satisfactory conclusions about them.

The American Family comprises the languages of the nations of North and South America excepting the Eskimo language in the extreme north. There are over four hundred dialects altogether, the most important of which are the Athabaskan, the Algonquin, the Iroquois, the Shoshonean, the Siouan, and the Maya in North America; the Caribbean, the Tupi, the Aymaran, and the Patagonian of South America. Whether these languages are derived from one original language is at the present time very doubtful.

The Australian Family.—In Australia and in Tasmania there are a number of related dialects which are rapidly becoming extinct. These languages have no importance except to the philologist.

Isolated Languages.—Besides these families of languages there is a considerable number of isolated languages. Such are the Basque in the Pyrennes mountains, the Etruscan (now extinct for 2,500 years) in Tuscany, some of the dialects of the Caucasus region, the Japanese and the Korean, the Eskimo language in the arctic region, and finally the clicking languages of the Hottentots and Bushmen in southern Africa, so-called because of the clicking sounds made by placing the tongue against the roof of the mouth and withdrawing it with a sucking action.

Universal Languages.—There have been over forty attempts to create a universal language which might serve as a means of communication for all peoples of the earth. Most of these attempts were made in the last fifty years. Those of greatest importance are: *Volopuk*, published in 1879 by Schleyer of Baden. Of the vocabulary, about one-third is of English origin, while the Latin and Romance languages furnish a fourth. The grammar is simplified to the utmost. *Esperanto*, published in 1887, by Zamenhof of Warsaw, latterly taken up for practical purposes in many countries, its use being promoted by special societies and periodicals. Its structure is so simple that the whole grammar can be completely mastered in an hour. There are no exceptions to the rules, perfect regularity being a leading feature of the language. The essential roots number only some 900, including grammatical inflexions, prefixes, and suffixes, and these are chosen from the principal European languages in such a way as to make their mastery easy to any person of ordinary education. *Ido*, a modification of Esperanto, published in 1907; and *Universal*, a very recent attempt of Molenaar of Bavaria.

PRACTICAL ENGLISH.—The word *English* as used above does not refer merely to English words. It concerns more than such questions as to whether this word or that is good English. It means the whole art of writing English for practical purposes, so far as that art is itself a practicable subject of study. It means not merely English, but the art of writing.

The art of writing has been studied systematically for two thousand years, and the principles laid down by Aristotle, after a careful inductive scrutiny of Greek authors, hold good for any language. They are psychological principles. They concern the nature of different audiences and different situations, and the fundamental laws of appeal to all audiences and every situation.

Aristotle devotes a third of his rhetoric to a study of audiences. There is no more practical injunction to a writer than this: Know the man you are writing to. Adapt your discourse to him and to the situation he is now in. Books on rhetoric, if they mention this principle at all, are likely to defer it till they come to the subject of argument. We place it first. It will keep you from writing into the air.

Keeping this preliminary principle in mind, we may proceed to divide our subject into ten sections: (1) Structure of the composition as a whole; (2) Structure of the paragraph; (3) structure of the sentence; (4) diction, or the choice of words; (5) punctuation and capitals; (6) proofreading; (7) argument and debate; (8) the forms of public speech; (9) journalism and short stories; (10) business English, especially business and social letters.

It will be observed that half of these topics deal with a great variety of particular situations—debates, after-dinner speeches, addresses, lectures, sermons, newspaper writing, short stories, advertisements, sales-letters, etc. The other and earlier half deal with principles which are applicable to all forms of writing, all audiences, all situations.

Structure of the Composition as a Whole.—No matter what the audience or the situation, no piece of English is practically effective unless it has unity, coherence, emphasis, and proportion. These terms are formal and time-honored, but they are the summing up of centuries of practical experience.

Unity implies singleness of purpose. It rests on the fact that you can produce only one effect at a time. Don't scatter. Make your point. Stick to your subject. Learn to shut out half the things that occur to you. Don't divide the reader's attention. Don't let him wander away and forget you. It is now or never.

Conversely, don't omit the one thing that you really meant to say. It is not enough to avoid irrelevance; you must bring in all that is relevant. Every practical writer can remember the days when he used to fill paper with readable stuff, only to find—later on—that it was mostly not to the point, and that the thing which lay nearest to his heart didn't get written down at all.

The Title.—Choose your title and then narrow it to fit the situation. At this minute I am writing in my cabin in the woods, and the birds are filling the birches with melody. But can I write about "Birds"? No; nor about "North American Birds," nor "Michigan Birds," nor any other vast phase of a vaster subject. But just outside my window a Wilson thrush is repeating his liquid, mellow performance at intervals of exactly five seconds; and I might possibly manage an article on "Intervals of Song in the Thrushes of Northern Michigan."

Outlines.—If you would be certain of unity, make an outline. It may be a very simple affair, consisting of half a dozen items. But a careful scrutiny of it will tell you whether you are attempting too much, and whether all your items logically come under the title you have chosen. Unity consists in a vital relation between title and content. In the case of an argument the outline must be not a mere list of topics, but a list of statements. In those half-dozen sentences you can read the whole theme in brief.

Never allow yourself to believe that you can't work from an outline. It is what all poor writers plead. The people who can't think till they have the pen in hand, and who then wander along after their own pens instead of guiding them—these are the people whose articles and letters are ineffective. Their stuff has no skeleton, no bones, no structure, no organic life. Make your work—not like an angleworm, that will live if you cut it in two. Make it like a human being. Make it as vitally organized as you yourself are.

Coherence means more than mere cohesion; it means a living connection of parts. It implies such an arrangement as will enable the reader to follow the thought readily. It implies a normal order. For narration the normal order is that of time; events must be set down in the order in which they occur. For description it is that of the relative position of objects, grouping, contiguity, nearness and distance, etc. For exposition and argument it is the logical relation of fact and observation to conclusion. When the parts of a composition are thus set down in their normal order a sufficient degree of coherence is usually established for the simpler forms of writing.

In the more subtle forms, however, such as exposition, and especially argument, coherence will demand not only a normal order but also connecting links in the form of conjunctions, transition sentences, and sometimes transition paragraphs. Such terms as "moreover," "consequently," "however," "on the other hand," "in the next place," my "second contention is," etc., are of great value in articulating an explanation or an argument.

Emphasis.—There will be a gain in emphasis if, without violating the principle of coherence, the items of a composition can be so arranged as to bring the most important or most striking at the end. The reader is more likely to remember the theme as a whole if his final impression is a strong or vivid one.

But the opening words of a composition are as important as the closing. Get attention at the start. Strike out at once for some vivid interest of the reader—only let it be a legitimate and not a sensational interest.

Scale.—It is often necessary to bring what one has to say within a certain assigned limit of space. This will call into requisition the faculties of comprehensive view and judicious selection. Inexperienced writers usually say a great deal more than is necessary to an adequate presentation of the subject.

A good exercise for training in the matter of writing to scale is to reduce a paper of one thousand words to five or six hundred without sacrificing any essential point. A converse exercise is to treat a given topic in five hundred words, expand it to a thousand, and then to five thousand.

Writing to scale is one of the best exercises for the development of a logical and organized sense of composition.

Proportion.—A piece of writing that is well proportioned is one in which the various points are given space in accordance with their relative importance. Of course mere physical size or mere extent of theme has nothing to do with that importance. The valve gear of a locomotive will probably call for more space than the boiler. Similarly a certain half-hour of your outing

may call for more space than the entire week preceding.

Introductions and conclusions should, in general, be very brief. Your paper must not be top-heavy, nor must you keep on after you have really finished. For a theme of five hundred words, probably the first one or two sentences of the opening paragraph will constitute a sufficient introduction; for one of twelve hundred to two thousand words perhaps one or two paragraphs might be required; for a book of three or four hundred pages the opening chapter might be reserved for introduction.

As a practical method of securing a right proportion, the assigning of a numerical value to the various topics of the outline will be found helpful. It may prevent the young writer from expending too much energy and flow of speech upon the first few points, and then telescoping the rest as the task begins to wear upon him.

Structure of the Paragraph.—Definition.—The paragraph is a modern device for avoiding an interminable sentence. In Milton's time a man could write a sentence of five hundred words, a sentence that would cover two pages of print, and go scot-free. Scholars would read it, and nobody else read anything in those days. Nowadays people wouldn't. But those old Latin-trained scholars were aiming at a large unit of thought. Often they indented before and after such a sentence to show that it was a unit. Now we keep the indentions, but we break the long unit up into several.

We state the topic briefly in one sentence. We are content to state it merely. Then we go on to illustrate it or defend it or amplify it. It may take three or four sentences to do this, but they will all be closely related. The group of sentences is unified by a single topic. The indention is a halting-place that permits the reader to breathe, look back, and fix the paragraph in mind.

So remember that the paragraph is a device to give you time. Take your time. Don't be afraid of making a short sentence if the thought is really emphatic. Save your long sentence to mass details of illustration or proof.

Unity in the Paragraph.—Our definition indicates in general what we mean by *paragraph unity*. But a bit of caution must be added with respect to the word *topic*. The amateur is likely to think of every item or point as a topic, and to indent accordingly. The result is a rapid-fire series of pseudo-paragraphs of two or three lines each, disconcerting and often misleading to the reader. Paragraph unity involves the generalizing of points under a real topic of sufficient note to command a real paragraph, with bulk enough to constitute a real unit of thought, and not a mere fragment. Colonel Roosevelt, in a paragraph of about two hundred words, deals with the following points: Premiums on meritorious conduct of policemen, a new system of pistol practice, the Bertillon system for identifying criminals, a police bicycle squad, and a new municipal lodging house. These points are all generalized, however, under the topic "Minor ways in which we sought to reform the police force," thus producing a logically unified paragraph.

Paragraph Length.—What we have said above has its bearing on paragraph length. By our definition a paragraph is a group of sentences. It should contain, as a rule, therefore, not less than three sentences of average length—twenty-five to thirty words each. This is the minimum. Your shortest paragraph should contain ordinarily not less than seventy-five to a hundred words. The paragraph consisting of a single long involved sentence should be avoided. Break such a sentence up into three or four shorter ones.

As to its maximum, a paragraph, even when theoretically well unified, should not include much more than three or four hundred words. A paragraph running on through several pages of print has a discouraging look to most readers, and is likely to result in a hazy impression. The normal average should be about two hundred words.

In three exceptional cases the short single sentence paragraph is in place. The first is that of *dialogue*, in which, by more or less arbitrary usage, whatever is said by a single speaker at one time, together with identifying or brief explanatory remarks by the writer, is put into a paragraph by itself. The second case is that of *special emphasis*, wherein the moment or point is of such supreme importance as to be briefly paragraphed by itself, and thus visually emphasized in the printing by its contrast with the longer units before and after it. The writer should be very sparing, however, in such use of the short paragraph, as any approach to a frequent use will naturally defeat its own end—that of emphasis. The third case is that of the *transition paragraph*, which expresses a brief summary, or anticipation, or both.

The number of paragraphs in a composition bears no necessary relation to the number of topics or points in an outline. It is possible occasionally to develop a theme by assigning a paragraph to each point in the outline. It is more probable, however, that related points will have to be grouped into a single paragraph; and it may be that a single point will require two or three paragraphs for its development. This is in accordance with what we have said about paragraph length and unity.

Coherence in the Paragraph means simply that every sentence shall be in its normal place in the paragraph, and that whatever connectives may be necessary to a ready progress of one's thought through the paragraph shall be supplied. The reader resents being led astray, and being compelled to zigzag through a paragraph.

Proportion in the Paragraph.—This means precisely the same as proportion in the theme as a whole, except that the principle is applied on a smaller scale. The points or subtopics in a paragraph must be given space in accordance with their relative importance.

Connection Between Paragraphs.—In exposition and argument it is often desirable to indicate the relation of paragraph to paragraph. This may be done by the conjunction at the beginning of the following paragraph (*e. g.*, "Moreover," "Besides," "As a result," "Notwithstanding," "Of no less importance," etc.). Or it may be done by the transition sentence, which is usually the first sentence of the following paragraph, although it may be found preferable sometimes to make it the last sentence of the preceding one. Or it may be done by the short transition paragraph. This last, however, is usually reserved for connecting one group of paragraphs with another group, rather than for connecting paragraph with paragraph.

Structure of the Sentence.—Definition.—The sentence is the fundamental unit of discourse. Hence the "sentence-sense," as it is often called, the ability instantly to recognize a sentence when one sees it, is a fundamental necessity of accurate writing. A sentence is a statement, question, or command that is grammatically complete—one that contains a subject and a predicate expressed, and that is not introduced by a dependent or subordinating word. The only exception is the imperative form, in which the subject is usually implied.

The sentence may be very short. The following are complete sentences (the first three being in the imperative form): "Wait." "Don't." "Come here." "I can't." "You're quite right."

A mere phrase (prepositional, participial, infinitive, etc.), or a dependent clause, is not a sentence, and may not stand alone as such. The following are not sentences: "In a few minutes." "Frightened almost to death." "Being sure of my ground." "Now, to proceed with the argument." "At least not at present." "Although of course we can't be certain." "Not unless you are willing." "Which is quite a different story." It is a mark of slovenly style to leave such expressions as these straying about like lost dogs. They must be attached to something—to a main clause of some sort; *e. g.*, "I can't answer all these letters, at least not at present." Of course in conversation such expressions are common enough, but the only right use of them in written discourse is in dialogue, when they represent what was actually said.

The converse error is that generally referred to as the comma blunder. Complete separate statements, and those closely connected in thought, must accordingly be separated by the period, the colon or the semicolon, but less often by the comma, unless there is a real conjunction joining the statements. The greatest temptation to the comma blunder comes when the second statement begins with a personal pronoun (*he, they, it*, etc.) or a conjunctive adverb (*then, therefore*, etc.), or when there is a close relation of cause and effect, or of contrast, between the two statements. The following sentences are correctly punctuated: "Come on, laddie. It's time to go home." "Tom wasn't afraid. He was simply waiting for the right moment." "You'd better not try that bridge. It isn't safe." "He would not take the crown; therefore 'tis certain he was not ambitious." "Be sure you're right; then go ahead." "Be sure you're right, and then go ahead." Special care should be observed in the writing of dialogue to avoid the comma blunder.

The only exception to the rule here stated is the case of the series form, in which short statements are sometimes separated merely by the comma; *e. g.*, "I have fought a good fight, I have finished my course, I have kept the faith."

Agreement.—Grammatical correctness requires an agreement or concord between certain parts of speech in the sentence. The commonest error is to confuse singular with plural. A verb must agree with its subject in number; both must be singular, or both plural.

The writer is sometimes misled in this matter when the subject comes before the verb. Notice the following: "Here *were* located the banking facilities of the colonies" (not *was*). "Coupled with the demand for the teaching of patriotism *have* come suggestions as to what course such instruction should take" (not *has*). "There *exist* in the minds of many people certain

prejudices against the foreigner." (Not *exists*).

Subjects joined by *and* commonly require a plural verb; *e. g.*, "There *are* my friend Barton and his wife coming toward us." (Not *there is* or *there's*.) "There *are* in this room a table, three or four chairs, and a small stove." (Not *is*.)

A plural noun coming between subject and verb sometimes misleads the writer: "The sound of his steps *was* gradually lost." "The size of the plates *varies* with the current capacity of the battery."

A collective noun is to be construed as singular or plural according as its parts are thought of separately or in the mass: "The crowd *were* throwing up their hats and shouting with excitement." "The crowd *was* headed by McAndrews, who was carrying a red flag."

The pronoun must agree with its antecedent in number: "The negro did not ask for the suffrage; but the responsibility involved in it has been good for *him*." (Not *them*.) "The drill press is a very useful machine. *It is* made in various forms and sizes." (Or, drill presses *are* made: not *They are* made.) The indefinite pronouns, *each, everybody, any one, a person, one*, etc., are singular, and should be so construed: "A person must have plenty of time if *he is* to do good work." (Not if *they are*.) "England expects every man to do *his* duty." (Not *their*.) The same is true of the correlatives *either —or, neither—nor*, when they connect singular nouns: "Either Arch street or Bond street *is* to be paved at once." "Neither your assumption nor your conclusion *is* justified."

Certain miscellaneous cases of agreement may be noted: "All the sprinters were attired in *track suits*." (Not *a track suit*.) A student writes: "The faces of both Goldsmith and Johnson were disfigured." He should say: "The face of Goldsmith was disfigured, and so was that of Johnson." Again: "There were *two* stained glass windows on *both* sides of the entrance." This is ambiguous. The writer means either "*A window to each side* or *two windows to each side*."

Government.—Certain cautions must be observed in the use of nominative and objective. After *it is* and *it was* we must have the nominative forms of the pronoun: "Is it *I* whom you mean?" "I believe it is *they*." "Wasn't it *she* whom we met at Newport?" Do not use the objective form of the pronoun for the nominative, or the nominative form in place of the objective. "*We* boys are going to the circus." "Uncle is going to take *us* boys to the circus." The same holds true when two pronouns are joined by *and*: "*He* and *I* were asked to report on the power loom." "The instructor asked *him* and *me* to report on the power loom." "Mr. Barlow invited Frank and *me* to be present at the recital." "Between you and *me*, I think he will bear watching."

Who and *whom* follow the same rule as any other pronoun: "I can't remember *who* it was." "*Who* was present at the reception?" "*Whom* are you looking for?" "For *whom* are you looking?" "He is a man *who*, I believe, is well qualified for the position." "He is a man *whom* I believe to be well qualified for the position."

In this connection may be noticed the correct use of verb tenses. The confusion of present, past, and perfect forms is unpardonable. We need only mention such horrible examples as, "He *come* up and introduced himself to me." "I think he *has went* out to lunch." "The water was *froze* solid." "I *seen* at once that there was no hope."

The forms of *lie* and *lay* are as follows:

Present	*Past*	*Past Participle*	*Present Participle*
lie (lies)	lay	lain	lying
lay (lays)	laid	laid	laying

Notice the following sentences: "I usually *lie* down for a little nap after dinner." "Just as I *lay* down yesterday, Dr. Harmon called." "The leaves have been *lying* on the lawn for some days." "*Lay* your books on the shelf, and let them *lie* there." Less obvious are certain inaccuracies in the use of the perfect tenses. In general, whatever goes back of the main verb should be stated in the pluperfect tense: "I often wish I *had been* born in the country." (Not *was born*.) "Men and women who *had been* shut up all day in the houses and shops came out to get a little fresh air." (Not *were* shut up.)

Unity.—Unity in the sentence means on a smaller scale the same thing as unity in the theme and in the paragraph. The sentence must be about *one* principal thing.

This does not imply that all sentences must be short: a very short sentence may be lacking in unity, while a very long one may be perfectly unified. "Peter Cooper founded Cooper Union, and his father made hats." Here is a sentence of only ten words, stating only two facts about Cooper, but the facts are so distantly related that they do not belong in the same sentence. Now take a longer sentence: "The road winds along by the river bank, and affords a glimpse of the stream now and then; and it is a shady, quiet road; but once in a while there is a clearing, and there the sun is very bright and warm." Here are five facts about the road; but they are so stated that not one of them stands out as the unifying fact.

Such a sentence may either be broken up into two or three shorter ones, or some of the facts may be subordinated by the use of other connectives besides the overworked *and*. Both methods might easily be applied to this sentence, and we should get something like this: "It is a shady, quiet road, *winding* along by the river bank, and affording a glimpse of the stream now and then; once in a while, however, there is a clearing, *where* the sun is bright and warm." A mastery of the principle of subordination, and of the various subordinating connectives, is more than half the battle for sentence unity.

Converse to the example just cited is the practice of writing a sentence in several separate fragments, when they really belong together: "We came to a path. It led off from the wagon road. It led through the woods. This path apparently was not much used. It was a narrow path." It should read somewhat as follows: "We came to a narrow path, apparently not much used, that led off from the wagon road through the woods."

Coherence.—So far as this principle applies to the sentence, it means that the parts should stand in a normal position. The subject must not be very far removed from the verb; modifiers must be reasonably close to the parts they modify; the reader must not be zigzagged through the sentence in a disconcerting way. A few examples will make the principle clear. The portions italicized should be inserted where indicated by the encircled 1. "Last week *I*, with an old friend of my father's, ①took a trip to New York City." "If a workman is honest, he *usually* is①repaid for his honesty." "Of course①everybody can*not* become the head of a great business concern." "I lived①in the small western town in which I was born, *for about three years*." "*While I was in New Mexico*, I remember that①I had a burro, which I rode every day." "The account was confirmed① by Colonel Shackleton, who some years ago headed an exploration party to the far south, *to-day*." "In front of the stores① different kinds of electric lights *hang*." "His hat①had a narrow black band around it, *which he had worn all summer*."

A special case is that of condensed comparison, often attempted in such sentences as the following: "Every year was as bad if not worse than the year before." Such sentences are faulty in syntax as well as incoherent, and should be written as follows: "Every year was as bad as the year before, if not worse."

It is disconcerting to travel through a sentence like the following, with two *but's* in it: "Even in his letter to his wife, Macbeth shows that the temptation is strong, but he does not put it actually into words, but suggests that the third prophecy may come true." The second part of the sentence should read, "He does not, however, actually put it into words, but suggests," etc.

Coordination.—Parts of a sentence that are joined by coördinating conjunctions, such as *and, but, or*, should be similar in form: *e. g.*, "This ordinance was passed by the village board May 13th last, and which is now in effect." This is bad form. *Which* after *and* must be elided, or else it must appear in the first part of the sentence. Either of the two following forms is correct: "This ordinance was passed by the village board May 13th last, and is now in effect." "We have here an ordinance which was passed by the village board May 13th last, and which is now in effect." Take another example: "Elaine's treatment of Lancelot shows not only how great her love was, but also that she was kind and gentle." It should read, "*that* she loved him greatly," or "*how* kind and gentle she was," so that both clauses shall be introduced by *that*, or both by *how*. Again: "Finally the two friends parted, Savage going to the west of England, and Johnson remained in London." It should read, "Savage *went*," (with period after *parted*), or, "and Johnson *remaining*," so that both expressions shall be participial, or neither expression. Again: "A protective tariff is laid not as a source of revenue, but to protect growing industries." It should read, "*to produce* a revenue," or, "*as* a protection for." Again: "The northern colonies produced wheat, corn, and potatoes; and in the southern, tobacco, rice, and cotton were produced." Make both members active by writing, "and the southern, tobacco, rice, and cotton."

A special case of faulty coördination is what is known as the false series. A true series requires that all the members be in the same grammatical form. One method of correcting a false series is to introduce another *and*, where indicated, for example, by the circled 1 in the following: "The men were at work making molds,①cores, and fixing the cupola for the afternoon heat." "The sudden introduction of a large volume of water causes contraction,①leakage, and necessitates rapid firing." "During the summer I got lost in a cornfield①got into two or three fights, and a few other disturbances." Another method is to supply such words as will make the three

members of similar construction; *e.g.*, "The men were at work making molds, *making* cores, and fixing the cupola."

Wordiness.—In general all statements should be as brief as is consistent with clearness. The thought is often unnecessarily repeated in the words of a sentence: "to return again," "to try the attempt," "a fine-looking appearance," "during the meantime," "all the whole afternoon," etc. Such phrases should be condensed. Somewhat more obvious, perhaps, is a certain loose extravagance of words resulting in a weak, spongy effect. The portions bracketed in the following should be excised: "It isn't right to lie to your employer in order [that you may be able] to go to the ball game." "You can see a number of fishermen fishing for [a species of fish known as the] black bass." "We drove along a beautiful road [which was] bordered by tall elms."

A careless writer will sometimes duplicate his constructions, especially his prepositions and conjunctions. The words bracketed in the following should be cut out: "The experience [of] which I am going to write about happened in my childhood." "It is argued that, because many children leave school at an early age, [that] their schooling should be such as will enable them to become good workmen."

A word may be said about *repetition*. There should be no awkward attempt to avoid repetition when it is necessary to clearness or effectiveness, but when neither of these ends is served the repetition becomes a burden. There is nothing gained by the presence of the bracketed words in the following: "Some of the lights were strung straight across the street, some [were strung] in a circle, and some [were strung] in arches." On the other hand, there is a distinct gain in force by the presence of those bracketed in the following: "I don't expect you to depend altogether on your notes, but [I do expect you] to study them." "If slavery is not wrong, nothing is [wrong]."

Ellipsis.—Words should not be omitted that are necessary to the grammatical or logical completeness of the statement. The verbal forms must be expressed whenever a change of construction makes it impossible for a single form to do double duty. Notice the forms supplied in brackets: "We rode back a great deal faster than we had [ridden] coming out." "Several proposals were received, but only one [was] considered." "All that Burns writes about is true; it has [taken place], and will again take place in the life of man." The same is true of the preposition: "We are not only prepared [for] but equal to the task." The article must be repeated when the nouns stand for distinct persons or things: "Thine is the kingdom, the power, and the glory." "The sum and substance of the matter is this." "Goldsmith produced a descriptive poem, a novel, and a comedy that are among the best of their kind." "We think of Browning as a poet and as a philosopher." *The* must always be used before *United States*. Idiom requires the following: "All day," "all night," "all the morning," "all the afternoon," "all the evening," "all the week," "all the spring," "all the autumn (or fall)," "all summer," "all winter." An adverb should be inserted between *very* (or *too*) and the participle in *ed*: "very greatly pleased," "very well satisfied," "too highly delighted." *That* should not ordinarily be omitted from the indirect discourse construction: "It must be remembered [that] they had no difficulty in getting the best education." Logical comparison requires insertions as follows: "The general appearance of the church is like [that of] most city churches." "His face has the appearance of [that of] a bright, hard-working young man." "Our basket-ball team ranks high compared with [those of] other schools." Correct syntax requires the following: "On the opposite shore from [that on] which the town is situated, you can see lofty hills."

Reference.—Pronouns and other reference words must be clear and explicit in their reference. The agreement of pronoun with antecedent has already been explained. A pronominal reference must not be ambiguous, as it is in the following: "Chesterfield had treated Johnson discourteously many years before when *he* had called on *him*." "The parasite lives on the host until all *his* energy is gone." "Duncan tells Macbeth that he intends to stay over night at *his* castle."

Reference must be explicit, and not merely implied: "There's no use writing to John; he won't answer *it*." Here *it* refers to the noun *letter implied* in the verb *writing*. Similarly we have sentences like the following: "He invited me to join him in a bear hunt, *which* I readily accepted." "True friendship is so rare that when you find *one* you cling to *him* like a drowning man to a straw." Sometimes the implied reference is in a noun: "The shore is very rocky at this point, and *these rocks* are broken by the force of the waves." "The marquis taxes the people for everything. they use; *this money* he spends in banquets and suppers." Occasionally it is the adverb that is not explicit: "The increase of patriotism is due to school training; it is *there* that the child is first taught to love the flag." "He fainted, and remained *so* for some minutes."

The participial construction is often difficult to handle. There must be a real subject to which the participle can be logically and grammatically related. The misrelated participle is a mark of careless thought and careless writing: "On preparing to leave the next morning, the ax could not be found." Grammatically this means, "The ax, on preparing to leave, could not be found." Now, it is not the ax that is preparing to leave. The writer really means, "On preparing to leave, *we* could not find the ax." The same fault is apparent in the following: "Some time ago, while attending a debate, the negro question was discussed." "On hauling up the anchor the breeze carried us down to the far end of the lake." "After scarfing the two pieces of iron, they are heated to a high temperature." "Being a girl, he saw that she was afraid to protest."

In this connection we may notice what Professor Newcomer has called sins against *logical conformity*. One or two examples will illustrate: "Honesty is the best policy in business as well as any other place." But *business* is not a *place*, and cannot logically be referred to as a place. The sentence should read: "as well as in any other calling, or occupation." Again: "The same thing is true of the doctor, the lawyer, or any other profession." Medicine and the law may be referred to as professions, but not doctor and lawyer.

Diction.—The bulk of the English language is made up of Latin and of Saxon terms. In the dictionary there are more words of Latin origin than of Saxon, but in the usage of conversation and in the most enduring monuments of our literature the Saxon element prevails. In general the inexperienced writer will do well to rely mainly on Saxon words. They are the words with which he is most familiar. They have the merits of naturalness, directness, simplicity, strength, and emotional coloring. They come from the heart, and life, and experience. On the other hand Latin words afford the advantages of formality, dignity, sonorousness, and a certain lofty and superior tone of discourse. They also offer a more exact and discriminating choice of terms than the Saxon, and hence constitute by preference the scientific and professional vocabulary.

Good Usage.—The choice of words implied in the term good usage is impossible of exact limitation. The best we can do is to indicate certain forms that are to be avoided, and generalize from the result. In ordinary written discourse, except realistic narrative, the following classes of words should be avoided: *localisms*, such as "peart," "sun-up," "tuckered out," "right smart," "some chilly," etc.; *vulgarisms*, such as "ain't," "might of been," "hadn't ought," "complected," "most everybody," "photo," "auto," etc.; *improprieties*, such as "leave us see," "the balance of the morning," "a man who is well posted," "an invite," "real pleasant," "a nearby house," etc., and slang terms, except in rare instances; *colloquialisms*, such as "up-to-date," "anyway," "quite warm," "right away," "handy," "a nice time," etc.; *technical terms*, except when one is writing for a special group of readers, such as "tort," "metabolism," "eidolon," "pony brake," "isothermic," "epicycloidal," "oxymoron" "esemplasm," "rheostat," etc.; *pretentious and affected terms*, such as "fistic encounter," "tonsorial parlor," "culinary department" (for kitchen), etc.; and *foreign terms*, such as "de trop," "fin de siècle," "cuisine," "sub rosa," "nil admirari," "zeitgeist," etc.

Apart from such cautions little can be said. The right choice of words is the ultimate test of one's place among the elect, and is a thing which only in its more obvious phases is subject to rule. It is to be acquired in its finer and more real quality only through wide and sympathetic contact with the masters of literature. (See Correct Use of Words.)

Precision, or discrimination between words of related meaning, can be acquired by scrupulous attention to definition and usage. Certain grosser faults, almost as much matters of spelling as of meaning, are involved in the confusion of the following: There, their; to, too; its, it's; then, than; lose, loose; led, lead; forth, fourth; principal, principle; quite, quiet; effect, affect; except, accept; later, latter; cavalry, Calvary. The writer should, however, train himself in the finer distinctions, such as are involved in obtain, attain; secure, procure; survive, recover; apt, likely, liable; imaginary, imaginative; poetry, verse; fact, truth; democracy, republic; egoist, egotist; human, humane; effective, effectual, efficient; grief, grievance; act, action, activity; last, latest; education, schooling, culture; accurate, correct, exact, precise; start, begin; politic, political, etc. (See Multiplex Dictionary, or books by Fernald, Fallows, or Roget. See, also, Dictionary of Homonyms.)

Idiom.—Every language has its idioms—peculiar personal forms that are in a way the meat and kernel of it, and yet often illogical and not amenable to rules or principles. No one knows English who does not know its idioms, and yet few suggestions can be given as to how they can be learned. They must be acquired by con-

tact and absorption. The most we can here do is to indicate a few idiomatic expressions by way of illustration.

Much of our idiom centers about the preposition. The cars stop *at* Adams street, not *on* Adams street. The picture hangs *on* the wall, *at* the right hand end of it, *to* the left of the door. There is a window *in* the west wall, not *on* it. We have the privilege *of hearing* a noted speaker, not the privilege *to hear* him. We are *under* the necessity of cutting expenses. We go *into* the room, and move about *in* it. There is a fence *in front of* the house, and one *back of it*, or *to the back of it*, or *behind it* (not *in back of* it). We leave *about* nine o'clock in the morning, not *around* nine o'clock, and there are *about* twenty of us in the party. We say *seldom if ever*, or *seldom or never*, but not *seldom ever*, or *seldom or ever*. Similarly we say *seems to be*, or *looks as if*, but not *looks to be*. We have confidence *in* a person, and confide a secret *to* him, because we have a high regard *for* him on account of our long intimacy *with* him. Your way may be different *from* mine, but is not necessarily better *than* mine. The student will have to master these and hundreds of others, each in its own special application. (See Dictionary of Prepositions.)

Proof Reading.—The correction of proof requires scrupulous attention to every unit of composition from the smallest to the largest. Corrections should be indicated in the margin, as nearly as possible opposite the mistake. When this is not possible a line should be drawn from the mistake to the correction. Mistakes are indicated on the page by underscoring, crossing out, drawing a vertical line through certain letters, drawing a line around certain words, and placing the caret where necessary. Corrections should be made neatly, and should be absolutely legible and unambiguous.

The signs commonly used in the correction of proof are the following:

✗	Change bad letter.	[	Move over.
⊥	Push down space.	☐	Em quad space.
9	Turn over.		
₰	Take out (*dele*)	/–/	One-em dash.
∧	Left out; insert.	/—/	Two-em dash
#	Insert space.	¶	Paragraph.
v	Even spacing.		
◡	Less space.	No ¶	No paragraph.
⁀‿	Close up entirely.	*w.f.*	Wrong font.
⊙	Period.	.....	Let it stand.
,/	Comma.	*stet.*	Let it stand.
ⓘ	Colon.	*tr.*	Transpose.
;/	Semicolon.	*Caps*	Capital letters.
∨'	Apostrophe.	*s. c.*	Small caps.
∨'∨'	Quotation.	*l. c.*	Lower case or small letters
-/	Hyphen.		
≡	Straighten lines.	*Ital.*	Italics.
		Rom.	Roman.

Punctuation and Capitals.—The Period as indicating the end of a declarative statement has been already explained. It must also be placed after every abbreviation, and after Roman numerals.

The Interrogation Point is placed after a direct question, or a part of a statement that is a question: "Where are you going?" "'What about the boy?' is a question that is more and more demanding an adequate answer." It is used—but with doubtful propriety—in parentheses to indicate doubt: "The patriotism (?) typified by the *Dreadnought* is much in evidence," etc.

The Exclamation Point is placed after words or expressions that are definitely exclamatory in character: "Oh! look! They're being driven back." "Oh, if John were only here now!" The words Oh and O are interjections expressing strong feeling. O is used in direct address and in expressions of surprise, indignation, or regret, and should never be followed directly by the exclamation point. "O Thou Great Helper of the weak, give us now of Thy strength."

The Comma is used (a) to set off clauses within the sentence, as "The way was long, and the wind was cold." "Not that I loved Cæsar less, but that I loved Rome more." (b) The dependent clause is usually set off when it begins a sentence, and is also set off when it ends one, unless closely connected in sense with preceding clause: "When you are ready, say so." "Come to the tent when you are ready." "We were about to give up the search and start for home, when we heard a faint call in the distance." (c) The relative clause is set off when it is additional, but not when it is restrictive: "This road, which is the old St. Louis trail, runs past our farm." "Our farm is on the road which is known as the old St. Louis trail." (d) The comma is used to separate the members of a true series: "Days, weeks, months passed slowly by." " * * * * * precept upon precept; line upon line; here a little, and there a little." "Society has to care for the pauper, the delinquent, and the defective." "For winter is past, the rain is over and gone; the flowers appear on the earth; the time of the singing of birds is come, and the voice of the turtle is heard in our land." Notice the comma before *and* in the last two quotations. The comma is used to separate two or more adjective or adverbial modifiers when they are not logically an integral part of the word they modify: "A tall, young, handsome fellow he was." "A tall, handsome young man." (e) The comma is used to set off vocatives, and introductor and more closely related parenthetical elements. "My gentle Puck, come hither." "What mercy can you render him, Antonio?" "Well, honor is the subject of my story." "There is, if I remember rightly, a spring near the shore." (f) The comma is used to set off an introductory adverb lest it may be regarded as a preposition: "Beyond, the mountains rose in their strength and silence." "Beyond the mountains lies the land of our hope." The comma, as does punctuation in general, marks divisions in the grammatical construction and it is used especially to prevent misunderstanding. It should not be overworked, and must not be used to show elocutionary pauses. A good elocutionist may make a pause, called the rhetorical pause, after any word of a sentence, if by so doing he can increase the impressiveness of his interpretation.

The Semicolon is often used to separate complete statements that are so closely related in thought as to make the period too much of a stop. It should not ordinarily be used to separate a dependent clause from the main clause. It is used before *i. e.*, "that is," and *e. g.*, "for example."

The Colon is the most formal of all the marks of punctuation. It is used to separate statements that are set in formal apposition with each other, the second being a repetition or explanation or illustration of the first: "The engineer is supremely the man of scientific imagination: he must see the structure before he builds it." The colon was formerly much used to separate the two parts of a long compound sentence, if the parts themselves contained semicolons; but the practice is not to be commended. It is used, also, to introduce a list, or a quotation formally stated: "We have to consider, therefore, the three following propositions: government ownership, government control, and private enterprise." Moulton, on page 246, says as follows: "A foundation task of the artist, etc." The colon is also used after the salutation in a letter: "Gentlemen: Referring to yours of the 14th, etc." No dash need follow the colon after such a salutation.

The Dash is used informally, somewhat as the colon is used formally: "There is only one method left—concession." "There were only three of us present—Hayes, Carter, and I." The dash also indicates a sudden break in the thought: Now, the silurian strata—but of course that doesn't interest you." It is further used to set off a parenthesis more decided than those inclosed by commas: "Any one who has had that experience—and almost every one has had—will understand what I mean."

The Parentheses, or curves, are used to inclose a still more definite parenthesis, one that is often independent grammatically of the rest of the sentence: "Late that night (it was about eleven-thirty, as a matter of fact) I became aware that he (Stanley) was regaining consciousness."

The Quotation Marks are used to include quoted matter that is stated in direct form. A quotation within a quotation is indicated by single quotation marks. Notice the following, observing, also, the use and position of period, comma, question mark, and capitals: "I can hardly agree with you in that matter," said David. "I don't suppose," remarked Anne, quietly, "that there is anything more to be said." "Come here, Silas," said Arden; "I want you to look at this letter." "Why do you ask me that?" inquired the grocer, anxiously. "A few minutes later," continued my father, "Dexter came up to me and said, 'What are you doing here?'" But note the absence of quotation marks in the following: The printer said that the bill would come to about twelve dollars.

The Apostrophe is used to indicate possession. For the singular we add *'s*: "Henry's watch." "Fisherman's luck." "Charles's ideas." The apostrophe without *s* is permissible when the noun ends in *s*; *e. g.* "Charles' ideas," and must be used alone in such names as Crœsus', Achilles', Moses', etc. For the plural we add the apostrophe when the noun ends in *s* and *'s* when it does not: "The boys' tasks." "The ladies' aid society." "A book of children's stories." The apostrophe is less frequently used to indicate the possessive of objects; as, "the length of the field," not "the field's length," etc. But we say, "A year's absence," "two weeks' vacation," "at arm's length," "the water's edge," "a day's wages," "a dollar's worth," etc. The apostrophe is also used to indicate omitted letters in contractions: Don't, hasn't, you're, o'clock, etc. The *'s* is used also to indicate the plural of letters and figures: "Three 8's." "He doesn't make his *m's* correctly."

Capitals are used in general to distinguish personal or individual names from class names: David Farragut, Harlequin, Hamburg, Ceylon, American, etc. The words river, mountain, lake, street, building, etc., and official and professional titles are capitalized only when attached to prope

names: the Ohio River, Lake Erie, the Borland Block, the Hamilton Club, Central Park, Amherst College, Doctor McDonald, President Harper, etc. The following words are regularly capitalized: names of the Supreme Being; important words in the title of a book, article, etc.; historical epochs, wars, etc.; days of the week and months of the year (but not the seasons), holidays, holy days, etc.; abbreviations of title attached to proper names, and also A. D. and B. C.; the interjection O and the pronoun I; names of relationship when immediately preceding the name (*e. g.*, Aunt Amanda, Brother Amos,), and Father, when referring to any of the orthodox writers of the early Christian church (as, the Fathers); names of things personified, the first word of every independent sentence, and of every direct quotation (unless it is a phrase or fragment not in dialogue), the first word after a colon if it begins a letter or a formal quotation, and the first word of every line of poetry.

Argument and Debate.—The purpose of *argument* is to convince some one of the truth or falsity of a proposition—to make him agree with you in your view of the matter. To bring some one else to think as you do means that you must have good reasons for your own attitude and be able to present them in a convincing way. We have to consider, therefore, what constitutes a good reason.

(1) Practically all our reasoning falls under two broad general laws—those of induction and deduction. *Induction* is the primary form of reasoning. It means the drawing of a general conclusion from specific facts and observations. You decide, from certain facts, that a particular business firm is unfair or unreliable. It is apparent that the soundness of your conclusion will depend upon your getting at the real truth of the matter, and getting at it in a broad way.

Direct evidence is, on the whole, the best kind of proof. What you have yourself actually seen or experienced, may well be offered in support of your attitude. The experience of some one else may, however, be more convincing than your own, if he is a more practical observer or an authority. In citing authorities, it is absolutely essential to cite the best, those who are known to be accurate, truthful, unprejudiced, and thoroughly informed. Depend on weight of authorities, not on number. In offering *examples* to support a contention, you must remember that "one swallow does not make a summer," and that, similarly, one example does not prove a contention. In the same connection we may notice that, because one thing happens *after some other thing*, the first is not necessarily to be declared the cause of the second. We may be pretty certain that, if a field looks fresher after a rain, it is because of the rain; but we cannot be so sure that, if the wheat field is discovered ablaze after the train has just passed, it was the train that set it ablaze. A step further removed is the argument by *analogy*. The growth of the lily from the bulb is no argument for the immortality of the soul, though it is a very beautiful symbol of it. *Indirect evidence* is often very strong, as, to quote Thoreau, when you find a trout in the milk; but it is subject to the same allowances as direct evidence. The presence of a man at a horse race may indicate that he is interested in racing, but not that he is a gambler.

(2) The other general law of reasoning is that of *deduction*. It consists in the application to a specific case of a general proposition that is already admitted. The general proposition (major premise), its application (minor premise), and the resulting conclusion, constitute what is known as the syllogism. Take an example: Governments derive their just powers from the consent of the governed; our government of the Filipinos is without their consent; therefore it is unjust. It is obvious that you must be absolutely sure of your premises, or else your conclusion will be false. Practically every argument involves both the inductive and the deductive process.

(3) The presentation of arguments by speakers on both sides of a stated question constitutes a *debate*. The purpose of debate is, or ought to be, to get at the truth of the matter; and nothing can be more humiliating or demoralizing than the use of subterfuge, quibbling, rant, abuse, and intellectual trickery for the trivial satisfaction of beating one's opponents. The question chosen for debate should have two distinct sides to it. It should be stated affirmatively; *e. g.*, Resolved that the United States is justified in her occupancy of the Philippines (not, is *not* justified). The question should be discussed, and so formulated that both sides understand exactly in what sense it is to be understood. Then the preparation of the debate should proceed. The affirmative should apportion the arguments among its speakers, and the negative among its speakers. Each speaker should then study his argument, formulate its terms, collect his material, and prepare his brief.

The brief is the most important step in the process. It consists of a statement of the points which the speaker proposes to make, arranged in a logical way as main topics, minor topics, and subtopics. The order should be that of increasing importance, the weaker points coming first, and the stronger ones toward the end. All the points in the brief should be stated in the form of complete sentences. The speaker must prepare his refutation as well as his direct argument: that is, he must answer arguments that will be made, or might be made, on the other side. He will do well also to consult frequently with his colleagues to see that there are no overlappings or omissions. When the brief is completed, the argument should be written out *in extenso*, and absolutely mastered. It need not, and ordinarily should not be learned word for word. But the speaker must be sure of the exact phrasing of certain points, and must make certain that his transitions are easily apparent. In the delivery there should be no shouting, no striving for applause, no cheap allusion to the "ignorance and stupidity of our opponents." Speak calmly, naturally, firmly, quietly, and above all courteously.

The Forms of Public Speech.—We may distinguish the after-dinner speech, the address, the oration, the lecture, the sermon.

The After-Dinner Speech must be short and informal, yet it may be weighty. The greatest offense of after-dinner speeches is tedium. One good story is better than half a dozen. The diction should be eminently simple; for it is the very essence of the social temper to avoid technicalities on the one hand and extravagance on the other. Simplicity, restraint, and understatement are marks of breeding. Yet an examination of five-minute addresses by such men as Lowell, Curtis, and Henry Grady shows that this tiny form of composition may express important thoughts: it can get down to fundamentals; it can set up noble ideals. It can be "built like a watch," obeying on its own scale all those rules of organization which have been previously set forth.

The Address is a dignified speech of considerable length and great variety of subject. In a recent collection of addresses we note such topics as the influence of universities, the leadership of educated men, the scholar in a republic, the drama in America, the child and the state, general amnesty, secession. The presidential address of a society usually sums up recent tendencies which interest the society, and then gives some outlook on the future. Such is Miss Jane Addams' address on "Charity and Social Justice," before the St. Louis Congress of Charities, 1910, an address marked by broad historical retrospect and a penetrating philosophic prospect. The tone, or degree of dignity, in the diction of an address must be high. Humor must be kept very subordinate, and colloquialisms must be rare. On the other hand, unnecessary technicalities must be avoided, and display must be entirely absent. Before a recent meeting of the American Philosophical association the "papers" were so technical that even the members wrangled for hours as to their meaning. But the presidential address, by the late William James, on "The Energies of Men," was given in language so picturesque and clear that it was sought by a popular magazine, and was quoted far and wide.

The Oration is an elaborate discourse, treating an important subject in an impressive manner. Its purpose is not primarily that of the address; it seeks sooner or later to move the loftier emotions deeply. For this reason it is commonly felt that an oration should not be read; it should seem impressively impassioned and extemporaneous. The very name suggests *oral*, and recalls the whole ancient tradition of *rhetoric*, or public speech. It recalls Aristotle, with his distinction between the oratory of deliberation and that of display. Ancient *epideictic* oratory permitted a certain amount of display and beauty for its own sake. The modern form of oration which still preserves this tradition is the *eulogy*. Blaine's eulogy upon Garfield is a striking example of the legitimate exercise of the power of pure oratory. One who listened to the nominating speeches in the Republican Convention of 1908 cannot help regretting that the power of dignified eulogy—eulogy which unites a significant man to the times of which he is the expression—is practically lost. But the loss has some compensations. It is almost wholly a gain that young men are now advised to study Wendell Phillips instead of Daniel Webster. The plain, direct, *conversational* style is far more effective to-day than the older decorative and rhetorical style.

The basis of every good oration must be good organization and sound argument. Beyond that, the most important thing is for the orator to know his audience, that he may appeal to their sympathy, and, if need be, to their foibles. Remember that Aristotle, that great student of humanity, devoted a third of his treatise on oratory to the psychology of different audiences.

Journalism. Short Stories.—Perhaps the most valuable single gift to the journalist is the sense of mass and proportion. He must write accurately to space. He must

dwell on the significant, and boil the less important down to its lowest terms. Headlining is a science in itself, and keeps one man busy on every daily, for it is the art of telling the whole story in a few phrases.

As for diction, the trend of the times is toward simple words. It is only in rural districts that we find "fine writing," pretentious phraseology. Here it is often due to forcing an ignorant man to report something that he knows nothing about—as, for example, in this: "He has a pliable tenor of immense range, coupled with deep organ tones in his lower register. He will doubtless advance into deserved prominence in that mimic world which proves so fascinating to the actor and the singer." The day is passing when reporters talk about "infuriated animals" when they mean runaway horses. Headlining, however, has one bad effect on diction. It leads to the coining of short and ugly cant words, like *talk-fest*, to fit the exigencies of space. A sensible reporter avoids smartness in his diction; the people want the news, and not his verbal antics.

Short Stories.—The writing of short stories is an art which has grown with journalism and is closely allied to it. The short story finds its audience in the tired business men and the tired youths and maidens who shrink f om prolonged dealings of mind with novels—especially the sociological novels of the day. This means that the short story must be so constructed as to capture weak attention. An allegory or a tale, however lovely, does not do that, because it lacks plot and surprise.

Plot and surprise, then, the short story must have. Its material may be realistic or romantic, but it must be worked up into a story. On the other hand, there can be no intricate and elaborate plot, for that takes up space and time. The problem is to get a surprising incident, a surprising turn of affairs, and lead up to it neatly and briefly. The events must not cover a long period; the past must be ruthlessly foreshortened; a single day, sometimes a single hour, must disclose the whole complication and resolution of the events. So, as Brander Mathews has put it, a short story is not merely an abridged novel.

Again, there is no opportunity for showing the development of character. If there is to be change of character in your hero, you must catch him at the moment before the change comes. Most short stories do not attempt character-change, but deal with incidents. Of course, the more significant the incident is, the better. The ideal thing would be to catch the most important day, hour, and incident in the hero's life.

A good beginning is half the battle for it gets you your reader. Make it fresh and striking. Roughly speaking, do not begin either with description or with dialogue. Votes have shown that both are less acceptable than a paragraph which flashes before you an intrinsically interesting person or a striking situation.

Avoid dialect: there is no sale for it now, except to a few magazines from a few masters.

Avoid unpleasant and ghastly and cynical and "suggestive" material. Pure love, heroism in daily life, friendship, loyalty, ludicrous happenings, fair and honorable getting on in the world; hope, poetic justice—these are the themes that sell. Be human! and don't be trite, hackneyed, or commonplace.

Choose your title as carefully as if you were advertising.

Study your market—as in the book *1001 Places to Sell MS.* (Editor Co., Ridgewood, N. J.)

Sermons.—A sermon is not a lecture, although preachers sometimes forget the fact. The primary business of a sermon is to influence the human will in such a way as to bring the eternal into time; to make men feel that they may live the eternal life in the midst of time; and to make them attempt this divine task immediately. This definition may seem vague and abstract, but neither *eternal* nor *will* can be omitted from it. The teaching of morality without reference to spiritual motives is not preaching. The words *eternal* and *spiritual* are indeed difficult of definition, but the practical and progressive definition of these words is precisely the homiletic task.

So far as literary art is concerned, this end may be advanced by, say, three means: vitality of diction, vitality of organization, vitality of direct appeal.

Vitality of diction may best be studied in the sermons of the Christ. What strikes the literary student here is the variety, homeliness, beauty, and freshness of the language. The kingdom of heaven is not formally or scientifically defined. It is a kingdom of children, and of men reborn. It is a pearl, a net, a wedding-feast, a piece of silver, etc. This warm flood of fresh spiritual poetry was poured by the Great Preacher into the formal and frozen vocabulary of the Pharisees. No evangelist can be effective who does not learn this lesson. Preaching means relating the eternal to the ever-changing temporal, and the universally spiritual to the individually human.

Vitality of organization means that the whole sermon is easily grasped, that its main divisions are easily remembered, and that the point of the whole could be expressed in one paragraph or sentence.

Vitality of direct appeal means that the end is direct and forcible; that the peroration is not for display, but to accomplish a change of mental habits. Lyman Beecher drove one of his theological students back into the pulpit, and cried: "You have not cracked your whip; your whip has no lash." The figure was not wholly happy, for a preacher should leave his audience with a sense that he loves their souls more than he loves to lash them. But it emphasizes the indispensable appeal to the will.

Preaching from texts is primarily exegetical; but exegesis must not stop with formal explanation; it must run deep into life; here and now there are words and situations of common life which are essential to such exegesis as really comes home to men's business and bosoms. From the literary point of view there is one thing about texts, which the present writer does not remember to have seen mentioned. The Bible is full of superficially contradictory texts. This is because, of all books, it is truest to life. It does not blink the paradoxes of experience, but reconciles them by the *will*. A sermon on private prayer (Matt. 6: 6) should logically include or be followed by one on religious solidarity (Matt. 6: 10). It is characteristic of the Christ that he demands the coming of the whole kingdom as the first interest in the most private petition.

The *diction* of sermons should have a full Saxon element, and should be free from neologisms. The pulpit has done too much toward introducing such wretched words as *enthuse* and *mentality*. The pronunciation of the preacher should be correct, not eccentric; this is for no other reason than that false or eccentric pronunciation diverts the attention of the critical (and that means all the young) from his message.

Lecture means "reading," and most lectures are read—at least by the authors. They vary from the technical lectures of a university to the popular humorous lectures of a Bill Nye. Even in the case of popular lectures, no two styles or messages could differ more than Matthew Arnold's lecture on *Numbers* differs from Artemus Ward's on *The Mormons*. In the very same evening Wendell Phillips used occasionally to give his famous lecture on *The Lost Arts*, and follow it with an impassioned appeal to the same audience on the iniquity of slavery.

But in all popular lectures it is the primary purpose to please rather than to exhort. There must be fresh information, and there must be fresh humor. Scientific terms, if used at all, must be used sparingly, and must be explained. A wise lecturer will note the effect of his first delivery on the audience, and will remodel the lecture accordingly. Long descriptive passages will be shortened. Even in narratives of travel the human element must be present in every paragraph; for, as Stevenson said: "Nobody talks about mere scenery for more than two minutes at a time."

Business English. Social and Business Letters.—**Saxon and Latin Elements.**—Many of our most technical business words are of Latin origin; *e. g., advertise, auction, bill, bona fide, bonus, cancel, capital, cheat, clerk, collateral, competition, coöperation, corporation, currency, fiscal, fortune, gratis, grocer, guinea, interest, item, lien, mint, money, pecuniary, pound, premium, redeem, salary.*

A study of the history of these words, as found in any good unabridged dictionary, will throw a flood of light upon the movements which have produced modern business conditions. But, apart from these technical terms, it is inadvisable to load business English with Latin derivatives. Saxon terms still make the strongest appeal to the emotions and the will, and goods cannot be sold unless the will is touched. Plain, simple, strong words are the most effective. People's love of food, dress, the family—this must be reached; and it is best reached through words which were earliest associated in the buyer's mind with these deep interests.

Degree of Dignity.—But plain, simple words are not necessarily slang words. Business slang has so vast a vocabulary that it vitiates the usage of everybody. Business expressions are tending to displace social and literary expressions. Many Americans speak of "the balance" of the day instead of "the rest"; they speak of a man as "well posted," as if he were a ledger; and instead of asserting, declaring, maintaining, contending, they "claim" everything.

The young business man will not regret mastering certain more dignified phrases for many of the commoner vulgarisms of business parlance. If he is in the habit of saying *ain't*, he should master the following: *I'm not; you're not* or *you aren't; he's not* or *he isn't; we're not* or *we aren't; they're not* or *they aren't.*

Business English cannot always be as dignified as literary English, for business deals with all sorts and conditions of men. But a business man must command more than one vocabulary. Note the following

list of phrases, the second of which in each pair is the more dignified: *knock, complain; boost, praise; folks, family; cheap, inexpensive; back down, recede; anyway, at all events; a great success, very successful; mighty fine, extremely fine; right then, just then; quite a few, several; fired, dismissed; faked, falsified; hadn't ought, ought not; indorsed, approve; auto, car; without, unless.*

These are merely examples. Different situations and different customers require different vocabularies. But in general, business English should be plain and forcible without being vulgar. It is an error to think that educated customers wish to be addressed in magnificent words and swelling sentences. A truly educated man speaks simply. He goes to bed—not "retires"; has legs, not "lower limbs"; eats dinners, not "banquets"; builds a house, not a "residence"; calls a soup delicious, not "elegant"; has in his house a kitchen, not a "culinary department". If he receives a booklet advertising certain goods in highflown and bombastic language, he is as much offended by it as if it were full of such words as *fake, knock, boost, graft, boodle, swell, scads.*

Wordiness.—Time is money, and business English should cultivate brevity. A few words that catch the eye, hold the attention, present the arguments in a nutshell, are better than a wilderness of fine expressions. This principle applies to every form of business composition, from advertisements to report, from letters to booklets. Yet there is no merit in mere brevity. The few words must be the right ones. The short paragraphs must contain much meaning. Important facts must not be omitted. And if a good deal depends on one word, that word should appear often enough to be remembered.

This is particularly true in advertisements. A good advertiser keeps his keyword before the people. He varies the context to give freshness and attract attention, but he does not allow you to miss his precious word—his "Sapolio" or "Gold Dust Twins," or whatever it be. Into that word or phrase he packs as much of his story as possible.

Also the name and address of the maker are never absent from a good advertisement.

The headlines of an advertisement, like the headlines of a newspaper item, are extremely important. Their business is to catch the fleeting attention, for (as has been proved by the investigations of Professor W. D. Scott) people do not spend more than one-tenth the time on advertisements than they spend on the text of a paper or magazine, and many persons are unaware that they ever read advertisements—though we all do. A clear Saxon phrase, striking at once into some genuine human instinct or interest—this is the proper opening of an advertisement.

Not the price, but the quality—that is the important matter to name tellingly.

Business Letters.—We may distinguish three essentials of a good business letter—first, *courtesy*; second, *clearness*; third, *persuasiveness*. Brevity has been mentioned above.

Salutation and Closing.—Courtesy requires, first, that the salutation and the leave-taking should be free from brusqueness or indifference. Every man is entitled to the abbreviation *Mr.* before his name in the salutation and on the outside of the envelope. Physicians and other professional men are never offended if their correspondents take the trouble to give them their right professional title. Firms are entitled to be addresses as *Messrs.*, though incorporated companies—*e. g.*, The Macmillan Company—are not usually so addressed nowadays. *Dear Sir, Dear Sirs, Gentlemen, Dear Madam,* are proper business salutations. The last-given applies equally to girls and married women. The leave-taking may be *Yours truly, Yours very truly, Very truly yours*—the capital being used for the first word only. An unmarried woman should prefix *Miss* to her signature, or should place her full address to the left. A married woman should sign her legal name, and then place to the left the exact address which she wishes to see on the envelope of the reply, thus:

Yours truly,
Ellen Gates Adams.

Address!
Mrs. James Ward Adams,
1372 *Linden avenue,*
Chicago.

Care should be taken to avoid hackneyed, curt phrases, such as "Yours received and contents noted." The letter should have some ease, some individuality. It should impress the receiver as a piece of the courteous conversation of an educated and alert business man. Note how beginnings of replies may be varied: "We are glad to learn from your letter of March 12"; "The impression that we get from your favor of the third"; "We are glad to have your inquiry of the seventh concerning"; "You advised us on the fifth of last month that."

In cases where business relations are long established, the social form of salutation may be used; as, *My dear Mr. Jones.* This, however, should follow the full name and address of the person saluted, since business is business, and the letter is addressed to a particular Mr. Jones. Go out of your way to get his name right, and sign your own name uniformly every time; don't have John G. Jones doing business with F. H. Smith one day, and J. G. Jones with Frank H. Smith the next. Or, the name of the addressee may be put at the end of the letter, to the left of your signature.

Latterly it is the custom of many correspondents to begin sales-letters to strangers with the familiar *Dear Mr. Jones.* A good many people resent being so addressed by strangers. The form is not to be recommended, although it shows that the would-be seller is taking plains to be personal.

Circular or Form Letters are a necessity of modern business, and great things are claimed for them by houses that make a business of preparing and supplying them, together with specially inked ribbons which make it possible to match the salutation with the body. But no form-letter can wholly take the place of the individual letter. The personal touch at the end—"The last time I saw you"—cannot successfully be imitiated in any form-letter.

In all business letters it is both courteous and persuasive to say *we* as little as possible and *you* as much as possible, provided condescension and undue familiarity are avoided. The customer is not much interested in your affairs or your success; he is deeply interested in his own. You must learn to take his point of view.

Collecting Letters.—In answering letters of complaint or in sending collection letters, courtesy must be observed with especial care. The hotter your correspondent's tone, the cooler should be your own. Do not argue with an angry man. Take all the blame you honestly can, and then be generous, if you would keep your trade.

Clearness means that descriptions and terms should be beyond mistake. Descriptions of goods should be exact, but not tedious. The person addressed must receive a clear mental picture, and without undue effort. Try to hit the thing off in telling phrases, presenting the goods imaginatively—*i. e.*, in a way that satisfies the buyer's needs.

Sales Letters.—A good sales-letter begins by nailing attention; the start is half the battle. It proceeds to describe the goods. Then it gives reasons for buying them—for the particular man's buying them; but he should not be furnished with descriptions of competing goods, for that divides his attention, increases his responsibility, and often unintentionally suggests buying elsewhere. Then the letter closes with some inducement to act promptly. The imperative mood "Do it now" is well enough if reasons and inducements have actually been offered; otherwise it is an impertinence.

Too much care cannot be exercised in the selection of stationery, the type of engraving or printing, penmanship or typing, etc. The first impression of a letter is given not by its subject matter (ideas, phraseology), but by its general appearance. A letter represents to some degree its sender, and one should not forward a shabby or a gaudy missive; these characteristics do not inspire confidence.

Social Letters.—We distinguish (a) formal notes in the third person, (b) notes to a stranger, (c) notes to acquaintances, (b) intimate personal letters.

Formal notes should be in the third person throughout, except when engraving makes the words "your presence" necessary. Thus: *Mr. and Mrs. Charles Henry Webster requests the pleasure of Mr. and Mrs. James Henry Hammond's company at dinner, Monday, June the seventeenth, at seven o'clock.* Below, at the left, appears the street number of the sender, and the date, thus; 1274 *Washington avenue, June the third.* The acceptance reads: *Mr. and Mrs. James Henry Hammond accept with pleasure the kind invitation of Mr. and Mrs. Charles Henry Webster to dinner on Monday, June the seventeenth.* The sender's address appears below, at the left. Regrets read: *Mr. and Mrs. James Henry Hammond regret that a previous engagement prevents their acceptance of Mr. and Mrs. Charles Henry Webster's kind invitation to dinner on Monday, June the seventeenth.*

These forms are pretty definitely fixed, and do not admit of much alteration or addition. The full names are used; it is *at* dinner in the invitation, *to* dinner in the reply; it is *on Monday* in the invitation, and *on* or *for Monday* in the reply. It is *June third* or *June the third*, not *June* 3d; and the year is not give. Wedding invitations of course give the year, and etiquette varies slightly in other details from year to year, as any good stationer is able to indicate. *Previous engagement* covers all excuses in regrets. *Illness in the family, absence from the city*—these expressions may be used, but are not necessary; any other excuses are inserted at the risk of bungling the note. Notes to a stranger begin *My dear Sir*, or *My dear Madam*, and his or her name appears at the left at the end. *Yours sincerely, Yours very truly* are proper endings. *Yours respectfully* is no longer used by careful writers in any sort of letter. *Yours cordially* is impossible in a note to a

stranger, and is of doubtful taste except when used by women in social notes. Observe the use of capitals in *Sir* and *My*.

Notes to acquaintances begin with *My dear Mr. Jones, My dear Miss Jones, My dear Mrs. Jones*, and end *Yours sincerely, Yours very sincerely, Very sincerely yours*. The addressee's full name need appear nowhere save on the envelope. In no kind of note or letter should a clergyman be addressed to or referred to as *Rev. Jones*. The initials, or the name, or *Mr.*, or *Dr.* must appear after *Rev.* The best form is *The Rev. William Mead Jones, D. D.*

Notes and letters to friends and intimates are of every shade of familiarity. *My dear Mr. Jones, My dear Jones, My dear William Jones, My dear Billy Jones, My dear Billy, Billy*—all of them are good if used with tact. Signatures vary from *Yours sincerely* to *Yours ever* to *Yours*, and may respond still further to personal affection, whim, or humor. *Your friend* is very rarely used, but it comes well from older people who mean it. The tone of intimate letters should be individual, recalling the very voice and gesture of the writer. All pretense, all stiffness, all bookishness must be absent from a truly intimate letter. In their place there is room for all the personal charm that the writer can command.

Order for Goods.—

Menominee, Mich., Jan. 10, 1923.

Burke and James,
Chicago.
Gentlemen:

If you have in stock a camera of the following specifications, will you please ship it to me at once by express, C. O. D.?

V. P. size, for roll film 2¼ x 3¼.
Anastigmat lens, f 4.5.
Shutter to 1/300 sec. preferably an Ilex.

If I am correctly informed, there is nothing in the Eastman line which quite meets these requirements, so the camera may be an Ansco V. P. Speedex No. 3.

Truly,
John P. Jones

Dun.—

OFFICE OF BROWN & SMITH
GROCERIES AND MEATS

Aug. 20, 1922.

Mr. Robert Henry,
114 Eagle St.,
Chicago, Ill.
Dear Mr. Henry:

We find ourselves considerably embarrassed just now, owing to the fact that so many of our customers have gone away for the summer, leaving considerable balances unpaid, whereas the wholesalers allow us only ten days' time.

Under the circumstances, would you mind our suggesting a credit period of not more than thirty days for all our charge accounts, including yours?

Respectfully yours,
BROWN & SMITH

Philadelphia, Pa.,
November 9, 1924.

James Clark, Esq.,
Boyertown, Berks Co.,
Pennsylvania.
Dear Sir:

We have waited patiently to receive a settlement from you of our overdue account, $322.85, and have written you sundry urgent requests to that effect without response.

You are a business man and must be aware that an account in this shape is not satisfactory. We do not want to go to law in this matter, but if we must suffer loss would rather come to a prompt and friendly compromise with you. If you cannot pay us 100 cents on the dollar, can you pay 75?

We want the matter closed as soon as possible, and shall expect to hear from you without further delay.

Yours very truly,
Caldwell & Kane.

Claim.—

Chicago, Ill.,
February 6, 1925.

Henry Carson, Esq.,
Little Rock, Ark.
Dear Sir:

We learn that you have been appointed assignee of Rogers & Green, of your city. Our claim against this firm is $213.42, for which we hand you duplicate bills inclosed, and would thank you to inform us what is the prospect for an early settlement.

We feel friendly toward the suspended firm and would willingly join in any reasonable composition of their affairs, so as to give them a chance to retrieve their losses.

Awaiting your early reply advising us of the condition of affairs, we remain

Yours very truly,
L. M. Tyson & Co.

Application.—

29 Wildover St., Xenobia, Wis.,
Oct. 1, 1923.

J. P. Samson, Ph.D.,
Principal Xenobia Academy.
Dear Sir:

May I ask you to have my qualifications in mind when students apply to you for private instruction in French or English?

I am a graduate of the university of this state, and hold a master's degree from Vassar College, with major and minor subjects named above. I have taught French for the past three years in the high school at Singleton, N. J., and would have continued there this year, had my mother's ill health not required me to be at home.

Very truly,
Fannie Wilson

Formal Invitation.—

Mr. and Mrs. Charles Valentine request the company of Mr. William Abercrombie at their home, 76 Breadwine Avenue, for the evening of March 29, 1924, to meet Mr. Frederick Ames.

Dinner at 6:30. R.S.V.P.

Formal Regret.—

Mr. William Abercrombie regrets that, owing to a previous engagement, he will be unable to accept the kind invitation of Mr. and Mrs. Valentine to dinner, on March twenty-ninth, nineteen hundred twenty-four, to meet Mr. Frederick Ames.

Hotel McAlpin,
November 23rd, 1924.

Formal Acceptance.—

Mr. William Abercrombie accepts with pleasure the kind invitation of Mr. and Mrs. Charles Valentine to their home, March twenty-ninth, nineteen hundred twenty-four, to meet Mr. Frederick Ames.

Hotel McAlpin,
November 23rd, 1924.

Friendly Invitation.—

Dear Doc.:

You remember you promised to join me next year, for the kind of summer you and I like best? I have found the place. It's a small island off the coast of Maine, a place unspoiled by the rush of summer folks. Only eight or ten interesting native families and two or three camps of artists, the natives clustered in a hamlet near their harbor, and the camps tucked away in thickets of "cat-spruce" a mile from the village.

I know you will love it there. Those sailor-fishermen are a bit shy about accepting strangers,—perhaps that is what has kept the island from Bohemian intrusion,—but nobody can resist you, Doc. We stayed long enough this year to get some notion of what the place will be like. It's a little paradise, beautiful beyond anything else I know, and rare fun for a fisherman like you. It's too far north for blue fish, but cod are caught near there up to seventy-five pounds, haddock to twenty-five, gamy sea-pollock will rival big salmon for sport, and you are likely at any minute to hook a halibut for a battle unbeaten this side of California.

I've heard a lot about salt water fish not putting up a fight. Take it from me, Doc, that's all wrong. Small cod and hake do come up easily, but most of the fish you strike in this region I'm taking you to will empty your reel spool over and over if you let them have their way.

I claim your promise, Doc, on my double guarantee that you cannot be disappointed. Let me know when I can see you to talk it all over.

Jim.

Sept. 20, '24.

Congratulation.—

Dear A. N.:

It's a good many years since we heard from each other directly, but I learn in a roundabout way of your change of occupation for next year.

May I congratulate? You have outlasted by a good many years all the men we knew who were in the game when you and I began. You have come through the ordeal of managing a system that has doubled its difficulties every fifth year since you took hold. You have lived solidly up to your code, with a fair deal for every youngster and every teacher in your town. In an age of unreasoning quackery you have kept your head, favoring no half-baked schemes.

And while you have been a good school man, you have been so good a business man that you can step across now without a jolt from the second stage of life to the third—your own master, busy as you please, and no busier, at tasks of your own choosing, unharassed by the pressure of false standards.

You have had two parts of a fine life. I am sure the third will be best yet.

Your old friend,
Dick Henry.

Albany, N. Y.,
Sept. 20, 1923.

Condolence.—

365 Madison Ave.,
New York City, N.Y.,
December 6th, 1924.

My dear Marie:

The melancholy news of your sister's death has grieved me more than I can express, and I beg to tender you my heartfelt sympathy. Truly we live in a world where solemn shadows are continually falling upon our path—shadows that teach us the uncertainty of all temporal blessings and warn us that "here there is no abiding stay." We have, however, the blessed satisfaction of knowing that death cannot enter that sphere to which the departed are removed. Let hope and faith, my dear friend, mingle with your natural sorrow. Look to that future where the sundered ties of earth are reunited.

Affectionately yours,
Ada Jones.

NOTED AUTHORS

Answer to Condolence.—

613 Greene Street,
Pittsburgh, Pa.,
December 16th, 1924.

My dear Ada:

You can't imagine how much good your words of comfort did me. It is in our hour of trial that we appreciate the sympathy of our kind friends. It helps us to bear more patiently the burden which is sent us. I shall, indeed, try to live in the hope that time will ease the pain.

Assuring you of my deepest appreciation of your sympathy, I am

Gratefully yours,
Marie Smith.

Announcing Visit.—

Kalamazoo, Michigan,
December 16th, 1924.

Mrs. Thomas Wood,
735 Park Avenue,
New York, N. Y.
Dear Aunt Carolyn.

I am eagerly looking forward to spending the holidays with you, and am planning to leave just as soon as school is over. Have decided to come on the train arriving at Pennsylvania Station at three in the afternoon Christmas Eve.

Hoping to see you and uncle Tom at the station, I am

Your loving niece,
Jane.

FIGURES OF SPEECH.—For practical purposes the distinction sometimes made between figures of speech, figures of grammar, and figures of thought, may here be discarded. The essential principle, which the reader may apply for himself, holds the same in all.

Definition.—A figure of speech is a means of expressing or intensifying one idea in terms of another. This fusion of terms is the essential principle of figures of speech; it is called connotation. That is to say, in addition to what is *denoted* or literally meant, there is *connoted* something else which serves as a helping or carrying idea. This connoted idea may be a distinct thought in itself, in which case its value is mainly illustrative; or it may be merely felt in the manner of expression, in which case it has an emotional value of some kind. The two values may be proportioned or blended in many degrees; but in any case the principle of connotation is present; the reader is made to think or feel somehow in terms foreign to the literal idea.

Illustration.—This connotation of ideas may be seen in its simplest form in the following paragraph from Macaulay, in which he is explaining the difference between two kinds of historical composition, the descriptive and the philosophical: "Of the two kinds of composition into which history has been thus divided, the one may be compared to a map, the other to a painted landscape. The picture, though it places the country before us, does not enable us to ascertain with accuracy the dimensions, the distances, and the angles. The map is not a work of imitative art. It presents no scene to the imagination; but it gives us exact information as to the bearings of various points, and is a more useful companion to the traveler or the general than the painted landscape could be, though it were the grandest that ever Rosa peopled with outlaws, or the sweetest over which Claude ever poured the mellow effulgence of a setting sun." Here the terms applicable to a map and a painting respectively, used purely to illustrate, are of material aid in making clear a somewhat abstruse literal subject. On the other hand, we are aware of a heightened feeling when David, lamenting over Saul and Jonathan, says of them: "They were swifter than eagles, they were stronger than lions." Here his sense of their work is so keen that he greatly overstates the case, describing them in terms that belong only to another order of beings; this because his emotion has so borne him on.

The Good of Figurative Language.—It is a mistake to suppose that figures of speech are merely decorative and ornamental elements put on for display. Nor are they more natural to educated people and men of letters than to the common and unlearned. They are an even more primitive and spontaneous manner of expression than the literal; reflecting, as they do, the picturing play of imagination, more native to man than the logical powers. Figurative language has advantages over literal, both for reader and writer. For the reader it is of advantage because it gives him the benefit of an associated idea more concrete or more intense than the literal, thus calling forth his more vivid realization. For the writer it is of advantage because it enables him to express a hard or subtle idea not only more clearly but in much less space; it enables him also to imply his feeling about some matter without dictating what the reader's emotion shall be. It is a kind of literary shorthand, conveying twice as much thought in the same place, thus economizing attention; and a literary tonic, using as it does twice as vivid terms and forms.

Note.—It follows from this that figurative language is especially adapted to the more inward and abstract ideas, which need to be reduced from hard logical processes to the picturing terms of sense perception. Thus, when Tennyson wants to describe the subtle idea of the manifold meanings of poetry, he puts it: "Poetry is like shot-silk with many glancing colors. Each reader must find his own interpretation according to his ability, and according to his sympathy with the poet." Here the simile both shortens and vivifies the whole description.

The Most Commonly Used Figures.—It would serve no practical purpose to make a minute list or analysis of the various figures of speech. It will be better to classify the most commonly occurring ones, reduce them to principle as the connoting idea is related to the literal, and refer them in each class to certain salient types.

As intimated in the paragraph of "Definition" figures fall into the two leading classes of *illustrative* and *emotional*; and as several figures in each class may be mere variants of one essential principle, they are best grouped according to types.

Illustrative.—In this class, which comprises the forms most commonly recognized as figurative, the connoted idea is introduced mainly for its interpretative and clarifying value; that is, the literal idea is associated with something more concrete, or better known, or more directly present to the senses. Three types may be named.

Figures of the Similitude Type.—In this type of figures the writer's effort is most purely illustrative: he is concerned with showing how in some point the literal idea resembles something which in other respects is totally different. Note that it is the general difference of class between the literal and the connoted idea which makes the figure; comparison of things in the same class is not figurative at all, but literal.

Simile.—When the idea to be illustrated is relatively simple it is said or assumed to be like something else; the word simile being just the Latin adjective *similis*, *simile*, like. Generally the comparing term, *like, as, so, resembles*, is expressed, though this is not essential.

Examples.—The figures from Macaulay and Tennyson are similes; the way in which they apply the connoted idea to the literal explains itself. The following is a plain and telling simile from Abraham Lincoln: "Once let slavery get planted in a locality, by ever so weak or doubtful a title, and in ever so small numbers, and it is *like the Canada thistle or Bermuda grass*—you cannot root it out."

Analogy.—But the ideas that need figurative illustration are not always so simple; they involve complex relations and principles that need to be brought out into the open, where the whole can be seen. Hence the similitude needs to be enlarged and deepened; it becomes not so much a likeness of things as a likeness of relations; one thing is represented as working in its sphere as does some other thing in its sphere. This deepening of the likeness, less picturesque perhaps but more charged with thought, is called analogy.

Examples.—Abraham Lincoln's well-known illustration of the divided house is an analogy. Its point is not that the state is like a house, but that the state in a certain condition is like the house in an analogous condition. "A house divided against itself cannot stand. I believe this government cannot endure permanently half slave and half free. I do not expect the Union to be dissolved—I do not expect the house to fall—but I do expect it will cease to be divided." A very familiar analogy is that between an argument and a chain: as a chain is no stronger than its weakest link, so an argument is no stronger than its weakest premise. Analogy is probably the most widely useful of all the figures of the similitude type.

Parable.—In this figure the analogy is carried out in detail, in the form of a story or an extended description, so that not merely one but several elements of the connoted idea are made to convey a meaning and lesson. It is an analogy elaborated into a parallel case in which more familiar objects or events are displayed in like relations.

Examples.—The parables of the Bible, expecially in the teachings of Jesus, furnish the most perfect examples of this figure. A whole series of his parables, for instance, is devoted to explaining the real inwardness of the kingdom of heaven, in many aspects and relations. The following is one of his shortest parables: "The kingdom of heaven is like unto leaven, which a woman took, and hid in three measures of meal, till it was all leavened." In other parables he represented it as "like unto a grain of mustard seed"; as "like unto a man that is a merchant seeking goodly pearls"; as "like unto a treasure hidden in the field," etc. (*R. V.*); and by such parables he revolutionized men's ideas of what the kingdom of heaven essentially is.

Figures of the Identity Type.—This type comprises the figures wherein the similitude is not expressed, but implicit; that is, the connoted idea is not likened to the literal, but squarely identified with it. By this means vigor is gained, and the reader is put more directly in position to think the matter out for himself.

Metaphor.—In this figure the type is embodied most plainly, the other figures being in fact merely aspects or enlargements of this. Instead of saying one thing is like another, it says or assumes that one thing *is* the other. The word metaphor means a transfer; that is, of meanings.

Example.—In the following, from Chesterton, the literal idea conveyed is that men have many more ways of communicating ideas to each other than by words: "In the last resort all men talk by signs. To talk by statues is to talk by signs; to talk by cities is to talk by signs. Pillars, palaces, cathedrals, temples, pyramids, are *an enormous dumb alphabet; as if some giant held up his fingers of stone.*" Here, it will be noted, the figure is finished by a kind of simile (*as if*, etc.). Metaphor and simile, in fact, often interact with each other.

Trope.—This figure is merely metaphor in its most condensed and least obtrusive form.

The word, derived from a Greek word meaning *to turn*, denotes a word turned from its literal meaning to connote some figurative idea. *Trope* is by far the most frequent and spontaneous figure of all; all language, in fact, that has vigor and life in it will be found to derive its interest in large part from the words of metaphorical suggestiveness that it contains.

Examples.—Thus, to speak of a man's character as *warped*, or *twisted*, or *unbalanced*; of his disposition as *sunny* or *sour*; to speak of one as an *all-round* man, or as having intellectual *poise*, or as standing *four-square to all the winds that blow*, is to use the perfectly natural yet vigorous language of trope. Men are frequently using the vocabulary of their business or occupation in this accommodated sense; as when a person's sincerity of conduct is described as *straight goods*, or when a man who fulfills his promises is said to *deliver the goods*. A certain Cape Cod skipper once described an untrustworthy man's character by saying that "his center-board was crooked;" a farmer would perhaps have said that "you could not hitch to him." Stevenson describes the endeavors made by a certain community to dispossess a supposed haunted house of its infernal occupant: "Every kind of spiritual *disinfectant* was put in requisition." (*R. V.*,) When we speak of "improving the moral *tone*," we are employing the language of music for a more abstract idea.

Personification.—This is a form of metaphor in which the literal idea is conceived as a person, having something of the life and traits of personality; thus the idea is made to think and act is if alive. A very powerful figure, rightly used; its abuse consists in employing it idly or insincerely.

Examples.—Instead of enumerating the noble qualities with which a man was endowed by nature, Shakespeare puts the thought in far more vigorous form by making nature speak:

"His life was gentle; and the elements
So mix'd in him, that Nature *might stand up*
And say to all the world, This was a man!"

Personification is fully as effective in the form of personal touches, a kind of trope, as for instance: "Ideas have hands and feet, as Hegel said, and move the world," where the metaphorical attribution of personal members is sufficient to suggest the life that inheres in personality.

Allegory.—This figure expands and carries out the metaphor, much as parable expands the similitude; only, instead of blending the literal and connoted ideas, it gives merely the connoted idea, in the form of a narrative or description, and leaves the reader to make out the literal meaning for himself. It is much used as a vehicle for moral or spiritual truth.

Example.—It is a mistake to deem allegory an obsolete form, or to associate it only with its great literary exemplars like the *Pilgrim's Progress*, or Spenser's *Faërie Queene*. Its principle can be seen equally well in a shorter example, such as the following, from a German source: "A man had a plain strong-bow with which he could shoot far and true. He loved his bow so well that he would needs have it curiously carved by a cunning workman. It was done; and at the first trial the bow snapt." Here a story is told, and no claim is made for a second meaning of it; yet the reader cannot help getting a moral lesson from it. Another example employs the kindred figure called fable, in which animals are endowed with personality: "An old ruinous tower: which had harbored innumerable jackdaws, sparrows and bats, was at length repaired. When the masons left it, the jackdaws, sparrows, and bats came back in search of their old dwellings, but these were all filled up. 'Of what use now is this great building?' said they: 'come, let us forsake this useless stone-heap' " The figures allegory, fable, apologue, and parable are closely akin to each other, and frequently so run together that a minute distinction between them is unpractical.

Figures of the Selective Type.—In this type of figures the connoted idea, instead of being taken from some alien class of objects, is selected from the class to which the literal idea belongs; that is, the part or accompaniment which is immediately concerned in the action—the business part so to say—is used, and the rest is left out or taken for granted. Thus the reader's attention is concentrated and economized. Two figures, alike in principle, belong to this type.

Synecdoche.—This figure takes a part for the whole, or, less often the whole for a part, and makes it do the work of the whole idea. The figurative suggestion may be conveyed either by the noun or the verb, as best serves the writer's purpose.

Examples.—1. A part for the whole. This is very common in the language of business or labor: as when we say so many *hands* for work in the field; so many *spades* for digging; so many *spindles* in a factory; so many *rifles* in the army; so many *sail*, or *hulls*, in a fleet. "Every *eye* shall see him; with *fire* and *sword*:" "sounds as if some fair city were one *voice*," are synecdoches. 2. This is seen in the use of such a term as the *administration* for the persons in power. "That I may make thee an *astonishment*, and the *inhabitants* thereof a *hissing*," is a Scripture synecdoche, the effect or result, as a whole, put for the cause of it. 3. "Coleridge *sat on the brow* of Highgate hill in those days," is a synecdoche conveyed by the verb; it is Carlyle's way of saying that Coleridge resided in Highgate at a certain period of his life, which (also by synecdoche) he designates as "those days."

Metonymy.—In this figure not a part stands for the whole, but the aspect or accompaniment or result of the idea which has most direct significance for the thought conveyed is selected to do the work. The word metonymy means a transfer of terms.

Examples.—In "The bright *death* quivered at the victim's throat," Tennyson is speaking of a sacrificial knife. In "he had drunk up two thriving *businesses* like a bottle of sherry," Stevenson names the result of a life of dissipation. "The pen is mightier than the *sword*" uses the concrete instruments for what they produce: literature and war.

Emotional.—In this class of figures the connoted idea is not a definite image called up from a different class of objects, but rather a state of mind belonging to a different level of feeling: an emotion of wonder, or intense realization, or humor, or contempt, which draws the reader out of his ordinary placid mood to some degree of its own intensity. This emotional state is brought about not directly, but by assuming the manner of expression peculiar to such connoted mood and trusting to the reader's sympathy to share in it. Two types of this class of figures may be distinguished.

Figures of the Intensity Type.—In this type of figure the writer's feeling is heightened by his sense of the greatness or importance or deep meaning of his idea, and his manner of setting it forth corresponds. Of this type of emotional figures the most representative are:

Exclamation; which is simply an outburst of wonder or exultation, generally expressed by an elliptical form of the sentence, in which the thought is not formally stated by an indicative verb, but held up, as it were, for contemplation and wonder. In case where the thought is stated in full grammatical structure there is intensity enough in the context to support the emotion, which then is indicated merely by the mark of exclamation (!). The utterance of the emotion is often aided also by interjectional words.

Examples.—Hamlet's expression of wonder at the greatness of man is a very pure example of the figure: "What a piece of work is a man! how noble in reason; how infinite in faculty; in form and moving how express and admirable! in action how like an angel! in apprehension how like a god!"—Simple as the figure is, the right use of exclamation is a delicate mark of literary skill. Especially, if the writer marks his emotion merely by an exclamation point, he must judge accurately if the emotional value of his context warrants it; and, if he ventures on the support of interjections, he needs to guard against giving the impression of forcing the emotional note.

Interrogation.—A figure used principally in oratory and animated argument, is the asking of a question, not in order to elicit an answer, but to imply strongly the opposite of what is asked. It connotes a conviction so strong that the truth of it cannot be gainsaid; it is thus a kind of challenge.

Examples.—In the following, from one of Burke's speeches, it can be felt how he is asking questions not to get an answer, as if it were something to be investigated, but as indignantly challenging hi: hearers to make any other answer than is implied- "What! Gentlemen, was I not to foresee? or, foresee: ing was I not to endeavor to save you from all these multiplied mischiefs and disgraces? * * * Was I an Irishman on that day that I boldly withstood our pride? or on that day that I hung down my head, and wept in shame and silence over the humiliation of Great Britain? I became unpopular in England for the one, and in Ireland for the other. What then? What obligation lay on me to be popular?"

Apostrophe.—This figure is an address to some absent or distant object as if it were present and could hear and respond; it connotes the fervor of intense realization. Thus, with the connoted idea, is conveyed emotionally the beauty or pathos of the thought.

Examples.—In the following, Stevenson, filled with the vivid realization of the truth that men follow ceaselessly after vague ideals, and never attain them, breaks forth into this fervid address to them: "O toiling hands of mortals! O unwearied feet, travelling ye know not whither! Soon, soon, it seems to you, you must come forth on some conspicuous hilltop, and but a little way further, against the setting sun, descry the spires of El Dorado." The intensity of the apostrophe, it will be noted, is supported by exclamation. Note also the synecdoche, "toiling hands," "unwearied feet."

Figures of the Animus Type.—In this type, as in the previous, there is a degree of intensity in the emotion; but the controlling element is the *kind* or direction of the emotion: it reveals how the writer would have his reader feel, in a sense of sublimity or of humor or of the absurd, toward the idea thus set forth—in other words, a certain animus toward it.

Hyperbole.—This is simply overstatement: describing a thing in terms so beyond all reasonable or possible bounds that the reader cannot be misled into understanding it literally; he adjusts the statement to fact, rather, in the spirit of it.

Examples.—The figure hyperbole, which is essentially a descriptive figure, seems to have had an interesting history. In the old times men used hyperbole because they could not set bounds to their own imagination; as when the Hebrew spies, sent out to explore Canaan, reported that the cities of that land were "fortified up to heaven," and of the inhabitants: "we were in our own sight as grasshoppers, and so we were in their sight." Of a hostile army also it is said: "The children of the east lay along the valley like locusts for multitudes: and their camels were without number, and as the sand which is upon the sea-shore for multitude." (*R. V.*) In modern times, however, it is used rather to induce in the reader an unbounded imagination, describing in exaggerated terms so that he will not try to measure or to number, but

simply surrender himself to an impression; as when an old-fashioned table is described in Hawthorne as "exhibiting as many feet as a centipede," or as when, describing an astonishing run in a violin passage, a non-musical man averred that the performer played "more than a million notes."

One can produce much the same effect as in hyperbole by a studied *understatement*, an exaggeration in reverse; and this may be regarded as a kind of transition to the next figure.

ony.—In this figure the writer's animus is so strong, and the real state of the case so obvious, that he says or assumes the exact opposite, in the certitude that his meaning will be taken as it is. It connotes various degrees of contempt, or resentment, or indignation, or ridicule. Being mainly a vituperative figure, it is best employed in a tone of playfulness and lightness, else the writer may injure his case by seeming morose and cynical.

xamples—When Job says to his friends, in whose arguments he had discovered a fallacy, "No doubt but ye are the people, and wisdom shall die with you," we can feel the contempt with which he estimates their mental powers and conclusions. When Macauley, describing a man whose character he detests, begins, "It may well be conceived that, at such a time, such a nature as that of Marlborough would riot in the very luxury of baseness," the word *luxury* apprises us that he is putting his conduct in ironical terms; and he goes on to say, "Lest his admirers should be able to say at the time of the Revolution he had betrayed his King from any other than selfish motives, he proceeded to betray his country." Here the animus is unrelieved by any lightness of touch; it is pure vituperation. Such handling of one's aversions does not make friends.

The figure *Irony* has many forms and degrees of intensity; giving rise to a whole class of kindred figures: from *Innuendo*, which conveys the ironical suggestion by light hints and touches; through *Satire*, which makes its way by the general ironical or disparaging tone of the writing, to *Sarcasm*, which lets loose its indignant animus in undisguised and scathing terms. On the whole, irony is a rather dangerous figure; if much employed, it is apt to react on the writer's own disposition, or at best to misrepresent his character, especially to unsubtle readers.

Examples of Mixture Good and Bad.—1. When Stevenson, speaking of certain suburban resorts in the vicinity of Edinburgh, says, "There are places that still smell of the plough in memory's nostrils," he is mixing three figures together: trope or metaphor (*smell*), metonymy (*plough*, for farm usages), and personification (*memory's nostrils*, as if memory were a person;) and all the figures are alive. 2. When, however, a rustic preacher says "the Gospel ship is sailing on, full-laden and well-rigged, and will continue to sail and prosper, because it is founded on a rock," he is using two figures that have had their day, and were both true; but the mixture of them makes an incongruous idea, the two members annulling each other.

DICTIONARY OF WORDS FREQUENTLY MISUSED

Americans are said to speak their own language with less correctness than do any other intelligent people in the world. Perhaps the reason is that we do things too rapidly to do them well; we are careless of our speech as we are careless of many things we do; we perhaps consider correct speech a trifle, being quite satisfied in our communications of thought with a crude approximation of our real meaning.

The general classes of errors made by people of ordinary intelligence are few, and if one cares, these may be readily corrected. If one wishes to use words correctly he must give attention to what he reads; he must read good things, and he must study the words as well as the thought. If one wishes to speak correctly he must give conscious daily attention to his own speech, and to the speech of others. A man's speech is judged by the worst he does—not by the best—so that one who realizes that his use of words is faulty will be saved from his errors only by constant attention to his regular and daily use of words, either in speech or writing. It is not a case of using words with correctness and effectiveness on occasion, but if one is to be prepared for the occasion, he must learn never to lapse into slovenliness. Any man who values correct speech, and is willing to pay the price of constant attention to his own speech, will soon make few errors.

Abbreviations.—Such abbreviations as *e'er*, *ne'er*, *o'er*, *e'en*, *'tis*, *'mid*, and *'neath*, are legitimate in verse, but should not be used in prose.

Ability, Capacity.—*Ability* is the power of doing; *capacity* the faculty of receiving. "The *ability* is in me to do him good." "Man's *capacities* have never been measured."

Abortive.—That is *abortive* which is premature, not brought to completion. A plan may be *abortive* but not an act. We may speak of an *abortive* effort.

About.—Not to be used as *almost*. "The day is *almost* gone," not "The day is *about* gone."

Above.—This word should not be used as an adjective; as, "The *above* statement." Say "The *foregoing* statement."

Accept, Except.—*Accept* means to take; *except* means to exclude "I *accept* your terms." "A few were *excepted* from condemnation."

Administer.—Not to be used in the sense of *deal*. We *deal* blows; we *administer* medicine, oaths of office, and affairs of state.

Affect, Effect.—To *affect* means to influence or to pretend. To *effect* means to bring about. "He *affected* intoxication." "He *affected* the audience strongly." "I shall *effect* a reform."

Aggravate.—This word means to make worse or to increase in intensity. Do not say, "His conduct *aggravates* (annoys) me," but "The climate *aggravates* the disease."

Ain't.—This is illiterately employed as a contraction for *are not, am not, is not*. It should not be used.

Allow.—This word is frequently misused for *think*, as "I *allow* that I shall go to town." Say, "I *think* that.' etc.

Alone, Only.—That is *alone* which is unaccompanied; that is *only* of which there is no other. "He suffered *alone*" means that no one was with him. "*Only* he *suffered*" means that no other person did.

Alternative.—This word should not be used when more than two things are referred to. Not to be used for *course*. "He had this *alternative* left him"—a choice between two.

Amateur.—Do not use the word to mean one new, or unskilled, at a business, a novice. An *amateur* is skilled in something he likes but does not pursue as a business, as "An *amateur* photographer."

Anxious.—The word does not mean desirous but concerned or worried. "I am not *anxious* to live in the country" should be "I am not *desirous*." We may say, "I am *anxious* concerning your safety."

Anybody, Any one, Anything.—These words are singular and should always be referred to by singular pronouns. "*Anybody* can do as *he* pleases." "*Any one* is at *his* best here."

Anybody else's, Anybody's else.—The predominance of usage seems to be in favor of the first form, which is correct according to analogy of similar cases, which "throw" the apostrophe and s to the last word of the unified expression, generally nouns in apposition.

Appreciate.—The word does not mean *prize* or *value* but *to rate at its true value*. In such expressions as "I *appreciate* your services *highly*," the adverb is superfluous.

Apt, Likely, Liable.—*Apt* means fit; *likely* means probable; *liable*, unpleasant probability. "Such *apt* and gracious words." "We are all *likely* to make mistakes." "If he exposes himself to the weather, he is *liable* to contract a cold."

As—As, So—As.—Use the former in affirmative and the latter in negative propositions. "We are *as* wise *as* our teachers." "I am not *so* young *as* I used to be."

As I take it.—Better say "As I understand," or "As it seems to me."

As though is often used for *as if*. In the sentence "He walked *as though* he were lame," if the ellipsis is supplied the error will be evident. "He walked *as* (he would walk) *though* he were lame." *As though* is seldom correct.

At.—"Where are you *at*?" A common error, in which *at* is superfluous. Say "Where are you?"

Audience.—Do not use when you mean *spectators*. An *audience* listens; *spectators* see what occurs. The preacher had a good *audience*. There were many *spectators* at the ball game.

Avoid is often used for prevent "He shall receive no pay if I can *uvoid* it." Say, rather, "If I can *prevent* it."

Awful, Awfully.—Do not use these words as intensives or for supposed force. *Awful* should mean that which inspires awe. "The *awful* mysteries of the world unseen."

Bad, Badly.—*Bad* is not to be used for severe, as "I have a *bad* headache." *Badly* is also inelegantly used for very much, as "I need money *badly*."

Balance.—The word means the *excess of one thing over another*, and should not be used for *remainder* or *what is left*. We may say, "He has a large *balance* in the bank."

Been to.—Do not say "I have *been to* New York," for "I have *been in* (or *at*) New York." You can not *be to* a place.

Beside, Besides.—*Beside* is a preposition; *besides* is an adverb. "The tree stands *beside* the house." "I have more *besides* this."

Between.—Should be used with reference to two things only. Not "*Between* us three," but "*Between* you and me."

Blame it on.—A vulgarism used to mean *accuse* or *suspect*. "He *blames it on me*," should be "He *accuses* (or *suspects*) me."

Both alike.—In such expressions as "They are *both alike*," "The two boys *both* have blue eyes," *both* should be omitted.

Bran new.—The correct form is *brand new*.

Bring, Fetch.—*Bring* means to convey to this point; *fetch* means to go and bring. "*Bring* me your books." "*Fetch* the racquets from the house."

Burgle.—The word is an entirely unauthorized form.

But what.—Do not use when you mean *but that*. "I know nothing *but what* you told me." is correct. "I do not doubt *but what* he will succeed," should be, "I do not doubt *but that*." etc.

Calculate.—Often vulgarly used for *think* or *suppose*. To *calculate* means to arrive at by a mathematical process. We *calculate* a result. We do not *calculate* that it will rain.

Caliber.—The word means the diameter of a body, especially of the hollow inside of a cylinder. Figuratively it means *capacity of mind*. "His work is of high *caliber*" should be "His work is of high *order*. "He has a mind of great *caliber*" is correct.

Can, May.—These two forms are often misused. *Can* suggests power or ability; *may*, permission. "*Can* I take your place?" means "Am *I able* to do it." "*May* I go with you?" requests *permission*.

Character, Reputation.—One's *character* is what one really is; one's *reputation* is what people think of one. We may have a good *character* and a poor *reputation*. and *vice versa*.

Claim.—Not to be used in the sense of *assert* or *affirm*. *Claim* means properly to demand as due. It is incorrect to say "He *claims* that he is your brother." We may correctly say "I *claim* my right."

Clerk.—Not a verb Do not say "John *clerks* for Smith & Co.," but "He is a *clerk*," etc.

Co-ed.—An unauthorized expression used to mean a young woman in a coeducational institution.

Complected.—This word is generally misused for *complexioned*.

Condign.—Often used to mean *severe*, but properly means *worthy* or *deserved*, as "The criminal suffered *condign* (that is *deserved*) punishment.

Congregate together.—In such expressions as "A large crowd *congregated together*" the word *together* should be omitted. *Congregate* means *gather together*.

Continual, Continuous.—The former often means *frequently repeated*; the latter means *uninterrupted, without break*, and is the stronger word. Thus we may say that the flow of a stream is *continuous;* that the clanging of a bell is *continual;* that *continual* showers drenched the ground.

Convict, Convince.—*Convict* is always used of something wrong, and refers to one's outer condition; "The man was *convicted* of the crime." *Convince* refers to the inner judgment, and may be used of either right or wrong; as, "I am *convinced* that you are right."

Couple.—This word does not mean *two* merely, but *two things paired* together; as, "The young *couple* is living on the hill."

Credible, Creditable.—*Credible* means worthy of belief, as, "Dr. Cook's story is not *credible*." *Creditable* means *worthy*, as, "He made a *creditable* address."

Dandy.—As an adjective the word is overworked slang, and should be avoided.

Definite, Definitive.—*Definite* means *specific*; *definitive*, final. "A *definite* (that is, *specific*) answer was given, but it was not *definitive* (*final*)."

Demean.—This word is often incorrectly used for *demean* (that is, *lower*), as "He *demeaned* himself by his careless actions." It properly means to *behave one's self*, as "He *demeaned* himself properly."

Depot, Station.—A *depot* is properly a place where goods or stores are kept. The place where a railway train stops for passengers may better be called a *station*.

Die with, from.—Invalids do not die *with*, nor *from* but *of*, a disease.

Differ from, with.—One thing differs *from* another in appearance; one person differs *with* another in opinion.

Directly.—Not to be used in the sense of *as soon as*. Do not say "*Directly* they came we left," but "We left *directly*" is correct.

Disremember.—Provincial for *forget*, and should not be used.

Donate.—An unauthorized formation from *donation*. Better say "Make a *donation*."

Don't for doesn't.—Don't is the plural contraction of *do not*, therefore such common expressions as "He *don't* live here," "She *don't* like to sing," etc., are ungrammatical.

Don't think.—Instead of saying "I *don't think* it will rain," it is better to say "I *think* it will *not* rain."

Double negative.—Double negatives in English are universally common but incorrect. Avoid such expressions as "I *didn't* know *nothing* about it;" "I *haven't never* been there," "I *haven't* had *but* one vacation in ten years."

Due, Owing.—That is *due* which ought to be paid; as, "The note is *due* next month." *Owing* is used in the sense of *on account of*; as, "It was *owing* to his daring that the insurrection was checked."

Dutch for German.—Do not say *Dutch* when you refer to *German*. *Dutch* refers to *Holland*.

Each.—*Each* is singular in number, and should be used with a singular noun and verb. Do not say "*Each* comes in *their* turn," but "*Each* comes in *his* turn;" not "*Each* man were singled out," but "*Each* man *was*," etc.

Elegant.—*Elegant* means *refined*, in *good taste*. A much misused and much overused word.

Elocute.—This form is not justified by god usage.

Else.—By preponderance of custom, when *else*, joined to *anybody*, *somebody*, *any one*, or *some one*, forms a possessive, the 's is added to *else*, as *somebody else's*. Many, however, prefer to write the form *somebody's else*.

Emigrant, Immigrant.—These two words are often confused. *Emigrants* are people going out of a country; *immigrants* are people coming into a country.

Endorse or **Indorse.**—Do not say "*Endorse* (or *indorse*) on the back of," for these words mean *to write upon the back of*. *Indorse* is the spelling now generally preferred.

Enjoy poor health.—This expression should be avoided; no one really enjoys poor health.

Enthuse.—A verbal form not authorized by good usage. Better say "*Arouse enthusiasm*."

Equally as well.—The *as* is not necessary; say "*Equally well*."

Every.—Be careful to see that a verb in the singular number follows. "*Every* man *was* at his post."

Every one, Everybody, Everything.—These words, being singular, should always be referred to by singular pronouns. "*Every one* should mind *his* own business." "*Everybody* has *his* troubles." "*Everything is* in *its* place."

Evidence, Testimony, Proof.—*Evidence* is anything that tends to convince; *testimony* is evidence given by witnesses; *proof* is whatever establishes the truth of a proposition.

Except, Unless.—*Except* is not to be used for *unless*. Do not say "*Except* I am delayed, I shall arrive at three," but "*Unless* I am delayed," etc.

Existing truths.—*Existing truths* should always be expressed in the present tense. Do not say "Galileo taught that the world *was* round," but "*is* round."

Expect.—*Expect* refers only to the future, and is not to be used for *think* or *suppose*. Do not say "I *expect* I was there;" "I *expect* you had a pleasant time yesterday."

Farther, Further.—*Farther* refers to *linear distance*. "We had gone *farther* than I supposed." *Further* measures quantity or degree as, "I shall speak *further* on the question."

Female.—Not correctly used for *woman*.

Few and a few.—These words are different in meaning. "*Few* persons like Mr. Jones" means that he is generally disliked. "*A few* persons like him" means some, and perhaps all who know him.

Firstly.—Not an approved form. *First* is both an adjective and an adverb.

First-rate.—Correctly used as an adjective. "He has a *first-rate* place." but not "He did *first-rate*."

Fix.—Be sure that you intend to convey the idea of fastening firmly when you use *fix*. It should not be used to mean *repair*, *arrange*, or *set up*. "He stopped to *fix* the machine" is an error.

Former, Latter.—The less a writer uses these words the better, unless they are followed by a noun, as "the *former* rule" or "the *latter* member."

For to.—Do not say "I went *for to* see the show." *For* is superfluous.

Funny.—The word should not be used to mean *strange* or *curious*.

Gent.—This word should never be used.

Gesture.—Not to be used as a verb. Do not say "The speaker *gestured* frequently." Say, rather, "*gesticulated*."

Get.—Strictly, *get* means to obtain by voluntary effort. It does not signify mere possession. Do not say "I haven't *got* a cent," but "I haven't a cent." *Got* is also preferred by good writers to *gotten* in such expressions as "When he had *gotten* over his illness."

Get over.—Often incorrectly used for *survive* or to *recover*, as "He *got over* the disease," or "*to get over* a fact," meaning to *refute* it.

Get to go.—This expression is common in some parts of the country but should be avoided. Say "I was unable to go," or "I was prevented from going" rather than "I didn't *get to go*."

Good deal, great deal.—Perfectly correct expressions. "I have walked a *great deal*." "The boy liked school a *good deal* better than play."

Good, Well.—*Good* should not be used as an adverb. Do not say "You sang *good*," "Did you sleep *good* last night?" In these cases *well* should be used.

Guess.—*Guess* is commonly used in the United States to mean *think*, as in "I *guess* you are right" for "I *think*," etc.

Had ought.—Provincial and incorrect. *Had* or any form of the verb *to have* cannot correctly be used as an auxiliary with *ought*. Use *should* or *ought not*. Not "He *hadn't ought* to have gone," but "He *should not* have gone."

Hain't.—A vulgarism. There is no such contraction for *have not* or *has not*.

Hang, Hanged.—The verb *hang* has two forms for the past participle, *hanged* and *hung*. *Hanged* is used for persons; *hung* for other objects. "The man was *hanged*." "The coat was *hung* on the rack."

Have got.—See *get*.

Healthy, Healthful.—That is *healthy* which is in good health; that is *healthful* which promotes health. "The family was in a *healthy* condition, because they had been living on *healthful* food."

How.—*How* is not to be used for *what* nor for "*What did you say?*"

Human.—Not to be used as a noun. Do not say "The house was not fit for *humans* to live in," but "The house was not fit for *human beings* to live in.

Ideal.—Not to be used in the sense of *perfect* or *beautiful*; it properly means *that which exists in idea only*. "His *ideals* are high."

If I was.—Use the subjunctive in all cases where the conditions are contrary to fact. "If I *were* you, I should go." "If I *were* a man, I should practice law." I am not you, and I am not a man. Use the indicative in cases of uncertainty. "If I *was* in town that day, I did not see you." I am uncertain as to whether I was or not.

Illy.—Should be avoided; *ill* is the proper word, both as adjective and adverb. "He did the work very *ill*."

In, Into.—Use *in* to signify rest in a place; use *into* to signify motion toward a place. "He was standing with his hands *in* his pockets." "I put my hands *into* my pockets." "I came *in* an automobile." "The stranger walked *into* the room."

Inaugurate.—The word means to *induct into office* or to make a *ceremonious beginning*. It is not to be used for the simple things of life.

Individual.—The word should not be used in the mere sense of *person*. The word is correctly used in "Changes both in *individuals* and in communities."

Infinitive, cleft.—The *cleft* or *split infinitive* (that is, the *infinitive* with an adverb between the two parts) is avoided by careful writers. Do not say "He was in a position *to accurately observe* the proceedings," but "*accurately to observe*," or "*to observe* the proceedings *accurately*."

Initiate.—The word ought not to be used simply for begin. The word suggests ceremonious form; as, "The candidates were *initiated* into the lodge."

In our midst.—The possessive case is not to be used, but rather a construction with of; as, "*in the midst of us*."

Invite.—Not to be used as a noun. Do not say "I received an *invite*," but "I received an *invitation*."

Kind of a.—The "*a*" is superfluous.

Lady.—This word is not to be used for *wife*, or to mean simply *woman*.

Learn, Teach.—These words are often vulgarly misused. *To learn* is to receive instruction; *to teach* is to give instruction. "I can *learn* if you will *teach* me," is correct.

Lend.—*Lend* is a verb; *loan* a noun. I *lend* a man a dollar, and he receives the *loan*.

Less, Fewer.—*Less* has to do with *amount* or *quantity*, and *fewer* with numbers. "He had *less* money and *fewer* clothes than he needed."

Let requires the objective case. "*Let him* and *me* go," not "Let *he* and *I*."

Liable.—See *Apt*.

Lie, Lay.—By a vulgar error these verbs have been so confounded as to deserve some notice. *To lie* is neuter, and designates a state: *to lay* is active, and denotes an action on an object; it is properly to cause *to lie*. "A thing *lies* on the table;" "Some one *lays* it on the table." "He *lies* with his fathers;" "They *laid* him with his fathers." In the same manner, when used idiomatically, we say, "A thing *lies* by us until we bring it into use;" "We *lay* it by for some future purpose."

The confusion arises probably from the fact that *lay* appears in both verbs. The words are correctly used in the following sentences:

I *lay* myself upon the bed (action). I *lie* upon the bed (rest).

I *laid* myself upon the bed (action). I *lay* upon the bed (rest).

I *have laid* myself upon the bed (action). I *have lain* upon the bed (rest).

A hen *lays* an egg (action). A ship *lies* at the wharf (rest).

The murdered Lincoln *lay* in state (rest); The people *laid* the crime upon the rebels (action).

Like. As.—*Like* has a propositional use, but *as* is a conjunction. Do not say "It looks *like* it was caused by fire," but "It looks *as if*," etc. The following are correct: "My brother looks *like* me." "He acted *as if* he were insane." "Do it *as* I do."

Likely.—See *Apt*.

Limb.—Do not use *limb* when you mean *leg*. *Limb* may be applied to any member, and it is not more modest than *leg*. "The woman had her *leg* broken."

Lit.—Not to be used for *lighted*. Instead of saying "He *lit* the gas," say "He *lighted* the gas." Do not say "He *lit* on his feet," but he *lighted* on his feet."

Locate.—This word should not be used in the sense of *settle*. It is used transitively to mean to *fix* or *place in a position*; as, "He *located* a claim."

Lot, Lots.—Very inelegantly used for *a great many*, *a great deal*; as, "He had a *lot* of money left him;" "She looks a *lot* like her brother." The word means *a distinct part or portion*. "He divided his goods into *lots*."

Lunch.—An authorized form both as noun and verb, but not considered so elegant as a noun as *luncheon*.

Mad.—Should not be used for *angry*.

Mail man.—An inelegant form for *postman*.

Me being.—Do not say, "He did not know of *me being* there." The possessive case is required. "He did not know of *my being* there." "There is little chance of *his winning* the game."

Monstrous.—*Monstrous* means *abnormal* or *deformed*. Not to be used for *large* or *immense*; as, "It was a *monstrous* gathering."

Most.—Not to be used for *almost*; as "He is here *most* every day."

Mutual.—Does not mean *common*, but *reciprocal*. "We may have a *common* friend, but a *mutual* dislike;" that is, a dislike for each other.

Myself.—Not to be used for *I*. Do not say "John and *myself* are friends;" but "John and *I*," etc.

Near.—Not to be used for *nearly*. Say "He was not *nearly* so unselfish as his brother," instead of "not *near* so unselfish," etc.

Nearby.—Should not be used as an adjective. We may say "The house is *nearby*," but not "A *nearby* house."

New beginner.—Omit the *new*; all beginners are *new*.

Nice.—A very generally misused word. Properly *nice* means *delicate*, *discriminating*, *fastidious*. The works of a watch show *nice* construction; a man may be *nice* in his manners. The word should not be used to mean *agreeable* or *charming*, as "I had a *nice* time."

Nicely.—Do not use *nicely* for *well*, as "The sick man is doing *nicely*."

Not as I know of.—Incorrectly used for *not that I know of*.

Notorious.—Implies some *bad* or *doubtful quality*; as, "He has a *notorious* reputation." Here his reputation is *not good*.

Noways.—Incorrectly used for *nowise*. Say "He was *nowise* to blame."

Of all others.—Do not say "He is the last one *of all others* you would expect it of." He could not be one of the *others*.

Off of.—Ordinarily *of* is superfluous. Say "The man fell *off* the roof," not "*off of*."

Only.—This word is often misplaced. Properly it should immediately precede the word or expression which it limits. Say "I have *only* three dollars;" "She sang *only* for us;" not "I *only* have" and "She *only* sang." "She *only* sang" would mean she did nothing else but sing.

Onto.—We get *on* a horse and *on* a chair, not *onto*.

Orate.—An unauthorized form commonly used to mean *to give an oration*.

Over.—Do not use *over* in the sense of *more than*; as, "I have *over* a hundred dollars;" "The stick is *over* a yard long."

Pants.—The word is a vulgar abbreviation for *pantaloons*, and should not be used.

Pardner.—Often incorrectly used for *partner*.

Partake.—One cannot *partake* of a meal alone. *Partake* means to *take* or *share* with another.

Partially.—The word is sometimes used in the sense of *partly*; as, "I have only *partially* examined it." It also means *with partiality*.

Party.—*Party* means a *group of people*, not a *single person*. Do not say "The *party* you sent to me," when you mean the *person*.

Patron.—A *patron* is one who shows *consideration* or *favor*. A charity ball may have *patrons*. Not to be used for *customer*.

Pellmell.—*Pellmell* means *mixed* or *mingled together*. The term cannot properly be applied to an individual. "He rushed *pellmell* out of the house" is obviously impossible.

Per.—*Per* day, *per* man, *per* pound, are better expressed by the plain English *a* day, *a* man, *a* pound. The word should be used only with Latin nouns, as *per diem*, *per annum*.

Photo.—Not to be used as an abbreviation for *photograph*.

Pled.—Not to be used for *pleaded*. Say "He *pleaded* for a pardon," "He *pleaded* for his friend."

Posted.—Not to be used in the sense of *informed*, as "He is a well *posted* man," "If I had been better *posted*."

Prejudiced.—*Prejudice* is an *unfavorable bias*; we cannot, therefore, be *prejudiced in favor* of anything. In such a case we should use *prepossessed*.

Presume.—Not to be used for *think* or *believe*. Do not say "I *presume* he is right," but "I *think* or *believe*."
Preventative.—Wrongly used for *preventive*.
Privilege, Right.—A *privilege* is a special advantage granted for conceded; a *right* is one's due. We grant *privileges*, but we claim *rights*.
Propose, Purpose.—*Propose* means to put forward for discussion or consideration; *purpose* means to intend. "I *purpose* going to town to *propose* a plan to my business partner."
Purchase.—Sometimes used pretentiously when *buy* would be better.
Quite.—To be used in the sense of *fully, completely*, as, "I am *quite* satisfied." Do not say, "There was *quite* a crowd," "I have *quite* a few friends."
Raise.—Often misused for *rear* or *bring up*. We *raise* chickens, but we *rear* children.
Real.—Not to be used adverbially in the sense of *very*, as "I am *real* tired. Say "I am *really* tired," or "*very* tired."
Reckon.—Provincial for *think*. "I *reckon* he will come soon." Say "I *think*" or "I *believe*."
Recommend.—Not to be used as a noun; as, "The teacher gave him a good *recommend*." *Recommendation* is the proper word.
Referee.—Not to be used as a verb. "The man acted as *referee*" is correct, but not "He *refereed* the game."
Replace.—To replace an object is *to restore it to its place*. Not used in the sense of *take the place of*.
Resurrect.—A colloquial word not to be used in writing.
Retire.—It is better to avoid the use of *retire* in the sense of *go to bed*.
Reverend.—As a title not to be used without *the*. "*The Reverend* Mr. Brown," not "*Reverend Brown*."
Set, Sit.—These verbs, like *lie* and *lay*, are often confounded in their use. *To set* is both transitive and intransitive; *to sit* is intransitive. "I *set* the hen, but she *sits* on her eggs." Incorrectly we speak of a *setting* hen instead of a *sitting* hen.

Christ came "*sitting* upon an ass," and, therefore, his disciples took a colt and "they *set* him thereon." The verb is correctly used in these sentences: "My dress *sits* well;" "We will *sit* up," that is, will not go to bed; "Congress *sits*." "We *set down* figures," but "We *sit down* on the ground."

We *set* a post, *set* glass, *set* milk, *set* the sails, *set* a bone, *set* a clock, *set* a price, *set* jewels, *set* an example.

The sun *sets*, one *sets* out, the current *sets* to the north; one *sets* forward, *sets* forth, *sets* off; Winter *sets* in.
Shall and Will.—These two forms are perhaps more commonly misused than are any other words in English. The rules with regard to the use of these words are as follows:

In declarative sentences, *shall* is used in the first person and *will* in the second and third persons to express simple futurity, as "I *shall* come"; "You *will* come"; "He *will* come."

In questions, however, *shall* is used rather than *will* in the second person to indicate simple futurity, as, "*Shall* you come?" In the first and third person, *will* is the proper word; as, "*Will* I come?" "*Will* he come?" To say "*Shall* I come?" would be to ask permission to come. "Shall he come?" would be a request that he be allowed to come.

In other cases *shall* and *will* express purpose or determination on the part of the speaker—*will* in the first person, and *shall* in the second and third.
Should and Would in general follow the same laws as *shall* and *will*.

In clauses expressing a condition, *should* is used in all three persons. "If I *should* try, I *should* succeed." "If he *should* come, he *would* meet you." (Here *should* expresses a condition.) *Should* is also used in all three persons to express a sense of duty. "I *should* (he *should*) come home early." (*Should* here expresses duty.) *Would* is also sometimes used to express a customary action; as, "He *would* come up to the window and look out." (*Would* here expresses habit or customary action.)
Sleeper.—Very generally misused for *sleeping car*.
Some.—Often misused for *somewhat*. "I am *some* tired this evening." Say "I am *somewhat* tired," etc.
Speciality.—An erroneous writing of *specialty*.
Splendid.—The word properly means *brilliant*. It should not be used for what is only *ordinarily good* or *commonplace*.
Stop.—Wrongly used for *stay*. We *stop* at the roadside; we *stay* with a friend or at a hotel.
Suicide.—Should not be used as a verb; as, "The prisoner *suicided* in the jail."
Sunday.—Not to be used as a verb. Say "He spent *Sunday* at home," not "He *Sundayed* at home."
Sure.—*Sure* is frequently misused for *surely*. "He will be here *sure*." Say, rather, "He will *surely* be here."
Suspicion.—Not a verb. Use instead *suspect*. "I *suspected* the truth of his statements."
That for So.—Instead of "He was *that* independent he would not speak," say "He was *so* independent."
Then.—Not an adjective. Do not say "the *then* president."
Thence.—Remember not to use *from* with this word. *Thence* means *from that place*. "He departed *thence* at noon."
These kind, Those sort.—*Kind* and *sort* are singular nouns, and should be modified by singular adjectives. Say "*this kind*," "*that sort*."
Through.—Often misused in the sense of *finished* "I am *through* with my breakfast" instead of "I have *finished* my breakfast."
Thusly.—An unauthorized form for *thus*.
Transpire.—*Transpire* properly means *to leak out, to become known*. It should not be used for *happen*. "It *transpires* that the couple had been married for a year" is correct.
Try and.—Do not use "*try and*" for "*try to*." Say "*try to come*," not "*try and come*."
Two first, two last.—Say "the *first two*," "the *last two*" rather than "the *two first*" or "the *two last*."
Unbeknown.—Not to be used for *unknown*.
Unique.—*Unique* means the only one of its kind. We cannot say, then, "*very unique*."
Use to.—Properly *used to*. There are many inelegant forms of this verb. Do not say "I *use* to"; "Didn't you *use* to?" "You *usen't* to."
Verbal.—Misused for *oral*. "He would not trust himself to write her a note, but sent her a verbal (should be *oral*) message."
Vocation.—A man's *vocation* is his calling, his regular business. His *avocation* is something outside of his business with which he occupies himself incidentally. My friend's *vocation* is the practice of law; his *avocation* is photography. Still, while *avocation*, in the sense of *vocation*, is usually avoided by good writers, such use has some sanction of authority.
Want, Need.—*Want* expresses both the desire for a thing and the fact that the thing is lacking; *need* expresses the necessity of having a thing. A man may *want* an automobile, though he may not *need* one.
Wa'n't.—Not to be used as a contraction for *was not* or *were not*.
Ways.—Often incorrectly used for *way*. Instead of "I walked a long *ways* with her" say "I walked a long *way*."
Whatsomever.—An unauthorized form for *whatsoever*.
While.—Often incorrectly used for *although* or *and*, as "*While* I believe you are honest, I cannot vote for you." *While* properly means *during the time that*, as "*While* I was musing the fire burned."
Widow woman.—The word *woman* is superfluous in this expression, as all widows are women.
Without, Unless.—*Without* is a preposition, and should not be used to take the place of the connective *unless*. "I shall not go *without* my father consents," should read "*unless* my father consents," or "*without* my father's consent."
Worse.—Not to be used for *more*. We do not dislike one thing *worse* but *more* than another.
Worst kind, worst way.—Vulgarisms used in the sense of *very much*.

BOOKS OF THE BIBLE ANALYZED

BOOKS OF THE OLD TESTAMENT

PENTATEUCH

Genesis. Account of creation, early history of the human race, and story of the patriarchs.
Exodus. Account of the exodus and the giving of the moral law by Moses.
Leviticus. Development of the nation and institution of priestly law.
Numbers. Further development and institution of social and political law.
Deuteronomy. Recapitulation of history and law.

HISTORIC BOOKS

Joshua. Conquest of Canaan, and separation of the tribes.
Judges. History of Israel under the administration of thirteen Judges.
Ruth. An Idyll of Jewish life in the period of the judges.
Samuel. Establishment of the kingdom under Saul and David.
Kings. Political history of the kingdoms of Judah and Israel.
Chronicles. Priestly history of the kingdoms of Judah and Israel.
Ezra. Continuation of Chronicles. Priestly restoration after the captivity.
Nehemiah. Continuation of Ezra. The political restoration.
Esther. A story of the Hebrew captivity.

POETRY

Job. A drama of the soul.
Psalms. Book of hymns.
Songs of Solomon. Hebrew pastoral poems.

DIDACTIC POETRY OR BOOKS OF WISDOM

Proverbs. Practical moral maxims.
Ecclesiastes. Practical moral reflections.

MAJOR PROPHETS

Isaiah. The Messianic prophet.
Jeremiah. The prophet of sorrow.
Ezekiel. The priestly prophet.
Daniel. The apocalyptic prophet.

MINOR PROPHETS

1. Hosea.
2. Joel.
3. Amos.
4. Obediah.
5. Jonah.
6. Micah.
7. Nahum.
8. Habakkuk.
9. Zephaniah.
10. Haggai.
11. Zechariah.
12. Malachi.

BOOKS OF THE NEW TESTAMENT

Biography. Life of Christ as found in the four gospels, Matthew, Mark, Luke, John.
Historical. History of the Apostolic Church as given in the Acts of the Apostles.
Epistles. Continuation of the history of the Apostolic Church as given in the

PAULINE EPISTLES

Romans, Corinthians, I and II, Galatians, Ephesians, Phillipians, Colossians, Thessalonians I and II, Timothy I and II, Titus, Philemon, Hebrews.

GENERAL EPISTLES

James, Peter, I, II, John I, II, III, Jude.

Prophetical. The Apocalypse or Book of Revelation.

Books, Sizes of.—The name indicates the number of pages in the sheet, thus: in a folio book, 4 pages or 2 leaves = 1 sheet; a quarto, or 4to, has 8 pages or 4 leaves to a sheet; an octavo, or 8vo, 16 pages or 8 leaves to a sheet. In a 12mo, 24 pages or 12 leaves = one sheet, and the 18mo, 36 pages, or 18 leaves = 1 sheet, and so on. The following are the approximate sizes of books:—

Royal Folio	19	inches ×	12
Demy	18	inches ×	11
Super Imp. Quarto (4to)	15½	inches ×	13
Royal 4to	12½	inches ×	10
Demy 4to	11½	inches ×	8½
Crown 4to	11	inches ×	8
Royal Octavo	10½	inches ×	6½
Medium 8vo	9½	inches ×	6
Demy 8vo	9	inches ×	5½
Crown 8vo	7½	inches ×	4½
Foolscap 8vo	7	inches ×	4
12mo	7	inches ×	4
16mo	6½	inches ×	4
Square 16mo	4½	inches ×	3½
Royal 24mo	5½	inches ×	3¼
Demy 24mo	5	inches ×	2¾
Royal 32mo	5	inches ×	3
Post 32mo	4	inches ×	2½
Demy 43mo	3¾	inches ×	2¼

DICTIONARY OF ABBREVIATIONS, CONTRACTIONS, AND DEGREES

A., a. Adjective.
A. Alto.
A., ans. Answer.
a, @. (Lat. *ad.*) *To*; at.
ā., ād., The like quantity of each. (*Used in medical formulas.*)
A. A. Associate of Arts.
A. A. A. S. American Association for the Advancement of Science.
A. A. G. Assistant Adjutant-General.
A. A. S. S. (Lat. *Academiæ Antiquariana Societatis Socius.*) Member of the American Antiquarian Society.
A. B. (Lat. *Artium Baccalaureus.*) Bachelor of Arts. [See *B. A.*]
Abbr., Abbrev. Abbreviated, Abbreviation.
Abl., abl. Ablative.
Abp. Archbishop.
A. B. S. American Bible Society.
A. C. (Lat. *Ante Christum.*) Before Christ; Arch-Chancellor.
Acad. Academy.
A. C. A. American Congregational Association.
Acc., acc. Accusative.
Acc., Acct. Account.
A. D. (Lat. *Anno Domini.*) In the year of our Lord.
Ad., advt. Advertisement.
A. D. C. Aide-de-camp.
Adj. Adjective.
Adjt. Adjutant.
Adjt.-Gen. Adjutant-General.
Ad. lib., Ad libit. (Lat. *ad libitum*), At pleasure.
Adm. Admiral; Admiralty.
Admr. Administrator.
Admx. Administratrix.
Adv. Adverb.
Æ., Æt. (Lat. *Ætatis.*) Of age, aged.
A. F. A. Associate of the Faculty of Actuaries.
A.-G., Adjt.-Gen. Adjutant-General.
Ag. (Lat. *argentum.*) Silver.
Agl. Dept. Agricultural Department.
Agr., Agric. Agriculture, Agricultural.
Agt. Agent.
A. H. (Lat. *Anno Hegiræ.*) In the year of the Hegira, or flight of Mohammed.
A. H. S. (Lat. *Anno Humanæ Salutis.*) In the year of human salvation.
A. I. A. Associate of the Institute of Actuaries.
A. L. of H. American Legion of Honor.
Al. Aluminium.
Ala. Alabama.
Alas. Ter. Alaska Territory.

Ald. Alderman.
Alex. Alexander.
Alf. Alfred.
Alg. Algebra.
A. M. (Lat. *Artium Magister.*) Master of Arts.
A. M. (Lat. *ante meridiem.*) Before noon
A. M. (Lat *anno mundi*) In the year of the world.
Am., Amer. America, American.
Am. Asn. Sci. American Association for the Advancement of Science.
Amer. Phil. Soc. American Philosophical Society.
Amt. Amount.
A. N. Anglo-Norman.
An (Lat *anno.*) In the year.
Anal. Analysis.
Anat. Anatomy, anatomical.
Anc Ancient.
Anon. Anonymous
Ans. Answer.
A. N. S. S. Associate of the Normal School of Science.
Ant., Antiq. Antiquities, antiquarian
Anthrop. Anthropology, anthropological.
A. O. U. American Ornithologists' Union.
A. O. U. W Ancient Order of United Workmen.
Ap., App Apostle, apostles.
A. P. A American Protestant Association; American Protective Association.
Apo Apogee
Apoc Apocalypse; Apocrypha.
App Appendix. [ly.
Approx Approximate, appproximate-
Apr. April
A. P. S. Associate of the Pharmaceutical Society.
Aq. (Lat. *aqua.*) Water.
A. Q. M Assistant Quartermaster.
A. Q. M. G. Assistant Quartermaster-General.
A. R. (Lat. *anno regni.*) In the year of the reign.
Ar., Arab. Arabic, Arabian.
Ar, Arr Arrive, arrives, arrived, arrival.
A. R. A. Associate of the Royal Academy.
Arab. Arabic, Arabian.
Aram, Aramaic.
Arch. Architecture.
Archæol. Archæology.
Archd Archdeacon.
A. R. H. A. Associate of the Royal Hibernian Academy.
Arith. Arithmetic, arithmetical.
Ariz. Arizona.
Ark. Arkansas.
Arm. Armoric; Armenian.
Arr Arrive, arrives, arrived, arrival.
A R. R. (Lat. *anno regni regis or reginæ.* In the year of the King's (*or* Queen's) reign.
A R. S. A. Associate of the Royal Scottish Academy.
A. R. S. M. Associate of the Royal School of Mines.
Art. Article.
A. S., A.-S. Anglo-Saxon.
Asst. Assistant.
A. S. S. U. American Sunday School Union.
Assyr. Assyrian.
Astrol. Astrology
Astron. Astronomy, astronomical.
A. T. S. American Tract Society
Atty. Attorney.
Atty.-Gen. Attorney-General
A. U. A. American Unitarian Association.
A. U. C. (Lat. *anno urbis conditæ*), In the year from the building of the city—Rome.
Aug. Augmentative.
Aug. Augustus; August.
Auxil. Auxiliary.
A. V. Authorized Version
A V. Artillery Volunteers.
Avoir. Avoirdupois.
B. Bass; Book.
B., Brit. British.
b. Born.
B. A. Bachelor of Arts. [A. B.]
Bal. Balance.
Balt., Balto Baltimore
Bank Banking.
Bap, Bapt Baptist.
Bar Barrel; Barometer.
Bart., Bt. Baronet.
Bat., Batt. Battalion.
Bbl., bbls. Barrel, barrels.
B. C Before Christ.
B Ch (Lat. *Baccalaureus Chirurgiæ.*) Bachelor of Surgery.
B. C L. (Lat *Baccalaureus Civilis Legis.*) Bachelor of Civil Law.
B. D (Lat *Baccalaureus Divinitatis.*) Bachelor of Divinity.
Bd. Bound.
Bdls. Bundles
Bds. Bound in boards.
B. E. Bachelor of the Elements; Bachelor of Elocution.
Belg. Belgic, Belgian.
Benj Benjamin.
Berks. Berkshire.
Bib. Bible, biblical.
Biog. Biography, biographical
Biol. Biology, biological.
B. LL (Lat. *Baccalaureus Legum.*) Bachelor of Laws.
B. ès L. (Fr. *Bachelier ès Lettres.*) Bachelor of Letters.
Bls. Bales.
B. M. (Lat. *Baccalaureus Medicinæ.*) Bachelor of Medicine.
B. M., B. Mus. (Lat. *Baccalaureus Musicæ.*) Bachelor of Music.
B. O. Branch Office.
B. O. Bachelor of Oratory.
Boh. Bohemian, *or* Czech.
Bost. Boston.
Bot. Botany, botanical.
B. O. U. British Ornithologists' Union.
Bp. Bishop.
Br., Bro. Brother.
Bret. Bas-Breton, *or* Celtic of Brittany.
Brig. Brigade.
Brig.-Gen. Brigadier-General.
Brit. Britain, Britannia, British.
B. S. Bachelor of Surgery; Bachelor of Science.
B. Sc. (Lat. *Baccalaureus Scientiæ.*) Bachelor of Science.
B. S L. Botanical Society, London.
Bt. Baronet.
Bucks. Buckinghamshire.
bush. Bushel.
B. V. Blessed Virgin.
B. V. M. Blessed Virgin Mary.
bx., bxs Box, boxes.
C. Cent, cents; Centigrade; Consul; Centime, centimes
C., Cap. (Lat. *caput.*) Chapter.
C. A. Chartered *or* Chief Accountant.
Cal California; Calendar.
Cam., Camb. Cambridge.
Cant. Canticles.
Cant. [Cantuar.]
Cantab. (Lat. *Cantabrigiensis.*) Of Cambridge.
Cantuar., Cant. (Mid. Lat. *Cantuaria.*) Canterbury.
Cap. (Lat. *caput*). Capital; Chapter.
Caps. Capitals.
Capt. Captain.
Card. Cardinal.
Cath. Catharine; Catholic.
C. B. Companion of the Bath.
C C. Catholic Clergyman, Catholic Curate.
C. D. V. Carte de visite.
C E Civil Engineer.
Cel Celsius
Celt. Celtic.
Cent (Lat. *centum.*) A hundred; Centigrade.
Centig. Centigrade.
Cert., Certif. Certify, Certificate.
Cf. (Lat. *confer.*) Compare.
c. ft Cubic feet.
C.-G Coast Guard; Commissary-General.
C. G. S. Centimeter, Gram, Second
C. H Courthouse.
Ch. Church; Chapter
Chal. Chaldron.
Chal., Chald. Chaldee, Chaldaic.
Chanc. Chancellor
Chap. Chapter.
Chas. Charles.
Chem Chemistry, Chemical
Ch Hist Church History.
Chic. Chicago.
Chin Chinese.
Chr Christ; Christian; Christopher.
Chron. Chronicle; Chronology.
C I Order of the Crown of India.
C I. E. Ccmpanion of the Order of the Indian Empire.
Cin. Cincinnati.
Cit. Citation; Citizen.
Civ. Civil
C. J Chief Justice.
Cl. Clergyman; Clerk; Chlorine.
Class. Classical.
Clk. Clerk
cm. Centimeter.
C. M Certificated Master; Common Meter
C M (Lat. *Chirurgiæ Magister.*) Master in Surgery
C. M. G Companion of the Order of St. Michael and St. George.
C. M Z. S. Corresponding Member of the Zoölogical Society.
Co. Company; County, Cobalt.
C. O. D Cash on delivery, Collect (*payment*) on delivery.
Cogn. Cognate.
Col. Colonel; Colossians; Column.
Coll. College; Collection; Colleague.
Coll. or *Colloq.* Colloquial; Colloquialism, Colloquially.
Colo. Colorado.
Com. Commander; Commerce; Commissioner; Committee; Commodore; Common.
Comm. Commentary; Commerce.
Comp. Compare comparative; Compound, compounded.
Compar. Comparative
Compos. Composition.
Con. Ver. Common version.
Con., contra (Lat.) Against.
Con. Cr. Contra credit.
Cong. Congregation, Congregational, Congregationalist; Congress.
Conj. Conjunction.
Conn. Connecticut
Con. Sec. Conic sections.
Contr. Contracted, contraction.
Cop., Copt. Coptic.
Cor. Corinthians.
Cor. Mem. Corresponding Member.
Corn. Cornwall, Cornish.
Corrup. Corruption, corrupted.
Cor. Sec. Corresponding Secretary.
Cos. Cosine.
C. P Clerk of the Peace; Common Pleas
C. P. A. Certified Public Accountant.
C. P. C. Clerk of the Privy Council.
C. P S. (Lat. *Custos Privati Sigilli.*) Keeper of the Privy Seal.
C. Q. D. Come quick—danger.
Cr. Credit, creditor.
C. R. (Lat. *civis Romanus.*) A Roman citizen.
C. R. (Lat. *Custos Rotulorum.*) Keeper of the Rolls.
Cres Crescendo.
Crim. Con. Criminal conversation, or adultery.
Crystal., Crystallog. Crystallography.
C. S. Court of Sessions; Clerk to the Signet; Civil service.
C S. A. Confederate States of America.
C. S. I. Companion of the Star of India.
csks. Casks.
ct. (Lat. *centum.*) A hundred.
Ct. Court
Ct., Conn. Connecticut.
C. T. Certificated Teacher
C. T. A. U. Catholic Total Abstinence Union.
Cu. (Lat. *cuprum.*) Copper
cub., cu. ft. Cubic, cubic foot.
Cur., Curt. Current—this month.
cwt. A hundredweight; Hundredweights.
Cyc., Cyclo., Cyclopædia.
D. Deputy.
d. (Lat. *denarius, denarii.*) A penny, pence.
d. Died.
Dan. Daniel; Danish.
Dat. Dative.
Dav. David.
D. C. (Ital. *da capo.*) From the beginning.
D. C., District of Columbia.
D. C. L. Doctor of Civil (*or* Canon) Law.
D. D. (Lat. *Divinitatis Doctor.*) Doctor of Divinity.
D. D. D. (Lat. *dat, dicat, dedicat.*) He gives, devotes, and consecrates. (The formula by which anything was consecrated to the gods or to religious uses by the Romans; still used in funeral inscriptions.)
D. D. S. Doctor of Dental Surgery.
D. E. Dynamic Engineer.
Dec. December; Declination.
decim. Decimeter.
Def Definition.
Deft Defendant.
Deg. Degree, degrees.
Del. Delaware.
Del. (Lat. *delineavit.*) He (*or* she) drew it.
D. Eng. Doctor of Engineering.
Dep., Dept Department.
Dep. Deputy.
Der. Derived, derivation.
Deut. Deuteronomy.
D. F. Dean of the Faculty; Defender of the Faith.
D. G (Lat. *Dei gratia.*) By the grace of God.
Dict. Dictionary; Dictator.
Dim., Dimin. Diminutive.
Dis., Disct. Discount.
Dist. District.
Dist Atty. District Attorney.
Div. Divide, dividend, division, divisor.
D. Lit., D. Litt. Doctor of Literature
D. L. O. Dead Letter Office.
D. M., D. Mus. Doctor of Music.
D. M. D. Doctor of Dental Medicine.
D. O. Doctor of Osteopathy; Doctor of Optics.
do (Ital. *ditto.*) The same.
Dols. Dollars.
Dom. Econ. Domestic Economy.
Dor. Doric.
doz. Dozen.
Dpt. Deponent.
Dr. Debtor; Doctor; Dram, drams.
Dram. Dramatic, dramatically
D. S. (Ital. *dal segno.*) From the sign.
D. Sc. Doctor of Science.
D. T. (Lat. *Doctor Theologiæ.*) Doctor of Theology
Du., Dut. Dutch.
Dub. Dublin.
Duo. 12mo. Duodecimo (twelve leaves to a sheet).
D. V. (Lat. *Deo volente*) God willing
D. V. M. Doctor of Veterinary Medicine.
D. V. S. Doctor of Veterinary Surgery
dwt. (Lat. *denarius,* and English *weight.*) Pennyweight, pennyweights.
Dyn., Dynam. Dynamics.
E East, eastern; English; Edinburgh.
ea. Each.
E. Aram. East Aramæan language, generally called Chaldee.
Eben. Ebenezer.
E. C. Eastern Central; Established Church.
Eccl., Eccles. Ecclesiastes; Ecclesiastical.
Eccles., Ecclesiol. Ecclesiology
Econ. Economy.
Ed. Editor; Edition; Edinburgh.
Edin. Edinburgh.
Edm. Edmund.
E. D. S. English Dialect Society.
Edw. Edward.
E. E. Errors excepted.
E. E. Electrical Engineer.
e. g. (Lat. *exempli gratia.*) For example.
E. I. East Indies, East Indian.
E. I. C, E. I. Co. East India Company.
E. I. C. S. East India Company's Service.
Elec, Elect. Electric, electricity.
Eliz. Elizabeth, Elizabethan.
Emp. Emperor, empress.
Ency., Encyc. Encyclopædia.
E. N. E East-northeast.
Eng. England, English.
Eng., Engin. Engineer, engineering.
Eng. Dept. Department of Engineers.
Ent., Entom. Entomology, entomological.
Env. Ext. Envoy extraordinary.
Ep. Epistle.
Eph. Ephesians; Ephraim.
Epiph. Epiphany.
Epis. Episcopal.
Epist. Epistle, epistolary.
Eq. Equal, equivalent.
Equiv. Equivalent.
Esd. Esdras.
E. S. E. East-southeast.
Esp., Espec. Especial, especially.
Esq., Esqr. Esquire
et al. (Lat. *et alibi.*) And elsewhere.
et al. (Lat. *et alii,* or *aliæ, alia.*) And others.
etc., &c. (Lat *et cæteri, cæteræ,* or *cætera.*) And others, and so forth.
Eth. Ethiopia, Ethiopian.
Ethnol Ethnology, ethnological.
et seq., sq., or *sqq.* (Lat. *et sequentes,* or *et sequentia.*) And the following.
Etym. or *Etymol* ,Etymology
Ex. Example; Examined; Exception; Exodus.
Exc. Excellency; Except, excepted.
Exch. Exchange; Exchequer.
Exd. Examined.
Ex. Doc. Executive Document.
Exec. Executor.
Execx. Executrix.
Exod. Exodus.
Exon. (Lat. *Exonia.*) Exeter.
Exr. Executor.
Exx. Executrix.
Ez. Ezra.
Ezek. Ezekiel.
E. & O. E. Errors and omissions excepted.
F. Fellow: Folio: Fahrenheit.
f. Farthing, farthings.
f., fem. Feminine.
f Franc, francs.
Fahr. Fahrenheit.
F. A. S. Fellow of the Society of Arts.
F. A. S E. Fellow of the Antiquarian Society of Edinburgh.
F. B S. E Fellow of the Botanical Society of Edinburgh.

F. C. Free Church of Scotland.
Fcp. Foolscap.
F. C. P. S. Fellow of the Cambridge Philosophical Society.
F. C. S. Fellow of the Chemical Society.
F. D., Fid. Def. (Lat. *Fidei Defensor*). Defender of the Faith.
Feb. February.
Fec. (Lat. *fecit.*) He (*or* She) did it.
F. E. I. S. Fellow of the Educational Institute of Scotland.
Fem. Feminine.
F. E. S. Fellow of the Entomological (*or* Ethnological) Society.
Feud. Feudal.
F. F. V. First Families of Virginia. [*Humorous.*]
F. G. S. Fellow of the Geological Society.
F. I. A. Fellow of the Institute of Actuaries.
F. I. C. Fellow of the Chemical Institute.
fi. fa., Fieri facias. (Lat.) A form of judicial writ.
Fig. Figure, figures; figurative, figuratively.
Finn. Finnish.
F. K. Q. C. P. I. Fellow of the King's and Queen's College of Physicians, Ireland.
Fl. Flemish; Florin, florins; Flourished.
Fla. Florida.
Flem. Flemish.
F. L. S. Fellow of the Linnæan Society.
F. M. Field Marshal.
Fo., Fol. Folio.
F. O. Foreign Office; Field Officer.
F. O. B. Free on board.
For. Foreign.
Fort. Fortification.
F. P. Fire-plug.
F. P. S. Fellow of the Philological Society.
Fr. France, French; Francis; Francs.
fr. From.
F. R. A. S. Fellow of the Royal Astronomical (*or* Asiatic) Society.
F. R. C. P. Fellow of the Royal College of Physicians.
F. R. C. P. E. Fellow of the Royal College of Physicians, Edinburgh.
F. R. C. S. Fellow of the Royal College of Surgeons.
F. R. C. S. E. Fellow of the Royal College of Surgeons, Edinburgh.
F. R. C. S. I. Fellow of the Royal College of Surgeons, Ireland.
Fred. Frederick.
Freq. Frequentative.
F. R. G. S. Fellow of the Royal Geographical Society.
F. R. H. S. Fellow of the Royal Horticultural Society.
F. R. H. S. or *F. R. Hist. S.* Fellow of the Royal Historical Society.
Fri. Friday.
Fries. Friesland, Friesic.
Fris. Frisian.
F. R. Met. S. Fellow of the Royal Meteorological Society.
F. R. M. S. Fellow of the Royal Microscopical Society.
F. R. S. Fellow of the Royal Society.
F. R. S. E. Fellow of the Royal Society, Edinburgh.
F. R. S. L. Fellow of the Royal Society of Literature.
F. R. S. S. Fellow of the Royal Statistical Society.
F. S. A. Fellow of the Society of Arts, *or* of Antiquaries.
F. S. A. Scot. Fellow of the Society of Antiquaries of Scotland.
Ft. Fort; Foot, feet.
Fth. Fathom.
Fur. Furlong.
Fut. Future.
F. Z. S. Fellow of the Zoölogical Society.
F. & A. M. Free and Accepted Masons.
G. Genitive; Guinea, guineas; Gulf.
Ga. Georgia.
G. A. General Assembly.
Gael. Gaelic; Gadhelic.
Gal. Galatians.
gal. Gallon, gallons.
Galv. Galvanism, galvanic
G. A. R. Grand Army of the Republic.
G. B. Great Britain.
G. B. & I. Great Britain and Ireland.
G. C. B. Grand Cross of the Bath.
G. C. H. Grand Cross of Hanover.
G. C. L. H. Grand Cross of the Legion of Honor.
G. C. M. G. Grand Cross SS. Michael and George.
G. C. S. I. Grand Commander of the Star of India.
G. D. Grand Duke, Grand Duchess.
Gen. General.
Gen. Genesis; Genitive.
Gend. Gender.
Genit. Genitive.
Gent. Gentleman, gentlemen.
Geo. George; Georgia.
Geog. Geography, geographical.
Geol. Geology, geological.
Geom. Geometry, geometrical.
Ger., Germ. German.
Gi. Gill, gills.
G. L. Grand Lodge.
G. M. Grand Master.
Go., Goth. Gothic.
G. O. M. Grand Old Man (applied to Gladstone).
Gov. Governor.
Gov.-Gen. Governor-General.
Govt. Government.
G. P.-O. General Post-Office.
gr. Grain, grains; Gross.
Gr. Great; Greek.
Gram. Grammar, grammatical.
gro. Gross.
G. T. Good Templars; Grand Tyler.
gtt. (Lat. *gutta* or *guttæ.*) Drop *or* drops.
Gun. Gunnery.
H. Hour, hours.
Hab. Habakkuk.
Hag. Haggai.
Hants. Hampshire.
H. B. C. Hudson's Bay Company.
H. B. M. His (*or* Her) Britannic Majesty.
H. C. Heralds' College; House of Commons.
H. C. M. His (*or* Her) Catholic Majesty.
h. e. (Lat. *hoc est, hic est*). That (*or* this) is.
Heb., Hebr. Hebrew, Hebrews.
Her. Heraldry, heraldic.
Hf.-bd. Half-bound.
H. G. Horse Guards.
H. H. His (or Her) Highness; His Holiness (the pope).
Hhd. Hogshead, hogsheads.
H. I. H. His (or Her) Imperial Highness.
Hind. Hindu, Hindustan, Hindustani.
Hist. History, historical.
H. J., H. J. S. (Lat. *hic jacet, hic jacet sepultus.*) Here lies, Here lies buried.
H. M. His (*or* Her) Majesty.
H. M. P. (Lat. *hoc monumentum posuit.*) Erected this monument.
H. M. S. His (*or* Her) Majesty's Service, Ship, *or* Steamer.
Hon., Honble. Honorable.
Hond. Honored.
Hor., Horol. Horology, horological.
Hort., Hortic. Horticulture, horticultural.
Hos. Hosea.
H. P. Half-pay; High-Priest; Horse power.
H. R. House of Representatives.
H. R. E. Holy Roman Empire, *or* Emperor.
H. R. H. His (*or* Her) Royal Highness.
H. R. I. P. (Lat. *hic requiescit in pace.*) Here rests in peace.
H. S. (Lat. *hic situs.*) Here lies.
H. S. H. His (*or* Her) Serene Highness.
Hum., Humb. Humble.
Hun., Hung. Hungary, Hungarian.
Hund. Hundred, hundreds.
Hyd., Hydros. Hydrostatics.
Hydraul. Hydraulics.
Hydros. [See *Hyd.*]
Hypoth. Hypothesis, hypothetical.
I. Island.
Ia. Iowa.
Ib., Ibid. (Lat. *ibidem.*) In the same place.
Icel. Iceland, Icelandic.
Ich., Ichth. Ichthyology.
Id. (Lat. *idem.*) The same.
Ida. Idaho.
i. e. (Lat. *id est.*) That is.
I. H. S. (Lat. *Iesus* [or *Jesus*] *Hominum Salvator.*) Jesus the Savior of Men.
Ill. Illinois.
Imp. (Lat. *imperator.*) Emperor; Imperial; impersonal.
Imp., Imperf. Imperfect.
Imper. Imperative.
in. Inch, inches.
Incog. (Ital. *incognito, incognita.*) Unknown.
Ind. India, Indian; Indiana.
Indic. Indicative.
Ind. Ter. Indian Territory.
Inf., Infin. Infinitive.
In lim. (Lat. *in limine.*) At the outset.
In loc. (Lat. *in loco.*) In its place.
I. N. R. I. (Lat. *Iesus* [or *Jesus*] *Nazarenus Rex Iudæorum* [or *Judæorum*].) Jesus of Nazareth, King of the Jews.
Ins., Insur. Insurance.
Ins.-Gen. Inspector-General.
Inst. Instant; the present month; Institute, Institution.
Int. Interest.
Int. Dept. Department of the Interior.
Intens. Intensive; Intensative.
Interj. Interjection.
Intrans. Intransitive.
In trans. (Lat. *in transitu.*) On the passage.
Int. Rev. Internal Revenue.
Introd. Introduction.
I. O. F. Independent Order of Foresters.
I. O. G. T. Independent Order of Good Templars.
I. O. O. F. Independent Order of Oddfellows.
I. O. R. M. Improved Order of Red Men.
I. O. S. M. Independent Order of Sons of Malta.
I. O. U. I owe you.
i. q. (Lat. *idem quod.*) The same as.
Ir. Ireland, Irish.
Irreg. Irregular.
Is., Isa. Isaiah.
I. S. Irish Society.
Isl. Island.
I. S. M. Iesus [or *Jesus*] *Salvator Mundi.* Jesus Savior of the world.
It., Ital. Italy; Italic; Italian.
Itin. Itinerary.
J. Judge; Justice.
J. A. Judge Advocate.
Jac. Jacob, Jacobus.
J. A. G. Judge Advocate General.
Jan. January.
Jav. Javanese.
J. C. Jesus Christ.
J. C. D. (Lat. *Juris Civilis Doctor.*) Doctor of Civil Law.
J. D. (Lat. *Jurum Doctor.*) Doctor of Laws.
Jer. Jeremiah.
J. G. W. Junior Grand Warden.
J. H. S. [*I. H. S.*].
Jno. John.
Jon., Jona. Jonathan.
Jos. Joseph.
Josh. Joshua.
Jour. Journeyman; Journal.
J. P. Justice of the Peace.
Jr. Juror; Junior.
J. U. [or *V.*] *D.* (Lat. *Juris Utriusque Doctor.*) Doctor of Both Laws. (*i. e.*, of civil and of canon law.)
Jud. Judith.
Judg. Judges.
Jul. July; Julius; Julian.
Jul. Per. Julian Period.
Jun. June.
Jun., Junr. Junior.
Juris. Jurisprudence.
K. King; Knight.
Kan., Kans. Kansas.
K. B. Knight of the Bath.
K. B. King's Bench.
K. C. King's Counsel.
K. C. B. Knight Commander of the Bath.
K. C. H. Knight Commander of Hanover.
K. C. M. G. Knight Commander of St. Michael and St. George.
K. C. S. I. Knight Commander of the Star of India.
K. E. Knight of the Elephant (in Denmark).
Ken., Ky. Kentucky.
K. G. Knight of the Garter.
K. G. C. Knight of the Grand Cross.
K. G. C. B. Knight of the Grand Cross of the Bath.
K. G. E. Knight of the Golden Eagle.
K. G. F. Knight of the Golden Fleece.
K. G. H. Knight of the Guelphs of Hanover.
Ki. Kings.
kilog. Kilogramme.
kilom., kilo. Kilometer.
Kingd. Kingdom.
K. L. B. Knight of Leopold of Belgium.
K. L. H. Knight of the Legion of Honor.
K. M. Knight of Malta.
Knick. Knickerbocker.
K. N. S. Knight of the Royal North Star (Sweden).
Knt. Knight.
K. of P. Knights of Pythias.
K. P. Knight of St. Patrick.
Ks. Kansas.
K. S. Knight of the Sword (Sweden).
Kt. Knight.
K. T. Knight of the Thistle; Knight Templar.
K. T. S. Knight of Tower and Sword (Portugal).
Ky. Kentucky.
L. Latin; Lake; Lord; Lady.
L., l., £. (Lat. *libra.*) Pound, pounds (sterling).
L., lb., lb. (Lat. *libra*), Pound, pounds (weight).
La. Louisiana.
L. A. Law Agent; Literate in Arts.
Lam. Lamentations.
Lat. Latin; Latitude.
lb. Pound, pounds (weight).
l. c. Lower case (in printing).
l. c., loc. cit. (Lat *loco citato.*) In the place before cited.
L. C. Lord Chamberlain; Lord Chancellor.
L. C. J. Lord Chief Justice.
L. C. P. Licentiate of the College of Preceptors.
Ld. Lord.
Ldp. or *Lp.* Lordship.
L. D. S. Licentiate of Dental Surgery.
Leg., Legis. Legislature, legislative.
Lerp. Leipzig.
Lev. Leviticus.
Lex. Lexicon.
Lexicog. Lexicography, lexicographer, lexicographical.
L. G. Life Guards.
L. Ger. Low German *or* Plattdeutsch.
L. H. D. (Lat. *Litterarum Humanarum Doctor.*) Doctor of Humanities.
L. I. Light Infantry; Long Island.
Lib. (Lat. *liber*), Book.
Lib. Library, librarian.
Lieut., Lt. Lieutenant.
Lieut.-Col. Lieutenant-Colonel.
Lieut.-Gen. Lieutenant-General.
Lieut.-Gov. Lieutenant-Governor.
lin. Lineal, or right-line measures; *e. g.*, lin. yd.; lin. ft., etc.
Linn. Linnæus, Linné, Linnæan.
Liq. Liquor, liquid.
Lit. Literally; Literature, literary.
Lit. D. or *Litt. D.* (Lat. *Literarum Doctor.*) Doctor of Literature.
Lith. Lithography.
Liv. Livre.
LL. B. (Lat. *Legum Baccalaureus.*) Bachelor of Laws.
LL. D. (Lat. *Legum Doctor.*) Doctor of Laws.
LL. I. Lord Lieutenant of Ireland.
LL. M. Master of Laws.
L. M. Long meter.
Lon., Lond. London.
Lon., Long. Longitude.
Loq. (Lat. *loquitur.*) He (*or* she) speaks.
Lou. or *La.* Louisiana.
Lp. Lordship.
L. P. Lord Provost.
L. S. (Lat. *locus sigilli.*) Place of the seal.
l. s. d. (Lat. *libra, solidi, denarii.*) Pounds, shillings, pence.
Lt. Lieutenant.
Lt. Inf. Light Infantry.
Luth. Lutheran.
m. Married; Masculine; Meter, meters; Mile, miles; Minute, minutes.
M. Marquis; Middle; Monday; Morning; Monsieur.
M. (Lat. *mille.*) Thousand.
M. (Lat. *meridies.*) Meridian, Noon.
M. A. (Master of Arts.) [*A. M.*]
Mac., Macc. Maccabees
Mach., Machin. Machine, machinery.
Mad., Madm. Madam.
Mag. Magyar; Magazine.
Maj. Major.
Maj.-Gen. Major-General.
Mal. Malachi; Malay, Malayan.
Manuf. Manufactures, manufacturing.
Mar. March; Maritime.
Marq. Marquis.
Mas., Masc. Masculine.
Mass. Massachusetts.
M. Ast. S. Member of the Astronomical Society.
Math. Mathematics, mathematician, mathematical.
Matt. Matthew.
M. B. (Lat. *Medicinæ Baccalaureus.*) Bachelor of Medicine.
M. B. (Lat. *Musicæ Baccalaureus.*) Bachelor of Music.
M. C. Member of Congress; Master of Ceremonies.
Mch. March.
M. C. P. Member of the College of Preceptors.
M. D. (Lat. *Medicinæ Doctor.*) Doctor of Medicine.
Md. Maryland
Mdlle. (Fr. *mademoiselle.*) Miss.
Mdse. Merchandise.
M. E. Most Excellent; Military Engineer; Mining Engineer; Mechanical Engineer.

M. E. Methodist Episcopal.
Me. Maine.
Meas. Measure.
Mech. Mechanics, mechanical.
Med. Medicine, medical; Medieval.
Med. Lat., Mediev. Lat. Medieval Latin.
Mem. Memorandum, memoranda.
M. E. S. Methodist Episcopal South.
Mess. & Docs. Messages and Documents.
Messrs. (Fr. messieurs.) Gentlemen.
Met. Metaphysics, metaphysical.
Metal. Metallurgy.
Metaph. Metaphysics; Metaphorical.
Meteor. Meteorology, meteorological.
Meth. Methodist.
Meton. Metonymy.
Mex. Mexico.
Mfd., Mfs. Manufactured, manufactures.
Mfg. Manufacturing.
M. F. H. Master of Foxhounds.
M. Hon. Most Honorable.
M. H. Ger. Middle High German.
M. I. C. E. Member of the Institute of Civil Engineers.
Mich. Michaelmas; Michigan.
Mid. Middle; Midshipman.
Mid. Lat. Latin of the Middle Ages.
Mil., Milit. Military.
M. I. M. E. Member of the Institute of Mining Engineers.
Min. Mineralogy, mineralogical; Minute, minutes.
Minn. Minnesota.
Min. Plen. Minister Plenipotentiary.
Miss. Mississippi.
Mlle. (Fr. mademoiselle.) Miss.
M. L. S. B. Member of the London School Board.
MM. Their Majesties.
MM. (Fr. messieurs.) Gentlemen.
mm. Millimeters; Micrometers.
Mme. (Fr. madame.) Madam.
M. N. A. S. Member of the National Academy of Sciences.
M. N. S. Member of the Numismatical Society.
Mo. Missouri; Month.
mo. Month.
Mod. Modern.
Mod. (Ital. moderato.) Moderately.
Mon. Monday.
Mons. (Fr. monsieur.) Sir, Master.
Mont. Montana.
M. P. Member of Parliament.
M. P. P. Member of the Provincial Parliament.
M. P. S. Member of the Pharmaceutical Society; Member of the Philological Society.
Mr. Master, Mister.
M. R. A. S. Member of the Royal Asiatic Society.
M. R. C. P. Member of the Royal College of Physicians.
M. R. C. S. Member of the Royal College of Surgeons.
M. R. C. V. S. Member of the Royal College of Veterinary Surgeons.
M. R. G. S. Member of the Royal Geographical Society.
M. R. I. Member of the Royal Institution.
M. R. I. A. Member of the Royal Irish Academy.
Mrs. Mistress (when abbreviated pronounced mis'sez).
M. S. Master of Surgery.
M. S. Master of Science.
M. S. (Lat. Memoriæ sacrum.) Sacred to the memory of.
MS. Manuscript.
MSS. Manuscripts.
Mt., Mts. Mount, mountains.
Mus. Museum; Music, musical.
Mus. B. (Lat. Musicæ Baccalaureus.) Bachelor of Music.
Mus. D., Mus. Doc., Mus. Doct. (Lat. Musicæ Doctor.) Doctor of Music.
M. W. G. M. Most Worthy Grand Master.
Myth. Mythology, mythological.
N. Noon; North; Noun; Number; New; Neuter.
N. A. North America, North American.
Nah. Nahum.
Nap. Napoleon.
Nat. Natural; National; Natal.
Nat. Hist. Natural History.
Nat. Ord. Natural Order.
Nat. Phil. Natural Philosophy.
Naut. Nautical.
N. B. New Brunswick; North Britain (i. e. Scotland).
N. B. (Lat. Nota bene.) Note well. Take notice.
N. C. North Carolina.
N. D., N. Dak. North Dakota.
N. E. New England; Northeast.
Neb. Nebraska.
Neg. Negative, negatively.
Neh. Nehemiah.
Nem. con. (Lat. nemine contradicente.) No one contradicting; unanimously.
Nem. diss. (Lat. nemine dissentiente.) No one dissenting; unanimously.
Neth. Netherlands.
Neut. Neuter.
Nev. Nevada.
New Test., N. T. New Testament.
N. F. Newfoundland.
N. H. New Hampshire.
N. H. Ger. New High German.
N. J. New Jersey.
N. L., N. Lat. North Latitude.
N. M. New Mexico.
N. N. E. North-northeast.
N. N. W. North-northwest.
N. O. New Orleans.
No. (Lat. numero.) Number.
nol. pros. (nolle prosequi.) To be unwilling to proceed.
Nom. Nominative.
Non con. Non-content, dissentient. (The formula in which Members of the House of Lords vote.)
Non obst. (Lat. non obstante.) Notwithstanding.
Non pros. (Lat. non prosequitur.) He does not prosecute.
Non seq. (Lat. non sequitur.) It does not follow (as a consequence).
n. o. p. Not otherwise provided for.
Nor., Norm. Norman.
Nor. Fr., Norm. Fr. Norman French.
Norm. (Norman.)
Norw. Norway, Norwegian, Norse.
Nos. Numbers.
Nov. November.
N. P. Notary Public.
N. S. New style (since 1752); Nova Scotia.
n. s. Not specified.
N. S. J. C. (Fr. Notre Seigneur Jésus Christ.) Our Lord Jesus Christ.
N. T. New Testament.
Num., Numb. Numbers.
Numis. Numismatic, numismatology.
N. V. M. Nativity of the Virgin Mary.
N. W. Northwest.
N. W. T. Northwest Territory.
N. Y. New York.
N. Y. H. S. New York Historical Society.
N. Z. New Zealand.
O. Ohio; Old.
ob. (Lat. obiit.) He (or she) died.
Ob., Obad. Obadiah.
Obdt., Obt. Obedient.
Obj. Objective.
Obs. Obsolete.
Oct. October.
Oct., 8vo. Octavo.
O. F. Odd Fellows.
O. H. Ger. Old High German.
O. H. M. S. On Her Majesty's Service.
O. K. "All correct."
Okl. Oklahoma.
Old Test., O. T. Old Testament.
Olym. Olympiad.
O. M. Old Measurement.
O. M. I. Oblate of Mary Immaculate.
Op. Opposite, opposition.
Opt. Optative; Optics, optical.
Ord. Ordnance.
Ore. Oregon.
Orig. Original, originally.
Ornith. Ornithology, ornithological.
O. S. Old Style (previous to 1752); Old Saxon.
O. S. A. Order of St. Augustine.
O. S. B. Order of St. Benedict.
O. S. F. Order of St. Francis.
O. T. Old Testament.
O. U. A. M. Order of United American Mechanics.
Oxf. Oxford.
Oxon. (Lat. Oxonia, Oxoniensis.) Oxford, of Oxford.
Oxonien. (Lat. Oxoniensis.) Of Oxford.
oz. Ounce. [The z in this contraction and in viz., represents an old symbol (ʒ), used to mark a terminal contraction.]
P. Page; Participle; Past; Pole; Port.
Pa. Pennsylvania.
P. a., par. a. Participial adjective.
Paint. Painting.
Pal., Paleont. Paleontology, paleontological.
Par. Paragraph.
Parl. Parliament, parliamentary.
Part. Participle.
Partcp. Participial.
Pass. Passive.
Pat. Patent.
Pathol. Pathology.
Paym. Payment.
P. C. (Lat. Patres Conscripti.) Conscript Fathers.
P. C. Police Constable; Privy Council, Privy Councilor.
P. C. S. Principal Clerk of Session.
Pd. Paid.
P. E. Protestant Episcopal.
P. E. I. Prince Edward Island.
Penn. Pennsylvania.
Pent. Pentecost.
Per., Pers. Persia; Persian; Personal.
Per an. (Lat. per annum.) Yearly.
Per cent., per ct. (Lat. per centum.) By the hundred.
Perf. Perfect.
Perig. Perigee.
Persp. Perspective.
Peruv. Peruvian.
Pet. Peter.
P. G. M. Past Grand Master.
Phar., Pharm. Pharmacy.
Ph. B. (Lat. Philosophiæ Baccalaureus.) Bachelor of Philosophy.
Ph. D. (Lat. Philosophiæ Doctor.) Doctor of Philosophy.
Phil., Phila. Philadelphia.
Phil. Philip; Philippians; Philosophy, philosophical.
Phil. Trans. Transactions of the Philosophical Society.
Philem. Philemon.
Philol. Philology.
Philos. Philosophy, philosophical.
Ph. M. Master of Philosophy.
Phoen. Phoenician.
Photog. Photography, photographic, photographer.
Phren., phrenol. Phrenology, phrenological.
Phys. Physics, physical; physiology, physiological.
Physiol. Physiology, physiological.
Pinx., Pxt. (Lat. pinxit.) He (or she) painted it.
Pk. Peck.
Pl. Place; Plate; Plural.
P. L. Poet Laureate.
Plf., Pltf. Plaintiff.
Plu. Plural.
Plup., Plupf. Pluperfect.
Plur. Plural.
P. M. (Lat. post meridiem.) Afternoon.
P. M. Past Master; Peculiar Meter; Postmaster.
P. M. G. Postmaster-General.
P. O. Post-office.
P. & O. Co. Peninsular and Oriental Steam Navigation Company.
Poet. Poetry, poetical.
Pol. Polish.
Polit. Econ. Political Economy.
P. O. O. Post-office order.
Pop. Population.
Port. Portugal, Portuguese.
Poss. Possessive.
pp. Pages.
p. p. Past (or perfect) participle.
P. P. (Lat. pater patriæ.) Father of his country.
P. P. Parish priest.
P. P. C. (Fr. pour prendre congé.) To take leave. [T. T. L.]
Pph. Pamphlet.
p. pr. Present participle.
Pr. Present; Priest; Prince.
P. R. (Lat. populus Romanus.) The Roman people.
P. R. Prize Ring.
P. R. A. President of the Royal Academy.
P. R. C. (Lat. Post Romam conditam.) After the building of Rome. [A. U. C.]
Preb. Prebend.
Pref. Prefix; Preface.
prep. Preposition.
Pres. President; Present.
Pret. Preterit.
Prim. Primary.
Prin. Principal; Principles.
Print. Printing.
Priv. Privative.
Prob. Problem; Probable, probably.
Prof. Professor.
Pron. Pronoun; Pronounced, pronunciation.
pron. a. Pronominal adjective.
Prop. Proposition; Property.
Pros. Prosody.
Pro tem. (Lat. pro tempore.) For the time being.
Prov. Proverbs, proverbial, proverbially; Provincial, provincially; Provost.
Provinc. Provincial.
Prox. (Lat. proximo.) Next, or of the next month.
Prs. Pairs.
P. R. S. President of the Royal Society.
P. R. S. A. President of the Royal Scottish Academy.
Prus. Prussia, Prussian.
P. S. (Lat. post scriptum.) Postscript.
P. S. Privy Seal.
Ps., Psa. Psalm, psalms.
Psychol. Psychology.
Pt. Part; Payment; Point; Port.
P. T. Post Town; Pupil Teacher.
Pub. Public; Published, publisher.
Pub. Doc. Public documents.
P. V. Post village.
pwt. Pennyweight.
Pxt. (See Pinx.)
Pyro., Pyrotech. Pyrotechnics.
Q., Qu. Query; Question.
Q. C. Queen's College.
q. d. (Lat. quasi dicat.) As if he should say.
q. e. (Lat. quod est.) Which is.
Q. E. D. (Lat. quod erat demonstrandum.) Which was to be proved.
Q. E. F. (Lat. quod erat faciendum.) Which was to be done.
Q. E. I. (Lat. quod erat inveniendum.) Which was to be found out.
q. l. (Lat. quantum libet.) As much as you please.
Q. M. Quartermaster.
Q. M.-Gen. Quartermaster-General.
Qr. Quarter (28 pounds); Quire.
Q. S. Quarter Sessions.
q. s. (Lat. quantum sufficit.) A sufficient quantity.
qt. Quart.
Qu. Queen; Query; Question.
Quar., quart. Quarterly.
Quart., 4to. Quarto.
Ques. Question.
q. v. (Lat. quod vide.) Which see.
Qy. Query.
R. Railway; Réaumur; River.
R. (Lat. rex.) King; (Lat. regina.) Queen.
R. (Lat. recipe.) Take.
R. A. Royal Academy; Royal Academician; Rear-Admiral; Royal Arch; Royal Artillery.
Rabb. Rabbinical.
Rad. (Lat. radix.) Root.
R. A. M. Royal Academy of Music.
R. A. S. Royal Agricultural Society.
R. C. Roman Catholic.
R. D. Rural Dean.
R. E. Royal Engineers; Royal Exchange.
R. E. Reformed Episcopal.
Réaum. Réaumur. (See R.)
Rec. Recipe.
Recd. Received.
Recpt. Receipt.
Ref. Reference.
Ref. Ch. Reformed Church.
Ref. Pres. Reformed Presbyterian.
Reg. Regular.
Reg., Regr. Registrar.
Reg., Regt. Regiment, regimental.
Rel. Religion, religious.
Rel. Pron. Relative Pronoun.
Rem. Remark, remarks.
Rep. Report; Representative.
Rep., Repub. Republic, Republican.
Res. Resolution.
Retd. Returned.
Rev. Revelation; Revenues; Reverend; Review; Revise.
Revd. Reverend.
Revs. Reverends.
Rev. Stat. Revised statutes.
R. F. D. Rural free delivery.
Rhet. Rhetoric, rhetorical.
R. H. S. Royal Humane Society.
R. I. Rhode Island.
R. I. H. S. Rhode Island Historical Society.
R. I. P. (Lat. requiescat in pace.) May he (or she) rest in peace.
Riv. River.
R. M. Royal Mail; Royal Marines.
R. M. A. Royal Marine Artillery; Royal Military Asylum.
R. M. L. I. Royal Marine Light Infantry.
R. M. S. Royal Mail Steamer; Royal Mail Service.
R. N. Royal Navy.
R. N. R. Royal Naval Reserve.
R. O. Receiving Office.
Robt. Robert.
Rom. Roman, Romans.
Rom. Cath. Roman Catholic.
R. P. Regius Professor.
R. R. Railroad.
R. S. A. Royal Scottish Academy.
R. S. E. Royal Society of Edinburgh.
R. S. L. Royal Society of London.
R. S. P. C. A. Royal Society for the Prevention of Cruelty to Animals.
R. S. V. P. (Fr. répondez s'il vous plaît.) Answer, if you please; Please reply.
Rt. Right.
Rt. Hon. Right Honorable.
Rt. Rev. Right Reverend.
R. T. S. Religious Tract Society.
Rt. Wpful. Right Worshipful.
Russ. Russia, Russian.
R. V. Revised Version.

R. W. Right Worshipful; Right Worthy.
R. W. D. G. M. Right Worshipful Deputy Grand Master.
R. W. G. M. Right Worshipful Grand Master.
R. W. G. R. Right Worthy Grand Representative.
R. W. G. S. Right Worthy Grand Secretary.
R. W. G. T. Right Worthy Grand Treasurer; Right Worthy Grand Templar.
R. W. G. W. Right Worshipful Grand Warden.
R. W. J. G. W. Right Worshipful Junior Grand Warden.
R. W. S. G. W. Right Worshipful Senior Grand Warden.
Ry. Railway.
S. Saint; Saturday; Section; Shilling; Sign; Signor; South; Southern; Sun; Sunday; Sabbath.
s. Second, seconds; See; Singular; Son; Succeeded.
S. A. South Africa; South America.
S. A. (Lat. *secundum artem.*) According to the rules of art.
Sab. Sabbath.
Sam., Saml. Samuel.
Sam., *Samar.* Samaritan.
Sans., *Sansc.*, *Sansk.* Sanscrit, Sanskrit.
S. A. S. (Lat. *Societatis Antiquariorum Socius.*) Fellow of the Society of Antiquaries.
Sat. Saturday.
Sax. Saxon, Saxony.
S. B. South Britain (England and Wales). [N. B.]
S. C. South Carolina.
S. C. (Lat. *senatus consultum.*) A decree of the senate.
Sc. [Scil. Sculp.]
Scan. mag. (Lat. *scandalum magnatum.*) Defamatory expressions to the injury of persons of high rank or dignity.
S. caps., Sm. caps. Small capitals (in printing).
Sc. B. (Lat. *Scientiæ Baccalaureus.*) Bachelor of Science.
Sc. D. (Lat. *Scientiæ Doctor.*) Doctor of Science.
Sch. (Lat. *scholium.*) A note.
Sch., Schr. Schooner.
Sci. Science.
Sci. fa. *Scire facias.* (Lat.) A form of judicial writ.
Scil., Sc. (Lat. *scilicet.*) Namely; to wit.
S. C. L. Student in Civil Law.
Sclav. Sclavonic.
Scot. Scotland; Scotch, Scottish.
Scr. Scruple, scruples.
Scrip., Script. Scripture, scriptural.
Sculp., Sculpt. Sculpture.
Sculp. Sc. (Lat. *sculpsit.*) He or she engraved it.
S. D. Senior Deacon.
S. D., S. Dak. South Dakota.
S. D. U. K. Society for the Diffusion of Useful Knowledge.
S. E. Southeast.
Sec. Second.
Sec. Leg. Secretary of Legation.
Sec., Sect. Section.
Sec., Secy. Secretary.
Sen. Senate, senator.
Sen. Doc. Senate Document.
Sep., Sept. September.
Seq. (Lat. *sequentes, sequentia.*) The following (or the next).
Serg.-Maj. Sergeant-Major.
Serg., Sergt. Sergeant.
Serj., Serjt. Serjeant.
Serv. Servian.
Sess. Session.
S.-G. Solicitor-General.
s. g. [sp. gr.]
sh., S. Shilling, shillings.
Sing. Singular.
S. J. Society of Jesus.
S. J. C. Supreme Judicial Court.
Skr. Sanskrit.
Slav. Slavonic, Slavonian, Slavic.
Sld. Sailed.
S.-M. Sergeant-Major.
S. M. Lond. Soc. (Lat. *Societatis Medicæ Londiniensis Socius.*) Member of the London Medical Society.
S. N. (Lat. *secundum naturam.*) According to nature, naturally.
Soc. Society.
S. of Sol. Song of Solomon.
Sol.-Gen. Solicitor-General.
Sp. Spain, Spanish; Spirit.
s. p. (Lat. *sine prole.*) Without issue.
S. P. C. A. Society for the Prevention of Cruelty to Animals.
S. P. C. C. Society for the Prevention of Cruelty to Children.
S. P. C. K. Society for the Promotion of Christian Knowledge.
Spec. Special, specially.
S. P. G. Society for the Propagation of the Gospel.
sp. gr., s. g. Specific gravity.
S. P. Q. R. (Lat. *Senatus Populusque Romanus.*) The Senate and People of Rome.
sq. Square; sq. ft. Square foot, feet; sq. in. Square inch, inches; sq. m. Square mile, miles; sq. yd. Square yard; sq. rd. Square rod.
Sr. Senior; sir.
S. R. I. (Lat. *Sacrum Romanum Imperium.*) The Holy Roman Empire.
S. R. S. (Lat. *Societatis Regiæ Socius.*) Fellow of the Royal Society.
SS. Saints.
SS. (Lat. *scilicet*), namely; (Lat. *semis*), half.
S. S. Sunday School.
S. S. C. Solicitor before the Supreme Court.
S. S. E. South-southeast.
S. S. W. South-southwest.
St. Saint; Stone; Strait; Street.
St. (Lat. *Stet.*) Let it stand (in printing).
S. T. Sons of Temperance.
Stat. Statute, statutes; Statuary.
S. T. D. (Lat. *Sacræ Theologiæ Doctor.*) Doctor of Divinity.
ster., stg. Sterling.
St. L. St. Louis.
S. T. P. (Lat. *Sacræ Theologiæ Professor.*) Professor of Theology.
Str. Steamer, steam vessel.
Subj. Subjunctive.
Subst. Substantive; Substitute.
Suff. Suffix.
Sun., Sund. Sunday.
Sup. Superior; Superlative; Supplement; Supine; superfine.
Supt. Superintendent.
Surg. Surgeon, Surgery.
Surg.-Gen. Surgeon-General.
Surv. Surveying, Surveyor.
Surv.-Gen. Surveyor-General.
s. v. (Lat. *sub voce.*) Under the word or title.
S. W. Senior Warden; Southwest
Sw. Sweden, Swedish.
Switz. Switzerland.
Syn. Synonym, synonymous.
Synop. Synopsis.
Syr. Syria, Syrian.
T. Tenor; Ton; Tun; Tuesday.
T. A. B. Total Abstinence Brotherhood.
Tan. Tangent.
Tart. Tartaric.
T. C. D. Trinity College, Dublin.
Tech. Technical, technically.
Tenn. Tennessee.
Ter. Territory.
Term. Termination.
Teut. Teutonic.
Tex. Texas.
Text. rec. (Lat. *textus receptus.*) The received text.
Th. Thomas; Thursday.
Theo. Theodore; Theodosia.
Theol. Theology, theological.
Theor. Theorem.
Thess. Thessalonians.
Tho., Thos. Thomas.
Thurs. Thursday.
Tier. Tierce.
Tim. Timothy.
Tit. Title; Titus.
T. O. Turn over.
Tob. Tobit.
Tom. Tome, volume.
Tonn. Tonnage.
Topog. Topography, topographical.
Tp. Township.
Tr. Translation, translator, translated; Transpose; Treasurer; Trustee.
Trans. Transaction; Translation, translator, translated.
Trav. Travels.
Treas. Treasurer.
Trig., Trigon. Trigonometry, trigonometrical.
Trin. Trinity.
T. T. L. To take leave. [P. P. C.]
Tu., Tues. Tuesday.
Turk. Turkey, Turkish.
Typ. Typographer.
Typog. Typography, typographical.
U. Utah.
U. C. (Lat. *Urbis Conditæ.*) From the building of the city—Rome. [A. U. C.]
U. J. D. [J. U. D.]
U. K. United Kingdom.
U. K. A. Ulster King-at-Arms; United Kingdom Alliance.
Ult. (Lat. *ultimo.*) Last; Of the last month.
um. Unmarried.
Unit. Unitarian.
Univ. University.
U. P. C. United Presbyterian Church.
U. S. United States.
U. S. (Lat. *ut supra.*) As above.
U. S. A. United States of America; United States Army.
U. S. L. United States Legation.
U. S. M. United States Mail; United States Marine.
U. S. M. A. United States Military Academy.
U. S. N. United States Navy.
U. S. N. A. United States Naval Academy.
U. S. S. United States Senate; United States Ship or Steamer.
U. S. S. Ct. United States Supreme Court.
Ut. Utah.
Ux. (Lat. *uxor.*) Wife.
V. Verb; Verse; Victoria; Violin.
V., vs., (Lat. *versus.*) Against.
V. (Lat. *Vide.*) See.
V.-A. Vicar Apostolic; Vice-Admiral.
Va. Virginia.
Val. Value; Valse.
Var. Variety.
Vat. Vatican.
v. aux. Verb auxiliary.
V. C. Vice-Chancellor; Victoria Cross.
v. def. Verb defective.
V. D. M. (Lat. *Verbi Dei Minister.*) Minister of the Word of God.
Ven. Venerable.
V.-G. Vicar-general.
v. g. (Lat. *verbi gratia.*) For example.
v. i. Verb intransitive.
Vice-Pres. Vice-President.
Vid. (Lat. *Vide.*) See.
v. imp. Verb impersonal.
v. irr. Verb irregular.
Vis., Visc. Viscount.
Viz. (Lat. *videlicet.*) Namely; to wit. [Oz.]
v. n. Verb neuter.
Voc. Vocative.
Vol. Volume.
Vols. Volumes.
V.-P. Vice-President.
v. r. Verb reflexive.
V. Rev. Very Reverend.
Vs. (Lat. *versus.*) Against.
V. S. Veterinary Surgeon.
v. t. Verb transitive.
Vt. Vermont.
Vul. Vulgate.
Vulg. Vulgar, vulgarly.
vv. ll. (Lat. *variæ lectiones.*) Various readings.
W. Wednesday; Week; Welsh; West, western.
Wal., Wallach. Wallachian.
Walt. Walter.
Wash. Washington.
w. c. Water closet.
W. C. A. Women's Christian Association.
W. C. T. U. Women's Christian Temperance Union.
Wed. Wednesday.
Wel. Welsh.
w. f. Wrong font (in printing).
Whf. Wharf.
W. I. West Indies, West India.
Wis., Wisc. Wisconsin.
Wk. Week.
W. Lon. West Longitude.
Wm. William.
W. M. Worshipful Master.
W. N. W. West-northwest.
Wp. Worship.
Wpful. Worshipful.
W. S. Writer to the Signet.
W. S. W. West-southwest.
Wt. Weight.
W. Va. West Virginia.
Wyo. Wyoming.
X. Christ.
Xm., Xmas. Christmas.
Xn., Xtian. Christian.
Xnty., Xty. Christianity.
Xper., Xr. Christopher.
Xt. Christ.
Xtian. Christian.
Y., Yr. Year.
Yd. Yard.
Yds. Yards.
Ye. The; Thee.
Ym. Them. Y for Anglo-Saxon letter [or th.
Y. M. C. A. Young Men's Christian Association.
Y. M. Cath. A. Young Men's Catholic Association.
Y. M. H. A. Young Men's Hebrew Association.
Y. P. S. C. E. Young People's Society of Christian Endeavor.
Yr. Their; Year; Younger, Your.
Yrs. Years; Yours.
Y. W. C. A. Young Women's Christian Association.
Zach. Zachary.
Zech. Zechariah.
Zeph. Zephaniah.
Z. G., Zoo. Zoölogical Gardens.
Zoöchem. Zoöchemistry, zoöchemical.
Zoögeog. Zoögeography, zoögeographical.
Zoöl. Zoölogy, zoölogical.

LIBRARIES.

Libraries existed in ancient Egypt and Assyria, and Pisistratus is credited with the honor of introducing a public library at Athens about B. C. 337. Cicero and various wealthy Romans made collections of books, and several Roman Emperors established libraries, partly with books obtained as spoils of war. By far the most celebrated library of antiquity was the Alexandrian. In the West, libraries of any note were founded in the second half of the Eighth Century by the encouragement of Charlemagne. In France one of the most celebrated was that in the Abbey of St. Germain des Prés, near Paris. In Germany the libraries of Fulda, Corvey, and in the Eleventh Century that of Hirschau, were valuable. In Spain, in the Twelfth Century, the Moors had seventy public libraries, of which that at Cordova contained 250,000 volumes. In Britain and Italy libraries were also founded with great zeal. After the invention of printing this was done more easily and at less expense. The principal libraries of modern times are:

Library	City	No. of Vols.	Library	City	No. of Vols.
Bibliothèque nationale	Paris	[illegible]	Königliche bibliothek	Berlin	[illegible]
British Museum	London	2,000,000	New York State	Albany	[illegible]
Imper. publichnaia biblioteka	St. Petersburg	2,000,000	Kgl. Hof-u. Staatsbibliothek	Munich	[illegible]
Library of Congress	Washington, D. C.	2,000,000	Public Library	Boston	[illegible]
Public Library—Astor, Lenox, and Tilden Foundation	New York City	1,350,000	K. k. Hofbibliothek	Vienna	[illegible]
			Universitäts-u. Landesbibliothek	Strassburg	[illegible]
			Harvard University Library	Cambridge, U. S.	[illegible]

The Forty Immortals of the French Academy

	Elected	Name	Born		Elected	Name	Born
1	1888	Othenin P. de Cléron Comte d'Haussonville	Gurcy, 1843	9	1899	Paul Deschanel	Brussels, 1856
2	1890	Charles Louis de Saulces de Freycinet	Foix, 1828	10	1903	Frédéric Masson	Paris, 1847
3	1891	Louis Marie Julien Viaud (Pierre Loti)	Rochefort, 1850	11	1903	René Bazin	Angers, 1853
4	1892	Ernest Lavisse	Nouvion, 1842	12	1905	Étienne Lamy	Cize, 1845
5	1894	Paul Bourget	Amiens, 1852	13	1906	Alexandre Félix Joseph Ribot	St. Omer, 1842
6	1896	Jacques Anatole Thibault (Anatole France)	Paris, 1844	14	1906	Maurice Barrès	Charmes, 1862
7	1897	Gabriel Hanotaux	Beaurevoir, 1857	15	1907	Maurice Donnay	Paris, 1860
8	1899	Henri Leon Emile Lavedan	Orleans, 1859	16	1909	Raymond Poincaré	Bar-le-Duc, 1860

The Forty Immortals of the French Academy

	Elected	Name	Born
17	1909	Eugene Brieux	Paris, 1858
18	1909	Jean Aicard	Toulon, 1848
19	1909	René Doumic	Paris, 1860
20	1909	Marcel Prévost	Paris, 1862
21	1910	Monseigneur Duchesne	Saint-Servin, 1843
22	1911	Henri de Régnier	Honfleur, 1864
23	1911	Denys Cochin	Paris, 1851
24	1912	Louis Lyantey	Nancy, 1854
25	1908	Jean Richepin	Medeah, Algeria, 1849
26	1914	Henri L. Bergson	Paris-en-Provence, 1859
27	1914	Alfred Capus (Vincent Marie)	Aix, 1858
28	1914	Pierre de la Gorce	Vannes, 1846
29	1918	Joseph J. C. Joffre	Rivesaltes, 1852
30	1918	Louis Barthou	Orlons-Sainte Marie, 1862
31	1918	Henri Joseph Leon (Alfred) Baudrillart	Paris, 1859
32	1918	Jules Martin Cambou	Paris, 1843
33	1918	René Boislesve	1867
34	1918	Francis de Curel	Metz, 1854
		President Wilson was made honorary foreign member in 1918.	
35	1919	Ferdinand Foch	Tarbies, 1851
36	1919	Georges Clemenceau	Chateau de l'Aubraie (Feole Vendee, 1841)
37-40	....	Vacant.	

III. CULINARY WORDS AND PHRASES

agneau (*ă-nyō*). Lamb.

à la, **au**, **aux** (*ō*). With; according to; after the manner of; as *huitres aux champignons*, oysters with mushrooms.

If a dish is cooked, or served, or made, with anything as an ingredient or garnish, the dish may be said to be "*à la*" that substance. So it may be possible to ascertain the meaning of phrases not given below by looking elsewhere in the vocabulary under the word used with the words "*à la*."

à la béarnaise (*ă lă bā-ăr-nāz'*). With a sauce of tarragon vinegar in which shallots have been boiled till it is reduced, then combined with egg yolks and butter, and beaten in a bain marie, then seasoned with red pepper and lemon juice.

à la béchamel (*ă lă bā-shā-mel'*). After the fashion of Béchamel (a French gastronomer); said of a sauce (see Béchamel); also prepared or served with this sauce.

à la Berey (*ă lă bâr-sē'*). Served with béarnaise sauce, stuffed green pepper and stuffed tomato.

à la bigarade (*ă lă bē-gă-răd'*). Flavored with (Seville) orange juice or peel.

à la bonne femme (*ă lă bôn făm*). Of, or in the style of, the housewife; specifically said of a kind of maigre soup made with fish, bouillon, legumes, and an assortment of vegetables.

à la bordelaise (*ă lă bôr-de-lāz'*). With Bordeaux wine; said of various preparations containing it; as of a sauce, with garlic, shallots, or onions, chopped mushrooms, and a piece of marrow; also with sauce à la bordelaise.

à la bourguignotte (*ă lă boor-gē-nyot*). Generally, prepared with the addition of red wine of Burgundy, or of Bordeaux, or of the Midi (*i. e.*, meridional provinces of France). At Bordeaux, or when made elsewhere with Gironde wine, the dish would be *à la bordelaise*.

à la caledo'nion (*ă lă*). Boiled slowly in plain water and then baked with dressing of butter, chopped parsley, and a little lemon juice; said of finnan haddie when so cooked.

à la Camerani (*ă lă kă-mă-rä' nē*). After the fashion of Camerani; said of a kind of rich chicken-liver soup.

à la Chateaubriand (*ă lă shă-tō-brē-ăN'*). With maître d'hôtel butter.

à la chevreuil (*ă lă she-vrû'y'*). Served with a savory sauce; said of fillets of beef.

à la chipolata (*ă lă chē-pō-lä'tă*). Containing an addition of the strongly flavored Italian sausages, or the mince with which they are filled.

à la chiffonade (*ă lă shē-fo-năd'*). See chiffonade.

à la cocotte (*ă lă kō-kot'*). Baked (as eggs) in a cocotte, with butter and cream, or with cheese, or the like, and served in the cocotte.

à la crapaudine (*ă lă krä-pō-dēn'*). Like a crapaudine (the flat piece of iron on which a grate pivot rests); said of grilled chicken, pigeon, etc., when prepared by boning, removing the legs and wings, and pressing flat.

à la Créole (*ă lă krā-ōl*). With tomatoes.

à la Croissy (*ă lă krwă-sē'*). Containing carrots in quantity, or at least strongly flavored with them; said specifically of a purée of onions, carrots, turnips, and parsnips stewed in coulis. According to others, containing turnips in quantity, or strongly flavored with them.

à la daube (*ă lă dōb*). Stewed in daube; said specifically of dishes cooked with small square pieces of salt pork, the round slices of carrots, glaced onions, and turnips.

à la Dauphiné (*ă lă dō-fē-nā'*). With various vegetables, spinach, lettuce, leek, onions, sorrel, beets, etc.; said of a kind of soup.

à la Dauphinoise (*ă lă dō-fē-nwăz'*). Generally, sauced over with a thick sauce (or with egg yolk), bread-crumbed, and then fried.

à la diable (*ă lă dē-ă'bl*). Deviled.

à la financière (*ă lă fē-năN-syâr'*). With extract of truffles (literally, after the style of a financier); said of a variety of espagnole sauce, and of dishes served with it.

à la Flamande (*ă lă flă-măNd'*). Containing cabbage, but more particularly Brussels sprouts, and, usually, turnips and carrots cut in big slices.

à la Florentine (*ă lă flō-răN-tēn'*). See à l'Italienne.

à la Génevoise (*ă lă zhă-ne-vwăz'*). Cooked with champagne; said of certain dishes of fish.

à la godiveau (*ă lă gō-dē-vō'*). With balls made of mincemeat, usually of veal.

à la Holstein (*ă lă hōl'stin*). Fried, and served with a fried egg, sardelles, capers, pickled beets, and pickles, and sometimes scraped horse-radish.

à la jardinière (*ă lă zhär-dē-nyâr'*). Made with a typical collection of cooked vegetables, as soups, ragoûts, and removes. See jardinière.

à la julienne (*ă lă zhū-lyen'*). With various vegetables sliced in strips, as carrots, turnips, leeks, onions, celery, lettuce, tarragon, sorrel; said especially of a kind of rich stock soup. Also said of potatoes cut in very slender strips and fried crisp floating in hot fat.

à l'Algérienne (*ă lăl-zhă-rē-en'*). Cooked with slices of raw ham; said of a preparation of fowl.

à la Languedoc (*ă lă lăNg-dok'*). Cooked with or in olive oil; with olive oil.

à l'Allemande (*ă lăl-măNd'*). Having a German provincial peculiarity of preparation, as a garnish of sauerkraut, prunes stewed in wine, quenelles of potatoes, etc.

à la Loren'zo (*ă lă*). Made of minced crab meat, put on toast spread with anchovy paste, then all covered with parmesan cheese and bread crumbs, buttered, browned in the oven, and served.

à l'Alsacienne (*ă lăl-să-syen'*). With pork and frankfurters; also with onions and pork.

à la lyonnaise (*ă lă lē-ō-nāz'*). With flaked or sliced fried onions; as, potatoes *à la lyonnaise*, or lyonnaise potatoes; sauce *à la lyonnaise*, or Lyons sauce, that is, espagnole sauce with flaked onions fried in oil.

à la macedoine (*ă lă mă-să-dwăn'*). Made with or of a typical collection of *green* vegetables, mostly in white sauce; also applied to collections of ripe fruit imbedded in jellies, etc.

à la Maintenon (*ă lă măN-te-nôN'*). A term variously used to designate a mode of cooking mutton or lamb chops; as, (*a*) wrapped in caul; (*b*) garnished with cockscombs and truffles; (*c*) served with a soubise; (*d*) served with financière sauce; (*e*) served with d'Uxelles sauce, etc.

à la maître d'hôtel (*ă lă mā'tr dō-tel'*). Prepared by a substantial, and homely, modest sort of cooking. Also served with maître d'hôtel butter.

à la Marengo (*ă lă mă-ren'gō*). With some garlic and oil.

à la Marsellaise (*ă lă măr-se-lāz'*). With Marsala wine.

à la Ma'ryland (*ă lă*). With a sauce of butter and cream, with or without wine. It is like à la Newburgh, but less rich.

à la Meyerbeer (*ă lă mi-âr-bâr'*). Shirred and served with broiled kidney and truffle sauce; said of eggs.

à la Milanaise (*ă lă mē-lă-nāz'*). See à l'Italienne.

à la mode de Caën (*ă lă mōd de kăN*). A term used to designate tripe prepared with vegetables, leeks, wine, cognac, etc.

à la Napolitaine (*ă lă nă-pō-lē-tăn'*). See à l'Italienne.

à la neige (*ă lă nāzh'*). In some form that suggests snow, as with white-of-egg froth, or in balls of white boiled rice, or the like.

à la New'burgh (*ă lă*). With a sauce made of cream, egg yolks, Maderia or sherry wine, and butter shaken in a dish over a slow fire until they thicken. Said also of this sauce.

à la nivernaise (*ă lă nē-vâr-nāz'*). Containing a nivernaise; said of a kind of soup à la julienne. See nivernaise.

à la Normande (*ă lă nôr-măNd'*). Generally, with apples in the composition of the dish in some shape or other.

à la Périgord (*ă lă pā-rē-gôr'*). Flavored with, or consisting of, truffles—alluding to the circumstances that these mushrooms grow of excellent size and quality in the province of Périgord.

à la Polonaise (*ă lă pō-lō-nāz'*). Having red beets or red cabbage, so as to have their juice, color, and taste; as Polish ragoût, or borsh, which is the type of dishes *à la Polonaise*.

à la poulette (*ă lă poo-let'*). With white velouté sauce.

à la printanière (*ă lă praN-tă-nyâr'*). Made with a typical collection of cooked *early* or *spring* vegetables; of a somewhat wider application than à la jardinière.

à la Provencale (*ă lă prō-văN-săl'*). Generally, prepared with more or less of olive oil, and flavored with garlic.

à la Reine (*ă lă rān*). Of, or after the style of, the queen; said specifically of a kind of chicken soup [*potage à la reine*, (*pō-tăzh' ă lă rān*)] containing white meat of chicken pounded and rubbed to a powder.

à la Ro'land (*ă lă*). Made of minced lobster meat in the same manner as *à la Lorenzo* dishes of crab meat. See à la Lorenzo.

à la Saint Cloud (*ă lă san'kloo*). With sliced truffles; said of a kind of velouté sauce.

à la serviette (*ă lă ser-vyet*). Served in or on a napkin, as braised truffles.

à la Soubise (*ă lă soo-bēz'*). Generally containing onions in quantity; or, at least, strongly garnished and flavored with them; especially, served with a white onion sauce used with lamb or mutton.

à la tartare (*ă lă tär-tär'*). With tartare sauce, or a sauce of similar ingredients. Also, said of a steak chopped and garnished with onions, pickles, pickled beets sardelles, and yolk of egg, to be eaten raw.

à la turque (*ă lă türk*). Shirred and served with chicken livers and mushrooms; said of eggs. Also boiled with rice and saffron; said of chicken.

à l'Aurore (*ă lō-rōr'*). With a pink sauce made by coloring velouté sauce with lobster coral or Armenian bole. Also said of sliced hard-boiled eggs put in a dish. covered with velouté, sprinkled with grated egg yolk, and baked.

à la vert pré (*ă lă vâr prā*). Colored green with vegetables, as with a purée of spinach.

à la Viennoise (*ă lă vyă-nwăz'*). Applied to dishes usually and typically prepared in the Austrian capital, such as the dumplings termed nockerlin, quenelles of potatoes, and others.

à la Villeroi (*ă lă vēl-rwă'*). With atelets sauce. Also, said of a poached egg put in a thick white sauce, then covered with egg yolk and bread crumbs, and fried.

à la vinaigrette (*ă lă vē-nē-gret'*). With vinaigrette sauce.

à l'espagnole (*ă lă-spă-nyōl'*). Made savory with espangole sauce; specifically, served with a garnish of onions, garlic, green peppers, mushrooms, tomatoes, and minced ham cooked together, and bound with espagnole sauce.

à l'huile (*ă-lwēl*). In olive oil; with olive oil dressing.

Alici (*ă-lē-'chē*). Anchovies, or a similar small fish preserved in oil according to the Italian fashion.

à l'imperatrice (*ă laN-pā-rē-trēs'*). Said of shirred eggs served with a slice of paté de fois gras upon each egg.

à l'Irlandaise (*ă lēr-lăn-dez'*). Containing potatoes in some form, and often cabbage, etc., in mass or as a prevailing garnish.

à l'Italienne (*ă lē-tă-lē-en'*). Generally made of, or garnished with, savory macaroni, or paste of that kind, or with ravioli; or made savory with Parma cheese.

Allemande sauce (*ăl-măNd'*). Velouté sauce, with the addition of essence of mushrooms, cream, and a leason, or binding, of yolks of eggs.

Alose (*ă-lōz'*). Shad.

Aloyau (*ă-lwă-yō'*). Loin of beef: short rib of beef.

Amontillado (*ă-mŏn-tēl-yă'dō*). A cheaper variety of wine classed as sherry, but in reality a wine from Sicily or other Mediterranean or Atlantic islands, mixed with a little real sherry.

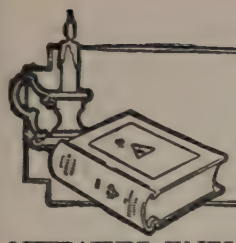
ananas (*ă-nă-nä'*). Pineapple.

anchois (*ăn-shwä'*). Anchovies.
anchovy (*an-chō'vi*). A small fish of the herring family caught in the Mediterranean, and pickled for exportation.
andouile (*ăn-doo'y*). Tripe.
anguilles (*ăn-g ē'y*). Eels.
anguilles grillée (*ăn-g ē'y gr ē-yā'*). Spitch-cocked, or grilled, eels.
anisette'. A cordial or liqueur flavored with anise seeds.
arroz à la Valencia'na (*ăr-rō'ä lä*). Valencia rice, a farinaceous substance in grains like rice.
artichaut (*är-t ē-shō'*). Artichoke.
asperge (*ä-spărzh'*). Asparagus.
aspic (*ăs-pēk'*). A savory jelly made of calves' feet, etc., or with extract of meat, flavored to suit the fancy, and stiffened with gelatine.
au (*ō*). See *à la*.
au beurre roux (*ō bûr roo*). With browned butter.
au chingaras (*ō shan-gä-rä'*). Sandwiched with ham and grilled; said of ox palates.
au four (*ō foor*). Baked in the oven, as a stuffed fish.
au fromage (*ō frō-mäzh'*). With cheese.
au gras (*ō grä*). Containing meat; said of soups so made.
au gratin (*ō grä-tan'*). With a crust made by browning in the oven; as spaghetti is often served *au gratin*.
au jus (*ō zhü*). In juice; in broth.
au kirsch (*ō k ērsh*). With kirschwasser; as an omelet or a punch containing this liqueur is termed *au kirsch*.
aumelette (*ōm-let'*). Omelet.
au naturel (*ō nä-tü-rel'*). In the natural condition; as, anchovies *au naturel*—i. *e.*, without oil or seasoning.
au rhum (*ō rüm*). With rum.
auro'ra sauce. Sauce à l'aurore. See *à l'Aulore*.
au suprême (*ō sü-prām'*). With supreme sauce.
au vert pré (*ō vâr prā*). With sweet or fresh herbs, especially, when they give a green color to the dish.
au vin blanc (*ō van blän'*). With white-wine sauce, as fillets of fish.
aux (*ō*). See *à la*.
aux cressons (*ō kres-sōn'*). With watercresses.
aux rognons (*ō rō-nyōn'*). With kidneys.
ballotine (*bä-lō-tēn'*). A shoulder of lamb, boned, stuffed, larded, and braised.
barbue (*bär-bü'*). A kind of fish.
bard (*bär*). Barbel, a kind of fish.
bardes de lard (*bärd de lär*). Fat slices of bacon for covering meat to be braised.
bar le duc (*bär le dük*). A kind of jam of white gooseberries.
Bava'rian cream. A cream jelly thickened with gelatine and set in a mold, and variously flavored and enriched; a Bavaroise; a kind of flummery.
Bava'rian dumplings. Boiled pudding, consisting of bread fried in fat, bread crumbs soaked in cream or milk, eggs, butter, flour, salt, and spice; or some other similar composition.
Bava'rian sauce. A modified Dutch sauce of vinegar, eggs, and butter flavored with crayfish butter.
Bavaroise (*bä-vä-rwäz'*). Bavarian. See *Bavarian cream*.
bécasse (*bā-käs'*). Woodcock.
Béchamel (*bā-shä-mel'*), or more properly, **Béchamelle.** Velouté white sauce mixed with cream; named after Louis de Béchamel, a French gastronomer.
beignet (*bā-nyā'*). A fritter.
benedictine (*ben-ē-dik'tin*). A cordial resembling chartreuse.
beurre (*bûr*). Butter.
beurre frais (*bûr frā*). Fresh (unsalted) butter.
beurre lié (*bûr l ē-ā'*). Dutch sauce with less butter than usual.
beurre noir (*bûr nwär*). Butter browned without flour.
beurre roux (*bûr roo*). Butter browned with flour.
biscuit (*b ē-skwē'*). French sponge cake.
bis'cuit à couper (*ä koo-pā'*). A form of sponge cake to be sliced and glazed with flavored sugar or sugar mixed with fruit juice.
bis'cuit à la Génoise (*ä lä zhä-nwäz'*). Sponge cake with anise-seed flavor, to be cut and toasted.
bis'cuit à l'Ursuline (*ä lür-sü-lēn'*). A sponge cake with rice and apple or apricot jam mixed into the paste, and grilled orange flower.
bisque (*bisk or b ēsk*). A soup of crayfish, made by cooking them in broth with herbs, sliced roots, and seasoning; other similarly prepared shellfish soups or sauces are also called *bisques*.
blancmanger (*blăn-man-zhä'*) or **blamange** (*blä-mänj'*). A jelly made with calves' feet, or gelatine, and milk of almonds; also, a jelly made of milk and starch, isinglass, or sea moss, with or without added chocolate, grenetine, or the like. This latter dish is more properly called *flummery*.
blanquette (*blăn-ket'*). A mince of white meat, as of chicken, warmed in velouté sauce, and pointed with butter and lemon juice. It often has added to it mushrooms, morels, or truffles.
blond (*blōn*). Concentrated juice or extract of some viand, used to add to certain sauces to give them body; as *blond de veau* (*de vō*), a rich broth of veal made by slowly stewing veal with accessories of ham, rabbit, or the like, with standard broth, shallots, cloves, etc.
bœuf de chasse (*bûf de shäs*). The sportsman's round of beef—the biggest joint of the animal.
bombe glacé (*bōnb glä-sā'*). A confection consisting of an ice casing frozen in the form of a truncated cone with cream of some kind, as Bavarian cream, inside.
Bordelaise sauce (*bôr-de-läz'*). Espagnole sauce with garlic, aromatic herbs, and Bordeaux wine.
bouillabasse (*boo-yä-bäs'*). A soup made of fish broiled and seasoned with onion, orange peel, saffron, oil, and other seasoning to suit the taste.
bouilli (*boo-y ē'*). Beef stewed, generally in one piece, and served with sauce.
boulettes de hachis (*boo-let' de hä-sh ē'*). Forcemeat balls.
bouquet garni (*gär-n ē'*). A tied bunch of parsley, onions, bay leaf, and thyme, used to boil in soup to flavor it.
bourguignonnes (*boor-g ē-nyon'*). Snails baked with a dressing of shallots, garlic, lemon juice, and butter.
braise (*brāz*) or **braisé** (*brā-zā'*). A piece of braised meat, or a dish prepared by braising; also a preparation mixed and prepared of various ingredients in or with which dishes are braised.
braisé de Boulanger (*brā-zā' de boo-lăn-zhā'*). A compound sauce in which meat is smothered when being braised.
bretonne sauce (*brā-ton'*). Espagnole sauce characterized by juice of fried onions or purée of onions.
Brie cheese or **Brie** (*brē*). A soft, white cream cheese.
bris'ket or **brisquet** (*brē-skā'*). The breast; the part of the breast next to the ribs.
broccoli (*brok'kō-li*). A kind of cabbage resembling the cauliflower.
brochet (*brō-shā'*). Pike; luce—a kind of fish.
brocheton (*brō-she-tōn'*). Pickerel.
brut (*brü*). An effervescent wine.
bückling (*bük'ling*). Red herring.
buisson (*bw ē-sōn'*). A dish disposed in a pyramid, and having a prickly [appearance.
bur'goo. Oatmeal porridge.
Burgun'dian sauce. Espagnole sauce flavored with shallots and red Burgundy wine.
cabillaud (*kä-b ē-yō'*). A fresh cod.
café (*kä-fā*). Coffee.
café au lait (*kä-fā' ō lā*). Coffee with hot milk; coffee to which milk is added during the process of infusion or boiling.
café bavaroise (*kä-fā' bä-vä-rwäz'*). Coffee with whipped cream.
café noir (*kä-fā' nwär*). Black coffee; that is, coffee without milk.
café parfait (*kä-fā' pär-fā'*). A form of coffee ice cream.
café Turc (*türk*). Turkish coffee; that is, coffee prepared by pouring boiling water on very finely ground coffee in the cup.
caille (*kāl*). Quail.
calipash'. A part of turtle next to the upper shell, containing a dull greenish gelatinous substance, esteemed as a delicacy.
calipee. A part of a turtle attached to the lower shell. It contains a fatty, gelatinous substance of a light yellowish color, esteemed as a delicacy.
Camembert cheese (*kä-măn-bâr'*). A rich, sweet, cream cheese, of a yellowish color, made in the neighborhood of Camembert, in Normandy, France.
canard (*kä-när'*). A duck.
canellons (*kä-ne-lōn'*). Hollow sticks or rolls of baked puff paste.
canelons (*kä-ne-lōn'*). Rugosities of ox palate, or preparations of them, covered with farce, rolled, and gratinated.
caneton (*kä-ne-tōn*). Young duck; duckling.
cannelon of meat (*kä-ne-lōn'*). A baked roll of highly seasoned mincemeat.
ca'pers. The pungent, grayish green flower buds of a trailing shrub (*Capparis spinosa*) of southern Europe.
capilotade of chick'en (*kä-pē-lō-tād'*). A kind of ragoût made of remains of fowl or game and some simple brown sauce.
ca'pon. A castrated cock. It fattens better and is tenderer than the uncastrated ones.
car'dinal sauce. Velouté variously flavored and colored red, as with cochineal.
carnichons (*kär-n ē-shōn'*). Gherkins.
carré (*kä-rā*). Breast.
carrelet (*kär-lā'*). A fish, the sole or flounder.
cassareep'. A brown, slightly sweet, aromatic thick extract made from the juice of the manioc.
casserole (*kas'se-rōl*; French pron. *käs-rōl'*). Stewpan.
cas'serole of rice. An ornamental pie case made of paste of prepared rice.
cassis (*käs-s ēs'*). Black currants; also, a kind of jelly, and a kind of liqueur or cordial, flavored with black currants.
caviare (*kä-v ē-är*) or **caviar** (*kav'-i-är*). Roe of sturgeon, and other large fish, prepared and salted, and used as a relish. They often resemble morning-glory seeds in appearance.
cèpes (*sāp*) or **ceps** (*sā*). An edible kind of mushroom.
champignons (*shăn-p ē-nyōn'*). Mushrooms.
chapon (*shä-pōn'*). Capon.
chapon au gros sel (*shä-pōn ō grō sel*). Plain boiled capon; literally, capon served with a big lump of salt (placed upon it).
charlotte russe (*shär-lot' rüs*) or **charlotte à la russe** (*shär-lot' ä lä rüs*). A dish of custard or whipped cream inclosed in a cup of sponge cake.
chartreuse à la Parisienne (*shär-trûz' ä lä pä-r ē-syen'*). A showy entrée, consisting chiefly of quenelles of forcemeat, containing ragoût and kebobs; an entrée de force; an entrée à surprise.
chasse café (*shäs kä-fā'*). A drink of liqueur served after the coffee at dinner.
chateaubriand sauce (*shä-tō-br ē-ăn'*). See *maître d'hôtel butter*.
chaufroid sauce (*shō-frwä'*). A white or brown jelly containing some sauce; a sauced jelly, or a gelatinized sauce.
cher'vil. A plant (*Anthriscus cerefolium*) with finely divided leaves. Two curly varieties are used in soups and salads.
chiffonade (*sh ē-fō-näd'*). A salad preparation of lettuce, chervil, sorrel, and scallions, with fresh butter, and some bouillon poured over it. When milk or fresh cream is added, it is called *potage à la chiffonade*; otherwise *potage de santé* (*pō-tāzh' de sän-tā'*).
chil'i. A kind of red pepper or capsicum.
chil'i sauce. A sauce condiment made with chilis, tomatoes, etc.
Chinese' stur'geon soup. A soup of beef and veal, containing pieces of cartilage from the sturgeon's head boiled tender.
chive. A plant allied to the onion, of which the young leaves are used in omelets, etc.
choucroute (*shoo-kroot'*). French sauerkraut, or sauerkraut in general.
choufleur (*shoo-flûr'*). Cauliflower.
choux (*shoo*). (*a*) Cabbages. (*b*) See *choux pâtissières*.
choux de Bruxelles (*shoo de brü-sel'*). Brussels sprouts.
choux de mer (*shoo de mâr*). Sea kale, a kind of cruciferous pottage root.
choux pâtissières (*shoo pä-t ē-syâr'*). Soufflés in small molds; small cakes of baked batter.
civet (*sē-vā'*). A ragoût of hare [civet de lievre (lyā'vr)], deer [*civet de chevreuil* (*she-vrû'y*)], or other game, into which wine and onions enter as ingredients.
clare'mont sauce. Butter sauce flavored by frying onions in it. The onions are removed after frying.
cock'a-lee'kie. Capon soup, boiled with leeks and prunes — a favorite Scotch dish.
cock'tail of oysters or clams. A dish containing oysters or clams seasoned with ketchup, pepper, etc., and served in a tumbler or glass.
cocotte (*kō-ket'*). A kind of iron casserole with two loop handles and a cover.
cœurs d'artichauts (*kûr-där-t ē-shō'*). Artichoke heads.
cognac (*kō-nyäk'*). A brandy distilled at Cognac, in France; hence, loosely, any French brandy.
coing (*kwan*). Quince. A liqueur, or ratafia, is made flavored with quince; and a jelly of quinces is called *coing de tranches* (*de trānsh*).
collared. This term is loosely used with no apparent definite meaning in the names of various dishes.
col'lared beef. A thin piece of beef, usually from the flank, rolled into a round form.
col'lops. Small pieces or slices.
com'fit. A dry sweetmeat; fruit, seed, or the like, preserved in sugar and dried.
compiègne cake (*kōn-pyān'*). A kind of cake intended to be drenched with liqueur, sliced, and sandwiched with apricot jam.
com'pote (French pron. *kōn-pōt'*). Cooked fruit; fruit preserved with sugar so as to preserve its form. Also, a savory dish of pigeons, quails or larks, mixed with peas or mushrooms.
confit (*kōn-f ē'*). A dry sweetmeat; fruit preserved in sugar and dried; a comfit.
confiture (*kōn-f ē-tür'*). Preserves.
consommé (*kōn-sō-mā'*). Strong broth of meat and vegetables, concentrated till slightly browned; in restaurants applied to thin soups such as would be made by this broth diluted.
cor'dial. A sweet and aromatic liquor. A *liqueur* is an alcoholic cordial.
côte (*kōt*). A rib.
côtelette (*kōt-let'*). A small rib; part of a rib; a piece of meat with the rib attached; a cutlet.

court bouillon (*boo-yôN'*). A very rich bouillon made by braising bouillon vegetables in butter, evaporating down, and then boiling in wine. It is added to sauces.
crême (*krăm* or *krâm*). A cordial of the relatively thick or viscid kind, such as *crême* de la menth (cream of minth), *crême* de la moka (cream of mocha coffee), *crême* de cocoa (cream of cocoa), etc.
crême bachique (*krăm bâ-shēk'*). A custard jelly with wine and egg-froth.
crême brulée (*krăm brū-lā'*). Brown sugar, or caramel, with cream.
crême fouettée à la paysanne (*foo-et-ta' ă lă pā-zăn'*). Whipped cream.
créole (*krā-ōl'*). See *à la créole*.
crêpes (*krăp*). Small fried cakes; a form of French pancake.
cressons (*krā-sôN'*). Cresses.
crevette (*krā-vet'*). Shrimp.
croquants (*krō-kăN'*). A piece of crisp pastry or confection which makes a crunching sound between the teeth, as a macaroon or a nougat.
crouton (*kroo-tôN'*). Small pieces of bread fried in butter or oil, for use as a garnish to salmis, fricassees, etc., or to serve with soups.
croquembouches (*krō-kăN-boosh'*). Small mounted pieces of crisp pastry, such as macaroons, nougats, gimblettes, etc.
crum'pet. A kind of large, thin, light cake or muffin cooked on a griddle.
cuissot (*kwē-sō'*). Haunch.
cyg'net. A young swan.
dantesques (*dăN-tesk'*). Frozen custards.
dariole (*dă-rē-ōl'*). A piece of pastry consisting of a shallow cup of short paste, filled with a rich compound of cream or custard with macaroons, fruit, or the like.
darne (*dărn*). Slice; cut.
de (*de*). Of.
demi-tasse (*dā-mē-tās'*). A small cup for black coffee.
désossée (*dā-sō-sāL'*). Boned.
diablotins (*dē-ab-lō-taN'*). (*a*) Frozen custards. (*b*) Neapolitan dragées. (*c*) Chocolate bonbons in paper.
dinde (*dand*). Turkey.
dindonneau (*dăN-dō-nō'*). Young turkey; turkey pout.
di zara (*sē zä'rä*). A less common name for maraschino.
Dutch sauce. Butter emulged with yolk of egg, or a sauce with this as a basis; Hollandaise sauce.
éclanche (*ā klănsh'*). Shoulder of mutton.
écrevisse (*ā-kr-vēs'*). Crayfish.
empotage (*ăN-pō-tăzh'*). Consommé or gravy broth.
en ballon (*ăN bā-lôN'*). Boned and stuffed with forcemeat, etc.—said of fowls' legs so cooked.
en brochette (*ăN brō-shet'*). On wooden skewers.
en caneton (*ăN kā-ne-tôN'*). A term used to designate fowls' legs boned and stuffed with forcemeat, etc.
en casserole (*ăN kā-s-rōl'*). In a casserole.
en coquille (*ăN kō-kē'y*). (Served) in shells, as oysters prepared as if to be escalloped and then baked in shells and served.
en cracovie (*ăN krä-kō-vē'*). With salpicon wrapped in calf's udder or pig's caul—said of ox palates.
escargots (*ăs-kär-gō'*). Snails.
escarole (*es-kä-rōl'*). A species of chicory used for salads; also, a variety of lettuce resembling this.
espagnole sauce (*es-pä-nyōl'*). Brown sauce made by boiling meat and flavoring vegetables and spices in normal broth to a glace, browning with roux, and removing the fat.
esturgeon (*es-tür-zhôN'*). Sturgeon.
faisan (*fā-zăN'*). Pheasant.
fanchonettes (*făN-shō-net'*). Small cakes like tartlets covered with meringue froth, with jam, currants, etc.
farcie (*fär-sē'*). Stuffing of forcemeat.
farine de riz (*fä-rēn' de rē'*). Rice flour.
fausse tortue (*fōs tôr-tü*). Mock turtle.
fécule de pommes de terre (*fā-kül' de pum de târ'*). Potato starch, used especially in making Savoy cakes, and other gateaux.
feuilletage (*fü-ye-täzh'*). Puff paste.
filet (*fē-lā'*). Eng. **fil'let.** (*a*) The under cut of the loin of beef and venison. (*b*) Breast of fowl or game when cut out [the inner muscles near the bone being the filet mignons (*fē-lā' mē-nyôN'*)]. (*c*) Any longish strips of meat or vegetables.
filet du dedans (*fē-lā' dü dă-dăN'*). The under cut of the loin of beef; a filet.
fil'let. See *filet*. Fillet is the usual spelling in English culinary books.
Fin'nan had'die. Haddock cured in peat smoke, originally coming from Findon (pronounced *fin'an*) in Scotland; also, haddock smoked in other ways.
flageolets (*flä-zhō-lā'*). Beans.
flamms. Pancakes.
fleurons (*flü-rôN'*). Punched-out ornaments of bread (crusted or fried), or of paste (baked), or of other materials.
Flor'ence cakes or **Flor'entines.** A kind of cake consisting of a thin shell of puff paste containing a composition of curds, butter, yolks, flour, bitter almonds, and lemon, or a very similar composition.
flum'mery. A cold, sweet dish chiefly of cereals, often with fruit in it, molded and to be eaten with wine, milk, or sauce.
foie (*fwä*). Liver.
fond (*fôN*). The broth or juice from braised flesh or fish, usually served as a sauce.
fondue (*fôN-dü'*). A preparation of cheese, eggs, and butter melted together.
fraise (*frăz*). Strawberry.
framboise (*frăN-bwăz'*). Raspberries.
frangipane (French pron. *frăN-zhē-păn'*). A kind of compound pastry cream flavored with almonds, with which pastry is garnished.
fromage (*frō-măzh'*). Cheese.
fromage à la Chantilly (*ä lä shăN-tē-y ē'*). **fromage de Chantilly** (*de shăN-tē-y ē'*). Apricot jam.
fru'menty. A food prepared by boiling wheat in milk to a jelly, usually with the addition of currants, sugar, egg yolk, and spice.
fumet (*fü-mā'*). A high-flavored substance, such as extract of game, for flavoring dishes of food; also, less properly, a ragoût of partridge and rabbits braised in wine.
gal'antine. Boned fowl, veal, or the like, stuffed with pieces of meat and force, boiled, and served cold, with a garnish of jelly or aspic.
gal'imaufry or **gallimafrée** (*gă-lē-mā-frā'*). A kind of ragoût of various kinds of meat highly flavored.
garbanças (*gär-bän-säs'*). Chick-peas.
garbure (*gär-bür'*). A soup of bacon and cabbage or other vegetables sometimes with cheese added.
Gas'cony sauce. Velouté with capers, truffles, and egg yolk.
gaspacho (*gäs-pä'chō*). A bread-and-vegetable salad, made by the Spanish, containing pimentoes, tomatoes, oil, and vinegar, and (in the richer form) fish, crayfish, piquant preserves, etc.
gâteaux (*gä-tō'*). Cakes of flour, butter, and eggs.
gâteaux de puits d'amour (*de pwē dä-moor'*). Lovewells.
gauffres (*gō'fr*). Waffles.
gelée (*zhe-lā'*). Jelly.
Gene'va sauce. A coulis of fried onions with meat essence or espagnole, with anchovy butter, and usually port or claret wine. It is used especially with fresh water fish.
génoise sauce (*zhā-nwăz'*). Espagnole sauce flavored with fumet and red wine.
génoises (*zhā-nwăz'*). Glazed cakes of sugar, eggs, flour, and almonds.
gioelotte (*zhē-blot'*). Stewed rabbit; sometimes, stewed chicken or other white meat.
gibier (*zhē-byā'*). Game, as hare, deer, etc.
gigot (*zhē-gō'*). Leg of mutton.
gimblettes (*zhan-blet'*). Small pastry preparations, such as croquignoles and croquembouches. Small pastry, or patés de petit four; they are used as ingredients of croquembouches.
glace (*glās*). A glaze, or broth, reduced by boiling to a gelatinous paste, so that when poured over meats it will give them a shiny appearance.
glacé (*glă-sā'*). Covered with glace.
glaced (*glāst*). Iced; having a shiny appearance produced by a coating of sugar, gelatine, or glace.
glaize or **glase** (*glāz*). A glace.
godiveau (*gō-dē-vō'*). A kind of mincemeat, usually of veal, made into balls, to garnish the interior of hot patés and vol-au-vents.
gold'en buck. A Welsh rarebit served with a poached egg on it.
goujon (*goo-zhôN'*). Gudgeon, a rather coarse fish.
goulash (*goo-läsh'*). See *gulash*.
gratin (*grä-taN'*). The brown crust formed upon a gratinated dish; also, the dish itself.
grat'inate. To cook, as macaroni, in a savory sauce or broth until the juice is absorbed and a brown crust forms.
gren'adine. A kind of fricandeau, with a basis of forcemeat.
grenouille (*gre-noo'y*). Frog.
grill. To broil.
grenadin (*grä-nä-daN'*). A small fricandeau, or dish made with a basis of forcemeat.
groseille à maquereau (*grō-zā'y ă mä-k'rō'*). Gooseberry.
gros rôti (*grō rō-tē'*). A large joint of roast meat.
Gruyère cheese (*grü-yâr'*). A kind of salted cheese in thin cakes.
guava jel'ly (*gwä'vă*). An excellent jelly made from the slightly astringent fruit of either of two tropical trees.
gulash (*goo-läsh'*), or **Hunga'rian gulash.** A ragoût of rump steak flavored with paprika.
gum'bo. A soup thickened with the mucilaginous pods of the okra; also, the okra pods themselves.
hareng (*ă-răN'*). Herring.
haricot (*ă-rē-kō'*). A stew or ragoût of meat. Also, the common string bean.
haricots verts (*ă-rē-kō' vâr*). Green string beans.
Hollandaise sauce (*ō-lăN-dāz'*; Eng. pron. *hol'lan-dāz'*). See *Dutch sauce*.
homard (*ō-mär'*). The European lobster—larger than the American lobster, called *homard americaine* (*ō-mär'dă-mă-rē-kăn'*).
hors d'œuvres (*ôr dûv'r*). Relishes; dishes which, while not sufficient to constitute a substantial meal, are served by themselves; as patties, rissoles, and other hot, light entrées, and cold entrées, such as sardines, oysters, anchovies, etc. The latter (*cold hors d'œuvres*) are eaten directly after the soup.
huitres (*wē-tr'*). Oysters.
huitres au lit (*ō lē*). Same as pigs in blankets.
hure de sanglier (*ür de săN-glyā'*). Head of wild boar.
jambon (*zhăn-bôN'*). Leg.
jardinière (*zhär-dē-nyär'*). A dish cooked à la jardinière. See *à la jardinière*. Jardinière soup has as many roots and green vegetables as can be; it differs from julienne soup by the prevalence of green vegetables in it.
julienne soup (*zhü-lyen'*). Soup à la julienne. See *à la julienne*.
jus (*zhü*). Broth; soup juice; gravy.
kip'pered her'ring. A herring split, salted, and smoked.
kirshwasser (*kērsh-vās'ûr*). A cordial distilled from the juice of the small black cherry.
klöse (*klü'ze*). Dumplings.
kumiss (*koo'mis*) or **kumys.** A beverage consisting of a liquor made by fermenting milk, originally mare's or camel's milk.
kummel (*koom'mel*). A liqueur made in Germany and Russia flavored with cumin, caraway, or fennel.
laitue (*lā-tü'*). Lettuce.
langouste (*lăN-goost'*). The crawfish.
langue (*lăNg*). Tongue.
lapereau (*lă-p'-rō'*). Young rabbit; cony.
lapins en accolade (*lă paN ă nă-kō-lăd'*). A brace of rabbits on a dish.
lasagne (*lă-săn'y*). Ribbonlike strips of macaroni paste; also noodles.
leason (*lē'son*). Thickening, as flour, starch, egg yolk, etc.
lebkuchen (*lāp'koo'ken*). A cake of flour and honey, variously flavored; also, a similar cake of flour and sugar.
legumes (*lē-gümz'*). Peas, lentils, or beans; improperly, fruit or green vegetables.
lev'eret. A young hare.
levreau (*lă-vrō'*). A young hare. *Levreau au sang* (*ō săN*) is a dish of young hares cooked with added pigeon blood.
macarons (*mă-kă-rôN'*). Macaroons.
macaro'ni. A paste of wheat flour and water dried in the form of long slender tubes. When prepared in still smaller tubes it is called spaghetti and vermicelli.
macaroon. A small cake composed chiefly of whites of eggs and sugar (meringue) with pounded almonds, or sometimes filberts, cocoanut, or the like.
macédoine of fruit (*mă-să-dwăN'*). A sweet jelly with whole fruit in its substance.
macédoine of veg'etables. A mixture of several vegetables, cooked, with some white sauce added.
macédoine sal'ad. A salad of mixed vegetables.
macroon'. A macaroon.
madère (*mă-dâr'*). Madeira wine.
maigre (*mā'gr*). Lean meat; also, any food other than meat. Also, a kind of fish. *Maigre soups* are those without meat, such as those used in Lent.
maître d'hôtel but'ter (*mā'tr dō-tel'*). Butter mixed with parsley, lemon juice, salt, and nutmeg—cold *maître d'hôtel sauce*.
manchons de veau à la Gérard (*măN-shôN' de vō ă lă zhā-rär'*). A dish of slices of veal rolled and stuffed.
maraschino (*mă-rä-skē'nō*). A cherry cordial made in Dalmatia from a sour cherry called *marasca*; hence, a similar liqueur prepared elsewhere.
marasquin (*mă-rä-skaN'*). French for maraschino.
marchand de vin (*mär-shăN' de vaN'*). Stewed with shallots, espagnole, and claret wine—said especially of kidneys.
march'pane. A cake of pounded almonds or pistachio nuts and sugar.
marsala (*mär'sä-lä*). A class of white Sicilian wines, of which the best kinds resemble Madeira, but are lighter.
mayonnaise sauce (*mā-yō-nāz'*). A sauce of egg yolk and oil worked together less properly with vinegar.

mennière (*me-nyâr'*). With brown butter, lemon juice, and parsley.
meringue (*mă-rang'*). Icing of white of egg and sugar thoroughly beaten together, sometimes with starch added. Pure meringues are called *baisers* (*bā-zā'*) or Spanish foam.
meringue glacée (*glā-sā'*). A glazed meringue.
meriuche (*mâr-lüsh'*). The haddock.
mirabelles (*mē-rā-bel'*). Plums of a certain superior variety.
morue (*mō-rü'*). Codfish.
moules (*mool*). Mussels.
moules à la bordelaise (*ā lā bôr-de-lāz'*). Mussels in forcemeat.
mousseron (*moo-srŏn'*). Mushroom (the edible kind).
mouton (*moo-tŏn'*). Mutton.
mulled (*muld*). Properly, heated and spiced; but often used to mean, made mild by sugar (acid wines), or by dilution (alcoholized wine).
mul'ligatawny or mul'ligatuuny. A spiced or curried soup of hashed chicken and rice.
Na'ples biscuit. Lady fingers.
Na'ples ice, Na'ples ice cream. Same as Neapolitan ice; Neapolitan ice cream.
Neapol'itan ice, Neapol'itan ice cream. Ice or ice cream prepared in layers, especially when colored, as in white, red, and yellow.
Neapol'itan sauce. Espagnole flavored with grated horse-radish, and a sweet and savory wine fumet.
nec'tarine. A smooth skinned variety of peach. The *Spanish nectarine* is a plum-like West Indian fruit, which is made into a sweet conserve.
nesselrode pudding (*nes'sel-rō-de*). Iced or frozen chestnut-and-fruit pudding.
neufchatel cheese (*nûf-shā-tel'*). A cheese made by thickening cream by heat and pressing it in a small mold.
nivernaise (*nē-vâr-nāz'*). A ragoût-like dish of carrots stewed in consommé.
nougat (*noo-gā'*). A mixture of almonds, pistachios, filberts, or the like, and honey or sugar baked together.
nouilles (*noo'y'*). Noodles.
œufs (*ăf*). Eggs.
œufs à la farce (*ăf ă lă fârs*). Hard boiled eggs with stewed sorrel.
œufs à la tripe (*ă lă trēp*). Hard boiled eggs with onion sauce.
œufs brouillés. Scrambled eggs.
ognon (*ō-nyŏn'*). Onion.
ognon d'Egypte (*dā-zhēpt'*). The rocambole, a mild, sweet onion.
o'kra. A plant, the long green, mucilaginous pod of which are used in soups, stews, etc.
olla (*ōl'lă*). Ragoût.
omelette au thon (*ōm-let' ō tŏn'*). Omelet with tunny, a kind of fish.
omelette aux confitures (*ō kŏn-fē-tür'*). An omelet served with fruit jelly. Jams do not go well with omelets.
oreilles (*ō-rā'y*). Ears; as, *oreilles de veau* (*de vō*), calf's ears.
orgeade (*ôr-zhād'*). Milk of almonds, made by stirring sirup of almonds in water; also, orgeat.
orgeat (*ôr-zhā'*). Sirup of almonds; also, orgeade.
Or'leans sauce. A mince of carrots, anchovies, hard-boiled eggs, and gherkins, with peppersauce.
pabrica (*pă'brē-kă*). Paprika.
pain (*pan*). Bread.
panais (*pă-nā'*). Parsnips.
panée (*pă-nā'*). Bread-crumbed (over egg yolk, sauce, butter, or fat) previous to frying.
panière (*pă-nyâr'*). A basket, as that for holding a wine bottle. Also, an entrée panée.
pannequets (*păn-kā'*). French pancakes.
paprika (*pă'prē-kă*). A mild kind of red-pepper condiment obtained from *Capsicum annum*.
Pari'sian loaves. Finger cakes ornamented with strips of currant jelly, greengage jam, or the like.
Pari'sian sauce. Allemande flavored with truffles and tinted.
pas'caline. White mushroom sauce.
paté (*pă-tā'*). A pasty.
paté aux choux (*pă-tā' ō shoo'*). Cream-cake paste, which resembles a cabbage head when baked.
paté de foie gras (*pă-tā' de fwă-grā*). Pie of fat livers.
paté mollette (*pă-tā' mō-let'*). A Mecca cake.
patés (*pa-tā'*). Pasties.
patés chauds (*shō*). Hot pasties.
patés de petit four (*de pe-tē' foor*). Small pasties—literally, pasties of the little oven.
patés froids (*frwā*). Cold pasties.
perdreux (*pâr-drû'*). Partridges.
perdrix (*pâr-drē'*). A partridge.
persillade of fish (*pâr-sē-lad'*). Fish with parsley.
petit rôti (*pe-tē' rō-tē'*). A roast fowl.
petit salé (*sa-lā'*). Pickled pork in small pieces.
petits choux. Same as choux pâtissière.
petits fois (*pe-tē' fwa*). Peas.
pigeonnaux (*pē-zhō-nō'*). Squabs.
pigeons innocents (*pē-zhŏn' ē-nō-sănt'*). Squabs.
pilau (*pi-law'*) **or pillau.** An oriental dish of rice stewed with mutton, lamb, or fowl, almonds, raisins, and saffron and other spices.
pimen'to. Allspice, or Jamaica pepper.
pimo'la. An olive stuffed with sweet peppers.
piquante sauce (*pē-kănt'*). Espagnole with pickles added and flavored with shallots.
plombière (*plŏn-byâr'*). A kind of frozen fruit pudding.
poché (*pō-shā'*). Poached.
poisson (*pwă-sŏn'*). Fish.
poivrade (*pwă-vrād'*). Peppersauce.
polen'ta. Porridge.
polonaise cakes (*pō-lō-nāz'*). A kind of tart made of puff paste with jelly at the corners.
pomme (*pum*). Apple.
pomme d'api (*pum dă-pē'*). Small rosy apple.
pomme de terre (*de târ*). Common Irish potatoes.
pompa'no. A highly esteemed marine food fish.
potage (*pō-tāzh'*). Soup; pottage; broth.
potage à la Camerani (*ă lă kă-mă-rā'nē*). A rich kind of chicken-liver soup.
potage croute au pot (*troot ō pō*). Plain broth with vegetables and crusts browned in gravy.
pot pourri (*pō poo-rē'*). A ragoût of various meats and vegetables cooked together.
printanière (*pran-tă-nyâr'*). A dish cooked à la printanière. See *à la printanière*. Printanière soup is the same as jardinière soup, essentially.
profiterolles (*prō-fē-trōl'*). Sweet entremets, a kind of cake filled with custard.
pumpernickel (*poom'per-nik'l*). Black bread made in Westphalia of unbolted rye. It is of an acid taste.
purée (*pü-rā'*). A pulpy maceration of meat, vegetables, fruit, or the like, passed through a sieve.
quartier (*kâr-tyā'*). Quarter; especially forequarter.
quasi de veau (*kā-zē' de vō*). The thick end of a loin of veal.
quenelle (*ke-nel'*). A kind of delicate forcemeat ball or dumpling.
radis (*rā-dē'*). Radish.
ragout (*rā-goo'*). A rich compound consisting of quenelles, mushrooms, truffles, etc., mixed with a rich sauce, and used to garnish rich dishes; also, a dish garnished with this.
ramequin (*ram'ē-kin*; French pron. *rā-me-kaN'*). A pastry consisting of a preparation of cheese inclosed in or mixed with puff paste, and baked or browned. Cheese straws are thin ramequin of cheese mixed with puff paste.
ratafià (*rā-tā-fē-ā'*). (*a*) Noyau, curacao, or other liqueur containing kernels of fruit, as of peaches, cherries, etc. (*b*) A small macaroon made mainly of bitter almonds.
réchauffé (*rā-shō-fā'*) **or réchauffée.** Warmed or heated over a second time.
relevés (*rā-l'-vā'*). Same as remove.
rémoulade (*rā-moo-lād'*). A purée of anchovies, capers, parsley, shallots, and hard-boiled eggs, dressed with spices, oil, and vinegar.
rémoulade à la provençale (*ā lā prō-văn-sāl'*). Rémoulade not sieved and with more oil.
remove. A dish removed from the table to make room for another; applied generally to the roasts, joints, turkeys, fillets, etc., which follow the soup and fish at an ordinary dinner of several courses.
ris de veau (*rē de vō*). The sweetbread; pancreas.
rissole (*rē-sōl'*). A kind of pastry made of minced and spiced meat or vegetables, or fruit, wrapped in paste, and fried in fat—originally one containing rice as an ingredient.
rissolé (*rē-sō-lā'*). Browned by baking or frying.
rissolette (*rē-sō-let'*). A croutade, or bit of fried bread containing or holding a little portion of forcemeat.
rognons (*rō-nyŏn'*). Kidneys; fries.
romaine salad (*rō-mān'*). A kind of mixed vegetable salad.
Ro'man punch. A water ice flavored, as with lemon, and mixed with rum of other spirits. Also, a complicated punch, similar in preparation to regency punch, with added frozen white of egg froth.
roquefort (*rōk-fôr'*). A French cheese made from the milk of ewes, cured in a cavern in the limestone rock at Roquefort, France.
rothe grütze (*rō'te grōōt'se*). A flummery of rice grits and fruit juice.
roulette (*roo-let'*). A dish consisting of a slice of meat spread with stuffing, rolled, and stewed or braised.
roux (*roo*). Browned by frying in butter or other grease.
roux blanc (*blăn*). Starch or flour fried in fat so as to be hardly colored.
roux brun (*brün'*). Fried a dark brown.
Rus'sian sauce. A velouté with egg yolks and strong herbs.
Rus'sian soup. A gravy soup of veal, fowl, etc., with souchets of salmon, eel, perch, mullet, quenelles of whiting, lobster coral, and mushroom purée.
salad russe (*să-lād'rüs*). A dish of chicken meat, ham, veal, etc., sliced, arranged separately and served with truffles, and tartar sauce, or caviare and sardelles, etc.
Sal'ly Lunn. An English tea cake.
salmagun'dy. A salad of cold chicken, veal, eggs, beets, anchovies, etc., finely minced and spiced.
salmis (*sal-mē'*). A ragoût of roast game or fowl in rich gravy or sauce.
sal'picon (French pron. *sal-pē-kŏn'*). A ragoût or rich compound of chopped meat or fish and vegetables with savory sauce, used as a separate dish, as a garnish, to stuff meats, etc.
sauce beurrée à l'Anglaise (*bû-rā' ă lăn-glāz'*). Butter sauce.
sauce blanche (*blănsh*). Butter sauce.
sauce Colbert (*kōl-bâr'*). Brown sauce with meat glace, lemon juice, parsley, and butter stirred in.
sauce de gourmets (*de goor-mā'*). A coulis with a purée of tomatoes and crayfish butter.
sauce en tortue (*ăn tôr-tü'*). Espagnole sauce, a kind of sauce used for calf's head.
sauce Italienne rousse (*ē-tā-lyen' roos*). A sauce of espagnole, varied and flavored with shallots, mushrooms, and olive oil.
sauce piquante (*pē-kănt'*). An acid or sour sauce.
sauce Robert (French pron. *sōs rō-bâr'*). A full-flavored espagnole sauce, strongly flavored with onions, mustard, and zested with lemon juice or vinegar.
sauce rousse (*roos*). Brown sauce.
saumon (*sō-mŏn'*). Salmon.
sauté (*sō-tā'*). Lightly and quickly fried in little grease.
savoy' cakes. Lady fingers or other fancy cakes of sponge-cake paste.
scones (*skōnz*). Scotch cakes of oatmeal or flour.
selle (*sel*). Saddle.
soubise sauce (*soo-bēz'*). A purée of white onions or souchie.
souchet (*soo-shā'*) **or souchie** (*sōō-shē'*). A stew of fish in a soup-like savory [broth.
soufflé (*soo-flā'*). A dish consisting of batter of starch or flour, eggs, milk or cream, and butter, beaten light and baked and served hot while light and spongy. Soufflés may be variously flavored, as with ginger, vanilla, chocolate, etc.
spaghetti (*spā-get'tē*). Hollow tubes of dried Italian paste, in size between macaroni and vermicelli.
Span'ish cream. Gelatine pudding containing custard, gelatine, and beaten white of eggs, set in a mold.
Span'ish puffs. Meringues.
suprême sauce (*soo-prăm'*). Velouté flavored with mushrooms and consommé of fowls.
tar'tare sauce. Mayonnaise sauce with vinegar and chopped green herbs, pickles, and capers.
tête (*tāt*). Head.
timbale (French pron. *tan-bāl'*). A drum-like case of macaroni or rice filled with some composition, as with forcemeat or ragoût.
truffes (*trüf*). Truffles.
truf'fle. A kind of edible mushroom that grows underground.
truite (*trwēt*). Trout.
Turk'ish cof'fee. Café au Turc.
tutti-frutti (*toot'tă-froot'tē*). A confection consisting of preserved fruits of various kinds.
valen'cia rice. Rice boiled till the grains are soft and then mixed with oil and tomatoes.
veau (*vō*). Veal.
vin (*van*). Wine.
vinaigre (*vē-nā'gr'*). Vinegar. *Vinaigre a l'éstragon* (*ă lās trā-gŏn'*) is vinegar flavored with tarragon.
vinaigrette (*vē-nā-gret'*). A sauce made sour by acid wine or vinegar.
vin ordinaire (*van ôr-dē-nâr'*). Ordinary table wine; claret.
volaille (*vō-lāl'*). Poultry.
vol-au-vent (*vō-lō-văn'*). A light puff-paste case baked and then filled with a ragoût, fricassée, or the like.
Welsh rare'bit or rab'bit. A dish consisting essentially of toasted bread on which is served toasted or melted cheese. The cheese is variously prepared, as with the admixture of ale, or other flavoring material.
white sauce. Same as velouté, or similar sauce.
wiener schnitzel (*vē'ner shnits'el*). A cut of veal from the leg fried in batter and seasoned with paprika, etc., after a style attributed to the Viennese.

FAMOUS COMPOSERS



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BOOK III

LITERATURE

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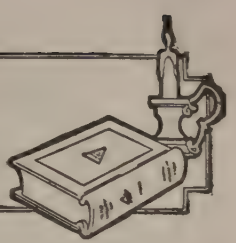


LITERATURE, IN ITS MOST EXTENDED significance, comprehends everything written in a given language which is colored by the temperament of the writer. A geometrical treatise should be colorless, though Euclid's *Elements* are marked by a sense of form and proportion peculiar to the Greek mind. A plain statement of fact is almost invariably colored by the sentiment of the narrator and his belief as to what is interesting and important. In a narrower sense, literature is restricted to writings to which the temperament of the writer has imparted charm, whether by reason of his earnestness and breadth of mind, his love of nature or of his fellowmen, or his peculiar power of embodying impressions in a verbal form of attractiveness and suggestion.

To the writer, literature is a method of expression and communication. Men naturally desire to express themselves, to put into form their ideas on some subject that appears to them of interest and importance. Matthew Arnold, influenced largely by his familiarity with the poetry of Wordsworth, defined literature to be a criticism (expression of judgment) of life. It would be nearer the truth to say that it contained a criticism of life. As man is essentially a "social animal," in the phrase of Aristotle, he desires to communicate his views to others. Even Milton, whose soul "like a star dwelt apart," sought an audience "fit though few." This desire to express and to communicate is the impelling force to the creation of literature, even when some peculiar perversity makes a writer use a cryptic or unintelligible style. The desire to produce something beautiful—the artistic impulse—which at first would seem to be strictly individualistic, is compounded with and modified by the desire to express thought and sentiment and to communicate them to others.

This being so, it is evident that a writer must use the language of his time and must embody the views and general principles of his age. Even when a man addresses a remnant who adhere to the ideas of the last generation, or the few progressives who have an intimation of the future or have caught sight of the new light which is soon to be the "light of a common day" to the next generation, he must deal with ideas which are somewhat in vogue in his own time For this reason literature is representative of its own age, though as the temperament which makes the writer is usually one which sympathizes with progress and hates embodied injustice, it tends to express the advanced ideas of that age rather than the reactionary or stationary ones. "Write on my tomb," said the poet Heine, "that I was a soldier in the cause of freedom." The same words might be engraved on Shelly's monument. There are many, like Shakespeare and Tennyson, to whom the ordered civilization of the present seems most significant; to others, like Sir Walter Scott, the pathos or magnificence of the past appeals more strongly. But all write for a certain number of those who sympathize with them; each must have a living audience.

For this reason the literature of any time is a mirror of the thought of the time, and as there is a gradual evolution of thought, not merely an accumulation of knowledge, the tone of literature changes with advancing civilization. It is a peculiarity of this evolution that it is not a continuous process, but is an irregular movement with periods of quiescence and of advance. Nor is the movement, as far as we can see, always in one direction. It seems to follow the line of least resistance, even if the impelling force is forward. Consequently, there are periods in which the national spirit—reflected in national literature—is in quite distinct moods. The prevailing views on politics, religion, philosophy, society, duty, and even property are gradually modified. For a number of years one set of these ideas seems prevalent, then they weaken and change, sometimes with great rapidity, and another period is inaugurated.

ENGLISH LITERATURE.—As the English nation is continuous, so the literature of one period is bequeathed to the next It may seem that an early period was more energetic or more spiritual or more artistic than a later one, still the influence of what was taught in one century is never entirely lost. The literature survives, and continues to exercise an influence on many minds long after the termination of the period in which it appeared.

AMERICAN LITERATURE. — American literature is not readily or satisfactorily defined. It excludes all the literatures of this Western Hemisphere except that of the United States, and even in the United States is generally reckoned as exclusive of all languages except English.

Branch of English Literature.—Obviously American literature belongs to the generic class English literature American literature is the American expression of human interests in artistic prose or verse.

But the prose or verse of America does not differ materially in form from that of Great Britain. This definition concedes similarity of interests and methods, but suggests that there is possibly a difference in point of view. Such a difference may be readily discerned, but not in the realm of pure art.

PARALLEL OUTLINES OF WORLD LITERATURE

In., Indian; Per., Persian; Arab., Arabian; Dan., Danish; Swed., Swedish; Ic., Icelandic; Nor., Norwegian; Sp., Spanish; It., Italian; Port., Portuguese; Russ., Russian.

TABLE I. FROM THE BEGINNING TO THE BIRTH OF CHRIST

Date	Egyptian	Babylonian and Assyrian	Hebrew	Indian and Persian	Chinese	Historical Events
4000 to 3000 B. C.	*Moral Precepts* of Ptah-hotep. Hieroglyphic records on tombs.	**King Sargon** (3800 B. C.) — *Early Tablets.*—Earliest record of a Semetic line of kings ruling in North Babylonia. Inscriptions.				Civilization in Egypt and Babylonia
3000 to 2000	Inscription of Una. *Book of the Dead* — A collection of prayers, mythical in character, dealing with the future state of the soul. *Song of the Harper*—Oldest version of a funeral drinking song.	**Hammurabi** (c. 2300). — *Code* — Great statesman-ruler. His reign called the Golden Age of Babylon.				2700, Chaldean literature already voluminous. 2234, Astronomical observation in Babylonia.
2000 to 1000	*Pentaur*—A prose poem descriptive of battle. The nearest approach to the epic in Egyptian literature. *Papyrus Ebers* (c. 1550) — An extensive medical treatise found by G. M. Ebers. *Amarna letters*—Clay tablets. The official archives of two kings of Egypt. Show evidence of advanced literary activity.		*Oldest Songs of the Old Testament.* — The Song of Deborah. Many of the psalms.	*The Vedas* (In.)—The collective designation of the ancient sacred literature of India. Prayers, sacrificial formulas, legends, rules for conduct. *Mahabharata* (In.) — A great epic narrative, containing about 100,000 stanzas.	*Oldest Songs of She-King Book of Chinese* — A book of poetry, chiefly religious.	2000, Chaldean rule over Syria. Mycenaean civilization. 1380, Rameses II 1040, King David.
	Greek					
1000 to 500	**Homer.** — *Iliad* and *Odyssey* — Epic poems containing the story of the siege of Troy and the wanderings of Ulysses. The greatest epic of all literatures. **Hesiod.**—*Works and Days*—Poet of humble descent and occupation, his work a collection of reflections and precepts relating to a rural household	668-608, Golden age of Assyrian literature. *Descent of Ishtar Into Hades*, etc. — Ishtar was the chief goddess in the religion of the Babylonians and Assyrians.	*Joel, Amos, Hosea* — Minor prophets. *Psalms* — Sacred poems. *Jeremiah*—The book of lament over Israel's humiliation.	**Zoroaster.** — *Afesta* (Per.) — The bible of Zoroastrianism. *Ramayana* (In.) — The second of the two great epic poems of mediaeval India.	**Lao-Tse.** — The reputed founder of the philosophy of Taoism. **Confucius.**— The most famous of all the sages of China. His doctrines were ethical and political.	1000, Zoroaster 776, First Olympiad 753, Founding of Rome.

TABLE I. FROM THE BEGINNING TO THE BIRTH OF CHRIST—Continued

Date	Greek	Latin	Hebrew	Indian and Persian	Chinese	Historical Events
1000 to 500 B.C. Cont.	**Sappho.**—One of the two greatest leaders of the Æolian school of lyric poetry. Passion, sincerity and grace in her work. **Anacreon.**—A graceful, lyric poet who sang of wine, love, and merry company.		*Songs of Solomon*—Hebrew pastoral poems.	*Laws of Manu* (In.)—Ancient law-book of the Hindus. *Brahmanas* (In.)—Writings relating to prayer and sacrifice. *Upanishads*—Speculations on the nature of the world and man.		586, Babylonian captivity.
500 to 400	**Pindar.**—The greatest of the Greek lyric poets. **Æschylus, Sophocles, Euripides.**—Writers of tragedies. Their works are so full of deep human content that they belong to the world's greatest treasures. **Aristophanes.**—The greatest writer of Greek comedy. **Plato.**—The most important of the Athenian philosophers.		*Job*—A drama of the soul. *Ruth*—An idyl of Jewish life in the period of the judges.		**Mencius.**—Second in rank among Chinese sages. Taught that man by nature is good.	492, Persian war. 490, Marathon; age of Pericles. 438, Parthenon. 431-404, Peloponnesian war.
400 to 300	**Isocrates.**—The fourth among the ten Attic orators. **Demosthenes.**—A celebrated Athenian orator. **Æschines.**—An Athenian orator. **Aristotle.**—The founder of the Peripatetic school of philosophy. **Xenophon.**—An Athenian historian.		*Malachi*—A minor prophet. *Daniel*—The apocalyptic prophet.	**Panini's** *Sanskrit Grammar*—The greatest of India's grammarians. His is the oldest preserved Sanskrit grammar. Cuneiform inscriptions near Persepolis.		399, Execution of Socrates. 390, Gauls sack Rome. 336-323, Alexander the Great.
300 to 200	**Theocritus.**—The creator of bucolic poetry in Greek. **Eratosthenes.**—Famous for astronomical, geographical and mathematical labors. **Apollonius.**—A Greek scholar and epic poet. *Septuagint version of Hebrew Scriptures*—A translation made at Alexandria by seventy Greek scholars.		*Ecclesiasticus*, or *Jesus, Son of Sirach*—Practical moral reflections.	*The Puranas* (In.)—The name of a class of poetic Hindu works of mixed cosmogonic, epic, and didactic character. Beginning of the Indian drama.		264-241, First Punic war. c. 229, Achæan league.
200 to 100	**Bion.**—A Greek bucolic poet noted for his sharp and incisive sayings. **Moschus.**—Author of eight bucolic poems elegant in expression. **Polybius.**—One of the most important Greek historians.	**Plautus.**—*Comedies: Aulularia, Captivi, Pseudolus*, etc.—Rich in humor and invention, his comic art rivals that of Shakespeare. Our modern drama owes much to him.		**Sudraka.**—An Indian dramatist.		218-201, Second Punic war. 168, Fall of Macedonia.
100 to A.D.	*The Anthology* compiled. Contains poems from forty-seven Greek poets.	**Pacuvius.**—A learned and able imitator of Greek literature. **Ennius.**—*Annals, Thyestes*, etc.—The writer of the first great Roman historic epic. He made the Latin language suitable for lofty poetry. **Terence.**—*Comedies; Andria, Phormio*, etc.—His comedies are almost modern in their elegance, and have been widely copied by French and English dramatists. **Lucilius.**—*Satires*—A daring satirist who spoke out his full meaning in language that was sometimes lofty and sometimes half-Greek and full of slang. **Cato the Elder.**—*Concerning Agriculture*—At once a fine writer and a writer of strong works in prose. "The father of Latin prose." **Varro.**—*On Agriculture, On Languages*—"The most learned of the Romans." A great encyclopædist who wrote on various subjects with authority. **Cæsar, Julius.**—*Commentaries*—At once a great statesman, writer, and historian. His work on the Gallic war is read in modern schools for its perfect style. **Cicero.**—*Orations, Essays, Letters*—Rome's finest writer. The model of prose style for all time, ranging from lofty and powerful declamations to urbane and rhythmically beautiful passages. **Lucretius.**—*Concerning Nature*—The most original philosopher-poet in Latin. He expounded the Epicurean philosophy with an intensity of feeling that was almost madness. Tradition makes him to have died insane. **Catullus.**—*Lyrics*—In his strong passionate language the model of the modern Italian poet, d'Annunzio. **Sallust.**—*Histories: Catiline Conspiracy, War with Jugurtha, Memoirs*—An accurate historian who wrote with clearness and vigor. **Nepos.**—*History, Biographies*—Style is colloquial, but biographies are fair, sympathetic and well arranged. **Vergil.**—*Georgics, Æneid*—The greatest of the Roman epic writers. His *Æneid*, partly imitated from Homer, is remarkable for its pathos and deep feeling. **Horace.**—*Odes, Satires, Letters*—The most polished and the most quoted of all the lyric writers. His Satires and Epistles are read with delight as representing the philosophy of life which Horace characterizes as the "golden mean."			146, Greece became Roman territory. 113-102, Invasion by Teutons. 63, Cicero consul. 49-45, Civil war. 44, Cæsar killed. 31, Battle of Actium. 27, Augustus emperor. 4, Birth of Jesus?

TABLE II. FROM JESUS TO MOHAMMED, 1-600 A. D.

Date	Latin	Early Christian Literature—Greek and Latin	Greek	Oriental	Historical Events
A. D. 1 to 100	**Livy** (59 B. C.-17 A. D.).—*History of Rome*—Originally in 142 books, only one-fourth of which now exist. Not a philosophical historian, but wrote in a fascinating style. **Seneca** (3 B. C.-65 A. D.).—*Tragedies, Moralistic Essays, Satires*—Epigrammatic, wise, rhetorical; he created a new and florid style.		**Josephus, Flavius** (37-100).—*History of the Jewish War, Jewish Antiquities*—A Jewish historian who wrote in Greek in such pleasing style as to win the title of "the Greek Livy." His history gives a detailed account of the fatal war with Rome. **Plutarch** (c. 46-125), *Lives, Morals, Table Talk*—Master in sketching character. His work is permeated by lofty enthusiasm and a warmth of portraiture.		14, Death of Augustus. 68, Death of Nero.

TABLE II. FROM JESUS TO MOHAMMED—Continued

DATE	LATIN	EARLY CHRISTIAN LITERATURE	GREEK	ORIENTAL	HISTORICAL EVENTS
1 to 100	**Ovid** (43 B. C.-18 A. D.) *Metamorphoses, Heroides*, etc. A court poet who wrote much that is beautiful and much that is indecent. He died in exile. **Pliny the Elder** (23-79).—*Natural History*. An encyclopædist who has left us a large work drawn from the writings of a multitude of other men. He died in the eruption of Pompeii. **Lucan** (39-65 A. D.).—*Pharsalia*. The author of this third important Roman epic. He dared the displeasure of Nero and lost his life. **Petronius**(—66).—*Satire*—The first writer of realistic literature. His work is remarkable for its knowledge of the world, brilliant criticisms, and its pictures of low life in Italy.		**Epictetus** (c. 50).—*Discourses*. — An eminent philosopher, born a slave, who led a life exemplary of the pure morals which he taught.		70, Destruction of Jerusalem by Titus. 79, Destruction of Pompeii by Vesuvius.
100 to 200	**Juvenal** (40-120), *Satires*.—A vigorous satirist of Roman life, depicting hideous vices and cauterizing them with words of fire. **Quintilian** (42-118).—*Rhetoric and Criticism*—A genial writer on practical education, abounding in anecdotes and examples. **Martial** (43-104).—*Epigrams*—Very witty but obscene epigrammatist. **Tacitus**(55-117)—*Germany, History, Annals*, etc.—A scientific, historical writer, though prejudiced against the emperor. His style is obscure yet terse and vigorous. **Pliny the Younger** (61-115).—*Epistles*—A rather self-conscious personage whose letters are written with one eye on the public at large. The facts he gives regarding his time make his epistles attractive reading. **Suetonius** (72-c. 160).—*Lives of the Cæsars, Lives of Eminent Grammarians*—A voluminous writer, from whom we have the lives of the first twelve Cæsars. His style is dry but precise. **Apuleius, Lucius** (c. 130).—*Golden Ass, Concerning Magic*—Writer of romance who protrayed conditions of his time with much humor and in life-like colors.	*New Testament.* **Justin Martyr.**—*Apologies for the Christians.*—Important as defender of Christian religion. Was an ardent student of philosophy. Said to have been beheaded in 165 because he refused to offer sacrifice to heathen gods. **Clement of Alexandria.**—*Exhortation to the Greeks.*—A defense of the faith, designed to win converts. **Tertullian** (c. 150-230).—*Apology, Tracts*. The creator of Christian Latinity. His works imprinted on Western theology a legalistic character which it never lost. Sharply attacked moral laxities of his time. **Origen.**—The greatest theologian of the third century. He developed the allegorical interpretation of scripture.	**Dion Chrysostomus** (c.50-117).—*Orations*.—Though his writings have but little inherent value he is famous on account of the beauty of his style. **Lucian** (c. 120-200).—*Dialogues of the Dead, Satires*.—A bold satirist who, fertile in invention and racy in humor, ridiculed the religion, philosophy and literature of his people. **Appian**(c. 150).—*History of Rome*.—His point of view is purely Roman but the work is invaluable for the history of the civil wars.	**Kalidasa** (In).—*Dramas*—The most illustrious name in the second epoch of Sanskrit literature. This is the period of artificial poetry. Kalidasa is rich in creative fancy and strong in powers of description. His fame rests on his dramas, but he is also an epic and lyric poet. *Talmud* begun. This great work is the encyclopædia of Jewish civilization.	98-117, Trajan. 117-138, Hadrian. 138-161, A. Pius. 161-180, Marcus Aurelius.
200 to 400	**Ausonius**(310-390).—*Mosella*.—A Latin poet of Gaul in whom we first find the modern love of nature predominant. His best known poem is called *Mosella*, from the river Mosella; but he also dwelt on many subjects. **Claudian** (c. 365-408).—*Rape of Proserpine, Epigrams*,etc.—The last of the classical Latin poets. His poetical gifts were considerable, especially in the mastery of language and meter.	**Athanasius** (c. 293-373).—*Discourses, Histories*.—The father of Greek orthodoxy. **Chrysostom.** — *Homilies, Commentaries, Epistles*. — An eloquent expounder of Christian doctrine. **St. Ambrose** (c. 340-397).—A learned bishop noted for his mild and gentle, but inflexible character. **Jerome**(c. 340-420).—*Latin Bible* (vulgate).—This translation was destined to become the Bible of the occident. **Prudentius** (c. 348-405).—*Hymns*.—The greatest of the early Latin Church. The *Hymns* were designed for devotional use. **St. Augustine** (354-430).—*Confessions*.—Greatest of the Latin fathers. Taught that outside of the true church there could be no salvation.	**Galen** (c. 130-170).—A celebrated physician and prolific writer. Nearly every phase of medical science is indebted to him. **Dio Cassius** (c. 150-235).—*History of Rome*.—Though a Roman senator he adopted Greek in his writings. The work is a model of diligence. **Ptolemy, Claudius.**—*Syntaxis, Almagest*.—A famous mathematician, astronomer, and geographer. The last work still of interest, as it contains a catalogue of the stars. **Herodian** (c.170-c. 240).—*History of the Roman Empire*.—A sober, accurate and impartial historian. **Plotinus** (c. 204-270).—*Enneads*.—A Greek philosopher characterized by depth of thought and pithy language. **Longinus** (213-273).—A rhetorician so learned that he was called "a living library and a walking museum." **Longus.** — *Daphnis and Chloe*.—This pastoral romance is considered the best of all ancient romances on account of its graceful narrative and deep, natural feeling. **Musæus.**—*Hero and Leander*—A short epic of love. In its warmth of feeling it has touches that are almost modern.	Completion of Palestine *Talmud*.	200 Hau dynasty in China. 226, New Persian empire. 272, Defeat of Zenobia. 273, Death of Plotinus. 284, Reorganization by Diocletian.
400 to 500				GOTHIC **Bishop Ulfilas**(c. 311-381).—*Gothic Bible*—The earliest literary monument in Germanic speech, translated by the bishop of the Visigoths, and formed the basis of Arian Christianity for two centuries. One manuscript is preserved in the *Codex Argenteus* in Upsala.	313, Edict of Milan by Constantine. 361-363, Julian. 376, Visigoths admitted. 395, Death of Theodosius. 410, Alaric sacks Rome. 449, Saxons invade Britain. 455, Vandals sack Rome.
500 to 600	**Boethius** (470-525).—*Consolations of Philosophy, Translations*.—Almost the last Latin prose writer who also knew Greek. He ends the Roman period of literature with his philosophic treatises.	**Fortunatus, Venantius**(c. 530-600).—*Hymns, Epitaphs, Epistles*. The chief Latin poet of his time. *The Royal Banners Forward Go*, is his most famous hymn. **Gregory the Great** (540-604.—*Exposition of Job, Dialogues*.—As a pontiff he was the great organizer of the ritual and public services of the Roman Church. One of the four greatest teachers of the Western church.		*Moallakat* (Arab.)—A collection of seven prize poems by as many authors. ANGLO-SAXON *Beowulf*—An epic poem, one of the most interesting literary monuments among Germanic peoples. Its mythological elements show great antiquity.	527-565, Justinian. 571, Birth of Mohammed. 590, Gregory becomes pope. 593, Books printed in China.

FAMOUS WRITERS

TABLE III. FROM MOHAMMED TO DANTE, 600-1300

DATE	ENGLISH	GERMAN	SCANDINAVIAN	ARABIAN, PERSIAN	HISTORICAL EVENTS
600 to 700	**Bede** or **Baede** (673-735).—*Ecclesiastical History, Poems*—Inspired by early Christian sentiment. **Cædmon** (675?).—*Paraphrase of Scripture*—Showing how strong an appeal the bible story made to the reverence of the race	This is the period of the infiltration of Roman civilization and Roman ideas.	400-1000, *Hundreds of Runic Inscriptions* (Dan.) — Very brief. Some in verse. Generally commemorate the dead. Very important for history, language, mythology. 400-1500, *About 2000 Runic Inscriptions* (Swed.) — Some authors known, as Ubir, Bali, Asmundr, Karasun. About 160 are in poetic form. Important for history, language, art.	**Mohammed's** *Koran*, the sacred book of Islam, collected shortly after his death. Many odes and lyrics in Arabic. *Bundahish* (Per.)—Date very uncertain. A work on cosmogony and theology.	622, Flight of Mohammed from Mecca, the Hegira. 632, Death of Mohammed. Rapid spread of Mohammedanism. 687, Battle of Testry.
700 to 800	*Traveler's Song* (700?)—Illustrates the sentiment of a wandering singer and the Anglo-Saxon's love of home. **Alcuin** (735-804).—*Letters, Biographies. Crist, Elene, Andreas*—Friend of Charlemagne, wrote a comparatively pure Latin. **Cynewulf** (c. 750-825).—*Poems*—Serious poems of moral simplicity and power.	*Lay of Hildebrand, Wessobrunn Prayer, Muspilli*—All are in the old Germanic alliterative verse. Authors are unknown. The *Lay of Hildebrand* is an example of the rough, uncouth ballad out of which the German national epic was, later, to be constructed.		In the latter half of this century Arabia enjoyed a glorious reputation in science and literature under the patronage of Haroun-al-Raschid. **Abu Hanifah** (702-772).—*Code of Laws*—Still in force in many parts of the Ottoman empire. **El-Asinai.**—*Romance of Antar* (Arab.)—A long poem upon the poet Antara.	711, The Arabs enter Spain. 732, Arabs repelled at Tanes. 751, Pepin the Short, king of Franks.
800 to 900	**Alfred the Great** (c. 849-901).— *Translations* — Some original matter interpolated, *e. g.*, narrative of others; versified by Longfellow.	**Orfrid** (c. 800-870).—*Gospel Book*—A poetic version of the life of Christ, and, like the *Heliand*, doubtless intended to supplant the old heathen epic. *Heliand* (c. 830)—An alliterative epic in Old Saxon speech, treating the gospel account of the life of Christ. Numerous religious writings, visions of judgment, lives of saints, epic gospel narratives, harmonies, and a few political compositions fill up the tenth century.	**Skalds** (800-1100). — *Drapas* (Ic.)—Vivid laudatory poems describing feats and battles of contemporary Scandinavian and English rulers. Traveled from court to court. **Anonymous** (850-1200).—*Elder (or poetic) Edda* (Ic.)— About 35 poems in alliterative verse dealing with myths (Odin, Thor, Frey) and hero legend (Sigfrid story). Composed in Iceland, Norway, Greenland; vivid, dramatic, terse.	**Al-Kindi** (c. 800).—*Medicine, Astrology* (Arab.)—Remains of 200 works on science and philosophy. **Abu Ubaidah** (824), (Arab.).—*History*, in 105 monographs including histories of Mecca and Medina.	800, Charlemagne crowned emperor of the west. 809, Death of Haroun-al-Raschid. 814, Death of Charlemagne. 843, Treaty of Verdun. 878, Treaty of Wedmore.
900 to 1000	**Alfric** (955-1020).—*Homilies, Grammar*—Writings in Latin. A man of power and sincerity. During the tenth and eleventh centuries the Anglo-Saxon or English language was undergoing radical grammatical changes. The great authors of these two centuries wrote in Latin, it being intelligible to the learned, for whom they wrote.	**Ekkehard**.—*Lay of Walther of Aquitaine* (c. 930)—*Waltharius manu fortis* is a short epic in Latin hexameters describing the adventures of Hildegunde of Burgundy and of Waltharius as hostages at the court of Attila. **Roswitha** or **Hrotswith.**—*Dramas*—A nun of Gandersheim who wrote six dramas in Latin in the Christian spirit of her time to take the place of the pagan plays of Terence.	**Egil Skallagrimsson** (Ic.), (900 - 983). — *Höfudlausn* (Head-ransom); *Sonatorrek*, (Son-Loss)—Daring, straightforward, original in expression. **Eyvind Skáldaspillir** (Nor.), (c. 910-995).—*Poem on King Hákon, Háleygjatal*—Is a fine poet and excellent man, but imitator of predecessors, whence his nickname "destroyer of skalds" **King Harald Harfagre** (Nor.), (933).—*Snaefridardrapa*—Encouraged skaldic poetry and is said to have been a poet himself. **Thorbjörn Hornklofi** (Nor.).—*Poem on Harold Harfagre, Wardin.* **Einar Helgason Skalaglam** (Ic.), (c. 945).—*Vellekla* (Goldwant)—Powerful and exalted. Fine diction. Melodious verse. **Hallfred Vandraedaskald** (Ic.), (c. 970).—*Poems on Various Chiefs*—Faithful, upright, but a bitter enemy. Fluent poet. Master of language and verse. **Sigvat Thordarson** (Ic.), (995-1045)—*Vikingarvisur* (Viking lays), *Bersöglisvisur* (Lays of Frankness)—Greatest poet of days of Olaf the Holy. Tactful, discreet, honest, ease and elegance. *Runic Inscriptions* (Nor.), (1050-1350)—Some in verse. About 150, and of no great importance. Some older than 1050.	**Rudagi** (——954), (Pers.).—*Divan*—Graceful, fluent lyrics. The first great poet of Mohammedan Persia. **Ebu-Alrumi** (905), (Arab.).—*Poems*—Lyrics and other types of verse. **Firdusi** (c. 940-1025), (Pers.).—*Book of Kings*—One of the foremost poets of all literature. A great epic dealing with the Persian monarchs. **Mutanabbi** (965), (Arab.).—*Divan*—A series of poems. **Avicenna** (980-1037), (Arab.) *Medicine, Philosophy*—Philosophical and scientific works. His work on philosophy has been a text-book for European universities.	912, Treaty with Rollo. 962, Restoration of Holy Roman empire. 981, Greenland discovered.
1000 to 1100	**William of Malmesbury** (1095-1142).—*History of Kings of England*—Of some value as an original. **Geoffrey of Monmouth** (1154——).—*History of English Kings*—Largely legendary.	**Notker III.**—*Translations*—A monk of St. Gall, the forerunner of the Renaissance He translated into German Boethius' *Consolations of Philosophy*, the *Psalter*; Aristotle's *Categories*, etc. *Ruodlieb* (c. 1030)—A Latin epic with novelistic features, describing the life of the time. **Williram.**—*Song of Solomon*—William Abbot of Ebersberg in Bavaria, translated the *Song of Solomon* into German. **Ezzo.**—*Lay of Ezzo*—A scholastic of Bamberg whose *Lay* was to be sung as an anthem on the last great pilgrimage to the Holy Sepulchre before the crusades.		**Hariri** (c. 1054-1122), (Arab.).—*Mohamat*—Moral and satirical prose and verse. **Al-Hasan al-Nisaburi** (died 1015), (Arab.).—*Commentary on the Koran.*	1054, The great schism. 1066, Normans conquer England. 1096, First crusade

ENGLISH	FRENCH
	Song of Roland. The greatest of the old French epics relating the adventures and death of Roland, a nephew of the Emperor Charlemagne. Probably composed at the end of the eleventh century.

TABLE III. MOHAMMED TO DANTE—Continued

Date	English	German	French	Scandinavian	Spanish	Arabian, Persian	Historical Events
1100 to 1200		*The Lay of the Nibelungs*—It is the Iliad of Germany.	**Villehardouin** (1150-1212). *Conquest of Constantinople*—The most valuable French prose of the Middle Ages.	**Snorre Sturlason** (Ic.), (1178-1241).—*Heimskringla* — History of kings of Norway from prehistoric times to 1177. *Younger* (or prose) *Edda*. Scientific handbook on Norse mythology poetic diction and versification.	**Unknown,** twelfth century (Sp.).—*Poem of the Cid*—Great narrative poem on the national hero.	**Omar** (-1123), (Pers.).—*Quatrains*—Philosophic and meditative stanzas.	1118. Order of Knight Templars founded.
		Wolfram von Eschenbach (c.1170-1220).—*Parzifal*—The greatest epic of its time. A phychological treatment of the story of the spotless Percival in his search for the Holy Grail.				**Averrohes** (1126-1198), (Arab.).—*Science, Philosophy*—Important works on criticism, astronomy, medicine.	1138. Battle of the Standards.
		Gottfried von Strassburg (c. 1200).—*Tristan and Isolde*—His great court epic is naturalistic, breathing the spirit of French poetry. Gottfried was the master poet of passion.					1163. Notre Dame of Paris founded.
1200 to 1300	**Roger Bacon** (1214-1294). —*Natural Science, Philosophy*—A man in advance of his age.		**Jean, Sire de Joinville** (1224-1317). —*Life of St. Louis*—A friend of Louis IX., whom he accompanied in the first crusade.			**Sadi** (Pers.) (c.1184-1291) *Rose-Garden, Tree-Garden, Odes*—Catholic in view and taste, elegant in finish.	1196. Observatory at Seville.
		Berthold von Regensburg (1247-1272).—*Sermons*—The greatest German preacher of the middle ages. His language is direct, dramatic, sincere.					1206. Franciscan order founded.
		Master Eckart (1260-1327).—*Sermons*—The first of the mystics.	**Marie de France.**—*Lays, Fables*—Peculiar charm from their elegant conciseness and their personal note. *Aucassin et Nicolette*—An excellent example of the chanter fable of the twelfth century.				1215. Magna Charta signed. 1229. University of Toulouse founded. 1248. Cathedral at Cologne begun.
			Lorris and **Meung.**—Joint authors of the *Romance of the Rose*, a poem on the "Art of Loving."				

TABLE IV. FROM DANTE TO THE PRE-REFORMATION PERIOD, 1300-1600

Date	English	German	French	Persian	Italian, Spanish, Portuguese	Scandinavian	Historical Events
1300 to 1400	**Sir John Mandeville** (1300-1371). *Travels*—Possibly a pen name. His travels are an extraordinary medley of invention and report.	**Tauler** (1300-1361)—*Sermons*—A great preacher of Strassburg, and the forerunner of Luther.			**Dante Alighieri** (It.), (1265-1321).—*Divine Comedy*—Great epic, written in the first person.	Collections of old provincial laws (Dan.),(c. 1300).—Fine picture of life of early times in all its phases.	1295. Marco Polo returned to Venice.
					Francesco Petrarch (It.), (1304-1374).—*Sonnets and Songs*—Lyrics mostly concerning Laura.	**St. Birgitta** (Swed.), (1303-1373).—*Revelations*—Mystical, conversations between Christ, Mary and Saints.	1309. Popes in Avignon.
	John Wycliffe (1324-1384).—*Translation of Bible*—A man of great power and sincerity. A dialectician and scholar.				**Giovanni Boccaccio** (It.), (1313-1375).— *Decameron*—A series of 100 tales in prose.		
	William Langland (1330-1400).—*Piers the Plowman*—Extraordinary man of broad humanity. First expression of the voice of the poor.		**Jean Froissart** (1337-1410). *Chronicles*—A vivid and striking account of the events which took place in his days.				
	Geoffrey Chaucer (1340-1400).—*Canterbury Tales, Short Poems*—A scholar, a poet of chivalry and a witty narrator of stories in verse.			**Hafiz** (c.1390), (Pers.)—*Poems*—Lyrics of a very high order.		**Eystein Asgrimsson** (Ic.),(1350).—*Lily*—Artfully wrought, popular religious poem.	1348. University of Prague founded.
					Iñigo López de Mendoza (Sp.), (1398-1458).—*Sonnets*—The first in Spain to compose sonnets in imitation of Petrarch.		1386. University of Heidelberg founded.
1400 to 1500	**Sir Thomas Malory** (1430- —).—*Morte d'Arthur*—Worked over a large part of the Arthurian legends in prose. The original for Tennyson's *Idylls of the King*.	**Geiler von Kaisersberg** (1445-1510).—*Sermons*—The representative preacher of the century.	**Charles of Orleans** (1391-1468).—*Poems*—Called the last of the Trouvères. His poetry in which art takes too often the place of thought, reaches a perfection of form in which we see already the approach of the Renaissance.		**Matteo M. Boiardo** (It.), (1430-1494).—*Orlando Inamorato*—A long romantic poem.		1409. University of Leipzig founded.
		Johann Reuchlin, Erasmus of Rotterdam—Famous humanistic scholars.	**François Villon** (1431-1485).—*Ballads*—The most remarkable poet of the fifteenth century. His *Testaments* are among the masterpieces of French poetry.		**Girolamo Savonarola** (It.), (1452-1498). — *Sermons, Poems*—Political and theological writings.		1453. Fall of Constantinople.
					Niccolò Machiavelli (It.), (1469-1527).—*History, The Prince*—Profound but not too scrupulous.		
					Ludovico Ariosto (It.), (1474 - 1533). —*Orlando Furioso*—A romantic poem of chivalry.		
	Sir Thomas More (1478-1535).—*Utopia, Life of Edward V.*—A man of fine character. Plan suggested perhaps by Plato's *Republic*.	**Thomas Murner** (1475-1537).—*Satires, History*—Famous for attacks on Luther. Witty, ironical pulpitorator.	**Philipe de Commines** (1445-1509). — *Memoirs*—Give the best accounts we have of the reigns of Louis XI. and Charles VIII.			**Christian Pedersen** (Dan.),(1480-1554) —*Translation of Luther's Bible* (1550)—Father of modern Danish literary language.	

TABLE IV. DANTE TO THE PRE-REFORMATION PERIOD—Continued

Date	English	German	French	Italian, Spanish, Portuguese	Scandinavian	Historical Events
1500 to 1600 Con.	**William Tyndale** (1484-1536).—*Translation of Bible*—On his translation of the scriptures later versions are founded.	**Martin Luther** (1483-1546).—*Translation of the Bible, Treatises, Hymns*—Inaugurator of the Reformation.	**Francois Rabelais** (1483-1553).—*Philosophy, Satire*—Scholar, philosopher, satirist, and innovator. Rabelais has left to posterity in the *Life of Gargantua and Pantagruel* a compendium of his vast knowledge.	**Francesco Guicciardini** (It.), (1483-1540).—*History, Politics.*—Cool, observant *Recollections*; masterly *History of Italy.*	**Brodr Niels** (Dan.), (1495).—*Rimkronikel* (rhymed chronicle).—Each king tells his own life and deeds. First Danish book printed.	
	Hugh Latimer (1485-1555).—*Sermons*—One of the most distinguished of British reformers.			**Gil Vicente** (Port.), (c. 1485-1536).—*Dramas*—Founder of the Portuguese drama.		1492. Discovery of America.
	Andrew Wyntoun.—*Chronicle of Scotland*—Story of Wallace. Much admired by Walter Scott.	**Ulrich von Hutten** (1488-1523).—*Poems, Songs*—Humanist and soldier, he supported the work of Luther.		**Vittoria Colonna** (It.), (1490-1547).—*Poems*—Sonnets on the death of her husband.	**Olaus Petri** (Swed.), (1493-1552).—*Religious Works, History, Hymns*—Unbiased historian. Luther of Sweden. Father of modern Swedish literary language.	
				Juan Boscán (Sp.), (1493-1543).—*Poems*—Introduced Italian measures into Spain.		
		Hans Sachs (1494-1576).—*Shrove Tuesday Plays, Poems*—Prolific cobbler mastersinger of Nuremberg.			**Hans Tausen** (Dan.), (1494-1561).—*Religion*—Age of Reformation. Polemical.	
		Philipp Melanchthon (1497-1560).—*Treatises, Text-Books*—Colleague of Luther.	**Clément Marot** (1495-1544).—*Poems*—Excelled in the lighter forms of poetry, such as the madrigal, the rondeau, the ballad, etc. Boileau calls his poems "elegant badinage."	**Jacopo Nardi** (It.), (1496-1556).—*History of Florence*—Animated history with the faults of a contemporary.		
	Sir Thomas Wyatt (1503-1542).—*Sonnets, Lyrics*—Introduced with Howard the Italian forms, sonnet and madrigal; made Italian literature a new force in England.			**Benvenuto Cellini** (It.), (1500-1571).—*Autobiography*—A remarkable picture of his times.	*Morality and Mystery Plays* (Dan.), (1500-1600)—Same origin and fate as in other countries.	1498. Martyrdom of Savonarola. The Reformation Raphael and Michelangelo in art.
			John Calvin (1509-1564).—*Institutes of Religion*, etc. The second head of the reform. His *Institutes of the Christian Religion* is a statement of the doctrine of the religious innovators, and, like his other works, shows a remarkable erudition.	**Garcilaso de la Vega** (Sp.), (1503-1536).—*Poems*—Refined but lacking in originality.		1509-1547. Henri VIII. king of England.
				Hurtado de Mendoza (Sp.), (1503-1575).—*History, Fiction*—*War of Granada*, a comic novel, *El Lazarillo de Tormes.*		
		Till Eulenspiegel, oldest version (1515)—A large collection of witty, popular anecdotes, the hero of which was the prince of rogues, Till Eulenspiegel.	**Jacques Amyot** (1513-1593).—*Translations From the Greek.* These translations, especially those from the works of Plutarch, stand as a model of the best language of the sixteenth century.	**Giorgio Vasari** (It.), (1512-1574).—*Lives of Celebrated Artists*—A gossipy book of information and anecdote about artists.		
	Henry Howard (earl of Surrey), (1517-1547).—*Translation of the Æneid, Songs, Sonnets*—Introduced Italian forms and blank verse.		**Pierre de Ronsard** (1524-1585).—*Sonnets, Odes*, etc.—As a poet Ronsard enjoyed in his time a celebrity second to none.	**Luiz de Camoens** (Port.), (1524-1579).—*Lusiad, Poems*—Greatest poet of Portugal. *Lusiad* a celebrated historical epic.		
	John Fox (1517-1587).—*Book of Martyrs*—His book had great influence in strengthening the reformers and was one of the literary influences on the Puritans who came to America.		**Etienne Jodelle** (1532-1573).—*Cléopâtre, Eugène*—His *Cléopâtre* may be said to mark one of the epochs of the French theater.	**Ponce de León** (Sp.), (1528-1591).—*Lyrics*—Original poems; translations from classics; translations from Hebrew poets.		1531. College de France.
			Michel E. de Montaigne (1533-1592).—*Essays*—The work of the sixteenth century the most read to-day. Writing without order or plan he reaches the knowledge of mankind through the study "in good faith," of himself.	**Ercilla** (Sp.), (1533-1595).—*Araucana*—An epic poem on the revolt in Chili.		
	Thomas Sackville (1536-1608).—*Mirror for Magistrates.* A poet of force and imagination. Afterward, as Lord Buckhurst, a courtier and politician. Worked in collaboration with others and had a hand in the first English tragedy.			**Fernando Herrera** (Sp.), (1534-1597).—*Lyrics*—Erratic and patriotic poems; author called the Divine.		
				Torquato Tasso (It.), (1544-1595).—*Aminta, Jerusalem Delivered*—The latter a great epic on the capture of Jerusalem in 1099.	**Tycho Brahe** (Dan.), (1546-1601).—*Astronomy*—Made regular and careful observations of the movements of the planets.	
	Edmund Spenser (1552-1599.)—*Faërie Queene, Shepherd's Calendar.* Called the "poet's poet." Great in romantic allegory, the ode, and the sonnet.	**Johann Fischart** (1550-1590).—*Treatises, Epic and Satire*—The master of German satire in the later sixteenth century. Achieved fame in 1577 by *The Fortunate Ship of Zürich*, treating the friendship between the cities of Zürich and Strassburg. Toward the end of the sixteenth century English comedians introduced English plays into Germany.		**Miguel de Cervantes Saavedra** (Sp.), (1547-1616).—*Don Quixote, Poems in Galatea*—The first is the great masterpiece of Spanish literature. *Galatea*, a prolix pastoral romance in prose, with verses.		
	Sir Walter Raleigh (1552-1618).—*History of the World*—A politician and adventurer; friend of Spenser. Some fine passages in his work.					

TABLE IV. DANTE TO THE PRE-REFORMATION PERIOD—Continued

Date	English	German	Italian, Spanish, Portuguese	Scandinavian	Historical Events
1500 to 1600 Cont.	**Richard Hooker** (1553-1600).—*Ecclesiastical Polity*—His prose has dignity and force. His book is the authority for the Church of England. **Sir Philip Sidney** (1554-1586).—*Arcadia, Poems*—Singular beauty of character. *Arcadia* is a pastoral romance of great merit. **Francis Bacon** (1561-1626). —*Essays, Philosophy* — Many beautiful and acute things in his essays and his philosophical works. **Christopher Marlowe** (1564-1593).—*Dramas*—Most important of Shakespeare's predecessors. His tragedies, although full of horrors, are sublime in tone. **William Shakespeare** (1564-1616).—*Dramas* (37 plays), *Sonnets*—The best of all writers, compounded; wit, humor, characterization, philosophy, musical and phrase power, and construction.		**Pietro Sarpi** (It.), (1552-1623).—*History of Council of Trent* — Philosophical and historical.	**Gudbrand Thorlaksson** (Ic.), (1584).—*Translation of Bible*—Unwearied author and translator of religious works.	

TABLE V. SEVENTEENTH CENTURY, 1600-1700

English	German	French	Scandinavian	Italian, Spanish, Portuguese	American	Historical Events
	Jacob Ayrer (1605).—*Dramas*—Constructed under the influence of the English comedians, a new German drama, based on the art of Hans Sachs. He popularized the operetta. Sixty-six plays were published in 1618 under the title *Opus Theatricum*.	*L'Avocat Patelin*—Is the masterpiece of the French theater in the middle ages and it remains to-day as one of the best examples of the comic play and of the Gallic wit. **François de Malherbe** (1555-1628).—*Poems*—Brought into poetry a harmony and a purity of style unknown before him. There is more work than genius in his poems.		**Lope de Vega** (Sp.), (1562-1635).—*Dramas, Lyrics*—Dramas of unusual number, variety, and power. **Galileo Galilei** (It.), (1564-1642).—*Scientific*—Physical and astronomical discussions. **Tassoni** (It.), (1565-1638).—*Rape of the Bucket*—A mock heroic poem. **Tommaso Campanella** (It.), (1568-1639).—*Philosophy*—Philosophical and political. **Guillen de Castro** (Sp.) (1569-1631). — *Dramas* — His *Youth of the Cid* furnished the basis for Corneille's *Cid*.		
		St. François de Sales (1567-1622).—*Religious Works*—Preacher and writer of religious works whose influence was felt and is still felt by pious minds.	**Arngrim Jonsson** (Ic.), (1568-1648).—*History of Iceland*—Revived study of Icelandic antiquities. **Johannes Thomae Bureus** (Swed.), (1568-1652). — *Book on Runes*—Founder of runology. Grammatical works. Busy with old Scandinavian manuscripts.			
Ben Jonson (1574-1637). — *Dramas*—A scholar and man of letters. A learned constructor of plays, had also the true lyrical faculty. **John Fletcher** (1576-1625); **Francis Beaumont** (1586-1616). — *Dramas*—Well constructed plays, but of a low moral tone.	**Jacob Boehme** (1573-1624).—*Mysticism, Theosophy*—The founder of the mystical theosophy of the century.	**Mathurin Régnier** (1573-1613).—*Satires*—His poems, few in number, are imitated from the ancients. He borrowed also considerably from the Italian satirists.	**Magnus Olafsson** (Ic.), (1573-1636).—*Dictionary* — First Icelandic dictionary.			1572. Massacre of St. Bartholomew.
Robert Burton (1577-1640).— *Anatomy of Melancholy*—Full of out-of-the-way learning and quotations bearing on the subject.	**Georg Weckherlin** (1584-1653). — *Odes* and *Songs*—One of the first German poets to write sonnets and Alexandrines.	**Hugo Grotius** (Dutch), (1583-1645). — *Law, Philosophy, Translation*—Famous scholar and statesman. Modest, pious, gentle, generous.	**Anders Arrebo** (Dan.) (1587-1637).—*Poetic version of David's Psalms, Hexameron*—Florid language. Good description of nature, Alexandrines, mythological references	**Gomez de Quevedo** (Sp.), (1580-1645).—*Theology, Satires, Poems*—Political and religious prose; humorous and satirical works.	**John Smith** (1580-1631).—*A True Relation of Virginia*—A romantic recital of thrilling adventures. **William Bradford** (1588-1657).—*History of Plymouth Plantation*—A full and clearly written account to 1649. **John Winthrop** (1590-1649).—*History of New England*—A simple, personal narrative, with occasional freshness of style	1588. Defeat of the Spanish armada.
Robert Herrick, (1591-1674).—*Poems*—Lyrics, many of them of charming quality and ingenuous construction.	**Johann Lauremberg** (1590-1658).—*Satirical Poems* — A patriotic satirist of the customs, language and dress of his time, especially of imitation of the French.	**Racan** (1589-1670).—*Pastoral Poems*—A poet full of a melancholy charm, highly appreciated by his contemporaries.				
George Herbert (1593-1633).—*The Temple*, etc.—Animated by a devotional spirit and an æsthetic spiritualism.	**Friederich von Spee** (1591-1635).—*Lyrics*—Von Spee and Johann Scheffler were exponents of the Catholic religious lyric.					

TABLE V. SEVENTEENTH CENTURY—Continued

ENGLISH	GERMAN	FRENCH	SCANDINAVIAN	ITALIAN, SPANISH, PORTUGUESE	AMERICAN	HISTORICAL EVENTS
Izaak Walton (1593-1683).—*The Complete Angler*—Prose of a delightful character, full of simple piety and love of outdoor nature.	**Martin Opitz** (1597-1639). — *Criticism, Translations, Poems*—Translated from Greek, Latin and Italian, and set up fixed principles of poetic art. He has been called "the father of German poetry"	**Guez de Balzac** (1594-1654).—*Eloquent Prose*—His somewhat oratorical but elegant and harmonious style had an excellent influence on the progress of the anguage. **René Descartes** (1596-1650).—*Philosophy*—The founder of the school of philosophy, based upon reason, known under the name of *Cartesianism*. Besides being a great philosopher, Descartes made remarkable scientific discoveries.	**Gustavus Adolphus** (Swed.),(1594-1632).—*Speeches, History, Hymns*— Hero of Thirty Years' war. Intended to write also about his own life and reign, but did not get beyond Karl IX.			
	H. M. Moscherosch (1601-1669).— *Novels, Poems* — Represents the beginning of the transition from satire to novel under Spanish influence.	**Vincent Voiture** (1598-1648) — *Letters.*—Enjoyed during his lifetime the reputation of a wit and his letters had a prodigious success. **Jean de Mairet** (1604-1686).—*Tragedies*—His *Sophonisbe* and *Cleopatra* are the first tragedies adhering strictly to the unities.	**Georg Stiernhielm** (Swed.),(1598-1672).—*Works on Language and Mathematics, Poems*— Introduces new period in literature. Earliest Swedish sonnets. Great linguist, greater poet. **Lars Wivallius** (Swed.),(1605-1669)—*Lyrics*— Love of liberty and nature. Long imprisoned.	**Calderón Barca** (Sp.), (1600-1681).—*Dramas*—Dramas with love, jealousy and honor as motives.		1600. Martyrdom Giordano Bruno. 1603, England and Scotland united under James I.
Sir Thomas Browne (1605-1682).—*Philosophy, Theology*—One of the most learned men of his time. His style exerted a great influence on Charles Lamb.	**Friederich von Logau** (1605-1655).—*Epigrams*—This great epigrammatist wrote 3000 German epigrams. Some were translated by Longfellow.	**Pierre Corneille** (1606-1684).—*Tragedy, Comedy*—Called the "Father of French tragedy." Among his tragedies four are ranked among the masterpieces of the world's literature: *Le Cid, Horace, Cinna* and *Polyeucte*. He was also the author of the best comedy written until then (1642): *Le Menteur*.				
Thomas Fuller (1608-1661).—*Church History of England*—A chronicle, with passages of wit or natural pathos. **John Milton** (1608-1674). *Areopagitica, L'Allegro, Il Penseroso, Comus, Paradise Lost, Paradise Regained*, etc.—A poet, grave, learned, of mental dignity but gifted with musical power as much as Shakespeare. **Samuel Butler** (1612-1680).—*Hudibras*—A rhyming jingle, destitute of elevation but with here and there a witty couplet. Anti-Puritan throughout. A favorite book of Charles II.	**Paul Gerhardt** (1607-1676).—*Hymns and Poems*—After Luther the greatest hymn-writer of the Lutheran church, and like Luther modeled his hymns on the popular ballads.	**Mlle. de Scudéry** (1607-1701).—*Novels*—One of the leaders of the "Précieuses" and called by them the "Tenth Muse." She published a number of voluminous novels which contain many interesting allusions to the events of her days. The best known of these novels is *Artamène, ou le grand Cyrus*. **Paul Scarron** (1610-1660).—*Comic Plays, Poems*—Author of a number of witty, burlesque poems. His widow became the famous Madame de Maintenon.		**Antonio de Solis** (Sp.), (1610-1686),—*Conquest of Mexico*—An eloquent spirited account of Cortes in Mexico.		1607, Jamestown, Va., founded. 1610, Galileo discovered Satellites of Jupiter.
Jeremy Taylor (1613-1667).—*Holy Living*, etc.—The "Shakespeare of Divines." Passages of rare poetic beauty and organ-like volume. **Richard Baxter** (1615-1691).—*Saint's Rest*—One of the *Vade mecums* of the later Puritans, earnest and sincere.	**Andreas Gryphius** (1616-1664).—*Dramas*—The German Shakespeare of the seventeenth century. His best work is in his comedies.	**François de la Rochefoucauld** (1613-1680).—*Maxims, Memoirs*—His maxims, full of bold paradoxes, give him a lasting reputation. He asserts that the love of self is the only motive for all human actions.	**Hallgrim Pjettursson** (Ic.),(1614-1674).—*Psalms* — Printed about 40 times. Clearest revelations in a northern tongue of the spirit of reformation.		**Anne Bradstreet** (1613-1672).—*The Tenth Muse*—An affected and cumbersome didactic poem.	
John Evelyn (1620-1706).—*Diary*—Of inestimable value, as it covers seventy years of dramatic English history.	**Philip von Zesen** (1619-1689).—*Novels*—Showed original talent as translator of the novel of gallant adventure.		**Stefan Olafsson** (Ic.), (1620-1688).—*Poems*—Lyric, ironic, satirical, moralizing.			1618-38, Thirty Years' war.
	Christoffel von Grimmelshausen (1624-1676).—*Novels*—The most important novelist of the period. *Simplicissimus*, the first great rogue novel in German literature, deals with the vicissitudes of the Thirty Years' war.	**Jean de la Fontaine** (1621-1695).—*Fables, Contes*, etc.—The *Contes*, inspired by Ariosto and Boccaccio, although full of wit are too often indecent. The reputation of the poet rests on his remarkable *Fables* which won for him the surname of "The Inimitable." **Molière** (**Jean B. Poquelin**), (1622-1673).—*Comedies; Le Misanthrope*, etc.—The greatest writer of comedies not only of his time but of all times. He has not been equaled in France, perhaps not in any country, and he is placed by common consent among the great men of genius who belong to the world. **Blaise Pascal** (1623-1662).—*Philosophy, Mathematics*—Not only a great mathematician but also a thinker and a philosopher. His *Pensées* (Thoughts), fragments of a religious work which he did not live long enough to finish, and his *Letters* remain as models of French literature.				

TABLE V. SEVENTEENTH CENTURY—Continued

English	German	French	Scandinavian	Italian	American	Historical Events
		Mme. de Sévigné (1626-1696).—*Letters*—Her charming familiar letters written to her daughter give interesting information on the court life of her time. **Jacques Bossuet** (1627-1704).—*Sermons*, etc.—The greatest orator and the greatest writer of his time. In his funeral orations especially he reached absolute perfection of oratorical style.				1625. Charles I., king of England.
John Bunyan (1628-1688).—*Pilgrim's Progress, Holy War*—Simple, idiomatic, with passages of rare beauty. Animated by simple, natural piety. A classic too much neglected.		**Charles Perrault** (1628-1703).—*Stories for Children*—His stories are known all over the world and have immortalized his name.	**Olof Rudbeck** (Swed.) (1630-1702).—*Atlantika, Works on Botany and Anatomy*—Very famous in anatomy. *Atlantika*, fanciful, represents the north as cradle of civilization.		**Henry Norwood** (1628-1670?)—*A Voyage to Virginia*—Surprisingly well written in parts, and informative.	1628. Gustavus Adolphus killed at battle of Lützen.
John Dryden (1631-1700).—*Virgil Translated, St. Cecelia's Day*, etc.—A fine critic. The father of fluent prose. Many energetic lines of verse, especially in his satires. A man of fine talent but limited genius.			**Peder Syv** (Dan.), (1631-1712).—*Collection of Proverbs*—Promoted study and use of Danish instead of Latin. Wrote first Danish grammar.		**Michael Wigglesworth** (1631-1705).—*The Day of Doom*—A poem on the day of judgment, according to the views of the time.	
John Locke (1632-1704).—*Essay on Human Understanding, Thoughts on Education*, etc.—A sound, practical thinker, whose works illustrate the common sense and unspiritual tone of his age.		**Louis Bourdaloue** (1632-1704).—*Sermons*—A severe and austere preacher. The strength of his reasoning has made his sermons famous.				
Samuel Pepys (1633-1703).—*Diary* — His *Diary*, not intended to be public, throws light on the life and habits of a capable business man of the eighteenth century.	**Caspar von Lohenstein** (1635-1683).—*Dramas, Novels*—Represents the decline of German Renaissance. Reveled in themes of blood, incest, and cruelty.	**Mme. de La Fayette** (1634-1693).—*Novels*—Replaces the bombastic style of the pastorals of the time by a real language. **Nicolas Boileau** (1636-1711).—*Epistles, Art, Poétique, Satires*—These works stamp him as a real poet and as a great critic. He did much to elevate the literature of the century. **Malebranche** (1638-1715).—*Philosophy*—Whatever may be the opinion of his theology, his rich and poetical style cannot be denied, and he is considered a great writer. **Jean Racine** (1639-1699).—*Tragedy*—Brought the French classic tragedy to its perfection. He understood men better than Corneille and consequently his tragedies are more human. It has been said that Racine painted men as they are, and Corneille as they should be.	**Thomas Kingo** (Dan.), (1634-1703).—*Hymns*—Denmark's most favorite hymn-writer and one of the world's best. **Thormod Torfason** (Ic.), (1636-1719).—*History of Norway*—A revolutionizing history. **Niels Stensen** (Dan.), (1638-1686).—*Mineralogy*—Finest work on subject ever written. Great student of astronomy. **Lars Johansson** (Swed.), (1638-1674).—*Lyrics*—Drinking songs, songs of love, casual poems.			1634. Wallenstein assassinated.
Sir Isaac Newton (1642-1727).—*Principia*, etc.—A great mathematician, he laid the foundation of our understanding of the mechanical structure of the universe.	**Christian Weise** (1642-1708).—*Plays, Novels*—Schoolmaster poet of Zittau, wrote after the manner of the Latin school dramas. He marks an advance by introducing fresh characters from the life about him and employing an unstilted style. **G. W. Leibnitz** (1646-1716).—*Philosophic Writings*—The first great scientific German philosopher of the modern type, sought to reconcile spirit and matter. Chief works deal with the goodness of God, the liberty of man, the origin of evil, and his theory of monads, or atoms. **Christian Thomasius** (1655-1728).—*First German Monthly*—Sought to bring universities into close touch with national life. Delivered the first of university lectures ever given in the German tongue.	**Jean de La Bruyère** (1645-1696).—*Character Studies*—Above all a moralist who in his *Caractères* satirized without mercy his surroundings. **François de la Motte Fénelon** (1651-1715).—*Télémaque*, etc.—Was not equaled in his century for the charm of his style. Less vigorous than his rival Bossuet, the influence of his sermons and his religious works was not less great. **Jean François Regnard** (1655-1709).—*Comedies in Verse*—His comedies, especially *Le Joueur*, show a decided comic talent.	**Samuel Columbus** (Swed.), (1642-1679).—*Works on Grammar, Poems, Hymns*—Unusually melodious poetry. **Harvin Spegel** (Swed.), (1645-1714).—*Glossarium Swedogothicum, Poems, Hymns*—Wrote *Guds Verk och Hvila*, religious, didactic poem. Best as writer of hymns. **G. E. Dahlstierna** (Swed.), (1661-1709).—*Poems*—Affected and bombastic, Patriotic. **Jon Thorkelsson Vidalin** (Ic.), (1666-1720).—(*Postille Family Book of Sermons*)—Bold eloquence.	**Vincenzo da Filicaja** (It.) (1642-1707).—*Lyrics*—Purely academic poet. Odes in lofty style.	**William Penn** (1644-1718).—*Brief Account of Pennsylvania*—Confidently religious and philanthropic in tone.	1642. English civil war. 1649. Charles I. of England beheaded. 1660. Restoration of the Stuarts.

TABLE VI. EIGHTEENTH CENTURY, 1700-1800

ENGLISH	GERMAN	FRENCH	AMERICAN	ITALIAN, SPANISH, SCANDINAVIAN	HISTORICAL EVENTS
Daniel Defoe (1661-1731).—*Robinson Crusoe*—A born story-teller and pamphleteer.			**James Blair** (1656-1742).—*Sermons, No Cross No Crown*—Comparatively modern prose, written with pious zeal.		
Jonathan Swift (1667-1745).—*Tale of a Tub, Gulliver's Travels* — Unequaled as a satirist and writer of allegories in simple, nervous, idiomatic English.		**Jean Massillon** (1663-1742).—*Orations*—One of the great French sacred orators. He lives in his *Petit Carême.*	**Cotton Mather** (1663-1728).—*Elegy of Rev. Nathaniel Collins, Sermons*, etc. — Voluminous ecclesiastical writings of "pedantic and fantastic quaintness."		1666. Great fire of London.
Joseph Addison (1672-1719)—*Essays*—Originator of the social essay, marked by kindly, gentlemanlike humor in the urbane style.		**Alain René Le Sage** (1668-1747).—*Gil Blas, Comedies*—Best known as the author of *Gil Blas*, a satirical novel, and the first one to depict truly the manners of society.		**G. Battista Vico** (It.), (1668-1744).— *Scienza Nouva* — Metaphysical and scientific.	
Sir Richard Steele (1672-1729).—*Essays*—Established the *Tatler.* A good second to Addison.			**William Byrd** (1674-1744).—*The Dividing Line* and *other tracts* — Full of fresh humorous observations on life.		
		Duc de Saint Simon (1075-1755).—*Memoirs*—An original and powerful writer whose memoirs are a rich mine for those who study the period in which he lived.	**Robert Beverly** (1675-1716).—*History of Virginia*—A straightforward narrative of slightly polemic purpose.	**Scipione Maffei** (It.), (1675-1755).—*Dramas*—His *Merope* is the first classic Italian tragedy.	1675. Greenwich observatory founded.
	Christian von Wolff (1679-1754).—*Philosophical Writings* — The modern scholastic who popularized philosophy and brought rationalism to bear upon theology.				
Bishop Berkeley (1684-1753). — *Philosophy* — A very acute thinker, English founder of one form of idealism.		**Philippe Destouches** (1680-1754). — *Comedies in Verse*—His *Le Glorieux* is an excellent comedy of manners and the best of his plays.		**Ludvig Holberg** (Dan.), (1684-1754).—*Comedies, Historical Works, Philosophy, Comic Poetry*—Founder of Danish drama. Satirical comedy. Natural language of daily life. Fine picture of Copenhagen life.	
Alexander Pope (1688-1744).—*Poems*—The model poet of his time and century. Imparted to the couplet vigor, pungency, and some variety.				**Emanuel Swedenborg** (Swed.), (1688-1772).—*Philosophy* — Prominent scientist. Founder of religious sect with adherents chiefly in England and America.	1688. English revolution.
Samuel Richardson (1689-1761).—*Novels; Clarissa Harlowe, Pamela, Sir Chas. Grandison* — Founder of the sentimental moral novel, and gifted with the story-telling faculty.		**Alexis Piron** (1689-1773).—*Comedies in Verse*—The many superior qualities displayed in his poetical works are spoiled by the licentious nature of some of them. His best comedy *La Métromanie*, is one of the masterpieces of the French theater.			
Bishop Butler (1692-1752). —*Natural and Revealed Religion*—The orthodox moralist of his day, ponderous in style and common-place in method.	**J. C. Guenther** (1695-1723).—*Lyrics* — A lyric poet of personal feeling, modeling his lyrics upon the ballad, and thus the forerunner of Goethe.	**Voltaire** (**François Marie Arouet**) (1694-1778).—*History, Letters, Philosophy, Poems, Dramas*, etc. — The greatest literary genius of the eighteenth century. Poet, historian, political and satirical writer, philosopher, writer of tragedies, he excelled in every branch of literature. His works fill from 75 to 80 volumes.		**H. A. Brorson** (Dan.), (1694-1764). — *Hymns*—Wrote some of the best Danish hymns.	
	J. Bodmer (1698-1783).—*Criticisms, Translations*—Attacked Gottsched for subordinating the poet's imagination to the understanding, and finally wrought the latter's downfall.			**Pietro Metastasio** (It.), (1698-1782).— *Musical Dramas*—Lyric smoothness of melody.	1697. Peace of Ryswick.
Henry Carey (1700-1743). *Poems; Sally in Our Alley*, etc.—A light gift of doggerel satire.	**J. C. Gottsched,** (1700-1766).—*Dramas, Criticisms*—For twenty years literary dictator in Leipsig, sought to reform the German drama on the model of the French, but insisted upon historic costume, and banished the clown from tragedy.				
James Thomson (1700-1748).—*The Seasons*, etc. —A delicate feeling for the quieter aspects of nature, harmoniously expressed.			**Jonathan Edwards** (1703 - 1758) — *Sermons, Surprising Conversions*, etc.—Strong and highly imaginative proclamations of Calvinism.	**Ignacio de Luzan** (Sp.), (1702-1754).—*Art of Poetry, Poems*—Helped introduce French influence in Spanish.	
			Benjamin Franklin (1706 - 1790). — *Poor Richard's Almanac, Autobiography* — Wise and sagacious utterances of a fair, avowed utilitarian.	**Finn Jonsson** (Ic.), (1704-1789). —*Ecclesiastical History of Iceland*—List of royal decrees. History up to 1740.	1704. Boston *News Letter* established.

TABLE VI. EIGHTEENTH CENTURY—1700 to 1800—Continued

ENGLISH	GERMAN	FRENCH	SCANDINAVIAN	ITALIAN, RUSSIAN	HISTORICAL EVENTS
Henry Fielding (1707-1754).—*Tom Jones, Amelia, Jonathan Wild*, etc.—The first great realistic novelist. Depicts life broadly and faithfully.		**Comte de Buffon** (1707-1788).—*Natural History* — A great naturalist and a writer whose style still serves as a model.	**Karl von Linné** (Swed.) (1707-1778).—*Botany, Travels* — Founder of science of botany. Language is naive, expressive, simple, clear. **Johan Ihre** (Swed.), (1707-1780).—*Swedish Dictionary* — Founder of modern Swedish philology. His dictionary was epoch-making. **Sven Lagerbring** (Swed.), (1707-1787).—*History of Sweden*—Opposed fantastic historical writing of Rudbeck and other predecessors.	**Carlo Goldoni** (It.), (1707-1793).—*Comedies*—Animated character comedy, mostly in prose.	
Samuel Johnson (1709-1784). — *Dictionary, Rasselas, Lives of the Poets, Vanity of Human Wishes* —A man great in eighteenth century learning and letters. The critical authority of his day. **David Hume** (1711-1776).—*History of England*—The first learned historian of England. A philosopher of acumen.	**Friederich von Hagedorn** (1708-1754).—*Anacreontic Lyrics, Fables*—Essentially a social poet. He gave the dominant tone to the German lyric for twenty-five years. **Albrecht von Haller** (1708-1777).—*Science, The Alps* —Great Swiss anatomist and physiologist. Came under the influence of English poets and wrote *The Alps* in the spirit of the English nature poetry.	**Louis Gresset** (1709-1777).—*Poems, Comedies—Vert-Vert*, a jocular poem, and *Le Méchant*, a comedy, are the best known of his works. **Jean Jacques Rousseau** (1712-1778).—*Fiction, Education*—The world-wide influence of the works of this man cannot be measured. **Denis Diderot** (1713-1784).—*Fiction, Encyclopedie* (Ed). One of the most powerful exponents of the ideas and philosophy of the eighteenth century.	**Olof von Dalin** (Swed.), (1708-1763).—*Journalism, History, Comedy, Tragedy, Poems*—Represents beginning of era of French influence. Shows influence of Pope, Addison, Swift, Voltaire.	**Prince Antioch Kantemir** (Russ.), (1708-1744).—*Poems*—Bold satirist of the social life of his own people. Verse form under French influence. **Michail Lomonossow** (Russ.), (1711-1765).—*Lyrics*—Scholar and poet Founder of Russian metrics. Grounded in Russian folk-song.	1708. Battle of Oudenarde. 1710. St. Paul's cathedral, London, completed.
Laurence Sterne (1713-1768).—*Tristram Shandy, Sentimental Journey*—A writer in whom affectation becomes an art. Some pathetic passages have become classic. **Thomas Gray** (1716-1771).—*Elegy in a Country Churchyard*, etc.—A scholar-poet. Production limited but of fine workmanship.	**C. F. Gellert** (1715-1769).—*Novels, Letters, Fables, Poems*—A poet of the people. Great stylist as letter writer. His *Swedish Countess of G.* is the first social novel in Germany. **Ewald von Kleist** (1715-1759). — *Nature Poetry, War Odes* — A Prussian military officer. Influenced in his poetry by Thomson. A spirit of melancholy unites with his passionate love for nature. **J. J. Winckelmann** (1717-1768).— *History of Ancient Art*—His work opened a new epoch in the history of art, and marked the beginning of modern archæology as a branch of science. **J. W. L. Gleim** (1717-1803).—*Anacreontic Lyrics, Grenadier Songs*—A mediocre poet of love and wine and of war-songs, best known as a generous patron of needy poets.	**Etienne de Condillac** (1715-1780). — *Metaphysics*—A friend of Rousseau a d Diderot, and, as a philosopher, for a long time a disciple of Locke. His *Treatise on Sensations* put him at the head of the "Sensualiste" school.			1717. Alliance between France, England and Holland.
Tobias Smollett (1721-1771).—*Humphrey Clinker, Roderick Random*, etc.—Originator of the sea-story. Inclined to vulgar coarseness. **Sir William Blackstone** (1723-1780). — *Commentaries on the Laws of England*—Learned and careful, with a conception of the dignity of law. **Adam Smith** (1723-1790).—*Wealth of Nations*—The first great economist. The moderns hardly equal to him in natural keenness of insight. **Oliver Goldsmith** (1728-1774).—*Vicar of Wakefield, Essays, Deserted Village, She Stoops to Conquer*, etc. —A true and graceful touch both in prose and poetry. Supposed to be the original compiler of *Mother Goose Melodies.* **Edmund Burke** (1729-1797).—*Essays, Orations*—Prose, sometimes musical and poetical, and, at the same time, a statesman's grasp of principle.	**F. G. Klopstock** (1724-1803).—*Messiah, Lyrics, Odes*—The first genuine poet of the eighteenth century. Inspired by Milton's *Paradise Lost*, he wrote his *Messiah.* He was also a great lyric poet. **G. E. Lessing** (1729-1781). —*Criticisms, Plays*—The greatest critic of Germany. Turned the minds of the Germans from the French stage to Shakespeare and German folk-drama, introduced the English comedy of common life, developed a new type of national German tragedy, and preached the evangel of brotherhood and religious toleration.	**Jean François Marmontel** (1723-1799). —*Novels, Tragedies*—Also a noted encyclopedist.	**Gerhard Suhm** (Nor.), (1722-1780).— *History of Norway*—Wrote a work on the north to 1400 in 14 volumes. **Bjorn Haldorsson** (Ic.) (1724-1794).—*Dictionary*—Originally an Icelandic-Latin dictionary, but published for the first time in 1814 with Danish meanings by R. Rask. **P. F. Suhm** (Dan.), (1728-1798).— *History of Denmark*—In 14 volumes ending with the year 1400. Characteristic ponderousness of age. **C. B. Tullin** (Nor.), (1728-1780).—*Poems*—Poems describing nature and didactic poems. Influenced by Thomson and Pope. Too much detail in description.	**Carlo Gozzi** (1722-1806). —Italian dramatist. **Guiseppe Parini** (It.), (1729-1799), *Poems, Odes* —His *Giorno* is one of the best works in Italy in the eighteenth century.	1727. George II., king of England.

TABLE VI. EIGHTEENTH CENTURY—Continued

English	German	French	Scandinavian	Italian, Spanish, Russian, American	Historical Events
William Cowper (1731-1800).—*The Task, John Gilpin*, etc.—Divests poetry of the affectations of Pope. Writes on simple themes.	**Solomon Gessner** (1730-1788).—*Idyls, Pastorals*—His *Idyls* the most popular German book in Europe before the appearance of *Werther*. His prose is delicately balanced, but very artificial. **C. M. Wieland** (1733-1813).—*Oberon, Novels*—Best known as author of the novels *Don Sylvio of Rosalva*, describing his transition from pietism to nature poetry; *Agathon*, giving his views of the antique; and the metrical romance *Oberon*, treating of the adventures of Huon of Bordeaux. **Immanuel Kant** (1724-1804).—*Critical Philosophy*—The greatest German philosopher. Substituted critical philosophy for the old dogmatic metaphysics, demanded obedience to the moral law, laid the foundations of modern æsthetics. He was the founder of the transcendental philosophy.	**A. de Beaumarchais** (1732-1799).—*Comedies*—Celebrated especially for his two witty and well constructed plays, *Le Barbier de Séville* and *Le Mariage de Figaro*, in which we find much of the spirit that is coming with the French revolution. **Bernardin de St. Pierre** (1737-1814).—*Paul and Virginia*. This popular work brings into French literature the taste for "nature" as it is. St. Pierre was in literature a disciple of J. J. Rousseau.	**Gustav Filip Crentz** (Swed.),(1731-1785).—*Poems*—Idyllic poetry. Tender in personality and expression. Delights of nature and of love. **Gustav Fredrik Gyllenborg** (Swed.), (1731-1808).—*Poems*—Best in didactic and satirical poetry. Wrote also fables and an epic.	**Girolamo Tiraboschi** (It.), (1731-1794).—*Literary History*—A valuable history of Italian literature. **Ramonde Cella Zrug** (Sp.),(1731-1799).—*Dramas*—Short farces of everyday life. **George Washington** (1732-1799).—*Farewell Address, State Papers*, etc.—Broadly patriotic and well-considered. **Thomas Godrey, Jr.** (1736-1763).—*The Prince of Parthia, Poems*—Imitative but original in imagination and marked by color. **Patrick Henry** (1736-1799).—*Speeches, Letters*, etc.—Eloquent, ardent, and profoundly impressive. **Thomas Paine** (1737-1809).—*The Crisis, Common Sense, Rights of Man, Age of Reason*, etc.—Journalistic and talented, and generally effective.	1734. University of Göttingen founded.
Edward Gibbon (1737-1794).—*Decline and Fall of the Roman Empire*—A painstaking and learned historian. Constructive powers of broad scope. **James Boswell** (1740-1795).—*Life of Samuel Johnson*—Shows the true reporter's instinct for the point of a story. The book is otherwise that of a toady, though an unusual biography. **William Paley** (1743-1805)—*Evidence of Christianity, Natural Theology*—A cogent reasoner on the old premises. **Hannah More** (1745-1833).—*Coelebs in Search of a Wife, Sacred Dramas*—Something of a minor poet, something of a dramatist and story-teller.	**J. G. von Herder** (1744-1803).—*Criticisms, History*—The chief factor in the literary revolution known as "storm and stress." His work in history sets forth the evolution of human institutions.		**Karl Mikael Bellman** (Swed.),(1740-1795).—*Songs, Lyrics*—Bubbling joy of life. Fluent writer. Wrote just to amuse. Musical. Very popular. **J. H. Wessel** (Nor.), (1742-1785).—*Poems, Plays*—Effective parody of dramas of the day, which were written in French style. Elegant language. *Love Without Stockings* is his best known work. **Klaus Fasting** (Nor.), (1746-1791).—*Poems*—Famous for critical essays and spirited epigrams. Admirer of French literature.	**Gabriel Derschawin** (Russ.) (1743-1816).—*Lyrics, Odes*, etc.—His ode *To God* translated into all European languages. Rhetorical but a strong poetic vein.	1740. Reign of Frederick the Great begins.
Jeremy Bentham, (1748-1832), *Philosophy, Essays*—Greatest critic of legislation and government in his day. **Richard B. Sheridan,** (1751-1816), *The Rivals, School for Scandal, Speeches*, etc.—Writer of witty dialogue and constructor of telling stage situations. Comedies still acted. **William Blake,** (1757-1827), *Songs of Innocence, Songs of Experience*—"The single Englishman of supreme and simple poetic genius of his time." **Robert Burns,** (1759-1796), *Poems*—Lyrics, songs and satires in Scotch dialect, marked by music, pathos and wit.	**Johann Wolfgang von Goethe** (1749-1832).—*Dramas, Lyrics, Elegies, Sonnets, Epigrams*—The greatest German poet. A universal genius. Before 1800 he had imitated Shakespeare, Ossian, Goldsmith and the ballad poetry, sung odes in the manner of Pindar and Klopstock, lived his story of *Werther*, and created a new German classicism in *Iphigenie, Tasso*, and *Hermann and Dorothea*. His life poem, *Faust*, is based upon the doctrine of redemption by ceaseless striving, and typifies the philosophical struggle of the poet's own life. **Friederich von Schiller** (1759-1805).—*Dramas, Lyrics, History*—The great associate of Goethe. Reflects the ideal yearnings of his time. Aimed to lead men to consecrate their gifts to *the good, the beautiful, and the true*. He is the best-loved poet among the Germans. **A. von Kotzebue** (1761-1819).—*Plays*—Now almost forgotten, he was the most popular dramatist of his time. His plays are very numerous, and catered to the public taste.	**Comte Mirabeau** (1749-1791).—*Orations*—The greatest orator of the French revolution. His speeches have been published and are his principal title to literary distinction. **Claude Rouget de Lisle** (1760-1836).—*Marseillaise*—The immortal national hymn of France. **André Chénier** (1762-1794).—*Lyrics*—A model in purity of form. His style in the lyrics is passionate, but not personal.	**Edw. Storm** (Nor.),(1749-1794).—*Poems*—Author of splendid heroic ballads. **Johan Henrik Kellgren** (Swed.), (1751-1795).—*Journalism, Poems*—Lyric and satiric poetry. Most prominent of the literary men who were intimate with Gustaf III. **Enevold Falsen** (1755-1808).—*Dramas*—His *Dragedukhen* enjoyed great popularity.	**Vittorio Alfieri** (It.), (1749-1803).—*Tragedies* Classical in spirit, observing the unities. **Tomás de Yriarte** (Sp.), (1750-1791).—*Literary Fables*—Original fables directed toward literary subjects.	1755. Earthquake at Lisbon. 1756-1763. Seven Years' war. 1759. Battle of Quebec

English	American	French
	Thomas Jefferson (1743-1826).—*Notes in Virginia, Declaration of Independence*—Full of wise foresight and keen acumen. **John Marshall** (1755-1835).—*Life of Washington, Decisions*, etc.—Profound and wise, but rather heavy. **Alexander Hamilton** (1757-1804).—*Contributions to the Federalist*—Keen and ingenious, full of information.	
	Alexander Wilson (1766-1813).—*American Ornithology*—Pioneer investigations of a shrewd observer.	**Xavier de Maistre** (1763-1852).—*Novels, Essays*—Models of vigorous narration. Deserves prominent place among French novelists. **Mme. de Staël** (1766-1817).—*L'Allemagne, Delphine, Corinne*, etc.—The first to set forth the principles of the Romantic school. Her book on Germany did much to bring the thought of that country into France. **Benjamin Constant** (1767-1830).—*Politics, Religion*—His works, both on politics and religion, are skeptical in tone. He also wrote *Adolphe*, a novel of some value. **Jean François Michaud** (1767-1839).—*History of the Crusades*, etc.—The founder of the universal biography.
Maria Edgeworth (1767-1849).—*Popular Tales*—Stories of middle-class domestic life, of excellent moral tone and some power of characterization.		
		François de Chateaubriand (1768-1848).—*René, Genius of Christianity, Atala*, etc.—Undoubtedly the greatest writer of his century, and his influence on the literature of the first half of the nineteenth century is considerable.
		Baron de Cuvier (1769-1832).—*Natural History*—One of the best known French naturalists. **Napoleon I.** (1769-1821).—*Proclamations, Letters, Memoirs*—His letters and his memoirs bear the stamp of the great genius whose characterization cannot be given in this restricted space.
William Wordsworth (1770-1850).—*The Excursion, Poems.*—Nature poems and descriptive poems. Many fine sonnets. First expression of modern feeling for nature. **James Hogg** (1770-1835).—*Pastorals, Shepherd's Calendar*—Scotch verses. One or two lyrics of sweetness and simplicity. **Sir Walter Scott** (1771-1832).—*Novels, Lady of the Lake, Poems*—Originator of the historical novel. Tone natural and wholesome. Secure in the estimation of posterity. **Sidney Smith** (1771-1845).—*Sermons, Essays*—The witty divine. Master of the expository style. **James Montgomery** (1771-1854).—*Hymns, Poems*—A man universally esteemed; best remembered now for his hymns, of which some hundred are found in our hymnals. **Samuel T. Coleridge** (1772-1834).—*Essays, Rhyme of Ancient Mariner, Translation*, etc.—A man of remarkable gifts, intellectual and poetic; a keen critic; a natural master of verbal melody.	**Charles Brockden Brown** (1771-1810).—*Wieland, Ormond*, etc.—Weird and sensational, of the Godwin type. **William Wirt** (1772-1834).—*Life of Patrick Henry, Letters of a British Spy*—Interesting and informative, but also imaginative.	**Charles Fourier** (1772-1839).—*Socialism*—A socialist whose system did not prove practical although it had many followers.
Robert Southey (1774-1843).—*Biographies of Nelson, Wesley*, etc., *Poems*—A man of industry and worth. Better as a prose stylist than a poet. **Charles Lamb** (1775-1834).—*Essays of Elia*, etc.—A quaint and delicate essayist; a friend of Coleridge. **Walter Savage Landor** (1775-1864).—*Imaginary Conversations, Count Julian, Heroic Idyls*, etc.—Classic scholar and writer. Reactionary and old-fashioned in his thought but a remarkable stylist. **Jane Austen** (1775-1817).—*Novels; Pride and Prejudice, Emma*, etc.—Her novels depicting upper middle-class life are delightfully realistic and full of quiet humor. **Thomas Campbell** (1777-1844).—*Pleasures of Hope, Lyrics*, etc.—Something of a critic. His lyrics have much vigor and verve. **Henry Hallam** (1777-1859).—*Europe During the Middle Ages, Constitutional History of England*—Strong, vigorous, historical writing from a standpoint now antiquated. **William Hazlitt** (1778-1830).—*Table Talk, English Poets*, etc.—Critical essays; contain some true eloquence, and many powerful phrases **Thomas Moore** (1779-1852).—*Biographies, Lalla Rookh, Irish Melodies*, etc.—Songs of much melody but of an unreal sentimentality.	**Robert Treat Paine** (1773-1811).—*Adams and Liberty, Poems*—Superficial, but of noticeable metrical facility. **Henry Clay** (1777-1852).—*Speeches, Letters*, etc.—Attractive because of personality and power. **Washington Allston** (1779-1843).—*Art Lectures, Poems*—Highly artistic in intent and achievement. **James Kirk Paulding** (1779-1860).—*Novels*—Romances of little present interest. **Francis Scott Key** (1780-1843).—*Poems, Star Spangled Banner*, etc.—The chief poem is a national song of patriotic ardor. **William E. Channing** (1780-1842).—*Addresses, Sermons*—Social papers, clear, tolerant, thoughtful. **John James Audubon** (1780-1851).—*Birds of America, Quadrupeds of America*—Marked by keen observation and wide interest.	**Jean Baptiste Biot** (1774-1862).—Philosopher and mathematician. **Pierre de Béranger** (1780-1857).—*Lyrics*—His songs, which have great lyric qualities, were very popular in his day and are still valued.

CENTURY, 1800-1900

German	Scandinavian	Italian, Spanish, Russian	Historical Events
	Anna Maria Lenngren (Swed.), (1755-1817).—*Poems*—Satiric and idyllic, but realities depicted in natural and simple colors. Her poetic career rather too late to show extreme traits of this period.		
J. G. Fichte (1762-1814).—*Philosophic Writings, Orations*—The philosopher of the Romantic school and the exponent of the philosophy of individualism. His great work *Addresses to the German Nation* helped arouse the revolt against Napoleon.			
Jean Paul Friederich Richter (1763-1825).—*Novels, Esthetics*—United elements of "storm and stress" with Fichte's philosophy. Often represents the idealist in conflict with real life.	**J. T. Baggesen** (Dan.), (1764-1826).—*Novels, Essays, Travels, Lyrics, Rhymed Letters*—Clothed his sparkling wit in most elegant language. Restless nature.	**Carlo G. Botta** (It.)—(1766-1837).—*Histories*—Dignified histories of the American war of independence and of Italy.	1763. *Georgia Gazette* established at Savannah.
Wilhelm and **Alexander von Humboldt** (1767-1825 and 1769-1859).—*Criticism, Science, Travels*—Great scientists and travelers. Wilhelm, virtual founder of the University of Berlin, was a great classical scholar. Alexander wrote the great masterpiece *Cosmos*.			
A. W. von Schlegel (1767-1845).—*Criticism, Poems*—The great critic of the Romantic school. Gave the Germans his famous lectures on *Dramatic Art and Literature*, and contributed to their classical translation of Shakespeare, 1797-1810.			
Zacharias Werner (1768-1823).—*Plays, Sonnets*—Next to Tieck, the greatest dramatist of the Romantic school.		**Quan Krylow** (Russ.), (1768-1844).—*Fables, Odes, Epistles, Tragedies*—Full of wit and humor. His fables very popular with the Russian people.	
F. E. D. Schleiermacher (1768-1834).—*Addresses, Criticisms*—The preacher of the Romantic school, famous for his *Addresses on Religion*, his *Monologues*, and his *Letters on Lucinde*.			
Ernst Moritz Arndt (1769-1860).—*Warsongs, Lyrics*—A sturdy patriot. An earnest religious spirit prevades his work. Most effective in stirring his nation to revolt against Napoleon.	**Jon Espolin** (Ic.), (1769-1836).—*History of Iceland 1262-1832*—Twelve large quartos in annalistic form. Valuable as source, but often uncritical.		
Friederich Hölderlin (1770-1843).—*Hyperion, Lyrics*—Devoted to Greek culture Poetic activity early cut off by insanity. Was the most gifted lyric genius at the close of the century.			
G. W. F. Hegel (1770-1831).—*Philosophy*—The philosopher of collectivism and of evolution in history.			
Heinrich Zschokke (1771-1848).—*Novels*—Prolific novelist, social and political reformer. His best novels are written in the spirit of Scott's *Waverley Novels*.	**Hans Christian Oersted** (Dan.), (1777-1851).—*Science*—Discovered electric magnetism.		
Novalis (Friederich von Hardenberg) (1772-1801).—*Novels, Lyrics, Criticism*—The sentimental poet of the Romantic school. His *Hymns to the Night* contain some of the most spiritual poetry in the German tongue.	**Franz Mikael Franzén** (Swed.), (1772-1847).—*Poems, Hymns*—Exquisite lyric poems. Tender in feeling, clear in form.		1772. Partition of Poland.
Friederich von Schlegel (1772-1829).—*Criticism, Novels*—Both critic and poet and wrote the greatest novel of the Romantic school, entitled *Lucinde*, dealing with the limitations of conventional society.			
J. L. Tieck (1773-1853).—*Novels, Lyrics*—The most prolific writer of the Romantic school. His *Puss in Boots* is the best satirical German drama. He is unrivaled in the world of phantasy.	**Countess Gyllembourg** (Dan.), (1773-1856).—*Novels* — Pseudonym. J. L. Heiberg's mother. Describes everyday life in all classes of society.	**Jean Charles Sismondi** (It.), (1773-1842), *Histories*—Extensive history of the literature of the south of Europe.	
F. N. J. Schelling (1775-1854).—*Philosophy*—A disciple of Spinoza, taught the identity of spirit and nature, and published *Philosophy of Nature* (1797), *The World Soul*, (1798) and *System of Transcendental Idealism* (1800).	**Malte Bruun** (Dan.), (1775-1826).—*Geography.* **J. P. Mynster,** (Dan.), (1775-1850), *Theology*—One of Denmark's greatest theologians.	**Alberto Lista** (Sp.), (1775-1848).—*Criticism*—Literary criticism of a wholesome nature.	1775. Battle of Bunker Hill.
			1776. American independence.
Heinrich von Kleist (1777-1811).—*Dramas, Novels*—Poet of a tragic life. The most original dramatist of North Germany. His *Prince von Homburg* is Prussia's greatest historical drama.			
F. de la Motte Fouqué (1777-1843).—*Tales, Lyrics*—A later Romanticist, popularly known for his charming *Undine* (1811), the story of a water sprite without a soul.			
Clemens Brentano (1778-1842).—*Novels, Ballads*—Best known for his work on *The Boys' Wonder Horn*, the first extensive collection of German ballads.	**Jons Jakob Berzellius** (Swed.), (1779-1848).—*Chemistry.* Enjoys world-wide fame. **Adam Gottlob Oehlenschlaeger** (Dan.), (1779-1850).—*Poems, Tragedies*—Very prolific and brilliant writer. Material chiefly from Scandinavia. Wholesomely human. His *Haye* was model for Tegnér's *Frithiofs Saga*.	**Ugo Foscolo** (It.), (1778-1827).—*Poems, Dramas*—Serious, often melancholy.	
Friedrich von Raumer (1781-1873).—*Historian*—A voluminous writer.			

TABLE VII. NINETEENTH

English	American	French
	John C. Calhoun (1782-1850).—*Speeches, Papers,* etc.—Forceful in logical thinking and clear exposition. **Daniel Webster** (1782-1852) —*Orations*—Elevated in thought and eloquent. **Thomas Hart Benton** (1782-1858).—*Thirty Years' View*—Rich and racy observations of wide experience.	
Leigh Hunt (1784-1859).—*Essays, Sketches, Memoirs, Poems*—A minor poet. A *littérateur* of appreciation rather than of creative power. **Thomas De Quincey** (1785-1859).—*Confessions of an Opium Eater,* etc.—Passages of magnificent color. A learned man, lacking in sound realistic judgment.	**Washington Irving** (1783-1859).—*Knickerbocker's History of New York, Sketch Book,* etc.—Humorous, with delicate sentiment and grace.	**Henri Beyle** (Stendhal), (1783-1842).—*Novels*—His novels *Le Rouge et le Noir* and *La Chartreuse de Parme* bring into literature an analysis of one's self more true than the self-presentation of the Romantic school in general.
Lord Byron (1788-1824).—*Poems*—Vigorous, eloquent, sardonic, iconoclastic. A great satirist and in many respects a great poet.	**Richard Henry Dana** (1787-1879).—*Poems: The Buccaneer,* etc.—Overambitious and not wholly successful. **Alexander Campbell** (1788-1866).—*Religious Debates, Editorials, Sermons,* etc.—Incisive in thought, tolerant in spirit, vigorous.	**François Guizot** (1787-1874).—*Histories*—His remarkable historical works have founded the school of philosophical history.
	James Fenimore Cooper (1789-1851).—*Leather Stocking Tales, The Spy,* etc.—Romantic and overfortunate in coincidence, but readable. **Jared Sparks** (1789-1866).—*American Biographies*—Commendable efforts of a pioneer biographer. **Fitz Greene Halleck** (1790-1867).—*Poems, Marco Bozzaris,* etc.—Spirited but overwrought; sometimes graceful. **Augustus B. Longstreet** (1790-1870).—*Georgia Scenes*—Frankly humorous and delightfully fresh.	**Alphonse de Lamartine** (1790-1869).—*Poems, History of the Girondists,* etc.—The first, in date, of the great poets of the Romantic school. An idealist whose harmonious verses and high ideals have continued to grow in favor.
	George Ticknor (1791-1871).—*History of Spanish Literature*—Scholarly and authentic	**Eugène Scribe** (1791-1861).—*Comedies*—The author of a large number of plays which show more dramatic skill than study of manners or character.
Percy B. Shelley (1792-1822).—*Queen Mab, Adonais, The Sky Lark,* etc.—A remarkable gift of lyrical melody. Full of generous impulse and the unbalanced judgment of youth. A genius. **Capt. Fred Marryat** (1792-1848).—*Peter Simple, Jacob Faithful,* etc.—Boys' stories, but evincing considerable narrative skill.	**John Howard Payne** (1792-1852).—*Home Sweet Home*—Universal in appeal and satisfying in form.	**Victor Cousin** (1792-1867).—*Philosophy, Metaphysics*—The chief of a school of philosophers called the Eclectics.
Felicia Hemans (1793-1835).—*Lyrics*—A minor poet of grace, sweetness and tenderness.	**Samuel G. Goodrich** (1793-1860).—*Peter Parley Books*—Popular introductions with a flavor of fiction.	**Casimir Delavigne** (1793-1843).—*Dramas, Elegies*—Author of popular elegies, but especially remembered as a dramatic writer.
George Grote (1794-1871).—*History of Greece*—A learned and sound historian, but superseded by modern exact research.	**William Cullen Bryant** (1794-1878).—*Addresses, Letters, Poems: Thanatopsis,* etc.—Dignified and poised, serious and helpful.	**Augustin Thierry** (1795-1856).—*History of France,* etc.—Historian of the Romantic school.
John Keats (1795-1821).—*Endymion, Hyperion,* etc.—A true poet, dying too young to reach full fruition of his remarkable artistic powers. **Thomas Arnold** (1795-1842).—*Roman History, Sermons, Essays*—A man of wide influence as headmaster of Rugby. An historian of the old school. **Thomas Carlyle** (1795-1881).—*French Revolution, Cromwell, Sartor Resartus, Essays,* etc.—A very great though one-sided man. A prose poet, an historian of insight and industry, impatient of shams.	**Joseph Rodman Drake** (1795-1820).—*The Culprit Fay*—Cleverly executed, but ingeniously fanciful. **James G. Percival** (1795-1856).—*Poems: Prometheus,* etc.—Unsustained, though not without positive merits. **John Pendleton Kennedy** (1795-1870).—*Swallow Barn, Horse Shoe Robinson,* etc—Old-fashioned but interesting pictures of southern life **William H. Prescott** (1796-1859).—*Conquest of Peru, Ferdinand and Isabella,* etc.—Excellent history, very interestingly told. **Thomas C. Haliburton** (1796-1865).—*Sam Slick*—Humorous with the raciness of the soil.	**François Auguste Marie Mignet** (1796-1884).—*Histories*—Like that of Guizot his history is founded upon a philosophical basis
Samuel Lover (1797-1868).—*Songs, Ballads*—A writer of slap-dash Irish stories and some good songs.	**Hugh Swintose Legaré** (1797-1843).—*Addresses, Articles, Letters*—Academic, stilted and in good form.	**Louis Adolphe Thiers** (1797-1877).—*French Revolution, History of the Empire,* etc.—A great historian and statesman. His histories are realistic and scientific.

CENTURY—Continued

GERMAN	SCANDINAVIAN	ITALIAN, SPANISH	HISTORICAL EVENTS
Achim von Arnim (1781-1831).—*Novels, Poems*—Like Brentano, a Heidelberg Romanticist, and assisted with the *Wonder Horn*. **Adelbert von Chamisso** (1781-1838).—*Peter Schlemihl, Poems*—A later Romantic lyrist, wrote ballads and *Peter Schlemihl*, the story of a man who sells his shadow, and finds his way through the world with seven league boots, a romantic treatment of the poet's own life.	**Finn Magnusson** (Ic.), (1781-1847).—*Mythology*—Thorough student of northern antiquities. **N. M. Petersen** (Dan.), (1781-1862).—*History, Mythology*—Wrote a work on Scandinavian mythology and a history of Danish literature. **Esaias Tegnér** (Swed.), (1782-1846).—*Speeches, Poems, Frithiofs Saga*—World-wide renown. Great personality and original poet. Brilliant figures, clear expression. Musical lyric verse. Influenced by German and Greek. Emphasizes Scandinavian mythology. **Erik Gustaf Geijer** (Swed.), (1783-1847).—*History, Philosophy, Poems*—Very great both as historian and poet. A scholar. His poetry appeals to the people. **Christopher Hansteen** (Nor.), (1784-1873).—*Astronomy*—Became widely known by his study of the earth's magnetism.		
Jacob Grimm (1785-1863).—*Fairy Tales, Dictionary*—With his brother Wilhelm, founder of modern German philology, and compiler of the great German dictionary; known in literature for his large collection of *Fairy Tales*. **Ludwig Börne** (1786-1837).—*Letters from Paris*—A Jew from the Frankfort ghetto. Famous for his *Letters*, written as a protest against narrowing social limitations. **Wilhelm Grimm** (1786-1859).—*Critical Writings*—See Jacob Grimm mentioned above. **A. Justinus Kerner** (1786-1862).—*Lyrics, Soothsayer of Prevorst*—Famous lyric poet and Romantic mystic. His *Soothsayer* is a collection mysterious sayings and doings. **Ludwig Uhland** (1787-1862).—*Criticism, Ballads*—Poet of Romantic type, wrote ballads, historical plays, patriotic poems, and treatises on German legends. **J. von Eichendorff** (1788-1857).—*Lyrics, Life of a Good-for-Nothing*—The greatest lyric poet of the Romantic movement. Essentially a poet of nature, and the ideal of a free "Wanderleben" is the recurring theme. **Arthur Schopenhauer** (1788-1860).—*Philosophy*—The philosopher of pessimism. His *World as Will and Idea* left a deep impression. **Friedrich Rückert** (1788-1866).—*Sonnets in Armor, Poems*—Poet of the war of Liberation. His *Sonnets in Armor* resound with the clank of arms. Also a great interpreter of oriental life and poetry.	**Bjarne Thorenson** (Ic.), (1786-1841).—*Poems*—Unique poems of love and patriotism. Excellent poems on deceased friends. **Rasmus Rask** (Dan.), (1787-1832).—*Grammatical Works*—Great scholar in comparative philology. Was the first to publish the so-called Grimm's law. **B. S. Ingemann** (Dan.), (1789-1862).—*Novels, Lyrics, Hymns*—The Walter Scott of Denmark. Romantic idealization of middle ages. **Gustaf W. Gumaelius** (Swed.), (1789-1877).—*Historical Novels*—In spirit of Walter Scott. **J. C. Hauch** (Dan.), (1790-1872).—*Novels, Dramas, Lyrics*—A genuine Romanticist of deep moral earnestness. Not very popular. Best are his lyric poems. **K. F. Dahlgren** (Swed.), (1791-1844).—*Novels, Short Stories, Poems*—At first allegorical and mystical. Later became leading humorist. **J. L. Heiberg** (Dan.). (1791-1860).—*Dramas, Poems*—Humorous. Son of P. A. Heiberg. Very popular. One of the best writers. Sharp critic. Musical comedies and other romantic plays.	**Alessandro Manzoni** (1785-1873).—*Novel, Dramas*—*The Betrothed*, the greatest Italian novel. **Silvio Pellico** (1789-1854).—Italian dramatist, poet, novelist. **Gino Capponi** (1792-1876).—Italian historian.	1786. Swedish academy founded. 1789. Beginning of French Revolution. 1792. French republic declared.
Theodor Körner (1791-1813).—*Lyre and Sword*—The young hero-poet, who fell in Lützow's corps in the war of Liberation, immortalised his poetic gift in his *Lyre and Sword*, a collection of patriotic lyrics. **Franz Grillparzer** (1791-1872).—*Dramas, Lyrics*—The greatest Austrian dramatist. He has neither contemporaries not successors who can be compared to him for classic beauty and depth of human experience. His *Waves of the Sea and of Love* is a great modern love-tragedy. **Wilhelm Müller** (1794-1827).—*Lyrics*—Master of the popular lyric. Poet of the German people in a higher degree than any other Romantic singer. His *Songs of the Greeks* are full of sentimental patriotism for Greek independence.	**Karl J. L. Almqvist** (Swed.), (1793-1866).—*Novels, Essays, Poems*—Unique, imaginative, mystical. Fine characterization. **H. N. Clausen** (Dan.), (1793-1877).—*Criticisms*—A clear critic in the domain of theology. **Poul Möller** (Dan.), (1794-1838).—*Novels, Poems, Student Songs*—Spiritually sound and original in thought and expression. Influence on later realism. **M. C. Hansen** (Nor.), (1794-1842).—*Novels*—Romantic. His stories are bright, but not national.		
August von Platen (1796-1835).—*Venetian Sonnets, Poems, Stories*—A romantic poet and master among the German sonnetists. His drama *The Fateful Fork* ridiculed the fate tragedy of the time. **K. L. Immermann** (1796-1840).—*Novels*—A late Romantic writer best known as the author of *The Epigons*, foreshadowing the tragedy of his own life, and *Munchhausen* distinguished for its description of Westphalian peasant life. **Heinrich Heine** (1797-1856).—*Lyrics, Short Stories*—The greatest lyric poet after Goethe, strongly imbued with Romanticism. Best known as the author of *The Journey to the Harz Mountains* (1826), and the *Book of Songs* (1827).	**Christian Winther** (Dan.), (1796-1876).—*Tales, Poems*—A master of style. Thoroughly and naturally Danish. Emphasises nature of Denmark. **K. J. Böstrom** (Swed.), (1797-1866).—*Philosophy*—Created an independent philosophic system. **Henrik Hertz** (Dan.), (1797-1870).—*Dramas, Epics, Satires*—Founder of the new comedy in Denmark. Elegant and correct in style. Most original in his lyric poetry.	**Cecilia Bohl von Faber** (Fernan Caballero), (1797-1877).—Spanish *novels*.	1796. Washington issues his "Farewell Address."

TABLE VII. NINETEENTH

ENGLISH

Robert Pollock (1798-1827).—*Course of Time*—A sound, serious, and heavy poet; suits Scotch theologians.

Thomas Hood (1798-1845).—*Poems*—A humorous poet of the first rank: some pathetic verses of high quality.

Thomas B. Macauley (1800-1859).—*Essays, History of England, Lays of Ancient Rome*—He makes history alive and readable. A partisan, but on the right side.

Harriet Martineau (1802-1876).—*Political Economy*, etc.—A woman of remarkably strong intellect. Her positions well argued but perhaps too radical.

Sir Edward Bulwer Lytton (1803-1873)—*Last Days of Pompeii, Last of the Barons*, etc.—A versatile and successful *littérateur* in several forms of the novel, but preëminent in none.

Benjamin Disraeli (1804-1881).—*Lothair, Vivian Grey*, etc.—Society novels eminently readable but thoroughly artificial.

James Martineau (1805-1900).—*Philosophy*—A philosophical thinker of insight and honesty.

Elizabeth Barrett Browning (1806-1861).—*Aurora Leigh, Poems*—A pleasing lyrical gift and warm, human sympathy made her a favorite poetess in the Victorian era.

John Stuart Mill (1806-1873).—*Political Economy*—Of thorough intellectual honesty and diamond-clear intellect, he furthered the cause of political justice and personal freedom.

Charles Darwin (1809-1882).—*Origin of Species, Descent of Man*—Lucid and attractive in style and an unflinching lover of truth, he has had a greater influence on thought than any man of his time.

Alfred Tennyson (1809-1892).—*In Memoriam, Idylls of the King, Poems*—The national poet of the late nineteenth century; a painstaking artist and master of verbal melody.

Elizabeth Gaskell (1810-1865).—*Cranford, Mary Barton*, etc.—A writer of charming feminine humor. One of the first to make the economic problems the basis of a story.

William M. Thackeray (1811-1863).—*Vanity Fair, The Newcomes, Henry Esmond*—Satirist and humorist, but with great powers of characterization, especially of the everyday social elements.

Charles Dickens (1812-1870).—*Novels: David Copperfield, Oliver Twist, Christmas Carol*, etc.—A broader humorist than Thackeray, appealing to the common human sympathies and the ordinary sense of the ridiculous.

Robert Browning (1812-1889).—*Dramatic Lyrics, Poems, The Ring and the Book*—A powerful poet, intent more on subtle analysis of character than lucidity. His interest lay "in the development of a soul."

AMERICAN

Amos Bronson Alcott (1799-1888).—*Concord Days, Table Talks, Sonnets and Canzonets*—Suggestingly idealistic, but lacking in general interest.

George Bancroft (1800-1891).—*History of the United States*—Faithfully prepared and honestly presented.

Horace Bushnell (1802-1876).—*Nature and the Supernatural, Work and Play*—Serious, didactic efforts with spiritual purpose.

George D. Prentice (1802-1870).—*Editor Louisville* (Ky.) *Journal*—Witty, sarcastic, daring and effectiv..

Ralph Waldo Emerson (1803-1882)—*Conduct of Life, Representative Men, Essays, Poems*—The prophet of American culture. Coalesces oriental conceptions and occidental individualism.

Jacob Abbott (1803-1879)—*Rollo Books*—Popular favorites of unsophisticated youth.

Nathaniel Hawthorne (1804-1864).—*Twice Told Tales, Scarlet Letter, Marble Faun*, etc.—Marked by a subtle mastery and the touch of genius.

John S. C. Abbott (1805-1877)—*Biographies, Histories*, etc.—Ephemeral in interest or easily eclipsed.

Charles E. A. Gayarré (1805-1895).—*History of Louisiana, Fernando de Lemos*, etc.—Entertaining and scholarly bilingual productions.

Nathaniel P. Willis (1806-1867).—*Poems, Sketches, Editorials*, etc.—Skillfully elaborated but diminishing in fame.

William Gilmore Simms (1806-1870).—*Poems, Novels, Biography*, etc.—Versatile, original and artistic.

Henry W. Longfellow (1807-1882).—*Outre Mer, Hyperion, Poems, Hiawatha*, etc.—Popular in appeal and simple in form.

John G. Whittier (1807-1892).—*Editorials, Household Poems*—With Burns' love of nature and human nature.

Edgar Allan Poe (1809-1849).—*Tales, Poems; Raven, Annabel Lee*, etc.—Excellent in artistic "totality of effect."

Albert Pike (1809-1891).—*Hymns to the Gods, Poems*, etc.—Of recognized interest and merit.

Oliver Wendell Holmes (1809-1894).—*Autocrat of the Breakfast Table, Novels, Poems*—Clever, witty, versatile, and skillful.

Margaret Fuller Ossoli (1810-1850).—*Summer on the Lakes, Papers on Literature and Art*—Notable in transcendental aim and in merit of achievement.

Harriet Beecher Stowe (1811-1896).—*Uncle Tom's Cabin*, etc.—Far-reaching in its influence.

FRENCH

Auguste Comte (1798-1857).—*Positive Philosophy*—His course on positive philosophy is one of the important works of the nineteenth century.

Jules Michelet (1798-1874).—*History of France*—Has given a new conception of history. According to him it is a resurrection of the life of the people studied in its material and in its spiritual aspect. His style is admirably adapted to his conception of history.

Honoré de Balzac (1799-1850).—*Novels*—The author of the *Comédie Humaine*, a collection of novels which embraces the whole of society. Balzac is considered as the chief of the "realistic school," although there is great share of idealism in his novels, in which many of the heroes are mere symbols.

Alfred de Vigny (1799-1863).—*Cinq Mars*, etc.—One of the great poets of the Romantic school. His distinguishing features are an extreme delicacy and a subtle melancholy. His *Cinq Mars*, in which history is often arranged to suit his views, is recommended on account of its style.

Victor Hugo (1802-1885).—*Novels, Lyrics*—One of the world-poets. In the field of epic poetry he has no rival and as a lyricist but very few. His dramas are valued more as admirable lyric pieces than as plays

Alexandre Dumas (1803-1870).—*Novels, Dramas*—The author of a large number of popular novels based upon history and remarkable for their easy style and the excessive fertility with which they abound. His dramas have a place in the history of the French theater.

Prosper Mérimée (1803-1870).—*Stories, Novels*—His stories alone give him a place among the authors of the nineteenth century. They are little masterpieces.

Eugène Sue (1804-1857).—*Mysteries of Paris, Wandering Jew*, etc.—His popular novels, in which imagination plays the principal part, were enjoyed in his time.

C. A. de Sainte-Beuve (1804-1869).—*Criticisms*, etc.—Is the incomparable master of criticism.

George Sand (Mme. Dudevant), (1804-1876).—*Novels*—Her literary career can be divided into four periods. She wrote romantic novels, then philosophical or socialistic novels, before reaching the rustic idyls in which she excelled.

Alexis de Tocqueville (1805-1859).—*Political Science, Histories*—The author of *Democracy in America*, in which the institutions and customs of America are keenly observed.

Alfred de Musset (1810-1857)—*Tales, Poems, Dramas*—Some of his poems—*Les Nuits, le Souvenir*, etc.—are among the most beautiful in French literature. They express the sufferings of love as they have never been expressed before or after. His comedies are an exquisite blending of dream and reality.

Henri Martin (1810-1883).—*History of France*—One of the best reference works we have.

Theophile Gautier (1811-1872).—*Criticism, Novels, Poems*—Poet and prose writer who regarded plastic beauty as the supreme aim of art. His constant preoccupation was to suppress all emotions which might interfere with the composition in his writings.

J. Sandeau (1811-1883).—*Novels*—A painstaking writer whose novels have enjoyed a certain popularity.

Victor Duruy (1811-1894).—*History*—His *History of Rome* is especially valuable. He was the originator of many reforms made in public instruction in France.

ENTURY—Continued

German	Scandinavian	Italian, Spanish, Russian	Historical Events
Wilhelm Häring (W. Alexis), (1798-1871).—*Patriotic Novels*—One of the first and the ablest of the German imitators of Walter Scott, wrote a series of patriotic novels treating of German history. **Hoffmann von Fallersleben** (1798-1874).—*Poems*—Philologist and poet, best known for his lyrics in the style of the ballad.		**Giacomo Leopardi** (It.), (1798-1837).—*Poems*—Permeated with "the infinite vanity of all things."	
		Alexander Pushkin (Russ.) (1799-1837).—*Poems, Stories, Novels, Dramas*—A great poet. Romantic at first. Later emphasized national feeling in Russian literature. Greatly influenced by Byron.	1799. Death of Washington.
C. D. Grabbe (1801-1836).—*Dramas*—Deeply pessimistic and romantically unbalanced, but often masterful in dramatic characterization. **Wilhelm Hauff** (1802-1827).—*Lichtenstein, Man in the Moon, Short Stories*—An eminent novelist, greatly influenced by Walter Scott. *Lichtenstein* is a story of Württemberg in the sixteenth century.	**Fredrika Bremer** (Swed.), (1801-1865)—*Novels*—Describes family life of middle classes realistically. Worked for emancipation of woman. Was popular in America and England.	**Manuel Breton de los Herreros** (Sp.), (1800-1873).—*Dramas*—Popular modern Spanish poet. Gives a good picture of Spanish social life.	1801. Discovery of first asteroid by Piozzi.
	R. Keyser (Nor.), (1803-1864).—*History*—Wrote a learned work on the Catholic church in Norway.		
Eduard Mörike (1804-1875).—*Lyrics, Stories*—The greatest lyric poet of Suabia. There is a peculiar charm in his delicacy of touch and his simplicity.	**Johan Ludvig Runeberg** (Swed.), (1804-1877).—*Poems, Dramas*—Born in Finland. Describes realistically Finnish home-life. Idyllic, epic, and lyric poetry. Fine characterization. Most popular are *Fänrik' Ståls Sägner*, dealing with Finnish-Russian war of 1808-1809. **J. N. Madvig** (Dan.), (1804-1886).—*Latin Grammar*—Great linguist and Latin scholar.		1804. Napoleonic code adopted in France.
	Hans Christian Andersen (Dan.), (1805-1875).—*Fairy Tales, Novels, Dramas, Poems*—Used language of the people and of childhood. Next to bible, his *Fairy Tales* have been translated into the most foreign languages.		1805. Battle of Trafalgar.
Heinrich Laube (1806-1884).—*Novels, Plays*—Witty, declamatory and sententious, but seldom a delicate poet. His chief works are novels or dramas of purpose in the spirit of radical Young Germany.			
	Jonas Hallgrimsson (Ic.), (1807-1845).—*Island Gunnarsholmi*—Popular patriotic songs. Excellent power over anguage. One of the best poets of modern Icelandic. **J. S. C. Welhaven** (Nor.), (1807-1873).—*Poems*—Polemic sonnets, lyric and descriptive. Opposed bitterly the hyper-patriotism of Wergeland. **H. A. Wergeland** (Nor.), (1808-1845), *Poems*—Poet, patriot, and hater of Denmark. Brilliant, original, and imaginative. **Fred. Paludan-Müller** (Dan.), (1809-1876).—*Poems, Mythological Plays*—Subjects from Greek mythology, Bible and from life. *Adam Homo* is his greatest work. Satire of life. A monumental work.		1807. Fulton's steamboat on the Hudson.
		Alexei Kolzow (Russ.), (1809-1842).—*Lyrics*—Deep feeling. The Russian Burns. **Nikolai Gogol** (Russ.), (1809-1852), *Plays, Tales, Novels*—The greatest of Russian humorists. Satirizes all classes of society.	1809. Battle of Wagram.
Fritz Reuter (1810-1874).—*Poems, Novels*—A Mecklenburg poet who wrote in his own dialect. A born story-teller, with broad realistic humor. **H. Ferdinand Freiligrath** (1810-1876).—*Poems, Translations*—Poet of the Revolution and friend of Longfellow. Some of his finest translations are from Robert Burns.	**P. A. Munch** (Nor.), (1810-1866).—*History*—His great history of Norway is in eight short volumes. Brilliant and industrious. Both Munch and Keyser were overpatriotic in believing Norway the hearth of Scandinavianism from the historic point of view.	**W. G. Belinsky** (Russ.), (1810-1848).—*Criticism*—In spite of the censorship of the press he exerted a powerful uplifting influence on society by his literary criticisms.	
Karl Gutzkow (1811-1878).—*Novels, Plays*—For a time the most influential writer in Germany. Combated the misuse of political and clerical power. *Uriel Acosta*, his best drama, is a strong plea for freedom of thought.	**A. Munch** (Nor.), (1811-1884).—*Lyric Poems*—His chief work is *Pigen fra Norge*, taken from Norwegian history. **August Blanche** (Swed),. (1811-1868).—*Comedy, Novels, Short Stories, Sketches*—Was very popular. Comedy deals with lower classes. Novels sensational. Stories and sketches realistic.		
Berthold Auerbach (1812-1882).—*Novels, Short Stories*—The poet of the Suabian Black Forest. His stories of village life, though not realistic, charm by their naive elements.	**P. C. Asbjörnsen** (Nor.), (1812-1885).—*Folk Tales*—The Grimm of Norway.	**Alexander Herzen** (Russ.), (1812-1870).—*Journalism*—Greatest journalist of his time. Devoted to pleas for liberal institutions.	1812. U. S. and English war.
Friederich Hebbel (1813-1863).—*Dramas*—The chief German dramatist of the century. A great innovator. His best works represent the clash of new epochs with those passing away.	**S. A. Kierkegaard** (Dan.), (1813-1855).—*Philosophy*—Denmark's greatest religious thinker. Strong imagination. Wrote a beautiful poetic prose.		

TABLE VII. NINETEENTH

ENGLISH	AMERICAN	FRENCH
Charles Reade (1814-1884).—*Peg Woffington, Cloister and Hearth*, etc.—A vigorous narrator, animated by hatred of injustice. **Anthony Trollope** (1815-1882).—*Barchester Towers*, etc.—Admirably realistic presentation of English society, political and ecclesiastical. **George Rawlinson** (1815-1902).—*Five Great Monarchies*—A learned Assyrian and Oriental scholar. **Charlotte Brontë** (1816-1855).—*Jane Eyre, The Professor*, etc.—Great power in novels based on narrow experience.	**John Lothrop Motley** (1814-1877).—*Dutch Republic. United Netherlands*—A rapid, easy style in presenting results of research. **Rufus W. Griswold** (1815-1857).—*Christian Ballads, Poets and Poetry of America, Famous Poets*—Valuable critical studies marred by partisanry	**Eugene Labiche** (1815-1888).—*Comedies*—A master in the art of writing many light comedies or vaudevilles.
	John G. Saxe (1816-1887).—*The Money King, New Rape of the Lock*, etc.—Humorous and sprightly. **Samuel A. Allibone** (1816-1889).—*Literature and Authors*, etc.—Laborious and valuable. **Henry D. Thoreau** (1817-1862).—*Walden, Excursions*—Redolent of nature love, and cultured scholarship. **John Bigelow** (1817-).—*Life of Benjamin Franklin*—Sympathetic and sage.	
James Anthony Froude (1818-1894).—*History of England*—A brilliant prose-writer, makes history human and interesting and suggestive. **George Eliot** (1819-1880).—*Silas Marner, Spanish Gypsy, Poems*—The greatest woman novelist. A realist with insight. Powers of wit and characterization; construction not remarkable. **Charles Kingsley** (1819-1875).—*Hypatia, Poems*—His novels, in spite of slight affectations and a taint of sentimentality, are vigorous and wholesome. **John Ruskin** (1819-1900).—*Stones of Venice, Modern Painters*, etc.—A great stylist. As art critic, subjective and governed by the moral suggestiveness of the object. As economist, an idealist.	**J. G. Holland** (1819-1881).—*Timothy Titcomb's Letters, Kalvina*—Enjoyed a large popularity. **Edwin P. Whipple** (1819-1886).—*Essays and Reviews, American Literature*—Of very distinct cultural value. **James Russell Lowell** (1819-1891).—*Among My Books, My Study Windows, Bigelow Papers, Poems: Sir Launfal*, etc.—Keen, sparkling, scholarly, and artistic. **Walt Whitman** (1819-1892).—*Poems: Leaves of Grass, My Captain*, etc.—Unique in claim and form. **Julia Ward Howe** (1819-1910).—*Social and Philosophical Papers, Battle Hymn of the Republic*—Representative of the spirit of the times.	**Leconte de Lisle** (1818-1894).—*Poems*—One of the greatest poets of the second half of the nineteenth century. He was the head of the group of poets called the Parnassians who sought above all technical perfection in poetry. He is a pessimist and in all his poems ye see an aspiration toward death as the final rest.
John Tyndall (1820-1893).—*Scientific Papers*—Unsurpassed, unless it be by Huxley, as a popularizer of Darwin's ideas. **Hebert Spencer** (1820-1903).—*First Principles*, etc.—A deep thinker but ponderous in style. Applied principle of evolution to sociology, history, etc.	**Margaret J. Preston** (1820-1897).—*Beechenbrook, Cartoons, Colonial Ballads*—Cultured and of human interest. **Richard Grant White** (1821-1885).—*Words and Their Uses, Everyday English*—Scholarly and suggestive.	**Emile Augier** (1820-1889).—*Dramas*—One of the masters of the modern French drama. Less aggressive than his contemporary Dumas the Son, his influence in some respects was greater **Gustav Flaubert** (1821-1880).—*Novels*—Wrote the most perfect novel of the century, *Madame Bovary*. One the other side his *Salammbô* is purely romantic. **Octave Feuillet** (1821-1890).—*Novels, Dramas*—All his novels describe society.
Matthew Arnold (1822-1888).—*Essays and Criticisms, Sohrab and Rustum, Poems*—Liberal in thought, but dominated by aristocratic prejudice on the literary side. As a poet inclined to despairing pessimism; weak in the power of verbal melody.	**Thomas Buchanan Read** (1822-1872).—*Poems, Drifting, Sheridan's Ride*, etc.—Commendable, especially in form. **James Parton** (1822-1891).—*Biographies*—Serviceable, but not satisfying. **Edward Everett Hale** (1822-1909).—*The Man Without a Country, His Level Best*—Vigorous and pointed, but provincial. **Donald G. Mitchell** (1822-1909).—*Dream Life, Reveries of a Bachelor*—Attractive in meditation and grace. **George H. Boker** (1823-1890).—*Plays, Poems of the War*—Inadequately appreciated. **Francis Parkman** (1823-1893).—*Oregon Trail, Montcalm and Wolfe*, etc.—Romantic, picturesque and of real interest.	**Henri Murger** (1822-1861).—*Novels*—His *Scenes of Bohemian Life*, in which he depicts the bohemian life of a certain class of students, is still enjoyed. **Edmond de Goncourt** (1822-1896).—*Novels*—He and his brother Jules de Goncourt claim to be the first to paint true life. They are the apostles of "modernism." **Emile Erckmann** (1822-1899).—*Novels*—With Alexandre Chatrian he wrote a large number of novels in which are painted in a free and simple style the customs and thoughts of the Alsatians especially during the wars of the first empire. **J. Ernest Renan** (1823-1892).—*Life of Jesus*, etc.—Critic and historian but above all a marvelous artist, he greatly influenced the thought of his day. With Taine, but in a different way, he contributed to the triumph of positivism.
Edward A. Freeman (1823-1892).—*Histories*—A conscientious, honest, painstaking historian. **Thomas Hughes** (1823-1896).—*Tom Brown at Oxford*, etc.—A manly, breezy person, who wrote one good book for boys.		
Thomas Henry Huxley (1825-1895).—*Man's Place in Nature*, etc.—A master of exposition and, with Tyndall, very effective in presenting the idea of evolution. **R. D. Blackmore** (1825-1900).—*Novels: Lorna Doone*, etc.—Infused an element of romance into the modern novel, *Lorna Doone*. **Dinah Maria Mulock** (1826-1887).—*John Halifax*, etc., *Poems*—Author of some twenty novels of which *John Halifax* is the best. Also of pleasing minor verse.	**George W. Curtis** (1824-1892).—*Potiphar Papers, Prue and I*, etc.—Widely popular and effective. **Bayard Taylor** (1825-1878).—*Northern Travel, Greece and Russia, Poems of the Orient, Translation of Faust*—Too good at many things to be best at any.	**Alexandre Dumas the Son** (1824-1895.)—*Novels, Dramas*—Marvelously clear and concise style. Dramas full of wit but lack in kindliness.
	Stephen Collins Foster (1826-1864).—*Old Folks at Home, Old Uncle Ned*, etc.—Popular in vein and melody.	**Alexandre Chatrian** (1826-1890).—*Novels*—See Erckmann (1822-1896).
Dante Gabriel Rossetti (1828-1882).—*Poems: The Blessed Damozel*, etc.—A highly imaginative poet, a master of color in verse and on canvas.	**Lew Wallace** (1827-1905).—*The Fair God, Prince of India, Ben Hur*—Uneven, but at times highly successful.	**Francisque Sarcey** (1827-1899).—*Criticism*—A recognized authority on the drama, his criticism bears especially on the theater. **H. A. Taine** (1828-1893).—*History of Literature*, etc.—*Origins of Contemporary France*, his most powerful work, shows his genius as a critic and as historian. He belongs to the same school as Renan but he is more aggressive.

CENTURY—Continued

German	Scandinavian	Russian, Spanish, Hungarian	Historical Events
Otto Ludwig (1813-1865).—*Dramas, Shakespeare Studies, Novels*—Master of detail-painting in his novels. His novel *Between Heaven and Earth* has become a classic. His dramatic work suffered under critical acuteness. **Richard Wagner** (1813-1883).—*Operas*—Creator of the music-drama. Insisted that German drama must be national and so drew for themes on older Germanic myths.	**J. Moe** (Nor.), (1813-1880).—*Poems*—Lyrics. Assisted Asbjörnsen in collecting the popular tales of Norway.	**Iwan Gontscharoff** (Russ.), (1813-1891).—*Novels*—At first romantic then realistic. His great work *Oblomoff* represents strongly that inertia which renders the hero incapable of action.	
Emanuel Geibel (1815-1884).—*Poems, Voices of the Time*—Successful writer of popular songs. *Voices of the Time* treats political events in a conciliatory tone.		**Michail Lermontow** (Russ.), (1814-1841)—*Poems, Novels*—Powerful prose. Strongly attacked the government and the prevailing tone in society.	1814. Stephenson's locomotive. 1815. Battle of New Orleans.
Gustav Freytag (1816-1895).—*Novels, Dramas*—His *Ancestors* is a cycle of the greatest modern German novels, awaking the national consciousness of the German people.		**José de Espronceda** (Sp.), (1816-1842).—*Lyric Poetry*—Imbued with the manner and spirit of Byron.	1815. Napoleon defeated at Waterloo.
Theodor Storm (1817-1888).—*Lyrics, Novels*—Masterful writer of the novel of reminiscence. The lyric note is prominent in his prose.		**Alexis Tolstoi** (Russ.), (1817-1875).—*Dramas*—Excellent historical dramatist. Fine artistic sense. **Iwan Turgenieff** (Russ.) (1818-1883)—*Stories, Novels*—Great prose-artist. Melancholy pessimism Faithful reflection of the inner development of Russian society.	
Gottfried Keller (1819-1890).—*Novels, Short Stories*—Master of the "novelle," or short story. Strong independence of spirit reflected in this Swiss poet.	**J. C. Hostrup** (Dan.),(1818-1892).—*Comedies, Popular Songs*—A great favorite. Adapts language to characters. Vivid picture of student life and life of middle classes. **Meir Goldschmidt** (Dan.), (1819-1887).—*Journalism, Novels, Short Stories*—Good stylist. Felt keenly his Jewish origin, but was not ashamed of it.		
Salomon Mosenthal (1821-1877).—*Novels*—Chiefly historical, including *Leah the Forsaken, The Queen of Sheba*, etc.		**Feodor Dostoveysky** (Russ.), (1821-1881).—*Novels*—Great power of psychological analysis. Even claimed by Russian criminologists as their colleague. **Nikolai Nekrassoff** (Russ.), (1821-1888).—*Lyrics*—Depth of feeling. Rare impassioned lyric power.	1821. Greek war of independence against Turkey.
		Alex. Petőfi (Hung.), (1823-1849).—*Lyrics, Translations*—One of the greatest lyric poets of the nineteenth century. Truth and naturalness. Full of the passion, melancholy, and humor of the Hungarian.	1824. National gallery in London opened.
Conrad Ferdinand Meyer (1825-1898).—*Short Stories, Novels*—Countryman of Keller, and one of the best story writers of the century. Particularly happy in giving true historical coloring to his novels.			
J. V. von Scheffel (1826-1886).—A late successor of Walter Scott. *Ekkehard*, one of the greatest German historical novels. *The Trumpeter of Säkkingen*, an epic in the Romantic spirit.		**Michail Saltykow** (Russ.), (1826-1889).—*Satiric Tales*—Written with his heart's blood. Keen wit, original in invention. **Juan Valera** (Sp.), (1827-).—*Novels*—Combines elegance of language with depth of thought.	
	Victor Rydberg(Swed.),(1828-1895).—*Philosophy, History, Mythology, Novels, Poems*—Great scholar, poet, and philosopher. Extreme purist in language.		

TABLE VII. NINETEENTH

English

George Meredith (1828-1909).—*The Egoist, Diana of the Crossways*, etc.—Novels of extraordinary power. Style epigrammatic and not attractive.

Samuel R. Gardiner (1829-1902).—*Histories*—A happy combination of attractive narrative and scholarly thoroughness.

Jean Ingelow (1820-1897).—*Poems*—A charming lyrical talent, of limited productive power.

JustinMcCarthy (1830-) —*History of Our Own Times, Novels*—A prolific journalist, novelist, and historian of modern times

Edward Lord Lytton, (Owen Meredith), (1831-1891).—*Biography of Bulwer Lytton, Lucile*, etc.—Fluent writer of light verse and society verse.

Edwin Arnold (1832-1904).—*Light of Asia, Poems*—An able journalist and prolific minor poet.

William Morris (1834-1896).— *Essays on Art*, etc., *Poems, Earthly Paradise*—Prolific as a narrative poet, fond of classic and mediæval legends.

George du Maurier (1834-1896).—*Peter Ibbetson, Trilby*—Artist and poet. *Peter Ibbetson* is a fanciful romance of dream life. *Trilby*, scene in Latin quarter of Paris, a masterful study of character.

John Richard Green (1837-1883).— *History of the English People*—Industrious and conscientious. His work more than a record of war and politics. Clear and simple style.

Algernon Chas. Swinburne (1837-1909).—*Poems*—A poet of remarkable musical power, master of headlong but involved prose, a critic of enthusiasm and eloquence.

John Morley (1838-).—*Criticisms, English Men of Letters*, (Ed.).—A sound literary historian and critic and a thinker of force and scope.

Walter H. Pater (1839-1894).—*Marius the Epicurean*, etc.—A wonderfully finished prose style, which sometimes diverts attention from the justness and beauty of the thought.

Henry Austin Dobson (1840-).—*Vignettes in Rhyme, Proverbs in Porcelain*—The English Horace. An authority on eighteenth century social and literary life. Charming light verses.

Thomas Hardy (1840-). — *Novels: Tess of d'Urbervilles*, etc.—Novels depicting country life. A writer of broad humanity. His books possess at once wit, realism, and an idyllic quality.

William Black (1841-1898).— *Novels: In Silk Attire*, etc.—His stories have considerable charm but not much force. Gaelic Scotland depicted pleasantly but unconvincingly.

Robert W. Buchanan (1841-1901).—*Alone in London, Poems*—A minor poet and dramatist of considerable output Known for his attack on Rossetti in *The Fleshly School of Poetry*.

American

Henry Timrod (1829-1867).—*Poems*—Admirable in poetic instinct and manner.

Chas. Dudley Warner (1829-1900).— *My Summer in a Garden, Little Journey*, etc.—Catholic in interests and attainments

John Esten Cooke (1830-1886). — *Novels: Survey of Eagle's Nest*, etc. *Lives of Lee and Jackson*—Prime favorites with romantic youth.

Paul Hamilton Hayne (1831-1886).—*Sonnets, Legends, Lyrics*—In sonnets excellent, in other poems too prolific.

Louise May Alcott (1832-1888).—*Little Women, Little Men*—Influential in their popular appeal.

Edmund C. Stedman (1833-1908).—*Victorian Poets, Poets of America, Alice of Monmouth, Panic in Wall Street*—Showing creative power and critical ability.

Chas. Farrar Browne (Artemus Ward) (1834-1867).—*Artemus Ward, His Book*, etc.—Humorous in exaggeration and perversion.

Frank R. Stockton (1834-1902).—*Rudder Grange, The Lady or the Tiger*—Ingenious in plot, straightforward in style.

Moses Coit Tyler (1835-1900).— *History of American Literature*—Accurate and exhaustive.

Samuel L. Clemens (1835-1910).—*Innocents Abroad, Huckleberry Finn*, etc.—Thoroughly representative of American humor.

Thomas Bailey Aldrich (1836-1907).— *Novels: Marjorie Daw*, etc.— Cultivated and of literary talent.

William Dean Howells (1837-1921).—*Venetian Life, Rise of Silas Lapham*, etc. — Realistic and entertainingly descriptive.

John Burroughs (1837-1921).—*Wake Robin, Winter Sunshine*—Strongly uttering the charms of nature.

Mary Mapes Dodge (1838-1905).— *Hans Brinker*—In high favor with children.

Albion W. Tourgée (1838-1905), *A Fool's Errand, Bricks Without Straw*—Valuable for the point of view.

Thomas R. Lounsbury (1838-).—*Life of Cooper, Studies in Chaucer*, etc.—Of recognized scholarship and ability.

Francis Bret Harte (1839-1902).—*Luck of Roaring Camp, Gabriel Conroy, Poems*—Of international fame. Faithful and skillful character portrays'.

Joaquin Miller (1841-1913).—*The Danites in the Sierras, Surge of the Sierras*—With the sweep and breadth of the prairies.

Sidney Lanier (1842-1881). — *The Boy's Froissart, Tiger-Lilies, Poems*—Artistic to a high degree

John Fiske (1842-1901).—*Myths and Myth-Makers, Histories*—Scholarly and fair-minded.

Henry James (1843-1916). — *Daisy Miller, Portrait of a Lady*, etc.—Of characteristic conception and style.

George W. Cable (1844-) —*Old Creole Days*, etc.—Successful in achievement of purpose.

Elizabeth S. Phelps Ward (1844-1911) *Gates Ajar*, etc. Widely read for religious sentiment.

French

Jules Verne (1828-1905).—*Twenty Thousand Leagues Under the Sea, Around the World in Eighty Days*, etc.—His novels have done much to popularize several branches of science. Interesting and instructive, they have been widely read all over the civilized world by both young and old.

Jules de Goncourt (1830-1870).— *Novels*—See Edmond de Goncourt (1822-1896).

Victorien Sardou (1831-1908).—*Dramas*—Although the theater of Sardou is generally superficial this author has a remarkable talent for showing exterior life and many of his vaudevilles, comedies and historical dramas met with pronounced success.

Henri Meilhac (1832-1897), **Ludovic Halévy** (1834-1908).—*Comedies*—Wrote together a number of very successful light comedies. They created the "operetta."

Edouard Pailleron (1834-1899).—*Comedies*—His light comedies are full of graceful and delicate touches. In the *Monde ou l'on s'Ennuie* his tone is considerably raised.

Henri Becque (1837-1899).—*Dramas*—With the "Corbeaux" (Crows) a new school of drama was inaugurated: The naturalistic play. In spite of his exaggerations dramatic art owes a great deal to Becque.

Sully-Prudhomme (1839-1907).— *Poems*—One of the greatest poets of the nineteenth century. From the "Parnassians" he took their respect for form. He was not only an artist but a thinker and a moralist. In him positivism and idealism are perfectly blended.

Gaston Paris (1839-1903.)—*Philology*—Greatest literary critic of France since Sainte-Beuve, especially on early French literature.

Alphonse Daudet (1840-1897).—*Novels*—In most of his works Daudet is a painter of rare ability of manners and customs; in two or three he shows a very keen psychological insight. He is one of the great prose writers of the century.

Emile Zola (1840-1902).—*Novels*—Called the head of the naturalistic school because he defined the theories of the school. His twenty volumes of the Rougon-Macquart series are a grand epopee of "human animality." In his later works materialism becomes idealism and his intense pessimism an exaggerated optimism. He is in literature a great painter of immense crowds.

Albert Sorel (1842-1906).—*Histories*—A brilliant writer. His history of *Europe and the French Revolution* is much esteemed.

Ernest Lavisse (1842-).— *Histories*—Is a moralist as well as an historian. He draws from the history of the past examples and lessons.

François Coppée (1842-1908).—*Poems, Dramas*—The poet of the humble, as he called himself, has excelled in pictures of real life and the study of interiors. Wrote also a number of plays which deserve praise

José de Hérédia (1842-).—*Poems*—The most impersonal and impassive of the Parnassian poets. His poems are on a small scale but perfect in form.

Paul Verlaine (1844-1896).—*Poems*—A unique poet. Without discipline or method he produced among a large number of imperfect and meaningless poems a few masterpieces which have made of him the imitator of a certain kind of modern poetry.

Anatole France (1844-).— *Novels*—His novels are really "frames in which he puts the adventures of his soul." In *Sylvestre Barnard* and other works we find the author himself and his philosophy, which derives from Montaigne and Renan. His style is inimitable and by many he is considered the greatest writer of our times.

CENTURY—Continued

German	Scandinavian	Italian, Spanish, Russian	Historical Events
	Henrik Ibsen (Nor.), (1828-1906).—*Dramas, Poems*—Most masterful dramatic genius of the nineteenth century. Sharp satire, terse and vivid dialogue. Attacked conventional hypocrisy.	**Leo Tolstoi** (Russ.), (1828-1910).—*Novels, Essays, Criticisms*—Strong individualism paired with the doctrine of non-resistance. Powerful appeal to simple life of the people as a standard of civilization.	
Friederich Spielhagen (1829-).—*Novels*—The novelist of German social conditions. *Problematic Characters* and *In Rank and File* are two novels attempting to reconcile the clash of the classes.			
Paul Heyse (1830-).—*Novels, Short Stories, Poems*—Long the central figure of the Munich school of poets. **Marie von Ebner-Eschenbach** (1830-).—*Tales, Novelettes*—The most venerable among the women writers of Germany.			
			1831. Death of Mrs. Siddons.
	B. Björnson (Nor.), (1832-1910).—*Novels, Dramas, Poems*—Very popular. Forceful, deeply in earnest. Author of Norway's favorite national song. Active in public questions.		1832. Cholera in Europe and America.
Felix Dahn (1834-)—*History, Novels*—Noted historian and historical novelist, famous as author of *A Struggle for Rome*, dealing with the conflict between the Goths and Romans.	**Jonas Lie** (Nor.), (1833-1908).—*Stories, Dramas*—Sketches of nature and popular life in the north of Norway.	**sé Eschegaray** (Sp.), (1833-).—*Dramas* — Most prominent representative of the modern Spanish dramatists. Romantic in tone.	
	Mathias Jochumsson (Ic.), (1835-).—*Poems, Dramas*—Lyric and tragic. Translator of Shakespeare, Byron.		1835. Morse's model electrical telegraph.
		Giosué Carducci (It.), (1836-1907).—*Poems*—Progressive, liberty-loving lyrics.	
Georg Ebers (1837-1898).—*Egyptology, Novels*—An Egyptologist. Wrote novels dealing with Egyptian life.			
Ludwig Anzengruber (1839-1889).—*Dramas, Prose Tales, Poems*—Highly endowed Austrian dramatist. A pioneer of realism.			1839. Daguerre's perfected photographic process.
		Giovanni Verga (It.), (1840).—*Novels*—Tales of Sicilian peasantry.	
	Karl Snoilsky (Swed.), (1841-1903).—*Poems*—Clear elegant form.		1844. Electrical telegraph between Baltimore and Washington.
Karl Robert Eduard Hartmann (1842-1906).—*Philosophy, criticism.*	**Georg Brandes** (Dan.), (1842-).—*Literary Essays*—A piercing literary critic. Splendid use of language. Has had a hard career.		
Friedrich Nietzsche (1844-1900).—*Philosophy, Criticisms*—Prophet of individualism. His greatest work, *Thus Spake Zarathustra*, left an indelible impression on the literature of his time. **Detlev von Liliencron** (1844-1910).—*Epics, Poems*—The chief lyric poet of the epoch.			

TABLE VII. NINETEENTH CENTURY—Continued

English	American	French	German	Scandinavian	Russian, Polish, Hungarian, Italian, Spanish, Portuguese	Historical Events
			Ernst von Wildenbruch (1845-1909).—*Dramas, Short Stories, Poems*—The greatest historical dramatist of his time.		**B. Pérez Galdós** (Sp.) (1845).—*Novels, Dramas*—Studies of Spanish political and religious life.	
		Emile Faguet (1847-).—*Criticism*—One of the great critics of our days.		**Holger Drachmann** (Dan.), (1846-1908).—*Novels, Lyrics, Dramas*—His lyric poems and lyric dramas rank among the best.	**Henryk Sienkiewicz** (Polish), (1846-).—*Novels*—Very attractive historical novels. Keen at exploiting remarkable epochs of history.	1846. Mexican war.
	Arthur S. Hardy (1847-).—*Passe Rose*, etc.—Of trained literary ability.	**Frédèric Masson** (1847-).—*Histories*—His best known histories are on the private life of Napoleon.				
		Henri Houssaye (1848-).—*Histories*—He has admirably depicted the reign of Napoleon I.				
	James Lane Allen (1849-).—*Flute and Violin, The Choir Invisible*, etc.—Reaching a high standard of excellence.	**Ferdinand Brunetière** (1849-1906). *Criticism*—Occupies a high rank among the modern critics.		**August Strindberg** (Swed.), (1849-).—*Novels, Dramas, Short Stories, Lyrics*—Greatest writer of to-day in Sweden. Superb dramatist.		
		Jean Richepin (1849-).—*Dramas*—A poet of great talent and power. His drama *The Tramp* is one of the good plays of our times.				
Robert Louis Stevenson (1850-1894).—*Essays, Novels, Child's Garden of Verses*, etc.—Careful and finished as a stylist, an excellent story-teller. *Treasure Island* and his *Scottish Tales* are true classics.		**Pierre Loti** (1850-).—*Novels, Travels*—Painter and a poet who gives us an image of his impressions of life and of the countries through which he passes.				1850. Clayton-Bulwer treaty.
		Paul Bourget (1852-).—*Novels*—He is a scientific psychologist who has used his great power of analysis in the study of society people.				
		Jules Lemâitre (1853-).—*Dramas, Criticism*—The impressionist critic par excellence.				1853. Louis Napoleon installed.
	Francis Marion Crawford (1854-1909)—*Novels*—Best known for his *Saracinesca* series, the scenes of which are laid in modern Rome.	**Edouard Rod** (1857-1910).—*Novels*—The problem of human destiny.	**Hermann Sudermann** (1857-).—*Plays, Novels*—Poet of the realistic school. His great novel is *Dame Care*, reflecting the struggles of the author's own life.	**Henrik Pontoppidan** (Dan.) (1857-).—*Novels*—Greatest prose writer of to-day. Ironical.	**Wessewolod Garschin** (Russ.), (1855-1888).—*Novels*—Spirited fantasy. Unfortunately marred by detailed psychological analysis.	1854. Treaty between United States and Japan.
		Paul Hervieu (1857-).—*Dramas*—Power and logic, but very little human indulgence.				
		Eugene Brieux (1858-).—*Dramas*—A vigorous playwright who faithfully depicts and attacks some of the bad sides of our modern civilization.		**Selma Lagerlöf** (Swed.).—(1858-).—*Novels, Short Stories*—World-wide renown. Original, romantic, imaginative, charming.		1858. First Atlantic cable.
				Verner von Heidenstam (Swed.), (1859-).—*Novels, Short Stories, Poems*—Chiefly historical prose.		1859. Darwin's *Origin of Species*.
		Réné Doumic (1860-).—*Criticism*—History of French literature and several volumes of literary criticism.		**Gustaf Froöding** (Swed.), (1860-).—*Lyrics*—Harmonic mixture of elegant language of poetry with natural language of everyday life.		1861-5. Civil war in United States.
		Marcel Prévost (1862-).—*Novels*—One of the most successful of the younger generation of novelists.	**Gerhard Hauptmann** (1862-).—*Dramas*—Chief German dramatist of our day. His symbolistic drama, *The Sunken Bell* is one of the most popular works of our time.	**Oskar Levertin** (Swed.), (1862-1906)—*Short Stories, Sketches, Literary Essays, Poems.*—Artistic and elegant use of the language. Perhaps Sweden's greatest literary critic.		
		Maurice Barrès (1862-).—*Novels*—Penetrating psychology in his novels.			**G. d'Annunzio** (It.). (1863).—*Novels, Poems, Tragedies*—Realistic novels; powerful poetic tragedies.	
Israel Zangwill (1864-).—*Novels, Dramas, Essays*—As Jew, an exponent of the Zionistic movement. Successful in the essay and especially in the novels depicting Jewish scenes and characters.		**Henri de Règnier** (1864-).—*Novels, Poems*—A symbolist poet of shadows and dreams.				
						1867. Alaska purchased by the United States.
Rudyard Kipling (1865-).—*Stories, Novels, Poems*—A vigorous, audacious, efficient writer. The most original genius among English literary men of to-day.				**Per Hallström** (Swed.), (1866-).—*Novels, Short Stories, Lyrics, Dramas*—Imaginative. Good in psychological analysis.		1870. Franco-Prussian war.
						1873. Republic proclaimed in Spain.
Stephen Phillips (1868-).—*Ulysses, Paolo* and *Francesca*—Lyric tragedies in blank verse, akin in spirit to the French classic drama.		**Edmond Rostand** (1868-).—*Dramas*—With his *Cyrano de Bergerac* came the prediction of a revival of the Romantic drama.			**Maxim Gorki** (Russ.), (1868-).—*Tales, Novels*—Masterful presentation of the life of those cast out by society.	1876. Centennial exposition at Philadelphia.
		Henri Bernstein (1876-).—*Dramas*—A dramatic author of powerful works.				

DICTIONARY OF FAMOUS BOOKS, POEMS, DRAMAS

SIR JOHN LUBBOCK'S HUNDRED BEST BOOKS

This list was the result of the interest aroused by a lecture on the subject of books and reading delivered by Sir John Lubbock at the opening, in 1886, of the Working Men's College, London. The list was first published in an incomplete form by the *Pall Mall Gazette*, and caused much discussion, participated in by eminent British and American scholars. Later the complete list, as finally revised by Sir John Lubbock, was published in the *Contemporary Review*. Here are the books which that noted scholar, after careful deliberation, pronounced the "best worth reading."

RELIGION AND DEVOTION.
The Bible.
Writings of Apostolic Fathers—Wake's collection.
St. Augustine—*Confessions.*
Thomas à Kempis—*Imitation of Christ.*
Pascal—*Ponsees.*
Spinoza—*Tractatus Theologico-Politicus.*
Compte—*Catechism of Positive Philosophy* (Congreve).
Butler—*Analogy.*
Jeremy Taylor—*Holy Living and Holy Dying.*
Bunyan—*Pilgrim's Progress.*
Keble—*Christian Year.*

NONCHRISTIAN MORALISTS.
Marcus Aurelius—*Meditations.*
Epictetus.
Confucius—*Analects.*
St. Hilaire—*Le Bouddha et sa Religion.*
Aristotle—*Ethics.*
Mohammed—*Koran.*

CLASSICS.
Aristotle—*Politics.*
Plato's *Dialogues Phædo Republic.*
Demosthenes—*De Corona.*
Lucretius—*De Rerum Natura.*
Plutarch—*Lives.*
Horace—*Odes and Epistles.*
Cicero—*De Officiis; De Amicitia; De Senectute.*

EPIC POETRY.
Homer—*Iliad* and *Odyssey.*
Vergil—*Æneid.*
Malory—*Morte d'Arthur.*
Hesiod—*Poems.*
Nibelungen Lied.

EASTERN POETRY.
Maha-bharata, Ramayana, epitomized by Talboys Wheeler.
Firdusi—*Shah-Nameh* (trans. by Atkinson).
She-King (Chinese odes).

GREEK DRAMATISTS.
Æschylus—*Prometheus; House of Atreus; Trilogy,* or *Persæ.*
Sophocles—*Œdipus; Trilogy.*
Euripides—*Medea.*
Aristophanes—*The Knights.*

HISTORY.
Herodotus—*History.*
Thucydides—*History.*
Tacitus—*Germania.*
Gibbon—*Decline and Fall.*
Grote—*Greece.*
Green—*Short History of the English People.*
Xenophon—*Anabasis.*
Tacitus—*Histories.*
Livy—*History.*
Hume—*England.*
Carlyle—*French Revolution.*

PHILOSOPHY.
Bacon—*Novum Organum.*
Mill—*Logic* and *Political Economy.*
Darwin—*Origin of Species.*
Smith—*Wealth of Nations.*
Berkeley—*Human Knowledge.*
Descartes—*Discours sur la Methode.*
Locke—*Conduct of the Understanding.*
Lewes—*History of Philosophy.*

TRAVELS.
Cook—*Voyages.*
Darwin—*Naturalist in the Beagle.*
Humboldt—*Travels.*

POETRY AND GENERAL LITERATURE.
Shakespeare—*Dramas and Poems.*
Milton—*Paradise Lost* and shorter poems.
Dante—*Divina Commedia.*
Spenser—*Faerie Queene.*
Dryden—*Poems.*
Chaucer—*Poems* (Morris' edition).
Gray—*Poems.*
Burns—*Poems.*
Scott—*Poems.*
Wordsworth—*Poems* (Arnold's selection).
Heine—*Poems.*
Pope—*Poems.*
Southey—*Poems.*
Goldsmith—*Vicar of Wakefield.*
Swift—*Gulliver's Travels.*
Defoe—*Robinson Crusoe.*
The Arabian Nights.
Cervantes—*Don Quixote.*
Boswell—*Samuel Johnson.*
Burke—*Works* (Selected by Payne).
Essays of Bacon, Addison, Hume, Montaigne, Macaulay and Emerson.
Molière—*Dramas.*
Sheridan—*Dramas.*
Voltaire—*Zadig.*
Carlyle—*Past and Present.*
Goethe—*Faust, Wilhelm Meister.*
White—*Natural History of Selbourne.*
Smiles—*Self-Help.*

MODERN FICTION.
Jane Austen—*Emma*, or *Pride and Prejudice*
Thackeray—*Vanity Fair, Pendennis.*
Dickens—*Pickwick; David Copperfield.*
George Eliot—*Adam Bede.*
Kingsley—*Westward Ho!*
Bulwer-Lytton—*Last Days of Pompeii.*
Scott—*Novels.*

A GRADED LIST OF BOOKS FOR THE READING OF CHILDREN OF ALL AGES

The following list names a considerable number of books suitable for the reading of children. It is divided into groups, the first of which includes stories for children too young to read for themselves, and the last of which makes suggestions for the entertainment and instruction of boys and girls of high school age. To the graded lists for different ages, a few books upon such subjects as Nature and Occupation are added.

In making the list the editor has given the author's name, the title of the work, and the name of the publisher The names of publishers are usually abbreviated, but are easily identified. In the case of a work which exists in many editions no publisher is named, unless an expecially good edition is known to the editor, or unless a good inexpensive edition has come to his attention. Most books of which there are many editions are simply marked "Various."

The following book-lists have been consulted in making up the list for this volume: Charles Swain Thomas; The Teaching of English in Secondary Schools; Clara W. Hunt; What Shall We Read to the Children; Harvard-Cleveland Course in English: lists prepared by the Traveling Library Section and Book Selection Division of the New York State Library; New York State Syllabi; A. L. A. Book Lists; Globe-Wernicke booklets; publications of the Albany Public Libraries, Brooklyn Public Library, Cleveland Public Library, Springfield Public Library, University of Tennessee Library; Report of the Committee on Home Reading, National Council of Teachers of English, Nov. 1913

BOOKS FOR VERY LITTLE CHILDREN

"We have found that the youngest children like pictures large in figures, strong and simple in coloring, and well defined in outline." C. W. Hunt.

Adelborg, Ottilia	Clean Peter and the Children of Grubbles	Longmans.
Bergengren, Ralph	Jane, Joseph and John: Their Book of Verses	Atlantic Monthly Press.
Brooke, Leslie	Johnny Crow's Garden, a picture book	Warne.
Brooke, Leslie	Johnny Crow's Party	Warne.
Brooke, Leslie	Nursery Rhyme Picture Book	Warne.
Brooke, Leslie	The Golden Goose Book	Warne.
Burgess, Gellett	Goops and How to Be Them	Stokes.
Burgess, Gellett	Goops and How Not to Be Them	Stokes.
Burnett, Frances Hodgson	The Racketty Packetty House	Century.
Byron, May	Humpty and Dumpty: Their Adventures	Henry Frowde.
Byron, May	Rufus	Henry Frowde.
Byron, May	Hungry Peter	Henry Frowde.
Caldecott, R.	The Diddle-Diddle Picture Book	Warne.
Crane, Walter	Cinderella's Picture Book	Lane.
Crane, Walter	Baby's Own Aesop	Warne.
Dodge, Mary Mapes	Baby Days	Century.
Francis, J. G.	A Book of Cheerful Cats and Other Animated Animals	Century.
Greenaway, Kate	Marigold Garden	Warne.
Greenaway, Kate	Mother Goose	Warne.
Greenaway, Kate	Under the Window	Warne.
Grover, Eulalie Osgood	Sunbonnet Babies' Book	Rand.
Grover, Eulalie Osgood	The Overall Boys, a first reader	Rand.
Hopkins, W. J.	The Sandman: his Farm Stories	Page.
Lear, Edward	Nonsense Book	Little.
Le Fevre, Felicite	The Cock, the Mouse, and the Little Red Hen	Jacobs.
Lucas and Bedford	Four and Twenty Toilers	McDevitt-Wilson
O'Shea, M. V.	Six Nursery Classics	Heath.
Poulsson, Emilie	Finger Plays	Lothrop.
Poulsson, Emilie	The Runaway Donkey	Lothrop.
Poulsson, Emilie	Through the Farmyard Gate	Lothrop.
Rackham, Arthur	Mother Goose	Century.
Roadknight	Old Fashioned Rhymes and Poems	Longmans.
Smith, E. Boyd	The Farm Book: Bob and Betty Visit Uncle John	Houghton.
Smith, L. R.	Eskimo Stories	Rand.
Stevenson, R. L.	A Child's Garden of Verses (illustrated by Jessie Willcox Smith)	Scribner.
Stevenson, R. L.	A Child's Garden of Verses, school edition	Rand.
Wiggin and Smith	Posy Ring	Doubleday.
Wiggin and Smith	Tales of Laughter	Doubleday.

BOOKS FOR CHILDREN FIVE TO SEVEN YEARS OLD.

Most of the books which are listed under "Books for very little children" will be enjoyed by children of this age, who can now read them themselves. The following may be added:

Andrews, Jane	Seven Little Sisters Who Live on the Round Ball That Floats in the Air	Ginn.
Bannerman, H.	Little Black Sambo	Altemus.
Browning, Robert	The Pied Piper of Hamelin (illustrated by Hope Dunlap)	Rand.
Boutet de Movel, R.	Joan of Arc	Century.
Diaz, A. M.	Story of Polly Cologne	Lothrop.
Jackson, Mrs. Helen Hunt	Letters from a Cat	Little.
Jackson, Mrs. Helen Hunt	Our Children's Songs	Harper.
Moore, Clement C.	The Night Before Christmas (pictures by Jessie Willcox Smith)	Houghton.
Bailey, C. S. & Lewis, C. M.	For the Children's Hour (stories suitable for dramatization)	Milton Bradley.
Field E.	Love Songs of Childhood	Scribner.

BOOKS FOR CHILDREN SEVEN TO TEN YEARS OLD.

Aanrud, Hans	Lisbeth Longfrock, translated from the Norwegian by Laura E. Poulsson	Ginn.
Alcott, Louisa May	Under the Lilacs	Little.
Andrews, Jane	Ten Boys who Lived on the Road from Long Ago to Now	Scribner.
Barrie, J. M.	Peter Pan in Kensington Gardens (illustrated by Arthur Rackham)	Scribner.
Burnett, Francis Hodgson	Little Lord Fauntleroy	Scribner.
Carrol, Lewis	Alice in Wonderland (illustrated by Tenniel)	Putnam.
Carey, Alice and Phoebe	Ballads for Little Folks	Houghton.
Chisholm, L.	The Golden Staircase	Putnam.
Collodi, C.	Pinocchio, the Adventures of a Marionette (translated by W. S. Cramp)	Ginn.
Craik, Mrs. Dinah Mulock	The Adventures of a Brownie	Harper.
Craik, Mrs. Dinah Mulock	The Little Lame Prince	Rand.
Cruikshank, G.	Fairy Book	Putnam.
De Musset, Paul	Mr. Wind and Madam Rain	Harper.
Eastman, C. A.	Indian Boyhood	Little.
Eggleston, Edward	Stories of Great Americans	Americans.
Field, Eugene	With Trumpet and Drum	Scribner.
Grimm, J. L. K. and W. K.	Fairy Tales (illustrated by Rackham)	Doubleday.
Harris, Joel Chandler	Uncle Remus, his songs and his sayings Nights with Uncle Remus	
Kelman, I. H.	Stories from the life of Christ	Dutton.
Kingsley, C.	The Heroes; or Greek Fairy Tales	
Kipling, R.	Just So Stories	Doubleday
Kipling, R.	The Jungle Books	Doubleday.
Lang, Andrew	Blue Fairy Book	Longmans.
Lang, Andrew	Blue true story book	Longmans.
Lucas, E. V.	Old-Fashioned Tales	Stokes.
Mabie, H. M.	Norse Stories	Dodd.
Macdonald, George	The Princess and the Goblin	Lippincott.
Olcott, F. J.	Bible Stories to Read and Tell	Houghton.
Page, T. N.	Among the Camps	Scribner.
Page, T. N.	Two Little Confederates	Scribner.
Peary, R. E.	The Snow Baby	Stokes.
Ruskin, John	The King of the Golden River	Ginn.
Scudder, H. E. Compiler	The children's book, an anthology of famous stories and poems	Houghton.
Stevenson, Burton S. (Editor)	The Home Book of verse for young people	Holt.

NATURE BOOKS

Author	Name of Book	Publisher
Beard, D. C.	The American Boy's Book of Bugs, Butterflies and Beetles	Lippincott.
Bertelli, L.	The Prince and His Ants	Holt.
Blanchan, Neltjie	Birds that Every Child Should Know	Grosset.
Bostock, F. C.	Training of Wild Animals	Century.
Bralliar, Floyd	Knowing Insects Through Stories	Funk.
Bearley, H. C.	Animals' Secrets Told	Stokes.
Burgess, T. W.	Bird Book for Children	Little.
Burroughs, John	Squirrels and Other Fur-Bearers	Houghton.
Chapman, F. M.	Our Winter Birds	Appleton.
Chapman, F. M.	Travels of Birds	Appleton.
Clarke, E. C.	Astronomy from a Dipper	Houghton.
Comstock, Mrs. A. B.	The Pet Book	Comstock.
Dana, F. S.	Plants and Their Children	Am. Book Co.
Fairbanks, H. W.	Stories of Rocks and Minerals	Ed. Pub. Co.
Fairchild, D. G. & M. H.	Book of Monsters	National Geo. Society.
Kipling, Rudyard	Jungle Book	Century.
Lang, Andrew	Animal Story Book	Longmans.
Maeterlinck, Maurice	Children's Life of the Bee	Dodd.
Miller, O. T.	First Book of Birds	Houghton.
Miller, O. T.	Second Book of Birds	Houghton.
Mitton, G. E.	Book of Stars for Young People	Macmillan.
Morley, M. W.	Bee People	McClurg.
Moseley, E. L.	Trees, Stars and Birds	World Book Co.
Patterson, A. J.	The Spinner Family	McClurg.
Perkins, L. F.	The Cave Twins	Houghton.
Rogers, J. E.	Trees that Every Child Should Know	Grosset.
Seton, E. T.	Rolf in the Woods	Doubleday.
Seton, E. T.	Wild Animals I Have Known	Scribner.
Sewell, A.	Black Beauty	Stokes.
Sharp, D. L.	Beyond the Pasture Bars	Century.
Thompson, J. M.	Water Wonders Every Child Should Know	Grosset.
Wright, M. O.	Gray Lady and the Birds	Macmillan.

AMUSEMENTS AND OCCUPATIONS FOR GIRLS AND BOYS.

Adams, J. H.	Harper's Electricity Book for Boys	Harper.
Adams, J. H.	Harper's Indoor Book for Boys	Harper.
Adams, J. H.	Harper's Outdoor Book for Boys	Harper.
Adams, J. H.	When Mother Lets Us Carpenter	Moffat.
Beard, D. C	Little Folks' Handy Book	Scribner.
Beard, D. C.	On the Trail	Scribner.
Beard, D. C.	Shelters, Shacks and Chanties	Scribner.
Bond, A. R.	American Boys' Engineering Book	Lippincott.
Bond, A. R.	Inventions of the Great War	Century.
Bond, A. R.	Scientific American Boy	Munn.
Burrell, C. F.	A Little Cook Book for a Little Girl	Estes.
Cave, E.	Boys' Camp Book	Doubleday.
Claudy, C. H	Battle of Baseball	Century.
Collins, A. F.	Book of Magic	Appleton.
Collins, A. F.	Book of Wireless	Appleton.
Collins, A. F.	Boys' Book of Model Aeroplanes	Century.
Collins, A. F.	Manual of Wireless Telegraphy and Telephony	Wiley.
Darrow, F. L.	Boys' Own Book of Great Inventions	Macmillan.
Duncan, F.	When Motner Lets Us Garden	Moffat.
Fisher, D.	What Shall We Do Now?	Stokes.
Fullerton, E. L.	Book of the Home Garden	Appleton
Hardy & Hewitt	Game Book for Boys and Girls	Dutton.
Hall, A. N.	Boy Craftsman	Lothrop.
Hall, A. N.	Carpentry and Mechanics for Boys	Lothrop.
Hall, A. N.	Handicraft for Handy Boys	Lothrop.
Hall, A. N.	Home Made Toys for Girls and Boys	Lothrop.
Johnson, Constance	When Mother Lets Us Cook	Moffat.
Judson, C.	Junior Cook Book, 1920	Barse and Hopkins.
Kilpatrick, V. E.	Child's Food Garden	World Book Co
Mackay, C.	House of the Heart and Other Plays for Children	Holt.
Onken, W. H. and Baker, J. B.	Harper's How to Understand Electrical Work	Harper.
Ralston, V.	When Mother Lets Us Sew	Moffat.
Shafer, D. C.	Harper's Everyday Electricity	Harper.
Stevenson, Augustus	Children's Classics in Dramatic Form	Houghton.
Thayer, E. R. L.	When Mother Lets Us Draw	Moffat.
Verrill, A. H.	Harper's Wireless Book	Harper.

BOOKS FOR CHILDREN TEN TO TWELVE YEARS OLD.

Alcott, L. M.	Little Men	Dutton.
Alcott, L. M.	Little Women	Little.
Aldrich, T. B.	Story of a Bad Boy	Houghton.
Aldrich, T. B.	Arabian Night's Entertainment	Ginn.
Baldwin, James	Fifty Famous Stories Retold	A. B. C.
Baldwin, James	Old Greek Stories	A. B. C.
Barbour, R. H.	The Crimson	Century.
Bennett, J.	Master Skylark, A Story of Shakespeare's Time	Century.
Brooks, E. S.	Century Book of the American Revolution	Century.
Burnett, F. H.	Editha's Burglar	Estes.
Burnett, F. H.	Sarah Crewe	Scribner.
Cervantes	Don Quixote	Lane.
Cervantes	Don Quixote (retold by Parry, illustrated by Crane)	Lane.
Chambers, R. W.	Cardigan	Harper.
Clemens, S. L.	The Prince and the Pauper	Harper.
Colson, Elizabeth (compiler)	Children's Letters	Hinds.
Darton, F. J. H.	Tales of the Canterbury Pilgrims (Retold)	Stokes.
Defoe, O.	Robinson Crusoe	Various.
Diaz, William Henry	Letters	Lothrop.
Dodge, M. M.	Donald and Dorothy	Century.
Du Chaillu, P. B.	Land of the Long Nights	Scribner.
Eastman, C. A.	Indian Scout Talks	Little.
Eggleston, Edward	The Hoosier School Boy	Scribner.
Eggleston, G. C.	Long Knives	Lothrop.
Griffis, W. E.	Brave Little Holland	Houghton.
Haskell, H. E.	Katrinka, The Story of a Russian Child	Dutton.
Hale, L. P.	Peterkin Papers	Houghton.
Hawthorne, Nathaniel	Grandfather's Chair	Various.
Henty, G. A.	True to the Old Flag	Various.
Jamison, C. V.	Toinette's Philip	Century.
King, Charles	Cadet Boys	Harper.
Kingsley, C. H.	The Water Babies	Dutton.
La Motte - Foque, F. H. K.	Undine	Doubleday.
Lagerlof, Selma	Wonderful Adventures of Nils	Doubleday.
Lamb, C.	Adventures of Ulysses	Various.
MacDonald, G.	The Princess and the Goblin	Lippincott.
MacDonald, G.	At the Back of the North Wind	Lippincott.
Martineau, H.	Feats on the Fiord, a Tale of Norway (Illustrated by Arthur Rackham)	Dutton.
Mitchell, S. Weir	The Youth of Washington	Century.
Munroe, K.	The White Conquerors, a Tale of Toltec and Aztec	Scribner.
Munroe, K.	The Flamingo Feather	Harper.
Munroe, K.	At War with Pontiac	Scribner.
Ouida	A Dog of Flanders	Various.
Ouida	The Nurnberg Stove	Various.
Parton, James	Captains of Industry (2 Vol.)	Houghton.
Porter, Jane	Scottish Chiefs	Various.
Pyle, H.	King Arthur and His Knights	Scribner.
Pyle, H.	The Adventures of Robin Hood	Scribner.
Richman and Wallach	Good Citizenship	A. B. C.
Riley, James Whitcomb	Rhymes of Childhood	Bobbs-Merrill
Sewell, Anna	Black Beauty	Various.
Stockton, F. R.	Jolly Fellowship	Scribner.
Swift, J.	Gulliver's Travels	Various.
Taylor, Bayard	Boys of Other Countries	Putnam.
Thackeray, W. M.	The Rose and the Ring	Various.
Wiggin, K. D.	Bird's Christmas Carol	Houghton.
Wiggin, K. D.	Timothy's Quest	Houghton.
Wiggin, K. D. and Smith, N. A.	Golden Numbers	Houghton.
Wyss, J. D.	Swiss Family Robinson	Various.

BOOKS FOR CHILDREN TWELVE TO FOURTEEN YEARS OLD.

Abbott, E. H.	Molly Make Believe	Century.
Alcott, Louisa May	Jo's Boys	Little.
Alcott, Louisa May	Eight Cousins	Little.
Alcott, Louisa May	An Old-Fashioned Girl	Little.
Aldrich, T. B.	Majory Daw	Houghton.
Amicis, Edmondo de	Cuore	Crowell.
Andrews, M. R. S.	The Perfect Tribute	Scribner.
Austin, Oscar P.	Uncle Sam's Soldiers	Appleton.
Barbour, R. H.	Captain of the Crew	N. Y. Book Co.
Barbour, R. H.	For the Honor of the School	Grosset.
Barbour, R. H.	Weatherby's Inning	Appleton.
Barrie, James	Peter and Wendy	Scribner.
Barnum, P. T.	Life (Written by Himself)	Scalfield.
Bjornson, Bjornstjerne	The Happy Boy	Macmillan.
Black, William	Four Mac Nicols	Harper.
Bolton, S.	Girls Who Became Famous	Crowell.
Brady, Cyrus Townsend	Border Fights and Fighters	Doubleday.
Brady, Cyrus Townsend	For Love of Country	Grosset.
Brady, Cyrus Townsend	Commodore, Paul Jones	Appleton.
Brooks, E. S.	Historic Americans	Crowell.
Brooks, E. S.	Century Book of American Revolution	Century.
Brown, J.	Rab and His Friends	Various.
Brown, J.	Marjorie Fleming	Crowell.
Bunyan, J.	Pilgrims Progress	Century.
Bennett, J.	Barnaby Lee	Century.
Burnett, F. H.	The Secret Garden	Stokes.
Cable, G. W	The Cable Story Book	Scribner.
Church, A. J.	Story of the Iliad	Macmillan.
Church, A. J.	Story of the Odyssey	Macmillan.
Churchill, Winston	The Crisis	Macmillan.
Churchill, Winston	The Crossing	Grosset.
Coffin, C. C.	The Boys of '76	Harper.
Cooper, J. F.	The Pilot	Various.
Cooper, J. F.	The Last of the Mohicans	Various.
Cooper, J. F.	The Spy	Various.
Cooper, J. F.	The Deerslayer	Various.
Cooper, J. F.	The Prairie	Various.
Crane, Stephen	Whilomville Stories	Harper.
Crittenden, Marriott	Uncle Sam's Business	Harper.
Custer, E. B.	The Boy General	Scribner.
Custer, E. B.	Boots and Saddles	Harper.
Dana, R. H.	Two Years Before the Mast	Various.
Daskam, J. D.	The Madness of Philip	Doubleday.
Davis, R. H.	Stories for Boys	Scribner.
Dawson, Coningsby	Carry On	Lane.
Dickens, Charles	A Child's History of England	Various.
Dickens, Charles	Christmas Stories	Various.
Dickens, Charles	David Copperfield	Various.
Dix, B. M.	Merrylips	Macmillan.
Dix, B. M.	Soldier Rigdale	Macmillan.
Dodge, Mary Mapes	Hans Brinker or the Silver Skates	Scribner.
Doyle, Conan	Micah Clarke	Longmans.
DuChaillu, Paul	The Country of the Dwarfs	Harper.
Dumas, Alexander	The Black Tulip	Various.
Dumas, Alexander	The Count of Monte Cristo	Various.
Earle, Alice Morse	Customs and Fashions of Old New England	Scribner.
Edgeworth, Maria	Tales	Macmillan.
Ewing, J. H.	Story of a Short Life	Little.
Ewing, J. H.	Jan of the Windmill	Ball.
Field, E.	Christmas Tales and Christmas Verse	Scribner.
Finnemore, John	Wolf Patrol; a Tale of Baden-Powell's Boy Scouts	Macmillan.
Ford, Paul Leicester	The Many-Sided Franklin	Century.
Frederic, Harold	In the Valley	Scribner.
French, H. W.	The Lance of Kanana	Lothrop.
Froude, J. A.	English Seamen in the Sixteenth Century	Scribner.
Garland, Hamlin	The Long Trail	Harper.
Garland, Hamlin	Boy Life on the Prairie	Harper.
Gilchrist, Beth	The Camerons of Highboro	Century.
Gilder, R. W.	Lincoln the Leader	Houghton.
Hagedorn, Herman	You Are the Hope of the World	Macmillan.
Hagedorn, Herman	Boy's Life of Theodore Roosevelt	Harper.
Hay, Jan	The First Hundred Thousand	Houghton.
Henley, W. E.	Lyra Heroica	Scribner.
Holmes, Oliver Wendell	Poems	Various.
Howells, William Dean	A Boy's Town	Harper.
Hughes, Thomas	David Livingstone	Macmillan.
Hughes, Thomas	Tom Brown at Rugby	Various.
Ingelow, Jean	Mopsa the Fairy	Lippincott.
Irving, W.	Rip Van Winkle	Various.
Jackson, Helen Hunt	Ramona	Little.
Jamison, Mrs. C. V.	Lady Jane	Century.
Jenks, A. E.	Childhood of Ji Shib the Ojibwa	Atkinson, Mentzer.
Jewett, Sarah Orne	The White Heron	Houghton.
Jewett, Sarah Orne	Betty Leicester	Houghton.
Jesitt, Sophie	God's Troubadour	Crowell.
Johnson, Owen	The Varmint	Little.
Keller, Helen	The Story of My Life	Grosset.
Kelly, Myra	Little Citizens	Doubleday.
Kipling, Rudyard	The Drums of the Fore and Aft	Doubleday.
Kipling, Rudyard	Captains Courageous	Doubleday.
Lamb, C.	Tales from Shakespeare	Various.
Lang, Andrew	Story of Joan of Arc	Dutton.
Larcom, Lucy	A New England Girlhood	Houghton.
Lee, Jeannette	Mr. Achille	Dodd.
London, Jack	The Cruise of the Dazzler	Grosset.
Longfellow, H. W.	The Courtship of Miles Standish	Various.
Longfellow, H. W.	Hiawatha	Various.
Longfellow, H. W.	The Hanging of the Crane	Various.
Longfellow, H. W.	Evangeline	Various.
Longfellow, H. W.	Other Poems	Various.
Lowell, J. R.	The Vision of Sir Launfal	Doubleday.
MacManus, Seumus	Donegal Fairy Stories	Caldwell.
MacDonald, A.	Through the Heart of Tibet	Harper.
Marryat, F.	Children of the New Forest	Dutton.
Marryat, F.	Masterman Ready	Doubleday.
Martin, G. M.	Emmy Lou	
Masefield, John	Martin Hyde	Little.
Mitchell, S. Weir	Hugh Wynne	Century.
Muloch, D. M.	John Halifax, Gentleman	Various.
Nicolay, Helen	Boy's Life of Lincoln	Century.
Ollivant, Alfred	Bob, Son of Battle	Doubleday.
Palgrave, F.	Golden Treasury of Songs and Hymns. (Illustrated by Parrish.)	Duffield.
Parkman, Francis	Montcalm and Wolfe	Little.
Peabody, Josephine Preston	The Piper. (Stratford Prize Play.)	Houghton.
Plutarch Lives: abridged		Ginn.
Poe, Edgar Allen	The Gold Bug	Various.
Pyle, Howard	Men of Iron	Harper.
Pyle, Howard	Otto of the Silver Hand	Scribner.
Pyle, Howard	The Story of the Grail	Scribner.
Pyle, Howard	The Story of Jack Ballisters's Fortunes	Scribner.
Reppler, Agnes	Book of Famous Verse	Houghton.
Rice, Alice H.	Mrs. Wiggs of the Cabbage Patch	Century.
Richards, Caroline Cowles	Village Life in America	Holt.
Richards, Laura E.	Captain January	Estes.
Richards, Laura E.	Florence Nightingale	Appleton.
Richards, Laura E.	Elizabeth Fry, the Angel of the Prisons	Appleton.
Riis, J. A.	The Making of an American	Macmillan.
Roosevelt, Theodore	Letters to his Children	Scribner.
Roosevelt, Theodore	Ranch Life and the Hunting Trail	Century.
Roosevelt, Theodore	Stories of the Great West	Century.
Roosevelt and Lodge	Hero Tales from American History	Century.
Saintine, J. X. B.	Picciola	Putnam.
Scott, Sir Walter	Ivanhoe	Various.
Scott, Sir Walter	The Lady of the Lake	Various.
Scott, Sir Walter	Kenilworth	Various.
Scott, Sir Walter	The Talisman	Various.
Seton-Thompson, Ernest	Biography of a Grizzly	Century.
Seton-Thompson, Ernest	Lives of the Hunted	Scribner.
Seton-Thompson, Ernest	The Trail of the Sandhill Stag	Scribner.
Shakespeare, W.	The Merchant of Venice	Various.
Shakespeare, W.	Midsummer Night's Dream	Various.
Shakespeare, W.	Julius Caesar	Various.
Shaw, Flora	Castle Blair	Little.
Southey, Robert	Life of Lord Nelson	Various.
Stanley, H. M.	My Kalulu	Scribner.
Stevenson	The Black Arrow	Various.
Stevenson	Kidnapped	Various.
Stevenson	Treasure Island	Various.
Stockton, F. R.	The Lady or the Tiger	Scribner.
Stockton, F. R.	Rudder Grange	Grosset.
Stockton, F. R.	Captain Chap	Lippincott.
Stowe, Harriet Beecher	Uncle Tom's Cabin	Various.
Stuart, F. P.	The Adventures of Piang, the Moro Jungle Boy	Century.
Sutcliffe, Mrs. A. C.	Robert Fulton and the Clermont	Century.
Tappan, E. M.	In the Days of Queen Victoria	Lothrop.
Tarkington, Booth	Penrod	Doubleday.
	(Treasury of War Poetry)	Houghton.
Trowbridge, J. T.	Cudjo's Cave	Lothrop.
Twain, Mark	Tom Sawyer	Harper.
Twain, Mark	Huckleberry Finn	Harper.
VanDyke, Henry	The Other Wise Man	Harper.
Wallace, D.	Ungava Bob	Grosset.
Warner, Charles Dudley	A Hunting of the Deer and other Essays	Houghton.
Warner, Charles Dudley	Being a Boy	Houghton.
Webster, Jean	Daddy Long Legs	Century.
Webster, Jean	When Patty Went to College	Century.
White, William A.	The Court of Boyville	Macmillan.
Whittier, J. G.	Poems	Various.
Wiggin, Kate Douglas	Polly Oliver's Problem	Houghton.
Wiggin, Kate Douglas	Rebecca of Sunnybrook Farm	Houghton.
Wiggin, Kate Douglas	A summer in a Canon	Houghton.
Williams, J. L.	Adventures of a Freshman	Scribner.
Woolsey, S. C.	A Guernsey Lily	Little.
Yonge, Charlotte M.	Book of Golden Deeds	Various.
Young, S. H.	Alaska Days with John Muir	Revell.

BOOKS FOR BOYS AND GIRLS OF HIGH SCHOOL AGE.

Novels

Allen, James Lane	The Choir Invisible	Macmillan.
Allen, James Lane	A Kentucky Cardinal	Macmillan.
Arnim, Countess von	Elizabeth and her German Garden	Macmillan.
Ashmun, M. E.	Stephen's Last Chance	Macmillan.
Ashmun, M. E.	Isabel Carleton's Year	Macmillan.
Austen, Jane	Pride and Prejudice	Various.
Austen, Jane	Emma	Various.
Bacheller, Irving	Eben Holden	Harper.
Barrie, J. M.	The Little Minister	Various.
Bennett, Arnold	Buried Alive	Doran.
Black, William	Madcap Violet	Harper.
Black, William	Judith Shakespeare	Harper.
Blackmore, R. D.	Lorna Doone	Various.
Bronte, Charlotte	Jane Eyre	Various.
Bronte, Emily	Wuthering Heights	Various.
Cable, G. W.	Sevier	Scribner.
Cable, G. W.	Grandissimes	Scribner.
Churchill, Winston	Coniston	Macmillan.
Churchill, Winston	Mr. Crewe's Career	Macmillan.
Churchill, Winston	Richard Carvel	Macmillan.
Collins, Wilkie	The Moonstone	Dodd.
Collins, Wilkie	The Woman in White	Dodd.
Connor, Ralph	The Man from Glengarry	Revell.
Conrad, Joseph	Typhoon	Putnam.
Craddock, C. E.	The Prophet of Great Smoky Mountain	Houghton.
Craik, Dinah M.	John Halifax, Gentleman	Various.
Crane, Stephen	The Red Badge of Courage	Appleton.
Crawford, F. Marion	Mr. Isaacs	Macmillan.
Curtis, G. W.	Prue and I	Various.
Daudet, Alphonse	Tartarin of Tarascon	Various.

Davis, Richard Harding	Soldiers of Fortune	Scribner.
Dickens, Charles	A Tale of Two Cities	Various.
Dickens, Charles	Oliver Twist	Various.
Dickens, Charles	Hard Times	Various.
Dickens, Charles	Our Mutual Friend	Various.
Dickens, Charles	Pickwick Papers	Various.
Dickens, Charles	Dombey and Son	Various.
Dickens, Charles	Little Dorrit	Various.
Doyle, Conan	The White Company	Various.
Dumas, Alexander	The Three Guardsmen	Various.
Dumas, Alexander	Twenty Years After	Various.
Duncan, Norman	Dr. Luke of the Labrador	Revell.
Ebers, George	An Egyptian Princess	Macmillan.
Edgeworth, Maria	The Absentee	Various.
Edgeworth, Maria	Castle Rackrent	Various.
Eliot, George	The Mill on the Floss	Various.
Eliot, George	Silas Marner	Various.
Ferber, Edna	Fanny Herself	Stokes.
Ford, Paul Leicester	The Hon. Peter Stirling	Grosset.
Fox, John, Jr.	The Little Shepherd of Kingdom Come	Grosset.
Goldsmith, Oliver	The Vicar of Wakefield	Various.
Halevy, Ludovic	The Abbe Constantine	Various.
Harland, Henry	The Cardinal's Snuff Box	Grosset.
Harrison, Henry	Queed	Grosset.
Harrison, Henry	V Vs Eyes	Grosset.
Hawthorne, Nathaniel	The House of Seven Gables	Various.
Holmes, Oliver Wendell	Elsie Venner	Various.
Hope, Anthony	The Prisoner of Zenda	Grosset.
Hope, Anthony	Rupert of Hentzau	Grosset.
Howells, William Dean	The Rise of Silas Lapham	Houghton.
Hughes, Thomas	Tom Brown at Oxford	Various.
Hugo, Victor	Les Miserables	Various.
Ibanez, Blasco	The Four Horsemen of the Apocalypse	Dutton.
Jewett, Sarah Urne	The Country of the Pointed Firs	Houghton.
Johnson, Owen	Stover at Yale	Stokes.
Johnston, Mary	To Have and To Hold	Houghton.
Lane, Elinor	Nancy Stair	Appleton.
Lever, Charles	Charles O'Malley	Various.
Locke, William J.	Septimus	Burt.
London, Jack	Martin Eden	Macmillan.
London, Jack	The Sea Wolf	Donohue.
Lover, Samuel	Handy Andy	Various.
Lytton, Sir Edward Bulwer	Last Days of Pompeii	Various.
Lytton, Sir Edward Bulwer	Rienzi	Various.
Marshall, Archibald	Novels, (Picturing English Country Life)	Dodd.
Moore, F. F.	The Jessamy Bride	Duffield.
Morley, Christopher	Paranassus on Wheels	Doubleday.
Norris, Frank	The Pit	Doubleday.
Page, Thomas Nelson	Marse Chan	Scribner.
Page, Thomas Nelson	Meh Lady	Scribner.
Page, Thomas Nelson	Red Rock	Scribner.
Porter, Jane	Thaddeus of Warsaw	Various.
Scott, Sir Walter	Guy Mannering	Various.
Scott, Sir Walter	Quentin Durward	Various.
Scott, Sir Walter	Ivanhoe	Various.
Scott, Sir Walter	Kenilworth	Various.
Shelly, Mrs.	Frankenstein	Everyman.
Sienkiewicz, Henryk	With Fire and Sword	Various.
Stevenson, Robert Louis	Dr. Jekyll and Mr. Hyde	Scribner.
Stevenson, Robert Louis	St. Ives	Grosset.
Stockton, Frank	The Casting Away of Mrs. Leeks and Mrs. Aleshine	Century.
Stowe, Mrs. Harriet Beecher	Old Town Folks	Houghton.
Tarkington, Booth	Seventeen	Harper.
Tarkington, Booth	Alice Adams	Doubleday.
Tarkington, Booth	A Gentleman from Indiana	Doubleday.
Thackeray, W. M.	Henry Esmond	Various.
Thackeray, W. M.	Vanity Fair	Various.
Trollope, Anthony	Barchester Towers	Everyman.
Wallace, Lew	Ben Hur	Grosset.
Westcott, E. N.	David Harum	Grosset.
Weyman, Stanley	Under the Red Robe	Longmans.
White, Stewart Edward	The Rules of the Game	Grosset.
White, Stewart Edward	The Blazed Trail	Grosset.
Wiggin, Kate Douglas	A Cathedral Courtship	Grosset.
Wiggin, Kate Douglas	Penelope's Irish Experiences	Houghton.
Wiggin, Kate Douglas	Penelope's Progress (in Scotland)	Houghton.
Wister, Owen	The Virginian	Macmillan.

BIOGRAPHY.

Addams, Jane	Twenty Years of Hull House	Macmillan.
Aldrich, Mrs. T. R.	Crowding Memories	Houghton.
	American Men of Letters Series	
	English Men of Letters Series	
	American Statesmen Series	
	English Statesmen Series	
Antin, Mary	The Promised Land	Houghton.
Asquith, Margot	An Autobiography	Doran.
Barrie, J. M.	Margaret Ogilvy	Scribner.
Bispham, D.	A Quaker Singer's Recollections	Macmillan.
Bok, Edward	Americanization of, By Himself	Scribner.
Breshkovsky, Catherine	Little Grandmother of the Russian Revolution	Little.
De Quincey, Thomas	Confessions of an English Opium Eater	Various.
Garland, Hamlin	A Son of the Middle Border	Macmillan.
Gilchrist, Beth Bradford	Life of Mary Lyon	Houghton.
Grayson, David	The Friendly Road	Grosset.
Grenfell, W. F.	The Adventure of Life	Houghton.
Grenfell, W. F.	Autobiography	Houghton.
Hough, Emerson	The Way to the West	Bobbs.
Irving, Washington	Life of Goldsmith	Various.
Jefferson, Joseph	Autobiography	Century.
Lockhart, J. G.	Life of Scott, (Abridged)	Macmillan.
MacKenzie, Jean	The Story of A Fortunate Youth	Atlantic.
Morlet, John	William Ewart Gladstone	Macmillan.
Morris, Clara	Life on the Stage	Doubleday.
Morse, E. W.	Life and Letters of Hamilton Wright Mabie	Dodd.
Muir, John	Story of My Boyhood and Youth	Houghton.
Oliphant, Mrs. M. O. W.	Francis of Assisi	Macmillan.
Palmer, G. H.	Life of Alice Freeman Palmer	Houghton.
Peat, H. R.	Private Peat	Bobbs.
Repplier, Agnes	In Our Convent Days	Houghton.
Acanchez, N.	Life of Mrs. Robert Louis Stevenson	Scribner.
Schurz, Carl	Abraham Lincoln	Houghton.
Schurz, Carl	Henry Clay	Houghton.
Sedgwick, A. D.	A Childhood in Brittany Eighty Years Ago	Century.
Southey, Robert	Life of Nelson	Various.
Thoreau, H. D.	Walden	Various.
Trevelyan, G. M.	Garibaldi and the Thousand	Longmans.
Twain, Mark	Life of Joan of Arc	Harper.
Washington, Booker T	Up from Slavery	Houghton.

PLAYS

Barrie, Sir James	A Kiss for Cinderella	Scribner.
Barrie, Sir James	Quality Street	Scribner.
Barrie, Sir James	The Admirable Crichton	Scribner.
Barrie, Sir James	Alice Sit by the Fire	Scribner.
Bennett, Arnold and Knoblauch, Edward	Milestones	Doran.
Goldsmith, Oliver	She Stoops to Conquer	Various.
Howells, William Dean	The Sleeping Car	Houghton.
Howells, William Dean	The Mouse Trap	Houghton.
Housman and Baker	Prunella	Brentano.
Kennedy, Charles Rann	The Servant in the House	Harper.
Maeterlinck, Maurice	The Blue Bird	Dodd.
Pinero, Sir Arthur Wing	The Amazons	Baker.
Rostand, Edward	Cyrano de Bergerac	Stokes.
Rostand, Edward	L'Aiglon	Harper.
Sheridan, Richard	The Rivals	Various.
Sheridan, Richard	The School for Scandal	Various.
Shakespeare, William	Romeo and Juliet	Various.
Shakespeare, William	Julius Caesar	Various.
Shakespeare, William	The Taming of a Shrew	Various.
Shakespeare, William	A Midsummer Night's Dream	Various.
Shakespeare, William	Macbeth	Various.
Shakespeare, William	Hamlet	Various.
Shakespeare, William	King Lear	Various.
Shakespeare, William	King Henry V	Various.
Shakespeare, William	Richard III	Various.
Shakespeare, William	Twelfth Night	Various.
Shakespeare, William	A Winter's Tale	Various.
Synge, J. M.	Riders to the Sea	Badger.
Yeats, William Butler	The Land of Heart's Desire	Dodd.

SHORT STORIES

Aldrich, Thomas Bailey	Marjorie Daw	Houghton.
Andrews, Mary Raymond Shipman	Bob and the Guides	Scribner.
Bacon, Josephine Daskam	Smith College Stories	Scribner.
Bangs, John Kendrick	The House Boat on the Styx	Harper.
Barrie, James	Auld Licht Idyls	Scribner.
Bunner, H. C.	Short Stories	Scribner.
Bunner, H. C.	Zadoc Pine	Scribner.
Conrad, Joseph	Youth	Doubleday.
Davis, Richard Harding	Van Bibber and Others	Harper.
Deland, Margaret	Old Chester Tales	Harper.
Doyle, Sir Arthur Conan	Adventures of Sherlock Holmes	Collier.
Doyle, Sir Arthur Conan	Memoirs of Sherlock Holmes	Collier.
Doyle, Sir Arthur Conan	The Return of Sherlock Holmes	Collier.
Dunbar, Paul Lawrence	Folks from Dixie	Dodd.
Garland, Hamlin	Main Travelled Roads	Harper.
Harte, Bret	Luck of Roaring Camp and Other Stories	Houghton.
Hawthorne, Nathaniel	Twice Told Tales	Various.
Irving, Washington	Tales of a Traveler	Various.
Irving, Washington	The Alhambra	Various.
Jewett, Sarah Orne	Short Stories	Houghton.
Kelly, Myra	Little Citizens	Doubleday.
Kipling, Rudyard	The Day's Work	Doubleday.
Kipling, Rudyard	Plain Tales from the Hills	Doubleday.
Kipling, Rudyard	Under the Deodars	Doubleday.
MacLaren, Ian	Beside the Bonny Briar Bush	Dodd.
Poe, Edgar A.	Weird Tales	Various.
Tarbell, Ida M.	He Knew Lincoln	Macmillan.
Twain, Mark	The Jumping Frog	Harper.
Van Dyke, Henry	The Blue Flower	Scribner.
Wilkins, Mary E.	A New England Nun and Other Stories	Harper.
Williams, Jesse Lynch	Princeton Stories	Scribner.

ESSAYS

Carlyle, Thomas	Essay on Burns	Various.
Emerson, Ralph Waldo	Essays	Various.
Holmes, Oliver Wendell	Autocrat of the Breakfast Table	Various.
Irving, Washington	The Sketch Book	Various.
Lamb, Charles	Essays of Elia	Various.
Lee, Sidney	Shakespeare and the Modern Stage	Scribner.

Mabie, Hamilton Wright	Essays That Every Child Should Know	Doubleday.
Maeterlinck, Maurice	My Friend, the Dog	Dodd.
Mathews, William	Getting on in the World	Scott.
Roosevelt, Theodore	American Ideals	Putnam.
Roosevelt, Theodore	The Strenuous Life	Century.
Root, Elihu	The Citizen's Part in Government	Yale U. Press.
Stephen, Leslie	Hours in a Library	Putnam.
Stevenson, Robert Louis	Virginibus Puerisque	Various.
Taft, W. Howard	Present Day Problems	Dodd.
Taft, W. Howard	Four Aspects of Civic Duty	Scribner.
Van Dyke, Henry	Little Rivers	Scribner.
Van Dyke, Henry	Fisherman's Luck	Scribner.
Warner, Charles Dudley	Backlog Studies	Houghton.
Warner, Charles Dudley	In the Wilderness	Houghton.
Wilson, Woodrow	Mere Literature	Houghton.
Winter, William	Shakespeare's England	Moffat.
Winter, William	Gray Days and Gold	Moffat.

POETRY

Arnold, Matthew	Sohrab and Rustum	Various.
Frost, Robert	North of Boston	Holt.
Gayley, C. M.	The Poetry of the People	Ginn.
Gummere, F. B.	Old English Ballads	Ginn.
Henely, W. E.	Lyra Heroica	Scribner.
Longfellow, Henry Wadsworth	Tales of a Wayside Inn	Various.
Macaulay, Thomas Babington	Lays of Ancient Rome	Various.
Newcomer, and Andrews	Twelve Centuries of English Poetry and Prose	Scott, Foresmen.
Noyes, Alfred	Tales from the Mermaid Tavern	Stokes.
Quiller-Couch, A. (Ed.)	Oxford Book of English Verse	Oxford.
Palgrave, F.	Golden Treasury of Songs and Lyrics	Macmillan.
Seeger, Alan	Poems	Scribner.
Service, Rovert W.	Rhymes of a Red Cross Man	Barse & Hopkins
Stedman, E. C.	American Anthology	Houghton.
Stedman, E. C.	Victorian Anthology	Houghton.

CHOOSING A VOCATION

Briggs, LeBaron R.	Girls and Education	Houghton.
Clow, F. R.	Introduction to the Study of Commerce	Silver.
Eliot, C. W.	Training for Effective Life	Houghton.
Esenwein, J. B.	Writing the Short Story	Hinds.
Frederick, Christine	Household Engineering	Am. Sch. H. Econ.
Husband, J.	America at Work	Houghton.
Lockwood, F. C.	The Freshman and the School	Heath.
Palmer, Alice Freeman	Why Go to College	Crowell.
Palmer, G. H.	Self Cultivation in English	Houghton.
Quinn, Mary J.	Planning and Furnishing the Home	Harper.
Weaver, E. W.	Vocations for Girls	Barnes.

VOCATIONS FOR BOYS

Wingate, C. F.	What Shall Our Boys Do for a Living	Doubleday.

A DICTIONARY OF AUTHORS, BOOKS, CHARACTERS AND LITERARY TERMS

The following dictionary aims to supply information about books and authors, and has been prepared with the purpose of omitting everything which does not contribute its mite of usefulness or pleasure to him who seeks to read intelligently. Its probable service may be indicated by the following questions and answers:

1. What does the careful student need to know concerning an author?

Ans. His nationality or his language, when he lived, for what he is famous.

2. What does a student need to know about a literary work?

Ans. What it is about, in what manner or style it is written, why it has value, what is its significance.

3. What does a student need to know about a character in drama or novel?

Ans. The human type to which he belongs, what his individual characteristics are, why he is admirable or despicable, whether he is well portrayed.

Such questions as these every reader of intelligence will wish to answer; this dictionary will help him. If the student happens to hear the name of Artemus Ward, for example, he may find by turning these pages who he was, when he lived, and what he wrote. If the student wants to know about the Iliad, he will find it summarized here. The things he will find in this dictionary may be indicated clearly in a table:

1. Names, dates, chief or representative works of English authors.
2. Names, dates, chief or representative works of American authors.
3. Brief identification of important foreign authors.
4. Descriptions of many of the more famous works of English and American authors.
5. Description of famous works in other languages.
6. A few character sketches which may serve as models in school work.
7. Explanation of some of the common literary terms, e. g., epic, ballad, comedy, etc.
8. Miscellaneous literary information.

Adam Bede, English novel by George Eliot, published in 1859. In this as in most of her works two stories are intertwined. Adam Bede, the hero, is a faithful and honest carpenter. He falls in love with Hetty Sorrel, a pretty dairymaid who has not the good sense to appreciate his worth. She becomes infatuated with the local squire, Arthur Donnithorne, and is betrayed by him. He is good-hearted but thoughtless. That he is not wholly bad is shown by his remorse after a child is born to him and Hetty and she is brought to trial on a charge of murdering it. Dinah Morris, a Methodist preacher, stands by Hetty in her trouble, and eventually becomes the wife of Adam Bede. The first story, then, is of Adam's disappointed love and later happy marriage; the second is of Hetty's tragedy and its effects.

The book is famous for its pictures of country life, its understanding of human nature, and of the motives of conduct. Many of the sayings of Mrs. Poyser, one of its rustic characters, have become proverbial. She is "not one of those as can see the cat i' the dairy an' wonder what she's come after." *Adam Bede* is often regarded as the best of the author's works. Dickens said that reading it marked an epoch in his life.

Adams, (Parson), Character in Fielding's novel *Joseph Andrews.* One of the most lovable characters in fiction. Parson Adams was absent-minded enough to forget he had a horse to ride and set forth afoot; he was improvident enough to give away all his money and having nothing with which to pay his own debts; he was often in a fist fight; he was the butt of innumerable practical jokes. In spite of his faults, his simple piety, his generosity, and his good intentions have endeared him to all who read.

Ade, George (1866-), American humorist, best known for his *Fables in Slang,* many of which have been dramatized for motion pictures, and *The College Widow,* a very successful play.

Addison, Joseph (1672-1719), English poet, dramatist, essayist, author of narrative sketches, statesman. He is most famous for the essays and narratives. Many of these, like the Sir Roger de Coverly sketches, appeared in papers like the *Spectator,* of which he was an editor. He praised good books, criticized the follies of mankind with a mild satire, never bitter or malicious. Common sense, moral purpose, and pleasant humor are characteristic of him. Johnson said: "Whoever wishes to attain an English style, familiar but not coarse, and elegant but not ostentatious, must give his days and nights to a study of Addison". Benjamin Franklin studied Addison with such a purpose.

Adonais, a formal elegy (1821) in which the English poet, Shelley, laments the death of a fellow poet, John Keats, whose death was at that time thought to have been hastened by harsh criticism. The poem imitates the classical elegy, as does Milton's *Lycidas.* The first half of the poem mourns the loss of the poet, cut off in his prime; the second half rejoices that he is with the immortals.

Aeneid, The, an epic poem in the Latin language by Vergil. The poem tells the story of the flight of Aeneas from Troy after it was captured by the Greeks in the famous war, of his adventures on land and sea, his visit to the underworld, and his final arrival in Italy where he founded the Roman state. Book I. Aeneas sails from Troy, heading for Italy, but is driven ashore at Carthage, where he is hospitably received by Queen Dido. Book II. Aeneas tells Dido the story of the capture of Troy, through the deceit of the wooden horse, of his flight with his family, and of his wife's death. Book III. Aeneas tells of his perilous voyage and of the death of his father, Anchises. Book IV. Dido falls in love with Aeneas, but he sails away. She then kills herself. Book V. Aeneas visits Sicily, and holds games there in honor of his father's memory. Book VI. Aeneas visits the infernal regions. Book VII. Aeneas reaches Italy and wins the king's daughter, thereby incurring the hatred of Turnus, who had been betrothed to her. Book VIII. Preparations for war are made by Aeneas and Turnus. Book IX. Turnus attacks the camp of Aeneas and burns his ships. Books X and XI. The war goes on. Book XII. Aeneas accepts the challenge of Turnus to single combat. Turnus is killed.

Aesop, ancient Greek fabulist. See FABLE.

Alcott, Bronson (1799-1888). American. Member of the transcendental group of authors living chiefly in Concord and Boston, Mass., about the middle of the nineteenth century.

Alcott, Louisa M. (1832-1888), American writer of stories for children. The best known is *Little Women.* Daughter of Bronson Alcott.

Aldrich, Thomas Bailey (1836-1907), American author of stories and poems. *Marjorie Daw* and *The Story of a Bad Boy* are well known.

Alfred, (The Great) (849-901). He was a patron of learning and letters, and himself an author, translating various books from the Latin into English.

Alice's Adventures in Wonderland (1865), a delightful story for children with much truth in its whimsical absurdities. It was written by C. L. Dodgson a learned mathematician of Oxford University, England, under the pen-name of Lewis Carroll, and, was illustrated by Sir John Tenniel. Alice falls asleep and dreams that she follows a rabbit into his hole and finds herself in a strange land where she meets and talks with the Mad Hatter, the Walrus, the Tortoise, and many other grotesque personages. *Through the Looking Glass* (1871) is a sequel.

Allen, James Lane (1849-), American novelist and short story writer. Best known work *The Choir Invisible.*

Allworthy, (Squire), a character in Fielding's novel, *Tom Jones* (1749). In Allworthy, Fielding has depicted the eighteenth century gentleman who is the "favorite of both Nature and Fortune", one who has "an agreeable person, a sound constitution, a solid understanding, and a benevolent heart", as well as "one of the largest estates in the county". Like Sir Roger de Coverly, Allworthy has all the substantial merits of the century and fewer than usual of its vices.

Amelia, the heroine of Fielding's novel, *Amelia* (1751). She is a character of unfailing charity, wedded to a man of many faults. She is depicted with the tenderness which characterized the writing of Fielding's last years. Thackeray said she was "the most charming character in English fiction".

Ancient Mariner (1817), ballad by Coleridge. The ancient mariner is a man condemned to wander forever and tell his story in expiation of his cruelty in shooting the albatross which followed his ship.

Anna Karenina, a Russian novel, by Tolstoy, English translation 1886. This is one of the world's greatest novels. Dealing with the familiar entanglement of husband, wife, and lover, it surpasses other novels in the subtlety with which it traces the heroine's character. Wedded to a selfish husband much older than she, Anna Karenina falls in love with Count Vronsky, a brilliant young officer, and thereafter

wavers between happiness and regret, until she becomes an exile from society, and, as she realizes what people think of her, passes gradually from defiance to ennui and despair. When she can endure life no longer, she throws herself beneath the wheels of a moving train. "And the candle by which she had been reading the book filled with pain and sorrow, deceit and evil, flared up with a brighter light, illuminating for her everything that had been enshrouded in darkness, then flickered, grew dim, and went out for ever."

Antiquary, The, English novel, by Scott. This is a novel of superstition and magic, with the talkative eccentric, Jonathan Oldbuck, and the weak-minded Edie Ochiltree as its most interesting characters. The story is a conventional one, involving rival lovers, a villain, and a wicked mother-in-law, but is full of excitement, humor, and tenderness.

Antony and Cleopatra. This is a tragedy by Shakespeare founded on information given in North's *Plutarch*. It relates the story of the infatuation of Mark Antony, the Roman triumvir, for Cleopatra the queen of Egypt. The splendor of ancient Egypt makes a rich setting for this representation of one of the most powerful men and one of the most fascinating women known to tradition. The fascination of Cleopatra, "Serpent of the Nile", undermines in this play the character of the man who was so strong and ambitious in the play, *Julius Caesar*.

Apologia Pro Vita Sua (In defense of his life) (1865), an autobiography of spiritual experience and a justification of religious affiliation written by John Henry, Cardinal Newman. The work was called forth by an attack upon Newman, who had gone from the church of England to the church of Rome, by Charles Kingsley, an Anglican clergyman. The work is famous for its clearness of expression and of reasoning, for its spiritual refinement, and for the light it throws upon the mental unrest of the time.

Apparition of One Mrs. Veal, The, a story (1706) by Daniel Defoe of a visit paid by the spirit of Mrs. Veal to one of her friends. It is told with such particularity that it seems true. Defoe learned this trick for making a narrative seem true long before he employed it in *Robinson Crusoe*.

Arcadia (1580-81), a pastoral romance by Sir Philip Sidney. The name Arcadia has come to designate a land of ideal simplicity and charm where the intrigues of elegant lovers and the affairs of state always run fortunately, unimpeded by the laws of probability or of cause and effect.

Arden, Enoch. A poem by Alfred Tennyson, narrating the adventures of a seaman who, shipwrecked on an uninhabited island in the tropical seas, spends many years in solitude, and when rescued, returns home to find his wife married to another, with whom she lives in happiness. Arden proves his nobility of spirit by refusing to reveal to her the fact of his existence, suffers in silence, and dies broken-hearted. Arden is a true hero after the highest conception of a hero. He is as great as King Arthur—by his unconquerable will, and by bowing before love and duty.

Ariosto (1474-1533), Italian poet, author of *Orlando Furioso* (The Mad Orlando), a romantic story in verse dealing with chivalric adventure.

Artful Dodger, The, a youthful character in Dickens's novel, *Oliver Twist*. He has been reared among criminals and gets his nickname because of skill in eluding the police. He is remembered for his droll and jaunty comments on everything and everybody.

Arthurian Romances, stories concerning a mythical king of the Britons and his knights of the Table Round. These stories appeared in various languages during the Middle Ages and have been much developed in modern times, especially in German and English. The chief groups, or cycles, of these romances are those dealing with (1) Merlin, the magician. (2) Gawain, originally a model knight, but in later stories (like the *Idylls of the King*) debased. (3) The search for the Holy Grail, in which either Percival or Galahad is the hero. (4) Tristan and his love for Iseult. (5) Launcelot and his love for Queen Guenevere. (6) The death of Authur. In English the best known of modern works based on this material are Tennyson's *Idylls of the King* and *Sir Galahad*, Arnold's *Tristram* and *Iseult*, Morris's *The Defence of Guinevere*. Richard Wagner's employment of the Arthurian material in his operas is well known. Some of the best of the older versions of the material are: *The Mabinogion*, a collection of Welsh tales of the fourteenth century; *Lays of Marie de France*, twelfth century; *Romances of Chretien de Troies*, twelfth century. These may be obtained, translated into English in the convenient *Everyman's Library*, published by E. P. Dutton.

The characters of the Arthurian stories represent types of men and women. Those who live according to the code of chivalry are made heroic; those who transgress the code are disapproved. Thus the stories as a whole enable us to see a knightly community in which each individual holds his place by virtue of his moral ideals and conduct. Much of the moral enthusiasm of the Middle Ages and later periods has been wrought into the characters and plots of these stories.

As You Like It is one of Shakespeare's romantic comedies, fanciful, witty, and full of the spirit of youth. The action is divided between the court of Charles, who has usurped the dukedom of his older brother, Frederick, and the forest of Arden, where the deposed Frederick holds sway. The play describes the flight to the forest of Arden of Frederick's daughter, Rosalind, disguised as a boy, and Charles' daughter, Celia, dressed as a rustic lass. There several scenes of love-making ensue. Touchstone, the court jester, tries his court manners on Audrey, a simple country maid; Rosalind, beneath her disguise, has a chance to test the fidelity of her lover, Orlando; and Celia finds a mate in Orlando's brother. The happy outcome of these love affairs and the repentance of the usurping duke furnish a pleasant ending to which the persistent melancholy of Jaques is in amusing contrast.

Aurora Leigh (1857), a novel in verse form by Elizabeth Barrett Browning. In telling a conventional love story, the author introduces contemporary theories regarding the improvement of society.

Austen, Jane (1775-1817), English novelist who gives neat pictures of life among the gentry of an English village. Best novels *Pride and Prejudice* and *Emma*.

Autocrat of The Breakfast Table, A series of narrative essays by Oliver Wendell Holmes which purport to record the conversation of a boarding-house. Holmes introduces comment on various subjects, anecdotes, poems, puns, and fancies. The book is a good one to read at odd moments, dipping in here and there.

Bacon, Francis (1561-1626), English prose writer, statesman, scientist. Best known work, *Essays*.

Baconian Theory, the theory that Bacon was the author of literary works which are usually attributed to Shakespeare. Supporters of this theory argue that the name of Bacon is introduced in acrostic cipher in many of the plays and sonnets.

Ballad. A ballad is "a song that tells a story". The oldest ballads were handed down from parents to children by word of mouth, as proverbs and weather sayings often are, and only in comparatively recent times got into writing.

Balzac, Honore de (1799-1850), French novelist, author of *The Human Comedy*, a series of novels classified to represent all phases of human experience. *Old Goriot* and *Eugenie Grandet* are two of the best.

Barchester Towers (1857). The title novel of a series by Anthony Trollope. The series depicts the life of an English cathedral town, and is notable for its realistic treatment of the clergy.

Bardolph is one of the group of low but amusing characters found in *Henry IV*, *Henry V*, and *The Merry Wives of Windsor*, plays by Shakespeare. He is an unprincipaled thief, roysterer, and coward whose end is hanging. His red nose is a great source of amusement to his companions.

Barkis is the stage-driver who marries Peggotty, the faithful old nurse of *David Copperfield*, a novel by Dickens. His chief claim to fame is his proposal of marriage, couched in the words, "Barkis is willing".

Barnaby Rudge (1841). One of the two historical novels written by Dickens. It deals with the religious riot of 1780 in England. Dickens gives an effective portrait of Lord George Gordon, the fanatic who incited this riot.

Barrie, Sir James M. (1860-), Scotch novelist and dramatist. *Sentimental Tommy* (a novel); *The Little Minister*, *Peter Pan*, *What Every Woman Knows*, (plays).

Bell, Currer and Acton, see **Bronte.**

Ben Hur. An historical romance by Lew Wallace (American), the action of which takes place in the time of Christ. Judah Ben Hur, a wealthy young man, because of accidentally knocking a tile from the roof while he is viewing the entrance of a new Roman governor into Jerusalem, gets arrested and condemned to the galleys. Many exciting adventures ensue, including the famous chariot race. The account of the conversion of Ben Hur to Christianity has added greatly to the popular interest in the book. Its sales have been enormous. The dramatic representation of the story has also had great popularity.

Beowulf. An early English (Anglo-Saxon) epic. The story consists of three episodes: (1) Beowulf with a small band of followers crosses the sea to aid a friendly people whose land is being ravaged by a monster named Grendel. Beowulf defeats Grendel in hand to hand conflict, and the monster flees, mortally wounded. (2) Grendel's mother seeks to avenge her son, but Beowulf follows her to her lair at the bottom of a mere and kills her. (3) In his old age Beowulf loses his life in combat with a fire-dragon which is devastating his kingdom. The hero of this poem shows a spirit of self-sacrifice which gives a nobility of spirit to the work, unusual in primitive compositions. So many of the customs and ideals of the people are revealed in the narrative that we are able to get a good conception from it of the Anglo-Saxon civilization.

Biglow Papers. Humorous and shrewd verses in the Yankee dialect, by James Russell Lowell, begun during the Mexican War. They are vigorously anti-slavery.

Blackmore, R. D. (1825-1900), English novelist. Best known for his romance of Devonshire life, *Lorna Doone*.

Blake, William (1757-1827), English poet, painter, engraver. Highly imaginative. *Songs of Innocence*.

Bleak House (1852-3). Novel by Charles Dickens. In this novel Dickens satirizes the injustice of delay in the Court of Chancery. The story is one of sin, concealment, and retribution. Several of the characters are memorable: Mrs. Jellyby, a woman devoted to foreign missions but neglecting her own family; Mr. Chadband, a shallow-minded pulpit-orator; Mr. Skimpole, poverty-stricen through his own improvidence; Jo, the street sweeper, a pathetic boy of the slums, who "don't know nothink". The novel is one of the most carefully constructed of all the author's narratives.

Blithedale Romance, The (1852). Novel by Hawthorne. This is a story which grew out of Hawthorne's interest in the Brook Farm Experiment. It depicts a community united in equality and fraternity. The novel is not one of Hawthorne's best, but the portrait of Zenobia, probably suggested by the character of Margaret Fuller, is interesting.

Boffin, Mr. A character in Dicken's novel, *Our Mutual Friend*. He is an illiterate old man who comes into a fortune, and uses it with generosity and wisdom. He assists the marriage of John Harmon and Bella Wilfer, though it means the loss of most of his fortune. Mrs. Boffin is equally amiable.

Boswell, James (1740-95), English writer (Scottish) who, though contemptible personally, wrote the best biography in the language, *The Life of Samuel Johnson*.

Bottom, Nick, the weaver in Shakespeare's *Midsummer Night's Dream*, belongs to a group of artisans including Quince, the carpenter; Snug, the joiner; Flute, the bellows mender; Snout, the tinker, and Starveling, the tailor. Shakespeare represents these characters as artisans of his own time living in ancient Athens. They plan to give a play of *Pyramus and Thisbe* before the Duke on his wedding day. Bottom is cast for Pyramus, but he covets the other parts, even that of the lion. He is a great braggart and very self-important, ordering about the other characters, although he is not in charge of the play. During the rehearsal Puck places an ass, head upon him, and causes the fairy queen to fall in love with him. Bottom's self-esteem is so great that he accepts the attentions of the fairies with perject equanimity. The clownish, literal Bottom is the most clearly individualized character in the play.

Bride of Lammermoor, The (1819). A tragical romantic story by Scott, depicting the love of a penniless youth, Edgar, Master of Ravenswood, for Lucy Ashton. A feud between the families and the intrigues of Lucy's worldly mother, culminating in Lucy's madness and Edgar's death, makes the story as pathetic as *Romeo and Juliet*. Leslie Stephen called this "in some respects the best and most artistic of Scott's novels". The opera, *Lucia di Lammermoor*, is based on this novel.

Bronte Sisters: Charlotte (1816-55), **Emily** (1818-48), **Anne** (1820-49). Three gifted English women, poets and novelists, of unfortunate life and morbid temperament. Two novels, *Jane Eyre*, by Charlotte, and *Wuthering Heights*, by Emily, entitle them to fame.

Brook Farm Experiment (1841-47), was an unsuccessful attempt to found an ideal community where all the members should labor with their hands as well as pursue scholarly vocations. The members were in sympathy with the Transcendentalists. Hawthorn's *Blithedale Romance* is an idealized picture of this community.

Brooke, Dorothea. The heroine of George Eliot's novel, *Middlemarch*. Dorothea is a high-minded woman who wishes to devote herself to service of mankind, but never finds so noble an opportunity as she seeks. Her life is one of good intentions unfulfilled, and unfulfilled not so much through any fault of her own as through the lack of opportunity which the author thinks characteristic of modern life.

Browning, Elizabeth Barrett (1806-61), English poetess. Wife of Robert Browning. Author of *Sonnets from the Portuguese*.

Browning, Robert (1812-89), English poet. Browning's chief characteristics are vigor and eccentricity of style, originality of thought, extraordinary range in subject-matter, and a resolute cheerful philosophy. *Rabbi Ben Ezra; Cavalier Tunes*.

Bryant, William Cullen (1794-1878), American poet and editor. Poems of nature and of general human experiences. *Thanatopsis*.

Bulwer-Lytton, Edward (1803-73), English novelist and dramatist. Novel: *The Last Days Of Pompeii*; play: *Richelieu*.

Bunner, H. C. (1855-96), American poet and story writer. Editor of *Puck*. Author of *Short Sixes* (stories).

Bunyan, John (1628-88), English Puritan. *Pilgrim's Progress* was written by him while he was in prison for preaching without authority.

Burke, Edmund (1729-97), English prose writer. Devoted to liberty, (*Speech on Conciliation with the Colonies*, speeches against Warren Hastings), but also conservative, seeking liberty through the gradual improvement of existing government (*Reflections on the French Revolution*).

Burnett, Mrs. F. H. (1849-), American author of *Little Lord Fauntleroy* (1886), a story for children.

Burney, Frances (Madame D'Arblay) (1752-1840) English. Disciple of Dr. Johnson, who spoiled her style. Novel, *Evelina*; *Diaries and Letters*, famous for the pictures they give of men and events in her time.

Burns, Robert (1759-96), Scottish poet. Burns appeals to emotions common to all men, and all in tenderness and humor, is everywhere read with affection. He is the favorite poet of the common man and of the outcast. Conviviality has never found better expression than in his works; bett-

songs than his have never been written. *Auld Lang Syne; Tam O'Shanter.*

Burroughs, John (1837-1921), American naturalist. Author of many books about nature.

Byron, George Gordon Noel (1788-1824), English poet, "the arch-apostle of revolt". He was a man of brilliant abilities but undisciplined character. For his wit and fluent rhetoric he remains famous, though he has not kept the great fame he once had. *Prisoner of Chillon; Childe Harold.*

Cable, George W. (1844-), American story writer. Stories of Louisiana. *Old Creole Days.*

Caliban. Character in Shakespeare's *The Tempest.* He represents human intelligence combined with bestial morality. The son of a witch, half beast and half man, he has been introduced into several literary works since Shakespeare's day. Recent works are Percy Mackaye: *Caliban and the Yellow Sands*; W. L. George: *Caliban.*

Campbell, Thomas (1777-1844), English poet. Poems of warfare: *Ye Mariners of England, Hohenlinden.*

Canterbury Tales. A collection of stories written by Geoffrey Chaucer, English poet of the fourteenth century. In a *Prologue* the author describes nine and twenty pilgrims, typical mediaeval folk of different social stations, who agree to entertain themselves on their pilgrimage to Canterbury by telling stories as they ride. After this introduction the stories begin. They are of various sorts, some coarse, some refined, some humorous, some tragic. In the stories and in the description of the pilgrims between stories we get an idea of the character of Chaucer himself. He seems to have been a man with remarkable power to observe men and women, understand their faults and follies and see through their hypocrisies. This power of observation was combined with a remarkable sense of humor and a remarkable kindliness.

Carducci, Giosue (1835-1907), Italian critic and poet

Carey, Alice (1820-70), American poetess, chiefly known as the author of playful and moral verses for children.

Carlyle, Thomas (1795-1881), English prose writer. Carlyle was a man of personal oddity, querulous, savage, gloomy, tender, by turns. He developed an eccentric, vigorous style. His favorite subjects were history, biography, literature, economics. *Essay on Burns, Sartor Resartus, French Revolution, Heros and Hero Worship.*

Carmen (1847) is the title of a romance by Prosper Merimee (French). It is a tragic story with a passionate gypsy heroine who is beloved by Don José, the cavalryman. The story is well known in its operatic version, and as a motion picture play, acted by Geraldine Farrar.

Carroll, Lewis, see **Alice in Wonderland.**

Carton, Sidney. The hero of Dicken's *Tale of Two Cities.* Through the greater part of the story Carton appears as a dissipated and unprincipled man, but at the end shows himself a hero by taking the place of a condemned prisoner, Charles Darnay, to whom he bears a striking resemblance. By this means he saves Darnay and secures the happiness of Darnay's wife, with whom he is in love, but loses his own life.

Cass, Godfrey. Godfrey Cass, in George Eliot's *Silas Marner,* is a self-centered man who had concealed a previous marriage from his wife, Nancy, a woman whose main characteristics were "an unselfish clinging to the right, and a sincerity clear as the flower-born dew." His character is skillfully drawn He had a "wavering nature, too averse to facing difficulty to be unvaryingly simple and truthful". At last, however, he brings himself to confess the secret he has concealed and partially redeems himself thereby. He is a character of the sort George Eliot frequently introduced in her novels, one in whom weakness and amiability mingle.

Castle Rackrent (1801) Story by Maria Edgeworth. It is a chronicle rather than a novel, recounting without a very careful plot, the follies and crimes of an Irish family through several generations. The story lacks plot but has humor and depicts character well. Scott acknowledged great indebtedness to Miss Edgeworth

Caxton, William (1422-91), first English printer. Important for spreading the influence of the Renaissance through England.

Caxton, The (1850). Novel by Bulwer-Lytton. The story concerns a love-affair interrupted by wordly ambition. There is gentle satire of politics and of society. One of Lytton's best novels.

Cellini, Benvenuto (1500-71), Florentine artist in gold, silver, and bronze, whose memoirs sketch his own brilliant and spectacular career, and also give a good picture of the most interesting of all periods in the history of Italian art. *Autobiography.*

Chanson de Roland or "The Song of Roland" is a poem in Old French which tells the heroic story of the fight of Count Roland, a leader in Charlemagne's army, against the Saracens. Roland's army was treacherously ambushed at the pass of Roncesvalles. There a prodigious combat ensued in which the knights did marvelous deeds of valor. Roland fought more fiercely than any, with his sword, Durendal, but at last, fatally wounded, was constrained to sound on his horn of ivory a call for help. The call was heard by Charlemagne thirty leagues away. He came and took revenge on the Saracens.

Chateaubriand, Francois Rene, Viscount de (1768-1848) Champion of Christianity and of the American Indian, whom de depicted as a noble savage.

Chatterton, Thomas (1752-70). A precocious genius who passed off his own poems as ancient works he had found in manuscript. Unappreciated and despairing, he committed suicide in his eighteenth year. *The Rowley Poems,* were his chief productions

Chesterfield, Lord (1694-1773), statesman and author, best known for his *Letters to his Son* in which he gives wordly advice for self advancement. His attempt to take the credit for aiding Samuel Johnson in writing his *Dictionary* (without deserving the credit), called forth a stinging letter from Johnson which marked the end of the system of patronage of authors.

Chesterton, Gilbert K. (1874-), an English essayist who writes in a clever, paradoxical style.

Childe Harold's Pilgrimage. A narrative and descriptive poem by Lord Byron. Canto I. describes travels in Spain and Portugal; Canto II. in the near East; Canto III in Belgium (including a visit to the field of Waterloo, a year after the famous battle), and up the Rhine to Switzerland; Canto IV. in Italy, with famous descriptions of Venice and Rome.

Christmas Carol, A. A ghost story of Christmas, by Charles Dickens, published in 1843, with illustrations by John Leech. "We are all charmed," wrote Lord Jeffrey to the author, "with your *Carol,* chiefly, I think, for the genuine goodness which breathes all through it, and is the true inspiring angel by which its genius has been awakened. The whole scene of the Cratchits is like the dream of a benevolent angel, in spite of its broad reality, and little Tiny Tim in life and death almost as sweet and touching as Nelly."

Churchill, Winston (1871-), an American novelist who chooses American problems and settings for his stories. Author of *The Crisis* and *Richard. Carvel.*

Cid, The, (1636). A play of the cape and sword type by the French dramatist, Corneille, who adapted it from a play in Spanish. It preserves the legend of the Cid, a hero of ancient Spanish romances and chronicles. The Cid killed the father of the girl he was to wed because of an insult to his own father. His betrothed then demanded vengeance upon him, but eventually found her love stronger than her desire for revenge.

Clarissa Harlowe, The History of. A novel by Samuel Richardson, published in 1751. It is written chiefly in the form of letters, and tells the story of a young woman of good country family who is abducted by the libertine, Lovelace. Clarissa's misfortune and death form the story, which is expanded to eight volumes by the microscopic analysis of every emotion of the unfortunate heroine. She was the favorite heroine of Richardson's generation.

Climax. The word is derived from a Greek word meaning ladder, and properly applies to the complete rising action of a plot. It has, however, come to be used of the acme, or highest point of the rising action.

Cloister and The Hearth, The. An historical novel by Charles Reade, depicting the life of the fifteenth century in Europe, when the Renaissance ideals were struggling with the mediaeval. The journey of the hero, Gerard, through Holland, Germany, France, and Italy gives a chance for the author (1) to recount many thrilling adventures; (2) to describe peasants, clergy, burgomasters, adventurers, German mediaeval innkeepers, robbers, deported French villagers, and Italian coutiers; and (3) to emphasize the power of the church by description and incident. The author studied innumerable documents to enable himself to write his novel. The hero, Gerard, and the herione, the devoted Margaret, are represented as being the parents of the distinguished Dutch scholar, Erasmus.

Coleridge, Samuel Taylor (1772-1834), English poet and critic. He was one of the English Lake Poets, so-called from the section in which they preferred to live. With Wordsworth he published the famous *Lyrical Ballads* in 1798. This work heralded a new era of imaginative work. Like De Quincy, Coleridge was a victim of the opium habit. Best known works: *Kubla Khan, Christabel, The Ancient Mariner.*

Collins, Wilkie (1824-89), an English novelist whose stories are distinguished for their elaborate plots. He wrote *The Woman in White* (1860) and *The Moonstone* (1868).

Comedy. In comedy men and women are represented in a conflict with circumstances which renders them ridiculous and is ended without disaster.

Complete Angler, The (1653). A book of narratives in dialogue form, with scenes from nature, advice on angling, songs and reflections pleasantly mingled. The author was Isaac Walton.

Comus. This is a masque written by John Milton for a Michaelmas festival in 1634 at Castle Ludlow, the home of the Earl of Bridgewater, in Shropshire. Music written by Henry Lawes and stage settings designed by Inigo Jones, accompanied its production. The triumph of virtue over evil is the tneme. Virtue is embodied in the lady, who is lost in the wood and lured to the home of the enchanter Comus, a son of Circe. She refuses to drink his potion, and is rescued by the Attendant Spirit, with the aid of Sabrina, the water-nymph. The high moral quality of the Lady's speeches makes a striking contrast to the gross materialism of Comus's utterances.

Confessions of an English Opium Eater (1821). Thomas De Quincey's account of his own experiences, telling how much opium he could take in a day and what the effects were, recounting various trivial events of his life and showing how these became the material of his dreams, glorified and distorted by the influence of the drug. This book, first published without his name, brought De Quincey a ready market for his writings and confirmed him in a literary career.

Conrad, Joseph (1857-). A novelist of Polish birth who writes in English. He is the author of stories of thrilling adventure, chiefly of the sea. Among his best works are: *Youth* (short stories); *The Arrow of Gold, Victory* (novels).

Cooper, James Fenimore (1789-1851). An American novelist who describes life on the Indian frontier and at sea. *The Leather-Stocking Tales, The Pilot,* and *The Spy* are the best of his works. He has been widely read in other countries.

Coriolanus. An historical play of Shakespeare's later dramatic period. The scene is laid in the time of the early Roman republic in the fifth century B.C. Coriolanus was banished from Rome, and, in consequence, led the Volscian troops against his native city. He was persuaded to turn back only by the prayers of a procession of Roman matrons, headed by his own wife.

Cotter's Saturday Night, The. A poem by Robert Burns published in 1786. The picture he gives of the Scotch laborer's family gathered around the hearth to rest and worship drives home the truth that the strength of a nation lies in its devotion to work and religion.

Count of Monte Cristo, The. A novel by the elder Dumas. This is one of the most exciting boy's books in the world. Edward Dantés is unjustly imprisoned for twenty years through the evil schemes of two rivals and the corruption of a magistrate. While in prison he is told the secret hiding place of an enormous treasure on the Island of Monte Cristo, and, escaping from his dungeon, finds the treasure, and establishes himself as Count of Monte Cristo, a mysterious person of unparalleled wealth. The sole purpose of his life comes to be the punishment of those who had wrongfully sent him to prison, but though he accomplishes his purpose he finds that revenge is not sweet.

Cowper, William (1773-1800). An English poet. Author of *The Diverting History of John Gilpin* (a humorous ballad, widely known), and *The Task.*

Crabbe, George (1754-1832). English poet who wrote realistic descriptions of country life in *The Village.*

Craddock, Charles Egbert (1850-). Under this pen name Mary Noailles Murfree, American novelist, writes stories of life in the Tennessee mountains. *The Prophet of the Great Smoky Mountains.*

Cranford is a novel by Mrs. Gaskell, published in 1853. It makes interesting to the reader the petty economies and pleasures of a group of old ladies in an English village. Miss Mattie Jenkins, Miss Betty Barker, Miss Pole, Miss Forrester, and others are described with sympathetic humor.

Crawford, Francis Marion (1854-1909). An American writer of romantic novels, many of which have Italy as their scene. *A Roman Singer, Saracinesca.*

Crawley, Rawdon. In Thackeray's *Vanity Fair,* "a novel without a hero," Rawdon Crawley is one of the chief male characters. Good of heart, slow of intellect, with boyish affection and spendthrift neglect of obligations mingling, he is best remembered for the great scene in which he strikes down the profligate Lord Steyne in defence of his honor. The character of Rawdon Crawley is in itself adequate proof of the completeness with which Thackeray understood the "gentleman" and the 'gentleman's code."

Criticism. The chief objects of literary criticism are (1) to judge, (2) to interpret, (3) to give personal impressions of books. Criticism may be favorable or adverse. It has been said that the aim of criticism is to give answers to three questions with regard to a book: (1) What is it about? (2) How is it written? (3) Is it worth while? Matthew Arnold defines criticism as "a disinterested endeavor to learn and propogate the best that is known and thought in the world." (See *Suggestions for Preparing Reports on Books,* in another part of this *Encyclopedia.*)

Crothers, Samuel (1857-). Unitarian minister and author of witty essays. *The Gentle Reader*

Curtis, George William (1824-1892). American editor and political orator; author of *Prue and I.*

Cycles. Cycle is a word used to designate works which taken together represent a complete story or a complete division of some great narrative material. For instance, all the romances telling of Sir Gawain constitute the Gawain Cycle. (See Arthurian Romances.) A cycle of miracle plays is a group which tells the biblical story of mankind from creation to the day of doom.

Dame Care (Frau Sorge) (1888). This story by Hermann Sudermann tells of a boy whose life was so full of misfortune that he seemed to be a foster-child of Dame Care. His father was shiftless but tyrannical, his mother full of complaint, his sisters somewhat disreputable. The boy made great sacrifices in attempting to save the family honor. At the close of the story he seems about to gain release from trouble in a happy marriage.

Dana, Charles A. (1819-97). Editor of the *New*

York Sun from 1868 to his death.

Dana, Richard Henry, Jr. (1815-82). Author of *Two Years Before the Mast*, an excellent sea story for boys.

Daniel Deronda (1876). George Eliot's last novel. In this novel two stories are merged. The first tells of the life of Gwendolyn Harleth, a beautiful but selfish girl. She marries Grandcourt, a cynical man of the world, and is very unhappy. At last she is partially released from misery by his death. The second story, which is the main thread of the plot, tells of Daniel Deronda, a boy who is ignorant of his parentage. He falls in love with a Jewish girl, Mirah, and eventually learns that he is himself the son of a Jewish opera singer. The two stories unite through the intimacy which grows up between Gwendolyn and Daniel Deronda, and the improvement of her character under his influence. George Eliot wrote the novel as a study in racial heredity, and succeeded in making it an interesting defence of the Jewish tradition.

D'Annunzio, Gabriel (1864-). Italian. Author of plays and novels. He has attracted much attention by his occupation of Fiume. *The Triumph of Death.*

Dantes, Edward, see **Count of Monte Cristo.**

D'Arblay, Madame, see **Burney, Frances.**

Darwin, Charles (1809-82). An English scientist whose book, *The Origin of Species*, published in 1859, presented elaborate evidence in support of the theory of evolution, and had a marked effect upon the thought of the time.

David Balfour (1893). Romantic novel by Robert Louis Stevenson. This novel continues the story of *Kidnapped*. It tells of David's attempt to help Alan Breck Stewart out of Scotland, of his own imprisonment, subsequent release, and marriage after varied fortunes to Catriona Drummond.

David Copperfield (1850). Novel by Charles Dickens. It gives the biography of the hero, including his sad childhood and bitter experiences as student and apprentice, the loss of his child-wife, Dora, and the later business prosperity and second marriage of his manhood. The novel is undoubtedly to some extent autobiographical. David's nurse, Peggotty; his tyrannical stepfather, Mr. Murdstone; his aunt, Betsy Trotwood; his landlord, Mr. Micawber, and other characters, are famous examples of Dickens's ability in characterization. Most of the characters are eccentric. David Copperfield was Dicken's own favorite among his works and is sure to hold its place because of the humor, kindliness, and graphic delineation of persons and places. No one can afford to be unfamiliar with this novel.

Davis, Richard Harding (1864-1916). American war correspondent and author of delightful stories of adventure. *Gallagher and Other Stories, The Princess Aline.*

Daudet, Alphonse (1840-98). French author of pleasing novels and short stories. He prefers to deal with subjects from common life. The Tartarin series, including *Tartarin of Tarascon*, are humorous stories about a boastful French provincial.

Decameron. A collection of one hundred tales by Boccaccio, an Italian of the fourteenth century. A group of ladies and gentlemen isolate themselves in the garden of a country estate to escape from the plague, according to the opening of the book, and there tell these hundred stories for their amusement.

Defoe, Daniel (1659-1731). An English political pamphleteer and realistic novelist. He had the gift of making a story seem real by putting in a great deal of small detail. Author of *The Shortest Way With Dissenters*, a tract which brought him to trouble with the authorities of church and state; *The Journal of the Plague Year*, which is almost wholly fiction; and *Robinson Crusoe.*

Deland, Margaret (1857-). American writer of novels and short stories of village life. *Old Chester Tales. The Awakening of Helena Ritchie.*

De Morgan, William (1839-1917). English novelist. He is the author of books which have been compared to the novels of Dickens, because of their subject-matter, tone, and length. He began writing novels after he was sixty years old. *Alice for Short, Joseph Vance.*

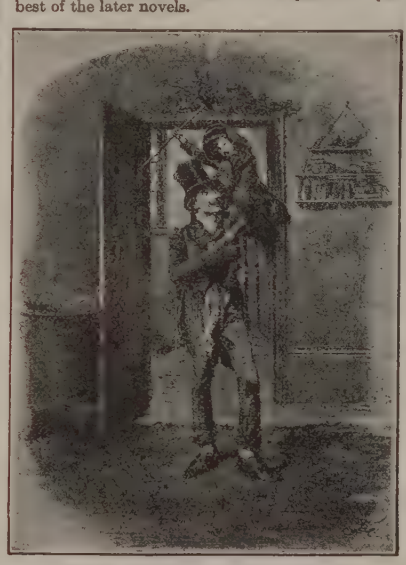
De Quincey, Thomas (1785-1859). A brilliant English prose writer, famous for the musical quality of his style. His habit of taking opium undoubtedly affected his writing, increasing a natural tendency to queer dreams. Carlyle wrote of him: "Eccovi, this child has been in hell!" Some of his best works are *Levana and Our Ladies of Sorrow, Confessions of an English Opium Eater, The English Mail Coach.*

Desdemona. The heroine of Shakespeare's play, *Othello*. Her character is one of entire sincerity and devotion. Rarely has a dramatist succeeded so well in portraying innocence without any sacrifice of interest. Hazlitt says of her, "we lose sight of her personal charms in her attachment and devotedness to her husband." That a woman of this sort should be killed by the man she loves makes a tragic situation of the most powerful kind.

Deserted Village, The. A poem of about three hundred lines by Oliver Goldsmith (English), written in heroic couplets. It is supposed to describe Goldsmith's native village in Ireland, which was depopulated to make part of the large private estate of a noble. Goldsmith introduces into the poem descriptions of the village parson and of the schoolmaster. These portraits are done with a kindliness and truth which makes them favorites. Throughout, the virtues and the pleasures of common life are depicted with sympathy.

Diana of the Crossways. A novel by George Meredith in which Diana, the heroine, is continually finding herself in a critical position. She is always coming to the crossways, that is to say, and must choose which of two difficult paths to take. Her difficulties are those of love, marriage, divorce, and money matters. They offer a chance for the making of several witty epigrams, such as Meredith is fond of weaving into his narratives. Diana is a remarkable study in feminine character. She has wit, beauty, and a capacity for loyalty. Her betrayal of a state secret to a newspaper is an incident the probability of which has caused a good deal of discussion. It has been alleged that her character was modeled upon that of Mrs. Norton, granddaughter of Richard Brinsley Sheridan.

Dickins, Charles (1812-70). The most popular of English novelists. Dickens's genius was best employed in telling stories of odd and humorous characters, but he enjoys great fame for the tender and pathetic narrative in which his work is often artificial and melodramatic. Perhaps the best of his works are: *Pickwick Papers* (early humorous sketches), *Tale of Two Cities* (a story of the French Revolution), *David Copperfield* (partly autobiographical), *Bleak House* (a story of the law's delay), *Christmas Stories* (in which the author's optimism finds best expression), and *Great Expectations* (the best of the later novels.



DICKENS CHRISTMAS CAROL

Dickinson, Emily (1830-86). A New England poet, author of quiet and simple verses.

Doctor Faustus, see **Faust.**

Dr. Jekyll and Mr. Hyde by Robert Louis Stevenson, was published in 1886. This is the story of a London physician of good reputation, who by means of a drug which he has discovered can change himself from Dr. Jekyll to Mr. Hyde, a person of cruel and criminal tendencies. The story is, therefore, one of a double personality, and is readily understood as an allegory of the good and the bad which unite in every human being. The allegory is carried to its natural conclusion when the evil personality predominates and Dr. Jekyll becomes transformed into Mr. Hyde without the aid of his drug and even against his own wish.

Dodgson, C. L., see **Alice in Wonderland.**

Dogberry. A character in Shakespeare's *Much Ado About Nothing*. Dogberry is a conceited and ignorant official with a blundering tongue. Hazlitt calls him a standing record of "formal gravity of pretension and total want of common understanding."

Doll's House, The. A play by Henrik Ibsen, the great Norwegian dramatist. Nora, the heroine, is a woman of restricted education who has been brought up to be merely an ornament, or doll, in the house of her husband. She makes tragic mistakes in consequence of this, and finally, at the end of the play, leaves the house to learn for herself the necessary lessons of which she has been deprived. The play is a protest against undue restriction of woman's sphere.

Dombey and Son (1846-7). A novel by Dickens. It tells a melodramatic story of the Dombey family. Mr. Dombey neglects his gentle daughter, Florence, but takes great pride in Paul, his son. His pride is shattered by misfortunes, however. Mrs. Dombey, a second wife, humiliates him by deserting the house; Paul dies while still a boy; Mr. Dombey's business fails. Meanwhile Florence gains the friendship of some plain seafaring people and marries one of them, Walter Gay. Her good fortune and faithfulness relieve Mr. Dombey's old age. Among the minor characters Cap'n Cuttle, with his seaman's jargon, is prominent. Paul Dombey's death afforded Dickens a chance for exhibiting the pathos of which he was fond.

Don Juan. A character famous in literature as the type of licentious adventurer. After Don Juan's many escapades, according to legend, the statue of a man he had killed in a duel descended from its pedestal and delivered him to the devil, body and soul. Mozart has an opera founded on this story. The title is *Don Giovanni*. Byron's *Don Juan* and Shaw's *Man and Superman* show its influence. There are dramas based upon the story in various languages.

Don Quixote (1605-15). A famous satirical romance by Cervantes, a Spaniard. The two chief characters are Don Quixote, a dignified gentleman crazed by reading stories of chivalry, and Sancho Pansa, an ignorant but shrewd country fellow, his servant. The ill-sorted pair go adventuring, and Don Quixote's insane attempt to demean himself always as a knight leads them into many ridiculous situations. To his disordered mind windmills are giants and hotel wenches are beautiful princesses. After long wanderings the odd pair return to the village from which they set out and Don Quixote regains his sanity. The book satirized the absurdities into which chivalric stories and chivalric sentiment had degenerated. It is so full of fun and wisdom that dramas and stories have been derived from it in many languages.

Donatello is a young Italian count in Hawthorne's *Marble Faun* who bears a marked resemblance to the famous statue of a faun by Praxiteles. His character is that of a carefree pagan until he falls in love with Miriam and commits a crime for her sake. Then he develops into a conscience-stricken member of civilized society, and gives himself up to justice. Throughout the story Hawthorne makes a mystery of the resemblance of Donatello to the statue, producing thereby that sense of wonder so familiar to readers of his works.

Dooley, Mr., see **Dunne, F. P.**

Doyle, Sir Arthur Conan (1859-). Englishman, author of short stories and historical romances. The best known are the *Sherlock Holmes Series* of detective stories, and *The White Company*, an historical romance.

Drama. The drama is a form of art in which a story is presented by means of action.

Dramatic Monologue. A form of art, perfected by Robert Browning, in which a speaker reveals his character by the words he utters at a critical (or dramatic) moment of his life.

Drinkwater, John (1882-). Contemporary English playwright. Author of the successful play *Abraham Lincoln.*

Drummond, William Henry (1854-1907). A Canadian poet who wrote in the dialect of the French-Canadian habitant. *Johnny Courteau, The Habitant.*

Dryden, John (1631-1700). Author of dramas, poems, and essays. He was a man of strong intellect who wrote in a polished style.

Dumas, Alexandre (the elder) (1803-70). Frenchman; author of an enormous number of novels written alone and with collaborators. Professor Cross says: "Dumas made history a background for imaginary adventure and sword-play." *The Count of Monte Cristo, The Three Musketeers*, and *Twenty Years After*, are the best.

Dumas's son, Alexandre, became a famous dramatist Because the names of the two men are the same, it is customary to designate them as "father" and "son," or "the elder" and "the younger."

The Dunciad. "The epic of the dunces," a satire in heroic verse by Alexander Pope. It is directed against the people who had offended the author, and especially against authors. Daniel Defoe and Robert Walpole were among those satirized.

Dunne, Finley Peter (1867-). An American humorist who writes in the dialect of an Irish-American very shrewd and entertaining comments upon interests of the day, especially political affairs.

Dunsany, Lord (1878-). A contemporary English playwright. *The Gods of the Mountains.*

Edgeworth, Maria (1767-1849). An Irish novelist who excelled in descriptions of Irish life and manners. *Castle Rackrent.*

Edwards, Jonathan (1803-58). A minister and writer of stern Puritanical works of theology. He was missionary to the Stockbridge Indians, and president, for a brief time just before he died, of Princeton College. *The Freedom of the Will, Sinners in the Hands of an Angry God.*

Eggleston, Edward (1837-1902). An American novelist who pictures early days in Indiana. *The Hoosier Schoolmaster.*

Egoist, The (1879). English novel by George Meredith. This was the novel which established Merideth with the reading public at home and abroad. The interest centers in Sir Willoughly Patterne and his fastidious search for a woman sufficiently perfect to become his wife. There is little action in the novel, but much very subtle analysis of egoistic sentiments. R. L. Stevenson wrote in praise of the novel in his essay "Books Which Have Influenced Me."

Egyptian Princess, The (1864). Historical romance by the German author, Georg Ebers. This novel unfolds a story of deception and revenge in ancient Egypt and Persia. The main story concerns

Cambyses, deceived into marrying Nitetis, an Egyptian princess who he thinks is the daughter of the king. He spurns Nitetis, when he learns the truth, and revenges himself upon his deceivers. The novel is based upon a careful study of ancient times, and depicts them with fidelity. Several historical personages are introduced.

Elegy. A funeral song or a song in honor of the dead.

Elegy Written in a Country Churchyard. A much quoted poem by Thomas Gray, the English poet of the eighteenth century. It embodies happily phrased reflections upon fame and death. Stoke-Pogis, near Eton, is the churchyard described.

Elia. The name assumed by Charles Lamb in writing his essay. He took this name from a clerk in the South Sea House.

Eliot, George (1819-80). Under this name Mary Ann Evans wrote her novels. She was a woman of remarkable intellect, well known as a translator before she began to write fiction. As a novelist she is notable for her sincerity, her insight into character, and her sympathy with common life. She was greatly influenced by the scientific thought of her time, and shows this influence in the comments upon life introduced into her stories. Her best novels represent English country life: *Adam Bede, The Mill on the Floss, Silas Marner, Middlemarch. Romola*, a story of Florentine life in the fifteenth century, is only a little inferior to these.

Elsie Venner. This is a novel of New England life by Oliver Wendell Holmes, published in 1859-60. It is based on the theory that pre-natal accidents may influence the character of a human being. Elsie Venner has a nature so strange that it seems allied to that of the snake which bit her mother before she was born.

Emerson, Ralph Waldo (1803-1882). American essayist, poet, lecturer. Emerson was a writer of energetic intellect, with ethical enthusiasms very valuable in the growing democracy at home and in the intellectual relationships with Europe which were developing.

Emile (1762). A narrative by Jean Jacques Rousseau, French novelist and philosopher. Though narrative in form, the book aims to lay down an ideal method of educating children. Emile, the hero, is a boy who learns directly through experiment and personal experience. Many educators since Rousseau have based their theories upon his principles.

Emma (1816). This is one of Jane Austen's realistic stories of English village life one hundred years ago. The charming but officious heroine, who is anxious to make matches among her friends, finally marries her wise counsellor, Mr. Knightley. So cleverly drawn are the characters that they seem like old friends.

Epic. An epic is a long narrative poem in a dignified style, celebrating the deeds of great heroes. Example: Homer's *Iliad*, Virgil's *Aeneid*, Milton's *Paradise Lost*.

Epictetus. Greek slave (first century A. D.) who gained his freedom and became famous as a philosopher, teaching calm endurance of the ills of life. *Discourses*.

Esmond, Beatrix. An interesting character in Thackeray's novel, *Henry Esmond*, and in its sequel, *The Virginians*. In the first novel she is a coquette, none too scrupulous, but beautiful and vivacious enough to charm men. With her, Esmond, the hero, is in love until her flirtation with the pretender to the throne of England reveals to him her true character. In *The Virginians* she is an old woman, conceited and not in the best repute, her beauty gone, a pathetic and unpleasant remnant of her old self.

Essay, The. A brief expression of opinion either upon some special aspect of a subject, or upon the whole subject, treated very generally. The essay is usually in prose. Examples: Montaigne's *Essays* (French); essays in the *Spectator* and *Tatler*, by Addison and Steele.

Essay on Man, An. A verse essay by Alexander Pope (English), in which the author attempts to explain the nature of man, his place in nature, and his relation to God. The style is epigrammatic.

Eugene Aram (1832). A novel by Bulwer-Lytton. The hero is a man of blameless character who has committed murder under unusual circumstances. The work is founded upon an incident of actual life, and furnishes an early instance of the tendency of our times to sentimentalize the criminal.

Eugenie Grandet (1833). A novel by Balzac (French). This is a story of Eugenie Grandet, daughter of a rich miser. Left with great wealth by the death of her father, she unselfishly helps the man she loves to marry another woman, and, left alone, without the power of enjoying her wealth, devotes herself to philanthropy. Her whole life is one of self-sacrifice.

Eustacia Vye, see **Vye, Eustacia.**

Evelina, by Frances Burney, is a novel which portrays the manners of London society in the eighteenth century. It consists chiefly of the letters of Evelina, a young girl visiting in London, to her guardian, Mr. Villars, in the country, describing her visits to Bath and Ranelagh, to the opera and the play. A mystery about the heroine and several complicated love affairs enliven the plot.

Evelyn, John (1620-1706). An English scholar whose most interesting work is his *Diary*.

Everdene, Bathsheba. The heroine of *Far From the Madding Crowd*, a novel by Thomas Hardy (English). Capricious, headstrong, and a bit vain, she has nevertheless enough womanly charm and beauty to win the love of three men. Something sterling in her character survives the tragic experiences which life brings her, and unites her finally with Gabriel Oak, who has loved and deserved her for years.

Everett, Edward (1794-1865). American statesman, editor, and orator, governor of Massachusetts, minister to England, president of Harvard.

Expedition of Humphrey Clinker (1771). A novel in the form of letters, written by Tobias Smollett (English). The novel tells of the journey of the hero and of Mattew Brambel about England. The characters are humorous; the incidents coarse but amusing; the pictures of the life of the times vivid.

Fable. A simple narrative which has the purpose of illustrating or teaching a plain truth. The most famous fables are those supposed to have been written by Aesop, an ancient Greek. In the most familiar fables animals are represented as speaking and acting like human beings.

Faerie Queene (1590-96). A long poem by Edmund Spenser. The poem was planned as an epical account of the virtues of the Christian knight. Only six complete books exist, though Spenser planned to write twelve. The six books tell of the adventures of knights and ladies, each of whom represents a virtue. Holiness, temperance, chastity, friendship, justice and courtesy are represented, each in a book. Spenser professed to be writing an allegory, but no one has been able to understand completely the application of his incidents and characters to events and persons of the age.

Falstaff, Sir John. A famous character in Shakespeare's *Henry IV.* and *The Merry Wives of Windsor*. He is a fat old rogue, the leader of a gang of thievish ruffians with whom Prince Hal, later King Henry V., consorts. Dr. Johnson says: "He is a thief and a glutton, a coward and a boaster, always ready to cheat the weak and prey upon the poor, to terrify the timorous and insult the defenceless". Yet he "makes himself necessary to the prince by perpetual gaiety, and by unfailing power of exciting laughter".

Far From The Madding Crowd, A novel by Thomas Hardy, appeared in 1874. The love affairs of the delightful rustic heroine, Bathsheba Everdene, are the basis of a narrative which includes vivid and charming pictures of rural life, such as the lambing and the scenes at the public house. Other models of graphic description in the book are the scene of the storm at night and of the sword play in the glen.

Farce. A form of comic drama in which the humor is often boisterous, the situations somewhat improbable, and the characters unreal.

Farewell Address, see **Washington's Farewell Address.**

Fathers and Sons (1861). A novel by Turgenev (Russian). The novel depicts the rebellion of the younger generation against the political and social institutions sanctioned by the elder generation. The book is interesting for the insight it gives into the intellectual unrest of the period.

Faust. Faust, or Dr. Faustus, is a famous literary character appearing in dramatic works in several modern languages. He typifies the gifted human being who is eager to enjoy life completely, to know all, to have all power, and to enjoy all pleasure. This zest for living brings him to realize that the satisfaction of all his desires will mean the loss of his soul. Thus the story of Faust, however told, presents a spectacle of contrasting light and shade, portraying the life of man in all its richness, but with the gloom of supernatural evil always in the background. Dramas: (English) Marlowe's *Dr. Faustus;* (German) Goethe's *Faust*. Operas: (German) by Schumann; (French) by Gounod and by Berlioz.

Federalist, The (1787-88). A series of papers which advocated the principles embodied in the proposed constitution of the United States. It was written by Hamilton, Madison, and Jay.

Fiction. Fiction is a term which properly describes all representations of scenes, characters, or events, some of which are imaginary. The word is, however, commonly applied to novels, short stories, and romances, rather than to dramatic works. Fiction and fact are antithetical in meaning.

Field, Eugene (1850-95). American author, best known for his verses for and about children. *Love Songs of Childhood*.

Fielding, Henry (1707-54). English dramatist and novelist, most famous for his novels. They give hearty and honest pictures of life, sometimes frankly coarse, but never mean. The candor of Fielding's work has given him an influence over later writers, who have admired the quality in him. His novels are: *Joseph Andrews, Tom Jones*, and *Amelia*. Byron called him "the prose Homer of human nature."

Fiske, John (1842-1901). American historian. Author of *Periods in the Modern History of America*, a series of histories.

Fitch, Clyde (1865-1909). American playwright, author of *The Truth, Captain Jinks of the Horse Marines*, and *Nathan Hale*.

Fitzgerald, Edward (1809-1883). An Englishman; translator from the Persian of the *Rubaiyat*, or quatrains, supposed to have been written by Omar Khayyam in the twelfth century.

Flaubert, Gustave (1821-80). French novelist, famous for the elaborate care with which he wrote his stories. *Madame Bovary*.

Folio. Literally a *leaf*. The word is commonly used to designate a book of the largest size. Strictly it applies to a book made of sheets of paper each of which is folded once in the process of making the book.

Foster, Stephen C. (1826-64). American poet, best known for his songs in negro dialect, such as *Old Black Joe* and *Old Kentucky Home*.

Fox, John Jr. (1863-1919). American novelist who wrote conventional and popular stories with the scene laid in the South. *The Little Shepherd of Kingdom Come, The Trail of the Lonesome Pine*.

Foxe, John (1516-87). English Protestant. Author of the *Book of Martyrs*, a very widely read work giving a prejudiced account of the religious persecution under Queen Mary.

France, Anatole (1844-1924). French author whose real name is Thibault. Best known for his narrative work in which irony, tenderness, humor and fancy mingle. Best known work, *The Crime of Sylvestre Bonnard*.

Francesca Da Rimini. A character in Dante's *Divine Comedy*. In real life she was a person of only local importance, but through Dante's masterly handling of her story she has become a famous personage. She was the wife of Gianciotto Malatesta, but fell in love with his brother Paolo. Their reading together of an old romantic story led to the expression of their love. When their love was discovered they were both killed by Gianciotto. In the *Inferno*, Francesca suffers for her sin, saying in her suffering: "There is no greater pain than to remember happy days in days less fortunate." The story of Francesca and Paolo has been given dramatic form by Stephen Phillips (English), George Boker (American), and D'Annunzio (Italian).

Frankenstein (1818). A "scientific" romance by Mrs. Shelley, wife of P. B. Shelley, the English poet. A young man named Frankenstein becomes interested in discovering the principle of life, and after long study constructs a being in likeness of a man, to which he succeeds in imparting vitality. The monster thus created upon the laboratory table finds his life unhappy because his frightful appearance keeps all human beings aloof, and demands that Frankenstein create a companion for him. When Frankenstein refuses, the monster becomes an avenging fury venting his resentment in a series of brutal crimes which culminates in Frankenstein's death. The monster is last seen floating to his own extinction upon an ice-raft in the arctic sea.

Franklin, Benjamin (1706-90). Early American statesman, inventor, and author of an *Autobiography* and *Poor Richard's Almanac*. He was a poor boy who learned the printer's trade, educated himself by reading and observation, and became prosperous and famous both at home and abroad. He was a signer of the *Declaration* and the *Constitution*, and ambassador to France. He made Philadelphia the center of the American culture of his time. No man in the history of modern times has shown such pre-eminent ability in so many fields as Franklin.

Free Verse. Free verse is a form of writing midway between verse of the usual rhymed sort and prose. It has "unrhymed cadence," as Miss Amy Lowell says. It is writing "whose cadence is more marked, more definite, and closer knit than that of prose, but which is not so violently nor so obviously accented as the so-called 'regular verse'." Good examples are to be found in the writing of Miss Amy Lowell, Mr. Robert Frost, Mr. Edgar Lee Masters.

Freeman, Mary E. Wilkins (1862-). A writer of realistic short stories describing life in New England villages. Her work has humor and pathos alike. *The Revolt of Mother* is one of the best short stories in the English language. Her best work is in the volume called *A New England Nun and Other Stories*.

Freneau, Philip (1752-1832). An early American writer of poems on political subjects, humorous poems, and poems about nature. In politics he was a strong anti-Federalist. Some of his best poems are: *The British Ship, The Wild Honeysuckle*, and *The Indian Burying Ground*.

Froissart, Jean. A French chronicler of the fourteenth century who gives a faithful picture of men and events of his time. He gives full expression to the ideals of chivalry as he comprehended them. His *Chronicle* is the best contemporary account that we have. Scott's historical novels dealing with the middle ages have been described as "Froissart modernized."

Frost, Robert (1875-). An American poet who has attracted much attention for his poems of New England country life, many of them in free verse. *North of Boston*.

Fuller, Margaret (1810-50). An American essayist and literary critic. She was a transcendentalist, editor of the *Dial*, and interested in the Brook Farm Experiment. Married Marquis Ossoli. Author of *Women in the Nineteenth Century*.

Gallegher and Other Stories. A volume of short stories by Richard Harding Davis. Gallegher, the title story, is an excellent story of a quick-witted boy in a newspaper office who turns amateur detective and has many thrilling adventures. Of the other stories in the volume the best are perhaps the Van Bibber stories, in which the hero is always getting into difficulties and always getting out with neatness, ease, and despatch. The whole volume is readable.

Galsworthy, John (1867-). English novelist and playwright. Among his best works are *The Patricians*, a novel; and *Strife* and *Justice*, plays.

Garland, Hamlin (1860-). American author of

narratives which often depict life in the Middle West. *A Son of the Middle Border* is autobiographical. *Main Travelled Roads.*

Garrick, David (1717-79). A famous actor, especially of Shakespearean parts; a friend of Dr. Johnson, and member of the Literary Club. In spite of short stature he succeeded in acting tragic parts as well as comic. Goldsmith described him as "an abridgement of all that is pleasant in man".

Garrison, William Lloyd (1805-79). An American orator and editor. The avowed purpose of his paper, *The Liberator*, was to effect the abolition of slavery. Garrison was one of the more violent or radical abolitionists. He was once dragged through the streets of Boston for expressing his views upon the policy of the government.

Gaskell, Mrs. Elizabeth (1810-65). An English novelist of much personal charm. She is best known for her novel, *Cranford*, in which she tells the story of a community of ladies. She was interested in the economic questions of her day and wrote of them, but is remembered best for her pictures of quiet village life.

Gibbon, Edward (1737-94). An English gentleman of means who gave his life to the most careful study of Roman antiquities, and wrote *The Decline and Fall of the Roman Empire.*

Gil Blas. A rambling tale of adventure written in the early eighteenth century by a Frenchman, Alain Rene Le Sage. The purpose which the author announced was to give true pictures of life and convey moral instruction. The scenes of the story are laid in Spain. Gil Blas sets forth with a mule and a little money to complete his education at the university and to seek his fortune. He is diverted from his first object by the accidents of his journey and his own love of adventure. Many lively and humorous incidents ensue, in the course of which the reader is enabled to become acquainted with all grades of society and all kinds of men and women, with the dens of thieves, the chambers of noblemen, the prison and the palace. The most famous character in the book is a quack doctor named Sangrado, who is depicted with great truth and satire. The book is a mine of incident seemingly invented without effort.

Gilbert, Sir William (1836-1911). An Englishman, author of the words of some of our best comic operas, like *The Mikado* and *Pinafore*, and of the highly diverting verses called *The Bab Ballads.* Sullivan composed the music for the operas, and the combination of Gilbert's words and Sullivan's music has proved unusually fortunate.

Gilder, Richard Watson (1844-1909). An American lyric poet, editor of *The Century* magazine for many years.

Gissing, George (1857-1903). An English writer of novels and short stories. He is particularly successful in showing the life of the poor. His novels are sad but give an impression of being true. They reflect the sadness of Gissing's own life. *The Odd Women, The New Grub Street.*

Glasgow, Ellen (1874-). An American novelist. Her best known work is *The Wheel of Life.* She often deals with the problems of women.

Godfrey, Cass, see **Cass, Godfrey.**

Godkin, Edwin Lawrence (1831-1900). A war correspondent and editor, born and educated in Ireland. He spent most of his life in America, and as editor of the *Nation* had a very important effect upon men and events. He was a fearless critic of political corruption.

Godwin, William (1756-1836). An Englishman who had a marked effect upon the men of his time, although he is now little read. He wrote novels, but is best known for an anarchistic treatise on society and government, entitled *Political Justice.*

Goethe, Johann Wolfgang Von (1749-1832). German. One of the greatest writers of modern times. He wrote plays, novels, and poetry. His best known plays are *Faust, Iphigenia in Tauris,* and *Hermann and Dorothea.* Carlyle translated one of his novels, *Wilhelm Meister's Apprenticeship.*

Gogol (1809-52). The "father of Russian realism". Author of *Dead Souls,* a novel, and *The Inspector,* a comic play.

Goldoni (1707-93). Italian. He was the author of many plays, comedies representing Italian life and types of character. The plots and the dialogue are especially good.

Goldsmith, Oliver (1728-74). Son of an Irish clergyman. Goldsmith is famous for his plays, his novel, *The Vicar of Wakefield,* and his poem, *The Deserted Village.* In addition to these he did a great amount of hack writing, and it has been said that he touched nothing with his pen which he did not adorn. His play, *She Stoops to Conquer,* still holds the boards. Very few plays see production for a hundred years. He was a very improvident and lovable character. In a comic description by one of his friends he was said to write like an angel but talk like poor Poll.

Grant, Robert (1852-). An American lawyer who has written several novels dealing with social problems. *Unleavened Bread, The Chippendales, Law and the Family.*

Grant, Ulysses S. (1822- 85) American general and President of the United States. Author of a very successful and interesting autobiography, called *Personal Memoirs.*

Gray, Thomas (1716-71). English poet. Gray was the author of *An Elegy Written in a Country Churchyard.* which is one of the most frequently quoted of English poems.

Greeley, Horace (1811-72). Founder and editor of the *New York Tribune.* Greeley had a very wide influence upon American opinion about the time of the Civil War especially throughout the country districts. His writing was often terse and effective. He made the phrase, "Go West, young man".

Gregory, Lady Augusta (1859-) One of the group of poets interested in the Irish Theatre. Author of many successful one act plays. *The Gaol Gate, The Bogie Man.*

Grimm Brothers,-Jacob (1795-1863), Wilhelm (1786-1859). German scholars, students of philology, grammar, and folk-lore. They are interesting to readers of literature because they collected and preserved the old German fairy stories.

Gulliver's Travels by Jonathan Swift is a satire published in 1726-27. The point of the satire is lost now that the conditions satirized are past, but the book remains interesting as a story. In four parts it tells of the hero's voyages to imaginary lands. pigmies; Book I to Brobdigna, the land of the pigmies; Book II to Brobdingang, the land of the giants; Book III to various countries, chief of which is Laputa, the home of eccentric scholars; and Book IV to the country of the Houyhnhums, a land where horses with an intelligence superior to that of mankind, carry on an ideal government. The first two books are the best.

Haggard, H. Rider (1856-) English novelist. Author of interesting stories, improbable in plot. His stories are told of strange lands. Africa is a favorite scene. *Allan Quatermain.*

Hakluyt, Richard (1552-1616). English traveller in the age of Elizabeth who compiled from the books of travel of the day a volume called *The Navigations, Voyages, and Discoveries of the English Nation.*

Hale, Edward Everett (1822-1909). An American clergyman best known to us for his story *The Man Without a Country.* Another well known story of his is *My Double and How He Undid Me.*

Halleck, Fitz-Greene (1790-1867). One of the so-called Knickerbocker school of writers, a group of men living in New York during the early nineteenth century. He was the author of *Marco Bozzaris.* He was a close friend of Joseph Rodman Drake who wrote *The Culprit Fay.*

Hamilton, Alexander (1757-1804). American statesman of the Revolutionary period. Chief contributor to the *Federalist.*

Hamlet. Perhaps the best known of Shakespeare's tragedies. Hamlet, Prince of Denmark, urged to seek vengeance by the ghost of his murdered father, defers action and indulges in melancholy reflections; but at last he screws his courage to the sticking point, and kills the usurping king. The walking of the ghost across the stage, the madness of Ophelia, the feigned madness of Hamlet, the assassination of the king and the death of Hamlet by a poisoned rapier furnish the somewhat melodramatic excitement which still makes the play popular.

Handy Andy. A rollicking story by Samuel Lover, who was a song-writer and popular entertainer as well as novelist. The story tells of the mishaps which befell the well-intentioned bungling hero. He was always doing the wrong thing, his mistakes bringing about complications in love and in politics which are very farcical. "Andy Rooney", says the author, "was a fellow who had the most singularly ingenious knack of doing everything the wrong way". At the end of the book Handy Andy is discovered to be really Lord Scatterbrain and weds his cousin like the true hero of old romance.

Hard Cash (1863). A novel by Charles Reade which purports to disclose abuses in the mangagement of private asylums for the insane and in the laws governing such institutions. The story is highly sensational, but like most of Reade's works is full of facts gathered by the author with great pains.

Hard Times (1854). A novel by Charles Dickens in in which he satirises extreme reliance upon statistics and a mechanical understanding of human relations. Its best known characters are Thomas Gradgrind, who worships statistics, and Josiah Bounderby, a conceited self-made man who holds in contempt the humble life from which he came.

Hardy, Thomas (1840). The venerable English novelist and poet. Author of *Tess of D' Urbervilles, Far From the Madding Crowd,* etc.

Harris, Joel Chandler (1848-1908). American author who wrote *Uncle Remus, His Songs and Sayings.* Uncle Remus, the old negro, and his humorous stories of Brer Rabbit are well known abroad as well as in America.

Harte, Francis Bret (1839-1902). American author, best known for his stories about mining and lumbering camps in the West. *The Outcast of Poker Flat, The Luck Of Roaring Camp, Tennessee's Partner.*

Hawthorne, Nathaniel (1804-64). American novelist whose masterly novels and short stories depict with great subtlety the austere ideals and the mysteries of conscience which are sometimes called Puritan. *The Scarlet Letter, The House of the Seven Gables.*

Hay, John (1838-1905). American statesman and author. Wrote one novel, a considerable amount of verse, and with Nicolay, the authoritative life of Lincoln.

Hazlitt, William (1778-1830). English literary critic and essayist. Stevenson said, "We are all mighty fine fellows, but we can't write like William Hazlitt".

Hearn, Lafcadio (1850- 1904). American author. Wrote stories and sketches of singular beauty, chiefly New Orleans or Japan. *Out of the East.*

Heart Of Midlothian, The (1818). A novel of Scottish life and character by Scott. The story mainly concerns two sisters, Jeanie and Effie Deans. When Effie is on trial for child-murder, Jeanie will not tell a lie to save her, but after sentence is pronounced walks all the way to London to secure a pardon. The character of Jeanie and that of Madge Wildfire, the witch, are the most memorable in the book.

Hereward The Wake (1866). An historical romance of the period of the Norman Conquest, written by the English clergyman, Charles Kingsley, with copious use of historical records of the time with which it deals. Manly daring in heroic contests against odds, with a constant purpose on the part of the author to illustrate muscular Christianity, gives the work its individuality.

Herrick, Robert (1591-1684). A Cavalier poet, author of religious poems and dainty lyrics of nature. *Hesperides.* Author of the well known

"Gather ye rosebuds while ye may,
Old time is still a-flying."

Hewlett, Maurice (1861-). Author of novels and short stories whose scene is usually laid in the Middle Ages. *The Forest Lovers, New Canterbury Tales.*

Hiawatha (1855) Poem by the American poet, Longfellow. Hiawatha is a mythical hero of the American Indians. He gives them their arts and after founding their civilization withdraws at the coming of the white man

"To the kingdom of Ponemah
To the land of the Hereafter."

Henry, Patrick (1736-99). American orator of the colonial period. Only fragments of his speedhes have been preserved.

Henry Esmond (1852) An historical romance by Thackeray telling the story of Esmond's life, of his courtship of the beautiful Beatrix Esmond, of his military career, of his part in bringing the Pretender to England when Queen Anne was dying, of the failure of his political hopes and of his hope of marrying Beatrix, and finally of his marriage to Lady Castlewood. Beatrix's mother, and their emigration to America.

Herbert, George (1593- 1623). English clergyman and poet. Author of verse fantastic in form and sentiment, but at times genuinely sincere.

Hooker, Richard (1554-1600). Author of a treatise, *Of the Laws of Ecclesiastical Polity.*

Hoosier Schoolmaster, The (1870). A story by Edward Eggleston, depicting country life in Indiana in the middle of the last century. The hero encounters many difficulties in his school-teaching, but faces them all pluckily, and at last wins through. To-day the book has interest chiefly for the vivid and intimate picture it gives of pioneer conditions in the Middle West.

Horatius. A ballad by Macaulay. One of the *Lays of Ancient Rome.*

Howe, Julia Ward (1819-1910). American poet, author of the *Battle Hymn of the Republic,* reformer, and advocate of woman's suffrage.

Howells, William Dean (1837-1920). American editor, essayist, and novelist. Novel, *The Rise of Silas Lapham;* farce, *The Sleeping Car.*

Huckelberry Finn, The Adventures of (1884). A humorous chronicle of the life of boys by Mark Twain (S. L. Clemens). Huck and his pal, Tom Sawyer, run away from home and adventure down the Mississippi River on a raft. Until their final return home, thrilling, and pathetic incidents succeed one another in rapid succession in a narrative so skillful and human that it places the author among the great natural story-tellers of the world.

Higginson, Thomas Wentworth (1823-). American historian. *Young Folks' History of the United States.*

Hohenlinden. A famous ballad by Thomas Campbell, beginning,

"On Linden, when the sun was low
All bloodless lay the untrodden snow".

Holinshed, Raphael (d. about 1580). Wrote the *Chronicles of England, Scotland, and Ireland.* The work furnished Shakespeare with much of the historical material of his plays.

Holland, J. G. (1819-1881). Founder of the *Century Magazine,* then called *Scribners' Monthly.* Author of poetry and novels. *Bittersweet, Seven Oaks.*

Holmes, Oliver Wendell (1809-94). American physician, author of poetry, novels and prose sketches. Famous for his humor and his sentiment. *The Chambered Nautilus* (poem), *Elsie Venner* (novel), *The Autocrat of the Breakfast Table* (miscellany).

Homer. The reputed author of the early Greek epic poems, *The Iliad* and *The Odyssey,* which preserve ancient Greek traditions and have influenced tremendously the art and literature of Europe and America. Homer is supposed to have lived in the ninth or tenth century B. C.

Hughes, Thomas (1823-96). English. Author of *Tom Brown's School Days,* probably the greatest story of its kind in the language.

Hugo, Victor (1802-85) Great French romantic poet, dramatist, and novelist. He is best known in America by his novels, *Les Miserables, Notre Dame de Paris,* and *The Toilers of the Sea.*

Hume, David (1711-76). Scottish philosopher. Author of *Treatise of Human Nature.*

Hunt, Leigh (1784-1859). Essayist and poet, literary critic, friend of Shelley and Keats.

Huxley, Thomas (1825-95). English scientist who had remarkable gifts for stating in clear and simple language the scientific ideas of his time. *On a Piece of Chalk.*

Hypatia (1838). An historical romance by Charles Kingsley (English) with its scene laid at Alexandria in the fifth Christian century. Here, as in a half dozen other great books, we see two civilizations confront one another, and realize the opposition of their ideals. The grapple of Goth, Greek, Roman, and Christian is depicted in scenes of great vividness and energy. The defect of the book is its inclusion of a great mass of erudition, which makes many pages dull

Ibsen, Henrik (1828-1906). Scandinavian playwright Author of problem plays dealing with modern life. In these he raises questions without answering them. Typical plays are *A Doll's House*, *Pillars of Society*, *Hedda Gabler*, *Ghosts*. In all these we see a somewhat morbid society. Nazimova has acted in several of Ibsen's plays with great success.

Idylls of the King, The (1859-85). A group of narrative poems in excellent blank verse, by Tennyson (English). The poems tell incidents which are either drawn from the old romances of King Arthur's court, or invented by Tennyson in the manner of the old romances. King Arthur, with his sterling virtue, is the central figure. The stories are arranged in such a way as to show the gradual decline of knightly ideals through sin, until, in the *Passing of Arthur*, the great king, mortally wounded, is borne to Avalon by fairy maidens, and the civilization which he established is left to crumble. In his last words King Arthur declares his faith that this civilization will contribute something to the progress of mankind.

Iliad, The. An epic poem of ancient Greece, attributed to Homer. It tells the story of the ten years' siege of Troy by Greek armies which sought to bring Helen, the most beautiful of mortal women, back to Sparta, from which she had been carried away by Paris, a Trojan prince. The epic tells of pitched battles; of individual combats; of the great Greek warrior, Achilles, sulking in his tent; of the fight between Achilles and Hector, during which Hector is slain. The poem is full of action and vivid descriptions of combat.

Il Penseroso (The thoughtful man) (1634). A poem by Milton (English) in which he describes the pleasures of meditative life, contrasting these with the pleasures of a less thoughtful, more mirthful life such as he described in a companion poem, *L'Allegro*.

In Memoriam (In memory) (1850). A collection of over a hundred short poems by Tennyson (English), all in the same meter, and all associated with the death of Hallam, the author's best friend. The various poems were written at intervals through a number of years, and record the varying moods and thoughts of his sorrow. They are described by the poet himself as,

"Short swallow-flights of song, that dip
Their wings in tears, and skim away."

The whole group of poems constitutes one of the noblest elegies in the language

Inland Voyage, An (1878). Chapters of travel by Stevenson, (Scottish), recording, with humor and fancy, a canoe-trip through France and Belgium. Throughout the work one finds that gay cheerfulness which made the author so charming a companion, and an abundance of that lively sense of the drama of life which transforms trivial incident into great adventure.

Ivanhoe. A novel by Sir Walter Scott (Scottish), published in 1819 Its scene is laid in England in the twelfth century, a period of adjustment between the Normans and the Saxons. The Saxon hero, Ivanhoe, a retainer of Richard Coeur de Leon, has been disinherited by his father because of his love for his father's ward, Rowena. His successive adventures, as victor in a brilliant Norman tournament, wounded prisoner in Front-de-Boeuf's burning castle, and champion of his noble Jewish benefactress, Rebecca, in her trial for witchcraft, end with his marriage to Rowena. Cedric, Athlestane and Rowena; Gurth the swineherd and Wamba the jester, serfs of Cedric; Isaac and Rebecca, the Jews; Locksley, or Robin Hood, and his band of outlaws, the Norman nobles, De Bracy, Front-de-Boeuf, and Bois Guilbert; Prince John and King Richard himself, are chief among the groups of characters which figure in this romance, of which Wilfred of Ivanhoe is the hero.

Jackson, Helen Hunt (1831-85). American. Author of *Ramona* and *A Century of Dishonor*, both of which deal with the treatment the American Indian has received.

Jacobs, W. W. (1836-) English writer of stories, humorous and terrible, dealing chiefly with sailors and longshoremen.

James, Henry (1843-1916). American novelist who made his home in England. Author of novels full of subtleties. Many of his novels describe the experiences of Americans in Europe. *Daisy Miller; The Portrait of a Lady.*

William James (1842-1910), the noted philosopher, was a brother of Henry James.

Jane Eyre (1847). Novel by Charlotte Bronte (English). This novel tells the story of an unfortunate heroine, of the indignities she suffered as a governess, of her strange wooing by Mr. Rochester, an impetuous gentleman with a mysterious past, of her discovery that he was the husband of an insane woman whom he kept under guard in a room of his house, of the burning of the house, the blinding of Rochester in an attempt to rescue his wife from the flames, and his subsequent marriage to the heroine. The novel had an extraordinary hold upon readers of its time because of the novelty of a heroine without physical charm, a mutilated hero, and stormy passions.

Jay, John. American statesman of the Revolutionary period. One of the contributors to the *Federalist*

Jefferson, Thomas (1743-1826). A Virginian gentleman, third president of the United States, author of the *Declaration of Independence*, founder of Democratic principles in the nation.

Jeffrey, Francis (1773-1850) Editor of the *Edinburgh Review* which exercised considerable influenee over public opinion concerning literary works a hundred years ago.

Jewett, Sarah Orne (1849-1909). Writer of stories about New England village life *The White Heron, A Winter Courtship.*

John Gilpin, The Diverting History of. A rollicking ballad by William Cowper (English) which recounts a wild ride taken by an awkward and unwilling gentleman upon a runaway horse.

Johnson, Samuel (1709-84). A remarkable figure in English letters, famous for his sayings more than for his writings. Because of his interesting conversation and personality he drew a circle of famous men about him. Boswell became his biographer, composing the best biography in any language. Macaulay's *Essay on Johnson* gives a vivid but somewhat exaggerated account of Johnson. His greatest literary work was the *Dictionary of the English Language.*

Johns, Henry Arthur (1851-) English dramatist *Michael and His Lost Angel.*

Jonson, Ben (1573-1637). English poet and dramatist, best known as the author of the English version of a song, "Drink to me only with thine eyes."

Joseph Andrews (1742). A novel by Henry Feilding (English). This novel tells the story of a virtuous servingman, Joseph Andrews. It gives an entertaining and true picture of life in the eighteenth century. Its most famous character is Parson Adams, one of the most lovable of country clergymen. The book was begun as a parody of Richardson's story of the virtuous servingmaid, *Pamela.*

Julius Caesar. A tragedy by Shakespeare dealing with the assassination of Caesar and the subsequent struggles between his friends, led by Octavius and Antony, and his enemies, led by Brutus and Cassius. Caesar, at the height of his power in 44 B.C., is warned to beware the ides of March, but proceeds to the senate house where he is stabbed by the conspirators. The mob hears Brutus deliver a speech justifying the murder of Caesar, but turns to Antony when he appeals to Caesar's love for them and reads his will. Civil war follows in which Antony and Octavius finally defeat Brutus and Cassius at Philippi. Thus imperialism triumphs in the end over republican ideals.

Because Shakespeare chose to make Brutus the hero of his play, he was forced to degrade somewhat the historical character of Caesar. Caesar is here represented as vacillating, suspicious, and easily flattered. He is persuaded to stay at home from the senate because his wife has a dream, but decides to go when the dream is interpreted favorably. He brags about his courage. He swoons in a public place. In many ways he is far from being the triumphant conqueror of history.

It is Brutus, then, with the rise and fall of whose fortunes we are chiefly concerned. He is not easily influenced, but joins the conspiracy only after mature reflection has convinced him that Rome must be rid of Caesar. Even Antony shows his belief in Brutus's integrity of purpose when he says,

"He only in a general honest thought
And common good to all, made one of them."

Junius Letters (1769-1772). A series of letters criticizing George III. and his government. Their authorship is one of the great literary mysteries

Katharina, the heroine of *The Taming of the Shrew*, a play by Shakespeare. Speaking to a young man, she threatens "to comb his noddle with a three-legg'd stool, And paint his face and use him like a fool" From such talk her reputation becomes so terrible that only a bold man, like Petruchio, dares attempt to tame her, and show the real womanliness under her bravado.

Kenilworth (1819). An historical romance by Sir Walter Scott (Scottish). Its scene is laid in Elizabethan England. Queen Elizabeth, courted by Leicester, in the midst of a brilliant pageant at Kenilworth Castle, forms a striking contrast with Amy Robsart, his unacknowledged bride, who is imprisoned and murdered by Leicester's minion, Varney.

Kidnapped (1886). A lively story of fighting, wandering, and family treachery, by R. L Stevenson (Scottish). The hero of the book, David Balfour, is sent to sea by a treacherous and cruel uncle. There he meets Alan Breck, a spirited and hard-fighting Jacobite. They have wonderful adventures on sea and shore, till with courage, persistence, and good fortune they win their way to happiness at the end of the book.

King Henry V. One of three historical plays by Shakespeare, dealing with the character of Henry V. In King Henry IV., part 1, the gay life of young Prince Hal is described; in part 2 his reflections upon his manner of life are given; and in Henry V. the patriotism and wisdom of his character as king are set before us. The action of Henry V. covers the years from 1414 to 1420, including a treacherous plot upon the king's life by three of his nobles, a campaign in France, the battle of Agincourt, and the king's courtship of the French princess, Katherine. The play is remarkable for its patriotic passages (e.g., Act III, Scene 1), and its delineation of typical soldiers, some, like Fluellen the Welshman, Macmorris the Irishman, and Jamy the Scot, from different parts of Henry's kingdom; others, like, Pistol, Nym, and Bardolph, from the scum of the army. King Henry VI. carries on the history into the next reign.

King John. One of Shakespeare's historical or chronical plays. It gives hints of the patriotic enthusiasm shown more strongly in Richard II. and in Henry V. The scene is laid in England and in France in the early part of the thirteenth century. The play describes some of the plots and intrigues of John's cruel reign, the wars with France, and the pitiful death of Prince Arthur. It will be noticed that the chronical plays are constructed loosely, without the careful attention which is given to unity in the tragedies.

King Lear. One of the most powerful of Shakespeare's tragedies. The plot deals with the ingratitude of King Lear's daughters, Goneril and Regan, and the fidelity of his daughter Cordelia. The ungrateful daughters rob the old king of his power, prejudice him against Cordelia, and deprive him of all but the bare necessities of life. Their cruelty drives him out into a violent storm one night, with a few faithful servants. The weight of troubles leaves him insane and raving. Cordelia, however, comes to his aid with an army. Then follow in rapid succession the violent deaths of Goneril and Regan, the death of Lear, the death of Cordelia, and the curtain falls upon a desolate kingdom, over which, however, a virtuous soverign is to rule.

King of the Golden River, The. A fairy story by John Ruskin (English) in which cruelty and selfishness are fittingly punished, and unselfish kindness wins a great reward.

King Richard II. Like many of Shakespeare's historical plays this is based upon Holinshed's *Chronicles*, a popular history published in 1577. The play covers the time from 1398 to 1400, and describes the deposition and death of the unpopular Richard II. His downfall is due to his intervention in a quarrel between Bolingbroke and Norfolk, two of his noblemen, and his banishment of them both. Bolingbroke returns with an army, and, supplanting Richard on the throne, becomes Henry IV. The play is remarkable for the patriotic speeches of old John of Gaunt and the pathetic philosophic utterances of the deposed Richard.

King Richard III. This is an historical play by William Shakespeare. The character of the king is one which many distinguished actors, such as Garrick, Kean, Edwin Booth, and Mansfield, have portrayed upon the stage. The title page of the first known edition speaks of the play as "containing his treacherous plots against his brother Clarence; the pittieful murther of his innocent nephews; his tyrannical usurpation; with the whole course of his detested life and most deserved death." The character of King Richard is thus sketched by the critic Hazlitt: "The Richard of Shakespeare is towering and lofty; equally impetuous and commanding; haughty, violent, and subtle; bold and treacherous; confident in his strength as well as his cunning; raised high by his birth and, higher by his genius and crimes; a royal usurper, a princely hypocrite, a tyrant, and a murderer of the house of Plantagenet".

Kingsley, Charles (1819-75). Church of England clergyman, poet and novelist. *Hypatia; Water Babies.*

Kipling, Rudyard (1865-). English author of stories and poems, dealing chiefly with life in India, children, and the glory of the Empire. His wide knowledge of the world and men, and his insistence on the simple and elemental virtues regardless of convention have attracted to him a large audience *Barrack Room Ballads* (verse); *Plain Tales From the Hills* (stories of Indian life), *Stalky and Co.* (story of boys).

Kubla Khan. A poem by Coleridge (English), written in very musical verse. The poem describes a fantastic vision of royal splendor.

Lady or the Tiger, The. A famous hoax story by Frank Stockton (American) in which readers are left puzzled by the ending.

L'Allegro (1645). A poem by John Milton (English) describing the pleasures of innocent mirth.

Lamb, Charles (1775-1834). English humorist, author of *Essays of Elia.* His work combines humor with sentiment, and mingles pathos with both.

Lamb, Mary (1764-1847). Sister of Charles Lamb and author with him of *Tales From Shakespeare.*

Landor, Walter Savage (1775-1864). English poet, author of imaginary conversations between famous

characters in fiction and history, such as *Pericles and Aspasia.*

Langland, William (14th century). Englishman; author of *Piers Plowman,* an allegorical poem showing the unrest of the laboring classes.

Lanier, Sidney (1842-81). An American musician, poet, and critic. *Marshes of Glynn.*

Larcom, Lucy (1826-93). New England poet; author of *Childhood Songs, Wild Roses from Cape Ann.*

Last of the Mohicans, The (1826). A romance by James Fennimore Cooper (American). The subject of this story is the warfare of the French and Indian forces against the British in Northern New York during the early history of the American colonies. The hero is Hawkeye, a woodsman whose knowledge of the forest and of Indian character is complete, and whose skill with the rifle is unmatched. Indian treachery, bloody fighting, heroic rescues and hairbreadth escapes follow one another in rapid succession. The hush and gloom of the primeval forest with its skulking savages gives the story a setting which is highly effective.

Last Days of Pompeii, The (1834). An historical romance by Bulwer-Lytton (English) which tells a thrilling story of the ancient city of Pompeii as it was in the days before it was buried by the great eruption of Vesuvius. Gladiatorial contests, banquets, plots, and counterplots make the story instructive and exciting. The characters are wholly fictitious and the whole conception of life in Pompeii is pure fiction, but the author has studied the ruins and relics of the buried city to good purpose.

Lay of the Last Minstrel, The (1805). A narrative poem by Scott, the chief interest of which is in its description of scenes and customs of the borderland of Scotland, and an occasional burst of poetical declamation.

Lays of Ancient Rome (1842). Dramatic and popular stories told in verse, concerning heroic deeds of Roman men and women. Thomas Babington Macaulay (English) was the author.

Legend of Sleepy Hollow, The (1819). A short story by Washington Irving (American). The story narrates the midnight adventures of Ichabod Crane—an ungainly schoolmaster of timorous heart—with a spectral, headless horseman whom he encountered while returning home from a party at the home of Katrina Van Tassel, to whom he was paying suit. After his wild race with the headless horseman Ichabod disappeared from the community. Katrina soon afterwards married Brom Bones, a daredevil horseman who "looked exceedingly knowing" whenever the story of Ichabod was mentioned.

IRVING'S LEGEND OF SLEEPY HOLLOW

Lincoln, Abraham (1809-65). Farmer, storekeeper, lawyer, president of the United States. The author of letters and addresses which are among the masterpieces of the language. *Letter to Mrs. Bixby, Gettysburg Address.*

Lindsay, Vachel (1879-). A contemporary American poet who deals with unusual subjects in unusual ways. *The Congo.*

Little Dorrit (1855-58). A novel by Charles Dickens (English). The story concerns the experiences of the Dorrit family in the Marhalsea debtor's prison, and their subsequent release and life of affluence. Governmental red tape is satirized.

Little Minister, The (1891). A well-known novel by Sir James Barrie (English). As a play, with Maude Adams taking the part of Babbie, it won great success. It describes the romance of the young minister, Gavin Dishart, and the fascinating but mysterious Babbie, in a village of stern, orthodox Scotch weavers.

Little Women (1868). A story for children written by Louisa M. Alcott (American). It is a genteel narrative of a New England girlhood.

Locke, John (1632-1704). An English philosopher. Author of *Essay Concerning Human Understanding.*

Locke, William J. (1863-). English novelist. Author of *The Beloved Vagabond, Septimus.*

Lockhart, John Gibson (1794-1854). (English.) Literary critic and biographer. Best known for his *Life of Sir Walter Scott.* Lockhart was Scott's son in-law.

London, Jack (1876-1916). An American, author of novels and short stories of adventure in remote places and outposts of civilization. *The Call of the Wild.*

Longfellow, Henry Wadsworth (1807-1882). Scholar, teacher, best known American poet of his generation. His prevailing sentiments have a very general appeal. His translations helped to bring European culture to America. England honored him by placing his bust in the Poet's Corner of Westminster Abbey. *The Children's Hour, Evangeline, Hiawatha, Tales of a Wayside Inn.*

EVANGELINE

Looking Backward (1888). A Romance by Edward Bellamy (American). A fantastic romance which relates the strange experiences and impressions of the Bostonian, Julian West, who awakens from a trance in the year 2000, and sees great changes in economic and social conditions.

Lorna Doone (1869). A stirring romance by R. D. Blackmore (English). Its scene is Exmoor, a county in southwestern England; its heroine, Lorna Doone, is the daughter of a family of aristocratic robbers and smugglers; its hero, John Ridd, has many exciting adventures among the outlaws, and at last becomes the protector of Lorna against her own kin. Passionate human beings doing deeds of physical prowess in a wild and beautiful country furnish forth a model romance.

Lovelace, Richard (1618-58). A Cavalier lyric poet (English). His best known lines are:

"Stone walls do not a prison make,
Nor iron bars a cage."

Lowell, Amy (1875-). A member of the famous Lowell family; a leader among American writers of free verse.

Lowell, James Russell (1819-91). American scholar, literary critic, essayist, and poet. Prominent among the Abolitionists; first editor of the *Atlantic Monthly*; minister to Spain and to England. *A Fable for Critics; The Vision of Sir Launfal; Harvard Commemoration Ode.*

Lycidas (1638). A poem by John Milton (English) in the form of a pastoral elegy, in which he commemorates his friend Edward King. An elegy is a lament for the dead; a pastoral elegy is such a lament with simple country scenery for a background and shepherds and shepherdesses for characters.

Macaulay, Thomas Babington, Lord (1800-59). English orator, poet, essayist, and historian. Very precocious as a child. *Lays of Ancient Rome, History of England.*

Macbeth. A tragedy by Shakespeare. The weird sisters, or fates, prophesy that Macbeth shall become king. This enlivens his ambitions to such an extent that he murders King Duncan and by violence gains the crown of Scotland. Lady Macbeth urges him on to do the deed and tries to keep him from remorse after it is done. His way is not easy, however. He finds it necessary to conceal his first crime. He is plagued by remorseful visions. Then suspicion begins to awaken against him; Lady Macbeth talks of the crime in sleepwalking delirium; Macduff, an honest nobleman, with strong forces takes the field against him. Meanwhile, the weird sisters prophesy again in ambiguous words which seem to shadow forth security for Macbeth, but which really foretell doom. Their prophecy is fulfilled in his violent death. The play is notable for the energy and consistency of its plot and for marvelous depiction of mental apprehension and distress.

Machiavelli, Niccolo (1469-1527). Italian writer on history and politics. He advocated the unscrupulous employment of any means to further the good of the state. *The Prince.*

MacKaye, Percy (1875-). American writer of plays and pageants. *The Scarecrow, Caliban and the Yellow Sands.*

Malaprop, Mrs. The pompous old aunt of Lydia Languish in Sheridan's comedy, *The Rivals.* She uses words so incorrectly that her name has become proverbial for such mistakes as the following: "Headstrong as an allegory on the banks of the Nile"; "precipitate one down the prejudice."

Malory, Sir Thomas (1400-78). Author of *Morte d'Arthur,* a prose translation of various stories concerning King Arthur and the Round Table.

Mandeville, Sir John. To him is attributed the fourteenth century prose work. *Voyages and Travels of Sir John Mandeville.* This is a record of impossibilities, told with an air of truth.

Marble Faun, The (1860). A romance of four artists in modern Rome, by Nathaniel Hawthorne (American). The murder of a monk by the thoughtless Donatello, at the suggestion of a glance from the persecuted Miriam is witnessed by their New England friend, Hilda. The effect of this crime upon the characters of these three people forms the theme of a tragic story in a brilliant setting.

Marjorie Daw. A clever story by Thomas Bailey Aldrich (American), told in the form of a series of letters. Marjorie Daw is a totally imaginary girl created for the pleasure of an invalid, John Flemming, by his friend, Edward Delaney.

Markham, Edwin (1852-). American poet. Author of *The Man With the Hoe.*

Marlowe, Christopher (1564-93). English dramatist, contemporary of Shakespeare, author of *Dr. Faustus* and *Tamburlaine.* He is sometimes called the father of the English drama, because he popularized the use of blank verse and disregarded the old dramatic unities. According to tradition he was killed at the age of twenty-nine in a tavern brawl.

Marmion (1808). A poem which "turns upon the private adventures of a fictitious character," but has a background of important historical events. It paints the manners of feudal times in the heroic manner. The poem opens in August in the year 1513, and ends with the battle of Flodden Field, about a month later. There are six cantos, which introduce us to the clangor of arms, troops on the march, drawbridge, portcullis, and the other appurtenances of a mediaeval castle, to the intrigues of guilty love and the brutality of mediaeval punishment. The poem ends with the battlefield and its deeds of valor. As is customary in Scott's work the action is stirring, the verse spirited.

Masefield, John (1874-). English poet and dramatist. *The Tragedy of Nan.*

Masters, Edgar Lee (1868-). American writer of free verse. *The Spoon River Anthology.*

Mather, Cotton (1663-1728). Bigoted preacher of the colonial period of America. Author of *Magnalia Christi Americana,* intended for a church history of New England. He was one of the chief men concerned in the Salem witchcraft persecution.

Maud Muller. A popular poem by J. G. Whittier (American) recounting the unfulfilled romance of the judge and Maud Muller, whom he sees and admires as she rakes the hay. Its most famous lines are:

"For all sad words of tongue or pen
The saddest are these: 'It might have been!"

Maupassant, Guy de (1850-93). French writer of short stories. Sometimes called the greatest master of that form of literature.

Merchant of Venice, The. This is one of Shakespeare's early comedies. It tells the story of Bassanio, who borrows money from his friend Antonio, the merchant of Venice, to court Portia, a rich heiress of Belmont. Antonio, in turn, has borrowed three thousand ducats from Shylock, the Jewish money-lender, agreeing to forfeit a pound of his flesh if he does not return it on time. Antonio's payment is delayed, and Shylock demands the pound of flesh nearest Antonio's heart. This means a demand for his life. Portia, disguised as a lawyer, frees Antonio and disgraces Shylock through a legal quibble. He may have the flesh but can shed no blood in taking it. Shylock's goods are declared forfeit for plotting against a citizen of Venice. The minor episodes in the play include the elopment of Shylock's daughter with a Christian, the selection of Bassanio as a husband for Portia by his choice of a certain casket, and the joke played upon Bassanio and his attendant, Gratiano, by Portia and her maid Nerissa, who pretended to part with their bethrothal rings.

Meredith, George (1828-1909). A distinguished English novelist and poet, famous for the brilliance of his ability in dialogue and characterization. *The Ordeal of Richard Feveral, Diana of the Crossways, The Egoist.*

Merrick, Leonard (1864-). English novelist and short story writer who has been much influenced by French life and art.

Midsummer Night's Dream, A, A play by Shakespeare (English). It is the most delightful fairy play that has ever been written. The scenes are laid chiefly in a wood near Athens in the legendary days of King Theseus. The king's courtiers mingle incongruously in the play with the fairies and a group of clownish artisans. The plot is concerned with two pairs of lovers whose tangled affairs are finally straightened out by fairy intervention. The dignified court scenes, the clumsy attempts of the artisans to present a play, the pranks of Puck, and the songs and dainty fancies of the fairies combine to make a very novel and attractive fantasy.

Miller, C. H. (Joaquin) (1841-1913). An American poet, the "Poet of the Sierras". A traveller and a hermit in the California mountains. *Songs of the Sierras.*

Milton, John (1608-74). Usually ranked as the second greatest English poet. He spent his youth and early manhood in study. Aiming deliberately to be a poet, he retired to a beautiful country place, Horton, near Windsor. There he composed *Comus L'Allegro, Il Penseroso,* and *Lycidas.* When civil war broke out, he took the side of the Puritans against the king. After the Commonwealth was established, he served as secretary under Cromwell, and became blind by using his eyes excessively in preparing pamphlets for the government. *Paradise Lost,* his greatest work, was dictated to relatives and friends after he became blind.

Mitchell, S. Weir (1829-1914). An American physician; author of novels and sketches. *Hugh Wynne.*

Moody, William Vaughan (1869-1910). American poet and dramatist. Author of *An Ode in Time of Hesitation,* and *The Great Divide.*

Moonstone, The (1868). A novel by Wilkie Collins (English). The story tells of a diamond taken from the forehead of an Indian idol, cursed by its Brahmin custodians to give it evil influence, bequeathed to an English girl, and finally restored to its place after being instrumental in mystery and murder.

Moore, Thomas (1779-1852). An Irish poet. Author of *Irish Melodies* and *Lalla Rookh.*

More, Sir Thomas (1478-1535). An English scholar prominent in the renaissance, beheaded by order of Henry VIII. He was the author of *Utopia,* a prose work describing an ideal state.

Morte D'Arthur. A romance by Sir Thomas Malory (English) written and published in the fifteenth century. From various romances in French Malory selected most of the stories of Arthur and his Round Table which are here translated into English. Merlin, Launcelot, Gawain, Guenevere and Arthur, Tristram and Isolt, Galahad, Percival, and many names less known to fame appear in various parts of the rambling narrative. It is marked by the spirit of chivalry which characterizes such romances, emphasizing troth, faith, generosity, humility, and other knightly ideals. Tennyson relied chiefly upon this work when writing the Idylls of the King.

Morris, William (1834-96). (English.) A member of the Pre-Raphaelite school, poet, versatile artist, social reformer. *The Defense of Guenevere, The Earthly Paradise.*

Motley, John Lothrop (1814-77). American historian. Author of *The Rise of the Dutch Republic.*

Murfree, Mary N., see **Craddock.**

Newman, John Henry (1901-90). A Roman Catholic cardinal. Author of the hymn, *Lead Kindly Light,* and of essays famous for their literary style. Some of the best of these are in a volume called *The Idea of a University.* Newman was an Englishman.

Nibelungenlied. An old German epic which tells the stories of wrathful and violent old heroes and heroines—Sigurd, Brunhild, Gudrun, and others. The work is full of supernatural events and pagan sentiments. It has inspired many operatic and literary works of later times.

Ninety-three (1874). An historical romance by Victor Hugo (French) which gives vivid pictures of warfare.

Norris, Frank (1870-1902). American novelist of great promise whose early death left unfinished a series of three novels in which he planned to tell the history of wheat and the human tragedy and comedy in which it plays an important part. The two completed novels are *The Octopus* and *The Pit.*

North, Christopher. The pen-name of John Wilson (1785-1854). He was a Scotchman, professor in Edinburgh University, and for many years connected with *Blackwood's Magazines.* He was a friend of De Quincey and Wordsworth. Author of *Noctes Ambrosianae,* a medley of prose and verse.

Norton, Charles Eliot (1827-1908). A professor at Harvard University, translator of Dante, friend of many literary men in England and America.

Notre Dame (1831). An historical romance by Victor Hugo (French) telling a story of Paris in the fifteenth century. Very vividly it brings before us the ancient city with its people of high and low degree, clerical and lay, and especially its great cathedral, which gives the romance its name. For its exciting action and tense scenes the book has been widely read, both in French and in the English translation.

Noyes, Alfred (1880-). English poet. Author of musical lyrics such as *The Barrel-Organ,* and narrative pieces such as *Tales of the Mermaid Tavern.*

Nym. A cowardly rogue who appears in several of Shakespeare's historical plays. He is hanged for pillage after the battle of Agincourt. He conceals his cowardice by never smiling and by speaking with deadly insinuation.

Odyssey. A Greek epic poem by Homer. The poem tells the story of the adventures of Odysseus, or Ulysses, who is condemned to wander over the ocean because of having displeased the god, Poseidon. Before he finally reaches his home in the island of Ithaca, he does many deeds, both crafty and brave, and encounters strange personages. He escapes the dangers of Polyphemus, the savage one-eyed giant; Calypso, the nymph; Circe, the sorceress; Scylla and Charybdis; and the singing Sirens who lure sailors to destruction. He lives happily for a time among the fortunate Phoenicians, whose orchards bear fruit all the year. Such marvelous incidents as these have kept men reading the work through many centuries.

O. Henry. The pen-name of Sidney Porter (1867-1910). An American author of ingenious short stories. His characteristic style is flippant and slangy, but very clever. His favorite trick is that of surprising readers with an unexpected ending. *The Four Million.*

Oliver Twist (1841). A melodramatic novel by Charles Dickens (English). Its hero is Oliver Twist, a workhouse waif who is brought to the school for pickpockets kept by a crafty old Jew, Fagin. Associated with Fagin are the brutal robber, Bill Sykes, and the kind-hearted but disreputable Nancy. Oliver is not corrupted by his surroundings, and finally escapes from the slums, and is decently established in life by the aid of charitable friends. Bill Sykes and Fagin get their just deserts at the end of the story.

Omar Khayyam, see **Rubaiyat.**

Origin of Species, The (1859). A volume by Charles Darwin (English) in which he records the results of years of scientific observation in all parts of the world, and argues that his observations establish that theory of the development of man from lower forms of animal life which is known as the theory of evolution. The book is regarded as an epoch-making work. It aroused a controversy which has not yet ceased.

Our Mutual Friend (1864-5). A novel by Charles Dickens. (English). John Harmon's father has left him a large estate on condition that he marry Bella Wilfer, who is unknown to him. Harmon disappears and is thought dead, and the estate goes to Mr. and Mrs. Boffin, who take Bella Wilfer into their family. Harmon becomes their secretary, under an assumed name, to test the character of Bella. Her apparently frivolous and mercenary nature develops into womanliness through the kindly plot of Mr. Boffin. She and John are married, and in time she is told of their wealth. Minor plots introduce Jenny Wren, Lizzie Hexam, Bradley Headstone, Silas Wegg, and others.

Page, Thomas Nelson (1853-1922). American author of novels and stories some of which describe life in Virginia. *Red Rock.*

Paine, Thomas (1737-1808). An English defender of the American Revolution in the pamphlet *Common Sense* (1776).

Pamela (1740). An early novel by Samuel Richardson (English). The story is told in a series of letters which pass between Pamela Andrews, a serving girl, and her friends. The letters tell of her difficulties in repelling the advances of her master, and of her final agreement to marry him. Thus the cause of virtue is upheld. To illustrate virtuous conduct was, indeed, Richardson's frank purpose. The story is too long for the reading public of the present day, too prudentially moral, and too smugly self-satisfied.

Paradise Lost (1667). A long poem by John Milton, the English poet of the Puritan period. The purpose of the poem is "to justify the ways of God to man". First, the poem relates how some of the angels revolted against God and were cast out of Heaven into Hell, to punish their rebellion. Afterward it tells of their deliberations and final decision to revenge themselves upon the Almighty by invading the earth and leading man to sin. The poem continues the story of the success of Satan, chief of the fallen angels, in corrupting Adam and Eve, the first human beings, and bringing about their expulsion from the garden of Eden. This expulsion is the "loss of Paradise", which gives the poem its title. *Paradise Lost* is regarded as the best epic in the language.

Parker, Theodore (1810-60). An eloquent Unitarian clergyman, prominent as a writer and speaker upon abolition. American.

Parkman, Francis (1823-93). American writer of historical narratives concerning French and Indian wars, and the life of the pioneers. *The Oregon Trail.*

Pater, Walter (1839-94). A scholarly English essayist; author of melodious, highly finished prose. *The Renaissance; Marius the Epicurean.*

Patterne, Sir Willoughby. The hero of Meredith's novel, *The Egoist.* His unsufferable conceit and self-satisfaction are displayed in a series of love affairs.

Pepys, Samuel (1633-1703). An Englishman of the time of Charles II. who kept a diary in cipher. This has been translated. It is one of the most curious books in existence.

Percy, Bishop Thomas (1729-1811). Compiler of *Reliques of Ancient English Poetry* (1765), which preserved for us many specimens of early ballads and songs which might otherwise have been lost.

Petruchio. The husband of Katharina in Shakespeare's *The Taming of the Shrew.* It is he who conceives and carries out the plan of making a gentle, obedient wife out of a notorious shrew by bullying her shamefully, all the time pretending everything is as she wishes it and for her own good.

Phillips, Stephen (1864-1915). An Englishman who revived the poetic drama. *Paolo and Francesca; Ulysses.*

Phillips, Wendell (1811-84). A brilliant American orator; a strong Abolitionist.

Phillpotts, Eden (1862-). An English novelist who has written many novels with scenes laid on Dartmoor, Devonshire. *Children of the Mist.*

Pickwick Papers (1836). A novel by Charles Dickens (English) depicting the droll adventures of a benevolent gentleman, Mr. Pickwick, and his ludicrous friends. So funny are many of the situations and so true the characters, in spite of their caricature, that much of the *Pickwick Papers* has passed into popular knowledge. Sam Weller and his sayings, and the trial of Bardell vs. Pickwick are perhaps the best known features of the book. The illustrations by "Phiz" exactly suited the text.

Pilgrim's Progress (1678). A religious allegory by John Bunyan (English). In this work the Christian life is revealed by means of a story recounting the experiences of Christian on his way to the City of God. The Slough of Despond, Vanity Fair, the Hill of Difficulty, and the Valley of the Shadow of Death are but a few of the places invented by Bunyan to represent the trials and temptations to which mankind is liable. At last, through faith, hope, and charity the hero surmounts all obstacles and wins eternal bliss. So simple is the narrative and so vivid are its pictures that the book has been a favorite in Protestant households for the edification of young and old.

Pinero, Sir Arthur Wing (1855-). A popular English dramatist. Author of *The Second Mrs. Tanqueray.*

Pistol. A character in several of Shakespeare's plays. He is a London ruffian, boastful, noisy, avaricious, cowardly—"with a killing tongue and a quiet sword."

Poe, Edgar Allan (1819-49). American poet and writer of fantastic and highly finished short stories. Among his more famous poems are *Annabel Lee* and *The Raven.* Well known stories by him are detective stories, like *The Gold Bug* and *Murders in the Rue Morgue;* stories of horror, like *The Black Cat* and *The Masque of the Red Death.*

Poor Richard's Almanac (1732-58). A yearly collection of pithy sayings into which is condensed, shrewd advice for the conduct of life. The work was written by Benjamin Franklin (American). The best known saying from the work is, "Honesty is the best policy." The work did much in establishing habits of thrift and common sense among the colonists.

Pope, Alexander (1688-1744). English poet; best representative of the classical spirit of the eighteenth century. His poems were chiefly in polished couplets upon didactic subjects. *An Essay on Criticism; An Essay on Man; The Rape of the Lock.*

Porter, Sidney, see **O. Henry.**

Portia. An heiress of Belmont, the heroine of Shakespeare's play, *The Merchant of Venice.* She is represented as a very resourceful and attractive woman. Her remarks about her unsuccessful suitors show discernment and wit, and her reception of the successful suitor, Antonio, modesty and capacity for emotion. Her independence and power of initiative in evolving the scheme for Antonio's release, her eloquence in the court-room, her patience and justice to Shylock, combine to make her one of the best of Shakespeare's heroines.

Prescott, William H. (1796-1859). American historian; author of *The Conquest of Peru* and *The Conquest of Mexico.* As he had been almost blinded in his college days by a piece of bread thrown by a boisterous student, he worked against terrible odds in writing of history.

Pride and Prejudice. This novel was written by Jane Austen (English) in the year 1796, when she was twenty-one years old. Like her other novels it deals with the love affairs of young women in the upper middle class of English society, in the latter part of the eighteenth century. The characterization of Mrs. Bennet, the foolish and complaining mother, of Mr. Bennet, the peace-loving father, and of Elizabeth, the heroine, proud but admirable, is surprisingly capable, considering the youth of the author.

Prince and the Pauper, The (1881). A fascinating romance by Mark Twain (American) telling the story of a pauper boy who changes places with the prince, later King Edward VI. of England. The experiences of the pauper, transported from the slums to the palace, and of the young prince, plunged suddenly into the life of the streets in mediaeval London, afford Mark Twain the sort of opportunity which he enjoys. He gives a vivid picture of the life of the times; he rouses our anger against cruelty; he stirs our sympathy for the poor.

Quentin Durward (1823). A novel by Sir Walter Scott (Scottish) with its scene laid in France during the fifteenth century. Quentin Durward, a valorous young Scot, is sent by Louis XI. ostensibly to escort Isabelle of Croye to the Bishop of Liege. Actually, Louis intends to have her seized by the outlaw, William de la Marck. After protecting her through sieges and plots, the hero wins the lady's hand with the approval of Louis and her rightful sovereign, Charles the Bold, of Burgundy.

Quickly, Mistress Nell. Dame Quickly is one of Falstaff's friends appearing in several of Shakespeare's plays. She is the hostess of a tavern in Fastcheap, London. In Henry V. she has become the wife of Pistol. That Shakespeare could depict a coarse, garrulous woman so truly is a proof of the width of his sympathy and of his understanding of human nature.

Radcliffe, Mrs. Anne (1764-1823). English writer of Gothic romances—romantic novels full of mysteries and horrors. *The Mysteries of Udolpho.*

Raleigh, Sir Walter (1552-1618). An explorer and a favorite of Queen Elizabeth; the man who dreamed the colonial empire of Great Britain. He was imprisoned in the tower by James I. for thirteen years, and during this imprisonment wrote a *History of the World.*

Ramona (1885). This novel, by Helen Hunt Jackson, is an appeal for just treatment of the American Indian. The scene is in California.

Reade, Charles (1814-84). English novelist; author of *The Cloister and the Hearth, Peg Woffington, It is Never Too Late to Mend.*

Rebecca. Rebecca, daughter of Isaac of York, the Jew, is the most interesting female character in Scott's *Ivanhoe.* Her charity in nursing the sick, devotion to her old father, bravery and dignity before a court of unjust accusers, determined resistance to the advances of Brian de Bois Guilbert, and generous renunciation of any possible claims upon Ivanhoe, the man she loves, make her a memorable character.

Repplier, Agnes (1857-). A highly intelligent American essayist.

Richardson, Samuel (1689-1761). The first important English novelist. He wrote exceedingly long novels in the form of series of letters. *Pamela; Clarissa Harlow.*

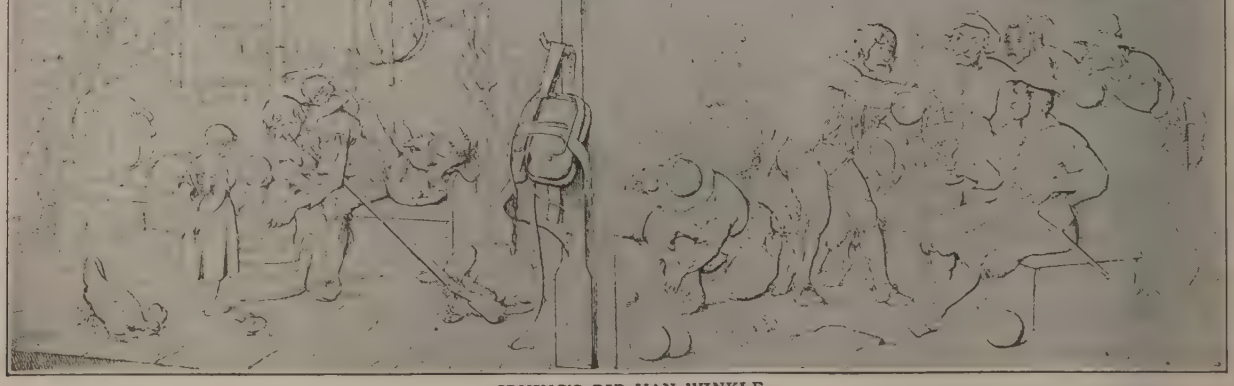
Riley, James Whitcomb (1849-1916). (The Hoosier Poet). An American poet and lecturer. *The Raggedy Man.*

Rip Van Winkle (1819). A short story by Washington Irving (American). Rip wanders into the Catskill Mountains one day on a hunting trip, gets lost, encounters a party of noisy dwarfs, drinks a cup of their liquor, and falls asleep. Upon awakening twenty years later he returns in great perplexity to his native village, where many of his old friends are now dead, where customs have changed, and where his very relatives do not recognise him. With his mellow old age as a village notoriety the story ends. The whole idea of a long sleep and innocent awakening into a new world is so whimsical and attractive that the story has been widely popular. Joseph Jefferson's chief success on the stage was in the character of Rip, the ne'er-do-well.

Robinson Crusoe (1719). This work was written by Daniel Defoe (English). It is the most famous story for boys ever written. Early in the story Robinson Crusoe, sole survivor from a wreck, crawls out upon the beach of a deserted island, with only his native wits and the gifts of fortune to save him from starvation. He first rescues from the wrecked vessel tools and provisions which will be of use to him; next he organizes his time and energy, builds a home, plants crops, and tames wild creatures with industry. With great detail Defoe tells of the marooned man's experiences, carrying the account through several years. When at last Crusoe sees the print of a human foot on the sand of his shore one day, the reader shares his amazement and suspense. The footprint is that of a savage whom Crusoe names Friday, and adopts as a servant. At last the island is invaded by savages, and later by European sailors. All Crusoe's resourcefulness is needed to save his life, but he eventually masters the situation,and sails back to England in prosperity. The secret of the book's success lies chiefly in two features: (1) the minute details which make it seem like a record of actual experience, and (2) the ingenuity of Crusoe in fighting a battle for life, alone, under primitive conditions.

Rochester, Edward. The hero of *Jane Eyre,* a novel by Charlotte Bronte. He is wealthy, accomplished, brave and generous, but "proud, sardonic, harsh to inferiority". His youth was dissipated. An insane wife lives under guard in a remote room of his mansion. He is not deterred, however, from attempting to marry Jane Eyre. The facts are revealed just in time to stop the wedding, but later, after his wife's death and his own mutilation in an attempt to rescue her from a fire, Jane thinks well enough of him to become his wife. The unusual plot and the paradoxical characters gave the novel a wide public interest.

Romola (1863). A novel of Florentine life in the fifteenth century written by George Eliot (English). In spite of the great amount of historical detail which the author wrought into the book, her interest centers not in Florentine history but in the moral degradation of one of her characters. This character is Tito Melema, a Greek who wanders



IRVING'S RIP VAN WINKLE

into the city one morning, a shipwrecked and friendless stranger, but who establishes himself in the favor of influential persons by his cleverness and becomes a man of importance. His rise in importance, however, is accompanied by a gradual moral deterioration, until at the end of the story he is utterly unscrupulous, all because of seeking his own interest and taking the easiest way, whether right or wrong. In tracing Tito's debasement through his own actions, George Eliot is illustrating a favorite theory of hers: "Our deeds determine us as much as we determine our deeds."

Romeo and Juliet. An early romantic tragedy by Shakespeare (English). Its scene is laid chiefly in Verona in the fourteenth century. Romeo, a Montague, falls in love with Juliet, of the house of Capulet. Despite the bitter feud between their families they are secretly married by Friar Laurence, but unfortunately just after the wedding Romeo becomes involved in a brawl with the Capulets and slays Tybalt, the cousin of Juliet. He is sentenced to banishment, and goes to Mantua. Juliet's parents, unaware of her marriage, insist upon her wedding Count Paris. To escape this second marriage Juliet, on the advice of Friar Laurence, takes a potion which will make her appear dead for forty-two hours. She is buried in the Capulet vault. Friar Laurence sends a message to Romeo calling him to her rescue, but the message miscarries, and when Romeo hears that Juliet is dead, he comes to her tomb, takes poison, and dies just before she awakens. She finds him dead and stabs herself. Friar Laurence tells the story of the tragedy to their assembled families, who decide to become reconciled.

Roosevelt, Theodore (1858-1919). An American who is considered one of the best representatives of his time. He was a soldier, a hunter of big game, an historian, and President of the United States. *The Winning of the West; Ranch Life and the Hunting Trail.*

Rosalind is the delightful heroine of *As You Like It.* Brave and adventurous when she dresses as a boy and goes to the forest of Arden, mischievous when she teases Orlando about his love, and always witty, gay, and captivating, she is, as Professor Dowden says, "a figure which quickens and restores our spirit as music does".

Rossetti, Dante Gabriel (1828-1882). Pre-Raphaelite painter and author of many beautiful ballads and sonnets. (English.) *House of Life* (a series of sonnets); *The Blessed Damozel.*

Rubaiyat (1859). An English version by Edward Fitzgerald (English), of the verses of an ancient Persian philosopher and poet. The verses record melancholy reflections upon life in vivid and simple figures, likening existence to a day's rest in a journey, or man to a clay pot. The prevailing reflection is that since life is brief and the future uncertain, one should enjoy the present with feast and song.

Ruskin, John (1819-1900). A famous English prose writer, critic of art and of social conditions. He is famous for his application of moral ideas in the criticism of art. *Modern Painters; The Seven Lamps of Architecture: Praeterita* (his autobiography).

Saxe, John G. (1816-87). A humorous American poet. *The Proud Miss McBride.*

Scott, Sir Walter (1771-1832). Scottish poet and novelist; author of *Marmion* and *The Lady of the Lake* (poems); *The Heart of Midlothian, Ivanhoe The Bride of Lammermoor* (novels). Scott attempted to live like a feudal baron. His estate, Abbotsford, near Melrose, furnished background for such a life; horses, dogs, a retinue of servants, and lavish entertainments were but a part of it. Through his poems and novels he wrote under the inspiration of that which was best in the spirit of the Middle Ages—the sense of honor, faith, physical bravery, chivalry toward woman, the love of king and country.

Seton-Thompson, Ernest (1860-). Naturalist and writer of books about animals. *Wild Animals I Have Known.*

Shakespeare, William (1564-1616). Greatest of English dramatists. Very little is known of his life. He was born and died in Stratford-on-Avon; he had slight formal education; he learned the craft of the playwright as an actor and manager in London theatres; he became prosperous and moderately famous in his own life-time; he was buried in the church at Stratford. Shakespeare's plays fall into three large groups; historical or chronicle plays comedies, and tragedies. The best examples of these respectively are: for the chronicle play, *Henry V.*; for tragedy, *Macbeth, Romeo and Juliet, Hamlet, Othello, King Lear;* for comedy, *Twelfth Night, The Merchant of Venice, Midsummer Night's Dream, As You Like It.* Shakespeare's greatness is in (1) his complete and sympathetic understanding of men and women of all types, (2) his conception of what is noble and what is base, (3) his mastery of the problems of dramatic representation, (4) his master of vocabulary and metre.

Sharp, Dallas Lore (1870-). American naturalist and professor of English at Boston University. Author of interesting essays about nature. *A Watcher in the Woods.*

Shaw, George Bernard (1856-). An Irishman; author of witty and entertaining plays. *You Never Can Tell; Man and Superman.*

Shelley, Percy Bysshe (1792-1822). English poet of radical ideas. Author of poems which have strange and beautiful imagery, and express noble but impractical ideals. Best known and most readable poems: *To Night, The Cloud, To the West Wind, To a Skylark, Adonais.*

Shelley, Mary Wollstonecraft Godwin (1797-1851). Second wife of Percy Bysshe Shelley, the poet, and herself the author of a remarkable scientific romance, *Frankenstein.*

Sheridan, Richard Brinsley (1751-1816). English dramatist, author of *The School for Scandal; The Rivals.*

Sherlock Holmes, The Adventures Of. Detective stories by Sir Arthur Conan Doyle (English) with two characters which closely resemble characters in Poe's detective stories. The quick-witted and imperturbable Holmes and his slow-minded friend, Watson, make an effective pair. The stories are varied in subject-matter, but in almost all the mystery of some crime is solved by Holmes's minute observation and agile reasoning.

Shylock. Shylock, the Jewish money-lender in the *Merchant of Venice,* may be viewed as an "inexorable dog" who hates all Christians and plots against their lives, loves his money and oppresses his young daughter Jessica; or he may be pitied because he belongs to an abused race and stands alone in the play, opposed to all the other characters and deserted even by his daughter.

Sidney Carton. Carton is a character in Dickens's *A Tale of Two Cities.* He is a dissipated man but is in love with Lucie, the heroine. The striking resemblance which he bears to Charles Darnay, the husband of Lucie, enables him to change places, with Darnay, and go to the scaffold in his stead, purified and exalted by the sacrifice.

Sidney, Sir Philip (1554-86). English courtier, soldier, and author, of the age of Elizabeth, in England. *Arcadia.*

Silas Marner. This is a novel by George Eliot (English), published in 1861. "In the old days there were angels who came and took men by the hand and led them away from the city of destruction. We see no white-winged angels now. But yet men are led away from threatening destruction; a hand is put into theirs; . . and the hand may be a little child's". This is the theme of the novel, which shows the redemption of Marner, a miserly weaver, by his love for a little child. He has been robbed of his hoard of gold, but is recompensed by finding a little child, Eppie, upon his threshold. Eppie turns out to be the unacknowledged daughter of Godfrey Cass, the village squire, by an unfortunate first marriage.

Sinclair, May A. A contemporary English novelist. Author of *The Divine Fire.*

Smith, F. Hopkinson (1838-1915). An American painter, lighthouse engineer, and author of novels and short stories written with a good deal of vigor. *Colonel Carter of Cartersville; Caleb West, Master Diver.*

Smollett, Tobias (1721-71). English novelist; author of rather coarse narratives which give a graphic and true picture of English life in the eighteenth century. *Roderick Random; The Expedition of Humphrey Clinker.*

Sohrab and Rostum. A narrative poem by Matthew Arnold (English). It tells the story of a Persian warrior who unwittingly engages in personal combat with his own son and mortally wounds him before learning of their relation.

Southey, Robert (1774-1843). Poet laureate of England and one of the group of Lake Poets, though he wrote better prose than verse. *The Life of Nelson.*

Spectator, The (1711-14). A periodical founded by Addison and Steele, and contributed to by them and a group of their associates. It was devoted to narratives concerning Sir Roger De Coverley, to literary criticism, to satirical essays upon men and society. There were 555 papers in all, of which Addison wrote 274 and Steele 236. So popular was the work that it could be found upon every breakfast table and in every coffee-house. Its effects upon English thinking and English manners were considerable.

Spencer, Herbert (1820-1903). An Englishman who wrote concerning the application of the evolutionary theory to society. *Autobiography.*

Spenser, Edmund (1552-1599). A poet who employed allegory and classical allusion to excess, but who wrote with a remarkable poetic sense of words and a remarkable musical sense of sounds. *The Faery Queen.*

Stedman, Edmund Clarence (1833-1908). An American poet and literary critic. *Poets of America.*

Steele, Richard (1672-1729). English essayist; with Addison editor of the famous periodicals, *The Tatler* (1709-11) and *The Spectator* (1711-14).

Sterne, Lawrence (1713-68). English clergyman, author of the most whimsical novel in the language—*Tristram Shandy.* Two famous characters in this book are *Uncle Toby* and *Coporal Trim.*

Stevenson, Robert Louis (1850-94). Scottish writer. Because of ill health he travelled much and lived in many places, including California, Saranac Lake, N. Y., France, Switzerland, and the South Sea Islands. His ill health did not prevent his laboring constantly at literary tasks, producing romances like *Treasure Island,* perfect short stories like *Will o' The Mill,* and poems for children, chiefly in a volume called *The Child's Garden of Verses.*

Stockton, Frank R. (1834-1902). American writer of amusing short stories and novels. *The Casting Away of Mrs. Leeks and Mrs. Aleshine; The Lady or the Tiger.*

Stowe, Harriet Beecher (1812-96). American novelist; author of *Uncle Tom's Cabin* (1852) which was of great assistance to the anti-slavery cause.

Swift, Jonathan (1667-1745). English prose humorist and controversialist. Author of *A Tale of a Tub, The Battle of the Books, Gulliver's Travels.* He was Dean of St. Patrick's Cathedral, Dublin.

Swinburne, Algernon Charles (1837-1909). An English poet distinguished for his skill in the use of verse forms and the choice of words to produce musical effects. *Atalanta in Calydon.*

Synge, John Millington (1871-1909). Irish dramatist. Author of *Riders to the Sea; The Playboy of the Western World.*

Tale of Two Cities, A (1859). A novel of the French Revolution by Charles Dickens (English). Dr. Manette, a political prisoner, released from long imprisonment, rejoins his daughter, Lucie, and sees her happily married to Charles Darnay, who has just been tried and acquitted on a charge of treason. In the midst of their happiness, however, they become objects of suspicion in Paris. At last, through the maliciousness of a wine-seller named Defarge, and of his villainous wife, Darnay is imprisoned again and condemned to death; but Sydney Carton, an Englishman who loves Lucie, takes Darnay's place in prison and dies in his stead upon the guillotine. The scene of the execution, with the knitting-women calmly numbering the numerous victims as time and again the knife falls, is justly famous as a piece of rhetoric,—rather melodramatic, but effective.

Talisman, The (1825). A novel by Sir Walter Scott (English) telling a story of the third crusade. Palestine is the scene of its action, during an interlude in the fighting. Two noble adversaries, Richard the Lion-hearted and Saladin the Sultan, are the chief warriors. The reader's interest centers, however, in the soldierly exploits and the courtship of the Prince of Scotland, disguised as Sir Kenneth of the Couchant Leopard, who wins the hand of Lady Edith Plantagenet. The love story is in Scott's best romantic vein. The romantic effect is heightened by descriptions of the splendor of the armies, of a great sand-storm on the desert, of marvelous feats of swordsmanship,—descriptions which suitably develop the main action.

Tanglewood Tales (1853). A collection of tales by Nathaniel Hawthorne (American). Hawthorne draws his material from the ancient Greek myths but simplifies them and makes them less sombre, so that children may enjoy the stories. In this volume he tells such stories as those of the Minotaur, a monster who was killed by Theseus, of Circe's Palace, where men were turned to pigs, and of the Golden Fleece, wrested away from a dragon, which guarded it by Jason and his Argonauts.

Tarkington, Booth (1869-). An American writer, author of popular plays, novels, and short stories. *Penrod* describes the pranks of a small boy; *Seventeen,* the sentimental affairs of a youth; *The Magnificent Ambersons,* life in a Middle Western city.

Taylor, Bayard (1825-78). An American author, called by Professor Bronson "the man of letters in motion." He was a great traveler, and wrote and lectured upon his experiences. *Views Afoot; Poems of the Orient.*

Tempest, The. This is a romantic drama by Shakespeare (English). It has an impossible plot, and is written in the spirit of contentment which marked the author's old age. Its chief character, Prospero, a magician, is a model of magnanimity. Caliban, a beastly creature with something of human intelligence but no moral sense, contrasts with him most sharply. The plot opens with a tempest, caused by Prospero's magic. This tempest brings to Prospero's desert island the duke who had formerly usurped his throne. After a day of marvels Prospero regains his dukedom, and all sail away to Italy.

Tennyson, Alfred, 1st Lord (1809-92). Tennyson is the most representative and popular of English poets of the Victorian period. His first volume of poems, in 1832, was severely criticised, but the next volume, published in 1842, was a great success. In 1850 he published *In Memoriam,* an elegy in memory to Arthur Hallam. In 1859 came *Idylls of the King.* In 1850 he was made Poet Laureate, and in 1884 was created Baron. His poems are polished in style, fluent, and melodious. In thought they reflect the accepted standards of morals and behavior. *The Princess, Maud, Enoch Arden, The Charge of the Light Brigade, Crossing the Bar.*

Thackeray, William Makepeace (1811-63). English novelist, poet, and essayist; most noted for his novels. The most famous of these give pleasant, satirical pictures of English society. He had a very easy, urbane style, a moralizing vein of sentiment, and genial humor. His best known novels are: *Vanity Fair, Henry Esmond,* and *The Newcomes.*

Thanatopsis. A poem of consolation upon thought of death, written by William Cullen Bryant (American). He concludes with the exhortation that a man should so live that he may approach his grave, "Like one who wraps the drapery of his couch About him, and lies down to pleasant dreams."

Thaxter, Celia L. (1835-94). American poet. *The Sandpiper.*

Thomas, James (1834-82). Scotch poet; author of gloomy, pessimistic works, of which *The City of Dreadful Night* is best known.

Thompson, Francis (1859-1907). An English Roman Catholic poet. His best known poem is *The Hound of Heaven*, an interpretation of a passage in the psalms.

Thomson, James (1700-48). A Scotch romantic poet. Author of *The Castle of Indolence*, written in the Spenserian stanza, and of *The Seasons*, a poem in blank verse which showed an interest in nature not common in his day.

Thoreau, Henry David (1817-62). An American nature-lover who lived for two years in a hut which he built at Walden Pond, near Concord, Massachusetts. In a book, called *Walden*, he recorded his thoughts and observations upon nature and man.

Ticknor, George (1791-1871). First Professor of Modern Languages at Harvard University; one of the most influential people in establishing the Boston Public Library. He gave a great incentive to American scholarship. *History of Spanish Literature*; *The Life of Prescott.*

Tito, Melema. One of the leading characters in George Eliot's *Romola.* His great personal charm, which endears him to all whom he meets, is offset by the weakness of his character, which develops into positive cruelty and treachery. Failing to go in search of his shipwrecked benefactor is the beginning of his moral degradation. Later this first lapse leads to his denying his benefactor entirely, selling his wife's cherished library,—the legacy of her father,—and being false to his wife and his country. His characterization is one of the most detailed and convincing studies in moral deterioration to be found in English fiction.

Tom Brown's School Days (1856). This story, written by Thomas Hughes (English), is probably the best story of school life ever written. It relates the experiences of the hero at Rugby, including his acquaintance with the famous headmaster, Doctor Arnold. Cricket, football, fagging, bullying, and poaching receives more attention in the story than lessons do. *Tom Brown at Oxford* takes the hero to college.

Tom Jones (1749). A novel by Henry Fielding (English), said by Thackeray to be the last in which an English novelist was allowed to depict a man as he is. It is, indeed, very outspoken. The hero, Tom Jones, is a foundling who grows up into an impulsive, frank, and generous boy. He loves Sophia Western, daughter of the local squire, but has a rival, Blifil, a malicious hypocrite. Tom gets into scrapes, is disinherited, has several discreditable adventures with women; but through all his wanderings remains frank, well-intentioned, and kind of heart. At the end of the story he is discovered to be the rightful heir to a fortune, reforms, marries Sophia, and launches upon a virtuous and happy career.

Treasure Island (1883). A pirate story by Stevenson (Scottish), originally written for the entertainment of his stepson, Lloyd Osborne. The hero is Jim Hawkins, a boy whose father keeps a seaside tavern. At the tavern lives a terrible old seaman who guards the secret of the burial place of pirate treasure. A murderous gang is after this secret, but the old man dies without revealing it, and the map of Treasure Island passes into the possession of Hawkins. Friends of his proceed to fit out a vessel to seek the treasure, but their purpose leaks out, and some of the pirate gang enlist in the crew. Mutiny on board ship, cold-blooded murders, strategy and fighting, on sea and ashore, form the material of the remaining story, until the treasure is found. The book has all the best features of a good pirate yarn, including a diabolical villain, Long John Silver, the one-legged cook.

Trilby (1895). A novel by George Du Maurier (English), which attained great popularity a generation ago. It concerns the infatuation of three young English students of art, living in the Latin Quarter of Paris, with Trilby, an artist's model. Eventually, through the hypnotic influence of Svengali, a sinister Austrian Jew, she becomes a famous singer, but loses her power and dies when his influence is removed.

Trollope, Anthony (1815-82). An English novelist. He wrote about fifty novels, of which the best known is *Barchester Towers*, a story of life in a cathedral town.

Twain, Mark (1835-1910). (Penname of S. L. Clemens.) The greatest American humorist, known and honored abroad as well as in America. *The Adventures of Huckleberry Finn* and *The Adventures of Tom Sawyer* are fascinating stories concerning the adventures of boys living near the Mississippi River, in the middle years of the last century. *Innocents Abroad* is a whimsical account, full of characteristic buffoonery, of the author's European travels. *A Connecticut Yankee at King Arthur's Court* tells the remarkable adventures of a modern Yankee who finds himself living at the court of Arthur. These works represent the author at his best.

Twelfth Night. This is one of Shakespeare's romantic comedies, in keeping with the spirit of the festival which is celebrated in England on the twelfth night after Christmas. It was written to give amusement, but even while amusing us Shakespeare shows us characters which are so true to life that they instruct us as well. He satirizes the conceited and languishing Malvolio, at the same time winning our admiration for the whole-hearted and faithful Viola. The humor runs from vulgar but droll scenes showing Sir Andrew Aguecheek and Sir Toby Belch in their cups, to the scenes of refined comedy with witty dialogue, in which Viola has the leading part. The plot is one of mistaken identity in which four lovers are involved in ludicrous situations.

Ulysses. The Latin name for the Greek hero, Odysseus. He has a prominent place in the Iliad and is the chief character in *The Odyssey.* *The Odyssey*, indeed, concerns itself with his adventures after the fall of Troy. Ulysses is the most crafty of all the characters in Homeric epic. To him his comrades turn when a difficult situation arises, and by following his ingenious counsel extricate themselves from their troubles.

Uncle Tom's Cabin (1852). A novel by Harriet Beecher Stowe (American). Judged by the usual literary standards, this is an inferior book; but judged by its influence upon human life it must be rated one of the great books of all time. It was read very widely at the time of its publication and had a considerable effect in winning freedom for the negro race in America. The story depicts the horrors of slavery by tracing the history of Uncle Tom, a faithful old slave, who is sold because of his master's loss of fortune. First he goes to a kind master, and has a happy life; but after a few years he has the misfortune to be sold once more, this time to a cruel master, Simon Legree, who tyrannizes over him, and finally, in a burst of wrath, has him so severely flogged that he dies from his wounds. Famous passages in the book describe the escape of Eliza, a fugitive slave, from the blood-hounds; the death of Little Eva, daughter of one of Tom's masters; and a slave-auction of the most heartless sort.

Uriah Heep. A dishonest and repulsive clerk in Dicken's *David Copperfield.* He conceals his true character under a mask of fawning humility. His name has become almost a synonym for hypocrisy.

Van Dyke, Henry (1852-). Clergyman, professor, and minister to Holland. Author of poetry, essays, and stories. *Fisherman's Luck*, *The Other Wise Man.*

Vanity Fair (1847). A novel by William Makepeace Thackeray (English). In its sub-title this novel is called a story "without a hero." The complete title, accordingly, informs the reader that the world will be depicted as a mart like that in *Pilgrim's Progress*, where only baubles and trinkets are for sale and all at high prices, a place where no man is really heroic, no man without his folly. Becky Sharp, a clever adventuress, is the leading character. Although she had disreputable parents, she succeeds through her own efforts in getting well married, in living lavishly by evading creditors, and in winning her way into smart society. At last her husband, Rawdon Crawley, catches her in a compromising situation with Lord Steyne, an old rake, unmasks her, and leaves her. Thereafter she sinks into a cheap, vagrant life, trying more or less in vain, to seem respectable. The more admirable characters in the book are Amelia Sedley, sweet-natured but weak, and Dobbin, faithful and honest though a bit dull. Many readers consider *Vanity Fair* the greatest of English novels.

Vicar of Wakefield, The (1766). A novel by Oliver Goldsmith (English). The hero of this book is a benevolent, lovable, country clergyman, one who unites in his person, as Goldsmith says, "the three greatest characters upon earth: he is a priest, a husbandman, and the father of a family." The story tells of the misfortunes which fall upon the Vicar's family, of the follies of Moses, a blundering son, of the worldliness of the mother and daughters, of the family's loss of property, and worst of all, of the elopement of Olivia, one of the daughters, with a philandering squire of the neighborhood. Throughout the troubles which beset him, the Vicar maintains a steadfast, hopeful composure. At the end of the story, perhaps with some abuse of coincidence, misfortune gives way to prosperity and happiness. The character of the Vicar,—a smiling Job,—is the great feature of the work. He has been called one of the highest compliments ever paid to human nature.

Viola. She is the winsome heroine of Shakespeare's play, *Twelfth Night.* Disguised as a page, she enters the service of Orsino, the man she loves. To him she is loyal, even when he bids her help him to woo another woman, Olivia.

Walden (1854). In this book Henry D. Thoreau gives an account of an experiment in simple living. He tells how he went to live on the shore of Walden Pond, near Concord, Massachusetts. He built a hut with his own hands; he raised beans and other vegetables for his food. By simplifying his life he was able to support himself with a few hours' labor each day, and to have the major part of his time for reading, walking, writing, and the observation of birds, beasts, and flowers. Thoreau did not write the book with the idea of arguing that all men should live as hermits in the woods, but as an illustration of the fact that luxury is not essential to high-mindedness and quiet happiness.

Wallace, Lew (1827-1905). A general in the United States Army; author of historical novels. The best known, *Ben Hur*, has been exceedingly popular, and has had enormous sales. The stage version of the story has been equally successful.

Walpole, Horace (1717-97). Author of vivacious *Letters*, and of a Gothic romance, *The Castle of Otranto.* Walpole was an English nobleman, a dictator to society. The house where he lived, Strawberry Hill, near London, which held his private printing press and a remarkable collection of curios, is famous.

Walpole, Hugh (1884-). *The* English novelist. *Dark Forest*; *Fortitude.*

Walton, Izaak (1593-1683). A retired English shopkeeper who immortalized his love for fishing in *The Complete Angler.* Also the author of excellent biographies of men of his time.

"Ward, Artemus" (1834-67). Penname of Charles F. Browne, and American humorist, lecturer as well as writer. His humor was broad and full of common sense. *His Book.*

Ward, Mrs. Humphrey (1851-1920). An English novelist; niece of Matthew Arnold; wife of the editor of Ward's English Poets. Her novels deal with problems of English social, economic, and religious life. *The Testing of Diana Mallory*; *Marcella.*

Warner, Charles Dudley (1829-1900). American essayist and editor. Author of *My Summer in a Garden*; *Being a Boy.*

Washington, George (1732-99). Best known as patriot and first president of the United States. Author of the *Farewell Address*, and other state papers.

Washington's Farewell Address. This address was delivered in 1796 at the close of his last administration. It was written with the assistance of Madison and Hamilton. Washington states his intention to retire now that no urgent affairs demand his attention, and thanks the people for their support. He then makes suggestions for their conduct in the future, especially regarding domestic unity and foreign neutrality. (1) Unity of government must be preserved; to this end America has inducements of common interest, descent, and so forth. A tendency to change the Constitution frequently and excessive party spirit are dangerous to unity. (2) Harmony with all nations and partiality or dislike for none is the best policy. Phrases from this address are frequently quoted in addresses and articles upon political subjects.

Webster, Daniel (1782-1852). Great American orator. Born on a New Hampshire farm, he studied law, became United States Senator, and later Secretary of State. He was an opponent of State Rights. *Bunker Hill Orations*; *Reply to Hayne.*

Wegg, Silas. A character in Dicken's *Our Mutual Friend.* He is a one-legged man who keeps a street still. He is hired by Mr. Boffin to read to him *The Decline and Fall of the Roman Empire.* Wegg occasionally "drops into poetry." He is a deceitful but amusing rogue.

Wells, Herbert George (1866-). The foremost English novelist of his generation. He has written upon a great variety of themes, but usually shows a keen interest in social problems, science, and religion even in books dealing with other materials chiefly. *The Research Magnificent*; *Mr. Britling Sees It Through.*

Westward Ho (1855). A novel by Charles Kingsley (English). The story tells the adventures of Amyas Leigh, a sailor in the days of Queen Elizabeth. His first voyage was around the world with Sir Francis Drake. Afterward he went to the continent of South America, to find Rose Salterne, an English girl who had married a Spaniard. After some fighting he and his men have to abandon their ship, and strike inland. For many months they tramp over the continent, fighting, accumulating gold, and rescuing a white girl from the Indians. They return to England at last, taking Ayanacora, the white girl, with them. Amyas goes out again soon afterwards to fight against the Spanish Armada, and loses his eyesight from being struck by lightning, just after the fight is won. He then returns home and marries Ayanacora. The book gives a good picture of the seafaring of the period. Famous persons introduced include Sir Walter Raleigh, Sir Richard Grenvil, and Edmund Spenser.

White, Gilbert (1720-93). An Englishman who observed very minutely the things which lay about him in a small village and recorded his observations in a book called *The Natural History and Antiquities of Selborne.*

White, William Allen (1868-). American author of novels and short stories. *The Court of Boyville.*

Whitman, Walt (1819-92). An American poet of radical democratic ideas. His verse forms were as unconventional as his ideas. He has a high reputation in Europe as well as in America. *Leaves of Grass*: *Oh Captain! My Captain* (Upon the death of Lincoln).

Whittier, John Greenleaf (1807-92). An American poet. A Quaker, a native of Massachusetts. An ardent advocate of abolition, as in the lyrics, *Voices of Freedom;* the author of religious poetry (*Laus Deo*), and poems (*Snow Bound*) describing life in rural New England, with close attention to nature.

Wiggin, Kate Douglas (1859-1923). (Penname of Mrs. George Christopher Riggs.) American author of clever novels and short stories, many of them intended for children. *Penelope's Progress; The Bird's Christmas Carol.*

Wigglesworth, Michae (1631-1705). A minister in colonial Massachusetts who expressed his stern theology in *The Day of Doom*, a rhymed narrative which influenced New England for a century.

Wilde, Oscar (1856-1900). Brilliant Irish poet and playwright. One of the group of young men who founded the "aesthetic movement," an artificial following of "art for art's sake." His experiences in prison led to his writing *The Ballad of Reading Gaol. Lady Windermere's Fan* is one of his cleverest plays.

Wilkins, Mary E., see **Freeman.**

Willis, Nathaniel Parker (1806-67). A journalist of the Knickerbocker School whose works were esteemed in his time. Little read to-day.

Wilson, John, see **North, Christopher.**

Winthrop, John (1588-1649). First Governor of Massachusetts Bay Colony, and author of the annals of the colony (1630-49), called *The History of New England.* This has served as a source of material for later writers.

Wister, Owen (1860-). American novelist. *The Virginian.*

Woolman, John (1720-72). A New Jersey Quaker preacher, an early opponent of slavery. His *Journal* attracted the attention of Charles Lamb.

Wordsworth, William (1770-1850). A great English poet. In his youth he was in sympathy with the French Revolution, but later became a conservative. He spent most of his long and peaceful life in the Lake Country in the northwestern part of England, enjoying the beautiful scenery of that region, and devoting himself to poetry. About him and his sister Dorothy gathered Southey, Coleridge, and others, known as the Lake Poets. Wordsworth finds the same inspiration in nature that many people find in religion.

"But he was a priest to us all
Of the wonder and bloom of the world."

The Prelude; Michael; Ode on the Intimations of Immortality; sonnets.

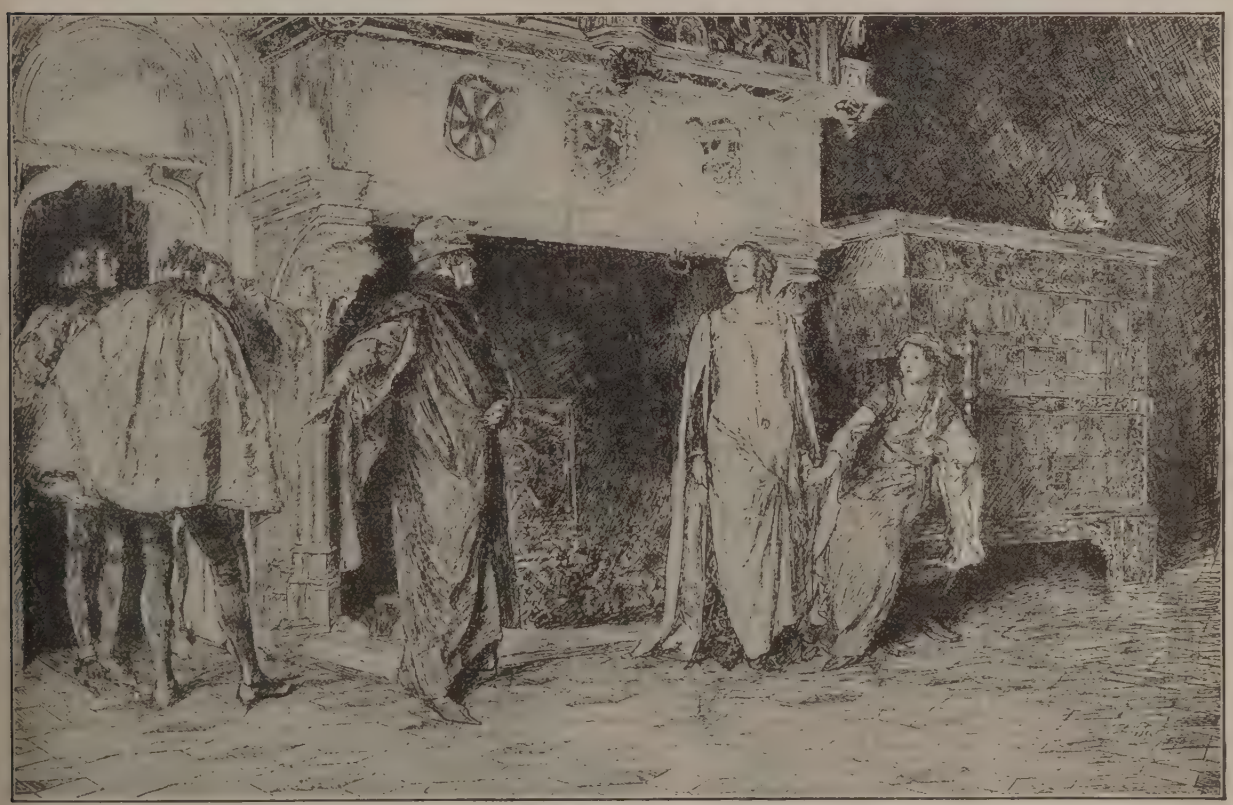
Wuthering Heights (1848). A novel by Emily Bronte (English). The scene is laid in Yorkshire, where the author lived. The story is concerned with the almost superhuman hate of Heathcliff, for his neighbors and friends. He hates even his own wife and child, and vents his wrath upon them cruelly. Death after death ensues as the story proceeds, until at last Heathcliff himself dies and the family which remains is at peace. Few if any stories have so concentrated a passion of wrath within them as this has. "Beyond the madness and terror of 'Wuthering Heights' romantic fiction has never gone."

Wycliffe, John (1324?-84). A religious reformer who conceived the idea of translating the Bible into English. The style of the translation made the scripture intelligible to the common folk of England. Wycliffe suffered much persecution for his work. He was one of the chief forerunners of the Reformation.

Yeats, William Butler (1865-). A contemporary Irish poet, who, like other poets of the Irish renaissance, derives his inspiration from the old legends and folk-lore of his country. *The Land of Heart's Desire.*

Young, Edward (1683-1765). An English clergyman, author of a religious poem, *Night Thoughts.*

SHAKESPEARE'S "AS YOU LIKE IT"



DUKE FREDERICK. ' Mistress, despatch you with your safest haste."—*Act I., Scene III.*

DICTIONARY OF PSEUDONYMS AND SOBRIQUETS

PEN NAME OR SOBRIQUET	REAL NAME
Abbott, Madeline Vaughan	Mrs. Charles E. Bushnell.
Achitophel, "Achitophel and Absalom"	Earl of Shaftesbury (1621-1638).
Ackermann, Gottlieb	Franz Xavier Mayer.
Ackworth, John	Rev. F. R. Smith.
Adam, Madame (Edmond)	Juliette Lamber.
Adams, Moses	Geo. Wm. Bagley.
Adams, Stephen	Michael Maybrick.
Addison of the North, "The Man of Feeling"	Henry Mackenzie.
Adeler, Max	Charles Heber Clark.
Admirable Doctor	Roger Bacon.
Adonais, "Adonais"	Keats (name given by Shelley).
Agate	Whitelaw Reid.
Aglaus	Henry Timrod.
Akers, Elizabeth	Mrs. E. M. Allen.
A. K. H. B.	Rev. A. K. H. Boyd.
Alcaeus	James Montgomery.
Alcibiades, *Punch*, 1846	Lord Tennyson.
Alexander, Mrs.	Mrs. Annie Alexander Hector.
Alexander of the North, The	Charles XII of Sweden.
Alexander, Sir Drawcansir	Tobias George Smollett.
Alexander the Coppersmith, LL. D.	Thomas Erskine, Baron Erskine.
Alexander the Corrector	Alexander Cruden.
Allen, F. M.	Edmund Downey.
Alte Fritz, Der	Frederick the Great.
Americus	Francis Lieber.
Ames, Lucia True	Mrs. Lucia Ames Mead.
Amyand, Arthur	Capt. E. A. Haggard.
Anacreon Moore	Thomas Moore.

Pen Name or Sobriquet	Real Name
Anacreon of Painters	Francesco Albani.
Anacreon of Persia	Hafiz.
Andrews, Annulet	Mrs. J. Kingsley Ohl.
Ane of that Ilk	Prof. W. E. Aytoun.
Angelical Doctor	Thomas Aquinas.
Angler, An, "Salmonia."	Sir Humphry Davy.
Anstey, F.	T. Anstey Guthrie.
Apostate, Julian the	Roman Emperor Julian.
Apostle of Germany	St. Boniface.
Apostle of Ireland	St. Patrick.
Apostle of Temperance	Rev. Theobald Mathew.
Apostle of the English	St. Augustine.
Apostle of the French	St. Denis.
Apostle of the Frisians	St. Willibrord or Wilbrod.
Apostle of the Gauls	St. Irenæus.
Apostle of the Goths	Ulfilas.
Apostle of the Indians	Rev. John Eliot.
Apostle of the Indies	St. Francis Xavier.
Apostle of the North	Ansgar or Anscharius.
Apostle of the North	Bernard Gilpin.
Archibald, Mrs. G	Mrs. George A. Palmer.
Armstrong, Regina	Mrs. C. H. Niebaus.
Arnold, Birch	Mrs. J. M. D. Bartlett.
Arp, Bill	Charles H. Smith.
Ashmont	J. Frank Perry.
Astrophel	Sir Philip Sidney.
Atlas	Edmund Yates.
Attic Bee	Sophocles.
Attic Muse	Xenophon.
Atticus	Joseph Addison (name given by Pope in "Prologue to the Satires").
Aunt Elmina	Mrs. Isaac Slenker.
Austrian Hyena	Baron Julius Jakob von Haynau.
Autocrat, The	Dr. Oliver Wendell Holmes.
Ayres, Alfred	Thomas E. Osmun.
Bab, "Bab Ballads"	W. S. Gilbert.
Baba, Ali	Alberigh Mackay.
Badinguet	Napoleon III.
Balfour, Clara	Mrs. Felicia Dorothea (Browne) Hemans.
Ballin, Ada S	Mrs. Oscar G. D. Berry.
Bard of Avon	Shakespeare.
Bard of Ayrshire	Robert Burns.
Bard of Rydal Mount, The	Wm. Wordsworth.
Barnaval, Louis	Charles De Kay.
Barnes, Catharine Weed	Mrs. Henry Snowden Ward.
Bates, Charlotte Fiske	Mme. Adolphe Roge.
Bayard, The Polish	Prince Józef Anton Poniatowski.
Baylor, Frances Courtenay	Mrs. Geo. S. Barnum.
Beard, Frank	Thos. Francis Beard.
Beau Brummel	George Bryan Brummel.
Beauclerc	Henry I. of England.
Beaumont, Averil	Mrs. Hunt.
Beau Nash	Richard Nash (also called "King of Bath").
Bede, Cuthbert	Rev. Edward Bradley.
Bell, Acton	Anne Brontë.
Bell, Currer	Charlotte Brontë.
Bell, Ellis	Emily Brontë.
Bell, Lilian	Mrs. Arthur Hoyt Bogue.
Bell, Lura	Julia May Williamson.
Bell, Nancy	Mrs. A. Geo. Bell.
Belloc, Marie Adelaide	Mrs. Frederick S. Lowndes.
Bell-the-Cat	Archibald Douglas, fifth earl of Angus.
Belted Will	Lord William Howard
Benson, Carl	Charles Astor Bristed.
Bentzon, Th	Marie Therese Blanc.
Berkeley, Thusnelda	Mrs. Mary L. Metcalfe.
Berwick, Mary	Adelaide Anne Procter.
Bess, Good Queen	Queen Elizabeth of England.
Bettina	Elisabeth or Bettina (Brentano) von Arnim.
Bevans, Neile	Nellie Bingham van Slingerland.
Bibliophile	L. A. Allibone.
Bibliophile, P. & Jacob	Paul Lacroix.
Bickerdyke, John	Charles H. Cook.
Bickerstaff, Isaac	Swift and Steele.
Biglow, Hosea	J. R. Lowell.
Billings, Josh	Henry W. Shaw.
Bisland, Elizabeth	Mrs. Elizabeth Wetmore.
Black Douglas	(Generic name of Scotch family of Douglas.)
Black Prince, The	Edward, Prince of Wales, son of Edward III. of England.
Blacksmith, The Learned, "Sparks from the Anvil"	Elihu Burritt.
Blanchard, Neltje	Mrs. F. N. Doubleday.
Blind Harry	Henry the Minstrel.
Bluff Hal, or Harry	King Henry VIII. of England.
Boisgilbert, Edmund	Ignatius Donnelly.
Boldrewood, Rolf	Thos. Alex. Browne.
Bon Gaultier	Prof. W. E. Aytoun and Sir Theo. Martin.
Bonehill, Capt. Ralph	Edwd. Stratemeyer.
Bouverie, Bartholomew	Rt. Hon. W. E. Gladstone, M. P.
Boz	Charles Dickens.
Bozzy	James Boswell.
Braddon, Miss M. E	Mrs. John Maxwell.
Brannigan, Calvin	Jas. Jeffrey Roche.
Breitmann, Hans	Charles Godfrey Leland.
Briscoe, Margaret Sutton	Mrs. A. J. Hopkins.
Brooke, Magdalen	M. H. M. Capes.
Brooks, Esta	Mrs. E. P. Evans.
Brooksby	Capt. Pennell Elmhurst.
Brown, Tom	Thomas Hughes, Q. C., M. P.
Brown, Tom, the Younger	Thomas Moore.
Brydges, Harold	James Howard Bridge.
Bunny	Carl E. Schultze.
Burlington Hawkeye Man	Robert Jones Burdette.
Burnett, Frances Hodgson	Mrs. Stephen Townsend.
Butt, Beatrice May	Mrs. W. H. Alhusen.
Byron, The Russian	Alexander Sergeivitch Puschkin.
C	Mrs. J. Farley Cox.
Cadenus	Jonathan Swift.
Calderwood, M.	William F. Robertson, M. D.
Caliban	Robert Buchanan.
Caliban	Louis Jean Emmanuel Gonzalès.
Cambridge, Ada	Mrs. George F. Cross.
Candidus	Samuel Adams.
Carmen Sylva	Queen of Roumania.
Carroll, Lewis	Rev. Chas. L. Dodgson.
Carter, Nick	J. Russell Coryell.
Carton, R. C.	R. C. Crutchett.
Cartwright, Julia	Mrs. Henry Ady.
Caryll, Ivan	John Carl.
Caskoden, Edward	Charles Major.
Castlemon, Harry	Charles A. Fosdick.
Catholicus	Cardinal John Henry Newman.
Cato	Alexander Hamilton.
Champ	Jas. W. Champney.
Chester, Eliza	Harriet Eliza Paine.
Chester, Morley	Emily Underdown.
Chicot	Epes Winthrop Sargent.
Chinese Gordon	Maj. Gen. Charles George Gordon.
Citizen King	Louis Philippe.
Clark, Henry Scott	Millard F. Cox.
Cleeve, Lucas	Mrs. Howard Kingscote.
Cleisthbotham, Jedediah	Sir Walter Scott.
Clement, Clara Erskine	Mrs. James Forbes Waters.
Coe, Captain	E. Card Mitchell.
Collingwood, Harry	W. J. C. Lancaster.
Collins, Mabel	Mrs. Keningale Cook.
Collins, Percy	Price Collier.
Colman, R. W.	James Hogg, the Ettrick Shepherd.
Colmore, G.	Mrs. Gertrude Colmore Dunn.
Common Sense	Thomas Paine.
Condroux, Alfred	Honoré de Balzac.
Confessor, The	Edward III., King of Anglo-Saxons.
Connor, Marie	Marie Connor Leighton.
Connor, Ralph	Rev. C. W. Gordon.
Conqueror, William the	Duke of Normandy.
Conway, Hugh	Fergus Hume.
Coo-ee	W. S. Walker.
Coolidge, Susan	Sarah C. Woolsey.
Corelli, Marie	Eva Mary Mackay.
Cornwall, Barry	B. W. Procter.
Corrector, Alexander the	Alexander Cruden.
Cotonnet	L. C. Alfred de Musset.
Craddock, Charles Egbert	Mary N. Murfree.
Craik, Georgiana M	Mrs. May.
Crayon, Geoffrey	Washington Irving.
Creyton	J. T. Trowbridge.
Crichton, The Admirable	James Crichton.
Crinkle, Nym	And. C. Wheeler.
Croaker & Co.	Joseph Rodman Drake, Fitz-Greene Halleck.
Cromarty, Deas	Mrs. Watson.
Crowfield, Christopher	Mrs. H. Beecher Stowe.
Cruiser, Benedict	G. A. Sala.
Curate of Meudon (le Curé de Meudon)	Francois Rabelais.
Curtius	Noah Webster.
Cusack, George	Grace Carter-Smith.
Cushing, Paul	Roland Alexander Woodsey.
D'Ache, Caran	Emmanuel Poiré.
Dacre, J. Colne	Mrs. A. S. Boyd.
Dagonet	George R. Sims.
Dale, Alan	Alfred J. Cohn.
Dale, Darley	Francesca Maria Steele.
Daly, Frederic	Louis Frederic Austin.
Damsel of Brittany	Eleanora, granddaughter of Henry II. of England.
Danbury News Man	J. M. Bailey.
Danby, Frank	Mrs. Julia Frankau.
D'Anvers, N.	Mrs. A. Geo. Bell.
Davy	Alexandre Dumas.
Dean, Mrs. Andrew	Mrs. Cecily Sedgwick.
Dean, The	Jonathan Swift.
De Burgh, A.	E. M. Alborough.
Defender of the Truth	Henry VIII. of England.
Deland, Margaret	Mrs. Lorin F. Deland.
Delorme, Joseph	Chas. Augustin Sainte-Beuve.
Democratic Tory, A	"Benj. Disraeli: the Past and the Future," John Skelton.
Democritus, Junior	"Anatomy of Melancholy" Robert Burton.
Devoore, Ann	Mrs. R. P. Walden.
Dix, Dorothy	Elizabeth M. Gilmer.
Dobson, Austin	Henry A. Dobson.
Doctor Angelicus	Thomas Aquinas.
Doctor Authenticus	Gregory of Rimini.
Doctor, The	Robert Southey.
Doe, John	Geo. Cavendish Bentinck
Donovan, Dick	Joyce Emerson Muddock.
Dooley, Martin	Finley Peter Dunne.
Douglas, George	George D. Brown.
Douglas, Marian	Annie Douglas Green Robinson.
Doyle, Conan	Sir Arthur C. Doyle.
Drapier, M. B.	Jonathan Swift.
Drinkwater, Jennie Maria	Jennie Conklin, M. D.
Droch	Robert Bridges.
Duchess, The	Mrs. Hungerford.
Duncan, Sara Jeannette	Mrs. Everard Cotes.
Dunning, Charlotte	Charlotte D. Morse.
Dunshunner, Augustus	Prof. Wm. Aytoun.
Egerton, George	Mrs. R. Golding Bright.
Eichberg, Annie	Mrs. John Lane.
Elia	Charles Lamb.
Eliot, George	Marian Evans.
Eliot, Max	Mrs. Granville Alden Ellis.
Elmwood	James Russell Lowell.
Emery, Clay	Clayton Mayo.
Enemy to Peace, An	Jonathan Swift.
English Opium Eater	Thomas De Quincey.
English Rabelais, The	Dean Swift.
English Republican, An	Algernon Chas. Swinburne.
English Roscius, The	David Garrick.
English Tory	Sir Richard Steele.
Englishman, An	Thomas Paine.
Ettrick Shepherd	James Hogg.
Expounder of the Constitution	Daniel Webster.
Falconer, Lanoe	Mary Elizabeth Hawkes.
Fancy, One of the	Thomas Moore.
Fane, Violet	Lady Currie.
Farnam, Ella	Ella F. Pratt.
Farquharson, Martha	Martha F. Finley.
Fat Contributor, The	W. M. Thackeray.
Father of Angling	Izaak Walton.
Father of English Poetry	Title given by Dryden to Chaucer.
Father of Epic Poetry	Homer.
Father of His Country	Given by Roman Senate to Cicero.
Father of His Country	George Washington.
Father of History	Herodotus.
Father of Jests	Joseph Miller.
Father of Letters	Francis I., King of France.
Father of Letters	Lorenzo de' Medici, Ruler of Florence.
Father of Medicine	Hippocrates.
Father of Music	Giovanni Pietro Aloiso Pierluigi da Palestrina.
Father of the People	Louis XII. of France.
Father of Tragedy	Title bestowed by Athenians upon Æschylus.
Federalist, A	Noah Webster.
Fellow of the Royal Society, A	Cotton Mather.
Female Howard	Mrs. Elizabeth Fry.
Fern, Fanny	Sara Payson (Willis) Parton
Field, Michael	Miss Bradley and Miss Cooper.
Fielding, Howard	Charles W. Hooke.
Finn, Mickey	Ernest Jarrold.
Fitz-Boodle, George	W. M. Thackeray.
Fitznoodle	B. B. Vallentine.
Fitzvictor, John	Percy Bysshe Shelley.
Fleming, George	Julia Constance Fletcher.
Flynt, Josiah	Josiah Flynt Willard.
Fontenoy, Marquise de	Margaret Owen Cunliffe.
Forbes, Athol	Forbes Alexander Phillips.
Forrester, Francis	Daniel Wise.
Forrester, Frank	Henry Wm. Herbert.
Forrester, Isola	Mrs. Reuben Merrifield.
Foucher, Paul	Victor Hugo.
Fra Diavolo	Michele Pezza.
Fra Elbertus	Elbert Hubbard.
France, Anatole	Jacques Anatole Thibault.
Francis, M. E	Mrs. Frank Blundell.
Frank, Dr.	J. Frank Perry, M. D.
Freeman, A	Jean Joseph Louis Blanc.
Freeman, Mrs.	First duchess of Marlborough.
Froissart, Jean	Alphonse Daudet.
Garrett, Edward	Mrs. John R. Mayo.
Gaston, Marie	Alphonse Daudet.
Gates, Eleanor	Mrs. Richard Walton Tully.
Gath	George Alfred Townsend.
Gay, Mr. Joseph	Alexander Pope.
Gazul, Clara	Prosper Mérimée.
Gentleman, A	Edmund Hoyle.
George, G. M.	Mrs. Spurrell.
Gerard, Dorothea	Mme. Longard de Longarde.
Gerard, Emily	Mme. de Laszowski.
Gerard, Morice	Rev. J. Jessop Teague.
German Milton, The	Friedrich Gottlieb Klopstock.
German Plato, The	Friedrich Heinrich Jacobi.
German Voltaire, The	Christoph Martin Wieland.
G. G.	Henry George Harper.
Gibbons, Lucy	Lucy G. Morse.
Gift, Theo.	Mrs. G. S. Boulger.

Pen Name or Sobriquet	Real Name
Gilman, Winona	Mrs. F. Schoeffel.
Gissing, George	J. Storer Glouston.
Gladiolus	Wm. Ewart Gladstone.
Glyn, Elinor	Mrs. Clayton Glyn.
Glyndon, Howard	Mrs. Laura C. R. Searing.
Godfrey, Hal	Charlotte O'Conor-Eccles.
Going, Maud	E. M. Harding.
Gooch, Fanny C.	Fanny C. G. Iglehard.
Good Gray Poet	Walt Whitman.
Good Knight, without Fear and without Reproach, The	[Chevalier. Pierre du Terrail de Bayard
Goodman, Maude	Mrs. A. E. Scanes.
Goodwell, Godek	Horace Greeley.
Gordon, A. M. R.	Alexander Macgregor Roe.
Gordon, Julien	Mrs. Van Rensselaer Cruger.
Gorki, Maxime	Alexi Maximovitch Peshkov.
Goslett, Paul	Chas. Lever.
Gower, The Moral	John Gower.
Graduate of Oxford	John Ruskin.
Graham, John	David Graham Phillips.
Grand, Mme. Sarah	Mrs. McFall.
Gray, Maxwell	Miss M. G. Tuttiett.
Great Commoner	William Pitt.
Great Elector	Frederick William, Elector of Brandenburg.
Green, Anna Katharine	Mrs. Charles Rohlfs.
Greenwood, Grace	Sara Jane Lippincott.
Greville, Henri	Mme. Durand.
Grey, Barton	George Herbert Sass.
Grier, Sydney C.	Miss Gregg.
Grile, Dod	Ambrose Bierce.
Gubbins, Nathaniel	Edward Spencer Mott.
Gushington, Angelina	Lady Dufferin.
Gyp	Countess de Martel.
Haliburton, Hugh	James Logie Robertson.
Hall, Owen	James Davis.
Hamilton, Gail	Mary Abigail Dodge.
Hard Pan	Geraldine Bonner.
Harland, Marion	Mrs. Mary V. Terhune.
Harlequin	Robert Harley.
Harrod, Frances	Frances Forbes-Robertson.
Harte, Bret	Francis Bret Harte.
Hawthorne, Alice	Septimus Winner.
Hayes, Henry	Ellen Olney Kirk.
Hegan, Alice Caldwell	Mrs. Cale Young Rice.
Helvidius	James Madison.
Henry, John	Hugh McHugh.
Herbert, Morgan	Margaret M. H. Mather.
Hero of the Nile	Horatio Nelson.
Heron, E. and H.	Mrs. Kenneth and Mr. Hesketh Prichard.
H. H.	Helen Hunt Jackson.
Hibernia	Jonathan Swift.
Hickson, Mrs. Murray	Mrs. S. A. P. Kitcat.
Hierro	Victor Marie Hugo.
Hill, Headon	F. Grainger.
Historicus	George Grote.
Historicus	Sir W. Vernon Harcourt.
Hobbes, John Oliver	Mrs. Pearl M. J. Craigie.
Hoffman, Prof.	Angelo Lewis.
Hogan, Ernest	Reuben Crowdus.
Holdsworth, Annie E.	Mrs. Lee-Hamilton.
Holland	E. J. Edwards.
Holloway, Laura	Laura C. H. Langford.
Holm, Saxe	Probably Helen Hunt Jackson.
Honeycombe, Henry	Leigh Hunt.
Hope, Anthony	Anthony Hope Hawkins.
Hope, Ascot R.	R. Hope Moncreiff.
Hope, F. T. L.	Dr. Farrar.
Hope, Graham	Jessie Hope.
Hopper, Nora	Mrs. Wilfred H. Chesson.
Huntington, Faye	Theodosia T. Foster.
Hutchinson, Ellen M.	Ellen M. H. Cortissoz.
Ignatius, Father	J. L. Lyne.
Incniquin	Robert Southey.
Incorruptible, The	Robespierre.
Ingham, Col. Frederick	Edward Everett Hale.
Ingoldsby, Thomas	Rev. R. H. Barham.
Innominato	Mgr. Eugene Boeglin.
Iota	Mrs. Kathleen M. Caffyn.
Irish Gentleman, An	Thomas Moore.
Iron Duke	Duke of Wellington.
Iron Hand, The	Gottfried von Berlichingen.
Ironquill	Eugene F. Ware.
Iron, Ralph	Mrs. S. C. Cronwright.
Ironside	Edmund II. (989-1016).
Ironside, Nestor	Sir Richard Steele.
Irrefragable Doctor	Alexander of Hales.
Isa	Mrs. Isa Craig-Knox.
Ivory Black	Thomas A. Janvier.
Jacob Omnium's Hoss	W. M. Thackeray.
James, S. T.	Horace E. Scudder.
Jay, W. L. M.	Julia L. M. Woodruff.
Jeames	W. M. Thackeray.
Jean Jacques	Jean Jacques Rousseau.
Jean, Paul	J. P. F. Richter.
Jessamine, James	Bryan Waller Procter.
Jessamy Bride	Mary Horneck (Mrs. Gwyn.)
Jewish Plato, The	Philo Judæus.
Jobber, A.	Daniel Defoe.
Johnson, Benjamin F.	James Whitcomb Riley.
Johnson, Ethe	Mrs. Orson Richmond.
Josiah Allen's Wife	Marietta Holley.
J. S. of Dale	Frederick J. Stimson.
June, Jenny	Mrs. David G. Croly.
Kata Phusin	John Ruskin.
Keith, Leslie	Grace L. K. Johnston.
Kendall, B.	Baroness Kurt von Kendall.
Kerr, Orpheus C.	Robert C. Newell.
Kerr, Sherrill	Julia Magruder.
King, Katherine Douglas	Mrs. Burr.
King Maker, The	Richard Nevil.
King of Courts	Quintus Hortensius.
Kirk, Eleanor	Eleanor K. Ames.
Kirke, Edmund	James R. Gilmore.
Kit	Prof. John Wilson.
Klingle, George	Mrs. Holmes.
Knickerbocker, Cholly	John W. Kellar.
Knickerbocker, Diedrich	Washington Irving.
Kron, Karl	Lyman Hotchkiss Bagg.
Kvelve	Rasmus B. Anderson.
Lady, A.	Mrs. Julia Ward Howe.
Lady, A.	Jane Austen.
Lady of Massachusetts	Mrs. Lydia Maria Child.
Laicus	Rev. Lyman Abbott.
Langstaff, Launcelot	Washington Irving et al.
Last of the Fathers	St. Bernard.
Last of the Goths	Roderick of Spain.
Last of the Romans	Aëtius, a Roman general.
Last of the Tribunes	Nicolo Gabrini Rienzi, Cola di Rienzi.
Laughing Philosopher	Democritus of Abdera
Laurence Slingsby	George Henry Lewes.
Laurie, Annie	Winifred Black.
Le Baron, Grace	Mrs. Henry Macy Upham
Lee, Home	Harriet Parr.
Lee, Vernon	Violet Paget.
L. E. L.	Letitia E. Landon.
Leslie, Amy	Lillie West Brown.
Leslie, Mrs. Frank	Mrs. Miriam F. F. Wilde.
Leviathan of Literature	Dr. Samuel Johnson.
Liberator, The	Simon Bolivar.
Light-Horse Harry	General Henry Lee.
Lion of the North	Gustavus Adolphus.
Little Comedy	Catharine Horneck (Mrs. Bunbury).
Little Corporal	General Bonaparte.
Little Giant	Hon. Stephen A. Douglas.
Little Mac	Gen. George B. McClellan.
Little Magician	Hon. Martin Van Buren.
Little Master	Hans Sebald Beham.
Little Thomas	Thomas Moore.
Logan, Celia	Mrs. J. B. Connelly.
Logan, Olive	Mrs. W. Wirt Sikes.
Lothrop, Amy	Anna Bartlett Warner.
Loti, Pierre	L. M. Julien Viaud.
Ludlow, Johnny	Mrs. Henry Wood.
Luska, Sidney	Henry Harland.
Lyall, Edna	Ada Ellen Bayly.
Lycidas	Edward King.
Lys, Christian	Percy Jas. Brebner.
Maartens, Maarten	J. I. N. W. van der Poorten Schwartz.
MacDermott, B.	Robert M. Sillard.
Mackenzie, Fergus	James Anderson.
Mackie, Pauline B.	Mrs. Herbert M. Hopkins.
MacLaren, Ian	Rev. John MacLaren Watson.
Maclean, Mona	Miss Todd.
MacNab, Frances	Agnes Fraser.
Mad Anthony	General Anthony Wayne.
Madman of the North	Charles XII. of Sweden.
Maid of Orleans	Joan of Arc.
Maid of Saragossa	Augustina Zaragoza.
Maitland, Thomas	R. Buchanan.
Malachi Malagrowther	Sir Walter Scott.
Malet, Lucas	Mrs. William Harrison.
Man of December	Napoleon III.
Man of Destiny	Napoleon Bonaparte.
Man of Ross	John Kyrle.
Mantuan Swan	Vergil.
Maori	James Inglis.
Marchant, Bessie	Mrs. J. A. Comfort.
Market Gardener, A.	R. D. Blackmore.
Marlitt, E.	Henriette Eugénie John.
Marlowe, Charles	Harriet Jay.
Mars, Victor de	Joinville.
Marshal Forward	Field Marshal von Blücher.
Marshes, A Son of the	Mrs. Owen Visger.
Martin, Ellis	Marah Ellis Ryan.
Martin, George Madden	Mrs. Atwood R. Martin.
Marvel, Ik	Donald Grant Mitchell.
Marvel, Matthew	E. P. Ackerman.
Mathers, Helen	Mrs. Henry Reeves.
Mathetes	John Wilson.
Matthæus, Thomas	John Tindal.
Maxwell, Ellen Blackmer	Ellen B. Barker.
May, Sophie	Rebecca Sophia Clarke.
McManus, Blanche	Mrs. M. F. Mansfield.
Meade, L. T.	Mrs. F. Toulmin Smith.
Meredith, Owen	Earl of Lytton.
Merlin	Lord Tennyson.
Merriam, Florence A.	Mrs. Florence M. Bailey.
Merriman, Henry Seton	Hugh Stowell Scott.
Merry Monarch	Charles II. of England.
Merrypebble, Mr.	Wm. E. Gladstone.
M. E. W. S.	Mrs. Jno. Sherwood.
Mignon, August	John A. Darling.
Mill-boy of the Slashes	Henry Clay.
Miller, Joaquin	Cincinnatus Heine Miller.
Miller, Olive Thorne	Harriet Mann Miller.
Millman, Helen	Mrs. Caldwell Crofton.
Miln, Louise Jordan	Mrs. George Crichton Miln.
Miss Teerius	Mrs. Fred Horner.
Moderator	Thomas Chatterton.
Modern Messalina	Catharine II. of Russia.
Monk, Lewis	Matthew Gregory Lewis.
Montbard, Georges	Charles Auguste Loves.
Moore, Mollie E.	Mary Evelyn Moore Davis.
Morley, Mrs.	Queen Anne.
Morning Star of the Reformation	John Wycliffe.
Morris, Peter	John Gibson Lockhart.
Mortimer, Geoffrey	Walter M. Gallichan.
Morton, Hugh	Charles M. S. McLellan.
Mother Ann	Ann Lee.
Mowbray, J. P.	Andrew C. Wheeler.
Mühlbach, Luise	Mme. Klara (Müller) Mundt.
Mulholland, Rosa	Lady Gilbert.
Mulock, Miss	Mrs. G. L. Craig.
Nasby, Petroleum V.	David Ross Locke.
Nero of the North, The	Christian II. of Denmark.
Nesbit, E.	Mrs. Hubert Bland
Newton, Aubrey	Ambrose Winterton.
Noble Lord, A.	Lord Byron.
Nobleman, A.	Oliver Goldsmith.
Nordau, Max	Simon Sudfeld.
North, Barclay	William C. Hudson.
North, Christopher	Prof. John Wilson.
Northern Herodotus	Snorro Sturleson.
Novalis	Friedrich von Hardenberg.
Nox, Owen	Charles B. Cory.
Octogenarian, An	Walter Savage Landor.
O'Dowd, Cornelius	Charles James Lever.
Officer, An	Major Alexander Jardine.
Ogden, Ruth	Frances Otis Ide.
Ogilvy, Gavin	J. M. Barrie.
O'Hara Family	J. and M. Banim.
O. K.	Mme. Olga (Kiréef) Novikoff.
Old Bachelor, An	George William Curtis.
Old Bullion	Col. Thomas Hart Benton.
Oldcastle, John	Wilfred Meynell.
Old Ebony	William Blackwood.
Old Hickory	Gen. Andrew Jackson.
Old Noll	Oliver Cromwell.
Old Public Functionary	James Buchanan.
Old Rowley	Charles II. of England.
"Old Sleuth"	Harlan P. Halsey.
Oldstyle, Jonathan	Washington Irving.
O'Neill, Rose Cecil	Mrs. Harry Leon Wilson.
Only, The	Jean Paul Friedrich Richter.
Optic, Oliver	Rev. Wm. T. Adams.
O'Reilly, Private Miles	Charles G. Halpin.
O'Rell, Max	Paul Blouët.
Oriana (*Oriens Anna*, The Dawning Anna)	Anne, queen of James I.
Otis, James	James Otis Kaler.
Ouida	Louise de la Ramée.
Owen, Jean A.	Mrs Owen Visger.
Oxenham, John	Mr. Dunkerley.
Pacificus	Alexander Hamilton.
Palmer, Lynde	Mrs. A. A. Peebles.
Pansy	Isabella Macdonald Alden.
Papaverius, Thomas	Thomas De Quincey.
Parley, Peter	Samuel G. Goodrich.
Partington, Mrs.	Benjamin P. Shillaber.
Paston, George	Miss E. M. Symonds.
Pathfinder of the Rocky Mountains	Maj.-Gen. John C. Fremont.
Pattieson, Peter	Sir Walter Scott.
Patton, J. B.	Edmund White.
Paul	Sir Walter Scott.
Paul, Jean	Jean Paul F. Richter.
Paul, John	Chas. Henry Webb.
Peasant Bard	Robert Burns.
Pellegrin	Lamotte Fouqué.
Pendennis, Arthur	W. M. Thackeray.
Pennsylvania Farmer	John Dickinson.
Perkins, Eli	Melville D. Landon.
Pfaal, Hans	Edgar Allan Poe.
Philosopher of Malmesbury	Thomas Hobbes.
Phœnix, John, Gentleman	Capt. George H. Derby.
Phiz	H. K. Browne.
Pindar, Peter	Dr. John Wolcott.
Plon-Plon	Prince Napoleon Joseph Charles Bonaparte.
Polish Byron, The	Adam Mickiewicz.
Poor Richard	Benjamin Franklin.
Porcupine, Peter	William Cobbett.
Plymley, Peter	Sydney Smith.
Porte Crayon	David Hunter Strother.
Powell, Richard Stillman	Ralph Henry Barbour.
Prescott, Dorothy	Agnes Blake Poor.
Prescott, E. Livingston	Edith K. Spicer-Jay.
Pretender, The Old	James Francis Edward Stuart.
Pretender, The Young	Charles Edward Stuart.
Prevost, Francis	Harry F. P. Battersby.
Prince of Destruction	Tamerlane, or Timour.
Protestant Pope	Pope Clement XIV.
Prout, Father	Francis S. Mahony.
Q	Arthur T. Quiller-Couch.
Q	Douglas William Jerrold.
Quad, M.	C. B. Lewis.
Quaker Poet	John Greenleaf Whittier.
Quarles	Edgar Allan Poe.
Queen of the East	Zenobia of Palmyra.
Quinn, Dan	Alfred Henry Lewis.
Quirinus	Dr. Döllinger.
Quixote of the North	Charles XII. of Sweden.

Pen Name or Sobriquet	Real Name
Quiz	Charles Dickens.
Rail-Splitter, The	Abraham Lincoln.
Raimond, C. E.	Elizabeth Robins.
Raine, Allen	Mrs. Beynon Puddicombe.
Raleigh, Cecil	Mr. Rowlands.
Ranger, Robin	James M. Freeman.
Rare Ben	Ben Jonson.
Redden, Laura Catherine	Laura C. Searing.
Reid, Christian	Francis C. Tiernan.
Republican, A	Charles Pinckney.
Reybaud, Mme. Charles	Henriette Arnaud.
Rheinhardt, Rudolph H.	George Hempl.
R'Hoone, Lord	Honoré de Balzac.
Riddell, Mrs. J. H.	Mrs. C. E. L. Riddell.
Rita	Mrs. E. M. J. von Booth.
Rives, Amelie	Princess Troubetskoi.
Robertson, Muirhead	Henry Johnson.
Robinson, A. Mary F.	Mme. Emile Duclaux.
Rohan	Koda Nariyuki.
Rosny, J. H.	The Brothers Boex.
Ross, Adrian	Arthur Reed Ropes.
Ross, Albert	Linn Boyd Porter.
Ross, Martin	Violet Martin.
Rough and Ready	General Zachary Taylor.
Rover	Alfred Gibson.
Roving Englishman	Hon. E. C. Grenville-Murray.
Rowe, Bolton	Benj. C. Stephenson.
Rowe, Saville	Clement Scott.
Royal Martyr	Charles I. of England.
Royce, Ashley Allen	Nathaniel Hawthorne.
Roy, Rob	John Macgregor.
Runnymede	Benjamin B. Disraeli.
Rupert of Debate	Earl of Derby.
Rusticus	J. K. Fowler.
Rutherford, Mark	Wm. Hale White.
Sailor King, The	William IV. of England.
Saint Remy	The Duc de Morny.
Saladin	William Stewart Ross.
Salem, Hezekiah	Freneau.
Samian Sage	Pythagoras.
Sand, George	Mme. Dudevant.
Sand, Jules	Jules Léonard Sylvain Sandeau.
Sanghamita, Sister	Countess M. A. de S. Canavarro.
Saunders, Marshall	Margaret M. Saunders.
Saunders, Richard	Benjamin Franklin.
Sauzade, John S.	James Payn.
Savonarola, Jeremy	Francis S. Mahony.
Schreiner, Olive	Mrs. S. C. Cronwright.
Scottish Solomon, The	James VI. of Scotland, and I. of England.
Scourge of God	Attila, king of the Huns.
Scriblerus, Martinus	Swift, Pope, and Arbuthnot.
Scriblerus Secundus	Henry Fielding.
Seeley, Charles Sumner	John William Munday.
Semiramis of the North	Margaret, daughter of Waldemar III. of Denmark.
Semiramis of the North	Catherine II. of Russia.
Seraphic Doctor	St. Bonaventura.
Setoun, Gabriel	Thomas Nicoll Hepburn.
Sevenoaks	Alfred S. Edwards.
Sharp, Luke	Robert Barr.
Shaw, Flora	Lady Flora Lugard.
Sidney, Margaret	Harriett Mulford Lothrop.
Siegerson, Dora	Mrs. Clement Shorter.
Siegvolk, Paul	Albert Mathews.
Single-Speech Hamilton	William Gerard Hamilton.
Sinjohn, John	John Galsworthy.
Slick, Sam	T. C. Haliburton.
Slingsby, Philip	N. P. Willis.
Smith, T. Carlyle	John Kendrick Bangs.
Soldiers' Friend	Frederick, Duke of York.
Sparks, Timothy	Charles Dickens.
Spinner, Alice	Mrs. Augusta Zelia Fraser.
Spy	Leslie Ward.
Stanlaw, Penrhyn	Penrhyn Stanley Adamson.
St. Aubyn, Alan	Frances Marshall.
St. Clair, Victor	G. Waldo Browne.
Stella	Miss Esther Johnson (so called by Swift).
Stepniak	S. Kartcheffsky.
Sterne, Stuart	Gertrude Bloede.
Stewart, Philip	Philip Robinson.
St. Laurence	Alfred Laurence Felkin.
Stonehenge	J. H. Walsh.
Stonewall Jackson	Thomas Jonathan Jackson.
Stretton, Hesba	Sarah Smith.
Stuart, Cosmo	Cosmo Chas. Gordon-Lennox.
Stuart, Esme	Miss Leroy.
Stuart, Leslie	T. A. Barrett.
Sturgis, Dinah	Mrs. Belle A. Whitney.
Subtle Doctor	Duns Scotus.
Surfaceman	Alex. Anderson.
Swan, Annie S.	Mrs. Burnett Smith.
Swan of Cambrai	Fenelon.
Swedish Nightingale	Jenny Lind (Madame Goldschmidt).
Sweet Singer of Israel	King David.
Swift, Benjamin	William Romaine Paterson.
Sylva, Carmen	Elizabeth, Queen of Roumania.
Sylvander	Robert Burns.
Symington, Maggie	Mrs. Sarah M. Blathwayt.
Syntax, Dr.	Wm. Combe.
Temple, Hope	Mme. Andre Messager.
Templeton, Laurence	Sir Walter Scott.
Teufelsdrockh	Thomas Carlyle.
Thanet, Octave	Alice French.
Theuriet, Andre	Claude Adhemar.
The Widow	Teresa Dean.
Thomas, Annie	Mrs. Pender Cudlip.
Thomas, Karl	Karl Thomas Richter.
Thompson, Wolf	Ernest Thompson Seton.
Thorn, Margaret	Ethel S. Cann.
Thorpe, Kamba	Elizabeth Whitfield Bellamy.
Thurston, Henry T.	Francis Turner Palgrave.
Tippecanoe	General W. H. Harrison.
Titcomb, Timothy	J. G. Holland.
Titmarsh	W. M. Thackeray.
Tivoli	Horace W. Bleackley.
Toby	Charles Dickens.
Toby	Jonathan Swift.
Toby, M. P.	Henry W. Lucy.
Tottenham, Blanche L.	Mrs. Arthur Ram.
Tower, Martello	Commander F. M. Norman.
Trask, Katrina	Mrs. Spencer Trask.
Travers, Graham	Dr. Margaret Todd.
Trois-Etoiles	E. C. Grenville-Murray.
Turner, Ethel	Mrs. H. R. Curlewis.
Twain, Mark	Samuel L. Clemens.
Two Brothers	Alfred and Charles Tennyson.
Tyler, G. Vere	Mrs. Lachlan Tyler.
Tynan, Katherine	Mrs. H. A. Hinkson.
Tytler, Sarah	Henrietta Keddie.
Uncle Charles	Charles Welsh.
Uncle Remus	Joel Chandler Harris.
Uncommercial Traveler	Charles Dickens.
Upper Servant, An	Jonathan Swift.
Vagabondia	Frances Hodgson Burnett.
Valens	Richard Burke.
Vandegrift, Margaret	Margaret T. Janvier.
Varley, John Philip	Langdon E. Mitchell.
Venerable Nestor Ironsides	Richard Steele.
Verne, Jules	M. Olchewitz.
Viator Vacuus	Thomas Hughes.
Violinist, A	Eric Mackay.
Virgin Queen, The	Queen Elizabeth.
Voltaire	Francois Marie Arouet.
Wagstaff, Simon, Esq.	Jonathan Swift.
Ward, Artemas	Charles F. Browne.
Warden, Florence	Mrs. G. James.
Wetherell, Elizabeth	Susan Warner.
Winter, John Strange	Mrs. H. E. V. Stannard.
Wizard of the North	Sir Walter Scott.
Yellowplush, Charles, Esq.	W. M. Thackeray.
Yendys, Sidney	Sydney Dobell.
Yorick	Laurence Sterne.
Zadkiel	Capt. R. J. Morrison, R. N.
Zeta	J. A. Froude.
Z. Z.	Louis Zangwill.

MYTHOLOGY—The word myth originally signified speech or discourse, and was identical with the word logos. After the age of Pindar and Herodotus, however, it came to be synonymous with the Latin word *fabula*, fable or legend. According to the present use of our language, a myth is an idea or fancy presented in the historical form; and though, of course, any fiction at any time, in this shape, might be called a myth, yet by usage the word is confined to those fictions made in the early periods of a people's existence—particularly of the Greeks and Romans—for the purpose of presenting their religious belief, and generally their oldest traditions, in an attractive form. The tendency to create myths in this way seems inherent in every people; there is no people so uncivilized as to be without them.

A myth is not to be confounded with an allegory; the one being an unconscious act of the popular mind at an early stage of society, the other a conscious act of the individual mind at any stage of social progress. Even myths of which the allegorical significance is pretty plain, such as the well-known Greek myth of Prometheus and Epimetheus, were received as facts of early tradition by the Greeks.

The ancient Greeks believed their gods to be of the same shape and form as themselves, but of far greater beauty, strength, and dignity. They also regarded them as being of much larger size than men; for in those times great size was esteemed a perfection, supposed to be an attribute of divinities, to whom they ascribed all perfections. A fluid named *ichor* supplied the place of blood in the veins of the gods. They were immortal, but they might be wounded or otherwise injured. They could make themselves visible or invisible to men, and assume the forms of men or of animals. Like men they stood in daily need of food and sleep. The meat of the gods was called *ambrosia*, their drink *nectar*. The gods, when they came among men, often partook of their food and hospitality.

Like mankind, the gods were divided into two sexes; namely, gods and goddesses. They married and had children. Often a god became enamored of a mortal woman, or a goddess was smitten with the charms of a handsome youth, and these love-tales form a large portion of Grecian mythology.

To make the resemblance between gods and men more complete, the Greeks ascribed to their deities all human passions, both good and evil. They were capable of love, friendship, gratitude, and all affections; on the other hand, they were frequently envious, jealous, and revengeful. They were particularly careful to exact all due respect and attention from mankind, whom they required to honor them with temples, prayers, costly sacrifices, splendid processions, and rich gifts; and they severely punished insult or neglect.

The most important classes of myths are the religious and moral. The usual classification is as follows:

Superior Gods.—Jupiter, Neptune, Apollo, Mars, Mercury, Vulcan, Janus, Saturn, Pluto, Bacchus, Juno, Minerva, Diana, Venus, Vesta, Ceres, Rhea.

Inferior Gods.—Cœlus, Sol, Æolus, Plutus, Æsculapius, Pan, Luna, Aurora, Nox, Iris, Latona, Themis, Nemesis, Fortuna, Fama. Several gods peculiar to the Greeks: Enyo, Ergane, Cotytto, etc. Several gods peculiar to the Romans. Priapus, Terminus, Vertumnus, Pomona, Flora, Feronia, Pales, etc.

Mythical Beings.—Titans, Giants, Pygmies, Tritons, Sirens, Nymphs, Muses, Graces, Hours, Seasons, Fates, Furies, Harpies, Winds, Genii, Somnus, Mors, Manes, Lares, Penates, Satyrs, Fauns, Gorgons, Amazons, Centaurs, Minotaur, Chimæra, Geryon, Hydra, Pegasus, Scylla, Charybdis, Sphinx, Typhon.

Deified Heroes.—Inachus, Phoroneus, Ogyges, Cecrops, Deucalion, Amphictyon, Cadmus, Danaus, Pelops, Minos, Perseus, Hercules, Theseus, Jason, Castor, Pollux, and heroes of the Theban and the Trojan wars, etc.

Most of the heroes were at last viewed as sons of gods, and often of Jupiter himself. The veneration for the heroes was, however, less sacred and less universal than the worship of the gods. The heroes received only an annual commemoration at their tombs, or in the vicinity, when offerings and libations were presented to them. Sometimes the respect paid them exceeded these limits, and they were exalted to the rank and honors of the gods. The introduction of solemnities in memory of heroes is ascribed to Cadmus.

Many also are known under a variety of names, for as example:

Apollo, Canoba, Cynthius, Delius, Delphicus, Demarus, Horus, Khrishna, Mythras, Numius, Oros, Pæan, Phœbus, Pythius, Sol.
Aurora, Eos.
Bacchus, Biformis, Brissæus, Dionysus, Nyctelius, Nyseus.
Buddha, Gautama.
Ceres, Cybele, Hestia, Ops, Prisca, Rhea, Vesta.
Cupid, Eros, Kama.
Diana, Artemis, Dyctinna, Hecate, Luna, Phœbe, Proserpine, Tergemina.
Flora, Chloris.

Hercules, Alcides, Sem.
Juno, Hada, Hera, Moneta, Nuptialis, Parthenos, Sospita.
Jupiter, Ammon, Apis, Assabinus, Belus, Capitolinus, Ceraunius, Demarus, Dies Pater, Dodonæus, Genitor, Gragus, Grapsios, Hemphta, Imperator, Indra, Jove, Maximus, Muscarius, Olympius, Osiris, Pluvius, Saturnius, Soter, Zeus.
Mars, Corythaix, Gradivus, Quirinus, Papremis, Silvester.
Mercury, Camillus, Caresa, Hermes, Quadratus, Thoth, Vialis
Minerva, Athena, Ergotis, Glaukopis, Pallas, Pylotis.
Neptune, Consus, Poseidon, Varuna.
Pan, Incubus, Innus, Mendes, Supersus.
Pluto, Dis, Februus, Hades, Shesa, Urgus.
Saturn, Chronos, Krodo.
Venus, Acidalia, Aphrodite, Armata, Astarte, Clucina, Cypria, Cythera, Dione, Erycina, Hortensis, Idalia, Onuva.
Vulcan, Hephæstos.

DICTIONARY OF MYTHS

Achates.—Æneas and Achates were friends. The devotion of Achates was so unselfish and exemplary that *Fidus Achates* became a proverb.

Achelous.—The son of Oceanus and Terra, or Tethys, god of the river of the same name in Epirus. As one of the numerous suitors of Dejanira, he entered the lists against Hercules, and, being inferior, changed himself into a serpent and afterward into an ox. Hercules broke off one of his horns and defeated him, after which, according to some, he was changed into a river.

Acheron.—To separate that portion of hades reserved for the punishment of the wicked, Pluto surrounded it with Phlegethon, a river of fire, while the Acheron, a deep and black stream, had to be passed by all souls before they reached Pluto's throne and heard his decree. Acheron is also used to signify hades or hell itself.

Achilles, the son of Peleus and Thetis, was the bravest of all the Greeks in the Trojan war. During his infancy, Thetis plunged him in the Styx, thus making every part of his body invulnerable except the heel by which she held him. To prevent him from going to the Trojan war, Thetis sent him privately to the court of Lycomedes, where he was disguised in a female dress. As Troy could not be taken without his aid, Ulysses went to the court of Lycomedes in the habit of a merchant, and exposed jewels and arms for sale. Achilles, choosing the arms, discovered his sex, and went to the war. Vulcan made him a strong suit of armor, which was proof against all weapons. He was deprived by Agamemnon of his favorite Briseis, and for this affront he would not appear on the field till the death of Patroclus impelled him to vengeance. He slew Hector, who had killed Patroclus, and tying his corpse to his war car, dragged it three times around Troy. He is said to have been killed by Paris, who inflicted a mortal wound in his vulnerable heel with an arrow.

Actæon.—A famous hunter, who, having surprised Diana as she was bathing, was turned by her into a stag, and killed by his own dogs.

Adissechen.—In Indian mythology the serpent of a thousand heads which hold the universe in place.

Admetus.—A king of Thessaly, and husband of Alcestis, famous for his misfortunes and his piety. Apollo tended the flocks of Admetus for nine years, when he was obliged to serve a mortal for having slain the Cyclops.

Adonis.—A beautiful youth, loved by Venus, and slain by a wild boar which he was hunting. Venus was inconsolable at his loss, and at last obtained permission from Proserpine that Adonis should spend six months on earth with her and six months among the shades. Adonis is also the name given to a Syrian god, supposed to be slain by a wild boar in Lebanon, and to revive every year. He is identified with the Greek Adonis, beloved by Venus.

Adrammelech.—God of the people of Sepharvaim, to whom infants were burned in sacrifice (II. Kings xvii, 31). Adar was the sun worshiped under a particular attribute.

Ægæon.—One of three brothers, huge monsters, with fifty heads and a hundred arms. According to the most ancient tradition, Ægæon and his brothers conquered the Titans when they made war upon the gods, and secured the victory to Zeus who thrust the Titans into Tartarus, and placed Ægæon and his brothers to guard them.

Ægeus.—King of Athens, and father of Theseus.

Ægis.—The shield of Jupiter, made by Vulcan, was so called and symbolized "divine protection." The shield of Minerva was called an ægis also.

Ægle.—A nymph: a daughter of Æsculapius; one of the Hesperides, also the name of one of the sisters of Phaëton.

Ælurus.—The cat. An Egyptian deity held in the greatest veneration. Herodotus tells us that Diana, to avoid being molested by the giants, changed herself into a cat. The deity used to be represented with a cat's head on a human body.

Æneas.—A Trojan prince, son of Anchises and Venus. He married Creusa, the daughter of Priam, and they had a son named Ascanius. During the Trojan war Æneas behaved with great valor in defense of Troy. When the city was in flames he is said to have carried away his father, Anchises, on his shoulders, leading his son, Ascanius, by the hand, his wife following them. Subsequently he built a fleet of twenty ships, with which he set sail in quest of a settlement. He was driven on the coast of Africa, and was kindly received by Dido, queen of Carthage, who became enamored of him; but he left Carthage by the order of the gods. He has been praised for his piety and his submission to the will of the gods; the term "Pius" is generally appended to his name.

Æolus, the ruler of storms and winds, was the son of Hippotas. He reigned over Æolia, was the inventor of sails, and a great astronomer. The poets have called him the god of the wind.

Æsculapius.—The son of Apollo and Coronis, the daughter of a Thessalian king. By his father he was committed to the care of the wise centaur, Chiron, who taught him botany, together with the secret efficacy of plants. By means of this information, Æsculapius became the benefactor of mankind. In tradition he is noted as having awakened the dead.

Æsir, plural of As or Asa, the celestial gods of Scandinavia, who lived in Asgard (god's ward), situate on the heavenly hills between earth and the rainbow. The chief was Odin.

Æson.—The father of Jason and brother of Pelias, who seized the kingdom rightfully belonging to Æson.

Æstas.—The god of summer; he is crowned with corn and generally holds a sickle in his hand. By poets and artists the seasons are all personified. They are frequently seen together on relievi, medals, and gems. The artists have also followed the poets in representing the four ages of life by depicting Ver (spring) as infantile and tender; Æstas (summer) as young and sprightly; Autumnus (autumn) mature and manly; and Hiems (winter) as old and decrepit.

Agamemnon, king of Mycenæ and Argos, was brother to Menelaus, and son of Plisthenes, the son of Atreus. He married Clytemnestra, and Menelaus Helen, both daughters of Tyndarus, king of Sparta. When Helen eloped with Paris, Agamemnon was elected commander-in-chief of the Grecian forces invading Troy.

Ahriman.—Most malevolent of all the Persian gods.

Ajax, son of Telamon and Peribœa, or Eribœa, was one of the bravest of the Greeks in the Trojan war. After the death of Achilles, Ajax and Ulysses both claimed the arms of the dead hero, which were given to Ulysses. Some say that Ajax was killed in battle by Paris, but others record that he was murdered by Ulysses.

Alastor.—A surname of Jupiter. Among the lesser gods the name Alastor is given to the unforgetting, revengeful spirit, who, in consequence of some crime perpetrated, persecuted a family from generation to generation.

Alcestis, or **Alceste.**—A daughter of Pelias, and the wife of Admetus. To save her husband's life, she died in his stead. By request of Apollo, the gods had granted eternal life to Admetus but on the condition that when the appointed time came for the good king's death, some one should be found willing to die in his stead. This decree was reported to Alcestis, Admetus' beautiful young wife, who offered herself as substitute, and cheerfully gave her life for her husband. But immortality was too dearly bought at such a price; and Admetus mourned until Hercules, pitying his grief, descended into hades and brought her back.

Alecto.—One of the Furies. She is represented with her head covered with serpents, and breathing vengence, war, and pestilence.

Alectryon.—A servant of Mars, who was changed by him into a cock because he did not warn his master of the rising of the sun.

Alfadur.—In Scandinavian mythology the Supreme Being—Father of All.

Alpheus and Arethusa.—The Greek fable says that Alpheus, the river-god, fell in love with the nymph Arethusa, who fled from him in affright. Diana came to her rescue.

Al Sirat.—A narrow bridge extending from this world to the next over the abyss of hell, which must be passed by every one who would enter paradise.

Althæa.—The mother of Meleager. She caused the death of her son and killed herself in remorse.

Amacitia.—The goddess of friendship. In Greek mythology she was represented with her head bare, her dress open near the heart, holding in her left hand an elm, around which a vine clung, filled with clusters of grapes.

Amazons.—A nation of women-soldiers who lived in Scythia. Hercules defeated them, and gave Hippolyte, their queen, to Theseus for a wife.

Ambrosia.—The food of the gods; so called because it made them not mortal, *i. e.*, immortal.

Ammon.—One of the names bestowed on Jupiter. As Jupiter Ammon, he was represented as having the horns of a ram.

Amphion.—Son of Jupiter and Antiope. He cultivated poetry, and made such progress in music that he is said to have been the inventor of it, and to have built the walls of Thebes by the sound of his lyre.

Ancæus.—A son of Neptune, who, having left a cup of wine untasted to pursue a wild boar, was killed by it, which gave rise to the proverb, There's many a slip twixt the cup and the lip."

Anchises.—A son of Capys and Themis. He was so beautiful that Venus came down from heaven on Mount Ida to enjoy his company. Æneas was the son of Anchises and Venus, and was intrusted to the care of Chiron the Centaur. When Troy was taken, Anchises had become so infirm that Æneas had to carry him through the flames upon his shoulders, and thus saved his life.

Andromache.—Daughter of Eëtion, king of Thebes. She married Hector, son of Priam, and was the mother of Astyanax. Her parting with Hector, who was going to battle, is described in the *Iliad* and has been deemed one of the most beautiful passages in that great work. Pope's translation of the *Iliad* (book 6) describes with great pathos and beauty the parting of Hector from his wife and child. The passage is too long for quotation, but this quatrain from it shows the style:

> Thus having spoke, th' illustrious chief of Troy
> Stretch'd his fond arms to clasp the lovely boy;
> The babe clung crying to his nurse's breast,
> Scared at the dazzling helm and nodding crest.

Andromeda.—Andromeda, to atone for a crime of which she was guiltless, was to have become the victim of divine anger. The whole country was laid waste with plagues, which, according to the oracle of Jupiter Ammon, were not to cease until Andromeda, swallowed up by a sea-monster, should, by her death, expiate the crime of her mother. Perseus beheld the maiden fastened with chains to a rock, and a monster rising out of the sea ready to devour her; while her parents stood on the shore in despair. Perseus rushed down upon the monster, struck a deadly blow, delivered the fair maiden and obtained her as his wife. After her death she was placed among the stars.

Angurvadel.—Frithiof's sword, inscribed with Runic letters, which blazed in time of war, but gleamed with a dim light in time of peace.

Antæus.—One of the giant sons of Neptune whose home was in Libya. His strength was invincible so long as he remained in contact with his mother earth. Once lifted from the earth and allowed again to touch it his strength increased. One of the exploits ascribed to Hercules was the exhibition of his strength in overcoming Antæus.

Antigone.—In the story of Œdipus, Antigone appears as a noble maiden, with a truly heroic attachment to her father and brothers. When Œdipus had put out his eyes, and was obliged to quit Thebes, he was accompanied by Antigone, who remained with him till he died at Colonus, and then returned to Thebes. After her two brothers had killed each other in battle, and Creon, the king of Thebes, would not allow Polynices to be buried, Antigone buried him by night, against the orders of Creon, for which offense he ordered her to be buried alive. She, however, killed herself on hearing of the sentence. The death of Antigone is the subject of a tragedy written by Sophocles.

Aphrodite.—One of the names under which Venus was worshiped. She was said to be the daughter of Zeus, but later poets frequently relate that she was sprung from the foam of the sea, whence they derive her name.

Apis.—One of the Egyptian gods worshiped under the form of an ox.

Apollo.—Son of Jupiter and Latona; called also Phœbus. He was the god of the fine arts and the reputed originator of music, poetry, and eloquence. He had received from Jupiter the power of knowing futurity, and his oracles were in repute everywhere. As soon as he was born he destroyed with his arrows the serpent Python, which Juno had sent to persecute Latona; hence he was called Pythius. He was not the inventor of the lyre, as some have supposed, but it was given to him by Mercury, who received in return the famous Caduceus. He received the surnames of Phœbus, Delius, Cynthius, Pæan, Delphicus, etc. He is in sculpture generally represented as a handsome young man with a bow in his hand, from which an arrow has just been discharged.

Arachne.—A Mæonian maid, named Arachne, proud of her skill in weaving and embroidery, in which arts the goddess of wisdom had instructed her, ventured to deny her obligation, and challenged her patroness to a trial of skill. Minerva accepted the challenge and they met to try their skill. Arachne produced a piece of cloth in which the amours of the gods were woven, and as the goddess could find no fault with it, she tore the work to pieces. Arachne, in despair, hung herself. Athena loosened the rope and saved her life, but the rope was changed into a cobweb, and Arachne herself into a spider.

Ares.—The Greek god of war, known as Mars by the Romans.

Arethusa.—A wood nymph of Elis, in Greece, who, pursued by the River Alpheus, was changed into a fountain and ran under the sea. The waters of the fountain, mingled with the river, rose again in the fountain of Arethusa in the island of Ortygia.

near Syracuse. According to another version of the same legend, it was Diana herself, and not Arethusa, whom the river-god of the Alpheus pursued; and when this pursuit ended in the island of Ortygia, there arose the fountain Arethusa.

Argo.—A fifty-oared ship in which Jason and his companions made their voyage to Colchis in search of the golden fleece. This ship was built of pines cut from Mount Pelion, and, although larger than any other previously constructed, moved lightly and easily, and was therefore called the *Argo* (swift-sailing). From her name those who embarked in her were called Argonauts. The mast of the *Argo* was taken from the forest of Dodona, where the oaks were endowed with the power of making predictions; therefore the ship was regarded as an animated being, in accord with fate, to which a man might commit himself with confidence.

Argonauts.—One of the most celebrated enterprises of the heroic ages, one which forms a memorable epoch in Grecian history, a sort of separation-point between the fabulous and the authentic, was the Argonautic expedition. This was a voyage from Greece to Colchis in order to obtain the golden fleece, conducted by Jason, the son of Æson, king of Thessaly. The undertaking was imposed upon him by his uncle Pelias. He invited the most illustrious heroes of Greece to unite in the expedition, and among those who joined were Hercules, Castor and Pollux, Peleus, Pirithous, and Theseus The vessel built for the purpose was named *Argo*, which after various adverse events arrived at Æa, the capital of Colchis.

Argus.—A son of Arestor, whence he is sometimes called Arestorides. He had a hundred eyes, of which only two were asleep at one time. Juno set him to watch Io, whom Jupiter had changed into a heifer, but Mercury, by order of Jupiter, slew him, by lulling all his eyes to sleep with the notes of the lyre. Juno put the eyes of Argus in the tail of the peacock, a bird sacred to her.

Ariadne.—Daughter of Minos and Pasiphæ. She fell in love with Theseus, when sent by Ægeus with of the Athenian youths and maidens as tribute, to be devoured by the Minotaur. She gave him the clew of thread by which he found his way out of the labyrinth, and accompanied him on his return to Athens as far as Naxos, where he deserted her. Bacchus found her there, made her his wife, and set in the stars the crown which he gave her at their marriage.

Arion.—A Greek bard, who, having thrown himself into the sea to escape from pirates, was taken up by dolphins, and carried on their backs safe to land.

Aristæus.—Protector of vines and olives, huntsmen and herdsmen. He instructed man also in the management of bees, taught him by his mother Cyrene. He was the father of the famous Actæon.

Artemis.—The daughter of Zeus and Leto, or Latona, and twin sister of Apollo, was the goddess of chastity, of the chase and the woods.

Asgard.—In Scandinavian mythology Asgard represents the city of the gods, situated at the center of the universe, and accessible only by the bridge Bifrost, *i. e.*, the rainbow.

Asir.—In northern mythology the most powerful, though not the oldest, of the deities; usually reckoned as twelve gods and twelve goddesses The gods are Odin, Thor, Baldur, Niörd, Frey, Tyr. Bragi, Heimdall, Vidar, Vali, Ullur, and Forseti; the best-known of the goddesses Frigga, Freyja, Iduna, and Saga.

Astarte.—Noticed in the Old Testament under the name Ashtaroth, an ancient Syrian deity, who was adored as the goddess of the moon; hence Jeremiah calls her "the queen of heaven." Solomon built her a temple on the Mount of Olives.

Astræa.—Daughter of Zeus and Themis, and the last of the immortals to quit the earth as the wickedness of mortals increased.

Astyanax.—Son of Hector and Andromache, was hurled from the walls of Troy on its capture.

Atalanta.—Daughter of Iasus and Clymene. She took part in the Calydonian hunt. She required every suitor to run a race under penalty of deatb if she defeated them. Hippomenes defeated her by throwing in her path three golden apples given him by Aphrodite, which Atalanta turned aside to pick up. They were both turned into lions for profaning the sacred grove of Zeus.

Ate.—Daughter of Zeus. She led both gods and men into rash actions. Zeus banished her from Olympus.

Athena.—One of the twelve great Greek divinities. She sprang, full armed, from the head of Zeus. She was the virgin goddess of wisdom, agriculture, and art, and was also a warlike divinity.

Atlas.—A Titan, son of Iapetus and Clymene. Being defeated in the war of the Titans against the gods, he was condemned to bear the heavens upon his shoulders.

Atreus.—A king of Mycenæ, son of Pelops and Hippodamia, and father of Agamemnon and Menelaus, who, from him, were called the *Atridæ*. The crimes and calamities of Atreus and his family afforded a prolific subject for the Greek poets.

Atropos.—One of the three Parcæ, or Fates; the one that cut the thread of life. As wife of Pluto, and queen of hell, Proserpine presided over the death of mankind; and, according to the opinion of the ancients, no one could die if the goddess herself, or Atropos, the minister, did not cut off one of the hairs from the head.

Augean Stables.—The stables of Augeas, king of Elis, in Greece. In these stables he had kept 3,000 oxen, and the stalls had not been cleansed for thirty years. When Hercules was appointed to cleanse these stables, he turned the course of the river Alpheus through them.

Augurs.—Their principal business was to observe the flight and cry of birds, from which they predicted future events. They also explained other omens and signs.

Auræ.—The auræ, or sylphs, nymphs of the air, a species of sportive, happy beings, and well-wishers to mankind; they were winged and represented as flying.

Aurora.—The goddess of the morning, or of the dawn; sometimes described as the goddess of day. She is represented as standing in a magnificent chariot, sometimes drawn by winged steeds. A brilliant star sparkles upon her forehead, and, while with one hand she grasps the reins, she holds in the other a lighted torch.

Avatar.—The incarnation or descent of the deity Vishnu, of which nine are believed to be past, and the tenth is yet to come, when Vishnu will descend from heaven on a white-winged horse, and introduce on earth a golden age of virtue and peace.

Avernus.—Properly, a small, deep lake in Campania, occupying the crater of an extinct volcano, and almost completely shut in by steep and wooded heights. The entrance to the infernal regions, called Avernus, is described as having around it a host of dreadful forms—Disease, Old Age, Terror, Hunger, Death, War, Discord, and the Furies, the avengers of guilt.

Azazel.—Ewald considers Azazel to have been a demon belonging to the pre-Mosaic religion. Another opinion identifies him with Satan, or the devil. Milton makes him Satan's standard bearer.

Azrael.—Meaning in Hebrew "help of God." In the Jewish and the Mohammedan mythology, the name of an angel who watches over the dying, and separates the soul from the body.

Baal.—A sun god, the center of whose worship was Phenicia, whence it spread to neighboring countries

Bacchus.—Called also Dionysus, son of Zeus and Semele, god of wine. He married Ariadne after her desertion by Theseus.

Balmwawa.—In American Indian folk-lore, the sound of thunder.

Balder.—The god of peace, son of Odin and Frigga. He was killed by the blind war-god, but was restored to life at the general request of the gods.

Balios.—A famous horse given by Neptune to Peleus as a wedding present, and afterward given to Achilles.

Balmung.—In Norse mythology, the sword of Siegfried forged by Vulcan.

Banshee.—The domestic spirit of certain Irish or Scottish families, supposed to wail shortly before the death of one of the family. The banshee is allowed only to families of pure stock.

Barguest.—A frightful goblin among fairies, armed with teeth and claws. An object of terror in the north of England.

Bay-tree.—The tree of Apollo, hence a shield against lightning. A wreath of bay-leaves was worn as protection during thunder-storms. The withering of a bay-tree was dreaded as an omen of death.

Beelzebub.—A heathen god of evil at the head of nine ranks of demons and second only to Satan. Also the god of flies.

Befana, La.—The fairy of Italian children, who is supposed to fill their stockings with toys on Twelfth Night.

Bellerophon.—Son of Glaucus, king of Corinth, and Eurymede. Having killed Bellerus, he fled to Prœtus for protection. Antea, Prœtus' wife, became enamored of Bellerophon, and on his rejecting her advances, she accused him to her husband, who thereupon sent him to Iobates, king of Lycia, with a letter requesting that he be put to death. Iobates accordingly sent him to kill the Chimæra, which Bellerophon did with the aid of the winged horse Pegasus. After other trials, in which he was successful, Iobates gave him his daughter in marriage.

Bellona.—Goddess of war. She prepared the chariot of Mars when he was going to war, and appeared in battles armed with a whip and holding a torch.

Belphegor.—A god of evil, worshiped by the Moabites. An archfiend who had been an archangel.

Belus.—The name of the Chaldean sun-god.

Berenice.—A princess who vowed to sacrifice her hair to the gods, if her husband returned in safety. She suspended her hair in the temple of Venus. After her husband's safe return the locks disappeared, and the astronomer Conon reported that Jupiter had placed the queen's locks among the stars, and pointed out the constellation since called Berenice's hair.

Berg Folk.—Pagan spirits doomed to live on the Scandinavian hills till the day of redemption.

Bertha.—The white lady who guards good German children, but is the terror of the bad, who fear her iron nose and big feet. Corresponds to the Italian La Befana.

Bheem.—One of the five brotherhoods of Indian demi-gods, famous for his strength.

Bifrost.—In Norse mythology, a bridge between earth and heaven, over which none but the gods could travel It leads to the palace of the Fates.

Bilskirnir.—A wonderful palace built by Thor for the use of peasants after death.

Bona Dea.—A Roman divinity, worshiped by women as a chaste and prophetic goddess.

Boreas.—The name of the north wind blowing from the Hyperborean mountains. According to the poets, he was son of Astræus and Aurora. He was passionately fond of Hyacinthus.

Bragi.—The son of Odin and Frigga and the god of poetry and eloquence. He is represented as an old man with flowing white beard.

Brahma.—The supreme god of the Hindus, represented with four heads and four arms. He is regarded as the creator of the universe, and forms, with Vishnu the preserver, and Siva the destroyer, the Hindu trinity.

Briareus.—A giant with fifty heads and a hundred hands. He hurled a hundred rocks at Jupiter in a single throw and Jupiter bound him under Mount Ætna with a hundred chains.

Bukadawin.—The god of famine among American Indians.

Butes.—An Argonaut beloved by Aphrodite, who snatched him away as he was swimming toward the Sirens.

Byblis.—According to Ovid, the daughter of Miletus, sister of Caunus, and niece of Sol. From her tears arose the fountain of Byblis.

Cacus.—A giant, son of Hephæstus, living on Mt. Aventine, who plundered the neighboring country. He stole from Hercules some of the cattle of Geryon, dragging them by their tails to his cave that their tracks might not be discovered. He was, however, detected and slain by Hercules.

Cadmus.—Son of Agenor, king of Phenicia. When his sister Europa was carried off by Zeus, Agenor sent Cadmus to find her. Unable to do this he settled in Bœotia and built Thebes, having followed a cow to that place from Thrace by direction of the oracle of Delphi. He slew a dragon which guarded the well of Ares at that place, and sowed the teeth, from which armed men sprung, the ancestors of the Thebans. He married Harmonia, and the two were changed to serpents. Cadmus is said to have introduced or invented the alphabet.

Cæneus.—Originally a maiden, beloved by Poseidon, she was by him changed to a man, and took part in the Argonautic expedition and Calydonian hunt. He was buried under a mass of trees by the Centaurs, and changed into a bird He recovered his female form in the lower world.

Calliope.—The Muse who presided over epic poetry and rhetoric. She is generally depicted using a stylus and wax tablets, the ancient writing materials.

Callisto.—In Greek mythology an Arcadian huntress, a companion of Artemis, beloved of Zeus and transformed by him into a she-bear. In this form she was slain by Artemis in the chase. She was placed among the stars as the constellation Arctos (Bear).

Calpe.—One of the two pillars of Hercules, the other named Abyla. These two were originally only one mountain, which Hercules tore asunder, pouring the sea between them.

Calypso.—One of the daughters of Atlas. When Ulysses was shipwrecked on her coasts she received him with hospitality, and offered him immortality if he would remain with her, which he refused to do. After seven years' delay he was permitted to depart from the island.

Camdeo.—The Hindu god of love.

Camilla.—Virgin princess of the Volscians. She was so swift that she could run over a field of corn without bending a blade, or make her way over the sea without wetting her feet.

Canopus.—The Egyptian god of water. The Chaldeans worshiped fire, and sent all the other gods a challenge, which was accepted by a priest of Canopus. The Chaldeans lighted a vast fire, when the Egyptian deity spouted out torrents of water and quenched it.

Capitolium.—The temple of Jupiter Optimus Maximus at Rome, was situated on the south summit of the Mons Capitolinus, so called on account of the temple.

Capys.—(1) Son of Assaracus, and father of Anchises, (2) A companion of Æneas, from whom Capua was said to have derived its name.

Cassandra.—Daughter of Priam and Hecuba. She was left when young asleep in the temple of Apollo, where her ears were purified by serpents so that she could understand the voices of nature. Apollo, becoming enamored, conferred upon her the gift of prophecy, but upon her refusing to grant his desires, ordained that no one should believe her prophecies. Upon the capture of Troy she fell to the lot of Agamemnon and was killed by Clytemnestra.

Cassiopela.—The chief stars of this constellation form the outline of a chair. Cassiopeia boasted that the beauty of her daughter Andromeda surpassed that of the sea-nymphs. The sea-nymphs complained to the sea-god of this affront, and Andromeda was chained to a rock to be devoured by sea-monsters. Perseus delivered her and made her his wife. The mother was taken to heaven and placed among the stars.

Castor and Pollux.—Twin brothers, called the Dioscuri, sons, according to some, of Zeus and Leda. They took part in the Argonautic expe-

dition. Castor was famous for his skill in managing horses, and Pollux for his boxing.

Cauther.—In Mohammedan mythology the lake of paradise, whose waters are as sweet as honey, as cold as snow, and as clear as crystal; and any believer who tastes thereof is said to thirst no more.

Cecrops.—In mythology is represented with upper part of his body human, the lower part that of a dragon. Cecrops is said to have founded Athens, and to have divided Attica into twelve communities, and to have introduced the first elements of civilized life; he instituted marriage, abolished bloody sacrifices, and taught his subjects how to worship the gods.

Centaurs.—Monsters, half horse, half human. They are especially celebrated for their contest with the Lapithæ in the mountains of Thessaly.

Cephalus.—Husband of Procris, loved by Eos, who advised him, when he rejected her advances, to try his wife's fidelity. Disguising himself as a lover, he returned to Procris, but she received his advances with disdain. He made himself known, loaded her with reproaches, and left her in a rage. Procris then fled to Crete, where Artemis gave her a dog and an unerring spear and sent her back. To obtain the dog and spear, Cephalus pretended to love her, and a reconciliation followed. He killed her accidentally with the spear.

Cerberus.—The three-headed dog that keeps the entrance of the infernal regions. He prevents the living from entering and the shades from escaping. Orpheus lulled Cerberus to sleep with his lyre; and the sibyl who conducted Æneas through the inferno, also threw the dog into a sleep with cake seasoned with poppies.

Ceres.—The daughter of Saturn, sister of Jupiter and Neptune. She was the goddess of corn, flowers, and harvest. She is represented as riding in a chariot drawn by dragons, and crowned with poppies. She was the mother of Proserpine, who was seized by Pluto while she was gathering flowers. Ceres was the Roman name for mother-earth.

Chaos.—The vacant space which existed before the creation of the world, and out of which the gods, men, and all things arose. Chaos was called the mother of Erebus and Night.

Charon.—A god of the infernal regions, son of Nox and Erebus, who conducted the souls of the dead in a boat over the rivers Styx and Acheron.

Charybdis.—A woman who robbed travelers and was turned by Jupiter into a dangerous whirlpool on the coast of Sicily, opposite Scylla. Scylla and Charybdis are generally mentioned together to represent alternative dangers

Chibiabos.—A musician, ruler in the land of spirits, and friend of Hiawatha. Personification of harmony in nature.

Chimæra.—A celebrated monster goat, lion, and dragon, which continually vomited flames. It was destroyed by Bellerophon.

Chiron.—A centaur, son of Philyra and Saturn. He was famous for his knowledge of medicine, and taught mankind the use of plants and herbs He was placed among the stars, and is known as Sagittarius.

Chloris.—The goddess of flowers, known as Flora in Greek mythology.

Chou.—An Egyptian god corresponding to the Roman Hercules.

Cimmerians.—People living in a land of perpetual darkness.

Circe.—A sorceress, daughter of Sol and Perseis, celebrated for her knowledge of magic and venomous herbs. Ulysses, on his return from the Trojan war, visited her coasts, and his companions were changed by her potions into swine.

Clio.—The muse who presided over history

Clotho.—The youngest of the Fates, three daughters of Jupiter and Themis, supposed to preside over the moment of birth. She held the distaff and Lachesis spun the thread of life

Cluricaune.—An Irish elf, who guards a hidden treasure. He has an evil disposition, and appears as a wrinkled old man.

Clytemnestra.—Daughter of Tyndareus and Leda, sister of Castor, Pollux, and Helena; wife of Agamemnon; and mother of Orestes, Iphigenia, and Electra. During her husband's absence at Troy she lived in adultery with Ægisthus, and on his return to Mycenæ she murdered him with the help of Ægisthus. She was subsequently put to death by her son Orestes, to revenge the murder of his father.

Clytie.—A water-nymph who loved the sun-god, Apollo, and was changed into a sunflower. In this form, she turns always toward the sun.

Cocytus.—A river of the infernal regions. The unburied dead wander on its banks for 100 years, and it is known as the river of lamentation.

Colchis.—A country of Asia famous for the expedition of the Argonauts, and the birthplace of Medea.

Comus.—The god of revelry, presiding over feasts.

Concordia.—The goddess of peace and concord, one of the oldest at Rome. She is represented holding a scepter budding with fruit, and a horn of plenty. Camillus raised a temple to this goddess, in the capital.

Consentes Dii.—The twelve Etruscan gods who formed the council of Jupiter, consisting of six male and six female divinities—Jupiter, Neptune, Mercury, Apollo, Mars and Vulcan; Juno, Ceres, Vesta. Minerva, Diana and Venus.

Cophetua or **Copethua.**—A mythical king of Africa, of great wealth, who fell in love with a beggar-girl, and married her. Her name was Penelophon, but Shakespeare writes it Zenelophon in *Love's Labor's Lost.*

Corybantes.—Priests who served at the worship of the mother of the gods. The name came from their habit of striking themselves in their religious dances.

Cressida.—Daughter of Calchas the Greek, beloved by Troilus, son of Priam. They vowed eternal fidelity, and as pledges Troilus gave the maiden a sleeve, and Cressida gave the Trojan prince a glove.

Creusa.—Daughter of Priam, and wife of Æneas. She was lost in the city of Troy when her husband escaped from its flames.

Cronos.—The youngest of the Titans. Cronos was also known as the father of Jupiter.

Cupid.—God of love, son of Jupiter and Venus, represented as a winged boy, naked, armed with a bow and arrows, and often with a bandage covering his eyes. He shot his arrows into the hearts of both gods and men. Like all the gods, he put on different forms to suit his plans. He became the husband of Psyche.

Cybele.—A goddess, daughter of Cœlus and Terra, and wife of Saturn. On her birth she was exposed on a mountain, where she was tended and fed by wild beasts, receiving the name of Cybele from the mountain. She is represented on a throne with lions at her side.

Cyclops.—One-eyed giants who forged the thunderbolts of Jove. Homer describes them as wild, insolent, lawless shepherds, who devoured human beings. A later tradition represents them as Vulcan's assistants.

Cyparissus.—A beautiful youth, beloved by Apollo, whose favorite stag he inadvertently killed, and who was metamorphosed into a cypress because of his grief.

Cythera.—A name given to Venus from the island Cytheræa, where she first rose from the foam of the sea.

Dag.—In mythology of the north this name is given to the "radiant son of night." The name is also applied to the last of a treacherous race. the Hundings.

Dagon.—A national god of the Philistines, formed in human shape upward from the waist, and resembling a fish downward, with a finny tail.

Dagun.—In Indian mythology a god who reconstructed the world when it had been destroyed after creation.

Dahak.—In mythology of Persia the ages of the world are divided into periods of 1,000 years. When the cycle is complete, the reign of Ormuzd will begin, and men will be good and happy; but this event will be preceded by the loosing of Dahak, who will break his chain and fall upon the world, and bring on man the most dreadful calamities.

Daikoku.—A mythical god invoked by Japanese workers. He is represented as holding a full sack, which he beats to bring from it all useful articles, and the sack never becomes empty

Daityas.—Among Hindu gods these are powerful to work evil.

Danaë.—The daughter of Acrisus, king of Argos, who became the mother of Perseus. An Italian legend related that Danaë came to Italy, built the town of Ardea, and married Pilumnus, by whom she became the mother of Daunus, the ancestor of Turnus.

Danaides.—The fifty daughters of Danaus, king of Argos, who married the fifty sons of their uncle Ægyptus.

Daphne.—A nymyh, daughter of Penios. Apollo courted her, but she fled from him, and was, at her own request, turned into a laurel tree.

Daphnis.—A Sicilian shepherd, son of Hermes (Mercury), by a nymph, was taught by Pan to play on the flute, and was regarded as the inventor of bucolic poetry. A naiad to whom he proved faithless punished him with blindness, whereupon his father, Hermes, translated him to heaven.

Delphobus.—A son of Priam and Hecuba, and, next to Hector, the bravest among the Trojans. After the death of Paris, he married Helen, but was betrayed by her to Menelaus. by whom he was slain and fearfully mangled on the capture of Troy by the Greeks.

Delius.—A name of Apollo, from Delos, the island in which he was born. The name Delia, of his sister Diana, has the same origin.

Delphi.—A town on Mount Parnassus, famous for the oracle and the temple of Apollo. Over the cleft of a cavern was placed the tripod on which sat the priestess through whose mouth he was thought to reveal the future.

Demeter.—The mother of Persephone, who was evidently a goddess of the earth, whom some ancient system married to Zeus, the god of the heavens.

Demogorgon.—The genius of the soil or earth, the life and support of plants. He was depicted as an old man covered with moss, and was said to live underground.

Deucalion.—The son of Prometheus, who, according to the legend, was, with his wife Pyrrha, the sole survivor of the Thessalian deluge.

Diana.—An ancient Italian divinity, whom the Romans identified with the Greek Artemis. At Rome Diana was the goddess of light. She was a daughter of Jupiter, and was born of Latona, or Leto, on the island Delos, at the same time with Apollo. As in Apollo the sun was deified and adored, so was the moon in Diana.

Dido.—Daughter of Belus, King of Tyre. She was married to Sychæus, who was murdered for the sake of his wealth by Pygmalion. Dido then fled with some followers and founded Carthage. A neighboring king, Hiarbas, sought her hand in marriage; but she refused, and, erecting a funeral pile, ascended it and stabbed herself. Vergil, in the *Æneid*, makes Æneas visit her, and her death the consequence of his desertion.

Diomed.—A Greek hero of the Trojan war, a son of Tydeus, and a king of Argos. He was a favorite of Minerva, who, according to Homer, encouraged him to attack and wound both Mars and Venus, who were engaged on the side of the Trojans.

Diomedes.—The cruel tyrant of Thrace, who fed his mares on the flesh of his guests, was overcome by Hercules, and was given to the same horses as food.

Dione.—The youngest of the Titan sisters and reputed mother of Venus. The name has also been poetically applied to Venus herself.

Dionysus (Bacchus).—Son of Jupiter and Semele, the daughter of Cadmus. He was the god of wine, and is generally represented crowned with vine leaves.

Diræ.—The avenging goddesses, or Furies.

Dis.—A name sometimes given to Pluto, and hence also to the lower world.

Discordia.—A malevolent deity corresponding with the Greek Eris, the goddess of contention. She was driven from heaven by Jupiter because she sowed dissensions among the gods. At the nuptials of Peleus and Thetis she threw an apple among the gods, which was the primary cause of the ruin of Troy. and of infinite misfortunes to the Greeks.

Dives.—Demons of Persian mythology. According to the Koran, they are ferocious and gigantic spirits under the sovereignty of Eblis.

Dodona.—The most ancient oracle was that of Jupiter at Dodona, a city of the Molossi, said to have been built by Deucalion.

Donar.—A name given, sometimes, to Thor, the thunder-god, in Norse mythology.

Doris.—Daughter of Oceanus and Tethys, wife of Nereus, and mother of the Nereides.

Draupnir.—The marvelous ring belonging to Odin, with which he worked magic. It was burned on the funeral pyre of his son Balder.

Droma.—The chain forged for the purpose of binding the Fenris wolf, but which he broke. Hence the proverb, "to dash out of Droma."

Dryads.—Wood nymphs, believed to be sent from heaven. The dryads were distinguished from the hamadryads in this, that the latter were supposed to be attached to some particular tree, with which they came into being, lived and died; while the former had the care of the woods and trees in general.

Duergar.—Dwarfs who dwell in rocks and hills; noted for their strength, subtlety, magical powers, and skill in metallurgy. They are the personification of the subterranean powers of nature.

Durga.—A goddess worshiped among the Hindus.

Echidna.—A monster, half woman, half serpent, mother of the Chimæra, the Sphinx, Cerberus, the Hydra, etc.

Echo.—A nymph who by her incessant talking engaged the attention of Hera while Zeus sported with the nymphs. Hera punished her by changing her into an echo, she pined away in consequence of an unrequited love for Narcissus, until nothing remained but her voice

Egia.—One of the nine beautiful giantesses seen by Odin along the seashore, known as wave-maidens. Her son became guardian of Bifrost, the rainbow bridge.

Egil.—The Vulcan of northern mythology, one of the three brothers who married the swan-maidens. He was a great archer, killed his brother. Völund by command of the king, and himself later became a peasant.

Egipans.—Rural deities who inhabited the forests and mountains. the upper half of the body being like that of a man, and the lower half like that of a goat.

Egis.—Part of the armor of Jupiter used by Minerva as a shield.

Elra.—An attendant of the goddess Fidgga, and a skillful nurse. She gathered herbs and plants for the cure of both sickness and wounds and taught the science to women.

Elatus.—A prominent warrior among the mythical people of Thessaly and the father of Caneus, whom Neptune changed into the form of a man.

Elbegast.—One of the dwarfs of Scandinavian mythology who dwelt in a magnificent palace underground, and drew their servants from the bosom of the earth.

Elberich.—In the German hero legends a dwarf who aided the Lombard Emperor Otnit to win the daughter of the soldan of Syria. He is identical with the Oberon of French and English fairy mythology.

Electra.—The bright or brilliant one. A daughter of Agamemnon and Clytemnestra, and the sister of Iphigenia. She became the accomplice of Orestes in the murder of their mother.

Elf.—The water sprite, known also as Elb, from which the name of the river Elbe is said to be derived. Elves are more properly known as mountain fairies, or those airy creatures that dance on the grass or sit in the leaves of trees and delight in the full moon.

Elivagar.—In Norse mythology the name of a great stream in Chaos, flowing from a fountain in the land of mist. This stream was much frequented by the elves at their creation.

Elysium.—The paradise of the Greeks, known also as the Happyland. Departed mortals were adjudged to Elysium or to Tartarus by the sentence of Minos and his fellow judges in the "Field of Truth." Elysium is described as adorned with beautiful gardens, meadows, and groves; where birds ever warble; where the river Eridanus winds between banks fringed with laurel, and "divine Lethe" glides in a quiet valley; where the air is always pure, and the day serene; where the blessed have their delightful abode.

Embla.—An elm tree found in human form, by the gods, according to northern mythology.

Empyrean.—A term used by the ancients to express the highest heaven, where the blessed enjoy the beatific vision. Its name is derived from its having been supposed to be the region of fire.

Enceladus.—A Titan, son of Terra, and the most powerful of all the giants who conspired against Jupiter, and attempted to scale heaven. He was struck by Jupiter's thunderbolts, and chained beneath Mount Ætna.

Endymion.—In Greek mythology the setting sun, with which the moon is in love. One of the many renderings of his story is that Endymion was a beautiful youth who fed his flock on Mount Latmos. One clear night, Diana, the moon, looked down and saw him sleeping. The cold heart of the goddess was warmed by his beauty, and she came down to him, kissed him, and watched over him while he slept. Another story was that Jupiter bestowed on him the gift of perpetual youth united with perpetual sleep. One version of this myth made sleep a reward for piety, while another version made it a punishment for presuming to fall in love with Hera.

Enipeus.—A fabled river in Thessaly. Poseidon assumed the form of the god of this river in order to obtain possession of Tyro, who was in love with Enipeus. She became the mother of Pelias and Neleus.

Enyo.—One of the gray maidens who became the goddess of war, and who delights in bloodshed and the destruction of towns, and accompanies Ares in battles.

Eolus.—Known in Roman mythology as the god of the winds.

Eos.—Goddess of the morning, known as Aurora among the Romans. Every morning she arose from the couch of Tithonus to announce the coming of the day to gods and mortals.

Epaphus.—The son of Zeus and Io, born on the river Nile, after the long wanderings of his mother. He became king of Egypt, and built Memphis.

Erebus.—Son of Chaos. The name is used by the poets to signify the dark spaces under the earth through which the shades passed on their way to hades.

Ergatis.—A name given to Minerva. It means the work-woman, and was given to the goddess because she was credited with having invented spinning and weaving.

Eris.—The goddess of discord; a sister of Mars, and a daughter of Night; the same as the Roman "Discordia."

Erl-king.—Name given to the king of the elves, or a spirit of the air. According to tradition, its home is in the Black forest of Germany, and it appears as a goblin, working harm and ruin, especially among children.

Eros.—The Greek name of the deity called Cupido (Eng. *Cupid*) by the Romans. He is said to have come forth from the egg of Night, floated on Chaos, and to have inherited arrows with which he pierced all things, thereby giving new life, and a torch with which he lighted the world. See *Cupid*.

Erytheia.—One of the daughters of Night, appointed to guard the golden apples in the gardens of the Hesperides.

Eumenides or **Erinyes.**—The three furies, Tisiphone, Alecto and Megæra, the avenging goddesses, originally the personification of the curses pronounced upon a criminal.

Eumolpus.—A Thracian bard, son of Poseidon and Chione, was regarded as the founder of the Eleusinian mysteries, and the first priest of Demeter. His descendants continued to be her priests at Eleusis.

Euphorbus.—The son of Panthous, one of the bravest of the Trojans, slain by Menelaus, who dedicated his shield in the temple of Hera (Juno), near Mycenæ. Pythagoras asserted that he had once been Euphorbus, and in proof of his assertion took down at first sight the shield from the temple of Hera.

Euphrosyne.—One of the three Graces. She specially represented joy, as her sisters stood for splendor and pleasure.

Europa.—A daughter of Agenor, king of Phenicia, and Telephassa. Her beauty attracted Jupiter, and to become possessed of her he assumed the shape of a handsome bull, and mingled with the herds of Agenor while Europa was gathering flowers in the meadows. She caressed the animal and mounted on his back. The god crossed the sea with her, and arrived in Crete, where he assumed his proper form and declared his love. She became the mother of Minos, Sarpedon, and Rhadamanthus.

Eurydice.—Wife of Orpheus. After her death, her husband ventured to go to hell, where by the melody of his lyre he obtained from Pluto the restoration of his wife provided he did not look behind on their journey back to earth. Eager to see his wife, he looked behind, and so lost her forever.

Eurylochus.—One of the companions of Ulysses in his wanderings, and the only one of them who was not changed by Circe into a hog.

Eurystheus.—King of Argos and Mycenæ, who appointed the twelve labors of Hercules.

Eurytos.—The god made tutor to Hercules, by Mercury, who taught him the use of the bow and arrows.

Evadne.—Wife of Capaneus, and mother of Sthenelus. Her husband having been killed at the siege of Thebes, she threw herself upon the funeral pile, and was consumed with him.

Excalibur.—(Written also Excalibor, Escalibar, etc.) The name of King Arthur's sword. When about to die, he sent Sir Bedivere to throw the weapon into a lake near by. Twice eluding the request, the knight at last complied. A hand and arm rose from the water, clutched the sword, and brandished it three times; then both sank.

Fada.—A fée or kobold of the south of France, sometimes called "Hada." These house-spirits, of which, strictly speaking, there are but three, bring good luck in their right hand and ill luck in their left.

Fafnir.—In northern mythology the eldest son of the dwarf king, Hreidmar. The slaying of Fafnir is the destruction of the demon of cold or darkness who had stolen the golden light of the sun.

Fahfah.—Name given to one of the rivers of Paradise in the mythology of the east.

Fates.—In Greek and Roman mythology the Fates are identical with the Parcæ. They were three sisters, daughters of Night, whom Jupiter permitted to decide the fortune and especially the duration of mortal life. One of them, Clotho, attached the thread; the second, Lachesis, spun it; and the third, Atropos, cut it off when the end of life arrived. They were viewed as inexorable, and ranked among the inferior divinities of the lower world. Their worship was not very general. The Parcæ were usually represented as three old women, with chaplets made of wool interwoven with the flowers of the narcissus, and wearing long robes—Clotho with a distaff; Lachesis sometimes having near her several spindles; and Atropos holding a pair of scissors.

Fauni.—The fauns differ from the satyrs. They are represented in human form, but with erect and pointed ears and the tail of a goat. Ease and freedom from care are their chief characteristics. Their festival was celebrated at Rome on the 5th of December.

Faunus.—Son of Picus; who was the son of Saturnus, mythical king of Italy. Picus was a fabulous king of Latium, and a prophetic divinity. Faunus was king of the Latins, and father of Latinus. He was warshiped as the god of fields and shepherds, was sometimes identical with the Arcadian Pan of the Greeks, and was regarded as one of the founders of the religion of Latinum.

Fay.—(Fr. *fée*). A fairy; an elf.

Felicitas.—A symbolical, moral deity of the Greeks and Romans. She was the goddess of happiness and prosperity, and is frequently seen on Roman medals, in the form of a matron, with the staff of Mercury and a cornucopia.

Feng.—The name taken by Odin in the capacity of wave-stiller. Under this name he teaches mortals to distinguish between good and bad omens and to know the moods of the winds.

Flora.—The Romans had a particular goddess of blossoms and flowers, whom they worshiped under the name of Flora. She is said to have been the same as the Grecian nymph Chloris.

Fortitudo.—A deification of courage and bravery was one of the moral deities of the Romans.

Fortuna.—Known also as Fortune and sometimes as the goddess of chance, to whom was ascribed the distribution and the superintendence of prosperity and adversity in general.

Fortunatæ Insulæ.—The Isles of the Blessed, mythical islands in the Atlantic where Elysium was supposed to be placed.

Fraud.—An evil god seen by Dante between the sixth and seventh circles of the Inferno.

Freki and Geri.—The two wolves of Odin. When Odin, seated on his throne, overlooks heaven and earth, his two wolves lie at his feet.

Frey.—Scandinavian god of the sun and of rain, and hence of fertility and peace. He was one of the most popular of the northern divinities. No weapons were ever allowed in Frey's temple, although oxen and horses were sacrificed to him. His name was connected with the taking of any solemn oath, a heavy gold ring being dipped in the blood of the sacrifice and the oath sworn upon the ring. One of the most celebrated of the temples built to Frey was at Therva, in Iceland.

Freyja.—She was the sister of Frey, and the wife of Odur, who abandoned her on her loss of youth and beauty, and was changed into a statue by Odin, as a punishment. She is known as the northern goddess of beauty and love; plants were called Freyja's hair, and the butterfly, Freyja's hen.

Frigga.—In Scandinavian mythology the wife of Odin, the queen of the gods, and the mother of Baldur, Thor, etc. She sometimes typifies the earth, as Odin does the heavens. The Anglo-Saxons worshiped her as Frea. The name survives in Friday.

Frodi.—The son of Frey, a god of peace. Under his direction two giantesses turned a pair of magic millstones which ground out gold according to his wish and filled his coffers. Excited by greed he forced them to labor, allowing rest only long enough for the singing of one verse. When Frodi himself slept, the giantesses changed their song and proceeded to grind out an army of troops to invade the land. These troops represent the vikings.

Furies.—Among the divinities of the lower world were three daughters of Acheron and Night, or of Pluto and Proserpine, whose office it was to torment the guilty in Tartarus, and often to inflict vengeance upon the living. The Greeks called them "Furies."

Fylgie.—Guardian spirits in Norse mythology. Besides the Norns or Dises, who were regarded as protective deities, the Norsemen ascribed to each human being a guardian spirit named Fylgie, which attended him through life.

Gabriel.—Is called "chief of the angelic guards" in *Paradise Lost*; but in another place Michael is said to be "of celestial armies prince," and Gabriel "in military prowess next."

Gæa (Ge).—The personification of the earth among the Greeks. Among the Romans she was worshiped as Tellus.

Galatea.—A sea-nymph, beloved by Polypheme. She herself had a heartache for Acis. The jealous giant crushed his rival under a huge rock, and Galatea, inconsolable at the loss of her lover, was changed into a fountain.

Ganesa.—Goddess of wisdom, in Hindu mythology.

Gangler.—The gate-keeper in Odin's palace who gave the explanation of the northern mythology that it might be recorded.

Ganymede.—A Phrygian youth, son of Tros, king of Troy, according to Homer, and the most beautiful of all mortals, was carried off by the gods that he might fill the cup of Zeus (Jupiter), and live among the immortal gods. Later writers state that Zeus himself carried him off, in the form of an eagle, or by means of his eagle, from Mount Ida; and he is generally represented sitting on the back of a flying eagle.

Garm.—A fierce dog that kept guard at the entrance of Hel's kingdom, the realm of the dead. He could be appeased by the offering of a Hel-cake which always appeared in the hand of one who, on earth, had given bread to the needy.

Gemini.—One of the names given to the twins, Castor and Pollux, under which they were transported to dwell among the stars.

Genii or **Ginn.**—An intermediate race between angels and men. They ruled on earth before the creation of Adam.

Gerda.—Wife of Frey, and daughter of the frost giant Gymir. She is so beautiful that the brightness of her naked arms illuminates both air and sea.

Geryon.—Was a monster, said to be the offspring of Chrysaor and Callirhoë, and to have three bodies and three heads. He was monarch of three islands in the dusky west, where his numerous flocks were kept by the herdsman Eurytion, and guarded by a two-headed dog called Orthrus. The destruction of this monster formed one of the twelve labors of Hercules.

Giallar Bridge.—The bridge of death, over which all must pass.

Giallar Horn, The.—Heimdall's horn, which went out into all worlds whenever he chose to blow it. According to northern mythology, he blew a long-expected blast as a rallying call to the battle which ended the reign of the gods Odin, Frey and Tyr.

Gian ben Gian.—In Arabia, King of the Ginn or Genii, and founder of the Pyramids. He was overthrown by Asazel or Lucifer.

Gigantes.—The Giants, sprung from the blood that dropped from Uranus upon Gæa. They fought against the gods, but were conquered with the aid of Hercules. They personified the great powers of nature—as their names signify Cottos (eruption), Briareos (hurricane), and Gyes (earthquake). In fables the giants are beings of monstrous size, with dragons' tails and fearful countenances. They attempted to storm heaven, being armed with huge rocks and the trunks of trees, but were killed by the gods with the assistance of Hercules, and were buried under Mount Ætna and other volcanoes. In Scandinavian mythology they are described as evil genii of various forms and races, enemies of the gods. They dwelt in a territory of their own called Giant-land. They had the power of assuming divers shapes, and of increasing or diminishing their stature at will.

Gill.—The infernal river of Scandinavian mythology.

Ginungagap.—In Norse mythology the vast chaotic gulf of perpetual twilight which existed

before the present world, and separated the region of fog from the region of heat. Giants were the first beings who came to life among the icebergs that filled this vast abyss.

Gladsheim.—The palace of Odin, in which were the great hall Valhalla (the hall of the slain) and the twelve seats occupied by the gods when holding council.

Glasir.—A marvelous grove in Asgard, in which the leaves were all of shimmering red gold.

Glendoveer.—In Hindu mythology is a kind of sylph, the most lovely of the good spirits.

Gnome.—One of a class of spirits or imaginary beings which were supposed to tenant the interior parts of the earth, and in whose charge mines, quarries, etc., were left. Rübezahl, of the German legends, is often cited as a representative of the class.

Goblins and Bogies.—Familiar demons of popular superstition, a spirit which lurks about houses. It is also called hobgoblin. Goblin is used in a serious sense by Shakespeare in *Hamlet*, where the ghost is supposed to be a "spirit of health or goblin damned."

Golden Apples, The.—The golden apples in the gardens of the Hesperides were a great treasure which was thought to be altogether unattainable. The gardens were watched by a monstrous dragon, and to bring the golden fruit to Eurystheus was one of the tasks imposed upon Hercules.

Golden Fleece.—Ino persuaded her husband, Athamas, that his son Phryxos was the cause of a famine which desolated the land, and he ordered him to be sacrificed to the angry gods. Phryxos made his escape over sea on a "ram which had a golden fleece." When he arrived at Colchis, he sacrificed the ram to Zeus, and gave the fleece to King Æetes, who hung it on a sacred oak. It was afterward stolen by Jason in his celebrated Argonautic expedition.

Gorgons, The.—Three sisters, with heads covered with serpents. Two of them, Stheno and Euryale, were immortal, while Medusa was mortal. Originally a beautiful maiden, she was transformed into a gorgon by Athena for profaning her temple, and her appearance was so terrible that those who gazed upon her were changed into stone. She was killed by Perseus, and Athena placed her head in the center of her shield.

Graces.—To the retinue of Venus belonged the Graces, servants and companions of the goddess. They were said to be daughters of Jupiter and Eurynome, or, according to others, of Bacchus and Venus herself, and were three in number—Splendor, Pleasure, and Joy. They were honored, especially in Greece, and had temples in the principal cities. Altars were often erected to them in the temples of other gods, especially in those of Mercury, Venus, and the Muses.

Grida.—Wife of Odin and mother of Vidar. She lent Thor her girdle, staff, and glove, warning him to beware of treachery.

Gripir.—A horse-trainer, servant of Odin, who could foretell events of the future. He could teach a young hero all that he might need to know. He is compared to Chiron the Centaur.

Hades or Pluto.—Brother of Zeus and Poseidon, obtained the kingdom of the lower world in the division of the world among the three brothers, and his name was often used as synonymous with the abode of the shades. He carried off and married Persephone, or Proserpine.

Hamadryades.—Nymphs, each of whom was born and died with the tree in which she lived.

Harmonia.—A daughter of Menelaus and Helen. She was privately promised in marriage to Orestes, the son of Agamemnon; but her father, ignorant of the engagement, gave her hand to Pyrrhus, the son of Achilles, whose services in the Trojan war he had valued.

Harpies.—Winged monsters who had the face of a woman, the body of a vulture, and feet and ngers armed with claws. They were three in number—Aëllo, Ocypete, and Cæleno—and were daughters of Pontus and Terra.

Hebe.—Daughter of Zeus and Hera. She served as cupbearer to the gods until Hercules was received among them, when she was given to him in marriage.

Hecate.—A mysterious threefold goddess, daughter of Perses and Asteria, sometimes identified with Selene in heaven, Artemis on earth, and Proserpine in the lower world.

Hector.—Son of Priam and Hecuba, the bravest of the Trojan heroes. He married Andromache. Upon his killing Patroclus, friend of Achilles, the latter was roused to vengeance. He pursued Hector and slew him, and then dragged his body at his chariot wheels into the camp of the Greeks.

Hecuba.—Daughter either of Dymas of Phrygia, or of Cissius king of Thrace, wife of Priam. She was carried away as a slave by the Greeks, and was either transformed into a dog or threw herself into the sea.

Heimdall.—In northern tales a god who lived in the celestial fort Himinsbjorg, under the farther extremity of the bridge Bifrost, and kept the keys of heaven. He is the watchman or sentinel of Asgard, sees even in sleep, can hear the grass grow, and even the wool on a lamb's back. Heimdall, at the end of the world, will wake the gods with his trumpet.

Helena.—Daughter of Zeus and Leda, the most beautiful woman of Greece. In her youth she was carried off by Theseus, but was rescued by her brothers Castor and Pollux. She married Menelaus, but was seduced and carried to Troy by Paris. The Greek chiefs who had been her suitors resolved to take vengeance, and accordingly sailed against Troy. After the death of Paris she married his brother Deiphobus. When Troy was captured Helena betrayed Deiphobus to the Greeks, and became reconciled to Menelaus, with whom she lived until his death. The accounts of her death differ.

Helicon.—A range of mountains in Bœotia, sacred to Apollo and the Muses, from which sprung the fountains of the Muses—Aganippe and Hippocrene.

Helios.—The god of the sun, called Sol by the Romans.

Helle.—Daughter of Athamas and Nephele and sister of Phryxus. When his stepmother Ino was about to sacrifice Phryxus to Zeus, Nephele rescued her two children, who rode away through the air on a ram with the golden fleece, which Hermes gave. Between Sigeum and the Chersonesus, Helle fell into the sea, which received the name of Hellespontus in consequence.

Hellen.—Son of Deucalion and Pyrrha, mythical ancestor of all the Greeks.

Hell Shoon.—In Icelandic mythology indispensable for the journey to Valhalla as the obolus for crossing the Styx.

Helmet of Hades.—A helmet borrowed from Pluto and worn by Perseus, rendering him invisible. Minerva lent him her buckler; and Mercury, wings, winged shoes, and a short curved sword. After he had slain Medusa he restored them again, and presented the gorgon's head to Minerva, who placed it in the middle of her shield.

Hera.—Greek name for the wife of Jupiter, known among the Romans as Juno. Hera was worshiped in many parts of Greece, but more especially at Argos, in the neighborhood of which she had a splendid temple, on the road to Mycenæ. She had also a temple in Samos. Hera was usually represented as a majestic woman of mature age.

Heraclidæ.—Name given to the descendants of Hercules, who, in conjunction with the Dorians, conquered the Peloponnesus eighty years after the destruction of Troy, or B. C. 1104, according to mythical chronology. This legend represents the conquest of the Achæan population by Dorian invaders, who henceforward appear as the ruling race in the Peloponnesus.

Hercules.—The most celebrated of the Grecian heroes. He was the son of Jupiter and Alcmena. The birth of Hercules was attended with many miraculous events. Before he was eight months old Juno sent two snakes to devour him, which he seized, and crushed to death. He achieved a series of enterprises known as the "Twelve Labors of Hercules." These were: (1) To slay the Nemean lion; (2) To destroy the hydra which infested the marshes of Lerna; (3) to bring to Eurystheus the Arcadian stag with the golden horns and brazen hoofs; (4) to bring to his master the boar of Erymanthus; (5) to cleanse the stable of King Augeas, in which 3,000 oxen had been kept for thirty years, and which had never been cleaned out; (6) to destroy the Stymphalides, terrible carnivorous birds; (7) to capture the bull that was desolating Crete; (8) to capture the mares of Diomedes, which breathed fire from their nostrils, and ate human flesh; (9) to procure the girdle of Hippolyte, queen of the Amazons; (10) to bring to Eurystheus the flesh-eating oxen of Geryon, from the island of Erythea; (11) to bring away some of the golden apples from the gardens of the Hesperides; (12) to bring up from hades the three-headed dog Cerberus. Besides these labors he performed numerous other difficult feats. He was conducted by Mercury to Omphale, queen of Lydia, became her slave, and he permitted her to dress in his armor while he was sitting to spin with her female servants. He delivered Dejanira from the Centaur Nessus, whom he killed. The Centaur, as he expired, gave Dejanira a mystic tunic, which, in a jealous paroxysm, she gave to Hercules to put on, which he had no sooner done than he was seized with a desperate distemper which was incurable. He erected a burning pile on Mount Œta, on which he cast himself. Jupiter surrounded the burning pile with smoke, amidst which Hercules, after his mortal parts were consumed, was carried to heaven in a chariot drawn by four horses.

Hermes.—One of the twelve great Greek divinities, son of Zeus and Maia. He was the herald of the gods and the god of eloquence, prudence and skill, and conducted the shades of the dead from the upper to the lower world. He also was the patron of commerce and riches, and inventor of the lyre. The Romans identified their god Mercurius with Hermes.

Hermione.—A daughter of Mars and Venus, who married Cadmus. She was changed into a serpent, and placed in the Elysian fields.

Hero.—A beautiful priestess of Venus, greatly enamored of Leander, who used to swim across the Hellespont to see her, while she directed his course by holding a burning torch on the top of a high tower. One stormy night Leander was drowned, whereupon Hero threw herself into the sea and perished also.

Hesperides.—The Hesperides are called daughters of Night, because their origin and existence are veiled in darkness. Their names were Ægle, Erytheia, and Arethusa; and they were appointed to guard the golden apples, which were the gift of Earth to Juno on her wedding day. The celebrated gardens of the Hesperides abounded with fruits and were carefully guarded by a dragon which never slept.

Hesperus.—A supposed son or brother of Atlas enrolled among the deities after death, and made identical with the evening star.

Hestia.—The Greek name for Vesta. She was the goddess of the domestic hearth.

Hippocrene.—A fountain of the Muses, on Mount Helicon, in which they bathed. "The whole mountain was celebrated for its fresh rills, and cool groves, and flowery slopes"; and the legends of the locality, as if in sympathy with its natural features, were free from the harshness characterizing those of other mountains more wild and rugged.

Hippolyte.—A queen of the Amazons, given in marriage to Theseus by Hercules. Hippolytus was their son.

Hippolytus.—Son of Theseus and Hippolyte. His stepmother, Phædra, fell in love with him. He fled to the seashore, where, his horses taking fright and rushing among the rocks, his chariot was broken into pieces, and he was killed. According to some accounts, he was restored to life by Diana.

Hippomenes.—Son of Megareus, and great-grandson of Poseidon (Neptune). He conquered Atalanta in a foot-race by dropping three golden apples, one by one, which she stopped to pick up. By this delay she lost the race

Hobomoko.—An evil spirit known among American Indians.

Hödeken.—A famous German kobold, or domestic fairy servant; so called from wearing a little felt hat pulled down over his face.

Hoder.—In Norse mythology a blind god who destroyed his brother Balder, at the instigation of Loki, without meaning to do so. He is the type of night and darkness, as Balder is of light and day.

Hofvarpnir.—The fleet steed of Ina, in Scandinavian legend, which traveled through fire and air and enabled this messenger of the gods to see all that was happening on the earth.

Honir.—In Asgard tales, name given to the god of mind or thought.

Horæ.—Daughters of Zeus and Themis, the goddesses of the order of nature and of the seasons. They guarded the doors of Olympus, and promoted the fertility of the earth.

Horus.—The Egyptian god of the sun, son of Osiris and Isis, who was also worshiped in Greece and at Rome.

Hugin.—One of Odin's two ravens, which carried him news from earth, and, when not thus employed, perched upon his shoulders. The personification of thought or intellect.

Hugon.—A kind of evil spirit in the popular superstition of France—a sort of ogre made use of to frighten children.

Hundred-eyed.—Argus, in Greek and Latin fable. Juno appointed him guardian of Io, but Hermes killed him with a stone; whereupon Juno transplanted his eyes into the tail of her peacock.

Hyacinthus.—A youth beloved by Apollo, and accidentally slain by him while playing at quoits. From his ashes sprang the flower which bears his name.

Hyades.—Daughters of Atlas and one of the Oceanides. They were five in number, and were changed into a constellation called the Hyades.

Hydra.—A celebrated monster which infested the neighborhood of Lake Lerna, in the Peloponnesus. It was one of the labors of Hercules to destroy the monster, which he accomplished with the aid of Iolas.

Hygeia.—The goddess of health, daughter of Æsculapius. She was held in great veneration among the ancients.

Hymenæus or Hymen.—The god of marriage among the Greeks. He was the son of Bacchus and Venus, or, according to some, of Apollo and one of the Muses.

Hyperboreans.—A fabulous people, supposed to live beyond the north wind, in a land of perpetual sunshine.

Hyperion.—A son of Cœlus and Terra, who married Thea. Aurora was their daughter. The name Hyperion is often used by the poets to signify the sun; as, for instance, by Shakespeare in *Titus Andronicus*.

> Even from Hyperion's rising in the east.
> Until his very downfall in the sea.

Also in *Troilus and Cressida* and other of Shakespeare's plays, the same license is used.

Hypermnestra.—One of the Danaides, who were the fifty daughters of Danaus. She was ordered by her father to murder her husband Lynceus on the night of their marriage, which she refused to do. Danaus wished to punish her for her disobedience, but afterward forgave her, and left his kingdom at his death to Lynceus.

Hypsipyle.—A queen of Lemnos, daughter of Thoas. During her reign, Venus, whose altars had been slighted, punished the Lemnian women by causing their husbands' affections to be estranged from them. This enraged the women and they put to death their male relatives, except

in the case of Hypsipyle, who spared her father Thoas.

Iacchus.—The solemn name of Bacchus in the Eleusinian mysteries, whose name was derived from the boisterous song called *Iacchus*. In these mysteries Iacchus was regarded as the son of Zeus and Ceres, and was distinguished from the Theban Bacchus (Dionysus), the son of Zeus and Semele.

Iapetos.—The father of Atlas and ancestor of the human race, called the progeny of Iapetos. By many considered the same as Japheth.

Icarius.—An Athenian who hospitably received Dionysus in Attica, and was taught the cultivation of the vine.

Icaros.—Son of Dædalos, who flew with his father from Crete; but the sun melted the wax with which his wings were fastened on, and he fell into the sea, hence called the Icarian.

Ida.—A mountain range of Mysia, in Asia Minor, celebrated in mythology as the scene of the rape of Ganymede and of the judgment of Paris. In Homer the summit of Ida is the place from which the gods watch the battles in the plain of Troy. It is an ancient seat of the worship of Cybele. A mountain in Crete, known as Mount Ida, was closely connected with the worship of Jupiter.

Idæan Mother.—Cybele, who had a temple on Mount Ida, in Asia Minor.

Idomeneus.—Son of Deucalion. He led the Cretan forces against Troy, and was one of the bravest of the Greek heroes of the Trojan war. On his return, being overtaken by a storm, he vowed to sacrifice to Poseidon the first object he met on landing. This was his son, whom he accordingly sacrificed. A plague was sent upon Crete in consequence, and Idomeneus was banished.

Iduna or **Idun.**—Daughter of the dwarf Svald, and wife of Bragi. She kept in a box the golden apples which the gods tasted as often as they wished to renew their youth. Loki on one occasion stole the box, but the gods compelled him to restore it. Iduna seems to personify that part of the year when the sun is north of the equator. Her apples indicate fruits generally. Loki carries her off to Giant-land when the sun descends below the equator, and he steals her apples. In time, Iduna makes her escape, in the form of a sparrow, when the sun again rises above the equator; and both gods and men rejoice in her return.

Ifing.—In Scandinavian mythology the great stream between the earth and the sacred lands, whose waters never froze.

Ilus.—Son of Tros and Callirrhoë the founder of Ilium, called also Troy after his father.

Inachus.—One of the river-gods, a son of Oceanus and Tethys, and father of Phoroneus and Io. He was the first king of Argos, and is said to have given his name to the river Inachus.

Indra.—In Hindu mythology the ever-youthful god of the firmament, and the omnipotent ruler of the elements. He is a most important personage in Indian fable. In the Vedic period of the Hindu religion, he occupied a foremost rank, and, though degraded to an inferior position in the Epic, he long enjoyed a great legendary popularity. In works of art he is represented as riding on an elephant.

Ino.—Daughter of Cadmus and Harmonia, married to Athamas after the death of Nephele.

Io.—Daughter of Inachus, and beloved by Zeus, who changed her into a white heifer to escape Hera's jealousy Hera set Argus to watch her, and Zeus directed Hermes to steal her away. Finally Hermes killed Argus. Hera then sent a gadfly to torment Io, who wandered from land to land over all the earth, finding rest at last on the Nile, where she was restored to her natural form. She was afterward identified with Isis.

Iolaus.—Son of Iphicles, relative and faithful companion of Hercules.

Ion.—Son of Apollo and Creusa, fabulous ancestor of the Ionians.

Iphicles.—Son of Amphitryon and Alcmene, and brother of Hercules.

Iphigenia.—A daughter of Agamemnon and Clytemnestra. When the Greeks, going to the Trojan war, were detained at Aulis by contrary winds, they were informed by a soothsayer that, to appease the gods, they must sacrifice Iphigenia to Diana. As the fatal knife was about to be plunged into her, Iphigenia suddenly disappeared, and a goat of great beauty was found in the place where she had stood ready for the sacrifice.

Irene.—The Roman goddess of peace, and daughter of Zeus and Themis, and one of the Horæ.

Iris.—Daughter of Thaumas and Electra, messenger of the gods, especially of Hera. The rainbow was considered the road on which she traveled, and she was therefore identified with it.

Irus.—The beggar of gigantic stature who kept watch over the suitors of Penelope. His real name was Arneos, but the suitors nicknamed him Irus because he carried their messages for them. Ulysses, on his return, felled him to the ground.

Isis.—The Egyptian goddess of the earth, also identified with the moon. Her worship prevailed extensively in Greece, and also in Rome under the emperors.

Israfil.—Known among Arabians as the angel of music, who possessed the most melodious voice of all God's creatures. This is the angel who is to sound the resurrection trump, and make music for the saints in paradise. Israfil, Gabriel and Michael were the three angels that warned Abraham of Sodom's destruction.

Ithaca.—In mythology the island-kingdom of Ulysses. The city of Ithaca, the residence of Ulysses, was situated on a precipitous, conical hill, now called "eagle's cliff," occupying the whole breadth of the isthmus. Ithaca was also the home of Penelope.

Ithuriel.—One of the angels commissioned by Gabriel to search for Satan, who had effected his entrance into paradise.

Ixion.—King of the Lapithæ, treacherously killed Deioneus. Zeus purified him, and carried him to heaven, giving him a seat at the table of the gods.

Jamshid.—King of the genii, famous for a golden cup full of the elixir of life. This cup, hidden by the genii, was discovered while digging the foundations of Persepolis.

Janus.—An ancient king who reigned in Italy. He was a native of Thessaly, a d, according to some writers, a son of Apollo. He built a town which he called Janiculum. Some authors make him to have been son of Cœlus and Hecate. He is represented with two faces, because he was acquainted with the past and future. His temple was always open in time of war, and was shut when peace existed.

Jason.—In Greek legend, king of Iolchos in Thessaly, celebrated for his share in the Argonautic expedition. On his return to Iolchos with Medea as his wife, he avenged the murder of his parents and his brother by putting Pelias to death. Unable to retain possession of his throne, however, he fled to Corinth, where, after some time, he married Glauce (or Creusa), daughter of the king, and put away Medea and her children. Different accounts are given of his death.

Jinn.—A sort of fairies in Arabian mythology, the offspring of fire. They are governed by a race of kings named Suleyman, one of whom "built the pyramids." Their chief abode is the mountain Káf, and they appear to men under the forms of serpents, dogs, cats, monsters, or even human beings, and become invisible at pleasure. The evil jinn are ugly, but the good are beautiful. According to fable, they were created from fire two thousand years before Adam was made of earth.

Jord.—Daughter of Night and mother of Thor. In Scandinavian mythology the name given to primitive earth.

Jove.—Known in classical mythology as the god of thunder. The name Jove is but another appellation, rarely given to Zeus or Jupiter.

Juggernaut or **Jaggernaut.**—A Hindu god. The temple of this god is in a town of the same name in Orissa.

Juno.—A celebrated deity among the ancients, daughter of Saturn and Ops. Jupiter married her, and the nuptials were celebrated with the greatest solemnity in the presence of all the gods. By her marriage with Jupiter, Juno became the queen of all the gods, and mistress of heaven and earth. She presided over marriage, and patronized those of her sex who were distinguished for virtuous conduct. Paris gave her great offense by giving the golden apple, as an award to beauty, to Venus instead of herself.

Jupiter.—The chief of all the gods of the ancients. According to Varro, there were three hundred persons of that name. To him of Crete, who passed for the son of Saturn and Ops, the actions of the rest have been attributed. Jupiter was educated in a cave on Mount Ida, in Crete, and fed with the milk of the goat Amalthæa. While he was very young he made war on the Titans, whom he conquered. The beginning of his reign in the supernal regions was interrupted by the rebellion of the giants who were sons of the earth, and who were desirous of revenging the death of the Titans; but by the aid of Hercules Jupiter overpowered them. Jupiter married Metis, Themis, Ceres, Euronyme, Mnemosyne, Latona, and Juno. His worship was universal: he was the Ammon of the Africans, the Belus of Babylon, and the Osiris of Egypt.

Kama.—The Hindu god of love. His wife is Rati (pleasure). He is shown riding on a parrot or a sparrow, holding in his hand a bow of flowers and five arrows, each tipped with the bloom of a flower supposed to conquer one of the senses. His power is so much exalted that even the god Brahma is said to succumb to it.

Kami.—The gods of ancient Japan. The name, in modern times, designates any spiritual saint, and may also be applied to a prince.

Kaswa.—The camel admitted into Moslem paradise, the favorite camel of Mohammed which fell on its knees in adoration when "the prophet" delivered the last clause of the Koran to the assembled multitude at Mecca.

Kederli.—In Mohammedan mythology is a god corresponding to the English St. George, and is still invoked by the Turks when they go to war.

Kelpie.—In mythology of Scotland a spirit of the water seen in the form of a horse. Each lake has its kelpie.

Kobold.—A house-spirit in German superstition. In northern lands the name is sometimes used in place of elf or dwarf, representing an underground spirit. Probably the same as the Scotch brownie.

Koppelberg.—The hill which miraculously opened to receive the children who followed the Pied Piper. This belongs to mythology, as people in the middle ages considered Odin as the leader of disembodied spirits, and from this came the Pied Piper. The rats were the restless souls of the dead, which the Pied Piper released by drowning.

Krishna.—In Hindu mythology the eighth incarnation of Vishnu. According to some authorities, he is considered distinct from all the Avatars, as these had only a portion of the divinity, and Krishna was Vishnu himself in form of "the Black One."

Kronos.—Kronos (Time) was the youngest of the Titans, and as the heavens measure out time to us, and earth is considered its beginning, he is said to be born of Uranos and Ge. He was generally worshiped under the name of Saturn.

Kuvera.—In Hindu mythology the god of riches, represented as frightfully deformed, and as riding in a car drawn by hobgoblins.

Lab.—The sorceress-queen in *Arabian Nights*. She tried to change Beder, the young king of Persia, into a halting, one-eyed hack; but Beder was forewarned, and changed Lab herself into a mare.

Lachesis.—One of the three Fates, or Parcæ. She spun the thread of life.

Ladon.—The dragon who guarded the apples of the Hesperides, and was slain by Hercules. Ladon is also the name of the father of Daphne and Metope.

Læding.—In Norse mythology the strong chain with which the wolf Fenris was bound. He easily broke the chain, and from this legend has grown the saying, "to get loose out of Læding." A stronger chain was known as Droma.

Laërtes.—A king of Ithaca who married Anticlea, daughter of Autolycus. Ulysses was their son, and succeeded him on the throne, Laërtes retiring to the country, and devoting his time to gardening, in which employment he was found by Ulysses on his return from the Trojan war, after twenty years' absence.

Laocoon.—A priest of Apollo who, in the Trojan war, was opposed to the admission of the wooden horse to the city. For this, as a punishment, two enormous serpents were sent to attack him, which they did while, accompanied by his two sons, he was offering a sacrifice to Neptune. The serpents coiled round him and his sons, and crushed them to death.

Laodamia.—The wife of Protesilaus, who was slain before Troy. She begged to be allowed to converse with her dead husband for only three hours, and her request was granted. Hermes (Mercury) led Protesilaus back to the upper world; and, when Protesilaus died a second time, Laodamia died with him.

Laomedon.—The king who built the walls of Troy, assisted by Neptune and Apollo, who had displeased Jupiter, and were sent to work for wages. Neptune built the walls of Troy, while Apollo tended the king's flocks on Mount Ida. When the two gods had done their work, Laomedon refused the reward he had promised, and expelled them from his dominions. Neptune sent a sea-monster to ravage the country; and a maiden, chosen by lot, was from time to time sacrificed to propitiate it.

Lapithæ.—A mythical people of Thessaly, noted for their defeat of the Centaurs.

Lares.—Gods of inferior power at Rome, who presided over houses and families. They were two in number, sons of Mercury and Lara.

Latinus.—A son of Faunus and Marica, king of the Aborigines in Italy, who from him were called Latini.

Latona.—A daughter of Cœus the Titan and Phœbe. She was admired for her beauty by Jupiter. Juno made Latona the object of her vengeance, and sent the serpent Python to persecute her.

Leander.—A youth of Abydos. He was passionately in love with Hero, a young girl of Sestos. He was in the habit of swimming across the Hellespont to visit her, in doing which, on a tempestuous night, he was drowned. Lord Byron performed the same feat in 1810, an exploit which he has celebrated in verse in his occasional pieces. He expresses surprise that, as the truth of Leander's story had been questioned, no one had hitherto tested its practicability.

Leda.—A daughter of King Thespius and Eurythemis, who married Tyndarus, king of Sparta. She is famous for her intrigue with Jupiter. She was the mother of Pollux, Helena, Castor, and Clytemnestra. She is said to have received the name of Nemesis after death.

Lemures.—The specters or spirits of the dead. They were said to wander about at night as specters, and to torment and frighten the living. In order to propitiate them the Romans celebrated the festival of the *Lemuralia* or *Lemuria*.

Lethe.—The river that separates hades from the Elysian fields. The Greeks believed in a magical power of the waters of this river, which the souls of all the dead are obliged to taste, that they may forget everything said and done in the earth.

Liber.—An ancient Roman divinity of wines, identified afterward with Bacchus.

Libertas.—The goddess of liberty, to whom several temples were erected at Rome. Libertas is represented in works of art as a matron, with the pileus, the symbol of liberty, or a wreath of laurel.

Sometimes she appears holding the Phrygian cap in her hand.

Libissa.—Queen of fays and fairies.

Libitina.—An ancient goddess of Rome, who presided over the burial of the dead. At her temple at Rome everything necessary for funerals was kept, and persons might there either buy or hire such things. Hence a person undertaking the burial of a person (an undertaker) was called "libitinarius," and his business "libitina."

Lidskialf.—The throne of Alfadir, whence he can view the whole universe.

Lif.—In Norse mythology the name given to man who is to occupy the purified earth when goodness resumes its sway.

Lilinau.—In American Indian folk-lore Lilinau was wooed by a phantom. She followed his green waving plume through the forest, and was never seen again.

Lilith.—In Hebrew mythology a female specter who lies in wait for children in order to destroy them. The older traditions tell of Lilith as a former wife of Adam and the mother of demons. Amulets were worn as protection from her powers.

Lobaircin.—In Irish mythical tales a fairy shoemaker resembling an old man, who resorts to out-of-the-way places, where he is discovered by the noise of his hammer. He is rich, and, while any one keeps his eye fixed upon him, cannot escape, but the moment the eye is withdrawn he vanishes.

Lofn.—The Scandinavian god who guards friendship.

Lofua.—The Scandinavian goddess who reconciles lovers.

Loki.—The great god of fire in Norse mythology.

Lorelei.—In German legend a siren who haunted a rock of the same name on the right bank of the Rhine. She combed her hair with a golden comb, and sang a wild song which enticed fishermen and sailors to destruction on the rocks and rapids at the foot of the precipice. In northern mythology Lorelei is represented as immortal, a daughter of the Rhine, and dwelling in the river bed.

Lotis.—A nymph, who, to escape the embraces of Priapus, was metamorphosed into a tree, called, after her, Lotus.

Lubins.—A species of goblins in Normandy that take the form of wolves, and frequent churchyards. They are very timorous, and take flight at the slightest noise.

Lucifer.—The planet Venus when a morning star, called by the Greeks Phosphorus. The same star when seen in the evening was called Hesperus or Vesper.

Lucina.—The goddess who presides at the birth of children. She was a daughter of Jupiter and Juno.

Lud.—In ancient British mythology the king of the Britons.

Luna.—She was the daughter of Hyperion and Theia, and was distinct in name, descent, and story from Diana, who was taken as goddess of the moon. To Luna was ascribed great influence in relation to the birth of men. Luna seems to have been especially worshiped by the Atlantides.

Lycomedes.—A king in the island of Scyros, to whose court Achilles was sent, disguised as a maiden, by his mother, Thetis, who was anxious to prevent his going to the Trojan war. Some traditions say that Lycomedes treacherously killed Theseus by throwing him from a rock.

Mænalus.—A mountain in Arcadia, extending from Megalopolis to Tegea, celebrated as the favorite haunt of the god Pan. The Roman poets frequently use the adjectives "Mænalius" and "Mænalis" as equivalent to Arcadian.

Mæra.—The dog of Icarios. Icarios, having made wine, gave it to some shepherds, who, thinking themselves poisoned, killed him; recovering themselves, they buried him. His daughter, Erigone, being shown the spot by his faithful dog Mæra, hung herself through grief.

Mammon.—In demonology, placed at the head of nine ranks of demons. Also a Syriac word used in the scriptures to signify either riches or the god of riches. By poetic license, Milton makes Mammon one of the fallen angels.

Manes.—The name given by the Romans to the spirits of the departed. The god of funerals and tombs.

Mani.—Name given in ancient Norse mythology to the moon. Later known as the son of Mundilfori; taken to heaven by the gods to drive the moon-car. He is followed by a wolf, which, when time shall be no more, will devour both Mani and his sister Sol.

Manitou.—The great spirit of American Indians.

Mars.—The god of war, was the son of Jupiter and Juno, or of Juno alone, according to Ovid. The loves of Mars and Venus are greatly celebrated. On one occasion, while in each other's company, Vulcan spread a net around them, from which they could not escape without assistance. They were thus exposed to the ridicule of the gods till Neptune induced Vulcan to set them at liberty. During the Trojan war Mars interested himself on the side of the Trojans, and defended the favorites of Venus with great determination.

Marsyas.—A celebrated piper of Cœne in Phrygia. He challenged Apollo to a trial of skill in music, which challenge was accepted, the Muses being appointed umpires. The palm of victory was awarded to Apollo, who tied his antagonist to a tree and flayed him.

Medea.—A celebrated magician, daughter of Æetes, king of Colchis, and niece of Circe. When Jason came to Colchis in quest of the Golden Fleece, Medea fell in love with him, and they exchanged oaths of fidelity; and, when he had overcome all the difficulties which he had to encounter, Medea embarked with him for Greece. She lived in Corinth with her husband Jason for ten years, with much conjugal happiness, when he became enamored with Glauce, daughter of Creon, king of Corinth. To avenge herself on Jason she caused the destruction of Glauce, and killed her two children in his presence.

Medusa.—One of the three gorgons, daughter of Phorcys and Ceto. She was the only one of the gorgons subject to mortality. She was celebrated for her personal charms and the beauty of her hair, which Minerva changed into serpents. According to Apollodorus and others, the gorgons were born with snakes on their heads instead of hair, and with yellow wings and brazen hands. Perseus rendered himself famous by his conquest of Medusa. He cut off her head and placed it on the ægis of Minerva. The head had the power of changing those who looked at it into stone.

Megæra.—One of the furies; sometimes said to personify a guilty conscience.

Megin-giord.—A magic belt worn by the god Thor. He once proposed to show his strength by lifting great weights, but when challenged to pick up the giant's cat, he tugged and strained, only to succeed in raising one paw from the floor, although he had taken the precaution to enhance his strength as much as possible by tightening his belt Megin-giord.

Meleager.—A celebrated hero of antiquity who signalized himself in the Argonautic expedition, and especially by killing the Calydonian boar, a famous event in mythological history.

Melissa.—A nymph, said to have discovered the use of honey, and from whom bees were believed to have received their name. There can be no doubt, however, that the name really came from a Greek word meaning honey, and was hence given to nymphs.

Mellona.—One of the rural divinities, the goddess of bees.

Melpomene.—One of the Muses, daughter of Jupiter and Mnemosyne. She presided over tragedy. She is generally represented as a young woman wearing a buskin, and holding a dagger in her hand.

Melusina.—The most noted among French fairies. She was condemned to become every Saturday a serpent from the waist downward, as a punishment for having, by means of a charm, inclosed her father in a high mountain, in order to avenge an injury her mother had received from him. She married Raymond, count of Poitiers, and, having been seen by him during her loathsome transformation—in violation of his solemn promise never to visit her on a Saturday—was immured in a subterranean dungeon of the castle of Lusignan.

Memnon.—A king of Ethiopia, son of Tithonus and Aurora. He came with ten thousand men to assist Priam in the Trojan war, where he behaved with great courage, and killed Antilochus, Nestor's son, on which Nestor challenged Memnon to fight, but he refused on account of the great age of the challenger; but he fought Achilles, who killed him. A statue was erected in his honor which had the property of uttering a melodious sound every day at sunrise.

Mendes.—An Egyptian god like Pan. He was worshiped in the form of a goat.

Menelaus.—King of Lacedæmon, brother of Agamemnon and husband of Helena. After Helena's flight with Paris, Menelaus and Ulysses went to Troy to demand her restitution; on the failure of their attempt Menelaus and his brother organized the expedition against Troy. After the capture of the city he became reconciled to Helena, and they lived happily in Sparta.

Mentor.—A friend of Ulysses, to whom the latter confided the care of his house and the instruction of his son Telemachus on departing for the Trojan war.

Mephistopheles.—One of the seven chief devils in the old demonology, the second of the fallen archangels, and the most powerful of the infernal legionaries after Satan. He figures in the old legend of *Dr. Faustus* as the familiar spirit of that magician. To modern readers he is chiefly known as the cold, scoffing, relentless fiend of Goethe's *Faust* and the attendant demon in Marlowe's *Faustus*.

Mercury.—Has been identified with the Greek Hermes. The Romans of later times transferred all the attributes and myths of Hermes to their own god. The Fetiales, however, never recognized the identity; and, instead of the "caduceus," they used a sacred branch as the emblem of peace. The resemblance between Mercurius and Hermes is indeed very slight. The worship of Mercury was very common among Egyptians, Greeks, and Romans, and many temples were consecrated to him. At Rome there was a particular festival held for the expiation of merchants, in honor of Mercury.

Meriones.—A Cretan hero, son of Molus, who was one of the bravest heroes in the Trojan war, and usually fought along with his friend Idomeneus.

Mermaids.—Wave maidens of northern mythology, and classed with nymphs in Grecian and Roman. They were generally represented as young and beautiful virgins, partially covered with a veil or thin cloth, bearing in their hands vases of water, or shells, leaves, or grass, or having something as a symbol of their appropriate offices. They were attendants of the gods.

Merope.—One of the Pleiades, daughter of Atlas, and wife of Sisyphus.

Merops.—King of Cos, whose wife was killed by Artemis for neglecting to worship her. Merops tried to kill himself, but was changed to an eagle, and placed among the stars.

Meru.—In Hindu mythology a sacred mountain, 80,000 leagues high, situated in the center of the world. It is the abode of Indra, and abounds with every charm that can be imagined. The Olympus of the Indians.

Midas.—A king of Phrygia, son of Gordius or Gorgias. According to some traditions, in the early part of his life he found a treasure, to which he owed his greatness and opulence. He showed hospitality to Silenus, in return for which Bacchus permitted him to choose whatever recompense he pleased. He demanded of the god that whatever he touched might be turned into gold. His wish was granted; but, when the very food which he attempted to eat became gold in his mouth, he prayed Bacchus to revoke the favor, and he was ordered to wash himself in the river Pactolus, the sands of which were turned into gold by the touch of Midas. Afterward, in consequence of maintaining that Pan was superior to Apollo in singing and playing the flute, he had his ears changed into those of an ass by the god.

Midgard.—In Scandinavian mythology the name given to the earth. Out of the giant's flesh they fashioned Midgard (middle garden), as the earth was called, which was placed in the exact center of the vast space, and hedged all around with Ymir's eyebrows, which formed its bulwarks or ramparts. The solid portion of Midgard was surrounded by the giant's blood or sweat, which now formed the ocean, while his bones made the hills, his flat teeth the cliffs, and his curly hair the trees and all vegetation.

Midgardsormen (earth's monster).—The great serpent that lay in the abyss at the root of the celestial ash. Child of Loki.

Milo.—A celebrated Crotona athlete, who is said to have felled an ox with his fist, and to have eaten the beast in one day.

Mimir.—In Scandinavian mythology the god of wisdom. Also god of the ocean, which is called "Mirmir's well," in which wit and wisdom lay hidden, and of which he drank every morning from the horn Gjallar.

Minerva.—The goddess of wisdom, war, and all the liberal arts, sprang, full-grown and armed, from the head of Jupiter, and was immediately admitted to the assembly of the gods, and became one of the most faithful counselors of her father. Her power in heaven was great; she could hurl the thunders of Jupiter, prolong the life of men, and bestow the gift of prophecy. She was known among the ancients by many names. She was called Athena, Pallas, Parthenos, Tritonia, and Hippia, Sais, and other names. She is usually represented with a helmet on her head with a large plume on it, in one hand holding a spear, and in the other a shield with the head of Medusa on it. Temples were erected for her worship in different places, one of the most renowned of which was the Parthenon at Athens. She was the tutelar deity of the city of Athens.

Minos the Second.—Was a son of Lycastes, the son of Minos the first, and king of Crete. He married Pasiphæ, the daughter of Sol and Perseis.

Minotaur.—A celebrated monster, half a man and half a bull, for which a number of young Athenian men and maidens were yearly exacted to be devoured. The Minotaur was confined in a famous labyrinth, where at length it was slain by Theseus, who was guided out of the labyrinth by a clew of thread given to him by Ariadne, daughter of King Minos.

Mithras.—In Persian mythology one of the principal gods of the ancient Persians, a personification of the sun. He was regarded as a mediator between the two opposite deities, Ormuzd and Ahriman, or the principle of good and the principle of evil.

Mjolnir.—From mythology of northern lands. The name of Thor's celebrated hammer—a type of the thunderbolt—which, however far it might be cast, was never lost, as it always returned to his hand; and which, whenever he wished, became so small that he could put it in his pocket.

Mnemosyne.—A daughter of Cœlus and Terra, mother of the nine Muses. Jupiter assumed the form of a shepherd in order to enjoy her company.

Moloch.—A god of the Phenicians to whom human victims, principally children, were sacrificed. Moloch is figurative of the influence which impels us to sacrifice that which we ought to cherish most dearly.

Momus.—The god of mirth amongst the ancients according to Hesiod, was the son of Nox. He amused himself by satirizing the gods by turning into ridicule whatever they did.

Moakkibat.—A class of angels, according to the Mohammedan mythology. Two angels of this class attend every child of Adam from the cradle to the grave. At sunset they fly up with the record of the deeds done since sunrise. Every good deed is entered ten times by the recording angel on the credit or right side of his ledger, but when an evil deed is reported the angel waits seven hours, "if happily in that time the evil-doer may repent."

Moiræ.—The Greek name for Parcæ, or the Fates. These grave and mighty goddesses were represented by the earliest artists with staffs or scepters, the symbols of dominion. They received the same homage as the Furies.

Morpheus.—A minister of the god Somnus, who imitated very naturally the gestures, words, and manners of mankind. He is sometimes called the god of sleep. He is generally represented as a sleeping child of great corpulence, with wings.

Mowis.—The bridegroom of Snow, who (according to American Indian tradition) wooed and won a beautiful bride; but when morning dawned, Mowis left the wigwam, and melted into the sunshine. The bride hunted for him night and day in the forests, but never saw him more.

Musæ.—The Muses, certain goddesses who presided over poetry, music, dancing, and all the liberal arts. They were daughters of Jupiter and Mnemosyne, and were nine in number—Clio, Euterpe, Thalia, Melpomene, Terpsichore, Erato, Polyhymnia, Calliope, and Urania.

Myrmidons.—The trusty followers of Achilles. They are said to have inhabited originally the island of Ægina, and to have emigrated with Peleus into Thessaly. The Myrmidons disappear from history at a later period.

Mysterious Three, The.—In Scandinavian mythology were Har "the Mighty," the "Like-Mighty," and the "Third Person," who sat on three thrones above the rainbow. Then came the Æsir, of which Odin was chief, who lived in Asgard (between the rainbow and earth); next came the Vanir, or gods of the ocean, air, and clouds, of which deities Niörd was chief.

Naiads.—The nymphs of fresh water, whether of rivers, lakes, brooks, or springs. Many of these nymphs presided over springs which were believed to inspire those who drank of them.

Naraka.—The hell of the Hindus. It has twenty-eight divisions, in some of which the victims are mangled by ravens and owls; in others they are doomed to swallow cakes boiling hot, or walk over burning sands.

Narcissus.—A beautiful youth, who, for his unfeeling heart, was caused by Nemesis to see his own image reflected in a fountain and to become enamored of it. He gradually pined away and was changed into the flower which bears his name.

Nausicaa.—A daughter of Alcinous, king of the Pæacians, and Arete, who conducted Ulysses to the court of her father.

Nectar.—Wine conferring immortality, and drunk by the gods.

Neleus.—Son of Poseidon and Tyro, brother of Pelias. He was cast off by his mother and brought up by countrymen. He settled in Pylos, and became father of Nestor. He and all his sons except Nestor were killed by Hercules.

Nemean Lion.—A monstrous lion, near the forest of Nemea, which wasted the surrounding country and threatened destruction to the herds. Hercules promised to deliver the country of the monster, and Thespius rewarded Hercules by making him his guest so long as the chase lasted. Hercules slew the lion, and henceforth wore its skin as his ordinary garment, and its mouth and head as his helmet.

Nemesis.—One of the infernal deities, daughter of Nox. She was the goddess of vengeance. She is made one of the Parcæ by some mythologists, and is represented with a helm and a wheel. The term is sometimes used to signify vengeance itself.

Neoptolemus.—Called also Pyrrhus, son of Achilles and Deidamia; he was one of the Greek heroes concealed in the wooden horse, and killed Priam. Andromache fell to his lot, and he became by her father of several children. He married Hermione and was killed at Delphi.

Neptune.—In Roman mythology the divine monarch of the ocean. The principal exploits and merits ascribed to Neptune are the assistance to Jupiter against the Titans; the building of the walls and ramparts of Troy; the creation and taming of the horse; the raising of the Island Delos out of the sea; and the destruction of Hippolytus by a monster from the deep.

Nereus.—A son of Pontus and Gæa, and husband of Doris, by whom he became the father of the fifty nereides.

Nessus.—A centaur who attempted to carry off Dejanira but was shot by Hercules with a poisoned arrow. His poisoned blood was afterward the cause of Hercules' death.

Nestor.—King of Pylos, son of Neleus. He was spared by Hercules when his brothers and father were killed. In his youth he was a distinguished warrior, taking part in the Calydonian hunt and Argonautic expedition. At the siege of Troy he was of advanced age, and distinguished for his wisdom and eloquence.

Nickar or **Hnickar.**—The name assumed by Odin when he personated the destroying principle.

Nicneven.—A gigantic and malignant female spirit of the old popular Scottish mythology. The hag is represented as riding at the head of witches and fairies at Hallowe'en.

Nidhögg.—The dragon that gnaws at the root of Yggdrasil, the tree of the universe in Scandinavian mythology.

Niflheim.—Mist-home of old Norse mythology. The region of endless cold and everlasting night, ruled over by Hela. It consists of nine worlds, to which are consigned those who die of disease or old age. This region existed "from the beginning" in the north, and in the middle thereof was the well Hvergelmir, from which flowed twelve rivers.

Ninus.—A son of Belus. He built Nineveh and founded the Assyrian monarchy, of which he was the first sovereign, B. C. 2059. He married Semiramis, whose husband had destroyed himself through fear of Ninus. He reigned fifty-two years.

Niobe.—A daughter of Tantalus, king of Lydia, and Euryanassa, or Dione. She married Amphion, and, according to Hesiod, they had ten sons and ten daughters. All the sons of Niobe expired by the darts of Apollo, and all the daughters, except Chloris, were destroyed by Diana. Niobe, overwhelmed with grief, was changed into a stone.

Niörd.—The Scandinavian sea-god. He was not one of the Æsir. Niörd's son was Frey (the fairy of the clouds), and his daughter was Freyja. His home was Noatun. Niörd was not a sea-god like Neptune, but the spirit of water and air. The Scandinavian Neptune was Ægir, whose wife was Skadi. His temples were near the seashore and all aquatic plants belonged to him.

Nisus.—A Trojan youth who accompanied Æneas to Italy, after the fall of Troy, and who is celebrated for his devoted attachment to Euryalus.

Nix.—Little creatures not unlike the Scotch brownie and German kobold. They wear a red cap, and are ever ready to lend a helping hand to the industrious and thrifty.

Nokomis.—Daughter of the moon, American Indian myths. Sporting one day with her maidens on a swing made of vine canes, a rival cut the swing, and Nokomis fell to earth, where she gave birth to a daughter named Wenonah.

Nornir or **Norns.**—The three fates of Scandinavian mythology, past, present, and future. They spin the events of human life, sitting under the ash-tree Yggdrasil which they carefully tend. Their names are Urda (the past), Verdandi (the present), and Skuld (the future). Besides these three Norns, every human creature has a personal Norn or fate. The home of the Norns is called in Scandinavian mythology Doomstead.

Nox.—Goddess of night, considered among the ancients as one of their oldest divinities, and was worshiped by them with great solemnity.

Nymphæ.—The nymphs, female divinities of a lower class. They were divided into: (1) Nymphs of the watery element, comprising the Oceanides, nymphs of the ocean; Nereides, nymphs of the Mediterranean; Naiades, the naiads or freshwater nymphs. (2) Nymphs of mountains and grottoes, called Oreades. (3) Nymphs of forests and groves, called by different names. (4) Nymphs of trees (supposed to die with the trees which had been their abode), known as Dryads and Hamadryads.

Oceanides and **Oceanitides.**—Sea nymphs, daughters of Oceanus, from whom they received their name. According to Apollodorus, they were 3,000 in number, while Hesiod speaks of them as consisting of forty-one.

Oceanus.—A powerful deity of the sea, son of Cœlus and Terra. He married Tethys, the Oceanides being their children.

Odhærir.—In Scandinavian mythology the mead or nectar made of Kvasir's blood, kept in three jars. The second of these jars is called "Sohn," and the third "Bohn." Probably the nectar is the "spirit of poetry."

Odin.—The king of gods and men, and the reputed progenitor of the Scandinavian kings. He corresponds both to the Jupiter and the Mars of classical mythology. As god of war, he holds his court in Valhalla, surrounded by all warriors who have fallen in battle, and attended by two wolves, to whom he gives his share of food; for he himself lives on wine alone. On his shoulders he carries two ravens, Hugin (mind) and Munin (memory), whom he dispatches every day to bring him news of all that is doing throughout the world. He has three great treasures, namely, Sleipnir, an eight-footed horse of marvelous swiftness; Gungnir, a spear, which never fails to strike what it is aimed at; and Draupnir, a magic ring, which every ninth night drops eight other rings of equal value. The German tribes worshiped Odin under the name of "Woden." The fourth day of the week, Wednesday, was sacred to him.

Odur.—In Scandinavian mythology, husband of Freyja, whom he deserted. He abandoned his wife on her loss of youth and beauty, and was punished.

Odysseus.—A Greek form of the name Ulysses.

Œdipus.—He was the son of Laius, king of Thebes and his wife Jocasta. Laius, having been warned by an oracle that his throne and life were in danger from this son, gave him to a herdsman to be killed. But his life was saved, and he was reared by a peasant. Afterward he ransomed Thebes from the Sphinx by answering her riddle, unwittingly killed his own father, married Jocasta, and became king of Thebes. Subsequently discovering his parentage, he destroyed his eyesight, and wandered away from Thebes, attended by his daughter Antigone, who remained with him till his death.

Ægir.—God of the ocean, whose wife is Ran. They had nine daughters, who wore white robes and veils. These daughters are the billows, etc.

Ogres.—In nursery mythology giants of very malignant dispositions, who live on human flesh.

Olympia.—Celebrated games which received their name either from Olympia, where they were observed, or from Jupiter Olympus, to whom they were dedicated.

Olympus.—A mountain in Macedonia and Thessaly. The ancients supposed that it touched the heavens, and thus they have made it the residence of the gods, and the place where Jupiter held his court. On the top of the mountain, according to the poets, eternal spring reigned.

Omphale.—A queen of Lydia, daughter of Iardanus, and wife of Tmolus, after whose death she reigned herself. The story is frequently told of Hercules serving her as a slave, and of his wearing her dress, while Omphale put on the skin and carried the club.

Ops.—A daughter of Cœlus and Terra, the same as the Rhea of the Greeks, who married Saturn, and became mother of Jupiter. She was known among the ancients by the different names of Cybele, Bona Dea, Magna Mater, Thya, Tellus, and Proserpina.

Orestes.—A son of Agamemnon and Clytemnestra. His father was slain by Clytemnestra and Ægisthus, but young Orestes was saved, and married a sister of Agamemnon. He was indulgently treated by Strophius, who educated him with his son Pylades. The two young princes formed the most inviolable friendship. When Orestes had arrived at years of manhood he avenged his father's death by killing his mother, Clytemnestra.

Orion.—A giant and hunter, who, when intoxicated, offered violence to Merope, and was in consequence deprived of his eyesight. His eyesight was restored, and he lived as a hunter with Artemis. He was placed among the stars after his death.

Orithyia.—A daughter of Erechtheus, beloved by Boreas, who carried her off as she was wandering near the river Ilissus.

Orlog.—A god of Norse fable personifying the eternal law of the universe, from whose decree there was no appeal.

Ormuzd.—The name of the supreme deity of the ancient Persians, and of their descendants, the Parsees and Ghebers. He is an embodiment of the principle of good, and was created by the will of the great eternal spirit, Zervan-Akharana, simultaneously with Ahriman, the principle of evil, with whom he is in perpetual conflict. Ormuzd is the creator of the earth, sun, moon, and stars, to each of which he originally assigned its proper place, and whose various movements he continues to regulate.

Orpheus.—A legendary character, son of Œagrus and Calliope. He was instructed by the Muses, and enchanted with his lyre not only wild animals but trees and rivers. He accompanied the Argonauts, and on his return married Eurydice, who died from a serpent's bite. To recover her, Orpheus visited the infernal regions, when Pluto promised him his wife on condition that he should not look back on her until he had reached the upper world. He turned around, however, to see if she was following, and she disappeared from his sight. His grief made him reject the advances of the Thracian women, who in revenge drowned the sound of his lyre with their shrieks, and tore him to pieces in a Bacchanalian orgy.

Osiris.—A great deity of the Egyptians, husband of Isis. The ancients differ in opinion concerning this celebrated god, but they all agree that as ruler of Egypt he took care to civilize his subjects, to improve their morals, to give them good and salutary laws, and to teach them agriculture. He was worshiped under the form of an ox.

Ossa.—A celebrated mountain in the north of Thessaly, connected with Pelion on the southeast and divided from Olympus on the northwest by the vale of Tempe. It is mentioned in the legend of the war of the giants.

Pactolus.—The river whose sands turned to gold when Midas washed in the waters by order of Bacchus.

Paimosaid.—In American Indian myths a walking thief, especially one who walks through cornfields about harvest time to pluck the ears of maize or corn.

Palæmon.—Originally called Melicertes. Son of Ino; called Palæmon after he was made a sea-god. The Roman Portunus, the protecting god of harbors, is the same.

Palamedes.—Son of Nauplius and Clymene, a Greek warrior at the siege of Troy. Agamemnon, Diomedes, and Ulysses caused a Phrygian captive to write to Palamedes a letter in the name of Priam, which they concealed in his tent. They then accused him of treachery, and, upon finding the letter, caused him to be stoned to death.

Pales.—The goddess of shepherds, presiding over cattle and pastures, whose festival, the Palilia, was celebrated on the 21st of April, the day on which Rome was founded.

Palladium.—A sacred image of Athena, which was supposed to keep safe the city in which it was preserved. Zeus threw it from heaven as Ilus was beginning to build Troy, and Ilus built a sanctuary for it. Ulysses and Diomedes carried it away.

Pallas.—A name of Minerva. She is said to have received the name because she killed a noted giant bearing that name.

Pan.—The god of shepherds, huntsmen, and the inhabitants of the country. He was in appearance a monster; he had two small horns on his head, and his legs, thighs, tail, and feet were like those of the goat. He was the inventor of the syrinx or shepherd's flute. Sudden fright without visible cause, a panic, was ascribed to Pan. The Romans identified Faunus with him.

Pandarus.—A son of Lycaon, who aided the Trojans in their war with the Greeks. He broke the truce which had been agreed on by the contending armies, and wounded Menelaus and Diomedes. He was at last killed by Diomedes.

Pandion.—King of Athens, father of Procne and Philamola, in whose reign Bacchus and Demeter are said to have come to Attica.

Pandora.—The first woman on earth. When Prometheus stole fire from heaven Zeus bade Hephæotus to make a woman from earth. Aphrodite gave her beauty, Hermes boldness and cunning, and each god gave some gift. Hermes took her to Epimetheus, who married her. In his house was a jar which he had been forbidden to open. Pandora was tempted by curiosity to open the lid, when all the evils incident to humanity poured out, and she had only time to shut the lid, preventing the escape of Hope.

Pantheon.—A celebrated temple at Rome, built by Agrippa in the reign of Augustus, and dedicated to all the gods.

Parcæ.—The Fates, powerful goddesses who presided over the birth and life of mankind. They were three in number, Clotho, Lachesis, and Atropos, daughters of Nox and Erebus, according to Hesiod, or, according to what he says in another place, of Jupiter and Themis.

Paris.—In Greek mythology, the second son of Priam, king of Troy, by Hecuba. His mother dreamed before his birth that she had brought forth a firebrand, which was interpreted to mean that he would cause the destruction of Troy. To prevent this the child was exposed on Mount Ida, where he was discovered by a shepherd, who brought him up as his own son. Here his grace and courage commended him to the favor of Œnone, a nymph of Ida, whom he married. At the marriage of Peleus and Thetis a dispute arose whether Hera, Athena, or Aphrodite was the most beautiful, and as such entitled to the golden apple. Paris was chosen judge, and decided in favor of Aphrodite, who had promised him the fairest woman in the world for his wife. Subsequently he visited Sparta, the residence of Menelaus, who had married Helena (or Helen), the fairest woman of the age, whom he persuaded to elope with him. This led to the siege of Troy, at the capture of which he was killed by an arrow.

Parnassos or **Parnassus.**—A mountain near Delphi, in Greece. It contained numerous caves, glens, and romantic ravines. It has two summits, one of which was consecrated to Apollo and the Muses, the other to Bacchus. It was anciently called Larnassos, from larnax, an ark, because Deucalion's ark stranded there after the flood. After the oracle of Delphi was built at its foot it received the name of Parnassos. It is celebrated as one of the chief seats of Apollo and the Muses, and an inspiring source of poetry and song.

Parthenope.—One of the sirens, whose dead body was washed ashore on the present site of Naples. She threw herself into the sea out of love for Ulysses.

Patroclus.—The gentle and amiable friend of Achilles in Homer's *Illiad*.

Pauguk.—Name given to the great power, death, in American Indian mythology.

Pau-Puk-Keewis.—In American Indian folk-lore a mischievous magician, who is pursued by Hiawatha, goes through a series of wonderful transformations in his endeavors to escape, and finally becomes an eagle.

Pax.—The goddess of peace, worshiped in Greece under the name Irene. Pax wears a crown of laurel, and holds in her hand the branch of an olive tree.

Peboan.—In America Indian folk-lore the personification of winter in form of a great giant who shook the snow from his hair and turned water into stone by his breath.

Pegasus.—The winged horse which sprung from the blood of Medusa. He ascended to the immortals and was used by Zeus to carry thunder and lightning. He was also the horse of the Muses.

Peleus.—King of the Myrmidons at Phthia in Thessaly. Having in conjunction with his brother Telamon murdered his half-brother Phocus, he was expelled by Æacus from Ægina and went to Thessaly. He was purified from the murder by Eurytion who gave Peleus his daughter Antigone in marriage, and a third part of his kingdom.

Pelias.—The name of the spear of Achilles, which was so large that none could wield it but the hero himself.

Pelion.—A high mountain in Thessaly celebrated in mythology. Near its summit was the cave of the Centaur Chiron. The giants, in their war with the gods, are said to have attempted to heap Ossa and Olympus on Pelion, or Pelion and Ossa on Olympus, in order to scale heaven. On Pelion the timber was felled with which the ship Argo was built.

Pelops.—Son of Tantalus and Dione, husband of Hippodamia, king of Pisa in Elis; from him the southern peninsula of Greece, or the Peloponnesus, derived its name. His father once invited the gods to a banquet, and killed Pelops and served him; they refused to taste the dish, and he was restored to life.

Penates.—The household gods of the Romans, in which were included the Lares.

Penelope.—The faithful wife of Ulysses, who being importuned, during his long absence, by numerous suitors for her hand, postpones making a decision among them until she shall have finished weaving a funeral pall for her father-in-law, Laörtes. Every night she secretly unravels what she has woven by day, and thus puts off the suitors till Ulysses returns.

Peri.—Peris are delicate, gentle, fairy-like beings of eastern mythology, begotten by fallen spirits. They direct with a wand the pure in mind the way to heaven. These lovely creatures, according to the Koran, are under the sovereignty of Eblis; and Mohammed was sent for their conversion, as well as for that of man.

Persa or **Perseis.**—A daughter of Oceanus, and wife of Helios (the sun), by whom she became the mother of Æetes, Circe, Pasiphaë, and Perses.

Perseis.—A name given to Hecate, as the daughter of Perses by Asteria.

Persephone.—The Greek name of Proserpine. Homer describes her as the wife of Hades (Pluto), and the formidable, venerable, and majestic queen of the shades, who rules over the souls of the dead, along with her husband.

Perseus.—Son of Zeus and Danaë. Polydectes, the king of Seriphos, to which Danaë and Perseus were borne in the boat in which they were set afloat when Perseus was born, treated them kindly, but, falling in love with Danaë, he dispatched Perseus to fetch the head of the Gorgon Medusa. Under the guidance of Athena and Hermes, he obtained the winged sandals, the helmet of Pluto which rendered him invisible, the magic wallet, and buckler which served as a mirror. By help of the mirror he cut off Medusa's head and escaped and went to Æthiopia, where he discovered and saved Andromeda. He afterward returned to Argos with her, and accidentally killed Acrisius, his grandfather, by hitting him with a quoit.

Phædra.—A daughter of Minos and Pasiphaë, who married Theseus. She became the mother of Acamas and Demophoön. She brought an unjust accusation against Hippolytus (a son of Theseus before she married him), who was killed by the horses in his chariot taking fright, causing him to be thrown under the wheels and crushed to death. On hearing this, Phædra acknowledged the falseness of the charge she had brought against Hippolytus, and hanged herself in despair.

Phaëton.—Son of Helios and Olymene. He obtained from his father permission to drive the chariot of the sun for one day. He was unable to control the horses, and they rushed so near the earth as to set it on fire. Zeus killed him with a thunder bolt and flung him into the river Eridanus. His sisters, for their excessive grieving, were changed into poplars.

Phaon.—Originally an old and ugly boatman of Mitylene, who received youth and beauty from Aphrodite for carrying her across the sea without accepting pay. Sappho is said to have fallen in love with him and to have leaped from the Leucadian rock on his slighting her. But, while Sappho is a historical character, Phaon is purely mythical.

Philocetetes.—A celebrated archer, friend and armor-bearer of Hercules, whose bow and poisoned arrows he inherited. On his voyage to Troy he was wounded in the foot either by a snake or one of his own arrows. The wound produced an intolerable stench, and Philoctetes was left alone in Lemnos. Subsequently he was sent for, as Troy could not be taken without the arrows of Hercules. At Troy he was cured, and killed, among others, Paris.

Philomela.—A daughter of Pandion, king of Athens. Her sister Procne had married Tereus, king of Thrace, and, being separated from Philomela, spent her time in great melancholy. Tereus treated Philomela with great cruelty. In poetry we frequently find the nightingale alluded to as Philomela.

Phœbe.—The goddess of the moon, and sister of Phœbus; a name of Diana. See *Diana*.

Phœbus.—The god of archery, prophecy, and music. He was the son of Jupiter and Latona, and brother of Diana (Artemis). He was god of the sun, as Diana, his sister, was the goddess of the moon.

Phœnix.—A fabulous bird described as being as large as an eagle; its head finely crested with a beautiful plumage, its neck covered with gold-colored feathers, its tail white, and its body purple or crimson.

Phryxus.—Son of Athamas and Nephele and brother of Helle. He was to be sacrificed to Zeus in consequence of the intrigues of his stepmother Ino. Nephele rescued her children, who rode away on the ram with the golden fleece. He arrived safely in Colchis, married Chalciope, daughter of Æetes, and sacrificed the ram to Zeus.

Phyllis.—A daughter of Sithon, or, according to some authorities, of Lycurgus, king of Thrace. She received Demophoön, who landed on her coasts on his return from the Trojan war, and fell in love with him, and he reciprocated her affection; but afterward proving faithless, Phyllis hanged herself, and, according to an old tradition, was changed into an almond tree.

Picus.—King of Latium, son of Saturn, who married Venilia. As he was hunting he was met by Circe, who became enamored with him. She changed him into a woodpecker.

Pierides.—A name given to the Muses, because they were born in Pieria, or, as some say, because they were supposed to be the daughters of Pierus, a king of Macedonia, who settled in Bœotia.

Pirene.—A celebrated fountain of Corinth, at which Bellerophon is said to have caught the horse Pegasus. It gushed forth from the rock in the Acrocorinthus, was conveyed down the hill by subterraneous conduits, and fell into a marble basin, from which the greater part of the town was supplied with water. The poets frequently used Pirenis in the general sense of Corinthian.

Pleiades.—Means the "sailing stars," because the Greeks considered navigation safe at the return of the Pleiades, and never attempted it after those stars disappeared. The Pleiades were the seven daughters of Atlas and Pleione, named Electra, Alcyone, Celæno, Maia, Sterope, Taygete, and Merope. They were transformed into stars, one of which (Merope) is invisible, out of shame because she alone married a human being. Some call the invisible star "Electra," and say she hides herself from grief for the destruction of the city and royal race of Troy.

Pluto.—He was a second brother of Jupiter, and received, as his portion in the division of empire, the infernal regions, or the world of shades. The chief incident in the history of Pluto is his seizure and abduction of Proserpine, who thereby became his wife, and the queen of the lower world.

Plutus.—The god of riches; was probably of allegorical rather than mythical origin, since his name in Greek is but the common term for wealth.

Pluvius.—"The sender of rain," a surname of Jupiter among the Romans, to whom sacrifices were offered during long-protracted droughts.

Podalirius.—The son of Æsculapius, and brother of Machaon, with whom he led the Thessalians of Tricca against Troy. He was, like his brother, skilled in the medical art.

Pollas.—Meaning "the goddess protecting the city." A surname of Athena at Athens, where she was worshiped as the protecting divinity of the Acropolis.

Polites.—A son of Priam and Hecuba, and father of Priam the younger. He was slain by Pyrrhus.

Pollux.—A son of Jupiter and Leda, brother to Castor.

Polydorus.—(1) King of Thebes, son of Cadmus and Harmonia, husband of Nycteis, and father of Labdacus. (2) Son of Priam and Hecuba. When Ilium was on the point of falling into the hands of the Greeks, Priam intrusted Polydorus and a large sum of money to Polymnestor, king of the Thracian Chersonesus.

Polyhymnia.—Daughter of Jupiter and Mnemosyne. One of the Muses, who presided over singing and rhetoric.

Polyphemus.—A celebrated Cyclops, son of Neptune and Thoösa, the daughter of Phorcys. He is represented as a monster with one eye in the middle of his forehead. Ulysses was his captive, but escaped by putting a firebrand in the monster's eye.

Polyxena.—Daughter of Priam and Hecuba, beloved by Achilles, and whose treachery led to the latter's death. Neoptolemus slew her on the tomb of his father.

Pomona.—A nymph at Rome, who was supposed to preside over gardens and to be the goddess of fruit trees.

Ponemah.—In American Indian mythology the name of the land of the future life, or the spirit-land.

Poseidon.—Called Neptune by the Romans; was the god of the Mediterranean Sea. He was a brother of Zeus (Jupiter), and Hades (Pluto), and it was determined by lot that he should rule over the sea. The palace of Poseidon was in the depth of the sea, near Ægæ, where he kept his horses with brazen hoofs and golden manes. With these horses he rides in a chariot over the waves of the sea, which become smooth as he approaches, while the monsters of the deep play around his chariot. Poseidon, in conjunction with Apollo, is said to have built the walls of Troy for Laomedon.

Priamus.—The last king of Troy, was son of Laomedon, by Strymo, called Placia by some writers. He married Arisba, whom he divorced in order to marry Hecuba, by whom he had a number of children, the most celebrated of whom were Hector, Paris, Deiphobus, Helenus, Laodice, and Cassandra. After he had reigned some time, Priam was anxious to recover his sister Hesione, who had been carried into Greece by Hercules, and to achieve this, he manned a fleet, the command of which he gave to his son Paris, who instead of obeying the

of obeying the paternal instructions, carried away Helen, the wife of Menelaus, king of Sparta. This caused the Trojan war, which lasted for ten years. At the end of the war Priam was slain by Neoptolemus, the son of Achilles.

Prometheus.—Son of the Titan Iapetus and Clymene, and brother of Atlas, Menœtius, and Epimetheus. He is represented as the great benefactor of men in spite of Zeus (Jupiter). He stole fire from heaven in a hollow tube, and taught mortals all useful arts. In order to punish men, Zeus gave Pandora as a present to Epimetheus, in consequence of which diseases and sufferings of every kind befell mortals. He also chained Prometheus to a rock on Mount Caucasus, where in the daytime an eagle consumed his liver, which was restored in each succeeding night. Prometheus was thus exposed to perpetual torture; but Hercules killed the eagle and delivered the sufferer, with the consent of Zeus, who in this way had an opportunity of allowing his son to gain immortal fame.

Proserpina.—A daughter of Ceres and Jupiter, called by the Greeks Persephone. As she was gathering flowers Pluto carried her off to the infernal regions, where he married her. Ceres, having learned that her daughter had been carried away by Pluto, demanded of Jupiter that Pluto should be punished. As queen of hell, Proserpine presided over the death of mankind. She was known by the names of Hecate, Juno Inferna, Libitina, and several others.

Proteus.—A sea deity, son of Oceanus and Tethys, or, according to some writers, of Neptune and Phœnice. He had received the gift of prophecy from Neptune, but when consulted he often refused to give answers, and puzzled those who consulted him by assuming different shapes.

Psyche.—A beautiful maiden who excited the envy of Venus, who bade her son Cupid to inspire her with a love for the basest of mortals. Cupid fell in love with her himself and conveyed her away to a lonely spot where, unseen and unknown, he visited her, bidding her never seek to know who he was. Her curiosity overcame her and she lighted a lamp to look upon him as he slept. A drop of oil fell from the lamp and woke him, and he left her with reproaches. She wandered about seeking her lover, and finally fell into the power of Venus, who forced her to perform the severest and most humiliating services, in which she was secretly aided by Cupid. She at length overcame Venus' enmity, was made immortal, and reunited to Cupid. The word Psyche means the soul.

Pukwana.—The smoke from the calumet or peace-pipe among American Indians. The pipe was made from stone found near the headwaters of the Mississippi. A quarry, located near the mountains, was famous among the Indians, who had made the adjacent territory neutral ground. Here they came and provided themselves with pipes. To apply the stone to any other use than that of pipe-making would have been sacrilege in their mind. From the color, they even fancied it to have been made, at the great deluge, out of the flesh of the perishing Indian.

Puk-Wudjies.—The pygmies of American Indian folk-lore; little wild men of the woods.

Pygmalion.—A grandson of Agenor. He made a beautiful statue, which he fell so deeply in love with, that Venus, at his earnest petition, gave it life.

Pythia.—The priestess of Apollo and Delphi. She is represented as crowned with laurels and seated on a tripod similarly adorned and placed over a chasm whence arose a peculiar vapor.

Pylades.—Son of Anaxibia, sister of Agamemnon. His father was king of Phocis; and after the death of Agamemnon, Orestes was secretly carried to his father's court. Here Pylades contracted that friendship with Orestes which became proverbial.

Pyramus.—The lover of Thisbe, who, on account of her supposed death, stabbed himself under a mulberry tree. Thisbe, afterward, finding the body of her lover, killed herself on the same spot with the same weapon; and the fruit of the mulberry has ever since been as red as blood. See *Thisbe.*

Pyrrhus.—Known also as Neoptolemus, a son of Achilles, remarkable for his cruelty at the siege of Troy. He was slain at Delphi, at the request of his own wife, by Orestes.

Python.—A celebrated serpent sprung from the mud and stagnated waters which remained on the surface of the earth after the deluge of Deucalion. Apollo killed the monster.

Quirinus.—An Italian divinity, identified with Romulus and assimilated to Mars.

Rachaders.—In Indian mythology the second tribe of giants or evil genii, who had frequently made the earth subject to their kings, but were ultimately punished by Shiva and Vishnu.

Radegaste.—In Slavonic mythology a tutelary god of the Slavi. The head was that of a cow, the breast was covered with an ægis, the left hand held a spear, and a cock surmounted its helmet.

Ragnarök (twilight of the gods).—The day of doom, when the present world and all its inhabitants will be annihilated. Vidar and Vali will survive the conflagration, and reconstruct the universe. In Scandinavian mythology the belief is taught that after this time the earth or realm will become imperishable and happiness sure.

Rahu.—In Hindu mythology the demon that causes eclipses. One day Rahu stole into Valhalla to quaff some of the nectar of immortality. He was discovered by the Sun and Moon, who informed against him, and Vishnu cut off his head. As he had already taken some of the nectar into his mouth, the head was immortal; and he ever afterward hunted the Sun and Moon, which he caught occasionally, causing eclipses.

Rakshas.—Evil spirits in Hindu myths, who guard the treasure of Kuvera, the god of riches. They haunt cemeteries and devour human beings; assume any shape at will, and their strength increases as the day declines. Some are hideously ugly, but others, especially the female spirits, allure by their beauty.

Ravana.—According to Indian mythology, was fastened down between heaven and earth for 10,000 years by Siva's leg, for attempting to move the hill of heaven to Ceylon. He is described as a demon giant with ten faces.

Ravens.—According to an oracle from the gods, delivered at ancient Athens, ravens prognosticate famine and death because they bear the characteristics of Saturn, the author of these calamities, and have a very early perception of the malign influence of that planet.

Remores.—Birds which retard the execution of a project.

Rhadamanthus.—A son of Jupiter and Europa, brother of Minos, and king of Lycia. He was so renowned for his justice and equity, that, after death, he was made one of the three judges in the underworld.

Rhamnus.—A daughter of Nox, and otherwise known as Nemesis. The city of Rhamnus was under her special patronage.

Rhea.—Daughter of Uranus and Gæa, a goddess of the earth. By Cronos she became mother of Hera, Pluto, Poseidon, Zeus, and other divinities.

Rhesus.—Marched to the assistance of Troy. An oracle had declared that the city could not be taken if his horses drank the water of the Xanthus and fed on Trojan grass. Ulysses and Diomedes slew Rhesus and carried off his horses.

Romulus.—According to tradition, the founder of Rome. He was a son of Mars and Ilia, and was twin brother of Remus. The twins were thrown into the Tiber, but were saved and suckled by a she-wolf till they were found by Faustulus, a shepherd, who brought them up. Disputes arising between the brothers in reference to the building of the city, Romulus caused Remus to be slain.

Saga.—Goddess of history in Scandinavian mythology.

Salamander.—A fabulous animal supposed by the ancients to live in and have the quality of eating fire.

Salmoneus.—King of Elis, who, wishing to be thought a god, used to imitate thunder and lightning by driving his chariot over a brazen bridge, and darting burning torches on every side.

Salus.—The Roman goddess of health and prosperity.

Sarpedon.—A Lycian prince, son of Zeus and Laodamia. He was killed at the siege of Troy by Patroclus.

Saturnus.—The son of Cœlus, or Uranus, by Terra. It was customary to offer human victims on his altars till this custom was abolished by Hercules. He is generally represented as an old man bent with age, and holding a scythe in his right hand.

Saturnalia.—Feasts in honor of Saturn. Slaves were reputed masters during the three days they lasted; were at liberty to say what they pleased; and were served at table by their owners. These festivities were held annually toward the end of December.

Satyr.—A sylvan deity, or demigod, represented as a monster, half man and half goat; having horns on his head, a hairy body, with the feet and tail of a goat. They belong in the train of Bacchus, and have been distinguished for lasciviousness and riot. Although mortal, they are superior to the cares and sorrows of mortal life.

Scylla.—A maiden whose body the enchantress Circe changed below the waist into frightful monsters always barking. The old Greek story is that Circe was jealous of Scylla, and so deformed her by pouring the juice of poisonous herbs into the water in which she bathed. This sudden metamorphosis so terrified Scylla that she threw herself into the sea, and became the rocks which bear her name.

Sedrat.—The lotus tree which stands on the right-hand side of the invisible throne of Allah. Its branches extend wider than the distance between heaven and earth. Its leaves resemble the ears of an elephant. Each seed of its fruit incloses an houri; and two rivers issue from its roots. Numberless birds sing among its branches, and numberless angels rest beneath its shade.

Segesta.—A rural divinity who protected corn during harvest time.

Semele.—Daughter of Cadmus and Harmonia, at Thebes, and accordingly sister of Ino, Agave, Autonoë, and Polydorus. She was beloved by Zeus (Jupiter). Hera (Juno), stimulated by jealousy, appeared to her in the form of her aged nurse Beroe, and induced her to ask Zeus to visit her in the same splendor and majesty with which he appeared to Hera. Zeus warned her of the danger of her request; but as he had sworn to grant whatever she desired, he was obliged to comply with her prayer. He accordingly appeared before her as the god of thunder, and Semele was consumed by the lightning; but Zeus saved her child Dionysus (Bacchus), with whom she was pregnant. Her son afterward carried her out of the lower world, and conducted her to Olympus, where she became immortal under the name of Thyone.

Serapis or **Sarapis.**—An Egyptian divinity whose worship was introduced into Greece in the time of the Ptolemies. His worship was introduced into Rome together with that of Isis.

Seriswattee.—The Janus of Hindu mythology.

Sex.—Milton says that spirits can assume either sex at pleasure, and Michael Psellus asserts that demons can take what sex, shape, and color they please, and can also contract or dilate their form at pleasure.

Silenus.—A demigod who is represented generally as a fat old man riding on an ass, with flowers crowning his head.

Silvanus or **Sylvanus.**—A deity presiding over woods, forests, and fields. He is also called the protector of the boundaries of fields.

Sirens.—They were a sort of sea goddesses, said by some to be two in number, by others, three, and even four. They lured to destruction those who listened to their songs. When Ulysses sailed past their island he stopped the ears of his companions with wax, and had himself tied to the mast of his ship. Thus he passed with safety, and the sirens, disappointed of their prey, drowned themselves.

Sirius.—Known in mythology as the faithful dog of Orion, and set in the heavens as a bright star by Diana when she mourned the display of her archery which caused Orion's death.

Sisyphus.—Son of Æolus and Enaretta. After death he was condemned, in the infernal regions, to roll a stone to the summit of a hill, which always rolled back, and rendered his punishment eternal.

Siva.—The third of the Hindu triad of divinities, who, among a thousand names, bears also that of Mahadeva. The greatest confusion exists as to his attributes; now he is said to be the destroyer, and now the creative principle.

Sol.—The Greeks and Romans worshiped Apollo as the god and dispenser of light, and in view of this attribute named him Phœbus; yet they conceived another distinct divinity, distinguished from Apollo under the literal name applied to designate the sun, *viz.*, Sol. This name, therefore, was employed to express not only the actual body in the heavens, but also a supposed being having a separate and personal existence.

Somnus.—Son of Nox and Erebus. He was one of the infernal deities, and presided over sleep.

Specter of the Brocken.—Among German myths, a singular colossal apparition seen in the clouds, at certain times of the day, by those who ascend the Brocken, or Blocksberg, the highest peak of the Hartz mountains.

Sphinx or **Sphynx.**—A fabulous monster who ravaged Thebes until answer should be found to her enigmas. On Œdipus having explained all the riddles, the monster immediately flung herself into the sea and perished. The form of the so-called Egyptian sphinxes is that of a winged lion with a human head and bust, always in a lying attitude, whereas the Greek sphinxes are represented in any attitude which might suit the fancy of the poet.

Stentor.—One of the Greeks who went to the Trojan war. He was noted for the loudness of his voice, and from him the term "stentorian" has become proverbial.

Styx.—A celebrated river of the infernal regions. The gods held it in such veneration that they always swore by it, the oath being inviolable.

Surya.—The sun-god, according to the Hindu *Veda*, whose car is drawn by seven green horses, the charioteer being Dawn.

Syrinx.—An Arcadian nymph, who, being pursued by Pan, fled into the river Ladon, and at her own prayer was metamorphosed into a reed, of which Pan then made his flute.

Tantalus.—Son of Zeus, father of Pelops and Niobe. For his crimes on earth (some say the murder of Pelops) he was punished in the lower world by being placed in a lake, the waters of which receded whenever he tried to drink, while overhead hung branches of fruit which also receded whenever he tried to reach them. The English verb "tantalize" comes from his name.

Tarpeia.—Daughter of Tarpeius, who admitted the Sabines to the fortress on the Capitoline hill tempted by their gold bracelets. As they entered they threw their shields upon her, crushing her to death. Part of the hill was called the Tarpeian rock from her.

Tartarus.—A dark abyss under the earth in which the Titans were chained when their father feared their strength. The music of Orpheus penetrated its depths and caused the condemned to cease their toil. The name has come to signify an inner region of hell, to which the gods sent the exceptionally depraved.

Telemachus.—Son of Penelope and Ulysses. At the end of the Trojan war he went in search of his father, whom, with the aid of Minerva, he found. Aided by Ulysses, he delivered his mother from the suitors that beset her.

Terpsichore.—One of the Muses, daughter of Jupiter and Mnemosyne. She presided over dancing.

Themis.—The daughter of Cœlus and Terra, and the goddess of law; according to some legends, married to Jupiter.

Thenus.—The goddess of justice and one of the most celebrated of the Titanides, or daughters of Uranus and Titæa. To her is ascribed the first uttering of oracles, and also the first introduction of sacrifices.

Thersites.—The ugliest of the Greeks that came to the siege of Troy. He was chastised by Ulysses for reviling Agamemnon and killed by Achilles for ridiculing him.

Theseus.—Son of Ægeus and Æthra. He killed Procrustes and other robbers and monsters, and the Marathonian bull. He also went to Crete, volunteering as one of the seven youths sent as tribute to be devoured by the Minotaur, which by the help of Ariadne he killed. He deserted Ariadne at Naxos and defeated the Amazons, whose queen he married. He took part in many exploits and finally invaded the lower regions to assist his friend Pirithous in carrying off Persephone. Here he was imprisoned until delivered by Hercules.

Thespian Maids, The.—The nine Muses. So called from Thespia, in Bœotia, near Mount Helicon, often called Thespia Rupes.

Thetis.—A sea deity, daughter of Nereus and Doris. She married Peleus, their son being Achilles, whom she plunged into the Styx, thus rendering him invulnerable in every part of his body except the heel by which she held him.

Thisbe.—A beautiful girl of Babylon, beloved by Pyramus. They lived in adjoining houses and conversed through a crack in the wall. They agreed upon a rendezvous at the tomb of Ninus, and Thisbe, who arrived first, fled from a lioness, which smeared with blood the veil she dropped. When Pyramus arrived he slew himself, supposing her to have been devoured by the lioness, and Thisbe, when she found her lover's body, also killed herself.

Thor.—In Scandinavian mythology the eldest son of Odin and Frigga; strongest and bravest of the gods. He launched the thunder, presided over the air and the seasons, and protected man from lightning and evil spirits. His wife was Sif ("love"); his chariot was drawn by two he-goats; his mace or hammer was called Mjolner; his belt was Megin-giord, and whenever he put it on his strength was doubled; his palace, Thrudvangr, contained 540 halls; Thursday is Thor's day. The word means "refuge from terror."

Titans.—The children of Uranus and Gæa. They deposed their father and raised their brother Cronus to the throne of the gods. They were overcome by Zeus, who confined them in a cavity below Tartarus.

Tithonus.—A son of Laomedon, king of Troy. He was so beautiful that Aurora became enamored of him, and persuaded the gods to make him immortal; but, as she forgot to ask for eternal youth, he became decrepit and ugly, and was, therefore, changed by her into a cicada.

Tityus.—A famous giant, son of Jupiter and Trera. His body was so vast that it covered nine acres of ground. He had dared to offer an insult to Juno and in punishment was chained like Prometheus while a vulture feasted on his liver. He is mentioned by Vergil.

Tomalin.—A valiant fairy knight, kinsman of King Oberon. Tomalin is not the same as "Tom Thumb," as we are generally but erroneously told, for in the "mighty combat" Tomalin backed Pigwiggen, while Tom Thumb seconded King Oberon. This fairy battle was brought about by the jealousy of Oberon, who considered the attentions of Pigwiggen to Queen Mab were "far too nice."

Trimurti.—The name of the Hindu triad of deities; or Brahma, Vishnu, and Siva united in one godhead, and spoken of as an inseparable unity.

Triptolemus.—Son of Oceanus and Terra, or, according to some authorities, son of Celeus, king of Attica, and Neæra. He was in his youth cured of a severe illness by Ceres, with whom he became a great favorite. She taught him agriculture, and gave him her chariot drawn by dragons, in which he traveled over the earth, distributing corn to the inhabitants.

Triton.—Son of Neptune, who dwelt with his father and mother in a golden palace in the bottom of the sea, or, according to Homer, at Agae. Later writers describe him as riding over the sea on sea-horses or other monsters.

Trolls.—Dwarfs of Northern mythology, living in hills or mounds; they are represented as stumpy, misshapen, and humpbacked, inclined to thieving, and fond of carrying off children or substituting one of their own offspring for that of a human mother. They are called hill-people, and are especially averse to noise, from a recollection of the time when Thor used to fling his hammer after them.

Tros.—Son of Erichthonius and Astyoche, and grandson of Dardanus. He was married to Callirrhoë, by whom he became the father of Ilus, Assaracus, and Ganymedes, and was king of Phrygia. The country and people of Troy derived their name from him. He gave up his son Ganymedes to Zeus (Jupiter) for a present of horses.

Troy.—The capital of Troas, in Asia Minor. A city whose fame belongs entirely to the heroic age, and the siege of which by the Greeks, for the recovery of Helen, which lasted for ten years, is the subject of Homer's grand epic, and the most renowned legend of all antiquity.

Typhœus or **Typhon.**—A famous giant, son of Tartarus and Terra, who had a hundred heads. He made war against the gods, and was put to flight by the thunderbolts of Jupiter, who crushed him under Mount Ætna.

Tyr.—In Norse mythology, a warrior deity, and the protector of champions and brave men; he was also noted for his sagacity. When the gods wished to bind the wolf Fenrir, Tyr put his hand into the demon's mouth as a pledge that the bonds should be removed again. But Fenrir found that the gods had no intention of keeping their word, and revenged himself in some degree by biting the hand off. Tyr was the son of Odin and brother of Thor.

Ulin.—An enchantress, who had no power over those who remained faithful to Allah and their duty; but if any fell into error or sin, she had full power to do as she liked. Thus, when Misnar (sultan of India) mistrusted the protection of Allah, she transformed him into a toad. When the Vizier Horam believed a false report, obviously untrue, she transformed him also into a toad. And when the Princess Hemjunar, to avoid a marriage projected by her father, ran away with a stranger, her indiscretion placed her in the power of the enchantress, who transformed her likewise into a toad. Ulin was ultimately killed by Misnar, sultan of Delhi, who felled her to the ground with a blow.

Ulysses.—The famous king of Ithaca, son of Anticlea and Laërtes, or, according to some, of Sisyphus. He married Penelope, daughter of Icarius, on which his father resigned to him the crown. He went to the Trojan war, where he was esteemed for his sagacity. On the conclusion of the war he embarked for Greece, but was exposed to numerous misfortunes on his journey. In his wanderings, he with some of his companions, was seized by the cyclops Polyphemus, from whom he made his escape. Afterward he was thrown on the island of Æea, where he was exposed to the wiles of the enchantress Circe. Eventually he was restored to his own country, after an absence of twenty years. The adventures of Ulysses on his return from the Trojan war form the subject of Homer's *Odyssey*.

Urania.—One of the Muses, daughter of Jupiter and Mnemosyne. She presided over astronomy.

Utgard-Loki.—The chief of the giants, in Norse mythology.

Valhalla.—In Scandinavian mythology the palace of immortality wherein are received the souls of heores slain in battle.

Valkyrs.—The battle-maidens of Scandinavian mythology. They were mounted on swift horses and held drawn swords. They rushed into battle and selected those destined to death and conducted them to Valhalla. The number of Valkyrs differs greatly according to the various mythologists and ranges from three to sixteen, the greater part of them, however, naming only nine.

Varuna or **Vrauna.**—In Hindu mythology, the deity who presides over the waters of the ocean corresponding with *Neptune* of classic mythology.

Venus.—The goddess of beauty, and mother of love. She attained but little importance until she was identified with the Greek goddess Aphrodite. It is said that she sprang from the foam of the sea, and was carried to heaven, where all the gods admired her beauty. Jupiter gave her in marriage to Vulcan, but she intrigued with some of the gods, notably with Mars, their offspring being Hermione, Cupid, and Anteros. She became enamored of Adonis, which caused her to abandon Olympus. Her contest for the golden apple, which she gained against her opponents Juno and Minerva, is a prominent episode in mythology. She had numerous names applied to her, conspicuous among which may be named Anadyomene, under which cognomen she is distinguished by the picture representing her as rising from the ocean, by Apelles. Sparrows and doves were customarily yoked to her chariot; her girdle inspired all hearts with passion for the wearer; and her son Cupid was her attendant and minister. The myrtle was sacred to her. Her favorite residence was at Cyprus.

Vesta.—The ancient goddess of fire. Æneas was believed to have brought the eternal fire of Vesta from Troy, along with the images of the Penates; and the prætors, consuls, and dictators, before entering upon their official functions, sacrificed, not only to the Penates, but also to Vesta at Lavinium. In the ancient Roman house, the hearth was the central part, and around it all the inmates daily assembled for their common meal (cœna); every meal thus taken was a fresh bond of union and affection among the members of a family, and at the same time an act of worship of Vesta, combined with a sacrifice to her and the Penates.

Vestal.—One of the virgin priestesses who, among the Romans, were consecrated to the service of Vesta. Their employment was to take care that the sacred fire of Vesta was not extinguished. The vestal took a solemn vow of chastity for the thirty years of her service; the dreadful punishment of a violation of which was that she should be buried alive in a subterranean vault near the Collina gate.

Victoria or **Victorina.**—The mother of Victorinus, after whose death she was hailed as the mother of camps; and coins were struck bearing her effigy.

Vidar.—The Scandiavian god of wisdom, noted for his thick shoes, and not infrequently called "The god with the thick shoes."

Virtus.—The Roman personification of manly valor. She was represented with a short tunic, her right breast uncovered, a helmet on her head, a spear in her left hand, a sword in the right, and standing with her right foot on a helmet.

Vishnu.—In Hindu mythology one of the great deities of the Hindu triad, ranking as the *Preserver*, after Brahma, the *Creator*, and before Siva, the *Destroyer*. It is believed that he has appeared on earth nine times, his tenth *avatar*, or incarnation, having yet to come.

Vulcan.—The son of Jupiter and Juno, who was lamed (according to some legends) by being kicked out of Olympus by Jupiter, and falling in Lemnos. He was the god of fire, and he forged the thunderbolts of his father in the forges of Ætna. Venus was married to him. But the legends differ very much in their account of him.

Wenonah.—Mother of Hiawatha and daughter of Nokomis. Nokomis was swinging in the moon, when some of her companions, out of jealousy, cut the ropes, and she fell to earth "like a falling star." That night was born her first child, a daughter, whom she named Wenonah. In due time, this lovely daughter was wooed and won by Mudjekeewis (the West Wind), and became the mother of Hiawatha. The false West Wind deserted her, and the young mother died.

Woden.—The Anglo-Saxon form of the Scandinavian god Odin; Wednesday is called after him.

Wooden Horse.—Vergil tells us that Ulysses had a monster wooden horse made by Epeos after the death of Hector, and gave out that it was an offering to the gods to secure a prosperous voyage back to Greece. By the advice of Sinon, the Trojans dragged the horse into Troy for a palladium; but at night the Grecian soldiers concealed therein were released by Sinon from their concealment, slew the Trojan guards, opened the city gates, and set fire to Troy.

Xanthos.—The marvelous, though mythical, horse of Achilles.

Yama.—The Hindu King of the dead. He judges the good and bad actions of the dead, and sends them to heaven or hell, as they deserve.

Yggdrasil.—In Scandinavian mythology the great ash tree which binds together heaven, earth, and hell. Its branches extend over the whole earth, its top reaches heaven, and its roots hell. The three nornas, or fates, sit under the tree, spinning the events of man's life.

Zem.—The sacred well of Mecca. According to Arab tradition, this is the very well that was shown to Hagar when with Ishmael in the desert. It is supposed to be in the heart of the city of Mecca.

Zephyr.—The personification of the west wind, described by Hesiod as a son of Astræus and Eos. Zephyrus and Boreas are frequently mentioned together by Homer, and both dwelt together in a palace in Thrace.

Zeus.—Called Jupiter by the Romans, the greatest of the Olympian gods, was a son of Cronus (Saturnus), and Rhea. When Zeus and his brothers distributed among themselves the government of the world by lot, Poseidon obtained the sea, Hades the lower world, and Zeus the heavens and the upper regions, but the earth became common to all. According to Homer, Zeus dwelt on Mount Olympus in Thessaly, which was believed to penetrate into heaven itself. He is called the father of gods and men. He is the supreme ruler, who with his counsel manages everything; the founder of law and order, whence Dice, Themis, and Nemesis are his assistants. Everything good, as well as bad, comes from Zeus; according to his own choice he assigned good or evil to mortals; fate itself was subordinate to him.

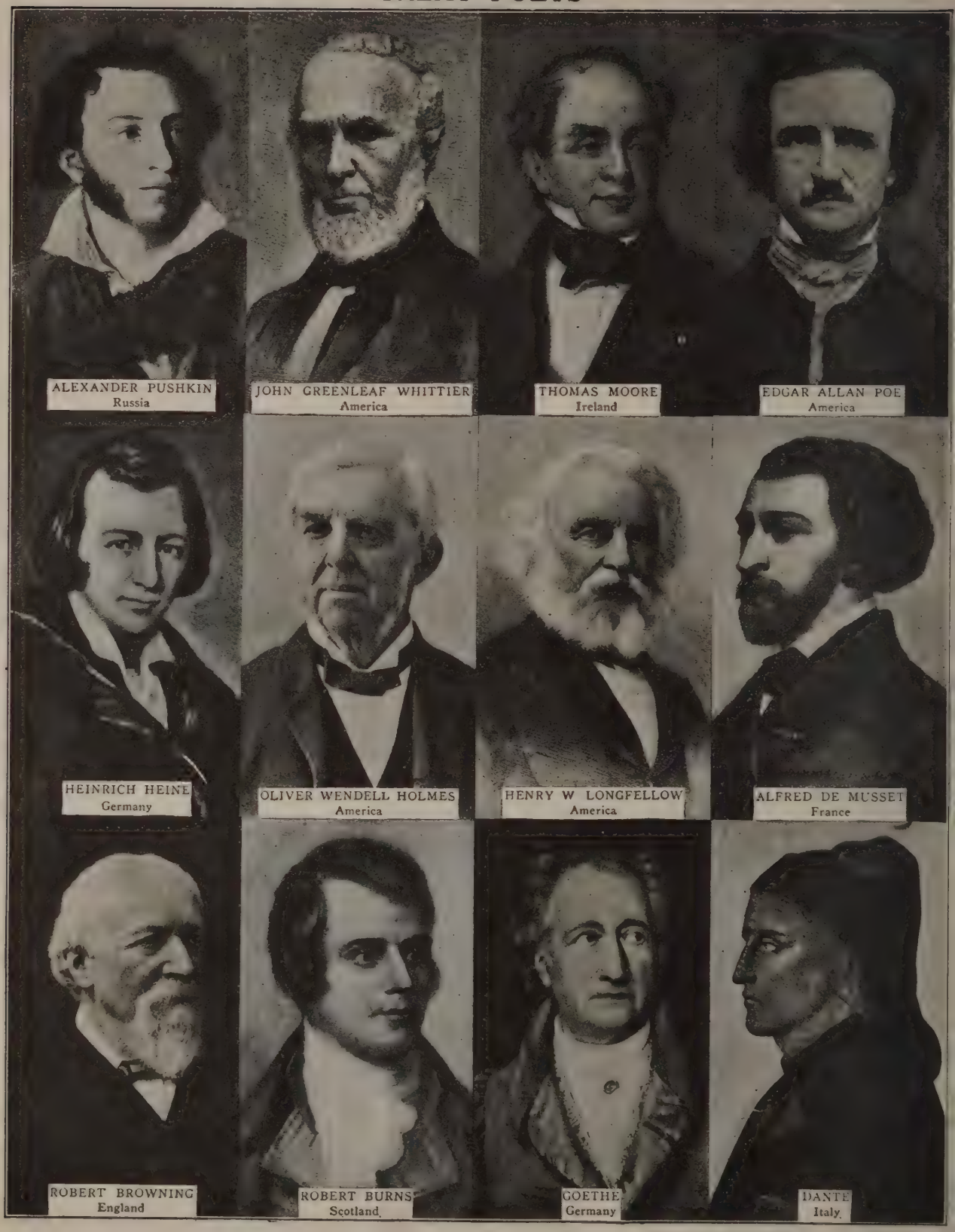
Zohak.—The giant of Persian mythology who keeps the "mouth of hell." He was the fifth of the Pischdadian dynasty, and was a lineal descendant of Shedâd, king of Ad. He murdered his predecessor, and invented both flaying men alive and killing them by crucifixion. The devil kissed him on the shoulders, and immediately two serpents grew out of his back and fed constantly upon him. He was dethroned by the famous blacksmith of Ispahan, and appointed by the devil to keep hell-gate.

Zohara.—An oriental queen of love, and mother of mischief. When Harût and Marût were selected by the host of heaven to be judges on earth, they judged righteous judgment till Zohara, in the shape of a lovely woman, appeared before them with her complaint. They then both fell in love with her and tried to corrupt her, but she flew from them to heaven; and the two angel-judges were forever shut out.

Zosteria.—A surname of Minerva. She had two statues under that name in the city of Thebes, in Bœotia. The word signified girt, or armed for battle, words synonymous among the ancients.

Zulzul.—According to Chinese mythology the sage whose life was saved in the form of a rat by Gedy, the youngest of the four sons of Corcud. Zulzul gave him, in gratitude, two poniards, by the help of which he could climb the highest tree or most inaccessible castle.

GREAT POETS


ALEXANDER PUSHKIN
Russia
JOHN GREENLEAF WHITTIER
America
THOMAS MOORE
Ireland
EDGAR ALLAN POE
America
HEINRICH HEINE
Germany
OLIVER WENDELL HOLMES
America
HENRY W LONGFELLOW
America
ALFRED DE MUSSET
France
ROBERT BROWNING
England
ROBERT BURNS
Scotland
GOETHE
Germany
DANTE
Italy

PRONUNCIATION OF MYTHOLOGICAL TERMS

KEY TO PRONUNCIATION

ā te, climāte, fâre, an, ămount, ärt, åpt, final; ē ke, êvent, bĕnd, decĕnt, hẽr; ī re, fīll; tōld, ŏnly, ôrdeal, hŏp, cŏnnote; fūse, ŭnify, spûrn, cûp, circŭs, mo͝on, co͝ols.

MYTHOLOGICAL PRONUNCIATIONS

Achates (ȧ-kā′tēz)
Achelous (ȧ-kē′lŭs)
Acheron (ȧ-kĕ′rŏn)
Achilles (ȧ-kil′ēz)
Actaeon (ak-tē′ŏn)
Admetus (ȧd-mē′tŭs)
Adonis (ȧ-dō′nĭs)
Adrammelech (a-dram′me-lech)
Ægeus (ē′jē-ŭs)
Ægis (ē′jĭs)
Ægle (ē′glē)
Ælurus (ē-lu′rus)
Æneas (ē-nē′ăs)
Æolus (ē′ō-lŭs)
Æsculapius (ĕs′kû-lā′pĭ-ŭs)
Æsir (ē′sĭr)
Æson (ē′sŏn)
Agamemnon (ăg′ȧ-mem′nŏn)
Ahriman (ä′rĭ-mȧn)
Ajax (ā′jȧks)
Alastor (ȧ-lăs′tôr)
Alcestis (ȧl-sĕs′tĭs)
Alecto (ȧ-lek′to)
Alectryon (ȧ-lek′trĭ-ŏn)
Alfadur (ȧl-fä′dûr)
Alpheus and Arethusa (ăl′fē-ŭs and ăr′ē-thū′sȧ
Al Sirat (as-sē-rät′)
Althaea (ăl-thē′ȧ)
Amazons (ȧm′ȧ-zŏn)
Ambrosia (ăm-brō-′zhĭ-ȧ)
Ammon (ăm′ŏn)
Amphion (ăm-fī′ŏn)
Ancaeus (ăn-sē′ŭs)
Anchises (ăn-kī′sēz)
Andromache (ăn-drŏm′ȧ-kē)
Andromeda (ăn-drŏm-′ē-dȧ)
Angurvadel (än′gur-vä′dĕl)
Antaeus (ăn-tē′ŭs)
Antigone (ăn-tĭg′ō-nē)
Aphrodite (ăf′rō-dī′tē)
Apis (ā′pĭs)
Apollo (ȧ-pŏl′ō)
Arachne (ȧ-răk′nē)
Ares (ā′rēz)
Arethusa (ăr′ē-thū′sȧ)
Argo (är′gō)
Argonauts (är′gō-nôt)
Argus (är′gŭs)
Aridane (ăr′ĭ-ăd′nē)
Arion (ȧ-rī′ŏn)
Aristaeus (ăr′ĭs-tē′ŭs)
Artemis (är′tē′mĭs)
Asgard (ăs′gärd)
Asir (ā′sĭr)
Astarte (ăs-tär′tē)
Astraea (ăs-trē′ȧ)
Astyanax (ăs-tī′ȧ-năks)
Atalanta (ăt′ȧ-lăn′tȧ)
Ate (ā′tē)
Athena (ȧ-thē′nȧ)
Atlas (ăt′lăs)
Atreus (ā′trē-ŭs)
Atropos (ăt-′rō-pŏs)
Augean Stables (ô-jē′an)
Augurs (ô′gûr)
Aurae (ô′rē)
Aurora (ô rō′rȧ)
Avatar (ăv-ȧ-tär′)
Avernus (ȧ-vûr′nŭs)
Azazel (ȧ-zā-′zĕl)
Azrael (ȧz′rā-ĕl)

Baal (bā′ăl)
Bacchus (băk′ŭs)
Balder (bôl′dẽr)
Balmung (bäl′mo͝ong)
Banshee (bȧn′shē)
Barguest (bär′guest)
Beelzebub (bē-ĕl′zē-bŭb)
Befana, La (lä bā-fä′nȧ)
Bellerophon (bĕ-lĕr′ō-fŏn)
Bellona (bĕ-lō′nȧ)
Belphegor (bĕl′phē-gor)
Belus (Bē′lŭs)
Berenice (bĕr′ē-nī-sē)
Bertha (bûr′thȧ)
Bifrost (bē′frēst)
Bilskirnir (bēl′skēr′nēr)
Bona Dea (bō′nȧ dē′ȧ)
Boreas (bō′rē-ăs)
Bragi (brä′gē)
Brahma (brä′mȧ)
Briareus (brī-ā′rē-ŭs)
Byblis (bĭb′lĭs)

Cacus (kā′kŭs)
Cadmus (kăd′mŭs)
Calliope (kȧ-lī′ō-pē)
Callisto (kȧ-lis′tō)
Calypso (kȧ-lip′sō)
Camilla (kȧ-mil′ō)
Canopus (cȧ-nō′pŭs)
Capitolium (căp′ĭ-tō′lé-ŭm)
Cassandra (kȧ-săn′drȧ)
Cassiopeia (kăs′i-ō-pē′yȧ)
Castor (kȧs′tẽr)
Cecrops (sē′krŏps)
Centaurs (sĕn′tôrs)
Cephalus (sĕf′a-lŭs)
Cerberus (sûr′bẽr-ŭs)
Ceres (sē′rēz)
Chaos (kā′ŏs)
Charon (kā′rŏn)
Charybdis (kȧ-rĭb′dĭs)
Chimaera (kĭ-mē′rȧ)
Chiron (kī′rŏn)
Chloris (klō′rĭs)
Cimmerians (sĭ-mē′rĭ-ănz)
Circe (sûr′sē)
Clio (klē′ō)
Clotho (klō′thō)
Cluricaune (klo͞o′rĭ-kōn)
Clytemnestra (klī′tĕm-nĕs′trȧ)
Clytie (klī′tĭ-ē)
Cocytus (kō-sī′tŭs)
Colchis (kŏl′kĭs)
Comus (kō′mŭs)
Concordia (kŏn-kôr′dĭ-ȧ)
Consentes Dii (kŏn-sĕn′tēz dī′ī)
Cophetua (co-phet′u-ȧ)
Corybantes (kŏrĭ′-băn′tēz)
Cressida (krĕs′ĭ-dȧ)
Creusa (krē-û′sō′)
Cronos (krō′nos)
Cupid (kū′pĭd)
Cybele (sĭb′ē-lē)
Cyclops (sī′klŏps)
Cyparissus (sĭp-ȧ-rĭs′ŭs)
Cytherea (sĭth′ẽr-ē′ȧ)
Dag (dăg)
Dagon (dā′gŏn)
Daikoku (dī′kō′kō͞)
Danae (dăn′ȧ-ē)
Danaides (dȧ-nā′ĭ-dēz)
Daphne (dăf′nē)
Daphnis (dăf′nĭs)
Deiphobus (dē-ĭf′ō-bŭs)
Delius (dēl′ĭ-ŭs)
Delphi (dĕl′fī)

The majestic columns of the Temple of Zeus with the Acropolis in the distance, Greece.
Publishers Photo Service.

Demeter (dēmē′tẽr)
Dēmogorgon (dē′mō-gôr′gŏn)
Deucalion (dû-kā′l-lŏn)
Diana (dī-ăn′ȧ)
Dido (dī′dō′)
Diomed (dī′ō-mĕd)
Diomedes (dī′ō-mē′dēz)
Dione (dī-ō′nē)
Dionysus (dī′ō-nī′sŭs)
Dis (dĭs)
Discordia (dĭs-kôr′dĭ-ȧ)
Dodona (dō-dō′nȧ)
Donar (dō′năr)
Doris (dō′rĭs)
Draupnir (droup′nẽr)
Droma (drō′mȧ)
Dryads (drī′ȧds)
Durga (do͞or′gä)
Echidna (ē-kĭd′nȧ)
Echo (ĕk′ō)
Egil (ē′gil)
Egipans (ē′jĭ-pan)
Egis (ē′jĭs)
Elbegast (ĕl′bĕ-gȧst)
Elberich (ĕl′bẽr-ĭk)
Electra (ē-lĕk′trȧ)
Elf (ĕlf)
Elivagar (ĕl-i-vág′ăr)
Elysium (ē-lĭsh′ĭ-ŭm)
Embla (ĕm′blä)
Empyrean (ĕm-pĭ-rē′ăn)
Enceladus (ĕn-sĕl′ȧ-dŭs)
Endymion (ĕn-dĭm′ĭ′-ŏn)
Enyo (ē-nī′ō)
Eolus (e′o-lus)
Eos (ē′ŏs)
Epaphus (ep′ȧ-fŭs)
Erebus (ĕr′ē-bŭs)
Eris (ē′rĭs)
Eros (ē′rŏs)
Erytheia (ĕr′ĭ-thē′ȧ)
Eumenides or Ernyes ′ (û-mĕn′ĭ-dēz) or (ē-rĭn′ĭs)
Eumorlpus (ŭ-mŏ′rl pŭs)
Euphobus (ū-fôbŭs)
Euphrosyne (û-frŏs′ĭ-nē)
Europa (û-rō′pȧ)
Eurydice (û-rĭd′ĭ-sē)
Eurylochus (ū-ril′ō-kŭs)
Eurystheus (û-rĭs′thūs)
Eurytos (û-rī′tŏs)
Evadne (ē-vȧd′nē)
Excalibur (ĕ x-cal′i-bur)
Fafnir (fäv′nẽr)
Fauni (fô′nī)
Faunus (fô′nŭs)
Felicitas (fē-lĭs′ĭ-tăs)
Feng (fĕng)
Flora (flō′rȧ)
Fortuna (fôr-tū′nȧ)
Freki (frek′ē)
Frey (frī)
Freyja (frī′ȧ)
Frigga (frĭg′gä)
Frodi (fro′di)
Furies (fū′rĭz)
Fylgie (fēl′gye)
Gabriel (gā′brĭ-ĕl)
Gaea (jē-ȧ)
Galatea (gȧl′ă-tē′ȧ)
Ganesa (gȧ-nā′sȧ)
Ganymede (găn′ĭ-mē′dē)
Garm (gärm)
Genii (jē′nĭ-ī)
Gerda (gĕrdȧ)
Geri (gēr′ē)
Geryon (jē′rĭ-ŏn)
Giallar (gyäl′lar)
Ginungagap (gĭn′nŏo͞n′gä-gäp)
Gladsheim (glăts′hām)
Glasir (glä′sir)
Glendoveer (glĕn′dō-vēr′)
Gnome (nōm)
Gorgons (gôr′gŏnz)
Grida (grē′dȧ)
Gripir (grē′pir)
Hades (hā′dēz)
Hamadryades (hām a′-drĭ′ă-dēs)
Harmonia (här-mō′nĭ-ȧ)
Hebe (hē′bē)
Hecate (hĕk′ȧ-tē)
Hector (hĕk′tẽr)
Hecuba (hĕk′û-bȧ)
Heimdall (hām′däl)
Helena (hĕl′ē-nȧ)
Helicon (hĕl′ĭ-kŏn)
Helios (hē′lĭ-ŏs)
Helle (hĕl′ē)
Hellen (hĕl′ĕn)
Hera (hē′rȧ)
Heraclidae (hĕr′ȧ-klī′dē)
Hercules (hûr′kû-lēz)
Hermes (hûr′mēz)
Hermione (hẽr-mī′ō-nē)
Hero (hē′rō)
Hesperides (hĕs-pĕr′ĭ-dēz)
Hesperus (hĕs′pẽr-ŭs)
Hestia (hĕs′tĭ-ȧ)
Hippocrene (hĭp′ō-krēn)
Hippolyte (hĭ-pŏl′ĭ-tē)
Hippolytus (hĭ-pŏl′ĭ-tŭs)
Hnikar (nē′kar)
Hippomenes (hĭ-pŏm′ē-nēs)
Hodeken (hā′dē-ken)
Hoder (hō′der)

Hofvarpnir (hŏf-värp'nĭr)
Honir (hŏn'ĭr)
Horae (hō'rē)
Horus (hō'rŭs)
Hugin (hū'gĭn)
Hugon (hū-gon')
Hyacinthus (hy-ȧ-sĭn'thŭs)
Hyades (hī'ȧ-dēz)
Hydra (hī-drȧ)
Hygeia (hī-jē'yȧ)
Hymenaeus (hī'mĕn-ē-ŭs)
Hyperboreans (hī'pĕr-bō'rē-ănz)
Hyperion (hī-pē'rĭ-ŏn)
Hypermnestra (hī'pĕrm-nes'trȧ)
Hypsipyle (hip-sip'i-lē)
Iacchus (i-ăk'ŭs)
Iapetos (ī-ăp'ē-tos)
Icarius (ĭk'ȧ-rē-ŭs)
Icaros (ĭk'ȧ-rŏs)
Idaean (i-dae'an)
Idomeneus (i-dom 'e-nŭs)
Idun (ē'doon)
Ifing (ē'fing)
Ilus (ī'lŭs)
Inachus (ĭn'ȧ-kŭs)
Indra (ĭn'drȧ)
Ino (ī'nō)
Io (ī'ō)
Ion (ī'ŏn)
Iphicles (ĭf'ĭ-clēs)
Iphigenia (ĭf'ĭ-jē-nī-a)
Irene (ī-rē'nē)
Iris (ī'rĭs)
Irus (ī'rŭs)
Isis (ī'sĭs)
Israfil (iz'rȧ-fēl)
Ithaca (ĭth'ă-că)
Ithuriel (ĭ-thū'rĭ-el)
Ixion (ĭk-sī'ŏn)
Jamshid (jăm-shēd')
Janus (jā'nŭs)
Jason (jā'sŭn)
Jinn (jĭn)
Jord (yôrd')
Juggernaut (jŭg'ĕr-nôt)
Juno (jōō'nō)
Jupiter (jōō'pĭ-tĕr)
Kama (kä'mȧ)
Kami (kä'mē)
Kelpie (kĕl'pĭ)
Kobold (kō'bōld)
Krishna (krĭsh'nȧ)
Kronos (krō'nos)
Lab (lȧb)
Lachesis (lȧk'ē-sĭs)
Ladon (lā'dŏn)
Laeding (lā'ding)
Laertes (lā-ûr'tēs)
Laocoon (lā-ŏk'ō-ŏn)
Laodomia (lā-ŏd'ȧ-mĭ'a)
Laomedon (lā-ŏm'ē-dŏn)
Lapithae (lăp'ĭ-thē)
Lares (lā'rēz)
Latinus (lȧ-tī'nŭs)
Latona (lȧ-tō'nȧ)
Leander (lē-ăn'dĕr)
Leda (lē'dȧ)
Lemures (lĕm'û-rēz)
Lethe (lē'thē)
Liber (lī'ber)
Libertas (lĭ-bûr-tȧs)
Lif (lēf)
Lilith (lil'ith)
Lofn (lōfn)
Lofua (lō'fū)
Loki (lō'kē)
Lorelei (lō'rē'lī)
Lotis (lō'tĭs)
Lubins (lū'bĭns)
Lucifer (lū'sĭ-fĕr)
Lucina (lû-sī'nȧ)
Lud (lŭd)
Luna (lū'nȧ)
Lycomedes (lĭk-ō-mē'dēz)
Mammon (mam'mon)
Manes (mān'nēz)
Mani (mä'nī)
Manitou (măn'i-tō)
Mars (märz)
Marsyas (mär'sĭ-ăs)
Medea (mē-dē'ȧ)
Medusa (mē-dū'sȧ)
Megaera (mē-jē'rȧ)
Megin-giord (mā'gin-gyērd)
Meleager (mĕl'ē-ā'jēr)
Melissa (mē-lĭs-ȧ)
Melpomene (mĕl-pŏm'ē-nē)
Melusina (mĕl'û-sē'na)
Memnon (mem'nŏn)
Menelaus (mĕn-ē-lā'ŭs)
Mentor (mĕn'tŏr)
Mephistopheles (mĕf-ĭs-tŏf'ē-lēz)
Mercury (mûr'kû-rĭ)
Mermaids (mûr'mādz)
Merope (mĕr'ō-pē)
Merops (mē'rŏps)
Meru (mā'rōō)
Midas (mī'dȧs)
Midgard (mĭd'gärd)
Mimir (mē'mĕr)
Minerva (mĭ-nûr'vȧ)
Minos (mī'nŏs)
Minotaur (mĭn'ō-tôr)
Mithras (mĭth'răs)
Mjolnir (myĕl'nir)
Mnemosyne (nē-mŏs'ĭ-nē)
Moloch (mō'lŏk)
Momus (mō'mŭs)
Moirae (mor'rē)
Morpheus (môr'fē-ŭs)
Musae (mū-sae')
Myrmidons (mûr'mĭ-dŏnz)
Naiad (nā'yăd)
Naraka (năr'ȧ-kȧ)
Narcissus (när-sĭs'ŭs)
Nausicaa (nô-sĭk'ă-ȧ)
Nectar (nĕk'tȧr)
Neleus (nē'lūs)
Nemean (nē-mē'ăn)
Nemesis (nĕm'ē-sĭs)
Neoptolemus (nē-ŏp-tol'ē-mŭs)
Neptune (nĕp'tūn)
Nereus (nē'rūs)
Nessus (nĕs'ŭs)
Nestor (nĕs'tŏr)
Nickar (nē'kar)
Nidhogg (nēd'hŏg)
Nifiheim (nĕv'l-hām)
Ninus (nī'nŭs)
Niobe (nī'ō-bē)
Niord (nyērd)
Nisus (nī'sŭs)
Nix (nĭx)
Nokomis (nō-kō'mĭs)
Nornir (nôr'nĭr)
Nox (nŏks)
Nymphae (nĭm-fē'ȧ)
Oceanides (ō-shē-ăn'ĭ-dēz)
Oceanus (ō-sē'ȧ-nŭs)
Odhaerir (od-hē'rir)
Odin (ō'dĭn)
Odur (ō'dōōr)
Odysseus (ō-dĭs'ūs)
Œdipus (ĕd'ĭ-pŭs)
Ogres (ō-gĕrs)
Olympia (ō-lĭm'pĭ-ȧ
Olympus (ō-lim'pŭs)
Omphale (ŏm'fȧ-lē)
Ops (ŏps)
Orestes (ō-rĕs'tēz)
Orion (ō-rī'ŏn)
Orithyia (ôr-ĭ-thē-ȧ)
Orlog (ôr'log)
Ormuzd (ôr'mŭzd)
Orpheus (ôr'fē-ŭs)
Osiris (ō-sī'rĭs)
Ossa (ŏs'ȧ)
Pactolus (păk-tō'lŭs)
Palaemon (pȧ-lē'mŏn)
Palamedes (păl-ȧ-mē'dēz)
Pales (pā'lēz)
Palladium (pă-lā'dĭ-ŭm)
Pallas (păl'ăs)
Pan (păn)
Pandarus (păn'dȧ-rŭs)
Pandion (păn-dī'ŏn)
Pandora (păn-dō'rȧ)
Pantheon (păn-thē'ŏn)
Parcae (pär'sē)
Paris (păr'ĭs)
Parnassus (pär-năs'ŭs)
Parthenope (pär-thĕn'ō-pē)
Patroclus (pȧ-trō'klŭs)
Pau-Puk-Keewis (pô-pŭk-kē'wĭs)
Pax (păks)
Pegasus (pĕg'ȧ-sŭs)
Peleus (pē'lūs)
Pelias (pē'lĭ-ăs)
Pelion (pē'lĭ-ŏn)
Pelops (pē'lŏps)
Penates (pē-nā'tēz)
Penelope (pē-nel'ō-pē)
Persephone (pĕr-sĕf'ō-nē)
Perseus (pûr'sūs)
Phaedra (fē'drȧ)
Phaeton (fā'ē-tŏn)
Phaon (fā'ŏn)
Philoctetes (fĭl-ok-tē-tēz)
Philomela (fĭl-ō-mē'lȧ)
Phoebe (fē'bē)
Phoebus (fē'bŭs)
Phoenix (fē'niks)
Phryxus (frĭ'sus)
Phyllis (fĭl'ĭs)
Picus (pī'kŭs)
Pierides (pī-ĕr'ĭ-dēz)
Pleiades (plē'yȧ-dēz)
Pluto (plōō'tō)
Plutus (plōō'tus)
Pluvius (plōō'vĭ-ŭs)
Podalirius (pōd-ȧ-lir'ē-ŭs)
Polias (pol'ĭ-ŏs)
Polites (pŏ-lī'tēz)
Pollux (pŏl'uks)
Polydorus (pŏl-ĭ-dō'rŭs)
Polyhymnia (pŏl-ĭ-hĭm'nĭ-ȧ)
Polyphemus (pŏl-ĭ-fē'mŭs)
Polyxena (pŏ-lĭk'sē-nȧ)
Pomona (pō-mō'nȧ)
Poseidon (pō-sī'dŏn)
Priamus (prī'ă-mus)
Prometheus (prō-mē'thŭs)
Proserpina (prō-sûr'pĭ-nȧ)
Proteus (prō'tūs)
Psyche (sī'kē)
Pygmalion (pĭg-mā'lĭ-ŏn)
Pythia (pĭth'ĭ-ȧ)
Pylades (pĭl'ȧ-dēz)
Pyramus (pĭr'ȧ-mŭs)
Pyrrhus (pĭr'ŭs)
Python (pī'thŏn)
Quirinus (kwĭ-rī'nŭs)
Ragnarok (rŏg'nȧ-rûk')
Rahu (rä'hōō)
Rakshas (rŭk'shŏs)
Rhadamanthus (răd'ȧ-măn'thŭs)
Rhamnus (răm'nŭs)
Rhea (rē'ȧ)
Rhesus (rē'sŭs)
Romulus (rŏm'û-lŭs)
Saga (sä'gȧ)
Salamander (săl'ȧ-măn-dĕr)
Salmoneus (săl-mō'nŭs)
Salus (sā-lŭs)
Sarpedon (sär-pē'dŏn)
Saturnus (sa-tûr'nŭs)
Saturnalia (săt'ûr-nā'lĭ-ȧ)
Satyr (sāt'ĕr)
Scylla (sĭ-le'ȧ)
Semele (sĕm'ē-lē)
Serapis (sē-rā'pĭs)
Silenus (sī-lē'nŭs)
Silvanus (sĭl-vā'nŭs)
Sirens (sī'rĕnz)
Sirius (sĭr'ĭ-ŭs)
Sisyphus (sĭs'ĭ-fŭs)
Siva (sē'vȧ)
Sol (sŏl)
Somnus (sŏm'nŭs)
Sphinx (sfinks)
Stentor (stĕn'tŏr)
Styx (stĭks)
Surya (sōōr'yȧ)
Syrinx (sĭr'inks)
Tantalus (tăn'tă-lŭs)
Tarpela (tär-pē'yȧ)
Tartarus (tär'tȧ-rŭs)
Telemachus (tē-lĕm'ȧ-kŭs)
Terpsichore (tûrp-sĭk'ō-rē)
Themis (thē'mĭs)
Thersites (thēr-sī'tēz)
Theseus (thē'sŭs)
Thespian (thĕs'pĭ-ăn)
Thetis (thē'tĭs)
Thisbe (thĭz'bē)
Thor (thôr)
Titans (tī'tănz)
Tithonus (tĭ-thō'nŭs)
Tityus (tĭt'ĭ-ŭs)
Tomalin (tŏm'ȧ-lĭn)
Trimurti (trē-mōōr'tē)
Triptolemus (trĭp-tŏl'ē-mŭs)
Triton (trī'tŏn)
Trolls (trōlz)
Troy (troi)
Typhoeus (tī-fō'ūs)
Tyr (tēr)
Ulysses (û-lĭs'ēz)
Urania (û-rā'nĭ-ȧ)
Utgard-Loki (ōōt'gard Lō'kē)
Valhalla (văl-hăl'ȧ)
Valkyrs (vâl-kĭrz)
Varuna (vär'ŏo-nȧ)
Venus (vē'nŭs)
Vesta (vĕs'tȧ)
Vestal (vĕs'tăl)
Victoria (vĭc-tō'rĭ-ȧ)
Vidar (vē'där)
Virtus (vûr'tŭs)
Vishnu (vĭsh'nōō)
Vulcan (vŭl'kăn)
Wenonah (wē-nō'nȧ)
Woden (wō-dĕn)
Yama (yä'mȧ)
Yggdrasil (ĭg'drȧ-sĭl)
Zem (zĕm)
Zephyr (zĕf'ĕr)
Zeus (zūs)
Zosteria (zos-tē'rē-a)
Zulzul (zŭl-zŭl)

BOOK IV

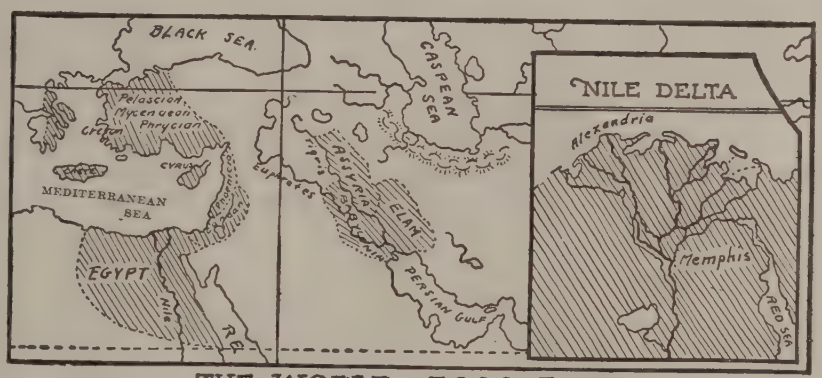
HISTORY

F. B. VROOMAN, Ph. D.

INTRODUCTION

What Is History?—History is a chart of humanity and its development. It shows in broad lines the direction and conditions of human progress and degeneration; the possibilities and limitations, the growths and inhibitions of human life. It is not merely the record of battles and of the births and deaths of rulers. It is the biography, perhaps one might say the autobiography, of the human race. "It must include all the races and tribes of men within its scope," says Lord Bryce, "and it must bring all these races and tribes into a connection with each other such as to display their annals as an organic whole... It is also the task of Universal History so to trace the march of humanity as to display the relations which each part of it bears to the others; to fit each tribe and race and nation into the main narrative."

Why Do We Study History?—It was a query of Coleridge whether history is but the sternlight of a ship, lighting only the wake behind it. It is one of the tragedies of humanity that it has learned so little from its own past. "Study the past to discern the future," said Confucius. It can be said that about the only light that can be shed upon the future is that cast by the records of the past. So one might say, following the figure of Coleridge, that history is not the sternlight of a ship; it is the headlight of the locomotive.



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History Is the Beginning of Culture.—A comprehensive view of the past is the background of any intelligent picture of the present day. "History is one," said the late Lord Acton, and that is the first thing to know in the process of culture. To comprehend the historic Unity, and to see the world whole are the essential foundations of a cultivated being, who is not content to drift like a fly on a chip, on a planet of whose past he knew nothing, and in an age which gives no account of itself. Without a knowledge of the past, human beings would be staggering in the dark towards a denser darkness into which no eye could penetrate. Science has made the scientific curve. It is now one of the necessities of business. It traces tendencies and directions and probable destinations. History is the scientific curve of mankind.

The study of humanity *seen whole, on the earth seen whole,* of those events which have causes and are causes, and of this interrelation of cause and effect working through every faculty of mind and soul in man; of the action and reaction of man and his environment: this study is one of the noblest of all human tasks.

The Field of History.—There is no sharp dividing line between ancient times and pre-historic antiquity; but wherever that line is to be drawn, it is somewhere near the appearance of the phonetic alphabet which the Phœnicians devised, probably from the Minoan text, and which Cadmus brought to Greece. Excepting the use of fire, there has been no more useful thing given to the race, for it has become the receptacle for the world of the Great Transaction. The alphabet appears after civilizations have risen and fallen and human development has reached far stages; but history begins with the alphabet in which the essential records were enshrined and accurately kept. There are other sources of history than in the written record; as in coins, monuments, ruins and tombs, etc., and the very study of language itself as disclosed in comparative philology, reveals the estate of primitive man and the earliest stages of society. This has been made possible because it has come down as a record.

Authentic tradition begins to take on vague and indefinite content somewhere about the period of 5000 B. C., but the accurate historic chronicle (and there is yet little accuracy), begins with the written record which began to take shape only after Cadmus brought the alphabet from Phœnicia to Greece, so late, that the epics of Homer had been handed down for generations and learned 'by heart', till Peisistratos, who became tyrant of Athens, 560 B. C., edited the first critical text of Homer, one of the most important literary tasks ever accomplished.

Physical Foundations of History.—It is a tragic fact that the most of history as it has been taught since the days of Thucydides, the first real historian, has been done in the dark and without the clue. In the dedication to his edition of Pomponius Mela, Johann Cochlaeus wrote: "Geography to the historian is as the sun to the earth." Geography is the study of the earth and man, and history is the record and interpretation of its significance. From these two points of view as from the hub of a wheel, radiate all other studies of men.

To the ancients the Earth presented itself as a flat disc surrounded by water. The known world was to them a great island. The Hebrews, Babylonians and Greeks held this notion as expressed in Homer, while Hesiod opined that the earth was held midway between the sky and the infernal regions. Homer believed in an Elysian plain at the western end of the world bathed by the last rays of the setting sun, but people only went there when they died. About 500 B. C. Hecatæus of Miletus wrote the first geography and drew the map of the world showing the two continents, Europe and Asia, with the River Oceanus surrounding them. 250 years later, Eratosthenes, the Greek philosopher, conceived the earth as a sphere, and found the true method of ascertaining its shape, estimating its circumference at 250,000 stadia, or 29,000 miles. Greek geography developed with the colonization of the Mediterranean, the travels of Herodotus, the expedition of the 'Ten Thousand', and Alexander's conquest of India. About a half century B. C. Strabo mapped the world as far as Ireland, which he placed north of England.

The configuration of the Earth and the relations of the land, the water and the air, and of these to man and his life, determine the climate, the means of communication, and the products of the soil and the sub-soil, which lie at the foundation of the entire economic life of mankind. No study of man is complete without these elements, since they determine the matter of supplying his wants. Geography determines the conditions of all earth life, to understand which it is necessary to study the anatomy of the globe as the home of man.

Abyssinia.—Abyssinia, with an area of 432,000 square miles and a population of from three to eight millions, is an inland country lying between the Anglo-Egyptian Sudan and the Red Sea. The main rivers are the Black and the Blue Nile, through which Abyssinia (or Ethiopia), has made its main contribution to civilization in the water and soil they have carried annually down the Nile. The three months of incessant rainfall in the Abyssinian mountains each year has kept Egypt alive for seventy centuries. Egypt has been intimate with Ethiopia since an early date, and even with Jerusalem, which the Queen of Sheba visited in the time of Solomon, and whose son by him was the first Menelik. The Abyssinians are a black people, with a perverted form of Christianity left over from the monkish invasion of the Dark Ages. The Portuguese entered the country two years before the discovery of America, looking for a lost kingdom in the Far East. They kept a footing for 150 years, but since, as before, the history of the country is a ghastly record of internecine wars. In 1870 Italy, seeking lands to colonize, occupied some of the Red Sea coast but met with disastrous defeat at Adowa in 1896. There is scarcely any manufacturing in Abyssinia, and commerce is in the hands of foreigners. It amounts to five or ten million dollars a year, mainly in exports of gold, ivory, wax, skins and butter, and imports of cotton, silks and arms.

Adams' (John) Administration—(1797-1801).

I. Political Parties, Formation of.—The Fathers of the American Nation can be roughly divided into two groups as to a state of mind and a way of thinking: particularists and nationalists; these represented the centrifugal and the centripetal, the organizing and the dissenting forces of society. More or less this distinction has lasted to this day, and the recognition of this fact furnishes the clue to the most of American History. Hamilton led the forces who wanted an adequate national government, before and after the Constitution was adopted; Jefferson led those who, as he once said, wanted for a national government but a committee with a few clerks. These stood for state rights and theoretical anarchy sufficiently modified to secure individual rights, especially in property. Jefferson always availed himself of Hamilton's interpretation of the Constitution when it was in the interests of his schemes, and where he did he was generally right, but he objected vigorously to Hamilton and his allies availing themselves of this principle. The rift between the two groups widened into two political parties, known as the Federals and Republicans, but the Republicans stood really for democracy which at that time was a term of reproach and it was the Federalist party that worked for a Republican form of government.

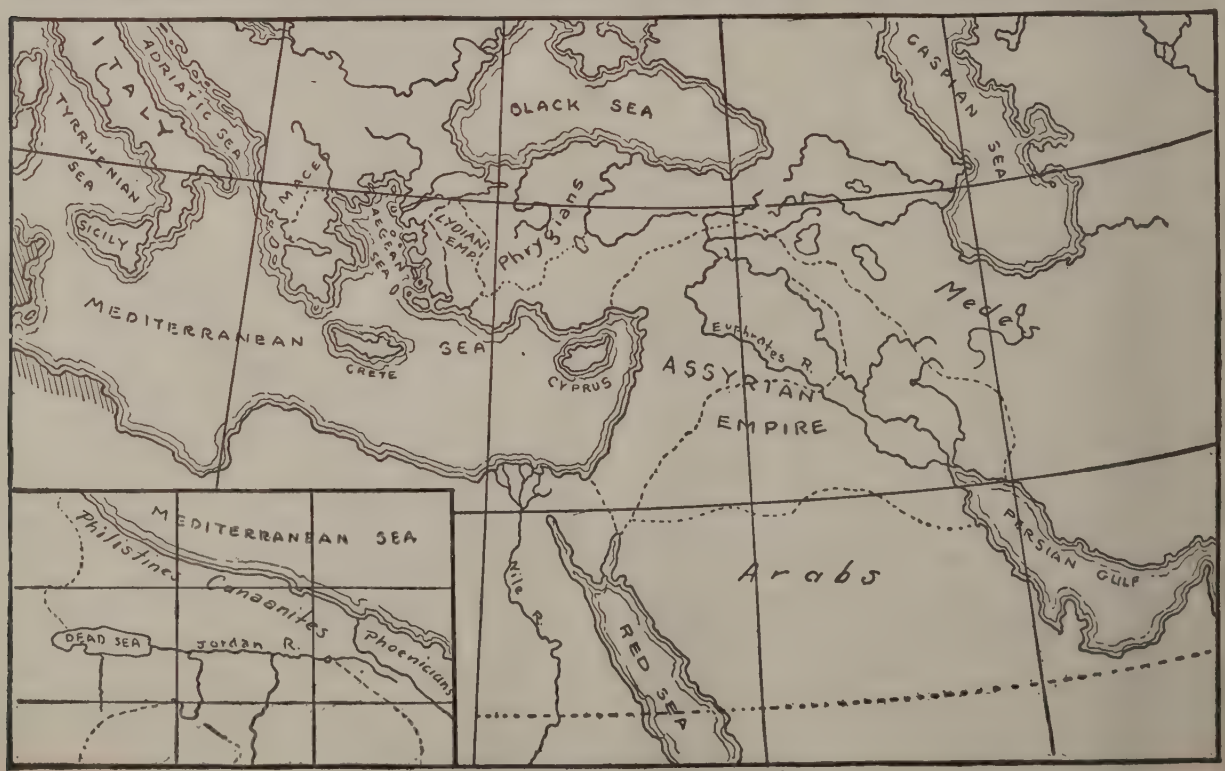
II. Napoleon Averts War Between France and the United States.—Upon the ratification of the Jay Treaty, France broke off relations with the United States, sending Pinckney, who was then our Representative at Paris, back home. One of the first things Adams had to do upon accession to office was to send a Commission to Paris consisting of Elbridge Gerry (Mass.), John Marshall (Virginia), and Charles C. Pinckney the rejected minister, on a mission to preserve the peace. Agents of the French government met them with a demand for a bribe which was refused, upon which they were directed to leave France. There was an immediate change of feeling in this country and preparations were made for war with Washington as Commander-in-Chief, and the building of a navy was begun with vigor and hostilities had already begun when Napoleon came into power and restored peace with the United States.

III. Washington Becomes the Capital.—George Washington died at his home at Mount Vernon in 1799, (Dec. 14th), and in less than a year, Nov. 22, 1800, Congress met in Washington for the first time. As a compromise between Hamilton and Jefferson on the matter of the assumption of the state debts by the national government, the District of Columbia was formed out of an area of ten miles square taken from Maryland and Virginia, in which the City of Washington was begun as Capital of the nation.

IV. Alien and Sedition Laws (1798).—These laws were passed by the Federalists in 1798 and were very unpopular among those who stood out for individual rights against the national security. The Alien law authorized the President to order any persons of foreign birth who might be deemed injurious to the nation to be deported immediately, while the Sedition laws imposed fines and imprisonment upon those who should combine to oppose any measure of the government or publish malicious articles or make scandalous attacks upon the President or Congress. They were designed to preserve the unity and dignity of the national government.

Adams' (John Quincy) Administration (1825-1829).

I. Internal Improvements.—Adams and Clay stood together on the matter of internal improvements, while a reaction was in progress among the southern leaders including Calhoun, who had advocated them. The South was reverting to the narrow views of earlier liberal principles holding



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that no national improvements should be made at the public expense.

II. Erie Canal.—The Erie Canal, completed in 1825, was the means of turning western traffic into the lakes and rivers by means of this canal into the Atlantic Ocean through the Hudson River. The perseverance of DeWitt Clinton, after whom the canal was derisively called 'Clinton's Ditch', was largely responsible for its construction.

III. First Railroad (1826).—In 1826 the first American Tramway was built at Quincy, Mass., two miles long, and was used to carry stone for building the Bunker Hill Monument. Steam was not used in this country on a railroad until 1829, horse power being employed for a time on the first railroad offering passenger service, the Baltimore & Ohio, chartered in 1827.

IV. "Tariff of Abominations" (1828).—So was the tariff of 1828 called by the South, again on account of cotton. The southerners held that the burden fell upon them, because 600,000 bales of cotton exported annually to foreign countries brought in return nearly every article used in the South. It was twelve years before (1816), when Jefferson and Calhoun had advocated a tariff.

V. Death of Jefferson and Adams.—Thomas Jefferson and John Adams had been political enemies, then friends, and came at last to agree freely upon the issues of the day. During the administration of his son, John Adams died on the fourth of July, 1826, and almost at the same hour Jefferson died, each thinking the other was alive. The American people were profoundly impressed with the singular coincidence.

Africa.—Africa is the second in size of the great land divisions of the globe. With the most startling contrasts of desert and tropical growth, it covers an area of 11,262,000 square miles, exclusive of the islands which properly belong to it. Africa is the southwestern extension of the vast Eurasian land mass, connected by the Isthmus of Suez, ninety miles wide. Not long ago, geologically speaking, this connection was much wider, covering even since Pliocene times, the Red Sea and the Gulf of Aden, while the continent was connected with Europe through Spain. The two continents now approach each other to within nine miles at the Strait of Gibraltar. The African coast line is almost destitute of bays, harbors and peninsulas, and contrasts sharply with that of Europe, which with an area of one-third that of Africa, has a coast line 1,000 miles longer. In these features Africa resembles South America, while Europe is like Asia and North America.

The Congo Basin is larger than that of the Mississippi. It drains an elevated area of 1,170,000 square miles, and has next to the Nile and the Amazon, the largest volume of water of any river in the world. The Basin of Lake Chad lies in the center of the continent, the lake of that name having no outlet. The Nile is the only living stream that crosses the great arid region from the Atlas Mountains in the Northwest of Africa to Baluchistan. Two-thirds of this dry land lies west of Suez and is called the Desert of Sahara. All the Great African Rivers, excepting the Niger, rise in the mountains in the south and southeastern parts of the continent: the Nile, Zambezi, Congo, Orange and minor streams. The Nile alone drains a basin of 1,600,000 square miles.

North Africa has been the scene since the earliest age of predatory wars, and the whole of North Africa has been at different times under the sway of many different tribes and nations. The Egyptian wars, the Carthaginian wars, the Mohammedan and Roman wars are but a few of the principal conflicts. After the slave trade was abolished by the English in the last century, societies were organized for the exploration of the Dark Continent. The most notable discoveries were made by the missionary, David Livingstone, who spent 23 years in exploration. Henry M. Stanley who was sent out under the auspices of the New York Herald, found the missing missionary. It was before this period that the French conquered Algeria, one of the conquests made for civilized and not for selfish purposes, the undertaking having been made for the purpose of ridding the Mediterranean of the Barbary pirates. A period of settlement, conquest and development followed. The Suez Canal was finished and opened in 1869, making unnecessary the trip around the Cape of Good Hope on the way from Europe to India, China and Australia. In 1875 British bankers managed to buy a controlling interest (177,000 shares) of the canal stock which gave the British control. For 300 years there had been no such scramble for territory as was made by Europe in Africa about the middle of the nineteenth century. The Germans, Portuguese, Belgians, Italians, French, Dutch and English acquired large territories. The discovery of gold in South Africa brought many English, then the discovery of diamonds drew more. The Dutch, or Boers, forced the foreigners to pay taxes and to render military services, but did not allow them a voice in government. It was another case of taxation without representation, and in addition, compulsory fighting without the franchise. This was the issue of the South African war in which the English were right as they were wrong when the American Colonies fought for less than this. Many Americans sympathized with the Boers who were far more tyrannical than the British had ever been with their ancestors. Through this war the British won domination of the south of the Dark Continent, but immediately gave the people self-government, which they had been denied by the Boers.

The North and South Temperate Zones are now occupied largely by the whites, but the masses of the population of 140,000,000 are of the black races. These include some of the largest and some of the smallest of mankind, the Wahuma of Ruanda, for example often standing six feet six inches in height, while other races are pygmies.

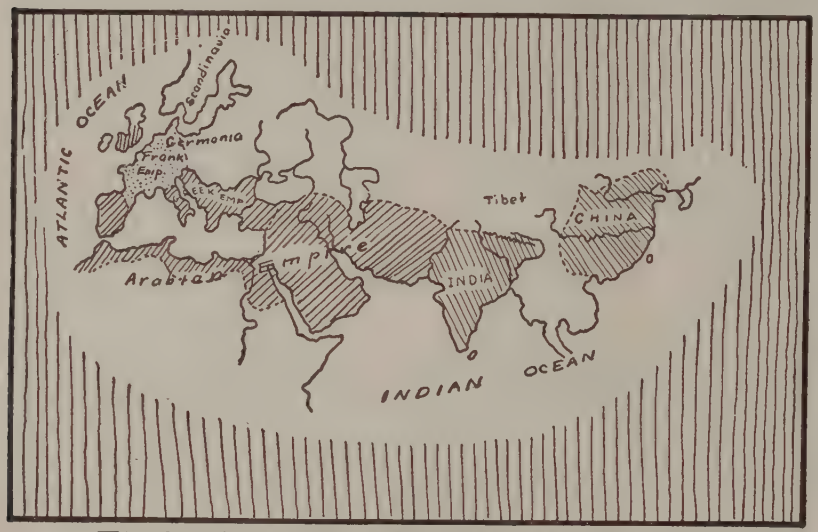
Black Africa lies south of the Sahara Desert. Cut off from the rest of the world by the sand reaches on the north and by the ocean on the other three sides, the black man has dwelt in undisturbed seclusion for uncounted ages. Until modern times the whites have been coming and going, but recently the country has been divided among European nations and now only Abyssinia and Liberia remain independent states. One of the most important elements in the future of this continent is negro fecundity. To this has to be added the fact that the white peoples have introduced measures of sanitation and civilization generally that are rapidly increasing the numbers of the blacks. Now Islam threatens to rule Africa through proselyting among the blacks, among whom they are making many converts. The real danger is that the Arab will make of the negro an arm with which to wield the scimiter and make Africa Mohammedan, and "the executor of sinister adventures."

THE WORLD ABOUT 300 A.D.

Agriculture Department Authorized by Congress (1889).—In 1889 the Department of Agriculture was authorized by Congress and has since been so enlarged, that it is now without doubt the most useful scientific organization in the world. In addition to the 3,000 specialists in all parts of the world, working out the problems of modern science as applied to the needs of the American farmer, there is a vast organization devoted to the social, cultural and economic interests of farm life which have already revolutionized the status of the farmer in this country and aided him in every civilized land on earth. As one example of its influence, the Bureau of Entomology alone covering the field of "bugs," with its affiliated activities among the states, is saving the American farmer $500,000,000 a year.

Alaskan Purchase.—The territory of Alaska belonged to Russia by right of discovery and in the nineteenth century its management was in the hands of the Russian-American Company, who seemed unable to make the enterprise pay. Consequently Russia did not greatly value this possession.

During the Civil War, the danger of attack by England through Canada had made the United States feel the need of a military stronghold in the northern Pacific. Through the influence of Seward, the United States purchased Alaska from Russia in 1867 for $7,200,000. It was used first only as a military station, but later the discovery of gold and the utilization of the rich resources of timber, furs and fisheries turned it into a commercial center as well.



THE WORLD ABOUT 800 A.D.

Algeria.—Lying between the Mediterranean Sea on the north and the Sahara Desert on the south is Algeria. It is a French colony, occupying the central position of the old Barbary states. In ancient times the Numidians were settled in the eastern part of what is now Algeria; the Moors (Mauri) in the western. Thus the history of Algeria, or old Numidia, down to the time of the Turkish dominion, is inseparable from that of Tunisia and Morocco. Under Roman dominion at the close of the Punic Wars, the people of these countries enjoyed prosperity and a high degree of civilization. In 440 A. D. the Vandal conquest resulted in a return to barbarism. Oriental civilization was introduced with the Mohammedan conquest in the seventh and eighth centuries. In 1492, the Moors and Jews, who were driven out of Spain, settled in Algeria, and proceeded to revenge themselves in acts of piracy. Algiers was taken by Spain in 1509, but Horuk Barbarossa, a Turkish pirate chief, drove out the Spaniards in 1515 and established a system of military despotism and piracy. European nations strove in vain to check the outrages of the Barbary pirates. In 1815 a United States fleet, under Stephen Decatur, stopped their depredations on American ships, while about the same time Algiers was bombarded by the British. Piracy continued until 1830 when the French took possession of Algiers, and then Algeria. For seventeen years the Arabs resisted and the Berbers struggled against the force of European civilization. In 1901 France completed the conquest, and in 1912 Tunisia, Algeria and Morocco were united under French dominion. Since French occupation trade has increased and a railway line parallel to the coast has been built. The government, instituted by France, consists of a governor general and an advisory council of government, but the legislative power lies with the French chamber. In 1911, the population of Algeria was 5,563,828, of which 795,522 were Europeans. Among the natives, the independent and industrious Berbers predominate, living in the southern oases and throughout the mountain ranges, like the nomadic Arabs of the plains and steppes to the west, they worship Mohammed, but they do not, like the latter, practice polygamy. In Algeria are to be found French, Tunisians, Moroccans, Spaniards, Italians, Turks, Negroes, Moors and Algerian Jews. Theirs is a country of steep and rocky coasts, few good harbors, agricultural lands used for farming and grazing, mineral wealth and great forests.

America.—400 years before the birth of Christ, Plato wrote an account of a great island called Atlantis which was said to be larger than Africa or Asia. Other ancient writers mentioned it as a mysterious land where strong and powerful people lived and which, because they were so wicked, was sunk into the sea. Navigators dared not journey far to the west for fear that they would encounter impediments strewn in the ocean. Although these accounts are only fables, it is believed by students of history that the Phœnicians, or Canaanites, became acquainted on their sea voyages with the continent of America. The ships of Phœnicia were known to all ancients, and people marveled because they risked the waters beyond the Pillars of Hercules, now known as Gibraltar. Evidences of visits by the ancients are to be found in New England, as for example, the Writing Rock, at Dighton, Massachusetts, containing hieroglyphic inscriptions similar to those found in Asia, and the famous Skeleton in Armor, discovered at Fall River, which closely resembles drawings taken from the sculptures unearthed in the rock-walled cities of Mexico, so markedly like ruins of ancient Asia. There seems to be ground for believing that long before the Christian era an Asiatic race traveled through North America and settled in Mexico. The ruins of the Mound Builders in the West, especially in the Mississippi Valley, covering acres of territory, are other sources of speculation. Historians have formulated theories around them, some saying that these strange builders were descendants of crews from Japan who were driven across the Pacific; others, and more reasonably, that they were an Asiatic race, the Shepherd Kings, who drove their flocks from Central India to Egypt, built the Pyramids, wandered back to Siberia where mounds like those in the Mississippi Valley are to be found. It is possible that they then went north to Behring Strait, at that period very narrow, crossed into Alaska, journeyed south to Mexico, Central America and Peru. As for the inhabitants that Columbus found in the West Indies, who were spread throughout the continent, it is not likely that they descended from the ancient people who are supposed to have preceded them, but more probably they are related to the Mongolian emigrants who came across Behring Straits.

In the eleventh century the Northmen had established a colony in Greenland, and it is probable that prior to the fifteenth century they had seen New England which they knew by the name of Vinland. Following the voyage of Columbus, in 1492, in which he reached the West Indies, Spanish patronage made possible a number of other expeditions during which most of the islands and the continental shores of the Caribbean Sea and the Gulf of Mexico were explored. These were still supposed to be connected with the Asiatic continent until the expeditions of Vespucius, Jacques and Coelho (1501-1503) established the belief that there really was a new world. Cortez (1519-1521) and Pizarro (1531-33) succeeded in their conquest of Mexico and Peru, and explored much of the Pacific coast; Drake (in 1577-1580) reached the northern coast of California. The eastern coast was explored by Spanish adventurers only as far north as Chesapeake Bay; the rest was left for the French and English after the decline of Spanish power in Europe. As for the colonizing of America by European nations—the Spanish settled in both North and South America; the French in the St. Lawrence region particularly, but also to a great extent in the West Indies; the English on the Atlantic coast at strategic points among the islands and along the shore from Florida to the Kennebec; the Portuguese confined themselves chiefly to Brazil. Holland and Sweden made fair showings at first, but the Swedish colonies along the Delaware and the Hudson were soon overcome by Dutch conquest (1655), and the Dutch were in turn overwhelmed by England in 1664. The colonial period in United States history records the progress of the western adventurers in carving a nation from the rough elements of the new world. The struggles with the native Indians, the competition of France and England, after the weakening of Spanish power, over the land and resources, the Seven Years' War between the French and the British, resulting in the practical exclusion of the French, and finally the uprising of the colonists against the restrictions of the mother country and their successful fight for independence—each is a chapter in the story that is typically American—a story

of development founded on a basic idea of initiative and freedom. Similar stories are true of other groups in the Americas, and today all the independent states, north and south, are republican in government, Brazil being the last to become a republic, in 1889.

The name "America" was first employed to designate the entire known western world by Mercator in 1541. It really consists of the two geologically independent sections, already mentioned, extending from the Arctic Ocean to the Isthmus of Tehuantepec in Mexico, in the West and Florida in the East. The northern section is connected with the southern by the two great parallel ridges, Central America and that territory including Haiti, Porto Rico, and the lesser Antilles, joining at the eastern side. Originally the name "America" was used only for central Brazil, in honor of Americus Vespucius, the Italian, who claimed he discovered it. Without Greenland and the Archipelago its area is 16,000,000 square miles. Two-thirds of the continent is north of the equator, and in each great section may be found diversified vegetation and all varieties of climate. In Central America, a region of the trades or easterly winds, the climate is that of a semi-tropical island, with enormous rainfall. All of tropical South America is within the trade-wind belt, where the rainfall makes possible the vast forests of the Amazon basin and the volume of the river and its tributaries. Zoologically considered, South America includes both Central America and the Antilles, and the plains of Mexico, east, west and south of the plateau of Anahuac, but the animal life of South America and North America proper have almost no common features.

North America may be divided into a few great geological units, the Canadian or Cambrian shield, the Coastal plain, the Eastern highland, the Great Central lowland, the Western highland, the Rocky Mountains, the Inter-mountain Plateau, whose southern, higher part is called the Colorado Plateau, the Great Basin, the Columbia lava plateau, and the Pacific border ranges. The Andes Mountains in South America correspond to the Rockies in North America, the Alleghany-Appalachian system in the United States to the Brazilian chain. In each country there is also a lateral range beginning in the north center, turning first south and then east, till it ends somewhat north of the eastern vertical chain, and in each it is the oldest part of the country.

No other drainage systems can equal those of America. The Amazon River alone sends more water to the ocean than the eight largest rivers of Asia together. The Mississippi carries more water than all the streams of Europe. There are more than 100,000 miles of navigable water in the St. Lawrence, Mississippi, Amazon, Orinoco, and Plata systems together, and there are 89,000 square miles of water in the five Great Lakes of North America alone. The Gulf of Mexico bears the same relation to the northern continent as the Argentine plain to the southern; both lie in the same position with regard to the eastern and western mountain chains, but one is submerged. The boundless mineral resources of both Americas are centered along the entire western coast, of which the great continental backbone is the Andes. The treasures in these mountains are practically untouched, though the world's entire supply of bismuth comes from Bolivia, the largest amount of thorium from Brazil, and the deposits of nitrate in Chile supply nearly all the world's consumption of nitric acid. Platinum comes from Columbia, tin from Bolivia, diamonds from Brazil, which is second in their production only to South Africa. Great deposits of coal and iron are to be found in the Andes, vanadium especially in Peru, tungsten in Bolivia, Argentine and Brazil, sulphur in Chile, and asphalt in Trinidad and Bermudez. In North America a somewhat different story may be told of a rapid and reckless exploitation of natural resources until conservation has come to be a word calling attention to the danger of a diminishing supply in the face of extravagant consumption. Faith in the great stretches of undeveloped land and little explored mountain ranges of the northwest incline many to optimism in viewing the North American situation regarding resources. And yet those who see farthest anxiously deplore the unlimited consumption of necessities like oil, coal and timber, foretelling the inevitable fate of a people who "waste their substance in riotous living." The record of the years since the first colonists settled in North America has been a record of discovery and development, made possible by the vast forests, the fertile soil, the powerful rivers, the oil wells, the deposits of coal, iron, gold, silver and minerals too numerous to mention, and the waterways to the sea. The Canadian Northwest, where development has been slower, now presents a field as attractive as, though of a different nature from, that of South America. Its mines, fisheries, forests, fields, the industries of the coast, like shipbuilding, are developing steadily, and its progress in agriculture alone is attracting world-wide attention.

THE WORLD ABOUT 1200 A.D.

American Federation of Labor.—The Federation of Organized Trades and Labor Unions of the United States and Canada was formed at Pittsburgh in 1881, when a number of separate labor unions joined together with the purpose of fighting the all-powerful Knights of Labor. The Knights of Labor was then the largest organization of workmen in the country and it seemed to be injuring the cause of labor by its autocratic methods. It ruled its members, rather than bringing them freedom. The new Federation aimed to be more democratic, to allow the workman and his local union to be supreme and the national organization was only incidental. This movement met with ready response among other dissatisfied workmen, and in 1886 the convention of independent trade unions added their numbers to it, under the new name, American Federation of Labor. Its membership grew with increasing rapidity and it was finally able to drive the Knights of Labor from the field. Today the American Federation, with its membership of more than 3,000,000, is the largest and most powerful labor organization in this country. It has maintained its democratic methods—the local union is still the dominant factor and the national unit only serves to further co-operation, increase membership and issue propaganda. The American Federation represents the more conservative element in the labor population and stands for trade unionism as opposed to industrial.

American Revolution.—The English colonists, who, in the middle of the eighteenth century, occupied the eastern strip of the North American continent (see map), had been largely ignored by England and allowed to control their own affairs. Therefore, when, about 1770, George III. tried to exert new authority in the form of taxes, the colonists refused to pay these taxes. George III. sent troops to force obedience. The colonists opposed these troops, and thus began the American Revolution, in 1775.

A Confederate Congress of delegates from the different states established independent government and organized a revolutionary army under George Washington. On July 4, 1776, the Declaration of Independence proclaimed the thirteen colonies a free nation and the colonists determined not to cease fighting until this freedom was acknowledged.

The English sent over large numbers of troops, among whom were 17,000 Hessians (hired German soldiers). The colonists were aided by the voluntary services of the Frenchmen, Lafayette and De Kalb, the German Baron von Steuben and the Polish generals Kosciusko and Pulaski. In 1778 France acknowledged the independence of the colonies and sent a fleet to their aid.

For the first two years of the war the colonists suffered disastrous defeats; but after the capture of a British army at Saratoga in 1777, Washington gained control of the northeast, and with the surrender of the British General Cornwallis at Yorktown, Virginia, in 1781, the south was won.

By the Treaty of Paris in 1783 between England and the colonies the independence of the colonies was guaranteed.

Antarctica.—Antarctica is the continent that surrounds the South Pole. From that it stretches, astronomically speaking, to the Antarctic Circle. Like the northern part of Greenland it is ice covered, but lying at high altitudes, the South Pole itself being 10,200 feet high. It is covered with snow well up to the coast line, which is often sheer precipitous cliff of granite covered with ice, where the rock forms show continental characteristics.

THE WORLD ABOUT 1500 A.D.

Little is known of the continent, but three regions have been studied, the largest being Victoria Land whose known coast extends from the 160th to the 170th meridian east, and from about latitude 70 to 80 degrees. The sea wall is nowhere less than 4,000 feet high and contains coal deposits in sandstone and granite. Mountain peaks, some of them extinct volcanoes, lie back and rise to an altitude of 15,000 feet. The summer is colder and the winter is warmer than the North Polar regions, the coldest known weather registering minus 67 degrees Fahrenheit. Dawson City has registered much colder weather. No land animals, so far as known, exist; many varieties of birds nest on the beaches, among which are the petrel and the penguin. The vegetation consists of mosses, lichens, and tussock grasses. In the Antarctic waters are found five varieties of seal, while sea-lions and sea-elephants are found well to the north. Sea life is very rich, ranging from mollusks, medusæ and fishes to dolphins and whales.

Antietam.—A creek in Maryland where was fought a decisive battle of the Civil War in 1862. Lee had crossed the Potomac into northern territory in the hope of gathering recruits in Maryland and marching on to Washington. He was met at Antietam by McClellan with a force of 75,000 Federals, against which his 40,000 Confederates held their ground firmly. Neither side was defeated; but Lee saw from this battle the impossibility of advancing into northern territory, and withdrew his troops into Virginia, to continue the war on defensive lines.

Appomattox.—A town in Virginia where Lee surrendered to Grant at the close of the Civil War, April 9, 1865. Lee had retreated from Richmond and Grant was in pursuit, when the Federal General, Sheridan, came upon the front of Lee's army and made escape impossible. The terms of the surrender provided by Grant were just and kind—all Confederate soldiers were released on parole to return to their homes.

Argentine Republic.—When Juan Diaz de Solis, a Spaniard, sailed up the estuary of the Rio de la Plata, South America, in 1515, like all other explorers he proclaimed the lordship of his king over the country round about. Don Pedro de Mendoza, another Spaniard, coming in 1535, chose and occupied the site of Buenos Aires. Other Spanish towns were soon founded, and by 1580 the settlement was firmly established. Buenos Aires flourished and became the chief city of the new viceroyalty. In 1806 the British captured the city but were unable to establish themselves firmly. During a general revolt the republic of the United Provinces of the Rio de la Plata was founded, and by 1826 the independence of the Spanish colonies in South America was completed. The viceroyalty of Buenos Aires had included the provinces of upper Peru, but since the Peruvians differed widely in manners, customs, and language from their neighbors, they were left to do as they wished, while the people of the Rio de la Plata took the name of the Argentine Republic (1853). Years of strife and uprising followed—a decade of national financial discredit due to banking schemes in Europe, and another decade of expense and struggle for national defense. Argentine enjoyed remarkable material prosperity, however, even while she was subduing Indian tribes and conquering the desert. She acquired additions of territory from Chile by treaty in 1881, including the greater part of Patagonia; other boundary disputes were gradually settled, and in 1904 the government was financially reorganized under President Quintana. After eighty years of turbulent political life, Argentine has succeeded in gaining a place among young nations; she has improved her country, built railroads, schools; extended her industries, especially farming and stock raising, and carried on commerce successfully with great nations of the world. Her population, numbering 7,885,237 in 1914, is composed (in the order of their number), of Italians, Spaniards, Russians, Uruguayans, French, Turks, Austro-Hungarians, Brazilians, Chileans, Paraguayans, English, Germans, Bolivians, and Swiss. She is second in size of South American states and contains an area of 1,135,840 square miles. Her government is a federal republic, ruled by a president, a vice-president, a federal assembly composed of a senate and a house of deputies. Provincial governors are elected by the people and territorial governors of sparsely settled parts are appointed by the president.

Armada.—The name of the Spanish fleet sent out by Philip II. in 1588 against the English, in the hope of avenging the execution of Mary, Queen of Scots and forcing the Catholic religion on England.

After numerous encounters with the English fleet, the Armada was defeated off the coast of northern France, near Gravelines. Only half of the original fleet returned to Spain; the rest had perished in storm or in battle.

Asia.—Asia is the largest of all the continents, with an area of 17,250,000 square miles. It covers more than a third of the land surface of the globe with more than one eleventh of its total area of land and sea. It is separated from Europe, which is but a peninsular appendage, by the Urals reaching from the north to the Caspian Sea, thence to the Caucasus range and the Black Sea. Its vast and teeming populations number about a billion souls, or nearly two-thirds of all mankind, and these for the most part have been weeded out by many elements of war and disease and pestilence and famine and flood, leaving the hardy and the immune. This is a fact to be reckoned with in the problem of Asia.

Asia is but thirty minutes from the United States (by aeroplane) at Behring Straits, which are but forty miles wide, while from the southern points of Asia to Valparaiso is half way round the world. The Aleutian Islands of Alaska, reach out into the Pacific Ocean to within 600 miles of Japan. Asia has the greatest extremes of climate, the highest mountains, and the greatest table-lands in the world. It is hardly probable that the first forms of human life appeared in Asia, for the oldest individual remains have been found in Java. But it is pretty certain that the first civilizations of which we have any evidence, and the earliest of evidence comes from Archeology and Comparative Philology, are indigenous to Central Asia, whence, with increasing numbers and decreasing food supply, the first migrations started in all directions like the spokes of a wheel. The plains whose inhabitants first rise out of the historic mists, lie some-

where between the Caspian Sea and the Pamir, which is called the roof of the world. The Pamir is where India, Afghanistan and Turkestan meet, and where the bottoms of their valleys are more than two miles "in the air," while the summits lie thousands of feet higher. The Pamir is a great geographical center. From it ranges of mountains radiate like the leaves of a fan, but mainly to the eastward and westward, the table-land of Thibet, for example, lying between the Himalayas to the south and the Kuenlun to the north. This is the highest plateau in the world, and few people can live there, and these only in the sparsely cultivated valleys. For this table-land lies from 17,000 feet high to the west to 9,000 feet in the east. Large areas in this central portion of the continental domain are sterile or desert spaces, where areas as large as Europe have little soil and few conditions with which to support life. But over the map of Asia

THE WORLD ABOUT 1700 A.D.

one could place the maps of seventy Frances and have room in which to lose Germany and England; or he could put over it the maps of North and South America and Europe combined. Some parts of Asia are abnormally congested with teeming populations, but not more so than some portions of Europe. There are areas of fertile soil in the hinterland large and rich enough to support another population equally great. More people can live on this vast continent than all the people alive today. So that Asia is not in need of American room. Asia could easily support the entire population of the known world without much overcrowding. (See Siberia, Manchuria, Mongolia, etc.)

There are seven great river systems, with the peculiarity that vast regions drain inland into land-locked salt water seas, as if Asia were a world to itself. In the Chinese system there are four great rivers: the Si-Kiang, the Yang-tze-Kiang, the Hoang-Ho and the Amur, flowing eastward to the Pacific Ocean. There are two systems in India, overlapping to the north, the Indus flowing to the Gulf of Arabia, draining the land of the Punjab, or the "Five Rivers," and the Ganges and the Brahmaputra draining towards the Pacific slope. Towards the Arctic the Siberian system drains the land through the Lena, Yenesei and Obi, while those rivers flowing into the Aral, Caspian and Dead Sea have no outlet to the ocean the Caspian being 85, and the Dead Sea 1,300 feet below the sea level.

The great masses of population are found in the immense territory of China, Siberia and India. The Chinese Empire contains 4½ millions of square miles, or more than one and one-third as much as the United States. The people number, according to the Chinese Customs Reports, 439,000,000. Siberia with the Russian dependencies has 6½ million square miles, with a population of over 25,000,000, and India has 1,789,154 square miles with 325,000,000 people. China contains nearly a third of the human race and India a fifth, while the two territories together are about equal in area to Europe and the United States together.

All the five great races of man live in Asia, the white, black, brown, red and yellow. The red and black races are weak, numerically and otherwise. The great mass of the population is made up of the yellow and brown races with a tenth of the population white. The latter are found in Asia Minor, India, Arabia, Persia, Afghanistan and Baluchistan, with a few scattered elsewhere. The yellow race is distinctly the Asiatic type and numbers seven-tenths of the population, while Asia itself contains, with the Islands, nearly seven-tenths of all mankind. Moreover, yellow blood has percolated into Siberia, Russia, Caucasus, Asia Minor, Afghanistan and Baluchistan. One of the main but remote causes of the Russo-Japanese war was that certain Slavs claimed for their race Asiatic origin, and made this kinship an excuse with the Asiatics for extension and domination in Asia.

Roughly speaking, the two great groups of the yellow races center, the Manchus and Mongols, around the Altai Mountains and the Sinetic or Chinese in the south of China or the region lying to the north of the Himalayas. These two branches include many stocks. It has been suggested that the North American Indians are related to the ancient arctic and sub-arctic stocks, among whom are the Koriaks and Kamchatkans, and of whom there are about ten thousand left. The north, east and west Mongols have centered about Lake Baikal, but have moved so far in one direction as China and to the Caspian Sea in the other, extending even to the Danube. It must be borne in mind that while most of the world's great religions have come from Asia, this is but a matter of geography, for these religions have all been given by the white races, both Semitic and 'Aryan', who are geographically, but not distinctively Asiatic.

Asia Minor.—Asia Minor is a term invented during the Middle Ages to describe the peninsula between the Ægean, Black and Caspian Seas and the Levant, better known as Anatolia. It included a great number of petty states: To the north was Mysia, Bithinia, Paphlagonia and Pontus; to the south, Caria, Lycia, Pisidia, Pamphylia and Cicilia; while in the center lay Lydia, Phrygia, Galatia, Lycaonia, Cappadocia and Armenia. On the western coast in ancient times lay Troas (Troy) immortalized in the Iliad, the history of which is mere tradition. Troy is said to have been founded by Dardanus, succeeded by Erichthonous, celebrated for his splendid horses. Tros named the city Troy, and Ilus changed the name to Ilium which was burned by her Grecian conquerors. (See Phrygia and Lydia.)

Assyria and Babylonia.—The latest and most reliable researches incline to the belief that the earliest cradle of human knowledge is to be found in the low river lands of the Euphrates and the Tigris. There is abundant evidence that the original settlers in part of these fertile valleys, a non-Semitic compound race, styling themselves Shumerians and Akkadians, even in 7000 B. C. had developed cuneiform writing and a flexible language. It is supposed that an offshoot of this ancient stock, which later amalgamated with the Semitic Assyrians and Babylonians, swept over Egypt and established the dynasty of the Hyksos or shepherd kings. Their language long survived in the rituals used in the temples of Babylonia. Ages went by without leaving much in the way of historic documents, but the old Babylonian Empire is generally supposed to have lasted from about 4000 B. C. to 731 B. C. It is also called the Chaldean Empire. The first King Sargon (to be distinguished from a much later one), about 3800 B. C. extended his sway to the Mediterranean shores, and under Hammurabi, one of the wisest and most progressive rulers of antiquity, Babylonia and Assyria were united.

Nothing in ancient times seems to have made the impression on the imagination of every race as did the splendor and extent of the two queen cities, Babylon and Nineveh. The walls girding Babylon were twenty leagues in circumference and from three to four hundred feet high. About 2000 B. C. Babylonia, after having been long subject to Elam, a nation of non-Semitic people to the east, achieved its independence. Assyria was being settled from Babylonia, and in its earlier stages it

developed side by side with Babylonia, from 1900 to about 1000 B. C. Then followed a time when Assyria and Babylon each held the overlordship for a period. In 1237 B. C. the Assyrian Empire appears to have been founded, and while Assur-nasir-pal was king, 884-859 B. C., Assyria became the leading empire of the world. In 745 B. C. King Tiglath-Pileser made himself master of Babylon, and was successful in war against Syria and Armenia. Assur-bani-pal, king of Assyria and overlord of Egypt as well, erected splendid buildings and did much for art and literature. The states subject to the Assyrian monarch were loosely bound, however, and constant rebellion resulted from the despotic method of government. After the death of Assur-bani-pal, Babylon revolted with success. About the same time the Medes in the north rose against the Assyrian yoke; the savage Scythians tribes rushed in, and ruin for the proud and splendid empire followed. Nineveh, the great metropolis, was taken and burned. Babylon enjoyed, however, a brief resurrection, from 608 to 538 B. C., under Nebuchadnezzar and Belshazzar. The latter was dethroned by Cyrus, the Persian, and Babylon became subject.

This ancient people gave much to the world in astronomy, mathematics, an exact system of weights and measures, cuneiform writing, a system of canals and river dykes, irrigation, important industries, including the manufacture of rugs, linen and silk garments, brick, silver and goldware, architecture, arts, especially sculpture, in which they excelled for centuries and which they transmitted to the early Greeks. Their creed, like that of most Oriental nations, was a nature worship originally. Some of the most enlightened among them conceived the idea of one all-ruling God. Subsequently their religious conceptions became more and more debased, falling into superstition and the worship of fish gods, bird gods, and of Mylitta, the type of the grossest sensuality. The earliest legends and religious myths of these people tallied singularly closely with those of the early Hebrews, their Semitic kinsfolk.

Austerlitz.—A town in northeastern Austria the site of Napoleon's great victory in December, 1805.

Napoleon was then threatening to spread his power over all Europe so that Austria, Russia and England were joining in military preparations for his overthrow. Napoleon's hope for safety lay in striking at the united armies of Austria and Russia before England could send her aid. This he did at Austerlitz, marching his army of 65,000 against 82,500 Russians and Austrians. By clever strategy he put the enemy to flight, causing them a loss of 27,200 while his own loss numbered but 6,800.

By the Treaty of Pressburg, following, the Austrian and Russian emperors were forced to admit Napoleon's claims to the very territories of which they had hoped to deprive him.

Australia.—Australia means "Southland." It lies, the largest island and the smallest continent, in the Southern Ocean and entirely in the Southern Hemisphere. It was once a part of an enormous continent stretching from the North Polar regions, but now partially submerged, by the shallow waters of those straits which separate Asia and Australia from the Great Island System lying between. Australia is 2,400 by 1,900 miles in extent, covering an area of 2,946,000 square miles, but a little less than the United States proper, or Europe. Tasmania is separated from the Australian mainland by the Bass Straits which average but 200 feet in depth. The land has the main characteristics which the geographers desire of a continent, high and bold coasts with mountain ranges nearby, and a depressed interior. 95 per-cent of the land surface of the continent being under an altitude of 1,500 feet, while the highest peak, Mount Kosciusko, is but 7,500 feet in height.

A generation after the discovery of America the first map of Australia very much resembled our maps of Antarctica today. Although the Chinese are supposed to have visited the land in the thirteenth century, the first recorded voyage was made by the Dutch in 1606. Afterwards many voyages were made, Captain Cook visiting the island in 1770 (April 14). His party, finding so many plants new to science, named the place "Botany Bay." By 1822 the whole coast had been determined. The Dutch having ignored the land for the greater apparent riches of the East Indies, the English re-discovered it and began colonization. This was caused mostly by the American Revolution which took so great a heritage from the British race. Australia, instead of the United States, became the "dumping ground" for British criminals, where persons condemned for crime had been sold into servitude for the sum of $100 each. In 1798, the first shipload of this type of colonist was sent to "Botany Bay," and an attempt was made quite unsuccessfully, to make "farmers of pickpockets," and it was not till after many crude experiments and as many insuperable difficulties, that free men and women came to emigrate to these lands which are, even though subject to severe drouths, among the best grazing lands in the world. The way Australia has overcome her handicaps is one of the many conspicuous romances of modern history, for it now contains a prosperous population of about 5,000,000.

The most conspicuous geographical and economic features of Australia are the two great plains; the alluvial area covering half a million square miles stretching across the continent, and the Australian Steppes in the northwest covering 400,000 square miles. The climate is very dry, two-fifths of Australia getting annually but ten inches of rain, and part of that not more than five inches. There have been some drouths of dreadful consequences. Nevertheless, next to sheep and cattle raising, agriculture is the principal source of wealth. Timber is an important asset but the land is rich in minerals. Gold was discovered early in this century, starting an industry which has grown in volume till it had aggregated up to 1911, about 2¾ billions of dollars. In 1891 the number of sheep reported was 106,421,068, yielding a half billion pounds of wool, while the number of cattle increased in thirty years, (1865-95), from 3¾ million to 11¾ million head.

The aborigines seem to be a distinct race, without records, and even without traditions of having come from other lands. Their languages and dialects show a remote connection with the Papuan tongues.

Politically, Australia is a commonwealth. The people have realized a commonwealth in fact as well as in name. The railroads are owned for the most part by the government, i. e.: by the people, and this fact has made it possible for lines to be built in areas which offer no immediate dividends, but tend to develop the country, extend population and advance civilization more rapidly than if these highways were built up only where the traffic would warrant. The Commonwealth is a Federal state under the supreme authority of the Crown of Great Britain, by Act of Parliament, dating with the opening day of the twentieth century, January first, 1901. This Act formed a union of the colonies of New South Wales, Victoria, Queensland, South Australia, and Western Australia.

The circumference of Australia is 8,000 miles, or about one-third of that of the earth.

Austria-Hungary.—In 1438 the House of Austria recovered possession of the imperial crown of Germany. There had been endless fighting between the German states, and Maximilian now tried to restore peace. The Diet forbade war between the states, but in vain, for the German princes, drunk with ambition, had no thought of being curbed in their desires. In 1520, Souleïman, the Ottoman sultan, set out to conquer, and succeeded in 1521 in taking Belgrade, the stronghold of Hungary, which state lay east of the Leitha River. Allied with the Protestants of Germany, he captured Rhodes from the Knights of Saint John, and passing the Danube, destroyed the Hungarian army at Mohacz, (1526). Ferdinand of Austria now fell heir to the crown of Hungary, but was dethroned by John Zapoli, a Magyar claimant, whom Souleïman supported. Hungary was ravaged, and the sultan crowned his vassal king of Hungary at Buda. About 1547 Souleïman was busy with wars in Asia against the Persians, and the Hungarians were able to drive back the Ottomans on the Danube. The feeble policy of Austria during the religious wars of the seventeenth century was suddenly changed when an enterprising prince, Ferdinand II., ascended the throne. He blew up the heretical churches and burned all the Bibles he could lay hands on. The Bohemians rose in revolt and chose a king for themselves. Then followed a war in Central Europe, one hundred years after the Reformation, which, though under the mask of religion, was really a political struggle. In fact, Ferdinand was determined to make Germany an Austrian province. For thirty years Protestants and Catholics—Bohemians, Danes, Austrians, Germans, Italians, Spaniards, Bavarians and Swedes struggled one after another, Gustavus Adolphus, leader of the last named, for a time checking the advance of Catholicism and the Austrians on the Baltic shore. Finally Richelieu of France, entered the fray and was successful in the West, aided by Swedish victories at Brandenburg, Silesia, and Saxony. Austria, which had tried to prevent religious liberty in Germany, had been vanquished, and Germany was only nominally an empire, composed of a confederation of politically and religiously independent states. The dream of Otho the Great, of Frederick Barbarossa and of Charles V. for a united empire was still unrealized.

The French Revolution in the eighteenth century aroused the crowned heads of Europe to unite "for the safety of their crowns." France was menaced on three sides. When she had proclaimed herself a republic and executed Louis XVI., Austria, Prussia, Piedmont and England joined the

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coalition, followed by Spain and Naples, Holland, Portugal and the German Empire, through the influence of its two leading states. The Austrians desired the French fortresses on the Scheldt, but when Napoleon appeared and by sheer genius placed France again in the foreground, all the armies of Austria were unable to withstand him. In 1805 he entered Vienna and a short time later won the battle of Austerlitz, over the emperors of Austria and Russia, as a result of which Austria lost all influence in Italy and Switzerland. Napoleon, now Emperor of France, conceived a world empire, and part of his plan was the elevation of his relatives to the kingships of states all under the confederation of the Rhine. The old German Empire was dissolved; instead of holding the title of Holy Roman Emperor, Francis II. now descended to the position of merely Emperor of Austria. The 370 German states, constantly at war, were reduced to thirty or forty, and united under the protection of Napoleon into a federated state from which Austria and Prussia, the two half Slav states, were excluded.

Following the fall of Napoleon and the Revolution of 1848, reactionary Austria fell into the hands of the revolutionists. Metternich, representative of autocratic power, fled, and a new constitution was proclaimed. Bohemia took courage from Vienna and declared the full equality of Slavs and Germans in the kingdom. Meanwhile there was revolution in Hungary, and the Viennese, hating the Slavs, momentarily sympathized with the Hungarians. Ferdinand of Austria abdicated in favor of his nephew, Francis Joseph, whom the Magyars refused to accept. The real ruler was the head of the ministry, Prince Schwartzenberg, whose policy, like that of Metternich, was absolutism. He aimed at complete subjection to the Austrian Germans. In the struggle that followed, Hungary was successful and made herself an independent state, until Austria, aided by Russia, crushed her. Meanwhile Prussia was becoming a powerful rival of Austria. Both states, largest and strongest in the German Confederation, were disliked by their neighbors, and neither gave promise of advancing the cause of German union. In 1862 Otto von Bismarck was appointed Minister of Foreign Affairs and President of the Cabinet by King William I. of Prussia. Under him was organized the military system of Prussia, the system of "blood and iron" which was to defeat Austria and France, and reunite Germany. Seven years of war between Austria and Prussia left the former excluded from Germany, abandoning her claims to Schleswig and Holstein and Venetia, while Prussia added much to her territory, including Schleswig - Holstein, (originally wrested from Denmark), formed secret treaties with the states of southern Germany, and strengthened herself by the North German Confederation. Following the Franco-Prussian War (1870-1871), the King of Prussia was made the Emperor of united Germany, from which, of course, Austria was excluded.

Disorder and rebellion marked the early part of the reign of Francis Joseph, who came to the throne of Austria in 1848. The German minority looked contemptuously at the other races, and it was necessary to rule by martial law until 1854. An attempt was made to Germanize all Austrian subjects. The German language was made obligatory in courts, civil administration, and in the schools of the Hungarians, Servians, Roumanians, Croatians, Slavonians and Bohemians. The subjection of other races than the German in the Chamber of Nobles and the Chamber of Deputies was met by the Hungarians with stout resistance. The Austro-Prussian War was a blessing in that it established the fact that Austria was not a German state and should no longer "seek her center of gravity" outside her own boundaries. The rights of her subject races were finally at least partially recognized; there was a complete reorganization—political, financial, military. A Protestant and a foreigner was invited by Francis Joseph to accept the chancellorship of this Catholic and reactionary empire. The independent existence of Hungary was recognized, and a prime minister appointed, (1867). Francis Joseph was crowned king of Hungary and the Hungarian crown and color were added to the imperial flag of Austria. But the question of the internal weakness of Austria-Hungary was not solved by coupling the names together, as the struggles of the present day have continued to show. The race antagonism manifested itself more strongly than ever following the Great War in which those who were related by blood to the Poles and Slavs of Russia were forced to do Germany's will and fight their kinsmen. While peace negotiations with Russia were going on, (1918), the Czechs and Slavs of Austria-Hungary were uniting with the Poles against the Austrian ministry, declaring that their hatred would endure as long as the country remained under the yoke of Germany. They asserted their right to form themselves into free and democratic states independent of the "Fatherland" or Austrian authorities. A revolutionary movement, extending to the army and navy, kept the country in a turmoil and disrupted the monarchy, resulting in the abdication of Emperor Charles (1918). Governments of their own were formed by the Czechs in Bohemia, the southern Slavs at Laibach, and the Croats at Agram. In Hungary great excitement existed over the hope of forming a republic, while the German-Austrians set up a separate administration. A revolution in Hungary, without much bloodshed, resulted in the triumph of the new government which promised to restore freedom of the press, trial by jury, right of assembly and association, and proclaimed military and civil amnesty. An appeal for order went out from the new cabinet, organized by Count Michael Karolyi, promising new rights and privileges and care for soldiers and war victims.

Babylon, Capture of, by Cyrus.—In 539 B. C. Cyrus, the Persian, already renowned for his conquests in the East, marched against Babylon. King Nabonidas of the Babylonian Empire had foreseen this attack and for ten years had been fortifying his city against it. Though Cyrus defeated the king's men in the open field, when they had retired behind the insurmountable wall of their city he was unable to assail them. After vain attempts he withdrew his troops a few miles up the Euphrates River, which river flows into the city of Babylon, and he set them at work with spades to drain the waters of the river into a channel. On a night when the Babylonians were feasting, this drainage was completed and the Persians were able to march along the empty river bed, entering Babylon through the unguarded river gate. A horrible massacre took place in the darkness and on the following morning Cyrus was king of Babylon.

Balkan Peninsula.—The Balkan peninsula is the storm center of modern Europe. It has been called the "Whirlpool of Europe." It lies adjacent to Asia and is peopled with races of distinct types and all with their race hatreds. The situation has been complicated by the presence of an alien and discordant element, this peninsula having been the meeting ground of Asia and Europe and the field of war for a thousand years between the two civilizations, while before that it was the scene of constant internecine strife.

Europe has three great southern peninsulas, of which this is the easternmost. It lies between the Adriatic Sea to the west, and the Black Sea to the east, with the Danube to the north. Its area is about 175,000 square miles, and includes European Turkey, Servia, Bulgaria, Bosnia, Herzegovina and parts of Dalmatia, Croatia, Montenegro, and Greece. Southeast of the peninsula is the Bosphorus, about twenty miles long, connecting the Black Sea with the Sea of Marmora, which in turn is joined with the Ægean Sea by the Dardanelles. Greece, Roumania, Montenegro, Servia and Bulgaria are called the Balkan states, and these have all been carved out of the Turkish Empire during the nineteenth century.

The political significance of the Balkan peninsula is found in its geography, its position being one of the most strategic in the world, culminating at Constantinople, where opens the gateway from western Europe to the countries bordering on the Black Sea and the farther East; it is emphasized in the fact that this spot since a little time before the discovery of America (1453), has been, with the vast hinterland, under the domination of the "Unspeakable Turk." For three centuries this peninsula was a Turkish and Mohammedan possession, with all that meant in its access to regions beyond, which have been ruled by fire and sword.

Ballinger - Guggenheim Controversy. — The progressive element of the Republican party complained bitterly over the alleged support of the President given to the "Guggenheim Interests," in the appointment of the Seattle Attorney of those interests as Secretary of the Interior, who made the attempt to validate immense coal titles in Alaska through illegal applications, which if successful, would have placed in their hands property admitted by their own engineers to be worth $4,000,000,000.

Bannockburn—a creek in Scotland, the site of a famous battle in 1314, when 40,000 Scotchmen under Robert Bruce defeated 60,000 English. The Scotch loss was 4,000, the English 10,000.

Since 1286 the king of England had laid claim to the throne of Scotland and exacted tribute from Scottish lords. After the Battle of Bannockburn and a few Scotch invasions into England, Scotland was granted her freedom in 1328 with Robert Bruce as king.

Belgium.—Belgium as a nation dates from 1830. Under the Congress of Vienna, Belgium (the Spanish Netherlands), was joined to Holland when Norway was made a part of Sweden. When the Spanish colonies declared their independence early

in the nineteenth century, and Metternich proposed the offices of the Holy Alliance to coerce them again into slavery, England objected and laid the train for the Monroe Doctrine, later encouraging Belgium in a successful revolt against Holland. In January, 1813, a conference of ministers in London recognized the new state, which adopted a liberal constitution, but it was not until 1839 that Holland accepted the situation. The crown was offered to the uncle of Queen Victoria, Leopold of Saxe-Coburg. Leopold II. succeeded him in 1865, and reigned until his death in 1909, when he was succeeded by the present king, Albert I.

The neutrality of Beligum was guaranteed under the treaty of 1831, by Great Britain, France, Austria, and Russia. By an international conference in 1885, Leopold II. was made sovereign of the Congo Free State, with 900,000 square miles inhabited by 30,000,000 people. On August 2, 1889, he bequeathed to Belgium all his sovereign rights, and by convention the right was granted to Belgium to annex the state at any time after 1900. Charges of cruelty on the part of government officials against the inhabitants of the Congo Free State and exposures regarding the use of the country as a means of private income for Leopold II. resulted in abolishing his overlordship and annexing the State in 1908.

The two great political parties of Belgium have been the Catholics and the Liberals, the former having opposed the principle of democracy and political equality. During the past few years the Socialists have gained in strength. Before 1893, in a population of over 6,000,000, less than 140,000 people were allowed to vote; a constitutional revision gave 1,350,000 electors a right to cast 2,066,000 votes, the Catholics having retained the right to cast two or three votes each in special cases.

In 1916 there were about 3,000,000 Walloons as compared with 4,000,000 Flemings in Belgium. The Walloons are of a French type, darker than the Flemish, and more vivacious. Because of the difference in the two types, Germany hoped to foster a separatist spirit among the Flemings, and succeeded, during the Great War, in forcing a division, with headquarters for Flanders in Brussels, and for the Walloons in Namur. Protests arose from both sections, and Belgium learned what distrust and hatred of German schemes meant when starvation followed financial oppression, and men were deported to serve Germany's purposes. The inhabitants took refuge in the interior, and the army of occupation of Germany did everything in its power to crush Belgium. When the Allies had recovered Ypres, Mons, Roulers and other important cities which had been seized, and peace was established (November 11, 1918), Belgium faced the future, sick with the remembrance of innumerable horrors, devasted homes, a financial loss of over $275,000,000 in four years, and with her whole transport and industrial system disorganized. Complete reconstruction has been attempted and the Inter-Allied Commission is at work planning ways and means.

Bell's Telephone.—Many inventors had tried to hit upon a device for tramsitting speech through space, but they had been electricity experts who studied the theory of sound waves without considering the apparatus of the human ear. Alexander Graham Bell was a professor of vocal physiology and understood thoroughly the mechanics of speaking and hearing. His longing to improve the lot of his wife, a deaf mute, added zeal to his researches.

Through the telegraph he knew the power of wire to carry sound, but how to make it carry the various graduations of sound involved in speech was his problem. While studying the diaphragm of the human ear, which vibrates as it is hit by sound waves and so produces hearing, he was struck with the idea of manufacturing such a diaphragm which should reproduce sound waves exactly as they are reproduced by the human ear. This is the principle of the telephone. There is a diaphragm at either end of the wire, so that the sound waves produced by the voice of the speaker at one end are transmitted to the other end of the wire, where a diaphragm is in contact with the ear of the listener.

Bell worked for two years to perfect his invention after he had gained the leading idea. In 1876 the telephone was patented and exhibited at the Philadelphia Centennial Exposition. At first it received little attention, but the Brazilian Emperor Dom Pedro was struck with wonder on hearing it talk and thereupon the eminent scientists began to examine it, granting it the prize of highest honor at the Exposition.

Although it was not thought at the time that the telephone would ever be more than a plaything, the business management of Mr. Hubbard saw it put to practical use. It is now one of the necessities of life.

Bolivia.—Bolivia, a neighbor of Brazil, Argentine, Peru and Chile, comprises an area of 708,195 square miles of South American territory. For two centuries after the Spanish conquest it was a part of Peru, but in 1825 it proclaimed independence and set up a republican form of government, the first president being General Sucré. Civil wars followed and later (1879-84), Chile wrested from Bolivia the coast province of Atacama, with its valuable nitrate and guano deposits. Boundary disputes with Brazil ended in Bolivia's acquisition of additional territory, 1,221 square miles, commercial facilities and a payment of $10,000,000. In 1917, Bolivia severed diplomatic relations with Germany.

The southwestern part of Bolivia is high and mountainous, the northern and eastern consisting of low terraces and plains. A plateau lies between the Andes, west, and the Cordillera Real, east. There is heavy rainfall on the eastern plains, and the mean annual temperature on the lowlands is 74° F., while it is about 63° on the highlands. Nearly three-fourths of the country is covered with forests from which valuable timber is obtained—mahogany, rosewood, cedar, jacaranda, quebracho, gum trees, and dyewoods. The high plateaus are treeless, and mimosa and bamboo are found in lower altitudes. Among other valuable products of Bolivia are cocoa, cinnamon, rubber, vanilla, sarsaparilla; and the metals tin, silver, gold, copper, iron, lead, zinc, cobalt, platinum, antimony, bismuth, quicksilver; the nonmetals alum, arsenic, borax, talc, mica, marble, salt, saltpetre, asphalt, petroleum, precious stones, such as topaz, turquoise, amethyst, and lapis lazuli. Gold is carried by the streams flowing down into the Amazon; silver is plentiful, though the mines are not extensively worked. In the eastern valleys of the Cordilleras are raised coffee, cocoa, sugar, tobacco, cotton, rice, yucca, manioc, maize, alfalfa, pineapples, oranges, bananas, lemons and peaches; besides sheep and goats. Navigable streams cover several thousand miles; railroads and telegraphs establish communication between the cities. The country depends upon river ports, having no seaport of its own. About fifty per cent of the population are Indian, twenty-five per cent mixed Spanish and Indian, and thirteen per cent white. The state religion is Roman Catholic.

Boxer Rebellion.—A "patriotic" society called the Boxers, began early in 1900 to massacre the native Christians in Northern China and to kill Missionaries and other foreigners. At Pekin foreign ministers and their associates were besieged by Chinese troops who were in sympathy with the Boxers. President McKinley sent warships to protect the resident Americans and these were joined by troops of Japan and the other powers. War was declared, several towns were captured and battles fought and Pekin was taken, after which order was restored.

Braddock's Defeat; the first battle of the French and Indian War in 1755. The English General Braddock led a force of British soldiers and colonist volunteers against the French at Fort Duquesne (now Pittsburgh). Having prepared his attack according to the European methods of open warfare, Braddock was helpless when surrounded by French and Indians in ambush. His brave and desperate fight ended in defeat. Braddock himself was killed and 977 out of his 1,456 men perished.

Brazil.—When Vicente Yanez Pinzon, a Spaniard, discovered the northeastern coast of Brazil in 1500, he did not take possession of the land because a treaty made previously with Portugal had assigned all the new country east of about longitude 50° W. to Portugal. In the same year Pedro Alvares Cabral, a Portuguese, on his way to India, happened upon the Brazilian coast south of Bahia, and took possession in the name of Portugal. It was some time, however, before Portugal gave much attention to colonizing the new territory, the first colony being formed in 1532 by Martin Alfonso de Souza, and other sections being granted to distinguished Portuguese on condition that they would settle them. Bahia, founded in 1549, was the capital until after 1762, when it was changed to Rio de Janeiro. Although the French and Dutch attempted to settle in Brazil, the Portuguese successfully drove them out. The country developed rapidly, owing to the growth of the sugar industry, and the discovery of rich gold and diamond mines in the interior. Expeditions were made to the interior and several towns were founded. When Napoleon drove Dom John, prince regent, out of Portugal, the prince fled to Brazil (1808), and established his capital at Rio de Janeiro. His son, Dom Pedro, remained as regent in Brazil and led the movement for Brazilian independence from Portugal after his father had returned to Portugal as king. Dom Pedro was crowned Emperor Pedro I. of Brazil in 1822. The Revolution of 1889 forced his son, the second emperor, to abdicate, and a federal constitution was adopted. A more carefully prepared constitution was framed in 1893, and insurrections raging at that time were settled by President Peixoto. In 1917, Brazil sympathized with the Allies in the Great War, and declared war on the German government.

Brazil is the largest country in South America, and comprises two-fifths of the southern continent. Its area is 3,209,878 square miles, much of which, especially along the western and northern boundaries, is unexplored. The southeastern coast has excellent land-locked harbors and channels, but in the northeast there are few harbors, except the estuary and the Bay of Maranhão. The Amazon River and its tributaries form the finest system of navigable waters in the world, ships being able to sail long distances up the rivers. Most of Brazil has a moderate and healthful climate, with abundant rains, but a portion of the northeastern coast is subject to periodical drouths, lasting for several years and resulting in many deaths. The warmest region is the Paraguan depression, formed by the Amazon and Paraguay, meeting in the center of the continent, where swamps and rank tropical undergrowth abound. The coast range is the forest region known as the Brazilian Plateau; eastward are open grasslands. North is the Guinea plateau, partly open and partly covered with the scattered growth of trees and brush. Brazil ranks next to South Africa in the production of diamonds. In addition it produces gold, quartz, coal, silver, copper, lead, immense deposits of iron, as yet practically useless because of the lack of coal, also petroleum, lignite, peat, monazite, sulphur, precious stones, rubber, Brazilian nuts, petrified wood, vegetable oils, drugs, cabinet woods, especially rosewood, coffee, which is the largest export, sugar, tobacco, and cacao. Manufacturing is done on a small scale, railroads and telegraph lines connect the towns, and the navigation of rivers makes possible a successful system of commerce. There has been as yet little exploitation of mines, but the past few years have seen an increase especially in the exportation of manganese. Cattle roam the broad, grassy spaces, and the woods are thick with wild hogs, puma, jaguar, sloth, monkeys, birds and reptiles. The forests have been worked for years, and the fisheries are famous, 2,000 varieties of fish having been discovered by Agassiz in the Amazon River alone. The population, a large part of which is Catholic, consists of pure Portuguese, whose language is the national language, negroes, aborigines or native Indians, German and other European immigrants, some Americans, and people of mixed race, the most numerous of all.

Buchanan's Administration (1857-1861)

I. Dred Scott Decision (1856-1857).—The Dred Scott Decision was made by the Supreme Court of the United States, in 1856, but was not made public till after the inauguration of Buchanan, who sympathized with slavery. There had remained the question as to whether a slave taken by his master to a free state became free. A negro named Dred Scott had been taken from Missouri into several free states and upon his return with his master sued for his freedom on the ground that his sojourn in free territory made him a free man. The Supreme Court finally decided that Scott, not being a citizen, could not sue in the Missouri courts. The Missouri Compromise was declared null and void, opening the way for slavery in all free territory, from which, it declared slave property could no more be shut out than a horse or a cow. The South was delighted; the Democratic party in the North was split in two, and the Republicans were more than ever determined to put an end to slavery.

II. John Brown's Raid (1859).—John Brown had been so prominent in the border troubles in Kansas that a price had been set on his head. He settled in 1859 in Harper's Ferry, Va., where he attempted to stir up a slave insurrection and to secure the liberation of the negroes. With less than twenty followers one Sunday night in October, 1859, he seized the United States armory at that place. The slaves failed to support him and several of his men were killed, including his two sons, and he was captured by Colonel Robert E. Lee, of the United States army. He was tried for murder and treason and hung in December of 1859.

III. Lincoln's Election (1860). — The national democratic convention which met in 1860 split over the slavery issue and each portion held its own convention and nominated candidates — one declared for Stephen A. Douglas and the other nominated John C. Breckinridge. A group calling themselves the Constitutional party nominated John Bell. The Republican party met at Chicago on May 16th and nominated Abraham Lincoln. Their platform repudiated the Dred Scott Decision, demanded the admission of Kansas as a free state, did not encourage interference with slavery in the states, but insisted that the territories must be kept free and called for a Homestead law and for a railroad to the Pacific. There were 303 electoral votes cast out of which Lincoln received 180, Breckinridge 72, Bell 39 and Douglas 12.

IV. Confederate States of America (1861).—South Carolina was probably the only state that would have voted for secession at the time of the election of the first anti-slavery President. But the leaders precipitated matters, and at a convention passed an ordinance of secession, declaring, "that the union now existing between South Carolina and the other states, under the name of the United States of America, is hereby dissolved." Preparations were made for an independent government and messengers sent to other states. Within six weeks Mississippi, Florida, Alabama, Georgia, Louisiana, and later Texas held conventions and passed ordinances to the same effect. Delegates met at Montgomery, Alabama, on February 8, 1861, and organized a government under the name of "The Confederate States of America," adopting a provisional constitution, electing the next day, Jefferson Davis, of Mississippi, as President and Alexander H. Stephens, of Georgia, as Vice-President. A permanent constitution was adopted March 11. Among the changes made differing from the Constitution of the United States was the declaration of "the sovereign and independent character of each state," the prohibition of protective tariffs and of the appropriation of public money for internal improvements. The Presidential term was six years and he was eligible for but one term. An election was held in which Davis and Stephens received the unanimous electoral vote and the Capitol was set up at Richmond, Virginia, February 22, 1862.

Buena Vista—a town in northern Mexico, the site of a decisive battle of the Mexican War in 1847. 5,000 Americans under General Zachary Taylor held the fortress, the rest having gone to reinforce General Scott at Vera Cruz. Santa Anna led 20,000 Mexicans against the weakened stronghold, but all his attacks were repulsed by the Americans and at length he withdrew his men. The Mexicans lost 2,000 men, the Americans only 750. This victory closed Taylor's successful northern campaign and thereafter all effort was turned toward subduing the south of Mexico.

Bulgaria.—Bulgaria, with an area of about 33,647 square miles and a population of less than 5,000,000, is one of the Balkan states which for centuries paid tribute to the Turk. Like the history of this entire region, that of Bulgaria is devoted to the oppression and killing of Christians by the Turks. Bulgarian independence grew out of sorrow. After the revolt of Bosnia in 1875, the Turks, fearing a general Christian uprising among their sympathizers, sent the Bashi Bazouks among the Bulgarians with orders to kill all whom they found. The Mohammedan fanatics threw themselves upon the villages and towns and massacred thousands of innocent men, women and children to the horror of all Europe, which is and has been well used to horrors. Russia, especially, was aroused through race sympathies, and the Czar declared war upon Turkey, defeating that power. The war issued in the treaty of San Stefano, which gave the most of Turkey to Russia. England resisted this treaty, and insisted upon the revision of the agreement, upon which the Congress of Berlin was called in June, 1878. Montenegro, Servia, and Roumania were declared independent, while Bulgaria was constituted a self-governing principality, paying an annual tribute to the Sultan. A constitution was adopted in 1879 at Tirnova, providing for a legislative assembly elected by popular vote, and Sophia was designated the capital. The prosperity of Bulgaria aroused the jealousy of Servia and war resulted, when Belgrade, the Servian capital, was saved by the Austrians. For seven years Stambouloff was the real ruler of Bulgaria, the main point of his policy being Bulgarian independence, but he was assassinated in the street. The majority of the people of Macedonia are Bulgarians, and this district is a constant source of friction between Bulgaria, Servia and Greece. In the Great War Bulgaria played a sullen and deceitful part and then threw its weight to the Kaiser's Allies, even to the Turks who for centuries had exploited and murdered its people.

Bull Moose Party.—The country replied to the attitude of President Taft towards Big Business in the election of 1910, by electing many democratic governors, and changing the republican majority in Congress of 47 to a democratic majority of 54. President Roosevelt led the progressives in his own party and a new party was organized, called the Bull Moose party which was finally slaughtered by Colonel Roosevelt himself. For a time, however, this party served to crystallize the moral sentiment of the American people, but its influence did not last long for want of leadership.

Bull Run, a small stream in Virginia, the site of two important battles of the Civil War, both disastrous to the Union.

The first occurred on July 21, 1861, when General McDowell advanced from Washington with 18,500 men to meet General Johnston commanding 18,000 Confederates. Both forces were as yet untrained, but the superior organization of the Confederates, the impassable resistance of "Stonewall" Jackson and the addition to their number of fresh re-enforcements, won the victory for the Confederates. The disgrace of this defeat awoke the northerners to the solemnity of their situation.

The second battle of Bull Run, in the last days of August, 1862, was a masterpiece of strategy on the part of the Confederate General, Lee, whose forces numbered half those of his enemy. The Federal army under General Pope was continually attacked from an unexpected direction and forced to change its plan of battle. The subordinate Federal generals did not obey orders and caused great confusion. On the first of September the northerners fell back to Washington, having lost 14,500. The Confederate loss was 9,500.

Bunker Hill, the site of the first pitched battle of the American Revolution. Here the Americans under General Prescott twice drove back the British under General Gage, but, their ammunition having given out, they were forced to surrender. The American force of 1,500 lost 450 men; the British lost 1,050 out of 2,500. This battle not only proved the mettle of the American troops, but so reduced the English force that it was equivalent to an American victory.

Bureau of American Republics.—In 1889 President Harrison, through the influence of his Secretary of State, Blaine, called the first Pan-American Congress at Washington. Here the representatives from all the republics of South and Central America came together to discuss means of increasing trade, furthering intercourse with each other and providing arbitration in case of disputes. Their one permanent work was the founding of the Bureau of American Republics, with its headquarters at Washington. The function of this organization is to collect and distribute information about the American Republics. It corresponds with the governments and answers any questions sent from them. It publishes a monthly bulletin containing the latest information as to the resources and the commercial situation of the republics.

The ambassadors from the various American republics at Washington, together with the United States Secretary of State, form the governing board of the Bureau. Its business is transacted in the beautiful Pan-American Building, donated by Andrew Carnegie.

Canada.—Canada measures 2,700 miles from the Atlantic to the Pacific, and 1,600 miles from the international boundary line to the Arctic outposts, covering an area of 3,729,665 square miles. The area under water is 125,756 square miles. In addition to the nine provinces, there are the Yukon and Northwest Territories, the boundaries of which were revised in 1912. The population in 1911 was 7,204,838.

Many large rivers flow into Hudson Bay, while the St. Lawrence system, including the Great Lakes, drains an area of a half million square miles, part of which, however, is in the United States. The Canadian Atlantic coast line is 10,000 miles, that of the Pacific, owing to many deep inlets, nearly as large, while the coast line of the Arctic ocean is unknown but very large. The whole coast line of Canada is far in excess of the circumference of the globe. In the Hudson Bay country, kept cold by Arctic currents along the coast, the winters are long and the summers short. British Columbia is tempered by the Japan Current, zero weather seldom occurring on the coast. The great interior plain stretching from Winnipeg to the coast, while cold in winter, has a hot summer, and long days with much sunshine, making it an ideal farming country. The soil is very rich and the land capable of growing wheat, owing to peculiar climatic conditions, in some places very nearly to the Arctic Circle. Vancouver and the vicinity have a climate like that of England, while Victoria at the southern extremity of Vancouver Island is called the Riviera of Canada. The forest resources of the Dominion are immense, nearly 400,000,000 acres out of the 550,000,000 acres of forest containing timber of commercial value. There is no finer timber in the world than that of British Columbia. Canada contains the world's most extensive fisheries, supporting 91,000 fishermen and their families. In addition to the great fur industry, carried on by many trappers and tradesmen, fur-farming has come to be remunerative. The mineral resources of the Dominion are great, largely discovered in recent years and aided by the Canadian Geological Survey, as able and useful a body of men as are to be found in the world. They are explorers as well as scientists and are adding much to the Canadian contribution to civilization. The country is especially rich in gold, silver, lead, coal, iron, copper, petroleum and salt, while the nickel deposits furnish most of the world supply.

Nearly half of the population are engaged in Canada's pre-eminent industry, agriculture. Politically and economically, the farmer is a power. There are many large irrigation projects completed or under process of development, the most ambitious being that of the Canadian Pacific Railway along its main line in Alberta. This tract contains 3,000,000 acres. In 1912, there were 32,449,420 acres under field crops. Under the British North American Act of 1867, a federal government was established with the name of The Dominion of Canada. Since that date new provinces have been created and added to the original four: Ontario, Quebec, Nova Scotia, and New Brunswick.

It is probable that Canada was seen by the early Norsemen but John Cabot reached the Gulf of St. Lawrence in 1497. Jacques Cartier followed, among others, in 1534, and took formal possession for the King of France. Colonization projects followed, and the country was gradually developed and exploited, principally for its wealth of furs. In 1663 Louis XIV. dissolved the Company of New France and placed Canada under direct control of the French crown, although later the Company of the West controlled the colonial trade. The English colonists came into conflict with the French in the latter part of the seventeenth century, and the French and English wars began which finally ended in the overthrow of Montcalm by Wolf at Quebec. Rupert's Land and the Northwest Territories, which had been held by the giant monopoly known as the Hudson's Bay Company since 1670, were surrendered to the British crown in 1869, two years after the formation of the Dominion of Canada. Like the Louisiana Purchase in the United States, it added a new "Empire" to the existing states, laying the physical foundations of one of the great nations of the future.

The executive authority of government is vested in the King of England, but exercised in his name by the governor general and the ministry which is responsible to the House of Commons. The Canadian Parliament consists of the Senate and the House of Commons. When England entered the Great War in 1914, Canada was called upon to aid her, and a Military Service Act was passed by the Canadian Parliament. Quebec protested that this Act was enforced with greater severity in that province than anywhere else; draft riots resulted and threats of secession from the confederation were heard. German agents were blamed for the undercurrent of disloyalty to England and the national government of Canada. Canada as a whole, however, contributed generously and loyally to the Allied cause.

Carthage.—Carthage was the greatest of all the colonies of Phœnicia. With the waning of Phœnician power, that of Carthage increased. Founded at a strategical point of Africa, with Sicily lying between her and Italy, with a fertile territory around it and a harbor large enough for any vessel, Carthage became the commercial rival of Greece and the political rival of Rome, at one time threatening its very existence. Many of the merchant kings of Tyre emigrated to Carthage upon the encroachments of the kings of the East, helping to make it the head of the Phœnician world. The mother country had grown rich and luxurious and her people were unwilling or unable to defend themselves when Sargon subjugated them. The book of Judges says of the people of Dan (Laish), "They dwelt careless, after the manner of the Sidonians, quiet and secure." This complacency has been the downfall of many a nation since. There were but two classes of people in Carthage—the rich landowners and merchants, and the poor who did the day's work, making an oligarchy. The two judges and the senate were subordinate to the nobles, or the hundred judges. The people had little to say in public affairs. In 480 Carthage made war on the Greek cities in Sicily, which was renewed from time to time. Then came the Punic wars, beginning with Rome relying on its army and Carthage supreme on the sea. In 311 B. C., Rome began to create a fleet, and in 263 B. C., won its first naval battle at Mylae, whereupon the Roman senate decided to invade Africa. Hamil Car maintained himself against Roman attacks for six years. Hannibal took command of the Carthaginian armies

at twenty-eight years of age, and became a leader unsurpassed by any other general in ancient or modern times.

In 218 B. C. Hannibal crossed the Ebro, conquered the people to the Pyrenees, and pushed into Gaul with an army of 50,000 foot, 12,000 horse, and 37 elephants, marched over the Alps, with mountaineers rolling stones down upon his soldiers, losing half his troops and all his draught animals. Reinforced by 60,000 Gauls, he marched through the swamps of Arne, losing an eye, and gained Etruria, defeating the Romans at Cannæ, where the Romans lost 80,000 men with eighty men of senatorial rank. Some of the Italian allies went over to Hannibal. But Hannibal failed to follow up this victory in marching at once to Rome. He took Capua, the second city of Italy, but he was finally defeated by Marcellus, because he could obtain no help from home, and afterward he was defeated by Scipio at the decisive battle of Zama.

Celts.—Far back in the days before histories were written, it is believed that a barbaric people known as Celts (or Kelts) wandered farther than the rest of their race from their home on the vast plateau of Central Asia and were the first of the Aryans to reach Europe. Here they were encountered as early as 2000 B. C., on the western portion of the continent, scattered, wandering tribes.

On their long journey from the plains of Asia to Western Europe some of the Celts fell by the way and settled in Bohemia, in parts of Germany, along the Moselle and Rhine. The rest continued as far as middle France, which became the center of their wanderings.

A characteristic of the Celts in all their doings was a slowness and lack of cohesive plan. This was largely owing to their low stage of civilization. Their religion was yet in a crude stage. Their priests (Druids) brought human sacrifices to their gods. We hear of a Cannulus (god of war), of a Taramicus (chief god), of Belisama (a sort of Minerva), and many others, but in different tribes these gods bore different names. With one portion of the Celts it was Bormo, with others Grannus (a kind of Apollo), that was chiefly worshipped.

Gaul, the France of today, having become their new home, fractions of the Celts continued to seek other regions. Large numbers penetrated Spain, where they mingled with the original inhabitants and formed a new stock, the Keltiberians. In the course of centuries, they gradually drove out or amalgamated with the various tribes in northern Italy. The Romans spoke of this part of their empire as Gallia Cisalpina, Gaul this side of the Alps, and continually waged war with the Celtic invaders. Brennus, chieftain of a great Celtic army, in the early days of the Roman republic, 390 B. C., seized Rome itself. About a hundred years later, we hear of the extermination of his tribe by the Romans. In 278 B. C., a huge band of Gauls ravaged Asia Minor, Macedonia and Greece, and finally, after many battles, founded Galatia. In 238 the Cisalpine Gauls formed a league against the Romans, but were crushed in 225 at Telamon. And at Mutina, in 193, the great Boji (a Celtic tribe) were wiped out. Between 58 and 51 B. C., Julius Cæsar conquered the Celts in Gaul, and the history of that branch of the race thereafter properly belongs to the history of Rome.

Meanwhile, in the centuries preceding, another great wave of Celtic adventurers had crossed over to Britain, also to Ireland. There is scant record today of these migrations; their object seems to have been plunder and conquest, or at best settlement in less crowded territory. Certain it is that by the time of Julius Cæsar England, Wales, Scotland and Ireland were inhabited almost solely by Celts. Here, too, the Romans vanquished.

Cæsar first invaded England with an army and subdued the natives, and after him Claudius and Agricola followed. Agricola carried the Roman eagle as far as Scotland. The Emperor Hadrian built the famous Roman wall from the Tyne to the Solway in 121 A. D., and Antoninus later strengthened this wall. A legend tells of the conversion of the Trinobantes, a powerful Celtic tribe, to Christianity in 180 A. D., but this is not authentic.

Gradually the power of Rome declined and her hold on Britain grew weaker. But this did not mean freedom for the Celts, for at the same time the savage raids of the Picts and Scots from the North grew more frequent.

Between 286 and 294 A. D., a British chief, Cerausius, proclaimed the independence of the island and in 410 A. D., Honorius of Rome renounced all claim to Britain. The last Roman soldiers left and Britain was now exposed to the inroads of the fierce Saxons, Angles and Jutes. Vortigern, king of the Celtic Damonii, defeated the invading hordes of Picts and others in 411 A. D. This, however, was only a respite. The raids of the Northmen continued with increasing strength until the island was given over to the Angles and the Saxons, and what Celts were not exterminated or assimilated, sought refuge in the remote corner of Wales.

It is claimed that the Irish are the best representatives of early Celtic civilization, inasmuch as their isolation caused them to mingle less with foreign races. The history of early Ireland, however, consists chiefly of legends and traditions, and these cannot be relied on for accurate information. There are legendary accounts of five distinct invasions of Ireland: that of Partholan, the Greek; that of Nemed of Scythia; that of the Firbolgs, who came under five chiefs and settled in different parts of the island; that of Tuatha De Danaan, and lastly that of the Milesians or Scots. The Irish also invaded Britain repeatedly, settling in Wales, Cornwall, Devon and in the northern districts of Scotland. The Irish were converted to Christianity during the fifth century, and their great missionary, St. Patrick, did much to plant the new religion firmly in the soil.

Centennial Exposition.—In 1876, by decree of Congress, an international industrial exposition was held at Philadelphia to celebrate the one-hundredth anniversary of America's freedom. This was the first of a series of such international expositions. Congress voted a capital of $10,000,000 to be raised by contributions of $10 each.

The five main buildings of the exposition were Memorial Hall (the art gallery), Machinery Hall, Horticultural Hall, Agricultural Hall and Main Exhibition Building. Other buildings were erected by the national government, by state governments, by foreign governments, by industries and by individuals, making a total of one hundred and ninety buildings. The exposition lasted about five months and its attendance showed thirty-three nations represented.

Central America.—Central America includes the six republics of Panama, Guatemala, Honduras, San Salvador, Nicaragua, and Costa Rica, with British Honduras. To the northwest lies Mexico, to the southeast Columbia or New Granada, and on its other sides are the Pacific Ocean and the Caribbean Sea. This strip of land, comprising Central America, connects North and South America, though the Panama Canal, completed in 1914, makes possible a passage of ships between the two bodies of water. The area of Central America is estimated at about 200,000 square miles; the population is about three and a half million. There are three distinct classes of people—the whites, mestizoes, or the offspring of whites and Indians; and the pure-blooded Indians or aboriginal natives. About one-twelfth of the population is white. The table-lands have a moderate temperature, but the low-lands suffer from excessive heat. The vegetable productions are as various as the climate and the zoology is that of all tropical America. Agriculture is the chief means of livelihood; some of the other industries are mining of gold, silver, iron, lead and mercury, the working of jasper and marble, and the collection of sulphur and salt. Guatemala is known for its large number of active volcanoes, having more for its extent of territory than any other country, except Java. The highest in Central America, Agua, is said to have an elevation of 15,000 feet. The coast lands are narrow, the rivers small and short, but there are several lakes of considerable size.

Central America contains relics and ruins of interest, showing the life of the aboriginal inhabitants who had gained some knowledge of the arts of life. The Spaniards in 1524 organized Guatemala; little by little they subdued the natives. The government, instituted by Spain, was in a measure subject to Mexico, but in 1821 the inhabitants declared their independence. In 1823 the five states united as a republic, but civil dissensions dissolved the union.

Central Asia.—The first known home of any civilization was in the valleys of the Oxus and the Jaxortes Rivers. There is now here a vast desert plateau, probably once fertile, covering large parts of Afghanistan, Turkestan, Thibet, Eastern Turkestan and Mongolia, where there is little rainfall, no outlet for the streams except in rare instances, but where the moisture on the mountain sides, melting into rivulets, enables the earth to this day to support a population. The streams and rivers lose themselves in salty swamps or sink into the sands. The Himalayas separate the frozen plains of Thibet from the sun-baked plains of India and for ages separated their inhabitants. But the mountain chains in Asia run east and west; thus China lay open towards the East. This also shows how the configuration of a country determines migrations as well as the development of tribes. Later the outlets of trade were the same routes over which once lay the paths of invasion and conquest. From Central Asia migrations proceeded eastward to the valleys of the Chukiang, Yang-tse-Kiang and the Hoang-ho; southeastward to the valleys of the Indus and the Ganges; westward toward the valleys of the Tigris and the Euphrates, and further on to the Nile. Not only were these river valleys the routes of commerce and migration, they furnished fertility of soil to the farmer and the tribesman who herded his flocks. Those people, whom we know as the Chinese, came down the Hoang-ho; the Hindus came through the Punjab and the Indus valley.

Chalons, Battle of.—In the middle of the fifth century A. D. the Huns, a barbaric tribe from Central Asia, under the mighty leadership of Attila had conquered much of Eastern Europe and were preparing to subdue Western Europe as well.

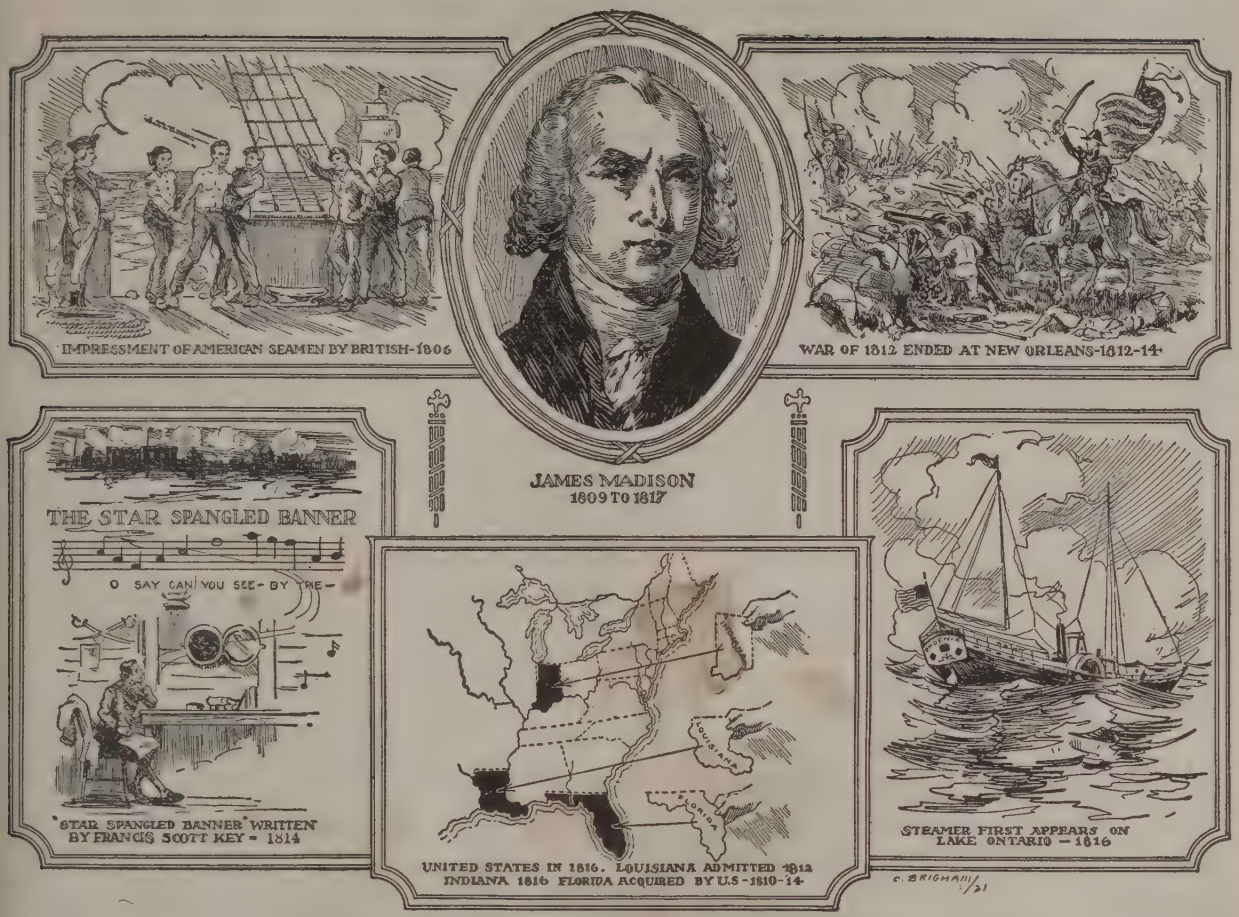
The Roman Emperor Aetius and King Theodoric of the Visigoths, the two most powerful rulers in Europe, formed an alliance against these invaders and in 451 their combined armies opposed Attila at Chalons-sur-Marne, in northern France. Although not actually defeated, Attila's army was so slaughtered in this encounter that he was never again able to terrify Europe.

Chile.—The first European to land in Chile was Magellan, the Portuguese explorer, at Chiloe, in 1500. After the conquest of Peru by Pizarro, an expedition was made to Chile under the leadership of a Spaniard, Diego de Almagro (1535). Although unsuccessful, it was followed by another, in 1542, under Pedro Valdivia, who succeeded in annexing the territory as far as the Maipu River, and in founding the capital, Santiago. Northern Chile formerly was a part of the dominions of the Incas of Peru. By 1550, the conquest of Chile was complete to latitude 37° S. The governors of Chile were subordinate to the viceroys of Peru and were appointed by the King of Spain. Chile, with other Spanish provinces, revolted from Spain, was at first defeated, but finally succeeded in establishing her independence in 1818, though the last stronghold was not taken until 1826. In the revolt Don Bernardo O'Higgins, son of one of the last viceroys of Peru, played an important role, and was the first dictator of the new republic. When peace was at last gained, Gen. Blanco Encalada became the first constitutional president. In 1865, Chile and Peru were in war with Spain; a little later Chile defeated Peru and Bolivia and advanced her borders to the north. Trouble with the United States over the wounding of two American marines in a riot at Valparaiso resulted in an apology and payment of indemnity by the government of Chile, though for a time war seemed imminent. Revolutionary outbreaks in Chile were common, for the social organization was feudal and the government, even after the establishment of the republic, remained conservative. The past few years have seen a new growth of liberalism.

Chile lies near Peru, Bolivia, and the Argentine Republic, bounded on the south and west by the Pacific Ocean, and comprising about 307,620 square miles. Its breadth ranges from 50 to 200 miles. The valley of Chile is the richest part, suitable for stock-raising. Cattle graze on the plains and rolling lands lying between the Andes and the coast range. The mountains are covered with heavy forests. In central Chile the land is fertile, but in the southern part it is poor, excessive rainfall making it unfit for agriculture. The whole country is subject to earthquakes, several towns having been almost totally destroyed in recent years. The mineral products are most important, consisting of nitrate of soda, large beds of which are found in the northern deserts and are valuable especially for fertilizing purposes; there are also excellent bituminous coal, copper, silver gold, quicksilver, lead, iron, antimony, and bismuth. Wheat, barley, maize, hemp potatoes, beans, apples, pears, peaches and oranges are raised and exported.

The constitution of the republic is modeled on that of the United States, the government consisting of a president, an advisory council, and a legislature composed of a Senate and a Chamber of Deputies. Chile was the first South American state to construct railways, and a fairly extensive telegraph system is in operation.

China.—Ancient China lay in two river valleys: the Hoang-ho and the Yang-tse-Kiang. How the people came there and from where is little known, further than that when they migrated from their home near the Caspian Sea they were already in possession of some degree of civilization, knew some astronomy, cultivated flax and grain, and wove cloth for garments. The Chinese is probably the oldest of all extant civilizations, but the one of whose origin we know the least. This may be due to isolation or distance or both, to race pri-



or difference in creed and culture. The legends handed down are purely mythical, dating the Creation, for example, two million years before the birth of Confucius. Mythical dynasties fill in long periods of time which do not concern us here. But it is pretty certain that prior to 2200 B. C. rulers were elected, and that before that date no ruler governed all of China Suy-Jin-Sho, about 2852 B. C., is said to have taught the use of fire, and Fu-Hi to have invented the process of making iron, while his successor showed the farmer how to use the plow. The Emperor Chun laid down the five immutable laws: duties of fathers to children; of a king to his subjects; of the aged to the young; of married people and friends to each other. The foundations of Chinese civilization are these laws, principally the respect for ancestors, a fundamental idea which has stereotyped Chinese life and thought and kept it unprogressive for four thousand years. The founder of the Chang dynasty was a superior man and celebrated by Confucius (Kung-Fu-Tzse), China's greatest philosopher and moral teacher. Confucius confined his teachings to the daily intercourse of men and their relations to each other. He was a sensible and normal man and untouched by the dreamy tendencies of the Hindu. "He spoke of human affairs," said one of his successors, "and he left the supernatural alone." Law and order were his subjects, not anarchy and intrigue. He expounded the writings of the ancients, enjoined conformity to their principles together with morality of life and fidelity to ethical principles. To the question of a student who asked if there were any one word which might be taken as a general rule of behavior throughout a man's life, he replied: "Is not such a word 'Reciprocity'? " "Do not unto others what you would not have them do unto you," he said. Confucius died 478 B. C., 73 years old, saying: "No wise ruler appears; no one in the whole kingdom desires my advice; it is time for me to die."

Mencius (Meng-tse), appears in 371 B. C, the first Chinese apostle of democracy. He taught: "The people are the chief element in a country; after them are the deities of the arable land and the corn; while the ruler is the least important of all." It is no wonder that he lived in retirement and died neglected, although he received official recognition in 1,300 years and was given fourth place among the scholars in the Halls of Confucius. His refutation of the Taoist, Chan Chu, who taught "Every man for himself," showed him in the "Middle Way" as taught by Aristotle, and he opposed the socialists who claimed that all, even kings, should sow and reap if they would eat. In 247 B. C., the Emperor, Tsin-Chi-Hwang-Ti, accomplished a thorough revolution, introduced many reforms, built roads and canals, erected the Great Chinese Wall after he had driven back Huing Nu, the ancestor of the Huns. He also burned all the books.

The kingdom of the Huns arose in modern Mongolia about 1200 B. C., and created the beginnings of a political unity. After the unification of the Huns under the Chan Tschau dynasty, 1122 B. C., the Chinese feudal system began. The Huns wasted northern Shansi in 910 B. C. and in 700 advanced to Shantung, and in 650 B. C. devastated Pechili. The incursions of these Mongolians from behind the Great Wall were made by the same peoples who later invaded Europe. With cabins on wheels and drawn by oxen, themselves living on horseback with dried meat and desiccated milk packed between the saddles and the backs of their steeds, the Tartars swept over the earth, north, south, and west, laying it waste. In 1203 A. D. these hordes united under Temudjin, better known as Ghengis-Khan, Chief of Chiefs, who after overwhelming his former masters, the Chinese emperors, defeated Persia, Russia and Poland, penetrating Europe as far as the waters of the Oder and Moravia. He imposed his yoke upon Russia for two centuries, dying in 1227, ruling China, Thibet, Persia, and the most of Russia, to which his grandson added Pechu and Cechin, China. It is said that Ghengis-Khan destroyed 18,500,000 human lives.

In 1368 the Chinese Ming dynasty expelled the Mongolians and ruled till after the arrival of the Portuguese in 1514, but not until after Timur (Tamerlane), had scourged the world and the Turks had taken Constantinople and driven an alien wedge into the very trunk of Europe, which

has not been dislodged to this day. In 1644 A D. China was again overthrown by the Manchu Tartars who reigned till the beginning of the present century. "So the yellow race," says Duruy, "has made a great noise in the world. Through the Huns, it brought about the fall of the Roman Empire; through the Mongols of Ghengis-Khan it raised in the thirteenth century the vastest domain in the universe; through those of Tamerlane it overthrew and crushed the population of twenty kingdoms; through the Turks it held Christendom in check for centuries; through the Chinese it has constituted a great society which for fifty centuries and with unbroken continuity has caused a large portion of the human race to enjoy the benefits of civilized life."

China today has nearly a third of all the people in the world, 438,000,000, according to the Chinese Census Reports.

Chivalry.—The institution of Chivalry arose in the eleventh century and died out in the fifteenth. It was a distinctively religious as well as military institution which developed the spirit of gallantry. The protection of the weak was one of its first duties, but especially when women became its object, being carried sometimes to great excess. Loyalty was held in high esteem, with fidelity to engagements both tacit and defined, and a breach of faith was held to be a disgrace which no valor could offset.

Education for the offices of chivalry was begun at the age of seven, when a youth was a page or valet till the age of fourteen, when he became a squire. Lords and knights trained boys in martial exercises, while the ladies of the castle taught them the duties of religion and love. At the age of twenty-one the squire became a knight, for which he prepared himself by prayer and fasting until he was inducted into his high calling through elaborate ceremonies.

Cleveland's Administration (1885-1889), (1893-1897).

Interstate Commerce Act (1887).—An important act of legislation was enacted by Congress in 1887, establishing the Interstate Commerce Commission. This act was amended by later legislation. The members are prohibited from engaging in any other business, and any person is ineligible who is in the employ of, or holds any official relations to any common carrier, subject to the provisions of the act. The Commission has power to inquire into management of common carriers and is required to enforce the provisions of the act. The general purpose is to prevent discrimination by common carriers, through rebates or otherwise and to secure reasonable and just transportation charges.

CLEVELAND'S ADMINISTRATION

I. Charleston Earthquake.—On August 31, 1886, Charleston was visited by the most violent and most destructive earthquake that had up to that time occurred within the borders of the United States. Seven-eighths of the houses of the city were rendered uninhabitable. The property damage was estimated at $8,000,000. Many persons were killed.

II. The Statue of Liberty.—In 1886 the Statue of Liberty was completed in New York harbor. It was designed by M. Bartholdi. The French people presented it as a gift to the United States in commemoration of the friendship between the two nations.

III. Department of Agriculture.—During the first Cleveland administration, an additional department of government was created by Congress and a Secretary of Agriculture was added to the President's cabinet in 1889.

IV. Columbian Exposition. — The Four Hundredth Anniversary of the discovery of America by Columbus was celebrated in the form of an international exposition in Chicago in the summer of 1893. The total cost of the exposition exceeded $26,000,000. All the civilized nations of the world participated as exhibitors.

V. Rural Mail Delivery.—The free delivery of rural mails was inaugurated on January 1, 1896.

VI. The Monroe Doctrine.—During the second Cleveland administration the controversy over the boundary line between British Guiana and Venezuela became acute. England threatened to act contrary to the long established Monroe Doctrine by landing troops and occupying Venezuelan territory. Cleveland and his Secretary of State, Richard Olney, made vigorous protest and warned England to hold strictly to the prevailing doctrine. The President was prepared to use the United States Navy to enforce the American point of view. England graciously acceded to the American demand and thus gave final authority to the unwritten but effective international code known as the Monroe Doctrine. Cleveland will always be remembered for his vigorous assertion of American principles.

Civil Service Reform.—The custom whereby the President of the United States, on coming to office, would place new people in all government positions had, by the time of Grant's accession (1869-1877), resulted in a vast amount of political corruption as well as inefficiency in the civil service. In 1871 the pressure of public opinion caused Congress to pass the first law of Civil Service Reform, authorizing the President to organize a system for regulating the appointments of minor civil service positions. The President appointed a commission which arranged competitive examinations for applicants to the civil service. This method of appointment was in practice for three years, at the end of which time the influence of the politicians in Congress prevailed in withdrawing the financial support from the Commission.

In 1881 President Garfield was assassinated by a disappointed office-seeker and this horrible calamity aroused public opinion to such an extent that Congress was forced to pass the Pendleton Bill in 1883, again providing for the Civil Service Commission and examinations. The number of offices thus filled was to be 14,000. Each President since has added to the number and in 1912 no less than 367,000 positions were under the authority of the Civil Service Commission.

Excellent work in building up this system has been contributed by George William Curtis, the head of the first Commission; by Theodore Roosevelt, head of the Commission under President Arthur, and by Gen. John C. Black, head of the Commission under Roosevelt and Taft.

Civil War, Declaration of in United States.—When Lincoln became President, March 4, 1861, he at once made clear his purpose to bring back to the Union the seven southern states which had seceded and were actively preparing for defense. "The Union must be preserved," he said, "with or without slavery." He wished to avoid war and was determined that, if it came, the South must strike the first blow. His Cabinet was divided; some wished a compromise with the South, others would allow the Union to be broken A majority, however, supported the President in sending supplies to the Federal garrison at Fort Sumter. (See Sumter, Firing on.)

When Fort Sumter was attacked, the flag of the Union defeated, the South had willfully broken the law of the land. Lincoln sent a proclamation to Congress, calling for 75,000 volunteers to put down the unlawful rebellion of the southern states. He commanded the members of the Confederacy to "disperse and retire peaceably to their respective abodes within 20 days." Congress approved the proclamation and soon 90,000 volunteers were in readiness. Jefferson Davis, President of the Confederacy, thereupon called for 32,000 volunteers and authorized attacks on northern merchant vessels. Lincoln declared a blockade against all foreign ships entering southern ports and enforced this blockade with United States Warships.

In the North party distinctions were forgotten as Democrats and Republicans united to defend the Union.

Civil War in the United States.—(For events leading up to this war see United States—History.)

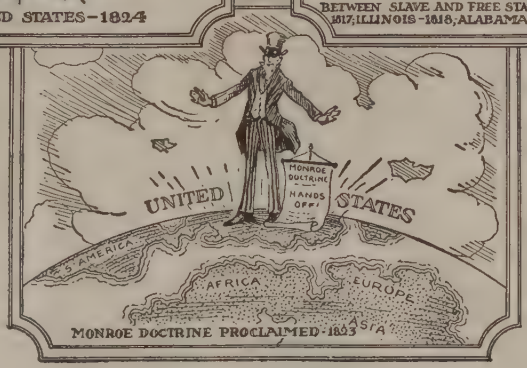
The Civil War between the Confederacy of southern states which had seceded from the Union and the northern states which upheld the Union, began in 1861, when the Confederates fired on the Union force at Fort Sumter. The southern states which made up the Confederacy were: South Carolina, Mississippi, Florida, Alabama, Georgia, Louisiana, Texas, Arkansas, North Carolina, Virginia and Tennessee.

The northern (Federal) army was nearly double that of the Confederates and the northerners had the additional advantage of the national fleet which blockaded the harbors of the South. The South had superior military organization under the able General Lee, while the command of the northern troops was continually shifted.

The fighting was mainly on southern territory. Three attempts of the Confederates to cross the border were immediately repulsed. The two chief aims of the Federals were the capture of the Confederate capital, Richmond, and the control of the Mississippi. The latter was attained after the long siege of Vicksburg in 1863; but for four years Lee kept the Union army from Richmond. He was forced to surrender after Grant's "hammering" campaign of nearly a year. Sherman's triumphant march through southern territory (1864-5) did much to weaken the Confederacy and the two naval victories of Farragut aided the success of the North.

The wise and strong leadership of President Lincoln kept up a morale in the North, without which victory would have been impossible.

Columbian Exposition.—In 1893 the World Columbian Exposition was held in Chicago in honor of the four-hundredth anniversary of Columbus' discovery of America. The exposition should rightly



have been on the preceding year, but preparations were not then complete.

Congress voted a sum of $1,500,000 for the enterprise, Chicago gave a fund of $10,000,000 and the total expenditure was estimated at $26,000,000. The site of the exposition was the lake front at Chicago, where many buildings were erected for the various exhibits.

Conservation Policies. — President Roosevelt in his first message to Congress opened "the most vital internal question of the United States," and prevailed upon Congress to authorize him to withdraw at his discretion timber and mineral lands, including more than 100,000 acres of Alaska coal lands. The timber lands amounted to 150,000,000 acres. In May, 1908, he called the famous conference of governors at the White House to outline a policy and in June, 1902, the Reclamation Act was passed, which provided room and homes for tens of thousands of people.

Coolidge's Administration (1923-1929).— By rigid economy in governmental expenses substantial reductions in the income tax rate were made possible under the presidency of Calvin Coolidge. The Dawes reparation plan regarding the manner of payment and collection from Germany of reparations was signed in London on August 30, 1924, by representatives of the Allied powers and Germany.

On May 26, 1924, the president signed an important measure which limited immigration after July 1, 1927. This Act divided the aggregate quota in accordance with the national origin of the entire population according to the latest census.

In the opening of the sixth Pan American Conference at Havana on January 16, 1928, President Coolidge pleaded for friendship and understanding. Richard Evelyn Byrd made his first flight over the north pole in 1926, and on June 29-30, 1927, flew from New York to France. The outstanding event of 1927 was the transatlantic flight of Charles A. Lindbergh from New York to Paris which greatly stimulated interest in Aeronautics.

In 1928 talking moving pictures witnessed a great revolution of the industry.

Crimean War.—In 1853 Napoleon III. of France demanded that Turkey turn over to Roman Catholic monks all the "holy places" in Palestine occupied by Greek Catholics. Russia, the strong Greek Catholic nation, opposed such a measure and declared a protectorate over all Greek Catholics in Turkish territory. Turkey forbade Russia's protectorate, whereupon Russia declared war on Turkey. France and England, failing in their attempts to arbitrate, joined the war on the side of Turkey.

The fighting was chiefly on land, as the Russian fleet avoided encounter with the combined French and English fleets. The Turks defended their own country successfully, while France and England centered their attack on Crimea, a province of Russia on the Black Sea. Here, after the long siege of Sebastopol, Russia surrendered. By the peace treaty in 1856, Bessarabia was ceded to Turkey by Russia, the Danube was opened for foreign navigation, the Black Sea became neutral territory for international commerce and the integrity of the Turkish Empire was established.

Crusades.—The Roman people and their neighbors were still, after the fall of the Empire, killing each other in the wars of the barons, largely because they had nothing else to think about. But at Constantinople (so called by Constantine of the Byzantine Empire), the people were devloping learning and the arts to some degree, maintaining a high standard of comfort, and also some stability of government. As early as 637, A. D., Jerusalem had fallen into the hands of the Saracens,

who permitted the Christians to continue their pilgrimages to the Holy City for political reasons. But in the eleventh century occurred another one of the great Chinese Tartar invasions, this time of the Seljukian Turks, a wild and ferocious race with few human traits or instincts. They overran the whole of the Saracen Empire before they entered Europe, taking Palestine and exposing the Christians to the greatest hardships and indignities, even cruelty and death. The news of such conditions leaked out to the Western world, and Alexius I. (1081-1118), of the Eastern Empire, wishing to regain the provinces that had been taken by the Turk, appealed to Pope Urban II. for aid to help win back the Holy Land. The Pope saw his opportunity in something that could be construed as an act of piety to extend the limits of the church and also of the Papal control and prestige. There was also the possible recovery of Eastern supremacy.

At this juncture Peter of Amiens, a priest called the hermit, returned from the East where he had seen and even experienced much of the hardship endured by the Christians of Jerusalem. It suited the Pope to welcome him and make of him the chief means of the propaganda that was to awaken Christendom to the Papal purposes of militant imperialism. Peter travelled throughout all Western Europe preaching eloquently of the injustice he had suffered in Jerusalem.

Councils were held at Placentia and Clermont, Peter preaching the Holy War, which, considering the state of Europe and the morals of mankind, set a very dangerous precedent. But Europe was aroused. Whatever may have been the motives of the Pope, his words after Peter had spoken at Clermont were those of a statesman: "Go now and take the sword of the Maccabees and protect the people of God..... The barbarous Turks have planted their colours on the very shores of the Hellespont, *hence they threaten war to all the states of Christendom. Unless you oppose a mighty barrier to their triumphant course, how can Europe be saved from invasion?*"

At the conclusion of this address the whole assembly arose and shouted: "God wills it," and then proceeded to enroll for the Crusade, so called from the fact that all agreed to wear a red cross on the right shoulder. They were soon joined by thousands from every quarter of Europe, and the First Crusade had begun. Early in the spring of 1096, A. D., 700,000 of them, divided into two armies, started for the Holy Land. The first army marched under Peter the Hermit. He had no authority and they had no discipline. It was one of those ghastly tragedies born of ignorance or foolish dreaming which have cursed the race from the beginning, though perhaps never more conspicuously than during the Crusades. Peter's army was destroyed. Many were killed on the way through Hungary and Bulgaria on account of the outrages they had committed on the inhabitants, for the Crusade had become a movement, and movements always attract those who have their own axes to grind. The second army was under experienced commanders like Godfrey and Baldwin, and it reached Constantinople.

The cause of the Crusaders became a prey first to the crimes of those individuals who had crept into the army for purposes of personal gain, then to the jealousies and fears of the Byzantines against those of their own faith; then to the jealousies and quarrels of the Roman Crusaders amongst themselves. Indeed it was the old story—the Crusades were destroyed as the Greek civilization was destroyed—they committed suicide—through their crimes and blunders. The Turks were better organized, not better equipped; they were ruled by one mind. The European commanders were divided among themselves. Through these conditions the Cross lost what had been gained in the conquests of the first Crusades and the crescent won through unity of aim and interest and command. The Christians had to call for help, and again a Crusade was preached. Louis VII. of France and Conrad of Germany marched upon the Turks, but both met defeat, after which a violent disease broke out in the Christian camp, terminating the second Crusade without one particle of advantage to the Christian cause. In 1174, the illustrious Saladin was sovereign ruler of Arabia, Syria, Egypt, and Persia. He re-conquered Palestine and laid siege to Jerusalem, taking it after defeating the Christian army on the field of Tiberias, A. D. 1177. Jerusalem remained in the hands of the Turk from that day till General Allenby took it again during the Great War.

Several other Crusades followed with more disastrous results, each one illustrating what nobody seemed to have the intelligence to realize, that the whole tragic movement was and had been a series of object lessons on the insanity of insubordination and dissension in any great task or any great cause.

The results of the Crusades were both good and bad. The Pope failed to unite to Rome the Greek Church whose Heads had betrayed the Christian armies to the Turk. The movement undermined Feudalism and laid foundations for the erection of larger and stronger states in Europe. The Crusaders being brought into close contact with Greece and the Arabs, found to their amazement that these peoples were far more advanced in the arts, amenities and comforts of life than were the people of Western Europe. This led to the revival of learning. Books were brought back. Scholars returned with the Crusaders. Universities were founded, Padua and Paris in 1180; the universities of Naples in 1230; Vienna in 1238; Salamanca in 1240; Cambridge in 1280; Lisbon in 1290.

The Crusades opened up the communications between the East and the West; and an enormous business came to be transacted along these routes. This impulse laid the foundations of the greatness that was to accrue to France, England, Portugal and Spain, the nations first to take advantage of the new commerce. But probably the most important and far-reaching effect of this world movement was that, although defeated, the Crusaders were victors, in that they finally stopped for a period the triumphant advance of the Turk, till Western Europe was awakened and vivified by the new learning and enriched by the new commerce, to be able to stop at last at the Danube the advance of Islam and prevent Europe from becoming an Asiatic satrapy.

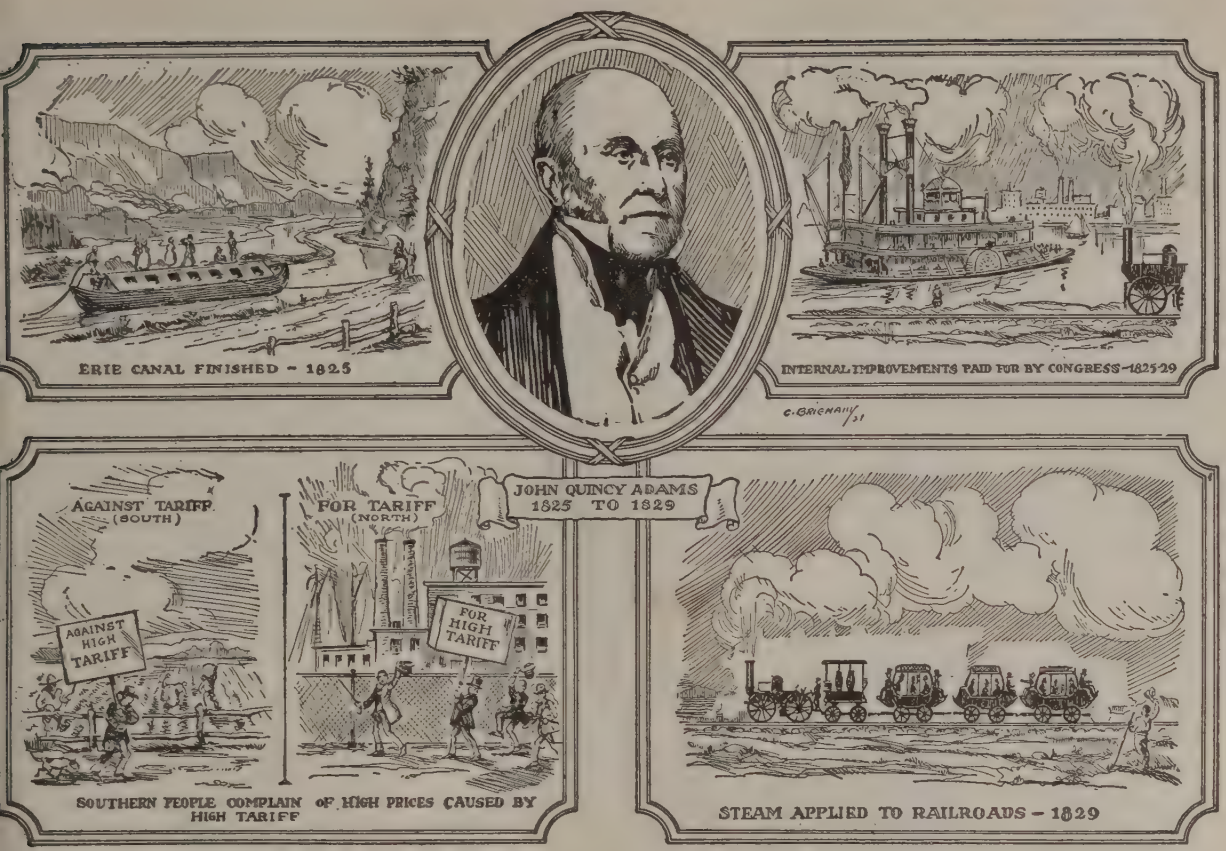
Cuba.—Cuba, called the Queen of the Antilles, was discovered by Columbus in 1492, settled by the Spaniards in 1511, contended for by French, Dutch, English and West Indian filibusters, and finally restored to Spain by the treaty of Paris, (1763). In 1848 the United States offered Spain $100,000,000 for the island, and meanwhile insurrections were occurring in Cuba against harsh Spanish rule. The United States battleship "Maine" was blown up in Havana harbor, 1898, while on a friendly visit, and as a result the Congress of the United States adopted resolutions declaring Cuba independent. War with Spain followed, during which Cuba was involved in the fights of El Caney, San Juan, the battle of Santiago, and the struggle before Las Guasimas. Under the treaty of peace the United States formally assumed the government until the Cubans framed a constitution. In 1902 the republic of Cuba came into existence and American troops were withdrawn. The Cubans later made a treaty with the United States by which the products of each are given a preference in the markets of the other.

Cuba is the largest and most westerly of the West Indies, situated at the entrance of the Gulf of Mexico, extending 775 miles from Cape Maysi on the east to Cape Antonio on the west, with a breadth of from 30 to 160 miles, and an area of 45,872 square miles. It is a beautiful island, covered with forests, and remarkable for its mineral waters and its limestone caverns containing stalactites. Its soil is marvelously rich, and agriculture flourishes, the sugar and tobacco industries being highly important. Among other products are copper, asphalt, iron, cocoanuts, palms used for hats and baskets, bananas, guavas, coffee, cacao, rice, maize, cotton and oranges. The population consists of Spanish, Cubans, Chinese, and other mixed nationalities. About two-thirds of these are white.

Custer's Troops Massacred.—In the latter half of the nineteenth century the discovery of gold attracted many settlers to the western part of the United States and one of the most sought after regions was on the border line of Dakota and Wyoming. This territory had long been occupied by the Sioux Indians who were reluctant to give way to the white man. The President ordered them to move westward into Montana, but they remained firm under their leader, "Sitting Bull", and fought off any invaders. An army was sent to drive back this tribe, but did not reckon with their strength. After two other bands of soldiers had been defeated, General George Custer in 1876 attacked Sitting Bull in the valley of Little Big Horn. Custer's troops were greatly outnumbered by the Indians, completely surrounded and cut off from any chance of escape. A horrible massacre ensued in which Custer and every one of his men were killed.

After the news of this disaster a larger army was sent, which succeeded in driving back the Sioux but could never capture Sitting Bull.

Denmark.—Denmark is the smallest of the three Scandinavian kingdoms. Its area is but 15,582 square miles, being connected with the European mainland by a peninsula, only forty miles wide. A part of this area is composed of sand dunes, lagoons and shallow bays, while the coast is indented by deep fjords or inlets. The surface does not reach an altitude of more than 500 feet. Denmark is an agricultural country, nearly 39 per cent of its population of two and three-quarter millions being farmers. The land early became the home of the Angles, Saxons and Jutes, whose brethren settled in



England. From these came the Vikings, who sailed as far as America and conquered large regions in Europe. A united kingdom sprang up about the ninth century. The history of Denmark is mostly like that of other countries, the history of war, mostly fruitless, and irrational and withal cruel. Napoleon brought the country to the verge of ruin, and in 1807, the British fleet reduced Copenhagen, after destroying the Danish fleet. In 1830 the Schleswig-Holstein affair developed animosity between the Danes and Germans, the German population rising against Denmark, until Prussia abandoned the cause of the Duchies and restored the former status. The question of the succession arose again in 1863, when the Germans overran Denmark. Schleswig, Laurenburg and Holstein were taken by Prussia and Austria. In the war between Austria and Prussia in 1866 these Duchies went to Prussia, During the Great War, Denmark, like the other Scandinavian countries, did no fighting.

gypt.—"Egypt is the gift of the Nile," said Herodotus. This is not only true in the sense that the water has fertilized the borders of the river that runs here through the great desert, but the very life of the people, their trade, religion, industry and daily occupations were determined by the Nile. The fertility of Egypt is due to rainfall, in Abyssinia, and this great natural irrigation system became the mother of artificial irrigation systems, wherein the increase of population necessitated an arrangement since known as conservation. Above the delta, Egypt proper is but a few miles wide, and it is annually enriched by the overflow which reaches over twenty feet in depth. From ancient times these waters have been diked, reservoired, canaled, water-wheeled and otherwise handled and controlled, till the land has been refreshed by waters and soil from the Abyssinian uplands and the lakes of Equatorial Africa. Some of the most prolific causes of local disputes in ancient days arose out of questions of agricultural boundaries and the water rights of the ditches and canals made for drainage and irrigation.

Lower Egypt from the cataract to the sea is 700 miles long and varies in width from one to twelve miles. With little labour a man can raise each year three crops of grain, flax, vegetables and grasses, while grape vines flourish on the hillsides. Metals and building stones come from the Arabian mountains to the east, which, with the desert to the west, protect the people from invasion. The Nile is also the main artery of commerce and makes possible the situation of Egypt, a nation lying between two seas and three continents. Geographically, therefore, Egypt has every advantage. Manetho, who lived about 300 B. C., wrote a chronology from which we have learned a great deal about ancient Egypt.

The ancients considered Egypt as a part of Asia, not considering, as we do today, that the Isthmus of Suez cut it off from that continent. Up to the time of Menes, 5000 B. C., the country was inhabited by Cushites, a Hamitic people, who came by way of the Isthmus, as came later the Egyptians, probably from the plateaus of Central Asia, where their ancestors surrounded the Aryans. The small Cushite states existed for centuries before they were subdued by Menes, whose dynasty lasted for eight centuries. From Menes to the Persian conquest in 527 B. C., twenty-six dynasties are recorded. The ancient Empire at Memphis lasted till about 2800 B. C., the Upper valley having been conquered and made into one kingdom. Memphis degenerated into anarchy and decay when the rival princes of Thebes seized the kingdom, ruling in ten dynasties for 1,708 years, and conquering Ethiopia and the negro tribes of the Upper Nile. About 2000 B. C., a horde of Asiatic invaders, called the Hyksos, or Shepherd Kings, plundered the country as far as Fayum, slaughtering the inhabitants without mercy, burning their cities and destroying their records and improvements. It is believed that King Apepi, or Nub of the Hyksos, was the Pharaoh who made Joseph prime minister. The New Empire began with Ahmes I., the first king of the eighteenth dynasty, which expelled the Hyksos and rebuilt Egypt. Under him and his successors a desire for conquest arose with a military caste which first introduced into Egypt the use of the horse in war. The character of the people changed for the worse, but they became masters of the land, from Ethiopia to the Euphrates.

Under Thothmes I. and III., the palaces of Karnak and Luxor were built and Egypt ruled as far as Nineveh. Rameses II., or Rameses the Great, is said to be the most brilliant figure in Egyptian history, and among Egypt's most famous builders. He was the son of Seti I. Rameses defeated

the Hittites in battle and made a treaty. It is supposed that they taught the Greeks the rudiments of their art. Seti had built the Temple of Ammon at Thebes, "the most splendid single chamber ever built by an architect." Some believe that it was under the reign of Rameses that Egypt fell to the Assyrians from whom the Greeks helped to free it again. This started a Greek settlement in Egypt where the Greeks came to learn the wisdom of the Egyptians.

In 525 B.C., Egypt became a part of the Persian Empire, having been conquered by Cambyses, the successor of Cyrus.

Eighteenth Amendment (1919).—On January 16, 1920, Nebraska was the 35th state to ratify the Eighteenth Amendment to the Constitution of the United States, prohibiting the sale and manufacture of intoxicating liquors. As a war measure for the conservation of grain, the Food Production Bill had been passed on November 21, 1918, prohibiting the sale of intoxicating liquors after July 1, 1919, but the law was feebly enforced and the liquor interests went to the Supreme Court to be defeated unanimously on a decision rendered December 15, 1919.

Ecuador.—At the time of the conquest of Peru by the Spaniards Ecuador formed part of the great empire of the Incas. As the presidency of Quito it was long included in the vice-royalty of Peru. From 1710 it became part of the presidency of New Granda (or Santa Fé de Bogotá). In the revolutionary war against Spain, Ecuador, along with the neighboring territories, secured its independence (1822), and was ultimately erected into a separate republic in 1831.

A series of civil wars ensued, lasting almost without intermission for more than twenty years. A free school system has been established and three universities are maintained. Commerce flourishes and the government is progressive. Ecuador has enjoyed great prosperity in recent years. In August, 1868, a very destructive earthquake occurred. In 1869, Garcia Moreno, the head of the clerical party, overthrew the government. He was assassinated in 1875 and Dr. Antonio Borrero, the candidate of the non-official party, was elected president. A constitution was adopted and a president elected, and until 1884 the republic enjoyed a reasonably peaceable government. In 1884 another constitution was formed, which, with modifications in 1887 and 1897, has since been in force.

Emancipation Proclamation. — Lincoln abhorred slavery—yet his aim in the Civil War was not the freeing of the slaves but the preservation of the Union. At first he felt that to proclaim them free would be an unwise war measure, as it might antagonize the few slave states, known as "Border States," which had not seceded. By the second year of the war, however, he perceived that the freeing of the slaves would help the northern cause. In 1862 he recommended a resolution, which Congress passed, offering pecuniary aid and cooperation to any state which would free its slaves. The same year Congress freed the slaves in the District of Columbia and in all territories of the United States.

After the battle of Antietam, when the North had the upper hand, in the Fall of 1862, Lincoln issued a warning that if the Confederate States did not cease fighting and return to the Union by January, 1863, their slaves would be freed. As the Confederates paid no heed, Lincoln issued the Emancipation Proclamation on the appointed date.

According to this document the slaves in all rebellious states became free, with the exception of a few regions which had opposed secession. In the "Border States" slavery was allowed to continue. The army and navy would protect the freedmen wherever their authority extended. The negroes were advised "to labor faithfully for reasonable wages," but such as desired would be accepted for military service.

This move greatly weakened the South by depriving the wealthy class of $2,000,000,000 in property. It strengthened the North by adding to their army within a year 100,000 freed negroes, and by winning for them the moral support of the European powers who were opposed to slavery.

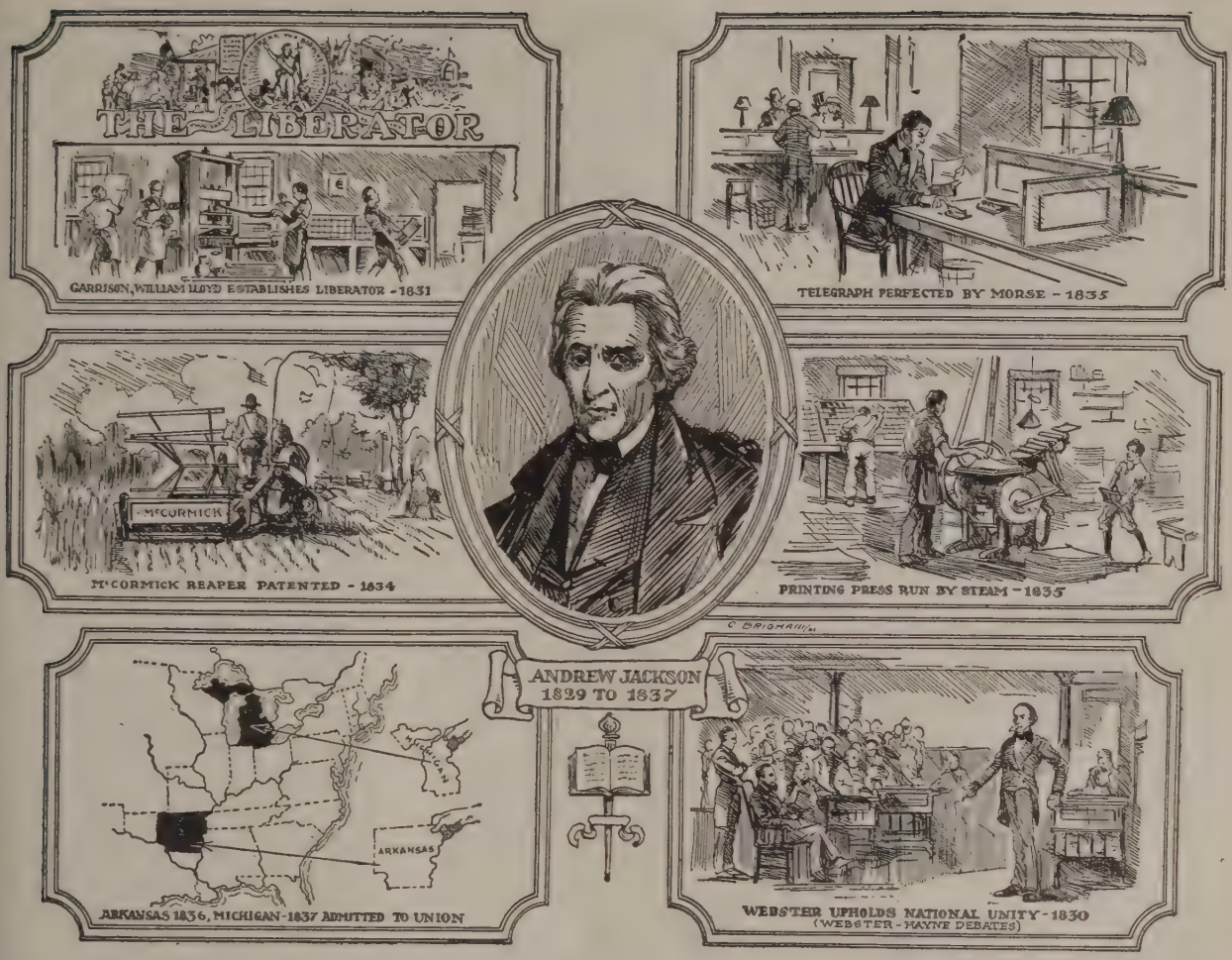
England.—The first people of whom we have record on the British Islands were a few families of savages of the lowest types of mankind. These dwelt on the banks of the southern and eastern rivers, and all they had with which to defend themselves against the cave-lion, cave-bear, hyena, elephant and many other large and dangerous animals, was the use of pieces of flint for tools and weapons alike. These savages died out or fled, probably before the ice age ended. The next race whose remains persist was a people of short stature, narrow heads and high cheek bones, with long hair knotted above their painted faces, who used axes, knives and darts made of bone, stone or wood. They lived on herbs of the forest, shell fish from the shore, or the game they could kill. These were the Iverians. The word Erin comes from Iverio.

About the year 500 B. C. an Aryan people, the Celts, after conquering the most of Spain and France (Iberia and Liguria), invaded and conquered England (Albion). They wore gold and silver ornaments and were armed with implements of bronze. They raised horses and cattle and mastiffs and tilled the soil. But the history of England begins with the invasion of that Island by Cæsar in 55 and 56 B. C. Doubtless the Phœnicians had been trading there for centuries, but they destroyed their records and the Celts had none. At least they had no books, but Cæsar tells us that they used the Greek alphabet for writing brief messages and the like. The Romans opened the country and in a hundred years had conquered it as far north as the Firth of Forth. They held the country for over 400 years.

At the mouth of the Elbe and Rhine, largely in and about Schleswig, lived three races of sea-wolves who called themselves Angles, Jutes and Saxons. They were Teutons of the Dutch rather than the German stock. After the withdrawal of the Roman garrisons, numbering 50,000 men, to oppose the invasions of the Germans in Rome, Vortigern, a British king of Kent, was foolish enough to invite these barbarians, who were good fighters and sailors, to come to England and help him fight the Picts and Scots, promising money and lands. He settled them on the Island of Thanet at the mouth of the Thames, hoping to keep them properly penned up, but under Horsa and Hengist they plundered and massacred their way to London, which they took, and became masters of the country. Thus came the Anglo-Saxons to Angle-land which might as well have been called Saxonland or Jutland as England. The Jutes founded their first kingdom in Kent, the Saxons settling further south under their king Cedric in 495 B. C., who formed the kingdom of Wessex or West Saxons, and Guest tells us that either directly or indirectly he became the ancestor of all the British kings and queens down to this day. It is likely that at this time lived King Arthur, if he ever lived at all, but it is not known whether his kingdom was near the northern boundary or in Cornwall and South Wales. But he was always fighting against the heathen Angles and Saxons and Jutes, only to be conquered himself, that is, the wars between the British and English resulted in Anglo-Saxon supremacy.

Christianity made some progress among the Britons but it was late in subduing the conquering race. In the year 597 A. D. Augustine and the Roman missionaries landed on the Island of Thanet, where Ethelbert, King of Kent, ordered them to stay till he knew what to do with them. He feared that they might get the better of him with their magic arts. But they came to an interview praying for the eternal salvation of those to whom they should come, and were offered hospitality in Canterbury where they preached to all who might listen. Soon Edwin, King of Northumberland, embraced Christianity. He was the strongest of all the English kings and his capital, Edinburgh, was named after him. In his day it was called Edwin's Burgh. After some backsliding, missionaries from Ireland and Scotland came to preach in England. The last of the kingdoms to be converted was Sussex, the people of which the papists taught to fish.

Charlemagne had a friend in England named Alcuin of York. He went to live in France to teach the people who were far behind the people of England in learning, for Charlemagne had to send to York for books for his school. It was in the Court of Charlemagne that Egbert, the first king of all England was trained. After Egbert came the great Danish invasions, followed by many years of pillage and fighting. Indeed there was scarcely a nation in those days free from the terrors of such war for very long at a time. Then we hear of Ethelbert, Ethelbart, Ethelwulf and Ethelred before we come to "England's Darling," or Alfred, who seems to have been one of the noblest characters who ever ruled a people. Under him there was the same series of wars with the pagans, but Alfred conceived the idea that to fight the sea-wolves he must have a navy, and he built the first British fighting fleet which he manned with the bravest sailors in the realm. He defeated the Danish fleet at Swan-wic (Swanage). But the Danes pushed on in great numbers, and Alfred fought against heavy odds till he with a few retainers was driven into a swamp where they nearly starved. In the spring after the dreariest of winters Alfred got his men together and attacked the Danes at Chippenham, defeating them whereupon Guthrum, the Danish leader became a Christian, Alfred became his god-father. He treated the vanquished with clemency and set himself to the task of building up the devastated country. He collected and studied all the old laws of the nation, keeping those he thought good and adding others based on the laws of Moses. These laws he laid before the Witan, or council of wise men. Witan



meaning wit or wise. He established justice in the administration of these laws and in many cases he was judge himself. He sent gifts to churches in Rome and Jerusalem and even as far as India, being the first Englishman to open communication with that country. In those days nearly all the working classes were slaves —ploughmen, shepherds, carpenters, cooks, and dairy-maids. These were bought and sold for from five to ten shillings. A slave market in Bristol was maintained for hundreds of years. But little by little this condition was mitigated.

Several kings followed before Ethelred, the Unready, forgot his defences and the Danes began to come again. They defeated the British at the battle of Maldon, after which England endured another period of misery. London was then called Augusta, so named by the Romans. King Alfred had rescued it from the Danes and built a fort on the present site of the Tower of London. The Londoners were rich and powerful and free, and they succeeded in beating back the corsairs. But about this time the English massacred many Danes, whereupon their friends on the continent made fearful reprisals which resulted in the Danish occupation of the island. Later Canute was crowned as king. The Londoners elected as their king Edmund Ironside, who fought many battles with Canute but lost in the end. After many cruelties Canute reformed, became a Christian, and favoured the English in many ways.

After a visit to the Pope at Rome he went to Scotland and made the king do homage to him. This was the king who was uncle of Duncan. With him was Macbeth who afterward murdered Duncan, and of whom Shakespeare writes. Canute died when he was but forty years old, and evil sons reigned after him. The monarchy was under the Danes, Canute and his sons, Harold and Hardicanute until 1042. The Saxon dynasty was restored in the person of Edward the Confessor, who reigned twenty-five years. His wife was the grand-daughter of Canute. He was one of the last Anglo-Saxon Kings. William, Duke of Normandy, who conquered England, was of the blood of Rollo or Rolf the Norseman and his men who, a hundred and fifty years before, had invaded France and conquered it, but were conquered in turn by the civilization of the Gauls, Romans and Teutons, whom they found there. These races all became amalgamated and even their language became French. Not more than 10,000 Normans entered England, and these did not mix for more than a generation. During William's reign of twenty-one years (1066-1087), the feudal system was established. The king became supreme landlord, making every man potentially a soldier, and his throne became the strongest in defence in all Europe. Vast changes were made to bring England up to the standards of Europe, and the Domesday Book was compiled containing the registration and survey of all the estates of England and their owners and retainers. The invaders became builders instead of destroyers. They built some of the most beautiful churches and schools in Europe, and in time themselves became Englishmen. Soon afterward Anselm became the Archbishop of Canterbury, through whose efforts Henry I. granted the Charter fo Liberties which became the groundwork of the Magna Charta under King John. During this reign Flemish weavers began the manufacture of woolen cloth at Worsted, making the name of the article, worsted. Four Norman kings had reigned eighty-eight years when Henry came to the throne and established a centralized despotism.

Henry was the first of the Angevin or Plantagenet line which reigned for 245 years, till 1399. The immediate successor of Henry II. was Richard I., the Lion Hearted, born at Oxford but educated abroad to become the Duke of Aquitaine. He joined the Crusaders and his brother John was made regent. After a brilliant career in the East Richard was imprisoned by one of the Christian Allies, Emperor Henry VI., from whom he was ransomed by a large sum. He perished in battle 1199, aged forty-two.

The reign of John so perfidious that he was deserted by all but seven of his followers, who were foreigners. At Runnymeade, a meadow between Windsor and Staines, the great charter of English liberties was signed. (See Magna Charta.) The Mad Parliament was held at Westminster in 1258, but in 1295 a large sum of money being needed to defray the expenses of the war with France, Scotland and Wales, the first regular Parliament was called. The exclusive right of the Parliament to impose taxes was established. Later in 1322 it was decided that the consent of Parliament was needed for the validity of any enactment. In 1349 the Black Death carried off nearly a half of the population, and similar destruction followed in 1361 and again in 1369. England struggled through a long period of misery under many feeble and wicked kings, the Lancastrian line beginning in 1399. The Privy Council gradually usurped the powers of Parliament. "The War of the Roses" resulted in the accession of the Yorkist kings of the White Rose. The infamous Richard III. became king at thirty-three years of age in 1483, and reigned two years until he was vanquished in battle by Henry of Richmond, the first of the Tudor Kings.

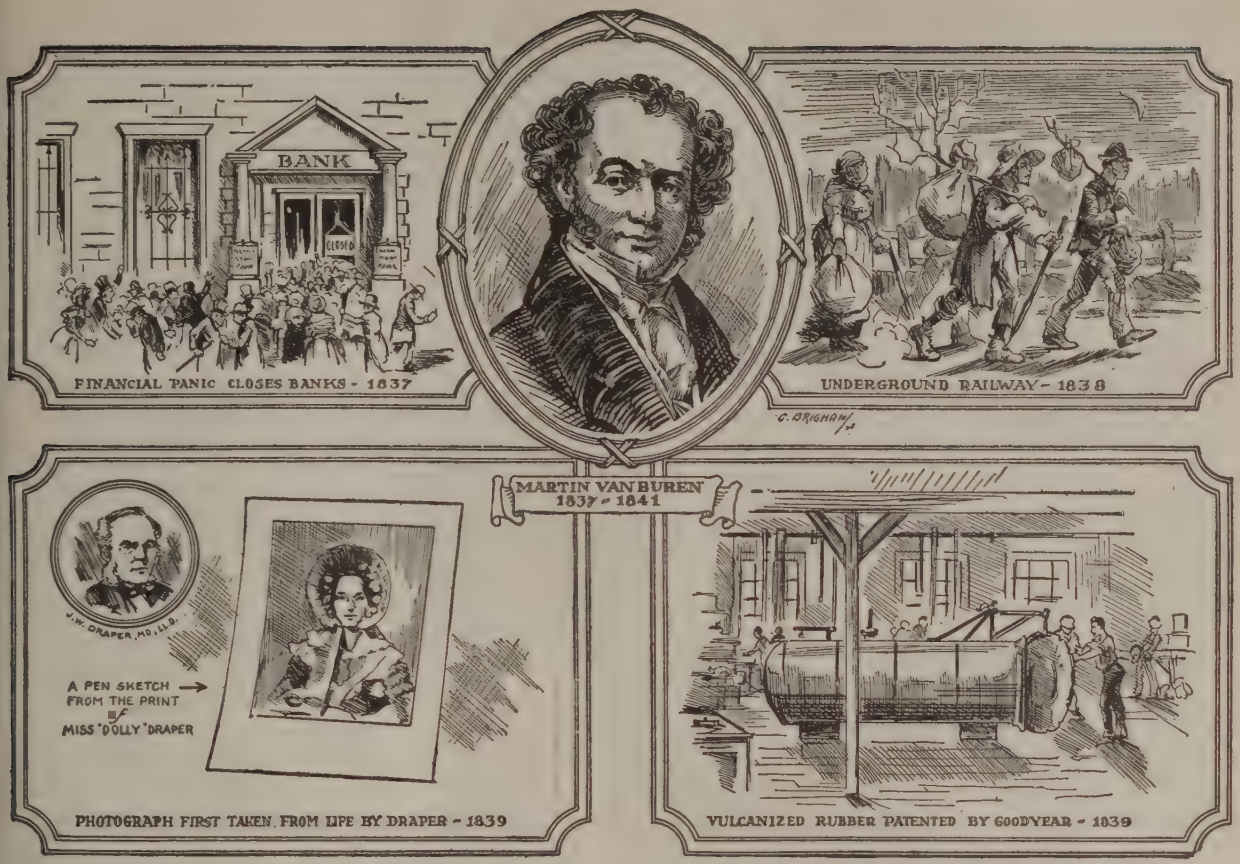
The Tudor kings came at the close of the medieval period, finding England prostrate and near to inward dissolution through the civil wars. They left to the Stuarts a kingdom strengthened and developed, united with Scotland, and free from Rome. They laid the foundations of the British Empire of today. The great achievement of this period was the religious and political revolution which brought about the separation from the church of Rome. For a long time before Henry VIII., the people had been dissatisfied. Wycliff had voiced the English feeling in his attack upon the organization and discipline of the church, although the nation was not ready to follow him in his views of the doctrines of Rome. The Papacy became the ally of France during the hundred years' war. The clergy had become very wealthy with ill gotten gains and equally corrupt and had ceased to perform properly the duties of their office. The English clergy stood apart from the nation, owing allegiance to a foreign power, till the antagonism reached the limit of endurance. The whole question arose out of the issue of Henry's divorce, ironically enough, since this king so soon found an easier method of getting rid of his wives. He made no important changes in church doctrines, keeping a "popery without a pope," but he gave the English Bible to his subjects, although he was to be its interpreter. Changes of doctrine were made under his son. A reaction occurred under his daughter, Mary but, the sect of the Puritans grew up, and Elizabeth had to manage between these two extremes. The Catholics claimed Mary Stuart for the rightful Queen. The Spaniards interfered and were about to settle the matter with an "invincible armada," but the defeat of this fleet settled the matter. The Puritans grew in power and appeared in increasing numbers in the House of Commons, while the government made many efforts to diminish their influence. James stood for the divine right of kings, and an established church as the support of the monarchy. He taxed the country without the consent of Parliament and pursued a distasteful foreign policy. He imprisoned some of the most distinguished members of the bar. attacked the House of Lords, and was all in all an unkingly man. The House of Commons was the only estate in England which had the power or inclination to offer effectual resistance to the crown. This body made its protestations under James, and more effectually under Charles I., who was false to the core and incapable of keeping faith. The Commons found it impossible to control such a king by constitutional means. As he persisted in his illegal and arbitrary course, the conflict developed, and the Commons determined to regain the liberties of the nation through the elimination of so irresponsible a despot. Charles was beheaded and Cromwell took the helm. Cromwell was a despot but used a kind of despotism with which the people were unfamiliar. His brilliant foreign policy made England stronger than it had ever been. His energy and ability dazzled even his enemies. After his son and successor had made a feeble attempt to carry on the work of the great Cromwell, the mass of the nation hurried to receive the returning Stuarts. It is probable that never in English history has there been such an anti-climax as the reign of Charles II., after Cromwell. The Royal Palace became little better than a public brothel. Men openly scoffed at anything that smacked of morality. The literature of the time was mostly base and sensual, and what Cromwell had built up abroad for the dignity and security of the nation fell away. But a reaction came, and the Whig party was formed in 1679. Such was the despotic rule of James II. that Whigs and Tories united in asking William of Orange to invade the country and assist in the restoration of the ancient liberties of England. James fled to France and Parliament declared William and Mary king and queen of England. In 1700 an Act of Settlement made the English sovereign as much a creature of an act of Parliament "as the pettiest tax-gatherer of the kingdom."

This revolution was a victory for the liberty of the English people and it showed that they had determined that no king should reign in England who did not reign for the good of the people. All the pretensions of the older despots had been wiped away forever. The people even hunted down the "bloody Jeffreys," whom they carried to the Tower, where he finally died in misery. In the reign of William religious toleration made its appearance and the persecution of the dissenters ceased. They built chapels and held services without fear of interference. William saw the growing power of France and the benighted bigotry of the church of Louis XIV., who had been persecuting the Protestants most cruelly. Many of these unfortunate people fled to England, carrying with them many useful trades and arts, especially silk-weaving, in which they were especially skillful. Many of these descendants of the Huguenots are still among the noblest of the people of England and her colonies. Until this time no one could even print a pamphlet without permission, but liberty of the press was established in 1695, upon which a number of newspapers sprang into existence. There had been but one or two before, and these hampered. Later, the speeches in Parliament were allowed to appear.

Meanwhile the wars with France were going on. After Anne came to the throne England and Scotland were united. When she died, the people sent for a petty German Prince, George of Hanover, and made him king. He was the most prosaic and mediocre of individuals and could not even speak English. Whig and Tory strife began to take the place of civil wars. Both parties wished to maintain the British monarchy under the Constitution, the latter feeling that the Constitution was beyond mending, and the former wishing to keep it in touch with the growing needs of the people. The Tories acted for the higher classes, the Whigs for the whole nation. "The Tories wished all people to obey the bishops, to believe the prayer book and to go to church. The Whigs thought all people should judge for themselves, and might become dissenters if they wished." The English and French came to blows about the American colonies and things went badly for England until Pitt came to the front. His very personality inspired the English nation, and he became its idol. He ended the rule of France in America when he sent Wolfe to Quebec, where he defeated Montcalm in 1759. England became interested in India, and the East India Company was formed. There again Pitt fought it out with the French and East Indians as he had contended with the French and Indians in America, and at the battle of Plassey in 1757, defeated the enemy. Since that time the British have ruled India and have kept the peace for the most part in that land of anarchy.

The American Revolution followed, in which the United States was lost to the British crown under George III., who went mad. In the year that the Constitution of the United States was adopted, 1787, England abolished the slave trade. Britain gained more of India and the whole of Ceylon, began to plant colonies in Australia, New Zealand and Tasmania, thus expanding while France was not growing at all. Then came the French Revolution and the wars of Napoleon. Wellington at Waterloo and Nelson at Trafalgar ended this long and bloody war. After the reigns of George IV. and William II., Queen Victoria came to the throne, the greatest and wisest ruler, as well as the best beloved, who ever sat on the throne of England. Her reign saw the development of the great industrial revolution and the material enrichment of the Empire, the Afghanistan wars, the Crimean war and the Sepoy rebellion. In the American rebellion, the English people sympathized with the section that furnished their cotton; the government recognized the Confederacy as belligerents; and for a time the whole nation sought to establish a slave-holding republic in a half of this land. An international tribunal assembled at Geneva awarding money to America, for damage to her shipping. It is believed that it was through the good offices of Queen Victoria that England did not come out openly as an ally of the South. In 1867, the Dominion of Canada was formed, embracing all the provinces except Newfoundland. The Zulu wars in South Africa were soon followed by the South African war in which England contended for rights of representation with taxation and military service. When the English won they proceeded at once to turn over control of South Africa to the Dutch who were in the majority, an act of good faith unexampled in international policy up to that time.

The heroic part which Great Britain played in the war of 1914 is too long and fine a story to be told in so brief a resume as this, but it is well to remember that but for the navy of Great Britain, the world



would have gone to the Hun in thirty days after hostilities began. Whatever may have been the outcome of the "Peace", in the first instance Britain fought, as her Allies fought, for the principle of Public Right against the despotism of Public Might.

Erie, Battle of Lake.—When the prospect of the Americans was dreariest in the War of 1812 a small, hastily built fleet under Commodore Perry defeated an English fleet under Barclay on Lake Erie in September, 1813, and so turned the whole tide of events. Through this victory the United States gained control of the Great Lakes and were able to re-capture Detroit. Out of 490 men the Americans lost 123 and out of 460 Englishmen 135 were killed.

Europe.—The old Assyrians spoke of Asia Minor as Assur, sunrise or East, and they called the land to the West Irib or Ereb. From this came the name Europe, to designate the smallest of all the continents except Australia, its area being 3,796,000 square miles, or one-fourth greater than that of the United States, not including Alaska. The coast line of Europe, lengthened by many islands, channels and deep penetrations of the sea into the land, has been one of the largest factors in its development. The low plains, the rivers, the absence of deserts, the temperate climate, the distribution of rainfall, and the variety of mountainous structures are features of value, responsible for the abundance of crops, the accessibility to markets of the world, and the immense store of mineral wealth. The three most important topographic forms are the highland belts in the south, the secondary mountains north of this, and the lowlands. The highland belt is the western extension of the great mountain chains extending through the Old World from the upper courses of the Yang-tse and Hoang rivers to the Atlantic. The Caucasus Mountains and those of Crimea are a part of this zone, interrupted by the depressions of the Black and Ægean Seas, beyond which lie the Alps, the Apennines, the Balkan Mountains and the Carpathians. Not connected with these are the high Pyrenees and the Sierra Nevadas of Spain. The secondary mountains, or those lying to the north of the highland belt, are shorter and of greater variety, all comparatively low, except the Scandinavian Mountains. The Urals to the east are an isolated group, the longest chain of the continent, rising from Asia and sloping away to the plain on the European side. Vesuvius is the only active volcano. Two-thirds of Europe is lowland, a continuation of the low plains of northern Asia, extending through Russia, northern Germany, and France to the Pyrenees. Especially noteworthy are the high plains of Switzerland, the plains of south Germany and of Castile in Spain. Most important of the mountain-inclosed lowlands are those of the Alpine streams, the Po Basin, the upper Rhine, and the Danube, the upper and lower plains of Hungary, and the Wallachian plain. Roughly speaking, Europe consists of the eastern part, or Russia, with its unbroken lowlands and mountains on the eastern and southern edges, and the western part, the remainder of the continent, composed of plains and mountains. The chief characteristics of the former section are its uniformity and inaccessibility, for the most part, to the sea; that of the latter, its variety, richness and accessibility to the influences of the sea.

The varied and complicated geological structure of Europe can only be touched upon briefly. There is a rich distribution of minerals—for example, extensive iron mines in Alsace and Lorraine and Luxemburg; coal and iron in Belgium, iron in Austria and France, one of the most remarkable fields being around Chavigny and Nancy. Iron, gold and platinum are found abundantly in Russia; silver and zinc in Germany, sulphur in Sicily and southern Italy; tin, iron and coal in England; opper, silver, lead and quicksilver in Spain, and copper in Portugal.

Roughly speaking, and considering only the Indo-European or Aryan stock, the Teutonic peoples live at the north, the Slavs at the east, the Celts, what there is left of them, in the western part of Europe, while the Latins have more completely populated the south. The Celts once possessed Europe from the Alps to the British Islands, but they were broken up by the Roman conquests. The Celtic language is now spoken only in the Scotch highlands (Gaelic), in parts of Ireland (Irish), in Wales (Cymric), and in Brittany (Armorican). The Teutonic race consists of two branches, the Germanic, from which have sprung Germans, Dutch, and English, and the Scandinavian, now divided into Danes, Swedes, and Norwegians. The Slavs include Russians, Poles, the Czechs or Bohemians, the Servians, Croatians, etc. The Greek and Latin group comprises

Italian, French, Spanish, and Portuguese. The Mongolian race is represented by the Turks, Finns, Lapps and Magyars or Hungarians, all of whom have come to Europe in comparatively recent times. European civilization began with the Greeks, flowered in a few centuries into something which quickly faded, for in poetry, art, philosophy and architecture, that brief moment of the Athenian has never been surpassed. With the decline of Rome, vast migrations set in among the northern races; devastating invasions from Central Asia overran the land as far as the middle of France; Europe relapsed into barbarism and anarchy—for anarchy is barbarism—and with the Renaissance or Revival of Letters, followed by the Reformation, a new impulse was given to the human mind and spirit, resulting in what is both good and bad in the so-called western civilization of today. With this awakening, Copernicus discovered the new heavens about the time that Columbus discovered the new earth, and the mind of the Middle Ages expanded indefinitely and infinitely to comprehend the new heavens and the new earth. But almost never was there a time when for some reason or pretext men were not fighting each other in a succession of wars.

Of late years Europe had developed commercially at the expense of her agricultural industry, and is to a large extent dependent on other countries for her food products. Improved transportation, however, has made it possible to import grain, fresh meat, butter and nearly every kind of food, both staple and perishable, and distribute it throughout the country.

Federal Reserve Act (1913).—The Federal Reserve Act was passed by Congress and signed by President Wilson, December 23, 1913. It divides the country into twelve federal districts, in each of which there is a city with a federal reserve bank. Each national bank is obliged to enter the system, thus becoming a member "bank". The governing committee of the national system (seven members), is composed of the Secretary of the Treasury, the Comptroller of the Currency and five other members appointed by the President. The system has given the United States one of the best instead of one of the worst currency systems in the world; and has prevented the recurrence of the periodical financial panics deliberately "engineered" in times gone by, by those wreckers who built false lights on the shore.

Feudalism.—The word *Feudum*, from which Feudalism is derived, appears first in the records of the Frankish king, Charles the Fat (884-887 A. D.), but the system had existed before that time. After the death of Charlemagne in 814, his empire drifted into chaos, although many of the things he accomplished endured in the industrial, social and political aspects of the Feudal System. The great conflict between the Romans and the Germans brought about the confusion which resulted in the organization of Feudalism, in which the land was divided by the lord between his tenants and the serfs to whom he offered protection in return for service. The great highways which had been the bond of organization of ancient Rome had fallen into decay, and great stretches of the country had become impassable. On the German side of the Rhine there were no roads at all, and rebellious barons could get well under way before the king had tidings of their sedition. Europe was in a state of anarchy, except for the numerous little despotisms which formed a hierarchy of land holders. Service was military or agricultural and later it took the form of money payments. The system was a combination of the old Roman custom of land grant for military service and the German custom of men following their lord as chief. It raised up great lords and depressed the poorer classes, who became villains or serfs, bound to the land. They lost all the old Teutonic privileges of meeting in national assembly and became abject creatures.

The result was a growth of towns, with a fixity of life hitherto unrealized. Houses grew up around castles, and these were defended by walls. Charlemagne founded Hamburg which was to become one of the capitals of the Hansa League, destined to be supreme in northern Europe for two centuries. In Germany these towns were fortified by burgs or fortified castles around which grew up many of those cities of Germany which have become famous. Sometimes these towns joined forces and defied Dukes and Kings, while in northern Italy, from the eleventh century onward there was a great number of city commonwealths. "Feudality recognizes two principles, the land and the sword, riches and force—two principles on which everything depends and to which everything is related, since it is necessary to own land in order to have the right to draw the sword." The suzerain knelt before his lord and swore to be his man—*homo*—thus comes the word homage. They took justice in their own hands, and the duelling system grew up. In France the feudal clergy held a fifth of the land, in Germany a third. But the church increased its possessions through bequests of the dying and gifts of the living. The will of the feudal lord was law. He could exact what he desired and there was no recourse. The serf could neither marry nor change his abode, nor could he bequeath his goods without the permission of his lord. Vassals were continually fighting against other vassals, lords against lords, and all against their sovereigns. To him who had the might of the sword belonged the power to enforce peace and "justice".

Fifteenth Amendment.—The Fifteenth Amendment gave the right of vote to all male negroes and forbade the state governments in any way to deprive them of this right. It was proposed by Congress in February, 1869. Virginia, Georgia, Mississippi and Texas, the only southern states not yet re-admitted to the Union after the Civil War, were to be admitted on condition that they accept this amendment, which they did. The Amendment received the support of the necessary number of states and became law in March, 1870.

Finland.—Finland is a table-land from 400 to 600 feet above sea level, lying chiefly in the extreme northern part of Russia. Its area is about 144,255 square miles and its population about two and a half million, mainly Finns and Lapps. These people were pagans, ruled by independent kings, until the twelfth century, when the Swedes invaded the land and introduced Christianity. In 1808 Russia conquered the Swedes and annexed Finland. When Russia attempted to abolish the autonomy of the country and make it a province, the Finns migrated in large numbers, many of them coming to America. During the late war, Germany's evident design of constituting two minor states, the Ukraine and Finland, in order that a new unified Russia might not rise from the ruins of Bolshevism, succeeded in so far as many Finns were won over to the side of the Huns, who promised Finland expansion and power if she would be a sort of guard for Germany over Russia. Revolution in Finland resulted in conflicts between the Red Guards (Bolshevists) and the White Guards (Pan-Germans). Finland established an independent government, which was recognized by most of the nations of Europe, including Soviet Russia. Civil strife continued, however, until the signing of the Brest-Litovsk Treaty between Germany and the Bolshevist government, of Russia. Four days later (in March, 1918,) Germany signed a treaty with Finland, having meanwhile invaded Finland and occupied the Aland Islands. For a while it seemed that she would make Finland a monarchy under her control, and by the treaty she virtually established a protectorate over the little country. She promised to do everything possible to have the independence of Finland recognized by the world, but Finland had to promise that no territory over which she was sovereign would be given up without first consulting Germany. Consular and diplomatic relations were established between the two countries and a commercial agreement entered into which made Finland a practical vassal of Germany.

Flodden Field.—In 1512 James IV., king of Scotland, sent to Henry VIII. of England a list of grievances which the latter refused to rectify. Thereupon, in 1513, James equipped a formidable army of 60,000, marched across the border and took possession of a number of English strongholds. Henry VIII., who was then fighting against the French, sent the Earl of Surrey with 40,000 men against James at Flodden Field. Surrey succeeded in surrounding the Scotch army and so gained the advantage. The Scotch kept up the fight through the day in spite of the death of their king, eighty of their chieftains and 10,000 men, but at night they silently withdrew. The loss of 4,000 had so weakened Surrey's army that he did not pursue. Peace was made without gain on either side.

Fourteenth Amendment.—During the months that elapsed between the close of the Civil War and the next session of Congress, President Johnson took many steps toward restoring to the southern states their former privileges. The Congress which met in December, 1865, was largely made up of northern Republicans whose attitude toward the South was bitter. They wished to punish the vanquished states more thoroughly and to establish positive freedom for the negro. The new governments of the southern states granted the negro no civil rights and made his position almost as humble as before the war. Congress brought help to the negro through the Freedman's Bureau and the Civil Rights Law (passed over the President's veto), and in June, 1866, they proposed to the states the Fourteenth Amendment.

The Thirteenth Amendment had made the negro free—the Fourteenth would make him a citizen, with the citizen's rights to the protection of the law. Whether the negro could vote would be decided by the states separately, but if a state denied the vote to negroes, her representation in Congress would be diminished according

The Amendment also annulled all debts incurred by the Confederacy and prohibited the leaders of the Confederacy to hold Federal office until pardoned by Congress.

Although the President had officially readmitted most of the southern states to the Union, Congress regarded them as no better than territories and the acceptance of this Fourteenth Amendment was made the condition on which Congress would recognize them as states. Tennessee acquiesced in July, 1866, and was recognized by Congress, but the other southern states refused to ratify. Congress was determined to bend the south to its will and in March, 1867, passed the Reconstruction Acts.

The South was divided into five military districts, each under the surveillance of a Federal general. These generals, with troops at their command, were to supervise the establishments of new state governments and allow no government to be formed that was opposed to the Fourteenth Amendment. Under this system the ratification was completed on the 28th of July, 1868.

France.—The Franks were a confederacy of German tribes on the lower Rhine. They were neighbors of the Angles and Saxons till in 486 A. D., they invaded and conquered a part of Gaul. Their king, Clovis, grandson of Merwig (from whom comes the name of the Merovingian dynasty), drove out the Visigoths and married Clotilda, a Christian, daughter of one of the Burgundian princes. The Franks soon adopted the language of the Gauls, which had become Latinized. The Romance, or Romanized (Latinized) languages developed into the Provencal tongue of southern France and the French, Spanish and Italian languages. The descendants of Clovis, who died in 511 A. D., kept the crown he had won for nearly two centuries, but the history of these times is another pathetic chronicle of the crimes and follies of feeble and wicked kings. In 687, Pepin, a Mayor of the Palace, founded the Carlovingian dynasty. His son, Charles Martel, distinguished himself through one of the greatest services ever done for Christendom, stopping the Moslem invasion in 732. His son, Pepin the Short, was the father of Charlemagne. Karl, or Charles the Great, came to the throne in 771. He is one of the great men in history, as soldier or politician, and is renowned for his intellectual ability. He found a chaos of nations and institutions around him and left them moulded into a great empire which, although it fell to pieces at his death, was the foundation for the French kingdom which became a bulwark against the hordes of pagans and barbarians that threatened Christian Europe from the East and the North.

The first requisite for kingship in those days was military ability, and in this Charlemagne was distinguished. He was able to defend his realm and his people and to make further conquests. He had an equal gift for administration. To these talents he added wisdom and insight, literary and artistic tastes, love of learning and skill in legislation. He reformed the coinage, founded schools, collected libraries and encouraged scholarship, through which he succeeded in welding unsettled tribes into permanent communities. During his time Christianity first took on a political form. He subdued the Germanic and Tartar tribes to the North and East, conquered the Saxons, vanquished the Avars of Hungary, drove the Lombards from Italy and the Saracens from Spain as far as the Ebro, and was crowned Emperor by the Pope at Rome on Christmas Day of the year 800. He allowed each nation to retain its own laws, chiefs and free assemblies, and his own central government kept in touch with them through the reports and activities of Royal Commissioners who visited them at stated intervals. He died in 814 A. D., after a reign of forty-three years, having ruled an empire that included what is now the whole of France, northern and central Germany, the island of Corsica and northern and central Italy, and much of Austria, except Hungary.

After him we read of such men as Louis the Debonair, or Mild, Louis the Stammerer, Charles the Fat, and Charles the Simple. It was under the last named of these kings that the Norsemen or Normans invaded northern France under Rollo and founded Normandy. The Capetian kings ruled from 987 to the reign of Philip of Valois, 1328. Hugh Capet, the first of these kings and an able man, established Paris as the seat of his government and enacted some good laws. Under the reign of Philip (his grandson), Peter the Hermit preached the first Crusade, and William the Conqueror invaded England. Philip's son, Louis the Fair, reigned wisely and said to his son and successor on his death-bed: "Remember that royalty is nothing more than a public charge, of which you must render strict account to Him who makes kings and will judge them."

After several rulers who did little, came Louis IX., called Saint Louis. His mother, Blanche of Castile, was regent from his accession at the age of twelve years. Louis was one of those rare characters who can be a Christian on a throne, but his zeal for religion prompted him to engage in two tragic Crusades. He died during the second at Tunis in 1270 A. D., in his fifty-sixth year, and in the forty-fourth year of his reign. Philip III., his son, defeated the Saracens in Algiers, and his son, Philip IV., suppressed the Knights Templars.

France had no king of note till 1364 A. D., when Charles the Wise was crowned. He labored with such diligence to repair the losses of his successors that he was able to drive the English from France except

from Bordeaux, Bayonne and Calais. He was a patron of letters and himself had a library of 900 volumes, which became the foundation of the great library of Paris. His successor became insane, but was followed by Charles VII., under whom the English laid siege to Orleans, the scene of one of the most remarkable events in history. When Orleans was about to surrender, a little girl of seventeen appeared from a humble cottage on the borders of Lorraine and asserted that she had received a divine commission to raise the siege of that city and procure the coronation of Charles at Rheims. She was examined by a committee and sent on her mission. The British were defeated and Joan of Arc became to history the Maid of Orleans. But the episode is marked by an act of extraordinary brutality. She fell into the hands of the English, who burned her in the public square at Rouen.

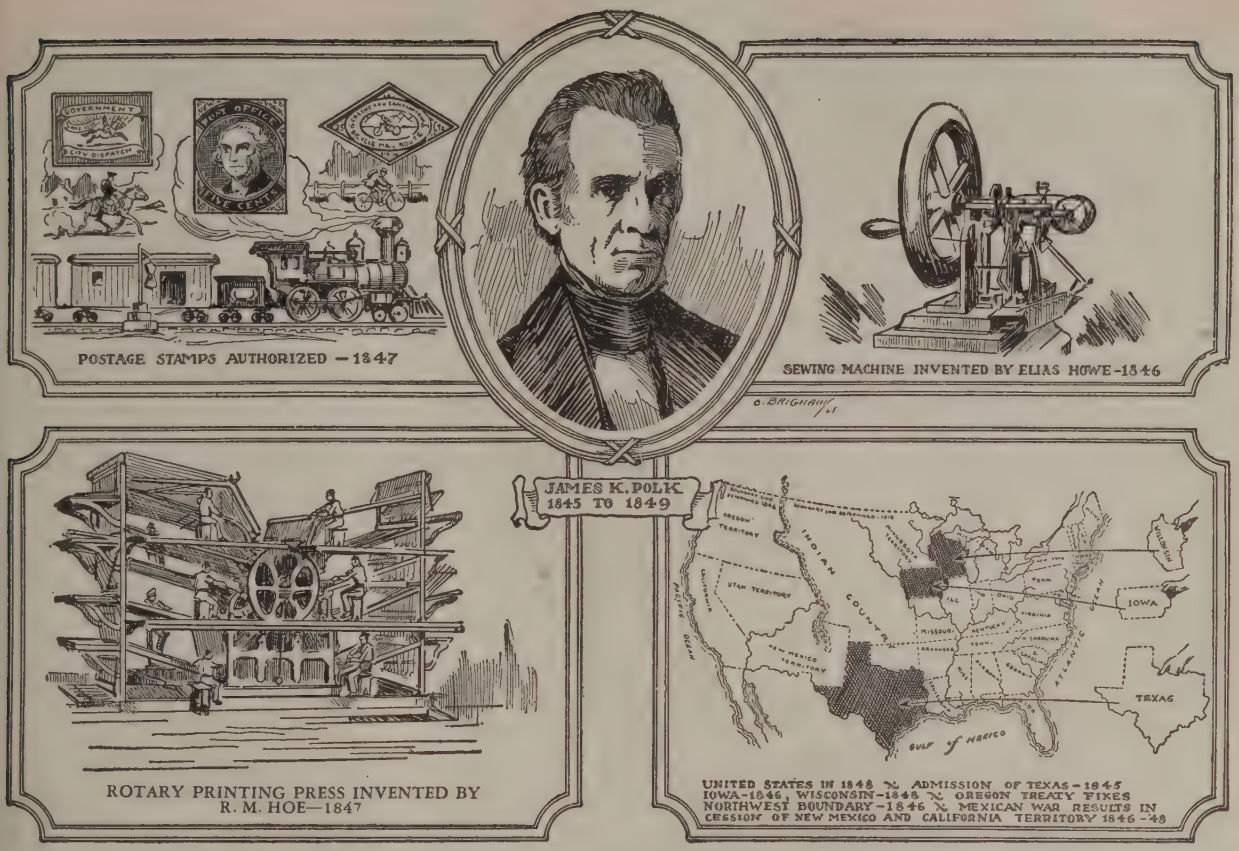
Charles was followed by the sinister and infamous Louis XI. He had a certain cynical ability and did much for the promotion of commerce, but he established the modern system of diplomacy with the advice to his agents that the enemy would lie but they must lie harder. His life was miserable from a guilty conscience and fear of death, and he died miserably.

The War of the Spanish Succession followed not long after the death of Louis XI., in which much blood was shed over the rival claims of two princes to the throne of Germany, made vacant by the death of Maximilian, Emperor of Germany in 1519. Henry II. persecuted the Huguenots, starting the civil wars which devastated France for several reigns. Under Charles IX. the Protestant religion had made much progress with some of the most distinguished men in the kingdom in the ranks of the church, among whom were the Prince of Condè and Admiral Coligny. One of the most memorable events of his reign was the massacre of St. Bartholomew, under circumstances of the foulest treachery. The massacre was aided by the populace and extended over the entire kingdom, some writers estimating the number murdered at 70,000. Whatever that number was, it was certainly large enough to disgrace the reign of Louis XI.

Henry IV. ascended the throne a Protestant but abjured that faith and became a Catholic. After civil wars were ended, he issued the celebrated Edict of Nantes, granting Protestants the free exercise of their religion and a political status in society. The Duke of Sully was his famous Counsellor. But this wise king was assassinated by a monk named Ravaillac in 1610, the twenty-first year of his reign. Louis XI. was nine years old at the death of his father, but upon assuming the throne later, he chose the famous Richelieu as his Prime Minister, who became one of the greatest statesmen and one of the most unscrupulous diplomats that Europe has produced. He laid the foundations of France upon which Louis XIV. built. Since this Louis was only five years of age when he came to the throne, the Queen mother raised Mazarin to the post of Prime Minister. The reign of Louis XIV. is one of the longest in history, and is in some respects the most brilliant. For much of his success he was under obligations to his generals and ministers, Colbert among the latter, with Condè, Turenne and Vauban among the defenders of the realm. He undid the good work of Henry IV., in the revocation of the Edict of Nantes, and all Protestant ministers were required to abjure their faith or leave France. It is not known how many people left, but the highest figure given is a half million. The loss of these Huguenots was an irreparable loss to France. Louis was a vain man, a cruel spendthrift, feeling no sympathies for the common people who created his wealth and fought his battles, but he encouraged art, literature and science. The Louvre and Versailles were built, and alongside the brilliant names of Condè and Turenne are those of Bossuet, Fenelon, Bourdaloue in the French pulpit, Boileau, Racine, Pascal, Descartes and many others who have been leaders in thought. Louis reigned till his seventy-eighth year, or the seventy-third of his occupancy of the throne. He was succeeded by his great-grandson, Louis XV., who also came to the throne at the age of five years, under the regency of the Duke of Orleans. Cardinal Fleury became his Prime Minister. The Austrian Succession broke out after the death of Charles VI. The claimants were Maria Theresa and Charles the Elector of Bavaria. The English and their allies supported the former who won, acknowledged by the Treaty of Aix-la-Chapelle. During this reign also England won the French possessions in Canada. Louis died in 1774, in the fifty-ninth year of his reign. These two kings of France, Louis XIV. and Louis XV., reigned for one hundred and thirty-two years. Louis XVI., grandson of his predecessor, ascended the throne of France at twenty years of age. The conditions in France were appalling, although liberal doctrines had been disseminated by the most brilliant writers of the age, such as Rousseau, Voltaire, the Encyclopedists, to say nothing of those in England, and in America where the revolution was about to break. The American Declaration of Independence was signed two years after the accession of Louis, and the Revolutionary War in America followed, in which France was more interested, probably, than in the cause of democracy, for the reason that it was waged against her age-long foe, England. The Marquis de Lafayette became the spokesman of those Frenchmen who sympathized with the American cause, as Queen Marie Antoinette had always sympathized. It must be remembered that the France that helped the American people in that issue, indeed which saved the cause at that time, was the France of Louis XVI. and his expiring regime. It was the France which, so to speak, was beheaded at the Guillotine, while her executioners of the Red Terror were those with whom later we had our own troubles and nearly came to war.

After the French Revolution—the result of discontent with the old social order—(see French Revolution)—came the political reaction such as nearly always follows in cases of anarchy and confusion. A tyrant arose and offered the people government, perhaps the worst of which was better than none at all. Napoleon certified his authority by sheer military genius to those who believe that Might is Right. It would be a poor type which would not make some pretense of the betterment of the people, as Napoleon did, but at bottom he was an altogether selfish and ambitious human being who bought his buttons with the dreadful price of the blood of Europe. The first allied armies of the five great coalitions of Great Britain, Holland, Russia and Spain invaded France and were overthrown. Napoleon completed the conquest of Italy, compelled Austria to acknowledge the French conquests in the Netherlands, and took possession of the Delta and of Cairo. In 1798, the French fleet was defeated by the English under Nelson in the Bay of Aboukir. The second coalition was formed between England and Russia, which other powers later joined, and the Allies gained some important victories. Napoleon returned to France and became First Consul. He crossed the Alps at the head of his army and defeated the Austrians at Marengo, gaining other victories which resulted in peace for a time. In 1804 he was crowned Emperor of France by the Pope, upon which a third coalition was formed against him, between England, Austria, Russia and Sweden, followed by Prussia. At Austerlitz he defeated the combined forces of Russia and Austria, but Nelson at the cost of his life defeated the fleet of France and Spain off Trafalgar, after which the peace of Presburg was signed. When Napoleon had broken the peace in 1806, a fourth coalition was formed in which England, Austria, Russia, Prussia and Sweden were arraigned against France. Napoleon broke the Prussian power at Jena and Auerstädt, and declared the British Islands in a state of blockade, ordering all ports closed against them. He placed his relatives and friends on the thrones of Europe, and found no end to his growing ambitions. Murat, his brother-in-law, was placed on the throne of Naples, and Joseph Bonaparte on the throne of Spain. The peninsular war was waged from 1808 till 1813, and the Emperor of Austria was compelled to give his daughter, Maria Louisa, to Napoleon as his wife. Then Napoleon determined upon the invasion of Russia—the beginning of his undoing. It was his march from and not to Moscow that has become famous, for the Russians had destroyed all the shelter and provisions by fire and left the French troops at the mercy of a Russian winter. Only 30,000 survived to cross the Niemen on the return home. The fifth coalition was formed between Russia, Prussia, Austria, and Sweden. The Emperor was beaten at Leipzig, after which he fled to Paris, abdicating the throne of France and involuntarily retiring to the Island of Elba. Louis XVIII. ascended the throne. While the Allies were yet holding the Congress of Vienna, Napoleon made his escape and landed at Frejus, where he gathered an army of but 1,140 men, marched to Paris and in twenty days was again seated upon his throne. Upon this, nearly all the powers of Europe made an alignment and the defeat at Waterloo sealed the fate of Napoleon.

Throughout the entire nineteenth century France suffered from revolutions and foreign invasions. In 1852 the second French Empire was proclaimed, and Louis Napoleon made emperor, as Napoleon III. Between 1853 and 1856 occurred the Crimean War, in which England, France, Sardinia and Turkey united against Russia, and succeeded in guaranteeing the independence of the Ottoman Empire, preventing Russia from gaining territory from the Turks. War between Austria and France followed (1859), in which France was victorious, annexing Savoy and Nice, after a plebiscite of the inhabitants. Outwitted by Count von Bismarck of Prussia, who failed to live up to his promises to Napoleon III., and exasperated by Prussia's jealousy, France declared war on July 15, 1870, and there followed a struggle for which Prussia had been preparing for



years. All Germany gave aid in this Franco-Prussian War, and as a result, France was crushed, Napoleon III. surrendering his sword to King William at Sedan. In Paris a frenzied mob seized the government, deposed the Emperor and proclaimed the Republic. Paris was besieged and forced to surrender (1871); the German Empire was proclaimed in the palace of Versailles, and by the Treaty of Frankfort, France was forced to pay Prussia an indemnity of a billion dollars in the space of three years and to give up all of Alsace, except Belfort, and one-fifth of Lorraine, including Metz. As the indemnity was paid evacuation of the Prussians would take place.

Thiers, who had shown his statesmanship in dealing with Prussian demands, was made president of the new (third) French Republic, and to him fell the task not only of raising the indemnity so that the country would be free from the Prussian army of occupation, but also of putting down civil war. This "Liberator of the Territory," although a liberal monarchist, believed that a republican form of government was the only possible one for France, and thus he incurred the enmity of the majority made up of legitimists, Orleanists and imperialists. At the age of 76 he resigned, and Marshal MacMahon, Duke of Magenta, was elected for seven years by the Assembly. On January 30, 1875, the Republic was officially recognized.

War with China and in Africa occupied considerable attention for the next few years. Political struggles continued, with a marked progress in Socialism. In 1894 President Carnot was killed in the streets of Lyons by an anarchist. In spite of the fact that since 1824 nearly every ruler in France has been driven from his position by revolution or assassination or the force of public opinion, and though the political struggles have been long and severe, the Republic has consolidated and strengthened itself. The condition of the peasant class improved, the country prospered, and signs of contentment were apparent until Germany's military machine again tore and devastated the land. The destruction of industries in France's industrial region, carried out deliberately by the German invaders in the Great War, to destroy her economic importance, can scarcely be estimated, but it will require more than 2,000,000 tons of pig iron and about 4,000,000 of steel to replace what was ruined in these regions, at an estimated cost of 25,000,000,000 francs. For four years these modern Huns laid waste the land destroying personal property to the value of 4,000,000,000 francs, and 350,000 homes, the cost of rebuilding of which is estimated at 10,000,000,000 francs. (See Germany and Great War.)

French and Indian War (1754-1760).—A war between the French and English in North America over their disputed possessions on that continent. The French were assisted by numerous Indian tribes and from 1754 to 1758 held unbroken a line of defense barring the English from their territory. The English generals, who led a mixed army of British regulars, colonist volunteers and Iroquois Indians, were ill suited to the hardships of an American campaign. The British organization was also inferior to the French.

After the severe British defeat at Ticonderoga, 1758, new vim was put into the English campaign through the influence of William Pitt, English Prime Minister, and a new general was put in charge. Within the next year the French defense was broken by the capture of six important forts. In September 1759 General Wolfe marched the English forces on Quebec and defeated the French under Montcalm. This opened Canada to the British and led to the conquest of Montreal. In 1760 the fighting on the continent ceased.

A war had at the same time been waging between France and England in Europe, the Seven Years War, which ended in 1763. By the Treaty of Paris in 1763 the French gave up all their possessions in North America. Canada and the territory west of the Mississippi became England's. Spain ceded Florida to England and received Louisiana from France.

The French Revolution.—In the latter part of the 18th century the people of France revolted against the evils imposed on them by an all-powerful king and an idle nobility who owned the land. Two very different classes made up this revolt:

(1) The educated class, with high ideals strove for reform through better laws.

(2) The lower class (peasants), overtaxed and starved, expressed their discontent by violence.

From 1789 to 1792 the educated class brought about peaceable reform through national assemblies, until France was

practically a republic. But as France became engaged in active warfare with Austria (who opposed the republic), the mob violence of the peasants began to dominate the revolution. The king, who had shown himself in league with foreign powers for the defeat of his country, was beheaded in 1793.

Under the pressure of war the Committee of Public Safety was put in power in Paris. This committee ordered some 2,800 persons, suspected of disloyalty to the government, to be beheaded. This became known as the "Reign of Terror," which ended with the execution of the man who had started it in July 1794, and a more moderate government was then established.

Other neighboring countries continued to make war on France until in 1799 these wars became such a menace that it was necessary to place the power of government in the hands of the ablest general, Napoleon. Napoleon gradually changed France from a republic to an empire, with himself as emperor, and thus ended the revolution.

Gallic Wars.—Cæsar's Gallic Wars came at that point in his career when the intrigues by which he had climbed to power were likely to cause him trouble in Rome, while a successful military campaign abroad would glorify him in the eyes of the people. His first move was in 58 B. C., against a Swiss tribe, the Helvetii, who seemed about to invade the Roman Empire. He next entered the territory now known as France to aid a friendly Gallic tribe, the Ædui, in driving off the Germanic invader Ariovistus. He then undertook to subdue all parts of Gaul which did not yet pay homage to Rome. He spent eight years thus, assisted by Crassus and Sabinus. His most difficult task was the conquering of the rebellious Veneti, who had so powerful a fleet that Cæsar was forced to build a fleet likewise. The Senate of the Veneti were executed for treachery and all their people sold into slavery. Among other tribes conquered were: the Belgæ, the Nervi, the Aduatici, the Morini and the Menapii.

Garfield and Arthur's Administration

I. The Stalwarts.—Garfield's nomination and election had split the Republican party, especially in New York. The opposition was led by Senator Conkling. President Garfield ignored Conkling in making appointments to office. Conkling resigned as Senator from New York and asked justification in the form of re-election. The New York legislature defeated him, thus supporting President Garfield. The opponents of Garfield were known as "Stalwarts" and included U. S. Senator Thomas C. Platt.

II. Garfield's Assassination.—Garfield had been elected President largely through the efforts of Roscoe Conkling, a shrewd political boss among the Republicans. But Garfield was not himself a politician and did not repay Conkling or Conkling's friends with any important political offices. This "ingratitude" so enraged Conkling that he agitated with his usual skill against Garfield and created a faction of opposition in the Republican party known as the "Stalwarts."

Among the "Stalwarts" was a fanatic named Guiteau. He had had a varied career—politician, lawyer, lecturer, evangelist. He had felt assured of a political appointment from Garfield and his disappointment made him ready fuel for the fire of Conkling's oratory.

Garfield had been warned of plans for his assassination but he paid no heed. On July 2, 1881, as he entered the railway station at Washington, Guiteau crept up from behind and shot him twice in the back. The President lived through a summer of dreadful suffering and died on September 19th.

Guiteau, when arrested, throughout his trial and up to the moment of his execution, showed a firm religious conviction that he had fulfilled his duty in ridding the country of Garfield, in making it possible for Vice-President Arthur (who sided with the "Stalwarts") to become President and thus to re-unite the Republican party.

The horror of the country at this insane deed was great; Conkling and the "Stalwarts" were despised and a movement for Civil Service Reform was set on foot to lessen the corruption of political appointment to office.

III. American Federation of Labor.—In 1881 a number of separate labor unions met in Pittsburgh, Pa., and organized the Federation of Organized Trades and Labor. Their first purpose was to oppose the Knights of Labor. In 1886 other organizations joined the new federation which then became the American Federation of Labor. It is now the largest and most influential labor organization in the world with a membership of more than 3,000,000.

IV. Brooklyn Bridge.—This bridge was completed in 1883. It had been begun in 1870. Its span is 1,595½ feet; each land span is 930 feet. Total length, including the approaches, 5,989 feet. It is 85 feet wide. It has four cables, each consisting of 6,300 parallel steel wires in a solid cylinder 15½ inches in diameter, with a total strength of 11,200 tons. The bridge cost $17,900,000.

Germany.—The ancient Germans are supposed to have migrated from upper Asia, in non-historic times, passing by the Caucasus and north of the Caspian Sea to central Europe. Like the Celts, they were tall, fair, with blue, fierce-looking eyes, and light or red hair. Gradually they worked their way into the Roman Empire, sometimes, as under Marcus Aurelius (161-180 A. D.,) being granted the right of settling within its borders, and sometimes pushing their way in with fire and sword. Behind them came other and fiercer tribes, forcing those on the borders farther within Roman boundaries. The empire had declined and broken up into a western and an eastern section, with the emperor at Constantinople quite powerless in the West. Romulus Augustulus, ruler at Rome, was succeeded by Odoacer, a German, who, deposing the former, sent his acknowledgment of submission to Zeno, Emperor at Constantinople, in 476. From that time on, the Germans ruled in the West, which, though nominally under the central power at Constantinople, really consisted of separate, independent kingdoms. Charlemagne, a German and a Christian, king in the West (768-814), was crowned emperor at Rome by the Pope in 800. Throughout many years following, this united German Christian Empire was little more than an ideal, but as an ideal it persisted in the minds of German kings down to the present. Notwithstanding its disunited condition, Germany began to trade with the East; the merchant class grew strong and wealthy and unscrupulous, a few monopolizing all the trade, while the majority of the population, the peasants, lived a monotonous, oppressed existence, relieved only by village brawls and revelries. The peasants' revolt in the sixteenth century, an uprising against the evils of serfdom, was quelled by the autocratic lords in the bloodiest possible manner. At least 100,000 peasants were killed, and German peasantry sank into a wretched condition from which it did not emerge until the nineteenth century. Even Martin Luther, of peasant stock himself, condemned their rebellion, saying that "to rebel against the princes was to rebel against God." From this time on, the movement of Luther for Protestantism was in the hands of the nobles, who for political or conscientious reasons preferred his beliefs to those of the Catholic church at Rome. Most powerful of these princes was Charles V., son of the archduke of Austria, who had fallen heir to the Netherlands, the crown of Spain and Naples, the sovereignty of vast possessions in the New World, and the duchy of Austria and its dependencies—an inheritance of larger dominion than of any lord since Charlemagne. Added to these was the sovereignty of the Holy Roman Empire, voted to him by the electors of Germany. Charles, a Catholic, was successful in driving back the Turks from the borders of Germany and defeating them in the Mediterranean, but in the end he was unsuccessful in his wars with the Protestant German princes. The Religious Peace of Augsburg (1555), meant victory for the Protestants only in that the church was freed from the control of Rome and the Pope. Feudal princes were free to choose either Catholicism or Lutheranism. The Thirty Years' War, (1618-1648), originally a struggle between Catholic and Protestant princes of Germany, eventually became a political struggle, involving nearly all of Europe and dragging civilization down to a low plane. The political provisions of the Treaty of Westphalia (1648), which marked the close of the religious wars, were important in that they remained practically unchanged for two centuries. Switzerland and Holland became independent; France was now the strongest power on the continent; Spain lost her leadership, and the Holy Roman Empire declined to a mere name. Of all the duchies of German origin, Prussia and Austria became the mightiest. Brandenburg, one of the many states of the Holy Roman Empire, absorbed the neighboring duchy of Prussia. Frederick the Great (1740-1786), crowned King of Prussia, succeeded in extending and strengthening his kingdom, rivalling Austria, which in 1438 had recovered the imperial crown through the House of Austria. Napoleon, Emperor of France, hoped to extend his own power by placing his relatives in reigning positions throughout the Rhine duchies. The Congress of Vienna which sought to regulate European affairs, in 1814, had before it the problem of these petty kingdoms. The advocates of German union, including Prussia, wished to re-establish the old empire, but it was agreed that this should not be done. Fearing Napoleon, however, a confederation of thirty-nine states agreed to send deputies to a Diet at Frankfort, over which Austria was always to preside. Thus the Germany of 1815 was only a collection of independent states, each retaining its sovereign power. Following the over-

throw of Louis Napoleon, nephew of the great Napoleon, elected in 1848, Russia, Prussia and Austria, absolute monarchies, attempted to quell the spirit of revolution in Europe and checked for a time the efforts of the weaker nations to obtain freedom of government. Thus the iron heel of Austria crushed Italy's efforts at uniting itself until France and England gave aid, resulting in the union of Italy, Sicily and Sardinia, thanks also to the brains and courage of Cavour and Garibaldi. Meanwhile Prussia was advancing rapidly in all lines of industry and learning and drawing other states into economic co-operation. King William, of Prussia, (1861), with his chief adviser, Otto von Bismarck, set about to organize a military machine which would make Prussia the mightiest power in Europe. With this behind him, Bismarck succeeded in weakening Austria, excluding that state from the German political system, organizing the northern states into a union under Prussian control, and crushing France in the Franco-Prussian War (1870). France was forced to pay a large indemnity and cede to the victors the two provinces Alsace and Lorraine, while the southern German states joined the northern in proclaiming William Emperor (kaiser), of a united Germany. In the years following 1876, Germany not only had begun to develop within her own borders to a remarkable degree industrially, but she had extended her commerce and founded colonies in all parts of the world. Thousands of her inhabitants migrated to America, hating the imperial system which compelled military service and submission to autocratic rule. Lust for power and conquest led the rulers to lay schemes whereby Germany would surpass every other nation of the world. Colonies were strengthened throughout the East, especially in Africa, where trade with coast cities became most important. William I., who lived to be ninety years old, was succeeded by Frederick I. (1888), who had fought in the Austro-Prussian and Franco-Prussian wars, and who had shown liberal tendencies, marrying the crown princess of Great Britain, eldest daughter of Queen Victoria. During his three months' reign, he protested against the despotic Army Bill of 1862. William II. (1888-1918), became emperor at Frederick's death and reigned until he was forced to flee the country when the fate of autocrats was sealed by the Great War. From the beginning of his reign at the age of twenty-nine, he manifested his love of military power and glory, his absolutist policy, and his belief in himself as the "anointed elector of the Divine Will." In the first year of his reign the free cities of Hamburg and Bremen merged themselves into the "Fatherland". At the outbreak of the Great War, in 1914, the German Empire was a constitutional monarchy of twenty-five states and an imperial territory, Reichsland in central Europe. About 64.5 per cent of the area of the empire and 61.9 per cent of the population was that of Prussia. Under the imperial constitution, the King of Prussia was the Emperor of united Germany, though it must be remembered that the twenty-five states were scattered about in more or less detached fragments. The kaiser's aim was German conquest and dominance. The Pan-Germans and extreme Socialists differed, but the general war aims of the country were clearly enough shown when many statements were published in regard to the minimum which the German Empire would accept, how German power would be extended and the British Empire destroyed by an ultimate coalition between Germany, Russia, and Japan. "The development of a national militarism, based on a spirit of national patriotism," has been stated as a cause of the war in Europe. According to the principle of nationalism, Austria-Hungary should have been divided as the sympathies and tastes of the population might suggest. Thus, obeying the principle, she should have surrendered to Germany her German provinces, granted the Trentino and Trieste to Italy, Transylvania to Roumania, and Bosnia and Herzegovina to Servia. When in June, 1914, the Austrian heir-apparent, Archduke Francis Ferdinand, and his wife were assassinated at Sarajevo, the Austrian-Hungarian government feared that Servian patriots and their ideas of nationalism threatened the Hapsburg empire. They feared this all the more because the Russian orthodox Slavs were in sympathy with the Servian orthodox Slavs. Germany was prepared for the break between Austria and Servia, which served only as an excuse for pushing ambitious designs, long and carefully laid by the German militarists. To understand fully Germany's ideals, one must refer back for a moment to the beginnings of the empire. The democratic and liberal plans of the Frankfort Assembly in 1848 for a national government over a united Germany had failed. Bismarck with his "blood and iron" policy, had succeeded in establishing an empire which was unified, despotic though it was. Henceforth, Germans associated national patriotism with military power, represented by large armies, autocratic officers, and obedient subjects, the last named always to be taught and impressed with the doctrine from the cradle to the battlefield that the strong survive and that Might makes Right. In 1913 the Army Bill of Germany aroused Europe. It was evident that the millions of trained men and the stores of supplies and ammunition were for a purpose. In Africa German colonies and capitalists were contending for control. Vast industrial schemes were under way: the Krupp

munition makers were said by Karl Liebknecht, a German socialist, to be using their financial influence everywhere to stir up hatred which would lead to war. After Austria had declared war on Servia, it took only reports of Russian mobilization to bring a declaration of war by Germany against Russia. War between Germany and France began immediately, and when German troops occupied the neutral duchy of Luxemburg and entered neutral Belgium, England saw fit to declare war on Germany. Montenegro joined Servia against Austria-Hungary, and Japan declared war on Germany. Russia and Turkey declared war on each other and France and Great Britain on Turkey. German submarine warfare and outrages finally brought the United States into the conflict on the side of the Allies, (April 6, 1917). The conquest of German East Africa by the Allies was completed in December, 1917, and that of the protectorate of southwest Africa in July, 1915. German rule in these provinces was no longer to be tolerated, the war having revealed her autocratic aims and methods.

Popular discontent with the war and its burdens during the year 1918, led to revolution in Germany, though it was probably fabulously reported at first that the people were rebelling against military rule in order to cause the Allies to relax their efforts. The attitude of Maximilian Harden is a revelation of a type of German mind of the present. In 1918 he said Germany's cause was hopeless, and he bitterly criticised the kaiser, though in 1914 he had said that the Allies were like the decadent Romans and the Germans like the barbarians who had conquered them. "Your culture, gentlemen," he had said, "has not a healthy smell. Accustom yourselves as soon as possible to the fact that barbarians and warriors inhabit the German land. When Tangiers, Toulon, Antwerp and Calais are under the yoke of these barbarians, they will be glad of the occasion to talk pleasantly with you." By October, 1916, Herr Ebert and the socialists were demanding peace, popular government and the abdication of the kaiser. William's abdication took place in 1918. He fled to the Netherlands, and the revolution went on in earnest. Liebknecht became leader of the radicals or Spartacides, and for a time it seemed that Bolshevism would rule. Several German states seceded and declared themselves independent republics. The Bavarian republic was established and the German fleet fell into the hands of the revolutionists. Heligoland, Kiel, Aix-haven, Wilhelmshaven and Borkum were seized, and Berlin was disrupted by revolutionists. Laborers went on strikes, and peace was far from Germany, though the Armistice with the Allies had been signed November 11,1918. Herr Ebert became the new chancellor and promised popular government, and a new government was set up in Berlin. Each of the separate states continued to be in the throes of internal political strife, twelve governments being overthrown during the week following November 8, 1918. Saxony and Baden declared themselves republics, and Hamburg, Bremen, Ostfriesland and Schleswig-Holstein united in a North Sea Republic, with Hamburg as capital. What the fate of disrupted Germany will be can only be left to the imagination until the ruins of her autocratic system are cleared away, if cleared away they shall be.

Gettysburg.—A town in Pennsylvania, the site of the most decisive battle of the Civil War, on July 1-3, 1863, when Lee's last attempt to invade northern territory was vigorously repulsed by the Union army under General Meade. Both sides showed unusual valor, but the greater determination of the Federal troops gave them the victory. 2,500 of the 73,000 Confederates perished and 3,000 of the 82,000 Unionists. New courage was instilled into the northern army after this victory and their success prevailed from that day until the end of the conflict.

Goths, Ostrogoths, and Visigoths.—The Goths were one of the most powerful of the Germanic nations of antiquity, supposed to be of Scandinavian origin. The oldest extant record of them is in the writings of a contemporary of Alexander the Great, Pytheas, of Marseilles. They appear first in history on the Baltic, selling amber to the Teutons. Tacitus describes them as living under a regal government, enjoying considerable liberty. We next hear of them on the Black Sea about the mouth of the Danube in the third century. They increased rapidly in strength and numbers and in the reign of Philip (244-249 A. D.), ravaged Dacia.

In 402 A. D. Alaric, king of the Visigoths, invaded Italy, pillaged Rome in 410, and died on an expedition to conquer Sicily. The successor of Alaric, Athwulf (410-415), married a sister of Honorius (Placidia), entered Gaul, and in 412 crossed the Pyrenees, and invaded Spain. He was assassinated at Barcelona (415 A. D.). His successor, Wallia, ruled over southern Gaul and Spain, and assisted Rome against the Vandals.

The Ostrogoths were conquered by the Huns, and under compulsion joined Attila on his invasion of Gaul. Thousands were cut down by their kinsmen, the Visigoths, at the battle of Chalons, 461 A. D. Theodoric was the greatest of Ostrogothic kings. He won from Zeno, the eastern emperor, a part of his empire and became chief of the Imperial Guard and Consul in 484 A. D., and dethroned Romulus Augustulus, the last of the western emperors, reigning over Italy until his death in 526 A. D. On the whole he ruled wisely and justly. When Theodoric died, Justinian, emperor in the East, sent Belisarius to Rome to hold it for him, but he was unable to subdue the Goths.

Grant's Administration

I. The Centennial Exposition.—The One Hundredth Anniversary of the signing of the Declaration of Independence was celebrated by a great international exposition in Philadelphia in the summer of 1876. It continued five months and was visited by hundreds of thousands of Americans and by people representing 33 different foreign nations. The exposition had excellent results in the industrial growth of the nation.

II. Custer Massacre.—In 1876 General Custer attacked the Sioux Indians commanded by Chief Sitting Bull. Custer's troops were led into ambush and being greatly outnumbered by the Indians, were massacred almost to a man. General Custer was among those killed. Sitting Bull was never captured.

III. The Telephone.—Alexander Graham Bell completed the invention of the telephone and secured patents on his invention in 1876. His invention attracted much attention at the Centennial Exposition.

VI. The Canadian Boundary.—In a treaty with Great Britian, in 1871, the present boundary line between Canada and the United States was fixed. It was then the Oregon territory which had been explored by Lewis and Clark. The United States-Canada boundary line, more than 3,000 miles in length, and the subject of long and continuous dispute, was settled without resort to war, and peace has prevailed for more than 100 years as a result of treaty negotiations. This boundary line history is a model for all the nations of the earth.

Greece.—Greece is a peninsula of Europe as Europe is a peninsula of Asia. The home of the Hellenes, as the Greeks called themselves, was about the size of the state of Maine, but its surface was so mountainous and its coast line so complex, that there was no spot more than ten miles from some high summit or more than forty miles from salt water. Geographically, Greece faced Asia. The most and the best of her harbours opened to the south and east, in close touch with all that was known of the ancient cultures. The three great divisions of Greece were the Peloponnese (present Morea), containing six states; Hellas, north of this peninsula with nine states, the third being composed of the two states of Thessaly and Epirus. Greek history was reckoned by Olympiads, periods of four years, because every four years, as we have presidential elections, the Greeks held their Olympic Games, as far back as 776 B. C. The Greeks had a common language, religion and culture. These tended to keep them together and at peace. But they were always ready to fight each other through jealousy, rivalry or pride, because temperamentally they leaned to the philosophy of individualism, that is, pure selfishness. It is a theory of "Myself", and where that is strong, the national spirit is weak. Thucydides, who wrote the first great real history, took for his subject the Peloponnesian War, in which Greece committed suicide. In this book he writes the greatest of all Greek tragedies, the destruction of the most gifted people that have ever lived. In one of the first chapters he says: "It is one of the marks of the imbecility of ancient times that the Greeks never held anything in common."

The community of language, culture and religion was more than anything else due to Homer, who has given us the first and greatest epic poem ever written. In some ways it was a great thing for Greece that her life and thought could have been interpreted through such a mind. Although many of the ideals were those of battle and carnage which have not ceased to affect the minds of men on the whole the *Iliad* and the *Odyssey* were so far ahead of the standards of the rest of the world as to have been a real revelation. Moreover, Homer shows us many pictures of the daily life and customs of the people.

About 1000 B. C., barbarous and heavily armed tribes from the North called the Dorians, conquered the people of the Peloponnesus in many battles, after which for some centuries we have no record. When the curtain rises again upon Greece there is a new race consciousness; great migrations have taken place; kings have given way to oligarchies; these to tyrants and to some degree democracies up to 500 B. C. Fugitives and traders carried the Greek blood to the islands of the Ægean, and the Asiatic coasts, while about sixty settlements were made on the shores of the Black Sea. In Asia Minor where Miletus and Ephesus were the principal cities, the district

became known as Ionia. About the time of Homer began the rise of Sparta with the legislation of Lycurgus, who ordained two kings, a senate of thirty members and arranged for the people to meet from time to time in open-air assembly to hear and decide all laws.

An anecdote of Lycurgus will show the spirit of his educational system. He brought up two young hounds from the same litter upon two different systems. One dog was fed on choice foods, was pampered and left to follow his own instincts, while the other was allowed a spare diet and trained daily for the chase. One day in assembly the two hounds were brought out before the people. Before them a dish of meat was set on the ground and a hare let loose, and the two dogs were unleashed, The trained dog made at once for the hare, while the mollycoddle brother set upon the dish of meat. "O Spartans," said Lycurgus. "These two hounds are of the same noble breed, come from the same litter; behold how different their tastes! So be it with your children; train them early and they will become useful citizens; but let them grow up in idleness and luxury, and they will become the degenerate victims of vice." The system of Lycurgus was carried to its logical extreme, almost always a bad principle, for in some ways it became harsh and brutalizing. At seven boys were taken from home and put in barracks; their bodies were hardened and their wills educated to obedience. They were whipped on festival days to test their endurance, and they often died without a cry. "The Spartan life is so unendurable," said an Athenian, "that it is no wonder he throws it away in battle." But their austerity and dignity and the enduring character of their constitution, lasting for a half millennium amidst the chaotic conditions of revolutionary states, made them a political refuge and a moral force in all Greece. They were hard and narrow. They did nothing in art, literature or philosophy, but Greece lasted longer for their defences and "they helped to save something better than themselves." The issue was Thermopylæ in 480 B. C., when Xerxes, the Persian, had crossed the Hellespont with an immense host, meeting no resistance till he reached the pass of Thermopylæ, where the Greeks, under Leonidas, devoted themselves to certain death because it did not become a Spartan to desert his post. There they died, betrayed by a Greek, Ephialtes, and above their graves was placed the epitaph: "Strangers tell at Sparta that we lie here in obedience to her laws."

For a long time the "Tyrants" ruled the Sicilian and Asiatic colonies of Greece, always unconstitutionally, and sometimes over unwilling subjects. Greek literature is unfriendly to the tyrant, but he did one good thing in breaking down the power of the aristocracy; he laid the foundations for Greek democracy and helped remove some of those petty political barriers which were always the curse of Greece and finally resulted in the downfall of her civilization. The tyrant was much like the modern "Boss". He rode into power generally in the espousal of the cause of the poor and made officers of his relatives and friends who did his "collections" for him; but he differed from the modern "Boss" in that he encouraged intelligence and patronized the sciences and the arts. During this age the rudiments of democracy appeared in that long warfare not yet ended between the few and the many; literature was developed beyond epic poetry to lyric and elegiac; sculpture made a beginning, and architecture became supreme, while the sixth century B. C. produced some profound philosophers. Intellectual supremacy was in Miletus, then the wealthiest and most populous city in Greece, which also boasted some of the greatest of Greek colonizers, traders, navigators and discoverers. Later supremacy moved from Asia to the European cities of Greece, Sparta, and Athens, the latter the first successful republic and the former the first successful democracy in history. Sparta endured longer than Athens, and both degenerated through their own peculiar vices.

With modifications these two forms of government were continued till absorption in the Roman Empire in 146 B. C. The first break in Athens was the seizure of the government by Peisistratos, who with his family ruled for a half century. It was his son, Hippias, having fled to Persia and taken refuge with Darius, who persuaded that king to war on Greece. Hippias, a Greek, was therefore the occasion if not the cause of the Persian Wars—the first great conflict between East and West—Asu and Ereb— as the Assyrian monuments would have it— Asia and Europe. Meanwhile

Athens had assisted the Asiatic colonies in their revolt against Persia, and Darius landed in Attica with 110,000 men to attack Athens. Out of all Greece there were but one thousand Platean hoplites ready to succor the Athenians, and these joined Miltiades with his immortal ten thousand. Athens defeated the Persians at Marathon, 490 B. C., and ten years later the Greek forces destroyed the Persian fleet at Salamis and their armies at Platea and Mycale, (479 B. C.).

In the age of Pericles, Athens, that is, all of Attica, had a population of about 350,000, of which nearly half were citizens and the rest foreigners and slaves. The latter were often men of culture and of the same color, captives of war, and it was one of these, Æsop, who lived at Samos about 550 B. C., and who made even the frogs "croak wisdom." It is the great distinction of this city, which is Greece to the modern world, that in its brief supremacy it created the first democracy of antiquity, founded the beginnings of science, and produced those philosophers who have never yet been excelled and who will probably determine the course of human thought very largely to the end of time. There is something fitting in the mythical origin of the name of Athens. It is said that during the reign of the first king, Cecrops, of Egypt, two deities, Poseidon and Athena, contended for possession, whereupon the gods decreed that it should go to the one who made the most useful gift to mortals. Poseidon gave the horse; and Athena planted the olive tree and won—hence the name of Athens. The emblem of peace won over that of war. Is it a prophecy of the great democracy?

Pericles in his youth came under the influence of Anaxagoras, the first Greek thinker to declare that mind and not matter rules the universe, and such was the loftiness of his moral tone that friends and enemies declared him the Zeus of Athens, while Aristophanes speaks of him in one of his satires as the Olympian Pericles. He was a greater statesman than Themistocles, as just as Aristides; as ambitious for Athens as Cimon; and he was the greatest orator in Athens. Says one writer: "Persuasion sat on his lips, such was his charm." What Isocrates said of his city at a later time, was especially true of Athens in the age of Pericles: "Athens was the champion of the masses, the enemy of dynasties, denying the right of the many to be at the mercy of the few." There was nothing in this noble ideal to prevent Pericles from marking out his policy to make such a state the foremost in the world, and he succeeded. The first scheme of his policy was in the perfection of the Athenian defences, not forgetting that the world (then as now), was overrun by hordes of predatory savages whose law is that Might is Right. It was not till Athens forgot her ideals and her defences and, it is to be added, not till Sparta arose in jealous fury before the superiority of her neighbor, that the latter projected the Peloponnesian Wars which brought them both to ruin.

A short time after this war was begun, the plague broke out in Athens, having been brought back from Asia, and killed a fourth of the population, Pericles dying of it. The Spartans, who had started the war, sold out the liberties of the Asiatic colonies of Greece for Persian gold with which to destroy Greece, including herself; and it may be said that until the same kind of thing was perpetrated by the German Spartans of modern times, there was never so great a tragedy in the annals of men. These long fratricidal wars so weakened all of Greece that it was but awaiting the pretext of Philip of Macedon, who took advantage of the call for help of a foreigner against blood brothers, to move into Greece to assist the Phocians. From this foothold Philip steadily increased his influence and power, Demosthenes alone seeing through his plans, but with all of his eloquence he was unable to break through the reckless complacencies of the people of Greece who had been blinded by Macedonian propaganda. The empire of Philip grew from small beginnings to rule as far as the Danube and the Black Sea, when his son, Alexander the Great, came to the throne. In 334 B. C., he set out with a great army, conquering Persia and invading India, and died at Babylon at the age of thirty-six. His great empire was soon dismembered and finally fell to Rome.

The Greeks were the first to make the attempt to see the world whole and find the causes which connect things in the great unity. The poets, especially Homer and Hesiod, referred things to the gods. Thales, of Miletus, was the first to try to explain things in some natural order, assuming water as the fundamental principle, while Anaximander, his pupil, substituted the air. Anaximander taught that the earth is round, invented the sundial and made astronomical calculations, while Xenophanes, living in Italy, taught the existence of one changeless God. The followers of Pythagoras taught that philosophy must be a guide to life, while Democritus advocated a system of atomism, teaching the very opposite of a rational unity, the atom being the last reality. Anaxagoras was the first to teach that the ruling principle in the Universe is mind. "In the beginning," he said, "all things were chaos; then came Intelligence and set all in order."

Here one of the noblest characters in history appears — Socrates — with the dictum: "Know thyself." His personal habits and appearance made him the butt of ridicule of the comic poets. He wandered bare-footed in the market place trapping the unwary in argument, and showed himself one of the greatest of geniuses of all time. His principal disciple was Plato, teacher of Aristotle, who was the teacher of Alexander the Great. How much of the thinking of Plato and Aristotle was the work of Socrates we shall never know; but these three men, all contemporaries, in the field of pure thinking have never been excelled. The central point of the doctrine of Socrates was the soul and the moral life. He taught absolute loyalty to conscience; was accused by the bigots of his day and condemned to death for teaching false doctrines. Although opportunity was offered for his escape, he said that he had always taught obedience to the laws and he would obey them—and then he drank the hemlock. Plato, the most distinguished disciple of Socrates, taught that our ideas must have come from God, that they are spiritual realities of which material things are but the shadows. Virtue is resemblance to God, and men used to say that if Zeus had spoken, it would have been as Plato spoke. Plato's school was the forerunner of the modern university, teaching mathematics, science, music and philosophy, with a president and lecture staff, the students including men and women. This school lasted nearly a thousand years, being abolished by Justinian in 529 A. D., because its teachings were not supposed to be in consonance with Christian doctrines.

The battle of Salamis (480 B. C.), connects three of the greatest names in Greek literature. In that battle (as at Thermopylæ), fought Æschylus as a hoplite at the age of forty-five, the first and one of the greatest of all tragic dramatists; Sophocles at the age of fifteen, took part in the celebration of the victory; and Euripides was born on the day the battle was fought. Æschylus produced seventy tragedies of which but seven remain; Sophocles wrote more than a hundred, with the same number remaining; Euripides, the dramatist of the common people, has extant eighteen out of his ninety-two plays. The greatest of all comic poets was Aristophanes, also a contemporary, eleven of whose fifty-four comedies remain.

Hanseatic League.—The old Teutonic word "Hansa" means "league" or "confederacy". It was used to denote a movement among the awakening commercial powers of Europe, arising with the growing towns which sprang up after the disintegration of Feudalism began. It is pretty certain that its first motive was the mutual protection of the cities engaged, against the inroads of the pirates which infested the seas. (See Northmen). While these new trading towns held aloof from each other, they were the prey of the pirates. Hamburg, which had been founded by Charlemagne, made an alliance with Lubeck, which later became the center of the Hanseatic League. Soon other towns joined from the interior as well as on the coast, and by 1370 there were seventy cities in the League. Congresses were held at Lubeck, and their deliberations had great weight. Severe penalties followed the failure to obey these decrees. With growing commerce followed growing ambition, and the League no longer stood for defence alone, but for trade monopoly of the commerce of the North Sea like that of Venice on the Adriatic. These Congresses secured certain privileges and immunities from the Northern kings, as, for example, the use of the herring fisheries of the Sound. They repressed piracy and land robbery and established constitutional government. Their measures fostered the spirit of freedom and the sense of law and order, in those days so feeble. They drew in from the outer places of the earth many of the comforts of life hitherto unknown, raised the standards of living, developed architecture, encouraged agriculture and industry, and in many ways hastened the development of modern civilization, including the arts of navigation and shipbuilding, which they exercised in war and peace. The Hansa towns established agencies which they called "factories". This is a term used by the Hudson's Bay Company to this day in Canada, where the manager is called the Factor. Here the natural productions of the country were gathered and exchanged for the imports of the Hansa towns. They were exempt from taxes and from the laws of the land, being a power to themselves, the principal factories being in London, Bergen, Bruges and Novgorod. Jealousies grew out of the prosperity of the English Hansards, as the merchants resident were called, leading to frictions that were settled at the Treaty of Utrecht, which the Hansa League dictated. The League stretched from England to Russia, a commercial League of Nations which monopolized the trade of northern

Europe. But its very prosperity encouraged competition in other countries. Many towns withdrew from the League, setting up for themselves, and trade began to take the form of the political divisions of Europe. Then the era of discovery set in with the establishment of new trade routes, and the League finally fell in the Thirty Years' War with the ruin of Germany.

Harding's Election (1920). — President Wilson had been re-elected on the record of his Domestic Policies in 1916, but his Foreign Policies and especially his management of affairs at Paris reacted in 1920, in the election of Warren G. Harding as President of the United States by the most significant majority ever given to a Presidential candidate.

Harding's Administration

I. The Washington Conference.—The new administration invited Great Britian, France, Italy and Japan into a major conference on international affairs in 1921. Other nations participated. Disarmament was sought and international questions were settled, partly or wholly. Naval armaments were reduced by agreement on the basis of a 5 - 5 - 3 - 1¾ - 1¾ ratio for the United States, Great Britain, Japan, France and Italy, respectively. Japan agreed to withdraw from China. Most of the vexed questions in the Pacific were amicably settled. The reduction of Naval armaments on the ratios named is to continue ten years. No land armament reductions were agreed upon because France, by common agreement needed her army intact during the period of reconstruction.

II. The Coal and Rail Strikes.—During the summer of 1922 both bituminous and anthracite coal miners went out on strike. No coal was mined for a period of four months. At the same time the railroad shopmen went on strike, badly crippling freight service and interfering somewhat with the mails and the passenger service. The strikes were the result of various grievances, but mostly against wage reductions. The administration made numerous efforts to end the strikes but without definite results. Compromise finally prevailed at the end of September. But a severe coal shortage resulted and there was much real suffering during the following winter.

III. Treaty of Peace With Germany.—The Senate of the United States had refused to ratify the Versailles Treaty under the Wilson administration. War with Germany was not yet technically ended. A separate treaty of peace was therefore concluded between the United States and Germany and was signed by President Harding in July, 1921.

Benjamin Harrison's Administration

I. Oklahoma Opened.—Oklahoma was carved out of Indian Territory, having been purchased from the Indians for $4,000,000. In 1889, April 22, by edict of Congress, settlers were admitted. A rush was made by thousands of prospective settlers who had camped on the border waiting for the signal to go forward to possess the land. Cities grew in a single day; in a few months the new territory had more than 60,000 people.

II. Johnstown Flood.—In May, 1889, unusually heavy rains caused a reservoir above the city of Johnstown, Pa., to break and flood the country below. A high flood hurled itself down on the thriving city as a wall of water fifty feet high advanced rapidly and engulfed houses and people. 2,235 lives were lost; $10,000,000 damage was done.

III. Bureau of American Republics.—President Harrison and Secretary of State Blaine called the first Pan-American Congress to meet in Washington in 1889. An effort was made to unite the various Republics in friendship. Mutual understanding was the first necessity. To secure reliable information and spread it among the people of the various countries was the first endeavor. For this purpose, the Bureau of American Republics was organized, with headquarters in the city of Washington. Out of its work has grown amity among all American Republics. War is each year more remote, while peace and mutual good will and respect are growing more secure.

IV. New States.—During the Harrison Administration, six new states were admitted into the Union—North Dakota, South Dakota, Montana, Idaho, Washington, Wyoming.

Harrison-Tyler Administration (1841-1845).

I. Ashburton Treaty (1842).—Harrison accomplished little before he died a month after his election, but the appointment of Daniel Webster as Secretary of State. Immediately Tyler repudiated the party that had elected him, being a states right Jeffersonian instead of a Jacksonian nationalist. Webster at once opened negotiations with Lord Ashburton, Minister of England, at Washington, for the settlement of the northeastern boundary dispute. There was a large disputed territory claimed by both parties, but a compromise was reached with the present boundaries of Maine. The extradition of certain classes of criminals was agreed upon, a principle but partly held before; also the right of search, Webster managed to get into the treaty a declaration that sailors in American ships would "find their protection in the flag which is over them." Each nation agreed to keep vessels coasting off Africa and work in harmony for the cessation of the slave traffic. War was again averted with Great Britain.

II. Mormons. (1830).—A religious organization composed of followers of Joseph Smith, who organized the Church of Jesus Christ of Latter-Day Saints, at Fayette, New York, April 6, 1830. Smith claimed to have received from an angel an ancient history of the inhabitants of the American Continent from about 2200 B.C. to 420 A.D. This history, it is alleged, was an abridgement made by Mormon the last of their historians. It is claimed that this history, on plates of gold, was hid in a hill near Palmyra, New York, by Moroni, son of Mormon, about 420 A. D. Moroni revealed the record to Joseph Smith who was given divine power to translate it. There were three special witnesses who testified that the angel showed them the "plates" and said they were to bear witness to all the world. There were also eight other witnesses who testified that they beheld the "plates." The testimonies of these witnesses appear in each copy of the Book. Joseph and Hyrum Smith, brothers, were killed by a mob June 27, 1844. Brigham Young led the people west founding Salt Lake City and other settlements in Utah. Because of their industry they became a prosperous people, making the desert to blossom as the rose. About 2,000 missionaries who pay their own expenses are kept in the world by the Church.

III. Texas and the Extension of Slave Territory.—The South considered Texas a promising field for the extension of slave territory. Many emigrants went there from the South with their slaves. In 1836 they revolted from Mexico and of the 57 signers of the Texan Declaration of Independence, 50 were Southerners. The Texans, under General Sam Houston, defeated the Mexicans, led by Santa Anna, who was forced to recognize their independence. In 1837, the United States, and later England, France and Belgium, recognized Texas as an independent power, and the matter of annexation became a political issue. The Whigs and Democrats of the North were opposed to it, but finally in the last hours of Tyler's administration the state was admitted.

Hastings, Battle of.—The battle of Hastings was fougnt on the 14th of October, 1066, by the English against the invading Normans. King Harold of England was slain and William the Conqueror of Normandy became king in his place. It is said that on the eve of the battle the English feasted and sang while the invaders occupied their time in the confession of their sins. Harold's eye was pierced by an arrow and he was denied Christian burial. On Christmas Day, William was crowned at Westminster.

Hayes' Administration

I. The Disputed Election.—The election of Rutherford B. Hayes was disputed by his opponent, Samuel J. Tilden. Congress finally made the decision through the Electoral Commission which decided all the contested electoral votes in favor of Hayes and gave him a majority of one electoral vote, 186 to 185. This led to a bitter political situation in the early part of the new administration, but the President won the respect of his opponents and his administration was regarded as pure and honorable.

II. Electric Railway.—Thomas A. Edison perfected inventions by which he constructed an electric railway at Menlo Park, N. J., in 1881.

III. Railway Strike.—In 1877 the railroad workers of the Baltimore and Ohio went on strike against a reduction of wages. All freight traffic was stopped and the mails and passenger traffic were interrupted. Damage estimated at more than $10,000,000 was done, to property. Federal troops succeeded in ending the violence.

IV. Life Saving Service.—The United States Life Saving Service was organized in 1871 by act of Congress. This service extends over a coast line of about 10,000 miles, including the Atlantic, Pacific and Great Lakes. It is in operation throughout the year and saves many lives and much property annually.

The Hebrews.—Of all the Semetic peoples—Assyrians, Babylonians, Phoenicians and others—the Hebrews stand out pre-eminent. Their authentic records indeed scarcely go back further than 200 years before the birth of Christ. Their real history begins with Abraham, who came from Chaldea, and settled in the land of Canaan with his sons and their descendants, the twelve sons of Jacob afterwards giving rise to the twelve tribes. It is a moving story we are told of Jacob's favorite son, Joseph, sold by his brethern into slavery to the Egyptians. Joseph rose to power and became the mighty minister of the Pharaoh, one of the Hyksos rulers of Egypt. The tale goes on to say how Joseph forgave his cruel brothers and how he summoned them and

theirs to settle in a fertile district of Egypt—the "land of Goshen"—where they multiplied and grew very prosperous. But after many years had passed, the Egyptians were wroth at their own liberality, and little by little made bond slaves of these foreigners, who cherished their own religion, so much simpler and superior to the superstitions of the Nile dwellers; who kept themselves separate and neither intermarried nor intimately mingled with the native population. Untold hardships the Hebrews had to endure until Moses, about 1400 or 1350 B. C., arose among them and finally induced his kin to emigrate from Egypt. The exodus of the Israelites forms one of the most stirring accounts in the ancient parts of the Bible. The facts about the earlier life of Moses himself are not established. However, the main fact, i. e., that the Hebrews did leave Egypt and after long wandering about through the deserts of Arabia, effected the conquest of Canaan, seems unquestioned. So, too, is the giving of the grand moral code, the decalogue, through Moses and those who came after him. The laws framed and accepted by the Jews were immeasurably superior to those of any other people, recognizing no castes, (as in India), but equality before God. The institution of the Sabbath as a day of rest and reflection alone stamps the Hebrew code as a blessing to the whole world. Charity and forbearance, things unknown to the ancient world, are taught in the sacred scriptures of the Jews. Joshua continued the work of Moses, and the land of Canaan was divided between the twelve tribes. There remained, though, scattering numbers of the native population, heathens given to all the abominations of their sensual religions, who grew in number and rose frequently in rebellion. The period when judges, successors of Joshua administered the land, was an unquiet and unsafe one, and although heroic figures stand out, such as those of Gideon and Deborah, Ehud and Shamgar, Jephtha and Samson, the need of regular kingly rulers became urgent. Therefore, the last of the judges, Samuel, anointed Saul as the first king, and after Saul had proved recreant, chose David (1097 B. C.), from the great tribe of Judah, for king. During the reigns of David and his brilliant son, Solomon, the Hebrew people saw their days of greatest splendor and strength, and Palestine became quite renowned for a time for her military prowess, her wealth and civilization. Jerusalem was taken and made the capital; the power of the Philistines and Moabites was broken; the country was ruled as far as the Euphrates; the Phoenicians became the friends and allies of the conquerors, and Hiram, their prince, aided in building the great temple of Jehovah at Sion. Solomon, however, had already shown signs of unfaithfulness to the God of the Hebrews, and became idolatrous under the influence of his pagan wives. Unwittingly he had thereby begun to destroy the very foundations on which his power rested, and after his death (978) the stately structure began to topple.

The time of the schism and of subsequent captivity drew near. The Hebrew people split into two unequal parts, and their dominions became the kingdoms of Judah and Israel. Only two out of the twelve tribes remained faithful to the house of David, although Jerusalem continued wealthy and respected. In Jerusalem all the Jews sacrificed at least once a year Israel, the larger half, grew more and more idolatrous and began to admit heathens to their fold The prophets thundered their laments and their curses against the backsliders; Elijah, Elisha, Amos, Micah, Hosea, Isaiah, Jeremiah emptied the vessels of their wrath over the heads of the culprits, who paid no heed. Not only the moral power declined, but also the temporal. After the schism only Palestine remained in the hands of the Jews. A long and turbid time ensued, both in Judah and in Israel, and this was capped in 721 B. C., by the fall of Israel. The Babylonian king, Sargon, captured Samaria and carried King Hosea off to Nineveh in triumph. Judah, after escaping several previous times, feared even worse in 586, when Nebuchadnezzar, the Assyrian, took Jerusalem and the whole of Judah, and Zedekiah, loaded with chains and rendered blind, was taken to Babylon. The leaders of the nations were massacred most cruelly, and the remnant was sent into captivity.

Under the rule of Cyrus, the Persian, when Jewish captivity "by the weeping willows" had lasted seventy years, the Jews were allowed to return to Jerusalem and to rebuild it and the temple. Alexander the Great, two centuries later, invaded Palestine again, and offered sacrifice in the temple at Jerusalem, showing the Jews leniency. After Alexander's death, however, the Egyptians made themselves overlords of the country for about a hundred years. One of the Hellenistic rulers of Egypt, Ptolemy II., Philadelphus, placed the sacred books of the Jews in the famous library of Alexandria and had them translated into Greek, the so-called Septuagint. After the Egyptians came the Syrians as oppressors, and one of the Seleucides, Seleucus IV., plundered the great temple of its riches, while one of his successors, Antigonus IV., sacrilegiously caused the statue of Jove to be placed upon the very altar of Jehovah.

Against such desecration of their holiest, the Jews rose under the great fighting family of the Maccabees, Judas Maccabeus in the forefront. They freed themselves from the yoke of the Syrians, only to fall under that of the Romans. For almost two centuries they underwent the most cruel reverses; sometimes, for a short period, achieving their independence, and in the time when Jesus of Nazareth was born their lot was bearable. The bitter and lasting strife between the Pharisees (interpreters of the severe code of Moses) and Sadducees (latitudinarians) often disturbed the internal peace. Having become again Roman subjects, the Jews revolted in the days of Nero, the Emperor, the rising becoming more and more bitter under the following Roman rulers. Altogether, it is said, considerably over a million Jews perished during this, the most desperate rising of the Hebrews in History, until in the year 70 A. D., Titus, the son of Vespasian, utterly destroyed Jerusalem. A new town—lia Capitolina—was erected on the site, and the dispersion of the Hebrews began.

Holland.—(Netherlands). The kingdom of the Netherlands (Holland), became an independent state in 1815. The people belong to the Teutonic stock, most of them having descended from the old Batavians. The country had been first subject to the Caesars, then to Charlemagne, but after many vicissitudes assumed international importance in the sixteenth century under Charles V., who had not only inherited the Netherlands, but had been crowned Emperor of the Holy Roman Empire Under his son Philip II., religious wars with the Protestants were conducted with brutal tyrany and cruelty. In 1581 the Dutch Republic was established as an independent state under William of Orange (the Silent), the wars continuing till 1648. During this period the Dutch achieved distinction in science, art, literature, scholarship and commerce. William II. of Orange, came to the Stadtholdership in 1672 and defeated the ambitions of France. Ten years later he was crowned king of Great Britain and Ireland. Cut off from European commerce, Dutch merchants sought the Indies, where their honest dealings established them in the confidence of the natives. From their first trading post in Java (1603), they extended control over the Spice and Banda Islands, crowding out the Spanish and Portuguese and gaining monopoly of trade in Sumatra, Borneo and neighboring islands. Holland threatened to control the trade of the world, when Cromwell (1651), passed the Navigation Acts, forbidding the carrying of goods to and from England except in ships built and owned in England or her colonies and manned with English or colonial crews. War followed. For a quarter of a century in the English channel Dutch and British natives contended for supremacy of trade in the East, until finally the issue was decided by sea power. The result was that Holland was shut off, though she kept the trade of Java and Ceylon; while the English laid the foundations of their Indian Empire, founding Madras, Bombay and Calcutta. After the French Revolution, the French armies overran Holland and Napoleon made his brother, Louis Bonaparte, King of Holland. Waterloo and the Congress of Vienna led to the proclamation of William V., as William I., King of the Netherlands, in March, 1815. He was recognized as an independent sovereign by all the powers of Europe. Under William II., his son, a better constitution was granted than had been in effect. He died in 1849 and William III. reigned till 1890. In 1898 Queen Wilhelmina, descended from William the Silent, became sovereign in reality as well as in name on her eighteenth birthday, and she still reigns. Holland retains vast colonial possessions in the East, covering 783,000 square miles with a posulation of 38,000,000. These islands are Java and Madura, with the outposts Sumatra, Borneo, Riou Linga Archipelago, Banca, Billiton, Celebes, Molucca Archipelago, the Sunda Islands and a part of New Guinea.

Holy Alliance (1815).—The French Revolution had begun in an attack upon the Bourbons, and it ended in their restoration, with the Red Revolution and the Napoleonic cycle between. The Congress of Vienna was a reaction against revolution and all it stands for, followed by a further arrangement entered into by the rulers of Russia, Prussia and Austria, with the ulterior motive of fighting revolution or even reform in any guise in which it might present itself. After the defeat of Napoleon at Waterloo, Alexander I., of Russia, drew up in his own handwriting a pact which was signed by him, Francis of Austria and Frederick William of Prussia, declaring in the name and according to the principles of Jesus Christ that they would coerce the principles of charity, justice and peace in their internal administration, and in their foreign relations, they would hold the welfare of their subjects to be their greatest object. These three nations would form one Christian nation which should have for its sovereign "Him to Whom alone

power belongs as His possession, because in Him are found all the treasures of love, of knowledge and of infinite wisdom." No kings of constitutional countries could sign this precious "Christian" document, which became an instrument of tyranny and usurpation.

Hoover's Administration (1929-).—One of the first official acts of President Hoover was calling into special session the 71st Congress to consider legislation for agricultural relief. March 22nd, the British Schooner "I'm Alone," suspected of being a contraband carrier, was sunk off the Louisiana Coast by the U. S. Cutter "Dexter." On April 25th the two governments agreed to arbitrate the case.

On May 20th, a National Commission on Law Observance and Enforcement was appointed by President Hoover headed by former Attorney-general Wickersham.

In the celebration of the completion of the canalization of the Ohio river from Pittsburgh, Pa., to Cairo, Ill., in October, 1929, President Hoover was the principal figure. He delivered a speech on the waterway policy of his administration and outlined plans for a ten-year program. Thomas A. Edison received a world-wide tribute on October 21st on the fiftieth anniversary of his invention of the incandescent lamp.

The Kellogg-Briand antiwar treaty was officially declared in full force and effect on July 24th, by President Hoover in the presence of an assembly of diplomats and distinguished persons in the White House in Washington. The closing of the year 1929 marked a great collapse in the stock market which proved one of the most disastrous in its history. Commander Richard Evelyn Byrd made a flight over the south pole on November 28-29.

The *Graf Zeppelin*, German airship, made the trip around the world in August. The World Protocol was signed in Geneva on authorization of President Hoover and on behalf of the United States. A five power naval conference in London was held in January, 1930, to discuss the limitation or reduction of naval armaments. The death of Chief Justice Taft of the United States Supreme Court occurred in January, 1930, and Charles Evans Hughes was appointed in his stead to the Supreme Court bench.

Hundred Years' War.—On the death of Charles IV., king of France, King Edward III., of England, put forth a claim to the French throne, for his mother had been queen of France. But the French law held that no such right could descend through a woman. Edward's claim resulted in a century of war between France and England.

Hyksos, Invasion of Egypt by.—About the year 2000 B. C. Egypt was conquered by the Hyksos, or Shepherd Kings. The word is derived from Hyk, King, and Schaeu, shepherd. Their conquest put a stop to progress in Egypt for about two hundred years.

India.—Ancient India lay in the valleys of the Indus and the Ganges. To the former belonged the Punjab, the land of the Five Rivers. The head waters of these two systems overlap at the base of the Himalayas, the Indus flowing to the Arabian Sea, while the Ganges and the Brahmaputra mingle their waters and empty into the Bay of Bengal. The plains watered by these river systems cover an enormous extent of territory. They are guarded on the north by the loftiest of all mountain ranges, a most effective barrier between the two great ancient Asiatic civilizations which have developed on such different principles.

The India of today contains about one-fifth of all mankind, who speak 147 languages, recorded as vernacular in India, in an area as large as Europe, outside Russia. Among them modern scientists have discovered a lingual if not a race kinship with the people of the West. It is known that these tribes which came from the Northwest in Central Asia into the Punjab, conquering and driving out the black peoples and singing the hymns of the Vedas, told their children the same stories that are told by the peasants of Thuringia and Abruzzi to this day. The Indian people had developed a philosophy and a literature a half millennium before the Christian era, but their early history lies in the dark for a long period after the native races had been overcome by the Aryan invaders and had acquired a considerable civilization of their own. How an Aryan civilization (one can speak with no certainty of an Aryan race), came to differ so fundamentally from that of Greece is one of the most interesting of historical problems; but there are two influences that must have counted: their geography and the influence of the native hordes.

Almost no historic documents come down from antiquity till we find the edicts of Asoka engraved on rocks and pillars throughout the land, but these were mainly concerned with the duties of the Buddhists, whose religion has now disappeared from India, though it still probably has the largest number of worshippers of any religion in the world.

The Rig-Veda, which was composed after the invasion of the Indus, is very different from the system which followed in the Ganges territory. It is cheerful in its religious teachings, polytheistic but devoid of the dreamy pantheism and gloomy asceticism that grew in the East. The deities are the powers of nature. Indra was the god of thunder and rain; Varuna the encompassing day, and Agni the god of fire. There were thirty-three gods, but all sovereign power was to be found in Varuna, the upholder of order.

Earlier than 1000 B. C., migrations had taken place to the Ganges where the caste system sprang up, of which we find nothing in the earlier Vedic system. The priests are the Brahmins; the Brahmin in the Vedic is but a worshipper. But the priests composed the literary caste, and mind ruled matter, for they were the only ones who understood the language of the hymns and ritual. Brahma is the supreme being, the eternal source, out of which are evolved, not created, all things which come into being. All life, animal and vegetable, partakes of the universal life, and the doctrine of transmigration appears. The development of individuality is evil; hence to get back to Brahma by absorption is good. The laws of Manu make the Brahminical code, all directed towards the emancipation of the soul from matter.

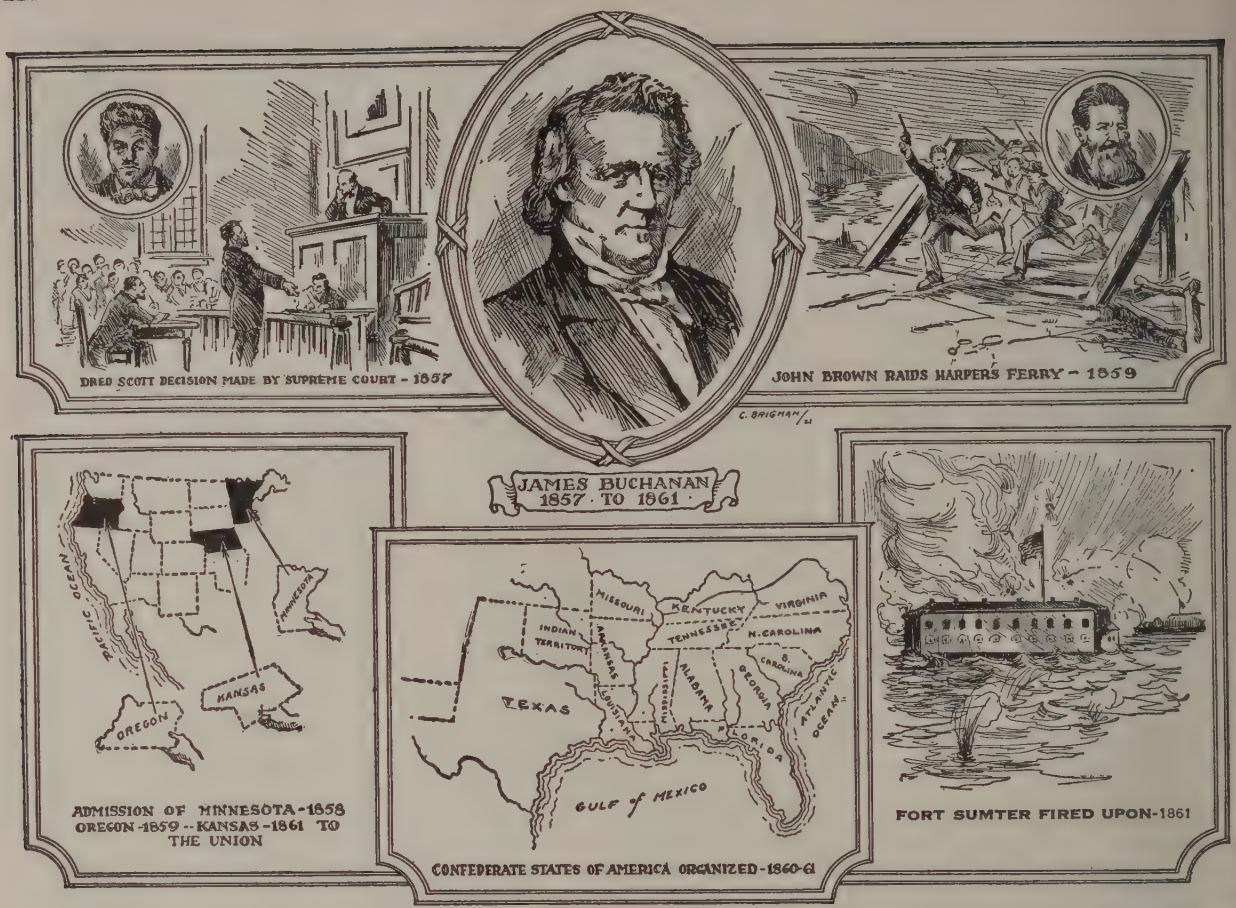
Against this system came the reaction of Buddha, the Enlightened. Prince Sarvathasiddha (Siddartha), son of the king of Kapilavastu, whose ancestors had come from the delta of the Indus, was born about 500 B. C. It is interesting to note that Cyrus, the Persian, reached the Indus about 540. Eight years later Prince Siddartha renounced the world and retired for some years for contemplation in the desert, returning to preach the faith of Buddha, that the world is a vain illusion and that the solution of life's riddles is to get out of the universe in which he can find no god. Actual records of the monuments show that later Buddhism, at least, was not an atheistic belief but a polytheism, Buddha himself taking the place as an incarnation of Vishnu. For a thousand years Buddha was worshipped as a god. Buddhism has been utterly swept away from India, except in Ceylon in the South and Nepal in the North, although it has permeated China, Japan, Russian Tartary and is today the religion of a fifth of mankind.

There is little authentic history between the invasion of Alexander the Great and the Mohammedan invasion in the eighth century and for two centuries the Moslem power gradually advanced into southern India. In 1398 Tamourlane sacked Delhi and returned to Central Asia. A descendant of his, Sultan Akbar, founded the Mogul Empire and his grandson, Akbar, extended Moslem dominion to the south of the peninsula, reigning for nearly a half century with some religious tolerance. In 1675, the Sikhs, a Hindu sect, established a religious and military commonwealth in the Punjab. The Dutch, French, Portuguese and English established themselves in India, but the British East India Company, a trading power, laid the foundations of British rule which was founded in 1858, and which has served to preserve law and order amongst the various peoples and interest, together with enormous improvements in the material civilization of the country. If Great Britain had done nothing more than keep the peace, that alone would have been a sufficient contribution to the cause of humanity, but the vast extent to which this power has contributed to education and general improvement must be reckoned as among the great services to the human race.

Ireland.—In prehistoric times Ireland seems, like Britain, to have been inhabited by peoples of the Iberian stock, who were successively invaded and subdued by Nemedians, Firbolgs, Tuatha Dé Danann, and Scots or Milesians. Most of these invaders seem to have been Celtic, some of the Cymric (British), and some of the Goidelic branch. The Scots were distinctly Goidelic. Ultimately the resulting races, Iberian at base but Celticized by degrees, had assumed the Celtic type of civilization and the Erse (Goidelic) language. The septs, tribes, or kingdoms were numerous, and constantly at war; though with curious permutations and combinations, some, or many of them, at times accepting the over-lordship of an ard-righ or chief king.

Irish history really begins with the Christianization of Ireland by St. Patrick, a Briton of Strathclyde, early in the fifth century. In the eighth century came Danish or Norse sea rovers, who established themselves in the east of Ireland, and, weakened by Brian Boru, and utterly defeated by him at Clontarf in 1014, were ultimately absorbed in the mass of the population. The intestinal strifes of the Irish potentates still went on as before, and led in 1167-72 to the Norman invasion.

Ireland had to undergo just 100 years later, and under Henry II., the fate England underwent under Henry's great-grandfather, William the Conqueror. Much of the Irish soil was parceled out, as England had been, among Norman nobles; but this change, so far from tending to consolidate Ireland into one kingdom, or into an organized province of the English mon-



archy, seemed but to have introduced additional elements of faction, feud, and warfare. The Norman chiefs fought with the Irish ones, and with one another; and became, as was said, "more Irish than the Irish themselves."

Henry VII. made an effort to reduce Ireland to order on Tudor lines; rebellions, expeditions, slaughterings, and confiscations went on in the reign of Henry VIII. and Elizabeth, the Reformation providing a new element of hostility between the English government and the Irish people. Under James I. vast confiscations took place, and great settlements, especially in Ulster, of English and Scottish immigrants. "The massacre of 1641" was directed against these aliens. Cromwell made a resettlement with a vengeance. The adhesion of the Irish to James II. brought William III. on them; and after the battle of the Boyne and the surrender of Limerick (1691) came the penal laws, which with many vastly more cruel provisions, debarred Catholics from all share in the Irish parliament.

In 1782 the Irish Protestant parliament had greater powers and dignities conferred on it; and under Grattan's influence, the emancipation of the Catholics seemed near. But Irish hopes were blighted by the obstinacy of George III. Hereupon the society of the United Irishmen became a distinctly rebellious organization, and fomented the short and futile rebellion of 1798. The union of the parliaments came into force in 1801.

The next great events in Irish history are Roman Catholic emancipation in 1829; O'Connell's agitation for the repeal of the union, begun in 1842; the potato famine of 1846; the fenian movement of 1867; the disestablishment of the Irish church (1871); Mr. Gladstone's land act (1881); the Home rule movement under Parnell; the home rule bill of 1886, defeated in the House of Commons; and that of 1893, defeated in the House of Lords.

The most important recent events in Irish history have been the visit of the king and queen to Dublin (1903); the Irish land purchase bill of 1903; and the resignation of Mr. George Wyndham, chief secretary for Ireland, over the incident connected with Sir Anthony MacDonnell. On January 7, 1921, the treaty was ratified, establishing the Irish Free State. By this treaty Ireland became a dominion of the British Empire, on the same general basis as Canada. It has its own parliament with a governor-general appointed by the King. Arthur Griffith was the first president of the provisional government. A constitution was adopted October 25, 1921. William T. Cosgrade became the first president under the new constitution. On December 5, 1921, King George gave royal sanction to the new legislation which made Ireland a dominion of the Empire and Timothy Healy was appointed the first governor-general. Ulster, the north of Ireland, remains separate from the Irish Free State, and enjoys its old status in the British Empire, with its own local government under its own premier. A new era of peace now prevails on the island.

Italy.—The area of Italy, 110,646 square miles, contains about 32½ million people, including the Islands of Sicily and Sardinia. Her colonial possessions are nearly half as large again as the mother country. The constitution of the kingdom is that of a limited monarchy, ruled by the hereditary monarchs of the house of Savoy, but only in conjunction with the National Parliament, consisting of two houses. The Senate is composed of the princes of the blood and a number of members appointed by the king for life, numbering in all just now, 334 members. The Chamber of Deputies of 508 members are elected by a majority of citizens above 21 years of age, who are literate and pay certain taxes. By the law of June 7, 1875, all men capable of bearing arms between the ages of 20 and 39 are liable to military duty. Compulsory education is also enforced.

The history of Italy as a nation begins late. It was never so dark for the national ideal as in 1850, after the revolutions of 1848, which after all were but rebellions since they were unsuccessful. At the time Italy comprised the Kingdom of the Two Sicilies, the Grand Duchy of Tuscany, the Duchies of Parma and Modena, the Lombardo-Venetian territory, the Kingdom of Sardinia, or Piedmont, and the States of the Church. In these, as usual in the history of the church, stretching across Italy from the Tuscan sea to the Po, Pope Pius IX. threw the weight of his power to the side of despotism. The bayonets of the Cardinal Antonelli were on the side of what aggressive bayonets generally stand for, while a Catholic Austrian garrison was maintained

in Florence. Piedmont had but 4,000,000 people, but there was a "Fundamental Statute" still in force, with a national army and flag and dynasty. In the struggles of this petty power the young son of Charles Albert, namely, Victor Emmanuel, bore himself well in battle in those struggles which preceded Italian Unity, in which Czvour played the part later essayed by Bismarck in Germany, in expelling Austria and creating a national unity. In the Crimean War Cavour declined the British subsidy and entered the Franco-British alliance as an equal. His army made a fine record while Austria dodged, exasperating her allies. This prepared the minds of the French and English at the Congress of Paris to listen to Cavour on the atrocities of Austrian rule in the peninsula. In 1859 Austria again took the initiative upon which Victor Emmanuel appealed to his compatriots over the whole of Italy and a popular uprising took place in which the Austrian Dukes and the papal tryants were alike expelled. But the victory of Solferino was immediately followed by the peace of Villafranca, between Napoleon the Little and Francis Joseph of Austria, giving the Italians some small gains, but betraying the great cause of Italy, causing Cavour to leave the Ministry.

But the assemblies of Modena, Parma and Tuscany declared alliance to Victor Emmanuel and asked for annexation to Piedmont, followed by the Romagna. Plebiscites by almost unanimous vote backed the assemblies, and Cavour again became Prime Minister over 11,000,000 people. Sicily rebelled against her tyrants, and Garibaldi, with an army of but 1,000 men sailed from Genoa on May 5, 1860, where in his red shirt, he took Sicily and marched on Naples. Here he was hailed as a liberator and dictator of the Two Sicilies. Mazzini, the purest patriot Italy had produced for many a weary century, was not favorable to the house of Piedmont, nor was Garibaldi, to whom all Europe was hostile, Cavour himself being held responsible for the revolutionary movement. Cavour was in a difficult position. His problem was whether he should hold with the powers of Europe or join in the party of progress. After asking the Pope to disband his foreign army and being refused, Cavour took the remaining papal territory in the north and, as he said in a speech, he left Rome and Venetia to the "arbitrament of time."

The Two Sicilies declared for Victor Emmanuel and an emancipated Italy, his troops and those of Garibaldi falling into each other's arms. All the Italian territories except Venetia and the papal territories on the Tuscan seas were now united under the tri-color of red, white and green. and on February 18, 1861, the first National Parliament assembled to enact laws for 22,000,000 people. Rome was as usual reactionary, but Venetia was added to Italy in an almost unanimous plebiscite on November 7, 1866. The French Premier, Rouher declared, "Italy shall never enter Rome," and France united with the Pope against Italy, but after the disasters of the Franco-Prussian War, French troops were withdrawn from Rome and the Italians occupied the city, and the ancient capital of the great Empire became that of New Italy. The Pope was bitterly opposed to all progress, tolerated no compromise or agreement and sought the Catholic powers of Europe. The land was covered with rich monasteries, glutted with wealth, while the people were perishing in their poverty. There were few roads or bridges or other public improvements—the wealth of the country had gone to the dukes and the church. They had neither schools, courts, police, nor a system of raising revenue, but the new king and his advisers began the organization of the kingdom. Victor Emmanuel died in 1878 and King Humbert reigned till 1900, when he was assassinated by an anarchist, Bresci, on July 29th. Beyond the Alps and on the other coast of the Adriatic were Italian peoples, Nice, Savoy and Corsica held by France, South Tyrol, Trieste and adjacent territories held by Austria, and Malta by Great Britain, were called *Italia Irredenta*, or "Unemancipated Italy," a good part of which has now become Italian through the Great War.

Jackson's Administration (1829-1837).—

I. New Era, The.—Washington, Jefferson, Jackson and Lincoln ushered in new eras in American history. Under Jackson came the strange mixture of personal politics coupled with the aim for a national democracy. Jackson never forgot a friend nor forgave an enemy, and he carried this intense personal bias into the White House. Before him, John Quincy Adams had never even removed an enemy unfriendly to him nor his administration; but Jackson made of his advent a house-cleaning under the slogan: "To the Victor belongs the spoils." There never has been a purer "rule" than that of the younger Adams, and within his lights there never has been a President with purer motives than those of Jackson's. It was he, a democrat of the democrats, who struck terror to the hearts of the southerners, when he met the sedition of the South, responding to the toast on Jefferson's birthday: "Our Federal Union: it must be preserved." He also said to a South Carolinian that "if a single drop of blood shall be shed there (South Carolina) in opposition to the laws of the United States, I will hang the first man I can lay my hands on to the first tree I can reach."

II. Spoils System, The.—Up to 1829 there had been in all 74 removals from office and most "for cause." Washington had made 9, J. Adams 10, Jefferson 39, Madison 5, Monroe 9, J. Q. Adams 2. Jackson made a clean sweep of everything worth anything, it being estimated that during his first year he had made 2,000 new appointments. He was the first President who distinctly made public office a reward for party service, and especially personal service to himself.

III. Kitchen Cabinet, The.—Jackson's abilities were those of war more than peace. He knew a smattering of law, had taken a prominent part in frontier disputes and development, had been a country storekeeper, lawyer, district attorney, judge, congressman and senator, before he was thirty-two years old. Jefferson says of him that he never could speak in the Senate "on account of the rashness of his feelings. . .he would choke with rage." Jackson rarely held a Cabinet meeting, but advised with his personal favorites, some of whom held positions in the departments and it became known that the road to favor led through these men who came to be known as "The Kitchen Cabinet."

IV. United States Bank (1816-1832).— The United States Bank had been chartered in 1816 for twenty years. In 1832 the directors asked for a renewal of the charter, although it was still four years before the old one expired. At first, Jackson was not unfriendly to the institution. but he became its inveterate enemy. Although Congress granted the request for renewal, it failed to pass over the President's veto.

V. Nullification (1831-1832).—Jackson persisted in enforcing the tariff law although he never liked it. It was enough that it was a law of the land. Opposing his national policy were many who believed that the Union was a confederacy of states, not a union of the people. Calhoun, the leader of the former party, claimed that the states had never given the Congress power to pass a tariff law. A convention was held in South Carolina declaring the tariff law null and void and that it ought to be resisted. The legislature confirmed the action of the convention and prepared for armed resistance. Jackson sent out his Nullification Proclamation and sent a naval force to collect the duties in the harbor of Charlestown, upon which, the leaders undertook to "nullify" the action of the convention and legislature. Henry Clay introduced a compromise bill which by 1842, made a tariff for revenue only.

Johnson's Administration

I. Negro Citizenship—The Fourteenth Amendment.—The Thirteenth Amendment had made the Negro free but it left him without the franchise. His civil rights were entirely denied by the former slave states. The sympathies of the President, Andrew Johnson, were largely with the southern states while Congress was still vindictive. The Civil Rights Law sought to secure the Freedman's civil status but President Johnson vetoed it. Congress promptly passed it over his veto. The Fourteenth Amendment was enacted to give the ballot to the freedmen. The ratification of this amendment by the southern states was slow, but Congress made ratification the condition on which the seceded states could win recognition as fully readmitted members of the Union. The last ratification was made July 28, 1868.

II. The Ku Klux Klan.—Great disorder prevailed throughout the slave territory after the negro had been freed. The relations between former master and the freedman were not clearly defined. A new social condition had to be established. The trouble was aggravated by the northerners, who came in as temporary government officials. Lawlessness was everywhere. The negro was inclined to be insolent and indolent. A secret association of southern gentlemen was therefore made to overawe the former slaves. The Klan appeared only at night, was always hooded and clad in grave clothes. Much cruelty was exercised. The lawless negro was overcome by more lawless white men. Murder and robbery were committed in the name of the Klan. Congress finally passed special laws by which the Klan was suppressed in 1871.

III.—Alaska was purchased from Russia in 1867 for the sum of $7,200,000. Secretary of State, William H. Seward, was chiefly instrumental in negotiating the purchase.

IV. Nebraska Admitted to Statehood.— Events leading up to the civil war had included the territory of Kansas and Nebraska. The John Brown raid and other conflicts had made this bloody ground. Both slave and free interests tried to get the territory admitted under their own conditions. After the war, admission as a state without slavery was prompt, taking place in 1867.

V. Impeachment.—The conflict between the congress and the President over the reconstruction of the south after the war

finally came to a head in the impeachment of President Johnson. The charges included high crimes and misdemeanors and the trial continued several months. The impeachment failed although the vote in the Senate stood 35 to 19 against the President, a two-thirds vote being required. Andrew Johnson, therefore, completed his term of office for which he had been elected with Abraham Lincoln, 1865-1869.

Japan.—Japan appears in authentic history very late, her past shrouded in the clouds of myths and legends. The Japanese race is largely Turinian, or Mongol, with probably some admixture of Malay. Originally an island people, they have gained large possessions on the mainland of Asia. Out of 4,000 islands, there are 5 which constitute Japan proper, without counting the areas wrested from other nations under a predatory war policy. A few drunken remnants of the degenerate Ainu race inhabit the northern islands, but there are now about 70,000,000 Japanese, increasing at the rate of three-quarters of a million a year. The people have mostly forsaken their religions without taking on new ones, but perhaps the Shinto religion, so called, is the form most in vogue, consisting of elaborate ceremonies and no morals, but blind obedience to the Mikado. There are debased forms of Buddhism in vogue and many other beliefs.

Jimmu Tenno is supposed to be the ancestor of the present dynasty, making a line from about 600 B. C. Sujin, the tenth Mikado, 97-30 B. C., reorganized the government upon an economic basis and opened intercourse with Korea. Little that is definite is known of Japanese history. Christianity was preached there by Xavier, a Jesuit missionary, in 1583, but on account of the fear of foreign domination, the government persecuted the Christians, proscribing Christianity and massacring all the Christians in the realm. In 1853 Commodore Perry, of the United States navy, entered the harbor of Yeddo, and later negotiated a treaty which opened certain ports for trade.

Up to 60 years ago Japan was intensely pacifist and exclusive; since that time it has been intensely militarist and exclusive, demanding of other nations, including the United States, privileges that it will not allow to us. The Revolution of 1868 destroyed the Shogun Dictatorship of Tokugowa and restored autocratic rule to the Emperor, in a reaction against pacifism to the most violent forms of militarism which has been the policy of Japan to this day. Japan has become a military adventurer. Some time ago, Yoshida Shion (who was executed at the age of twenty-nine for a fanatical murder), foretold a new order leading to Greater Japan. The Japanese were to conquer the Kurile Islands to the north and Saghalien, Kanchatka, Formosa, Korea, Manchuria and Eastern Siberia and become the leading power in Asia. Against the protests of Count Ito, one of the most enlightened statesmen of modern times, Japan declared war upon China (finding her totally unprepared), and by her unexpected success secured a recognition from Europe which years of peaceful progress had failed to obtain. This lesson was not lost on Japan. From the Chinese war onward the baleful influences of militarism have been uppermost in that country, and its policy has had scarcely a check. The Kurile Islands were acquired in 1875; the Loochoo Islands to the south in 1876; Formosa in 1895. The Russian war gave South Saghalien and made Japan absolutely predominant economically and politically in Korea, South Manchuria and Mongolia; while under the provisions of the Anglo-Japanese treaty, Korea was definitely annexed in 1910, and half the dream of Shion had been realized. Japan took Tsingtao from Germany at the opening of the Great War, and the Paris Treaty gave Shantung to Japan, throwing China into her arms and that after her aggressions under the "twenty-one points" gained under threat of war. The collapse of Russia gave her North Saghalien and Kamahatka, a free hand in the back country of Asia and Eastern Siberia, which she dominates today. Since the war she has doubled her mercantile marine and is doubling her navy, guaranteeing the control of the Pacific Ocean, which means eventually the islands of the Pacific and their vast resources. Already more than Shion dared to dream for Japan, that nation has won by wielding the sword or rattling the sabre.

The great question for western nations to solve just now is whether Japan is the "last stronghold of militarism or the bulwark of peace in the Far East." Japan now holds third place instead of seventh in the carrying trade of the world; she has doubled and trebled her capital since the war began; she has become a creditor instead of a debtor nation and made extensive investments abroad, especially in war materials left over from the war; has invested $125,000,000 in aerial experiment and turned the Island of Formosa into aerial training grounds; she has doubled her trade with China and quadrupled it with the United States, and in 1918, Japan exported ten times the average pre-war values to the countries of the world.

Jefferson's Administration (1801-1809).

I. The Growth of the National Domain.—The new century beginning with 1801, mark a new era in the history of the United States. In that year Jefferson began his administration and justified the prophecy of his greatest opponent, Hamilton, that it would be cautious and moderate, since in most of the great issues that he met, he acted as would the staunchest of Federals; as for example, in the acquisition of Louisiana Territory, which had just been ceded back to France by Spain. Jefferson saw the significance of the fact of this realm belonging to so powerful a country, and he wrote to Livingston, our representative at Paris, of the dangers of such a neighbor, adding, that from that moment "we must marry ourselves to the British fleet and nation." Livingston was directed to buy the strip of coast extending eastward from the Mississippi and including New Orleans, and at the moment Monroe reached Paris, Tallyrand asked if we did not want to buy the whole of Louisana. Napoleon took the position that such a purchase would establish the power of the United States and weaken England. Jefferson had for years held that under the Constitution, the Federal government possessed only such powers as were expressly delegated to it in that instrument, but Napoleon might change his mind before an amendment could be secured. Louisiana was purchased for $15,000,000, in spite of all his theories, concluding the greatest real estate transaction in the history of the world, consummating one of the most fortunate events in our own history. The character of Jefferson was larger than his doctrinaire theories.

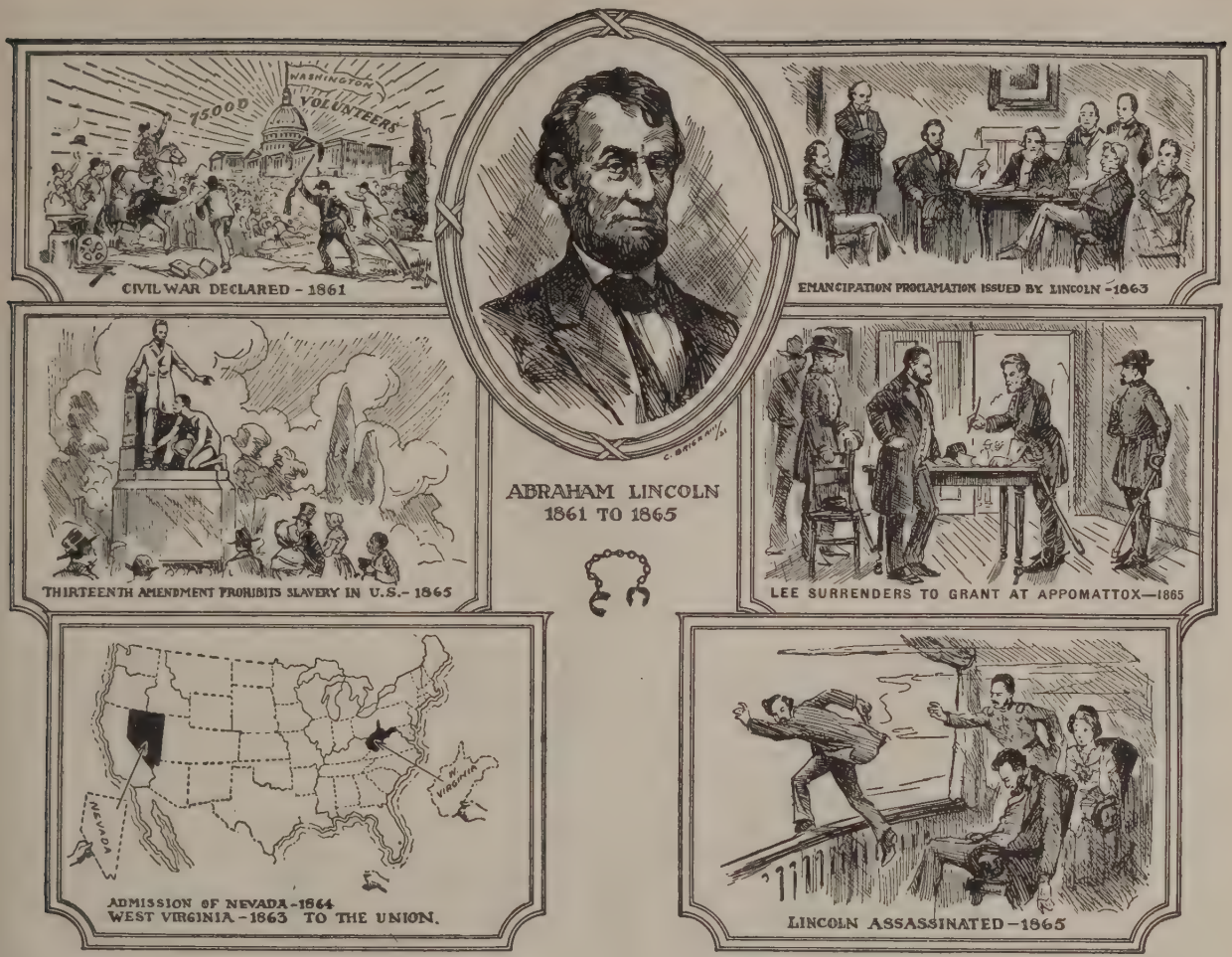
II. Adoption of the Twelfth Amendment (1804).—The Presidential election of 1800 developed a situation which resulted in the adoption of the Twelfth Amendment to the Constitution. Of the electoral votes, Adams received 65 and Jefferson and Aaron Burr each 73, although Burr was candidate for Vice-President. The election was thrown to the House of Representatives, where each state voted one, giving the Presidency to Jefferson and the Vice-Presidency to Burr. The new amendment provided for the vote of the electors for President and Vice-President to be on distinct and separate ballots. It was then no longer uncertain which of the party's candidates would be elected President.

III. The First Successful Steamboat (1807).—Before the end of the year 1787, Fitch at Philadelphia and Rumsey at Shepherdstown, Virginia, had both moved vessels by steam. By 1790 a Philadelphia steamboat company had plied a Fitch boat up and down the Delaware, while Samuel Morey of Connecticut and Elijah Ormsby of Rhode Island had made trips in vessels driven by steam. But it was not till 1807 that Robert Fulton made his trip to Albany on the Clermont, after Stevens had run a boat with a Watt engine on the Hudson and Oliver Evans had navigated a paddle-wheeled steamer on the Delaware and Schuylkill. But people said that no man in his senses would risk his life in a fire boat like the Clermont when there were good packets on the Hudson. By 1820 the Atlantic Ocean had been crossed by the Savannah and the Lakes and the Mississippi had been navigated.

Korea.—Korea is a peninsula lying between the Yellow Sea and the Sea of Japan, separated from Japan only by the Straits of Korea. The coast line of Korea is 1,740 miles, while the area is about 90,000 square miles. The climate is temperate and the soil fertile.

The earliest records of Korea go back to 1122 B. C., when the Chinese immigration took place with Ki-tse, who brought 5,000 Celestials with the Chinese arts and politics. Korea has been isolated to the degree that there is little if any authentic record of historic events. But Japan in 1876, gained a footing through a treaty, China following with the United States in 1882. Germany and Great Britain made their treaties in the next year, and France in 1886, two years after Italy and Russia signed, in 1884.

In 1888 it was rumoured that Russia was about to be placed in control over Korea. Since ancient times the suzerainty of China had been acknowledged, and one of the causes of the Japanese-Chinese war in 1894 was that Japan disputed it. When China renounced her right, Japan began to play an important part in Korean affairs. Russia again openly asserted her right to a voice in Korean affairs, which led to friction with Japan, resulting in 1904 in the Russo-Japanese war, after which Russia recognized Japan's paramount interest in Korea and transferred to Japan the lease to Port Arthur and the railroad to Chang-Chung. Japan denied any thought or wish for territorial rights on the Korean peninsula, and agreed to restore Manchuria. On July 19, 1909, Japan forced the abdication of the Emperor of Korea and on July 25th obtained by a treaty with her own nominees practically sovereign rights in the form of a "protectorate". On April 22, 1910, Japan annexed Korea.



Life-Saving Service of the United States.—Great are the dangers to the sailor off the eastern coast of North America. The prevalence of shipwrecks in this region aroused the anxiety of the American people who felt that something must be done to lessen these dangers. In 1848 eight life-saving stations were established along the New Jersey coast, each equipped with a trained crew. In 1871 the public demand caused Congress to establish the United States Life-Saving Service under the Treasury Department Under the leadership of Summer I. Kimball this service safeguarded, not only the Atlantic shores, but all the 10,000 miles of United States coastline. From Maine to Florida, along the Great Lakes, along the Gulf of Mexico, along the Pacific Coast, life-saving stations were erected, so that by 1910 these numbered 281. Between 1871 and 1910 the Life-Saving Service dealt with 21,250 disasters; they saved $234,985,892 worth of property out of $293,033,154 involved and out of 146,095 persons whose lives were endangered only 1,277 were lost.

Today a ship within sight of the coast cannot go down unnoticed. All through the year, even in the bitterest winter days, patrolmen watch from the shore, leaving no part untouched, and the men in the stations are ready at a signal to launch their surf boats into the foaming water, or to shoot the stalwart rope from the mouth of their cannon to haul in a stricken vessel

LINCOLN'S ADMINISTRATION

I. Firing on Fort Sumter.—The Confederate States moved promptly to occupy strategic places in their territory. A few forts within their territory continued in the hands of the U. S. Army when Lincoln was inaugurated. Sumter was one of them. It became clear at once that it must be surrendered or reinforced. Lincoln decided on the latter. The Confederate troops fired on the Fort and on the U. S. flag, on April 12, 1861, and thus precipitated the Civil War.

II. Declaration of War.—President Lincoln asked Congress for 75,000 volunteers to put down the rebellion which existed in the South as shown especially by the attack on Fort Sumter Congress approved the President's request on July 4, 1861, voting 500,000 men and $500,000,000

III. Emancipation Proclamation.—President Lincoln issued the Emancipation Proclamation, January 1, 1863. On September 22, 1862, he had issued a proclamation that he would free the slaves in all states that remained in rebellion on January 1, 1863. As not a single state returned to the Union, the final decree was issued as promised. The Border States were not included nor those parts of the seceded territory where secession was opposed.

IV. Reelection of Lincoln.—In November of 1864, Lincoln and Johnson were reelected. The events of the war had become more and more favorable to the Union cause The reelection of Lincoln was early assured, and showed a strong determination in the North and West to bring the war to a victorious close.

V. Appomattox—Lee's Surrender.—General Grant carried on his campaign with great vigor The South had been weakened by Sherman's raid in the rear of Lee's armies; a series of successes for the Union armies had finally concentrated the conflict in and around Richmond. Finally, on April 9, 1865, a little more than a month after Lincoln's second inauguration, Lee surrendered to Grant at Appomattox Court House. This brought all resistance to an end and promised peace and a reunited country

VI. Thirteenth Amendment.—By the thirteenth amendment, enacted in February 1865, slavery was abolished from the U. S. as a whole. The Emancipation

Proclamation had affected only the seceded states. The amendment became operative on December 18, 1865 when the necessary number of states — 27 — had ratified it.

Admission of Other New States.—In 1863, West Virginia, the loyal part of Virginia, was erected into a separate state and admitted into the Union. In 1864 Nevada was admitted; and in 1867, Nebraska was admitted, after Vice-President Johnson had succeeded to the presidency.

Lincoln, Assassination of.—The surrender of the Confederacy had ended the Civil War. The tremendous weight of that conflict was lifted from the shoulders of the President, while all over the north re-echoed the joy of victory. Lincoln had entered Richmond, the capital of the south, and on April 14, 1865, conferred with General Grant in Washington over the problems of the surrender. That evening he attended a play at Ford's Theater in Washington, sitting in the foremost box. During the last act a young southerner named Booth, insane in his violent sympathy for the south, entered the box unobserved and shot the President in the back of the head, wounding him fatally. Major Rathborne seized Booth, but Booth cut the major's hand with a dagger, jumped onto the stage and escaped through the rear door. The President lived in a state of unconsciousness for nine hours. The murderer was pursued and on the following day was taken prisoner.

The joy of the north was turned into mourning for the great leader whose wisdom and determination had saved the nation, and whose large sympathy had won the love of the people. And later, as the problem of restoring the shattered south faced the nation, together with the problem of adjusting the negroes to their freedom, it was seen how greatly was needed the guiding hand of him who had been taken away before his task was complete.

Lydia.—Lydia is remembered mostly today as the land over which Croesus reigned, so rich, especially in the gold from the River Pactolus which ran through his territory, that the very name of Croesus has been the synonym of wealth to this day. In his time the soldiers of his realm were among the best in the world, and they carried on successful war with the Phrygians, Mysians and Medes. The religion of the Lydians was a sun worship, after that of Babylonia, but it degenerated into a perversion of the sex principle reduced to a cult. Under the rule of the Mermadaean dynasty they carried war to Artaxerxes of the Medes, their capital, Sardis, being "filled" with gold from the River Pactolus, and from booty gained in battles. Croesus reigned from 563 to 548, B. C., when he formed a league of the Grecian coast towns against Cyrus, the Persian king who defeated him, taking him prisoner, and destroying Sardis. Thereupon Lydia became a satrapy of Persia.

Madison's Administration (1809-1817)

I. War of 1812 (1812-1814). — For more than two-and-a-half years the war of 1812 was carried on from the Gulf of Mexico and the Atlantic to the Great Lakes and under circumstances of which Americans are not proud. The whole period seems to have been filled with cowardice and defeat, and this because of unpreparedness and inefficiency. General Ross captured Washington in 1814 and the President's house and other public buildings were burned. After the treaty of Ghent was signed Andrew Jackson defeated the British at New Orleans and the country once more entered a period of internal prosperity.

Lincoln Memorial, Washington, D. C.

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II. States Admitted.—Louisiana was admitted to the Union in 1812, Indiana in 1816 and Florida was invaded by the United States troops under Jackson in 1818, pursuing the Seminoles, who had been protected by the Spanish inhabitants of St. Marks and Pensacola, which places he seized. While there he executed two British subjects, Arbuthnot and Ambrister, who seemed to be intriguing against the United States.

III. Star Spangled Banner Written.—The Star Spangled Banner was written by Francis Scott Key in 1814.

IV. Tariff of 1816.—The North and South united in a Tariff Act in 1816, Calhoun favouring a strong national policy and a protective tariff for domestic industry, even Jefferson advocating that the farmer and manufacturer stand side by side.

McKinley's Administration (1897-1901). Hawaii Annexed (1898).—For five years Hawaii had been a Republic seeking annexation to the United States, and in vain. But the Spanish war had changed the feelings of the American people, and the spirit of expansion of a half century before was again revived in a measure when the Hawaiian Islands were annexed by joint resolution of Congress signed by the President July 7, 1898. Formal transfer of sovereignty took place on August 12th, the islands remaining for a time under the existing form of government with a few changes, till June 14, 1900, when they were organized as a territory.

McKinley, Assassination of (1901).—On September 5, 1901 a large Pan-American Exposition was opened at Buffalo. President McKinley delivered an impressive address on the opening day and on the afternoon of the second day he stood on the Fair Grounds, shaking hands with the people who thronged by. Rather inconspicuous in the crowd was a young workman whose right hand was tied in a bandage. As he approached, McKinley took hold of the youth's left hand. Instantly the right hand was released from its bandage, a pistol raised and two shots rang through the air. The President fell back into the arms of the standers-by. Before losing consciousness he made two requests, that the news be broken gently to Mrs. McKinley and that the assassin receive no injury. For a time it was hoped he might recover, but the shots had proved fatal and early in the morning of September 14th he died. On the day of McKinley's funeral there was a hush over all the land. Work was suspended, few appeared on the streets. The mourning was universal.

The assassin, Czolgosz, was a German Pole, who had been incited to the deed by anarchist propaganda.

Manchuria.—Manchuria lies in the northeast part of the Chinese Empire, although to all intents and purposes it belongs no longer to China but to Japan. Like Korea, Manchuria, as well as Mongolia is on the way to being incorporated into the Japanese Empire. It is a very fertile country, lying in the temperate zone and inhabited by a thrifty people. The area is about 362,000 square miles, with many mountain regions full of mineral resources of the greatest value. The northern reaches are filled with vast forests of all kinds of wood known in similar climates.

In 1891 the first sod was turned by the Russian Government in the construction of the Siberian Railroad, while just ten years later the Russian Minister of Finance announced the completion of the railroad from the Transbaikal territory to Port Arthur and Vladivostock. A year before, in 1900, during the Boxer Rebellion, while the allied armies were engaged, the Russians occupied the right bank of the Amur and set up a provisional administration, declaring from St. Petersburg that the rumours that Russia had intentions of incorporating Manchuria were groundless. Upon Russia's failure to evacuate Manchuria in 1903, Japan began military preparations, resulting in the Russo-Japanese War. In spite of the Japanese promises under the sacred provisions of the Treaty of Portsmouth that she would faithfully observe the integrity of Manchuria and the Open Door, she has violated both of these treaty obligations and now seems to be in control of the whole Asiatic situation.

Manila Bay, Battle of.—The Battle of Manila Bay was fought by Admiral Dewey on the 1st of May, 1898, in Manila Harbor in the Philippines, against Admiral Montojo, whose fleet was supported by land batteries. Admiral Dewey had begun to mobilize the vessels of the American fleet at Hong Kong, when it became apparent that war with Spain was inevitable. It was thought that Manila Harbour had been planted with torpedoes, but the United States Squadron entered it on the night of April 30th and on the morning of May 1st opened fire. The men of the fleet breakfasted between the two engagements, which lasted less than two hours. The Spanish Flag-Ship, "Reina Christina" and the "Castilla" were burned; the "Don Juan de Austria" was blown up, and the entire Spanish fleet was destroyed. Dewey destroyed the water battery at Cavite and anchored off the city of Manila, sending word to the Governor General that if a shot was fired at his fleet from the city, he would lay the whole of Manila in ashes. The Spanish lost in officers and men about 2,000, while the Americans lost neither a ship nor a man.

Mexican War.—The Mexican War grew out of the annexation of Texas to the United States in 1845. Texas claimed the Rio Grande as her frontier, while Mexico insisted upon the Nueces River. The United States supported Texas and war was declared in 1846. General Zachary Taylor won the battles of Palo Alto and Resaca de la Palma, forcing Monterey to surrender. In July of the same year, General Winfield Scott won Vera Cruz and marched on the City of Mexico, fighting the battles of Cerro Gordo, Contreras, Churubusco, Molino del Rey and Chapultepec on the way. Upon the capture of the City of Mexico on September 14, 1847, the Treaty of Guadaloupe Hidalgo was signed, February 12, 1848.

Mexico.—Mexico was the land of the Aztecs and was conquered by Cortes, 1485-1547. Montezuma, the king, reigned over a large territory with many cities, and the people had made considerable advancement in the arts and industries. Cortes founded Vera Cruz with an expedition of 700 men taken from Santiago. He rewarded the hospitality of Montezuma, who received him in the City of Mexico, by making the king his prisoner and seizing the capital. The Aztecs were dismayed by the firearms and the horses of the strangers, but they made a good fight, although with the battle of Otumba, in 1520, Cortes put an end to the horrible religious rites of the Mexicans which were attended by human sacrifices. But his growing power aroused envy at home and he was recalled in 1528, first having visited the peninsula of Lower California.

Mexico remained under Spanish rule till 1821, when independence was achieved under Iturbide, a native of Mexico, after many attempts at revolution since 1808. Iturbide failed in making himself Emperor and the Mexican Republic was organized in 1824, and recognized by the United States in 1829. In 1835 Texas declared itself independent of Mexico, the revolt being led by Colonel Sam Houston of Tennessee, and in 1845 it was annexed to the United States, the leaders of the South wishing to add to the slave-holding territory. This led to the war with Mexico in which General Zachary Taylor and General Winfield Scott distinguished themselves, and the Treaty of Guadaloupe Hidalgo was signed in 1848, under the stipulations of which all claim to Texas was given up by Mexico to the Rio Grande, including New Mexico and Upper California.

Two parties were formed in Mexico after the war in which the church opposed the democratic movement. The church and clergy were possessed of nearly one-half of the landed property in the country. To retain this the church precipitated civil war, and Benito Juarez, was recognized as lawful President by the United States. France, Spain and England demanded reparation for injuries to their subjects during the war, and landed troops at Vera Cruz to enforce their demands, which in the case of England and Spain were met and their forces were withdrawn. But Louis Napoleon had failed to recognize Juarez, meaning to overthrow the government and establish a monarchy instead. Taking advantage of the civil war in America he sought to limit the power of the United States. He persuaded Archduke Maximilian, the brother of Francis Joseph of Austria to accept the throne and promised to support him. But at the close of the civil war the American people were well seasoned and equipped and in no pacifist frame of mind and they demanded the withdrawal of the French troops, whereupon he violated his promises to Maximilian, who was captured and shot. The years of 1868 and 1869 were full of insurrection, but in 1871 Juarez was re-elected but died next year.

Porfirio Diaz was raised to the office of the chief executive in 1876, and although he made of his office a dictatorship, he developed the country with its resources and transportation facilities and more than any other ruler before or since kept the peace.

The Middle Ages.—The term Middle Ages has been applied to that thousand-year lapse of the human mind when the cultivation of literature and the arts was suspended, interest in uplifting things was replaced by warfare, which arose at about the time of the great invasions of Rome, and ended with the taking of Constantinople—roughly speaking—from the downfall of Rome to the discovery of America. This dark and stormy period lies between ancient and modern times. During the greater part of it military and ecclesiastical chiefs ruled. The democracies

The CIVIL WAR

of antiquity were gone; the monarchies of modern times were in process of formation. The great wars were religious wars, or the struggle between the Empire and Papacy. It was preceded by the arrival of the Huns. It was succeeded by the establishment of the Huns in Europe. The invasion of the Germanic barbarians resulted in a mixture of Latin and Teutonic blood, the latter furnishing new blood and the former reacting upon the contact of Roman civilization. "The conquered became the civilizers and teachers of the conquerors." This was the first significant fact of the development of the Middle Ages; the second was that the church became about the only bond of unity, social or political, and welded the Roman and the Teutonic elements into something like a whole. The modern political units, later called nations, began to take form, and the Renaissance burst upon the world.

Monroe's Administration (1817 - 1825).

I. Foreign Relations.—James Monroe of Virginia had put his name to a treaty in 1806, while our representative at London, which Jefferson would not even submit to the Senate, but he had risen above the lines of party strife and shown elements of strength. He negotiated the commercial convention of 1815 with Great Britain, opening trade with the British West Indies and the Treaty of 1818 settling the Fisheries question, the northern boundary of the United States and the navigation of the Mississippi. He also acquired Florida from Spain. The Treaty was signed in 1819 and ratified in 1821. The Spanish-American Colonies south of us had thrown off the yoke of Spain and by 1822 revolutionary governments had been established in every Spanish colony on the American Hemisphere. Our interest in this matter led to the adoption of the famous Monroe Doctrine. (See Monroe Doctrine.)

II. Expansion.—Mississippi (1817), Illinois (1818), Alabama (1819), Maine (1820) and Missouri in 1821 were admitted to the United States, the last state as an offset to Maine, being slave territory, but all of Louisiana Territory north of Arkansas being free. The Missouri Compromise delayed the slavery issue for a generation and gave the North time to consolidate its strength for the final struggle.

III. Lafayette Visits Us.—In 1824 Lafayette, an old man then, visited the United States to wonder at the growth and prosperity of the land he had helped to save.

Monroe Doctrine.—The Monroe Doctrine was a compromise, which, through Clay and John Quincy Adams, defeated the opportunity, offered by George Canning, the British Minister, and supported by Monroe, Madison and Jefferson, of establishing a world-wide principle against the intervention of powerful states in the domestic affairs of small ones, especially with reference to the prevention of any despotism, European or Asiatic, from gaining a foothold on the American Hemisphere.

It arose out of the Holy Alliance. (See Holy Alliance.) This arch hypocrisy of modern history presented an unparalleled situation in Europe, which grew out of the Napoleonic wars and the Congress of Vienna. It arose in the visionary mind of Alexander I. of Russia, who was influenced by one Madame de Krudener, an attractive and discredited divorcee with whom he was used to pray privately. In the first instance England was party to the Holy Alliance so long as she could influence its decrees in favour of representative government. But when this was no longer possible, England withdrew, holding aloof from all part in the Conferences of Troppau and Laybach, although she had her representatives there to watch proceedings. Before this time, Lord Liverpool had said to Castlereagh as he was departing for Aix-la-Chapelle: "The Russians must be made to feel that we have a parliament and a public, to which we are responsible, and that we cannot permit ourselves to be drawn into views of policy which are wholly incompatible with the spirit of our government." This was in 1818. The revolutions followed in Spain, Portugal and Naples, and the year after in Greece, and measures were taken at Troppau and Laybach to suppress the movements for free government. At the meeting at Verona in October, 1822, all five powers were present, England being represented by Wellington. But the Treaty of Verona was avowedly a revision of the Holy Alliance.

Among the declarations of these Holy Allies, as they called themselves, were those to the effect, first, that the maxim of the sovereignty of the people is incompatible with the doctrine of the divine right, etc., and that the high contracting parties engage mutually in the most solemn manner, to use all their efforts to put an end to representative government in whatever countries it may exist in Europe, "and to prevent its being introduced in those countries where it is not yet known."

Article second undertook to declare the suppression of the liberty of the press; article third, to sustain the offices of religion, which contributes "most powerfully to keep nations in the state of obedience which they owe to their princes. . . . and the contracting powers join in offering thanks to the Pope, for what he has already done for them, and solicit his constant co-operation in their views of submitting the nations."

Article fourth made France their policemen, with a subsidy of 20,000,000 francs from each nation, Russia and Austria, "to the end of the war."

Wellington protested and withdrew from Verona, making the final break in the interests of democracy as against autocracy, and England turned to the United States. The South American colonies had drifted into something like independence while Napoleon's brother, Joseph, was on the throne of Spain, and Ferdinand, upon his restoration attempted again to fasten upon them the ancient yoke of tyranny. George Canning, Foreign Secretary of Great Britain, through Mr. Rush, the American Minister at London, urged the United States to take joint action against the Schemes of the Holy Alliance. In other words he proposed an Anglo-American Alliance. This, upon being communicated to President Monroe was favourably considered by him and he asked the advice of Madison and Jefferson, who also were much in favour of it. But it was opposed by John Quincy Adams and Henry Clay, and America took the stand alone in the introduction of the American System: to the effect that the American Hemisphere is no longer subject to European colonization, and a declaration against the extension of the system of the Holy Alliance.

Montenegro.—Montenegro is a little mountainous country with an area of but 3,630 square miles. The valleys are tolerably fertile and the climate is good, the mountain sides being covered with timber of many kinds. Farming is in a crude state, the peasants being ignorant, but sheep and cattle and goats are raised in large numbers. There are no manufactures and trade is left to foreigners.

The Montenegrins are Serbs, worshipping according to the rites of the Greek church, and are generally an athletic people. Their history is that of a struggle with the Turks. Sometimes they fought guerrilla warfare in the mountain fastnesses and sometimes they were the allies of other nations, as in 1877-78, when they joined Russia against the hereditary foe.

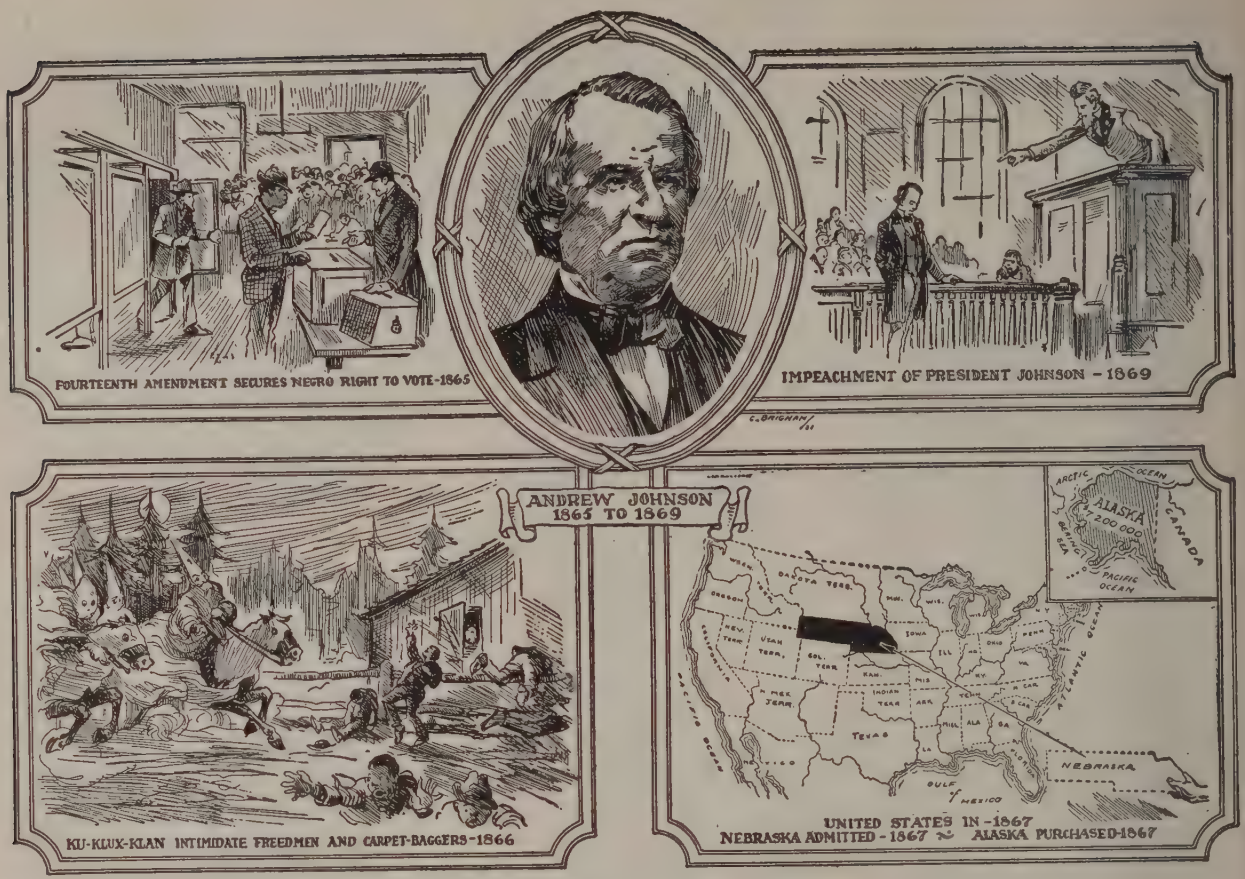
In 1848 the name of Montenegro was first applied to the mass of mountains then but about 1,500 square miles in area, and with a population of 107,000 people, scarcely larger than a second rate city of modern times. These people have been heroic to the last degree in maintaining their liberties, but their independence was not recognized by the Sultan until 1878.

Morocco.—Morocco, known to the natives as "The Farthest West" (Maghreb-el-Aksa), is an empire or sultanate with an area of about 219,000 square miles, lying west of Algeria on the continent of Africa to the south of Spain. The land produces crops known to the temperate and tropical zones, and while cattle are exported, no animals can be sent out of the country without a royal permit.

There are about 5,000,000 inhabitants divided into six divisions; many Jews whose ancestors were driven from Spain by the persecutions; the Arabs who are descended from the invaders of the seventh century; the Berbers who are still unsubdued; a few Europeans, mostly Spaniards; the Moors, who are the Mohammedans and large numbers of negroes who were brought in from the Sudan as slaves.

The Sultan receives and disburses the entire revenue; justice as it is sometimes called, is bought or sold, so far has commercialism invaded the land. The French have taken advantage of this spirit and have won their way into the graces of the sultan with soaps, phonographs and pianolas, establishing their civilized status, and finally establishing a protectorate in 1913.

Napoleonic Wars.—On October 4, 1795, Napoleon was made Commander-in-Chief of the troops provided for the defence of France. After he had quelled a mutiny among the National Guard, he was appointed commander of the forces of the Interior. The next year he conducted the victorious Italian campaign, which ended in the treaty of Campo-Formio, April 16, 1797. In 1798 he won the battles of Aboukir and the Pyramids and after he had taken Malta and Alexandria he returned to Paris to overthrow the existing government and become First Consul. In 1800 he raised an army of 36,000 men and crossed the Alps, gaining the victories of Montebello and Marengo. He signed the treaty of Luneville with Austria in 1801 and that of Amiens with England in 1802. He gained the battle of Austerlitz on December 2, 1805, signing the treaty of Presburg on December 26th of that year. In 1809 another war with Austria ended with the battle of Wagram, July 5th and 6th. In the beginning of winter 1812 he entered Moscow, but the city was burned to the ground by the inhabitants and he was forced to retreat through the snow



reaching France with but a remnant of his army. That year Prussia, Russia, Austria and Great Britain formed an alliance against Napoleon, which resulted in the invasion of Paris by the Allies and the abdication of Napoleon on April 11, 1814. He was banished to the Island of Elba, from which he escaped in ten months, returned to Paris and gathered together an army. He was finally defeated at the battle of Waterloo on June 18, 1815, and sent to the Island of St. Helena, where he died on May 5, 1821.

Code, Napoleon (1800-1804).—Napoleon gave to France a single legal code which took the place of the confusion of Frankish, Roman, royal, revolutionary, provincial and seigneurial laws and customs, which had made justice in France so dear and precarious. Napoleon himself took a personal part in the councils of the commission of jurists who had undertaken the task, and in 2,281 articles, French life became subject to a fair and uniform code of laws. They covered civil rights and duties; marriage and divorce with the powers and duties of guardians and wards; they modified the equal division of property among children. Other codes of the criminal law with penal codes followed, and Napoleon built frankly upon the principles of social equality and personal liberty, basing his work on the best of revolutonary jurisprudence. Thus the revolution has had its influence over the peoples of half the continent of Europe, for the code was substantially adopted by Switzerland, Holland, Spain, Prussia and the Illyrian provinces.

New Orleans, Battle of.—The battle of New Orleans was fought at the close of the War of 1812 after the peace treaty between the American and British Commissioners had been signed at Ghent. Communication was so slow then, that news of the peace could not reach the armies in time to prevent the battle. Sir Edward Pakenham and his English troops were rowed ashore near New Orleans in the midst of a storm and bitter cold weather, to be met by the American army under Andrew Jackson. 6,000 English troops attacked on the 8th of January, 1815, but the destruction of one-third of their number caused their surrender while the Americans, behind cotton breastworks, lost but seven men killed and the same number wounded.

Northmen.—The Northmen, hemmed in by the Carlovingian Empire and that of the Slavs, betook themselves to the sea. "The hurricane bears us on," they said, "wherever we wish to go." They set out on a career of pillage and slaughter and established themselves at the mouths of the Rhine, Seine and Loire, burning the cities of France and plundering the homes of the inhabitants. It was their devastations which prepared the way for Feudalism. After they had occupied France and the Netherlands, they invaded England and conquered it. Canute married the widow of Ethelred and paved the way for the union of the invaders with the conquered peoples, preventing the Danes from oppressing the English. In 861 A. D., they took the Faroe Islands and in 870 they took Iceland; while a number of years later they sailed as far as Greenland and Labrador, discovering America nearly a half millennium before Columbus. The Northmen were the Scandinavians, a Teutonic people, from whom later were formed the kingdoms of Norway, Sweden and Denmark. It was through the aid of the Northmen that the Duchy of France was raised to the rank of a kingdom, and Hugh Capet became the ancestor of a race of kings.

From time to time the English did as the Carlovingians' kings—bought off the Northmen, with the same final results, that they did not 'stay bought." But the Northmen, mostly Danes, who came to England, became English, as those who settled in France became French. This happened more quickly in Gaul than in Britain, because there were not as many of them and they were assimilated more easily. They adopted the manners and customs of the French till they came to be called Normans. The number of Danes who settled in England was very large. Being of close kin to the English of the Teutonic stock, they were rapidly assimilated and grafted upon the half-Romanized peoples a vitality which has endured.

Norway.—Norway with Sweden forms the Scandinavian peninsula, over a thousand miles long and at its broadest point 27[illegible] miles across. It has an area of 124,44[illegible] square miles, very mountainous. The people own their farms and have pastures back from the sea many miles, where they put out their stock for the summer. The horses are small but sure-footed, while in the extreme north is the reindeer. The

fisheries of Norway are of great value, including the herring, cod, mackerel, salmon, shark, seal, walrus and lobster. The Lutheran church is the state religion, to members of which alone are the offices open. Elementary schooling is compulsory, and there is a University at Christiania, the capital and chief port, Bergen and Trondhjem being the two other important seaports. (See Northmen.)

Oklahoma, Opening of (1889).—The territory now included in the State of Oklahoma was originally purchased by the United States from the Seminole Indians with the understanding that it would be reserved for Indians and negro freedmen. In the latter part of the nineteenth century the flood of migration westward created the demand that Oklahoma be opened to white settlers. The great cattle kings paid no attention to the law and took possession of certain tracts within the Indians' territory. Other white men made raids into the forbidden land, but were driven off by the Indians.

In 1889 Congress paid the Seminole Indians $4,000,000 with the understanding that there should be no more restrictions on Oklahoma, and on April 22, 1889, it was opened to settlers. Crowds camped outside the boundary awaiting the exact day and hour of opening and as the gates were thrown back, exactly at noon, there was a great cloud of dust and a beating of many hoofs as the pioneers rushed in to choose their homes. By nightfall a city of 10,000 inhabitants had grown up, Guthrie. By June Oklahoma City contained a business block and a number of residents. The scarcity of food, the arid heat and other hardships discouraged many of the eager settlers and large hordes departed. By December, nevertheless, Oklahoma boasted a population of 60,000 people, eleven schools and nine churches.

A movement was started among the neighboring Indians to drive off the white invaders which seemed for a time a real danger but came to naught.

In 1907 Oklahoma was admitted to the Union.

Open Door.—From time immemorial the distinctive policy of Japan has been one of exclusion. An impression prevails that the expedition of Commodore Perry to Japan in 1852-4, was a radical departure from our own exclusive policies and an interference with the hermetically sealed insularity with which Japan had surrounded herself. There were other reasons for this expedition, but the main factor was not only in closing her ports to the civilized world to which she had denied the obligations of a civilized nation, but in that when certain American sailors had been shipwrecked on the shores of Japan, they had failed to receive civilized treatment.

When, later, the Philippine Islands were retained by McKinley after the Spanish war, the Powers of Europe were well under way in what is known as the partition of China. We were next to England in the bulk of our commerce with China and this European policy was inimical to our trade there, to say nothing of the moral aspect of the case. This partition, of course, was concealed under the euphonious title of a "sphere of influence," but it was still effective in the monopoly of trade. It is now known, also, that Germany was preparing to take over the Philippines if the United States withdrew, and that the only thing that would prevent a world war was to take them ourselves.

On September 6, 1899, John Hay, Secretary of State, addressed his famous notes to Great Britain, Germany and Russia, each of which was asked to give the proper assurances, first, that it would not interfere with any treaty, port or vested interests in its so-called "sphere of influence;" second that the Chinese customs should not be interfered with, but should be collected by Chinese officials; and third, that it would not discriminate against other powers in matters of port dues or railroad rates.

Notes to the same effect were later sent to Japan, Italy and France. The only power addressed willing to sign such a declaration was England. All the other nations dodged the issue. A little later Lord Charles Beresford, returning from China by way of this country, asked the United States in an address before the San Francisco Chamber of Commerce to join with England and Japan in the policy of the Open Door. Our own insularity at that time prevented us from making good the policy that later came to be known as an American policy, but which, like the Monroe Doctrine, was first suggested by England and offered by England, but we fell back upon the blessed shibboleth of "no entangling alliances." John Hay favoured an alliance with England and Japan, both of which powers being ready for such an alliance, but we fell back upon the proposition that while we favoured it we would not fight for it, and the scheme fell through. That was doubtless the wish of McKinley instead of John Hay, but our feebleness prevented the making of a policy, which, to be a policy, must be good enough to fight for. Our responsible statesmen failed to realize that the "Open Door Policy" contained a sacred principle. Had we not failed the cause of civilization at that time, the powers might never have made their aggressions, the Boxer Rebellion might not have taken place and the Russo-Japanese War would have been prevented. More: all the terrible forces let loose by that war might have been held in leash and all subsequent history might have been not only different, but the Far-Eastern Question would not be as it is now—the most sinister thing that hovers over the future of the world. During the momentous days that preceded, accompanied and followed the Boxer Rebellion, John Hay stands out as the only living statesman in the world who combined vision with an adequate capacity of thought, but he realized the utter futility of his efforts. In a letter to John W. Foster he wrote the following significant words: (quoted from Litane). "What can be done in the present diseased state of mind? There is such a mad-dog hatred of England prevalent among the newspapers and politicians that anything we should do in China to take care of our imperilled interests would be set down to 'subservience to Great Britain'. How can I make bricks without straw? That we should be compelled to refuse the assistance of the greatest power of the world in carrying out our own policy, because all Irishmen are democrats and some Germans are fools—is enough to drive a man mad."

The upshot of the whole thing was that the "Open Door Policy" was ignored and has since been flouted and this has led to the Anglo-Japanese Alliance. The main opposition at that time came from Russia, later from Japan. Little by little the Policy has been whittled away till now there is not a shred left and Japan is mistress of China and therefore of Asia.

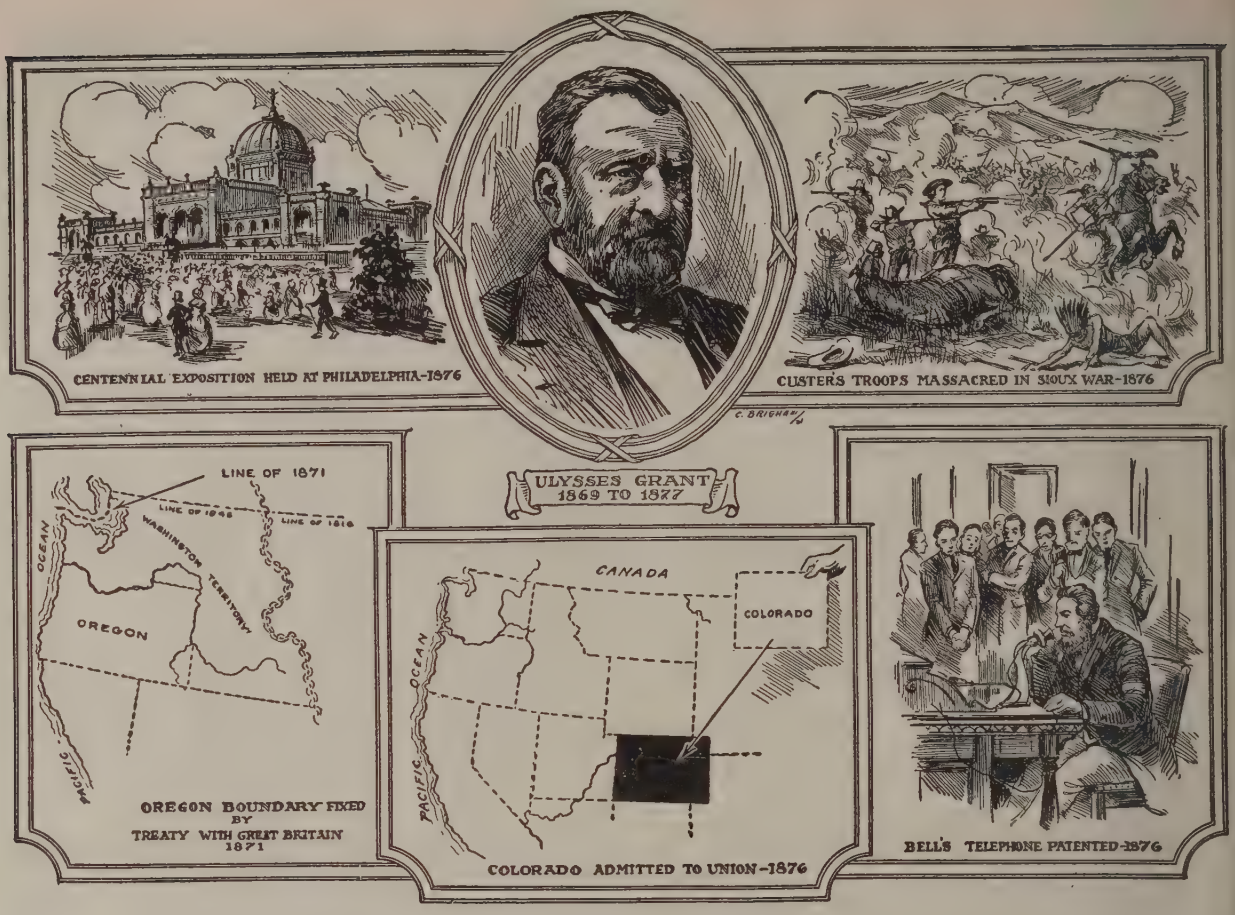
Panama.—Panama is a Republic occupying what was once the Isthmus of Darien and a department of Colombia. It asserted its independence in 1903, and was at once recognized by the United States and later by the principal powers of Europe. Under Spanish rule it had been a part of the Province of New Granada, which in 1718 became a viceroyalty, and encountered many vicissitudes after the war of independence, in successive revolutions. On November 18, 1903, a treaty was signed with the United States providing facilities for the construction and maintenance of the Panama Canal, in which treaty Panama grants a zone five miles wide on each side of the canal with exclusive control for police, sanitary, judicial and other purposes. Panama and Colon remain under Panaman control, but for defence the coast line and the Islands in the zone are controlled by the United States, together with jurisdiction for sanitation and quarantine over both cities and harbours. For this the United States paid $10,000,000 and after nine years will pay annually the sum of $250,000. The canal which has been built is now recognized as one of the greatest and most useful engineering achievements ever accomplished by man.

Panama Canal (1902-1914).—Ever since Balboa, in the sixteenth century, discovered the shortest route from the Atlantic to the Pacific across the Isthmus of Panama, it has been a world-wide dream to connect these two mighty oceans by a water-route through that territory and so increase tenfold the commerce between the East and the West. In the nineteenth century England, France, the United States and the republics of South America all considered projects for the building of a Panama Canal. France actually undertook the work in 1881 but failed to achieve more than a fraction of the excavation, due to the mismanagement of de Lesseps who made it a financial disaster.

In 1902, through the influence of President Roosevelt, the United States purchased the rights to the canal territory from France for $40,000,000 and offered to pay Colombia, in whose domain Panama lay, a sum of $10,000,000. Colombia's refusal to accept these terms might have foiled the entire scheme had not Panama, at this critical moment, shaken off the rule of Colombia and established an independent government. The United States recognized the Republic of Panama and Panama sold the desired region for $10,000,000, by the treaty of 1904.

The building of the canal was at first placed in charge of a commission, by decree of Congress, but there was unavoidable graft and inefficiency in this method and in 1907 Roosevelt transferred the management into the hands of the army engineers with Colonel Goethals at the head given supreme power. Goethals proved to be a master executive. He quelled all labor uprisings and brought about the completion of the gigantic task in 1913. This success would have been impossible without the services of Colonel Gorgas, chief sanitary officer, who wiped out the contagion of malaria and yellow fever, so prevalent on the Isthmus of Panama, and made the canal zone a safe and healthy region.

On August 15, 1914, the Panama Canal was officially opened for commerce and the neutrality of that zone proclaimed. The total cost of the undertaking has been estimated at $361,874,861.



Parthia.—The Parthian Empire flourished for about 500 years (250 B. C. to 226 A. D.). It was built upon the ruins of the Persian Empire of Darius and Xerxes. The Parthians were a branch of that Mongol tribe known as the Scythians who inhabited southeastern Europe and were among the lowest and most ferocious of the wild men of the times. While Cæsar was subduing Gaul, Crassus made war on these Parthians who outmaneuvered and outfought the Romans. Crassus was killed and but a remnant of his army escaped. In 250 B. C., Arsaces I. had defeated the Romans, being the chief of the Dahæ tribe and had become the first king of the Parthians. His son, Arsaces II., cemented the family power, while his son, Arsaces III., twice defeated Antiochus the Great of Syria. Mithridates I. reigned from 174 to 136 B. C., during which long period the Parthians extended their rule over the whole of Media, Bactria, Babylonia, Susiana and Persia. From 136 to 127 B. C., Arsaces VII. was attacked by many hordes of Mongolians, some of them the Scythians, and he and some of his successors fell in fighting them, but they were checked by Mithridates II. (124-87 B. C.), to be defeated by Tigranes of Armenia.

Peloponnesian War.—The Peloponnesian War was a long civil strife in Greece (431-404 B. C.), between Athens and Sparta with their respective allies, resulting in the destruction of Athens. This, one of the most useless tragedies and one of the most startling lessons in all history, had its roots in the growing individualism of the time, the "every-fellow-for-himself" theory of life. During the Golden Age of Pericles' "reign" the Athenians grew to love pleasure and luxury and peace, but they lost the lessons of discipline (on which the Spartan Republic was founded) and they forgot the kind of world they were living in. They lost sight of preparedness and neglected their defences. Men no longer strove for public welfare—they sought their own pleasure.

The conflict was brought on by the Corinthian jealousy of Athens' commercial superiority. Sparta came to the aid of Corinth, and, in the ensuing conflict, Pericles played a waiting game which might have been successful but for the plague which at that time was sweeping Asia Minor and had spread to Athens. Pericles died—half the population of Athens died and the rest were disabled. The war was marked by the utmost cruelty and brutality on the part of Sparta and her allies and Sparta showed a treachery scarcely equalled by allying with Persia for the destruction of Greek civilization. In return for Persian gold, Sparta allowed Persia to rule over all the Greeks of Asia Minor, and with this money the Spartans built fleets with which they destroyed Athens. Spartan supremacy was short-lived, that of Thebes was shorter, and all paved the way for Macedonian rule under Philip of Macedon and Alexander the Great.

Persia.—Early in prehistoric days two Aryan peoples, the Medes and the Persians, migrated from their home at the head-waters of the Oxus, in Central Asia, to the western part of the plains of Iran. Here the Medes settled, but the Persians moved on to the southern border of the Persian Gulf. The Medes and the Persians were fire worshippers. They believed in the age-long conflict between the powers of light and those of darkness: Ormuzd and Ahriman. Once neighbors of the Indian peoples and of blood kin, their religion became a dualism. The one deity made the world good, the other put in it all that is evil; so in man vice and virtue are struggling for the mastery. This is the religion of the Magi who grafted their dualism upon the monotheism of the ancient Iranians, got from the more ancient tribes of Media. We first find the Medes under Shalmaneser II., about 840 B. C., under the Assyrian power. Cyaxares, about 600 B. C., delivered the Medes from the Scythians. Under Cyrus the Great, the Persians gained the Iranian supremacy and founded an Empire that comprised nearly all the civilized nations of Asia. The conquest of Lydia and Babylon by Cyrus, of Egypt by Cambyses, and the victories of Darius, brought the best of the known world under Persian control.

At the time of Solon and Cyrus lived Crœsus, king of Lydia, a country lying on the Black and Mediterranean Seas, as far east as the Halys River. It was a country rich in minerals, and Crœsus became the

wealthiest king of antiquity. He subdued and ruled all the Greek cities of Asia Minor. But he was last and most famous of his line, for he was a contemporary of Cyrus the Great, who coveted his possessions. One of the search-lights of history comes here to enlighten us in a little story of a visit of Solon to Crœsus, who showed him all his gold and precious stones, upon which Solon replied: "When one cometh who hath more iron, he will become master of all this gold." We are told that when Cyrus had dragged Crœsus as a captive behind his chariot to the funeral pyre already lighted for his death, he spoke of Solon, whereupon Cyrus delivered him from death.

Cambyses conquered Egypt in his short reign of seven years and would have attacked Carthage, but for the fact that the Phœnician soldiers who manned his fleets refused to fight against their brethren.

Darius (521-485 B. C.), reconquered countries which had revolted and spread dominion as far as India and North Africa, and on to the borders of Macedonia. He organized his Imperial system into large districts called Satrapies and introduced order into his Empire and among those people whom he had overcome.

The Persian Empire stretched from east to west for 3,000 miles and was from 5 to 1,500 miles in width, covering nearly 2,000,000 square miles. Great roads and postal communications connected the cities and most distant provinces. From Susa to Sardis for 1,700 miles was one road with convenient stations over which couriers of the king rode in six or seven days. The Romans copied the Persian system of communications, which was one of the contributing causes of Roman power.

In 334 B. C., Alexander the Great crossed the Hellespont with 30,000 foot and 4,500 horse and defeated the Persians with 110,000 men. The next year he vanquished Darius at Issus, overran the whole Persian Empire, burning Persepolis, thus announcing that a new conqueror had arisen in Persia which from that time until the conqueror's death became the eastern part of the Macedonian Empire.

About two centuries before Christ, Arsaces founded the Parthian monarchy, while a century later arose the Sassanidæ, who restored the empir of the ancient Persians with its religion and institutions. This empire was overrun by the Mohammedans, who in turn suffered from the invasions of Ghengis and the Turks, followed by the Afghans, who carried destruction everywhere. Nadir Shah, a Persian, avenged the Afghan outrages, but civil war followed till the country was cut to pieces. In 1793 A. D., Aga Mohammed, a eunuch, raised himself to the throne and reigned during his lifetime, founding the present dynasty. In his lifetime war was carried on with Russia in 1813 and 1828, and with England in 1856-7. In 1896 the Shah Nasr-ed-Din was assassinated at Teheran. Muhammed Ali granted a constitution in 1907, but broke faith with the people and a revolution followed, causing his abdication in 1909. He was succeeded by his son Ahmad Shah.

Persian Wars.—Darius, of Persia, after he had crushed the rebellious province of Miletus, sent his fleet against the Greeks, but the fleet was lost in a storm off Mt. Athos. In 490 B. C., a second expedition was sent, landing 100,000 Persian soldiers at Marathon. Here they were defeated by 10,000 Athenians and 1,000 Plateans. This glorious battle for a time saved the Greek civilization and made possible its full development during the Age of Pericles.

Themistocles of Athens, realizing that it was but a question of time before the Persians would come again, prepared an Athenian fleet in the face of much opposition by the people. In 480 B. C., Xerxes succeeded Darius as king of Persia and, after reducing Egypt, gathered the vast resources of his empire and sailed against Greece with 1,000,000 men and 1,200 ships. He bridged the Dardanelles and subdued Thrace, Macedonia and Thessaly. At the pass of Thermopylæ he was opposed by King Leonidas with 300 men, who died to a man, having been betrayed by a Greek traitor. The Athenian fleet retreated to Salamis, leaving Athens and Central Greece at the mercy of the Persians. Xerxes burned Athens. Themistocles, by strategy, forced a naval battle in which the Persian king saw the destruction of his fleet before his eyes. On the same day Pausanias, king of Sparta, with 100,000 men defeated the Persians at Mycale on the Asiatic coast. Athens now sought to free the Asiatic Greeks from Persian rule, which was accomplished when Cimon gained two great victories over the Persians off the coast of Asia and one near Cyprus, thus ending the Persian Wars.

Phœnicia.—The Phœnicians, like their neighbors, the Hebrews, were Semites. Both nations were possessed of a strong commercial sense, but while the former excelled as traders and explorers, the latter were pre-eminent in spiritual insight and, for their day, in moral character. The Phœnicians were inventors and cunning, tireless merchants, but their religious ideas were among the most depraved of all ancient times. They invented glassware, purple dyes, many improvements in building ships and in navigation; they were skillful weavers, deft artificers in gold, silver and precious stones. They carried their trade as far as the shores of Britain and the Baltic seas and to the confines of India, but they made no maps, left no records of their travels, and much they might have done for the world has been lost through their secrecy in matters of trade.

The home land of the Phœnicians was a narrow strip of sandy, and for the most part, sterile soil, yielding little to agriculture, but they owned the forests of Lebanon where they got the timbers for their shipwrights, and their main occupation was not in acquiring property, but in making posts for trading purposes, and in the development of colonies at the most advantageous points suitable for their commercial aims. One of their earliest settlements was in the Island of Cyprus in the Eastern Mediterranean which became the shrine of their goddess Astarte (or the Aphrodite of the Greeks), and Crete became another center of commerce. They founded Massalia in Gaul, now Marseilles; Cadiz in Spain, where they found mercury and silver and worked the mines; they got tin from England, amber from the Baltic, and pearls from the Persian Gulf; started caravans overland to India and settled many cities in Sicily, Malta, Leptis, Adrumentum, Utica, on the coasts of Africa, also Carthage, not far from the present city of Tunis. This settlement finally outstripped all other Phœnician cities and became so great as to arouse all the fear and envy of Rome. Tyre and Sidon were their two principal cities and became known the world over.

The Phœnicians were essentially city people and in their cities developed their so-called religion, worshipping the goddess Astarte, representative of the female generative principle, while Moloch was the god of destruction, and therefore of war. To these they made frightful and bloody sacrifices, the mothers sometimes throwing their own children into the flames to propitiate the deities, their religious festivities being grossly sensual. The Phœnicians were a nation of pacifists. They were opposed to war—hated it—and loved trade, and the consequence was that Tyre and Sidon were often sacked and plundered by the more virile races. Tyre alone was plundered fourteen times, to be destroyed finally by Alexander the Great; Sidon meeting a similar fate later on. Phœnicia was at the height of its power at about 1000 B. C., for centuries being subject in turn to Babylon, Egypt and Persia. To the Phœnicians is given the credit of introducing a written alphabet, later adopted by the Greeks and from and through them by the civilized world.

Pierce's Administration (1853-1857).

I. Kansas-Nebraska Law, The.—In January, 1854, Stephen A. Douglas of Illinois introduced the Nebraska Bill, flouting the Missouri Compromise, and providing that all the territory between the Missouri River and the Rocky Mountains, then a wilderness, should be admitted as Nebraska under squatter sovereignty rule. The Bill was recalled and the Kansas and Nebraska Bill was introduced, repealing the Missouri Compromise and making territory north of 36°-30′ open to slavery. The Bill was passed and Pierce signed it, upon which began the seven years' struggle in Kansas. Missouri organized the migration of slave men, calling on the people of the South to hurry in to the new state. Northerners also flocked in and settled. In November of the same year there was an election of a territorial delegate to represent Kansas in Congress, and armed bands flocked over the border from Missouri, took possession of the polls and illegally elected a pro-slavery delegate. The same thing happened substantially in March of the next year, when the legislature was to be elected to determine whether Kansas should be slave or free. As election day drew near armed forces came from Missouri like an invading army and after they had voted, returned to Missouri, "electing" every member but one, who enacted the slave laws of Missouri and slavery was adopted in Kansas. The Free state men repudiated the illegal legislature and held a convention at Topeka, elected a governor and legislature and Senators were elected to Congress to ask admission of Kansas as a state.

II. Underground Railroad, The.—Vermont, in 1850, had passed a Personal Liberty Law which was followed in 1854 by Rhode Island, Connecticut and Michigan, and the next year by Maine and Massachusetts to prevent negroes from being carried back to slavery from their boundaries. Such an attempt was made a crime. An organization through the whole North was effected to aid negroes escaping from their masters to flee to Canada. This was called "The Underground Railroad."

III. Know-Nothing Party.—The death of Clay, in 1852 (June 29th), and of Webster in October of the same year, was a great loss to the Whigs. The Kansas and

earned the title of "Africanus". Carthage sued for peace and Rome, which had been fighting for existence, now won the World Empire.

The third Punic War arose out of the desire of Rome to destroy Carthage. Rome was perfidious, Carthage heroic, and Carthage was treacherously disarmed. In their desperation the Carthaginians raided their temples for arms; women gave their hair for strings for catapults; public buildings were torn down for building materials and metals. But the Roman legions forced their way over the walls and Carthage was utterly destroyed.

Rome.—Owing to their geographical configuration, Greece and Rome seem to have set their faces in different directions. The Greek rivers and harbours open to the Orient, those of Rome to western seas. Back to back they face two worlds, one the past, the other the future. So the two nations stand for the two great opposites of thought and character: individualism and nationalism; versatility and virility, the centrifugal and the centripetal forces in life. This great historic fact lies at the basis of all statesmanship. Rome grew from a village community to a World Empire because she placed order above culture, law above anarchy, and organization above inefficiency.

Rome caught up within itself all the past had done and disseminated itself throughout all the world, for modern Europe has been made out of the remnants of Rome. It has been said that all roads lead to Rome; so all roads lead from it—in the history of civilization. The secret of Rome's greatness is in that she solved the problem of combining the strength of organization with the elasticity of local independence. The Italian peninsula was inhabited by many peoples long before the Romans became an entity. Rome was at first a city state like Athens and Sparta, but her people, while less clever, were more stable, and more highly socialized. They developed the power of doing "team work".

Up to the age of the Republic, 509 B. C., there is little authentic history of Rome, but at this time we find about 60,000 people scattered over about 350 square miles, and caring little for art or literature, for two hundred years without schools, few of course, being able to read or write. Up to this date Rome was ruled by kings in a society divided into the family, the Curia, or brotherhood, and the tribe, divided again between plebeians and patricians. Laws were unwritten and known only to nobles. When the king wished to consult the people on questions of public interest criers went about with ox horns, calling them to the Assembly where a majority of the Curiæ decided whether there should be peace or war or whether some old custom should be changed. New kings were elected upon nomination by the senate, who in turn acted as interrex, during the interregnum.

Rome was built upon seven hills on the left bank of the Tiber, about fourteen miles from its mouth. As the population outgrew the Palatine Hill, it became necessary to drain the swamps lying nearby, and the last of the kings, the Tarquins, built the cloaca maxima and other great sewer through which an ox cart could be drive loaded with hay. In the center of Rom was the market place (Forum), abou which centered the industrial life. Th Romans seized the lands of their neighbors made the people slaves, and built publi places for religious worship and public ad ministration. Many interesting tradition must be overlooked before we come to th real history of the Republic, about dictator ships, senators, popular assemblies struggles for popular rights, the demand fo a written code which resulted in th Decemvirs and Twelve Tables in 450 B. C under which the plebeians gained the right of property and contract and trade, marriage with patricians, of voting in th assemblies and of holding the lower offices The Romans adopted many military idea and customs from the Greeks, and, unlik the Oriental peoples who fought under th lash, the Roman citizens became the mos formidable soldiers of antiquity. Subjec states were organized into province governed by an officer sent out from Rom who had little to do with their interna affairs, but who farmed out the collectio of taxes to the highest bidders. Th Romans exploited the provincials who wer kept in a state of serfdom; great estate were built up to the detriment of the sma farmers, and many prosperous towns fe into ruins, the traders and artisans flockin to Rome. Thus grew up a class of idle depending upon the rich for food an circuses, and the morale of the populatio declined.

In 390 B. C., the Gauls under Brenn sacked and burned Rome, which Camill

helped rebuild. The Latins (of Latium), were subdued, and after them followed the Samnite wars in which they were subjugated in 292 B. C. The next year the Calabrians fell to the Romans, with which victory the Romans completed their first half-millennium. They founded a navy and sailed against Carthage in the first Punic War, then sent troops under Regulus, to Africa where he defeated the Carthaginian army, but was in turn overcome. The first Punic War lasted twenty-three years, till 241 B. C. Meanwhile Hannibal was overrunning Spain and the African states, advancing into Italy, defeating the Romans at Cannæ and conducting one of the most brilliant campaigns in history. Hannibal was defeated at Zama in 201 B. C., and the second Punic War ended. Hostilities arose between Rome and Syria under Antiochus the Great, who was beaten in the battle which gave Scipio Asiaticus his name. Hannibal, while assisting the King of Bythinia, heard of a plot on the part of his ungrateful host to deliver him to the Romans and committed suicide by taking poison. Next Macedonia passed under the sway of Rome, when Scipio Æmilius destroyed Carthage after it had existed for seven hundred years. Corinth was destroyed and Greece became a province of the Roman Empire under the name of Achaia in 146 B. C.

Tiberius Gracchus, in the interests of the poorer classes, endeavored to revive an old statute called the Agrarian law to diminish the estates of the great land owners, and twelve years later his brother made a similar attempt, but there was much tumult and disorder and both the Gracchi lost their lives.

Barbarian tribes from the North defeated five Roman armies from 113 to 105 B. C., ravaged Gaul and Spain and threatened Rome, when Marius, a Consul of the people, raised an army of volunteers from the poorest class, and led it against the enemy, defeating them decisively. His successors used their armies for political preferment, and civil war ensued. Catiline became the champion of the increasing numbers of the poor, seeking to seize the property of the rich to divide it among them. Cicero was elected as Consul in 63 B. C., and he was able to detect the plot of Catiline and thwart it, delivering his four famous orations against Catiline. Catiline was overcome and killed in battle. Cicero had saved a republic which had existed for the benefit of the aristocrats and those proletarians who sold their votes for any cause. The vast majorities of the population toiled as veritable slaves, to enable the few to live in the most unjust extravagance, when Julius Cæsar arose, a young patrician of transcendent abilities, and as a champion of the commons, became Consul in 59 B. C. Cæsar carried a law for the distribution of the government-owned lands in small holdings among the needy, and through this he built up his own political power. By the year 50 B. C., he had conquered Gaul (France, Belgium and Holland), and through just measures made the people his friends, who kept some measure of self-government. Some of these took service in the Roman army, while others settled down to agriculture and industry and other civilized pursuits. Gaul became a buffer state between the Romans and the Germans. Pompey organized the populace at home and abroad to start another civil war, but they were overcome by Cæsar's trained veterans and the power of the aristocracy was annihilated, their estates were confiscated, and Cæsar became master of the whole Roman Empire. The new Dictator instituted many reforms. He abolished the custom of farming out the collection of taxes to bidders; he built public edifices; he granted citizenship to many of the provincial cities and defended the people against the official class. But his assassination plunged the Empire again into civil war which in the end brought the Roman Republic to an end.

Meanwhile the Greek religion had taken deep root; a notable literature had grown up; aqueducts and public roads had been built, and in the second century Greek architecture had been introduced while the Greek school system had taken root. The Roman children were taught reading, writing and arithmetic, committing to memory the Twelve Tables of the Law. In the grammar schools the pupils studied Greek literature till they had a literature of their own, the teachers being mostly Greeks. With the increase of learning was the growth of slavery and of great fortunes; and with the diminishing of the population came a moral degeneracy with civil wars and class hatred. Rome grew into an absolutism and the institution of Divus Cæsar appeared in which the Imperator was worshipped as a god when he was least godlike of all men. Roman policy was to Romanize Africa, Britain, Gaul, Spain and the whole West, and to this end a vast system of roadways was built through every town and city and to every province in the Empire. These roads were built upon beds of rock through hills and over stone bridges and causeways. They became the highways for armies and messengers of state. Rulers were careful to establish the laws, customs and language of Rome among the provincials, who were given citizenship when they were ready for it, and for the most part they became loyal Roman citizens.

Octavius, who conquered Anthony and Cleopatra, was named Augustus and reigned when Jesus was born at Bethlehem, in Judea. Rome fell to weak and cruel men, the most indecent moral maniac of them all being Nero, who began the Christian persecutions in 64-67 A. D., when Peter and Paul were put to death in Rome, the former being crucified and the latter beheaded. Under Vespasian (68-79), the rebelling Jews were conquered by Titus, who destroyed Jerusalem. Domitian, in A. D. 81-96, instituted the second great Christian persecution, but he was followed by four good Emperors, Trajan, 98-117, Hadrian, 117-138, Antoninus Pius, 138-161, and best of all, Marcus Aurelius, 161-180. A. D. Yet under Trajan and Marcus Aurelius were the third and fourth persecutions of the Christians. The Empire began to sink rapidly under the most infamous rulers known to "civilized" history, the last and most infamous persecution being under Diocletian in 303. A. D., the son of whose successor was Constantine the Great, the first Christian Emperor. In 312 A. D., Constantine gave liberty to the Christians and ten years later made Christianity the religion of the Empire, in 330, making Constantinople (Byzantium), the capital.

With the division of the Empire between the East and the West, the seeds of dissolution, which had been nourished for long, began to grow rank weeds and finally smothered the life of the Empire. The people had everywhere been oppressed and robbed, not only by the governors who had to make three fortunes (to pay his bribing debts, to provide for his judge's bribes, and to keep him in plenty for the rest of his life), but the whole economic life of the people had been ruined by money lenders and speculators who had eaten their property and reduced them to debt and starvation. Rome fell through economic causes. She had become rotten. Luxury had degenerated the upper classes; want had weakened her lower classes; the uneven distribution of wealth had caused the scum of Roman society to rise to the top and the dregs to settle at the bottom—and there was little left between. Rome fell because she could no longer hold together.

Roosevelt's Administration (1901-1909). Roosevelt Policies.—President McKinley had been assassinated at the Pan-American Congress at Buffalo in the summer of 1901, and Theodore Roosevelt as Vice-President became the President of the United States. Trusts had been organized under McKinley at an alarming rate. Up to the year 1898 there were but about sixty of these combinations ranging in capitalization from $1,000,000 to $5,000,000, but in the next two years 183 new trusts were organized with a capitalization totalling $4,000,000,000—in two years three times the number and many times the capitalization of all hitherto in the history of the nation. President Roosevelt openly declared that no honest business need fear his administration, but he made war on illegal privileges and the bribery of legislatures, and declared that monopolies should have proper government regulation. During his administration over forty suits were ordered by him and started by the Attorney General.

Roses, Wars of the.—After the death of Edward III., king of England, a dispute arose as to who should be heir to the throne, and this dispute involved all England in a series of petty civil wars. Edmund Beaufort, Duke of Somerset, was the representative of an illegitimate branch of the House of Lancaster (descended from Edward III.), and although Richard II. had conferred upon this family the rights of legitimate birth, there were doubts of their right to ascend the throne. Richard Plantagenet, Duke of York, was descended from the king through his mother. The supporters of the House of Lancaster wore a red rose, those of York a white rose. The first battle was fought on May 22, 1455, at St. Albans, where York was victorious, but further strife followed a hollow peace. For thirty years the warfare lasted, terminated by the battle of Bosworth Field in 1485, whereupon the Earl of Richmond, afterwards Henry VII., ascended the throne of England.

Rural Free Delivery (1896).—The Free Rural Delivery of mails was inaugurated in 1896, and on January 1, 1913, the parcel post system was instituted in the United States. These two institutions have done more than all other things to destroy that isolation which was so characteristic of the American farmer, especially in those districts where holdings are large and distances from supplies and neighbors are great.

Russia.—Russia in Europe comprises over half of Europe, and Russia in Asia equals a territory about twice as large as the whole of Europe. There is little sea coast; the mountains are mostly along the borders; the rest of the country in both Asia and

Europe is mostly a vast plain; while the three principal rivers, the Dnieper, Volga, and Neva, have largely shaped the whole history of the country.

The Varangians who were exiles of the Northmen found their way through the Baltic and sold their services to the City of Novgorod. This was later subjugated by Rurik in 862, A. D., who assumed the title of grand prince. Thus began the state which later became the Russian Empire. The Scandinavians were blended with the Slavic peoples in course of time. Under Vladimir I. (980-1015), the people were converted to the Greek faith, which is a branch of Christianity. The country came to be divided into many weak and discordant and petty principalities, chiefly because the sovereigns divided their rule among their sons. A ghastly series of petty but bloody wars without result bled the country white. Finally came the invasion of the Mongols who destroyed the principality of Kiev and made the land of Vladimir tributary. For two hundred years, these predecessors of the "Reds," the Golden Horde, kept the yoke on the Volga. Towards the end of the thirteenth century Moscow became the seat of Russian power, from which Muscovy was named. Ivan III., or Ivan the Great (1462-1505), conquered Novgorod which submitted to Moscow and the rule of the Mongols was done. Ivan abolished the law of appanage in his own family, thereby establishing the unity of Royal authority and the unity of the state; but he retained it among the nobility which divided and enfeebled them. Ivan, the Terrible (Ivan IV.), spent fifteen years in breaking the Boyars and in a ukase in 1593, he reduced all peasants to servitude, forbidding them to change masters or land. But the real creator of Russia was Peter the Great, who at ten years of age (1682), became Czar. In 1697 he went to Holland to learn the arts of ship-building, in England he studied her manufactures and in Germany her military machine. The Japanese have evidently taken a lesson from his book. Upon news received at Vienna of a revolt, he hastened back and beheaded 5,000 and broke on the wheel or hung 2,000 more. He organized an army, founded schools including a naval academy, and only a great war prevented the union of the Don and Volga by a canal. He founded St. Petersburg and added to his territory. Later he visited France and engaged engineers and skilled workmen with foundries and manufactories. He established uniformity of weights and measures, built ship yards and canals, founded a commercial tribunal, opened the mines of Siberia, looking as far afield as the Amur in Eastern Asia, and applied the military hierarchy to the administration of the whole empire. He died in 1725, and Frederick II. said of him: "The Czar Peter is the nitric acid which eats into iron."

The real successor of Peter the Great was the wife of his grandson, Peter III., whom she promptly strangled and reigned under the name of Catherine II. Under Catherine, after bloody civil wars in Poland and after the successful war against Turkey, Frederick, jealous of her growing power, forced upon her the partition of Poland, giving Galicia to Austria. Catherine occupied many of the little principalities in the east and on her border, while Frederick took the provinces of Poland which he needed to unite Prussia to the German states.

Under the treaties of Kainardji (1774), and Jassy (1792), Catherine required of the Turk many towns and the right to navigate the Black Sea with a protectorate over Wallachia and Moldavia, freeing the Kouban and the Crimea, later to be absorbed by Russia.

Russo-Japanese War.—Japan's pretext for declaring war on Russia was the refusal of Russia to withdraw from Manchuria (a province of China). Japan claimed to uphold the independence of China and Korea and to defend the Open Door, or unrestricted trade, in China. But when, after the war, Japan openly annexed Korea and secretly extended her power over Manchuria, and also ignored the Open Door, it was evident that the underlying motive of the war had been the Japanization of Asia.

The Japanese gained a great advantage before the war was declared. The Japanese Ambassador drank a toast with the Russian Ambassador at Seoul after hostilities had begun. The Siberian railroad had just been finished by the Russians, but it was a single-track road and unable to meet the demands of transportation so far away. The Japanese were nearby and had untold advantages, but in spite of these they were at their last extremity when President Roosevelt intervened and arrang

ed a meeting at Portsmouth where a treaty was signed September 5, 1905. This treaty recognized Japan's paramount interest in Korea, which later developed into the absorption of that unhappy country into Japan through cruel and harsh measures. Manchuria was to be evacuated by both countries, but Manchuria is now practically an adjunct of the Japanese Empire. This war has had far-reaching effects in the awakening of the whole of Asia and the raising of many new questions and problems still unsolved, all of which must be reckoned with by the statesmen of the world.

Saracens.—The Saracens were the *Sarak hein*, men of the East. With the rise of Mohammed in the seventh century, a man who could neither read nor write, and who turned his epilepsy to account as inspirational visits from the angel Gabriel whose presence he could not endure, the Saracens developed a religious fanaticism which soon took over the character of brigandage, and aggressive war which is brigandage writ large. One of the successors of Mohammed, Omar, during a reign of ten years, reduced 30,000 towns and cities to his dominion; demolished 4,000 Christian temples; erected 1,400 Mohammedan mosques; destroyed the library of Alexandria with its 500,000 volumes, every book carefully written by hand, and distributed them over the city to keep warm the public baths for six months. Here perished those records of the best thought of antiquity, whose illustrious fragments remain in the few monuments of human genius mostly given us by the Greeks. In less than a half century the Saracenic Empire was more extensive than what remained of the Roman possessions, and in a hundred years from the death of Mohammed his rule and his religion had spread from India to the Atlantic Ocean, comprehending Persia, Syria, Asia Minor, Arabia, Egypt, North Africa and Spain, and threatened to engulf Europe, when the tide of Islam was finally stopped by Charles Martel. Cufa on the Euphrates succeeded Mecca as the seat of the Mussulman Empire, when it was removed by Almansur to Bagdad, the most illustrious Caliphate, the next being Cordova. Haroun al Raschid, the twenty-fifth Caliph, who was the contemporary and friend of Charlemagne, appeared in "The Arabian Nights," and this wise and humane ruler established schools and patronized learned men, becoming the most illustrious of the whole dynasty which is contemporaneous with what is called the Augustan Age of Arabic literature. Bagdad remained the seat of the Saracen Empire for 490 years, until in the six hundred and fifty-sixth year of the Hegira, (A. D. 1258), an irruption from the heart of Asia under Halaku, the grandson of Zhengis Khan, brought the Saracen Empire to an end, abolished the Caliphate, and the conqueror dragged the last of the Caliphs, in a leather bag through the streets till he expired. The Saracens are now the Arabs. (See Arabia.)

Bagdad was called the city of peace. There fell the Saracen Empire. It fell because it had grown rich and rotten. It had departed from the stern discipline of the founders of the faith. Almansur left at his death about $150,000,000 in gold and silver, which treasure was exhausted in a few years by the vices of his children. In a single pilgrimage to Mecca, his son, Mahadi, spent 6,000,000 dinars in gold. In his train were camels laden with snow to cool the fruits and liquors of the imperial table. His grandson gave away about two and a half million dinars of gold before he took his feet from the stirrup. At his marriage a thousand pearls of largest size were showered upon the head of the bride. Gibbon, in giving a vivid picture of this ostentatious magnificence, quotes an authentic memorial found in the cabinet of the dead Caliph: "I have now reigned about fifty years....Riches and honour, power and pleasure have awaited my call....In this situation I have diligently numbered the days of pure and genuine happiness, which have fallen to my lot: they amount to *fourteen*: O man, place not thy confidence in the present world." *The luxury of the Caliphs, so useless to their private happiness, relaxed the nerves, and terminated the progress of the Arabian Empire.*

Scandinavian Peninsula (Sweden and Norway).—This peninsula covers an area (Sweden), of 170,516 square miles, and (Norway), 121,779. It is almost surrounded by water, being connected with the main land by Finland and Lapland. The greater part of the land in both countries is mountainous, and lying far north, has a cold climate. The coasts are indented by deep fjords or rocky inlets, but there are some well watered valleys and plains. Nearly one-tenth of the area of Sweden is occupied by lakes, and there are many small rivers abounding in fish. The very rich mineral deposits are mostly in the central districts, including copper, an iron which produces the finest steel, lead, nickel, zinc, cobalt, sulphur, alum, porphyry, marble and coal. Agriculture is mostly confined to the southern districts, which produce enough for local needs, while the forests covering about half of the surface of the country produce the best of fir, birch and pine.

Christianity was introduced into Sweden and Norway in the ninth century by German missionaries, and the people responded to the teachings of the Reformation with the result that the prevailing religion is Lutheran. At the beginning of the seventeenth century Sweden had her most famous monarch and her ablest statesman. Gustavus Adolphus was one of the world's most able soldiers and Axel Oxenstjerna reorganized the administration of the country and promoted industry, commerce and education, while strengthening the army and navy. Gustavus Adolphus was a great champion of Protestantism during the Thirty Years' War, meeting his death at the battle of Lutzen in 1632. The Peace of Westphalia added largely to the possessions of Sweden, but subsequent events whittled away her continental holdings. In 1810 Bernadette was elected crown prince by the states, and by the treaty of Kiel, Norway was ceded to Sweden, that country having been with the allies against Napoleon. Bernadotte succeeded to the crown in 1818, under the title of Charles XIV.

Scotland.—Scotland was known in Roman times as Caledonia and was inhabited by Celtic tribes known as Picts, speaking a Gælic language. The Scots came from Ireland in the fifth century and in 843 A. D., crowned Kenneth as king. Columba was their great missionary, and through him they converted the Picts, Cymri and the English of the northern districts to Christianity. The country was known as Ireland until the tenth century, when the land of the Picts and Scots was called Scotia, or Scotland. The last half of the eleventh century, under Malcolm Canmore (1057-93), was a period of revolution. The English customs were encouraged through his wife the sister of Edgar Atheling, and the English language was encouraged with the advent of English settlers. The southeast was almost purely English, while the Anglo-Saxons moved north, and the Normans came in with the French culture.

The area of Scotland of 30,328 square miles is divided between the Highlands and Lowlands, which are natural geographical divisions, separated by the Rivers Clyde and Forth. To the north the country is almost altogether mountainous with many fertile tracts well watered by rivers and lakes, while to the south the land is more level and richer in minerals and agriculture, yielding immense quantities of coal and iron. The country takes high rank in manufacture, the ship-building enterprises on the Clyde being among the first in the world. Education is universal and the average intelligence is very high. The people, as a whole, are very moral. The Presbyterian religion is the prevailing one.

We have the vivid pictures of the invasions of Agricola by his son-in-law, Tacitus, than whom antiquity produced no abler historian, and it was he who invaded Scotland as far as the Grampians and called the country Caledonia. Followed centuries of warfare, during which the people suffered from the invasions of the Danes, Norsemen and English, when Robert Bruce won the independence of the country at the battle of Bannockburn in 1314. The history of Scotland from that time on is one of continuous warfare with England until the union of the two countries was consummated by the legislative act of union in 1701. From that day there has been peace with prosperity, and Scotland is as truly and devotedly a part of Great Britain with England as is Massachusetts with New York a part of the United States.

Seven Years' War.—The Seven Years' War was a commercial struggle of England and Prussia against France and Austria (1754-1763). Frederick II. (the Great), of Prussia invaded Saxony and took its troops into his army, while France sent two armies into Germany, the one defending the Anglo-Hanoverians while the other was defeated at Rosbach. Without any help save English gold, Frederick for years fought against Austria, Russia, France and Sweden. The withdrawal of the Russian forces after the death of the Czarina alone saved him from defeat. Rallying, he again took possession of Silesia, and Austria sued for peace. Meanwhile the English had defeated the French troops in America (see French and Indian War), and France had lost, besides her Canadian territory, all of her navy. She signed the Treaty of Paris with England in 1763.

Siam.—Siam has no authentic records till A. D. 1350, when the old capital was founded. The Portuguese began to trade there in 1511, but in the next century were supplanted by the Dutch. The trade with Europe was unimportant until Sir John Bowring's treaty opened up the country to the Europeans. A few Siamese youths have been sent to Europe to be educated. France acquired some territory under the treaty of 1807, and two years afterwards Great Britain obtained important rights in the Malay states.

Siam has an area of a quarter of a million square miles of mountainous country, covered in places with swamps and jungles, covered with forests of many valuable woods, such as teak, sandal, rose and other hard woods which are exported from the ports of Bangkok, Meeklong, Puknam and Paklat. The available soil is rich and yields rice, pepper, tobacco, sugar, coffee, sago, gums and fruits. The monarchy is absolute and Buddhism is the prevailing religion. The present dynasty was founded in 1782, and in 1855-6 treaties were made between Siam and England, France and the United States, resulting in the introduction of many of the arts of civilized peoples to those of Siam.

Siberia.—Siberia, with nearly 5,000,000 square miles of territory, is about as large as the United States and Canada, exclusive of the Yukon and Alaska, from the Rio Grande to the Arctic Ocean. Before the war it was divided into four provinces under Russian dominion: Irkutsk, Tomsk, Tobolsk and Yeniseisk. Ninety per cent of the population of 6,470,600 (census 1906), are Russians, the most of the Mongolians living in the Amur district and on the Pacific coast which was not detached from China until 1858. Except in this region near to the Pacific Ocean, practically the whole of Siberia drains into the Arctic Ocean. There are four great rivers, which, until the building of the Trans-Siberian Railroad, were the chief arteries of civilization, affording, with their tributaries about 30,000 miles of navigation. There were 410 steamers plying on these rivers and their tributaries in 1910, 200 operating on the Amur, 140 on the Yenesei and the others on the Lena and Obi. A canal, 586 miles long connects the Obi with the Yenesei.

The Trans-Siberian Railway was begun in 1891 and finished by 1902. The route from Petrograd to Vladivostock is 5,481 miles long. This road cost $172,525,000, but being a single-track road, it offered insufficient means of communication to enable Russia to defeat Japan in 1904, so far from the bases of supply.

The mineral and agricultural resources of Siberia are very great. How great indeed will not be known in many centuries, perhaps, but enough is known of the natural resources of Siberia today, to enable us to grasp some idea of the significance of Russia in the future economic equilibrium of the world. For example, 100,000,000 poods of coal were mined in 1912. Siberia already produces two-thirds of Russia's gold, the same year having yielded 1,014,094 troy ounces, and of silver 134,465 ounces with 3,780 tons of copper. There are immense deposits of iron already known and large quantities in easy reach of tide water, but little attention is being paid to this for lack of development of the country before the Great War and now, of course, because of the resulting chaos. The Urals furnish the most of the world's supply of platinum. There are known to be over 300,000,000 acres of good farming land of which the Amur and the coast furnish 60,000,000 acres.

Russian chronicles show an expedition to have gone to the "land of Siberia." before Columbus discovered America, (1483). Since that time it has been developed and settled, and there have been wars and usurpations. In 1651 Russia came in contact with the Manchus who had just conquered China. The first treaty made with a western power was with Russia in 1689. In 1860 under the treaty of Pekin, Russia secured the country from Ussuri to Vladivostock which was founded in that year. Later the Russians advanced to Port Arthur and Dalny which were taken by the Japanese, first in the Chino-Japanese war and forced to be returned by the powers of Europe and later in the Russo-Japanese war since which they have been held by Japan. Until 1900, convicts were exiled to Siberia by Russia under circumstances of great cruelty, but the system was abolished at the outbreak of the Great War.

Sixteenth Amendment (1913).—The Sixteenth Amendment to the Constitution of the United States was declared in force on February 25, 1913, empowering Congress to lay and collect taxes on private incomes after having been ratified by a sufficient number of states to make the Amendment valid.

Spain.—Cadiz in Spain is the oldest town in Europe having been founded by the Phœnicians about 1100 B. C. Through Tyre their merchandise was sent out to Egypt and to Nineveh and Babylon. Spain was conquered by the Carthaginians nearly a thousand years later because of the tribal feuds of the Celtiberians and Lusitanians

the western and central districts and the ntabrians and Basques at the north. ey took Saguntum from the Romans. is provoked the following war. The mans under Scipio expelled the Carthaians in 205 B. C. Cæsar gave full izenship to the Trans-alpine Gauls in ain but in 409 A. D., Spain was overrun the Suevi, the Alans and the Vandals, t they were checked by the Visigoths o absorbed the Suevi, and were domint in the peninsula till the Arabian conest in 711. The amalgamation of the rbers with the Arabs and North Africans ulted in the race called the Moors. By s time Spain had become enfeebled by cord, and in the great battle of Xeres de Frontera, near the Guadalquiver, the sigothic kingdom was destroyed and in e next eight years the Moors conquered e whole of Spain. They even occupied a ovince north of the Pyrenees, threatening encompass the whole of Christendom t were finally defeated in one of the ghtiest battles of the world in the plains tween Tours and Poitiers by Charles artel, the grandfather of Charlemagne. was in the north in the mountainous gions of Cantabria and Asturia that the st successful resistance to the Arabs gan, near which grew up the kingdom of avarre, Castile growing out of Leon nich developed from Asturia a Christian untry. In the beginning of the eleventh ntury also starts the kingdom of Aragon. timately through the union of Castile id Aragon arose the Spanish monarchy the fifteenth and sixteenth centuries. ortugal joined Castile and Aragon in their position to Moslem rule, Portugal on the lantic, Aragon on the Mediterranean, id Castile in the interior. The two panish kingdoms were united with the arriage of Ferdinand and Isabella in 06, and it is interesting to note that the oslem kingdom of Granada in the South, e last stronghold of Islam in Spain, was nquered by these two kingdoms in 1492. he union of these two states developed a ational character. John II., second son of rdinand, poisoned his own son, the rince of Vianne. He was also the father Ferdinand "the Catholic," under whose own the kingdoms of Aragon, Castile and avarre were brought together.

The cities of Castile were the richest and ost flourishing of any in Europe outside ose of Italy, and the people had more ower, compared with that of their sovergu, than those of any other European untry. Christopher Columbus, a Genese, with the conviction that India could e reached by sailing in a westerly direction, id having applied in vain to other uropean Courts for assistance, was given ree ships by Isabella of Castile. In ese he and his little party sailed west and scovered the Island of San Salvador, hich he so named in honour of Jesus. olumbus built a fort on Cuba, and founded colony. Of the continent and ocean that y between him and India he did not ream; he thought he had found India till e died. He suffered from the plots of the avious; was sent home from one of his oyages by the agent of Ferdinand, in ains, spending the last two years of his fe in sadness till in 1506 he died. Cortes nquered Mexico and Pizarro, Peru, hose peoples they treated with the most rocious and perfidious cruelty in the nnals of men. One incident of Pizarro to the effect that after Atahualpa had rovided the ransom of $17,500,000 in old, he was basely put to death. In 1587, Drake destroyed the Spanish fleet in the harbour of Cadiz, whereupon, Philip fitted out the "Invincible Armada," to chastise England, the army of Parma in the Netherlands, co-operating. But a storm at sea helped the English and but fifty-four out of one hundred and fifty vessels got back to Spain. Explorations of Florida and the Mississippi followed, and the war of the Spanish Succession with the opening of the seventeenth century, resulting in the peace of Utrecht.

Spain began to decline in the sixteenth century, for many reasons; principally that the deluge of gold and silver from America placed a premium on idleness, through which industry declined and money was spent to keep up expensive wars and an expensive Court. Gold was spent abroad for what should have been made at home and Spanish commerce declined with the morale of the people, while in religion and politics grew up an absolutism which has made the history of the Inquisition as infamous as that of Mexico and Peru, under Spanish rule. Under this regime South America broke away and set up her independent governments, called Republics, really Dictatorships, which time may modify and soften into some form of representative government, determined by the ballot, not the bullet.

The promises made to Cuba in 1879 had not been kept, and that Island seceded; the old-time Spanish methods were so obnoxious to the people of the United States, that events finally made it necessary for the United States to go to war with Spain, in which she lost the Philippine Islands and Porto Rico, the Island of Guam in the Ladrone to the United States which paid $20,000,000 for the Philippines instead of asking for an indemnity from a vanquished nation—a case of generosity rare in warfare

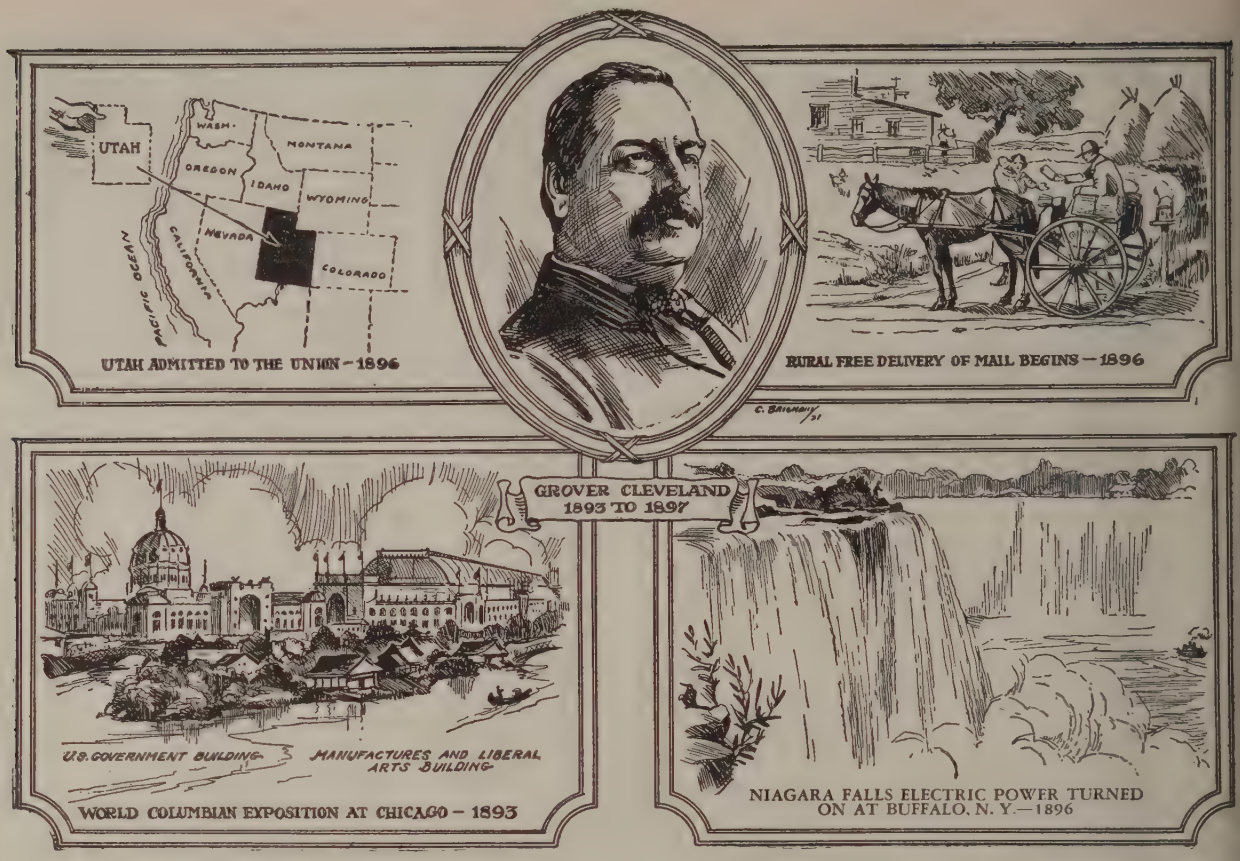
Spanish-American War.—During the latter part of the nineteenth century, Cuba was the only remaining possession of Spain in the American Hemisphere, and here Spain ruled with such rigid cruelty that the natives were constantly in rebellion. During the last insurrection the administrations of Cleveland and McKinley maintained strict neutrality while the American people sympathized keenly with the maltreated Cubans. Neither civil, political nor religious liberty existed on the island. Power was exclusively in the hands of the Spaniards who extorted taxes from the natives to pay for the army that enslaved them. General Weyler replaced Marshal Campos, who had failed to pacify the island, and the former's policy of terrorism was denounced even by many of the Spaniards. The American battleship, *The Maine*, was blown up in the harbour of Havana on February 15, 1898, with the loss of 250 seamen and two officers. This disaster fanned the flame of American anger. On April 20, 1898, President McKinley signed a resolution of Congress recognizing the independence of Cuba, whereupon Spain declared war. On land and sea the American forces were victorious—in Cuba, Porto Rico and the Philippines—and by the peace of August 12, 1898, the United States was granted a protectorate over Cuba, Porto Rico and the Philippines with the understanding that these territories were to be released as soon as they had established satisfactory governments. The Spanish-American War ended America's isolation in world politics.

Statue of Liberty Unveiled (1886).—In 1886 the Statue of Liberty was completed and set up in New York Harbour and there dedicated in memory of the old-time friendship between the French Republic, that gave it, and the United States in whose free institutions the French people thus happily testified to their faith. The expense of the pedestal was met by contributions from the people of the United States. The bronze statue itself is 150 feet high but the whole structure rises 300 feet above water. It is now illuminated at night by electricity.

Sumter, Firing on.—When the first group of southern states seceded from the Union in December, 1860, and formed a Confederacy (see Civil War), they began at once drilling soldiers, taking possession of the forts in their territory and seizing the military supplies of the United States. President Buchanan's cabinet was made up of northern and southern men and so could come to no decision to stop these ominous events. Major Robert Anderson, a loyal Unionist in charge of Fort Moultrie, Charleston, S. C., moved his troops to Fort Sumter, where his defence was stronger and there refused to evacuate. A steamer bearing supplies to Major Anderson was fired on by the Confederates and returned without delivering her cargo. Before March, 1861, all the southern forts except Sumter, Pickens and Key West had surrendered to the Confederated States, and seven states had seceded. When Lincoln became President, a fleet was sent to the relief of Sumter, but before it reached its destination the Confederates had fired on the fort. A bombardment of twenty-four hours resulted in the exhaustion of all Anderson's ammunition and he surrendered. No one had been killed on either side. Anderson and his troops returned to New York; Lincoln called for volunteers. Thus began the Civil War.

Switzerland.—Switzerland is a small Republic in Central Europe without a sea port. It is the most mountainous country in Europe in the small area of 15,722 square miles Here are the Alps. The most level tracts are in the cantons of Bern, Basel and Zurich, backed by the Jura Mountains on the French border, while the chief valley is that of the Rhine in the south. Neither are there navigable rivers, but there are many deep and beautiful lakes. Forests cover about one-sixth of the entire area, while agriculture is pursued in the valleys, yielding cereals, flax, hemp and tobacco. The mountain slopes occupying two-fifths of the whole area are good for pasturage, and these yield diary products, hides, tallow, enough for export. There are many factories in the 22 states or cantons which constitute this Republic.

The original inhabitants were the Helvetii and Rhetii (Celts), who were conquered by Cæsar and Romanized. They were overrun in turn by the Burgundians, Germans, Alemannians and Frankish kings and were Christianized in the seventh century. During the Reformation the cantons took opposite sides, but by the treaty of Westphalia, Switzerland was recognized as an independent state. The present constitution was adopted in 1848, revised in 1874, and the railroads were nationalized in 1898. There are large elements of French and German people in the land, but the state was neutral during the war.



Syria.—Syria of old, like Belgium of modern times had the misfortune of being an easily accessible land, lying open to Egypt and Babylon, as well as to the Mediterranean; and thus it became the great highway of the ancient world, as well as one of the chief battlegrounds. The Egyptians and the Babylonians in turn vied with the Hittites to the North for possession, and the small states of Syria were politically helpless between their more powerful neighbors. The most powerful Syrian state was that of the Hittites, who fought alone for two centuries with both Egypt and Assyria, from 1300 to 1100 B. C., but did little except prepare the way for the rise of the Jewish nation.

The two important Syrian peoples were the Phœnicians and the Hebrews, the former living in a narrow strip of country between the Mediterranean and the Mountains of Lebanon, about twelve miles back from the coast. This strip of land, about 120 miles long, was the home of the first great commercial nation in the world. Having found no room for expansion on land, the Phœnicians made themselves ships from the firs and cedars on the mountains of Lebanon, in which ships they crept from port to port, from island to island, trading, plundering, enslaving the inhabitants.

About 1300 B. C., it is recorded that Phœnician ships swarmed the waters of the Mediterranean. So it was that in the ancient world one of the smallest nations became one of the wealthiest.

The Phœnicians developed many industries in fine glass and metal work, pottery and textile fabrics. The famous Syrian purple dye, which had been discovered when a hungry dog, eating a sea snail, was seen to have purpled his teeth, gave them the purple fabrics with which they made one of their great monopolies in trade. Unable to seek land dominion, they paid tribute at home and sought dominion at sea. They had intercourse with Europe, Asia and Africa, discovering Spain in the days of Homer. In Spain they found silver, lead, iron, tin, gold, corn, wool, oil, wax, fruit and wine, and established a trade through which they brought the raw materials back home and took the finished products again to these and further countries, even to the shores of the Baltic, where in turn they got corn, wool, hides, furs and amber in exchange for their manufactured products. They set up caravan trains which went into Syria, Palestine, Egypt, Babylon and to the Indian Ocean, and in 620 B. C., they circumnavigated Africa at the behest of an Egyptian king. To aid in the extension of commerce they established trading posts or colonies wherever they sailed, not only for trading with the civilized peoples of the East, but for developing the raw materials of the West. Gold and pearls came from the Far East; slaves, ivory, lion and tiger skins from the interior of Africa; frankincense from Arabia; linen from Egypt; "tin from England, and iron from Elba." Tyre and Sidon were among the richest cities of antiquity. "What city is like Tyre?" asks Ezekiel (XXVII, 32, 33). "When thy wares went forth out of the seas, thou filledst many people; thou didst enrich the kings of the earth with the multitud of thy riches and of thy merchandise."

Taft's Administration (1909-1913)

I. Payne-Aldrich Bill (1897).—Immediatel upon the election of President Taft, th Republican party, pledged in its platfor to reform the tariff downward, passed th Payne-Aldrich Bill which was substantiall the same as the old Dingley Bill, so obnox ious to the people of the country who wer not "stand-pat" Republicans. The Bi was not only signed by the President, bu defended by him on the public platform a the best in our history. Many Republica leaders accused him and the party breaking the election pledges.

II. Titanic Disaster (1912).—The Ne Steamship, *Titanic*, of the White Star Lin was sunk in mid-ocean on its maiden tri through striking an iceberg late in th evening of April 14, 1912. 1,503 person many of them eminent, in Great Brita and the United States, being drowne with but 703 saved.

III. Polar Discoveries.—R. E. Pear U. S. N., reached the North Pole on Augu 6, 1909, after many unsuccessful attemp made by him and others, while two yea later, Captain Roald Amundsen, a N wegian, reached the South Pole, December 14, 1911. Captain R. Scott, of the British Navy reached t South Pole a few days later, January 1912, and perished there with the remainc of his party on March 29th, of the sa year.

aylor-Fillmore Administration (1849-353).

Slave or Free.—The great conflict was more and more over slavery, which was ever the burning question. The South made an effort to anticipate the action of the North to keep the new territory free soil. Missouri sided with the South and Virginia adopted resolutions to the effect that an attempt to enforce the Wilmot proviso would be met with determined resistance "at all hazards and to the last extremity," and at a dinner, a Senator from South Carolina offered the toast: "A Southern Confederacy." In the North the tension was as great, where the legislatures of every state except Iowa passed resolutions to the effect that Congress had the power and was in duty bound to prohibit slavery in the territories. Suddenly it was found that California was bound to be the home of something besides "the sage brush and the rattlesnake", for gold had been discovered in that territory.

I. Discovery of Gold in California (1848).—In January, 1848, a man named Marshall came into Sutter's Fort (now Sacramento), with particles of a yellow substance which he had found in the sand of the American River while digging a mill race for a Swiss emigrant, named Sutter who ran a mill at that point. A conference was held at midnight behind locked doors, but the news leaked, and the people went wild. Sailors left their ships. Business was stopped. Stores were shut. Everybody flocked to the diggings, and when the news came east, the rush began and people crowded towards California by way of Panama, Cape Horn and across the prairies in wagons, filling up the country with pioneers, known later as Forty-Niners. These men made a free state constitution and applied for admission to the Union.

II. Clay's Compromise and Squatter Sovereignty.—General Taylor died on July 9, 1850, and Fillmore was inaugurated as President of the United States. So bitter had been the controversy which was waged over the extension of slavery, that there seemed little hope of an adjustment. The South demanded the right to take their slaves with them or go after them when they got away. The North wanted California admitted as a free state and the Free Soilers insisted on having no more slave states nor territories. It looked as if the Union were to be split into two republics when Clay came forward with his famous compromise: that California be admitted as a free state; that the slave trade be abolished in the District of Columbia; that there should be a new Fugitive Slave Law; and that the people of Utah and New Mexico should make their states what they pleased. This plan was called Squatter Sovereignty. Clay defended his measure eloquently; Webster denounced the abolitionists and advocated the compromise; Willian H. Seward spoke for the Free Soilers, declaring that all the territories were free, not only under the constitution but by the "higher law" of Justice and humanity.

IV. Fugitive Slave Law, The (1850).—The New Fugitive Slave Law provided that any colored man or woman might be turned over by the U. S. Commissioners to anyone who claimed the negro as an escaped slave, and that he be deprived of the right of giving testimony. It commanded all good citizens to aid in the capture and delivery of slaves to owners and prescribed fine and imprisonment for anyone who harboured a slave or prevented his capture. Immediately "man hunters" invaded the North and dragged back to captivity free negroes who had lived in contentment for thirty years. In spite of all this a few slaves were rescued and freed. Uncle Tom's Cabin appeared and crystallized the growing sentiment of the North against the infamy and the result of this wicked law was that great numbers became abolitionists.

Ten Thousand, The Retreat of the.—The Persian Empire had become enfeebled through luxury and lack of discipline and Xenophon, who had been a Greek mercenary captain in Persian service, speaks of them as "reclining on tapestries wearing gloves and furs".....They no longer dared fight....They had for their maxim "never to fight the Greeks without Greek auxiliaries on their side." In the year 400 B. C., Cyrus marched against his brother, the Great King Artaxerxes, in the hope of securing the Persian throne. He had in his army 10,000 Greek auxiliaries, of whom Xenophon, the historian, was one. This army marched across Asia Minor to the Euphrates without resistance and offered battle at Babylon. The Greeks charged with their war-cry and the Persians ran before they came within bowshot. Only one Greek received a wound from an arrow; but Cyrus was killed and his army disbanded. The Persians treacherously killed five generals, twenty captains and 200 soldiers of the enemy and the Greeks burned their tents and chariots and began retreat. Through snow and famine they marched, through Armenia to the Black Sea and then to Greece. Xenophon was general of the 8,000 retreating soldiers.

Thirteenth Amendment.—Toward the close of the Civil War, on February 1, 1865, Congress passed the Thirteenth Amendment to the Constitution, by which slavery was to be abolished forever in all parts of the United States. Thus the Emancipation Proclamation of 1863 would be extended over all the country and incorporated into the Constitution. The President signed the amendment and during the next two months the majority of the northern states had approved it. It is necessary to have the approval of three-fourths of the states to ratify an amendment and therefore, at the close of the Civil War, in April, 1865, it was submitted to the southern states. Texas had not yet reorganized her government and took no action, Alabama and Mississippi would not accept it without changes, but the rest of the vanquished states, having already lost their slaves, voted approval. Of the five slave states which had taken no part in the war, Delaware and Kentucky opposed the amendment while West Virginia, Maryland and Missouri, who had voluntarily begun the freeing of their own slaves, took no interest.

By December 18, 1865, twenty-seven out of the thirty-six states of the Union had accepted the amendment and it became law.

Thirty Years' War.—The Thirty Years' War (1618-1648), was a religious war among the peoples of northern and central Europe. In the course of the conflict many other motives than the religious were of importance. The Catholics were at that time angered by the growth of Protestantism, which then had been in existence for about a century. The Catholics were united, but the Protestants were split into many sects, the strongest of which were the Lutherans and the Calvinists. The schism between these two sects was brought about largely through the intrigues of the Jesuits (Catholic monks), who recognized the weakness of dissension. The Lutherans deserted Frederick, one of their strongest leaders, because he was a Calvinist.

The fighting was mainly in Germany, which suffered disastrously from the ravages. Wallenstein, a mercenary pillager for a time maintained a large army by murder and robbery, but was prevented by Cardinal Richelieu of France from establishing the unification of Germany under one Catholic king. King Gustavus Adolphus, of Sweden, joined the forces of the Reformation with his veterans and was killed at his great victory at Lutzen (1632). When Europe was exhausted war was concluded with the Treaty of Westphalia (1648). The Protestants won the independence of the German states in the matter of religious faith. So far had the motives of religion vanished from the strife that it was two Catholic princes, Richelieu and Mazarin, who defeated the interests of the papacy.

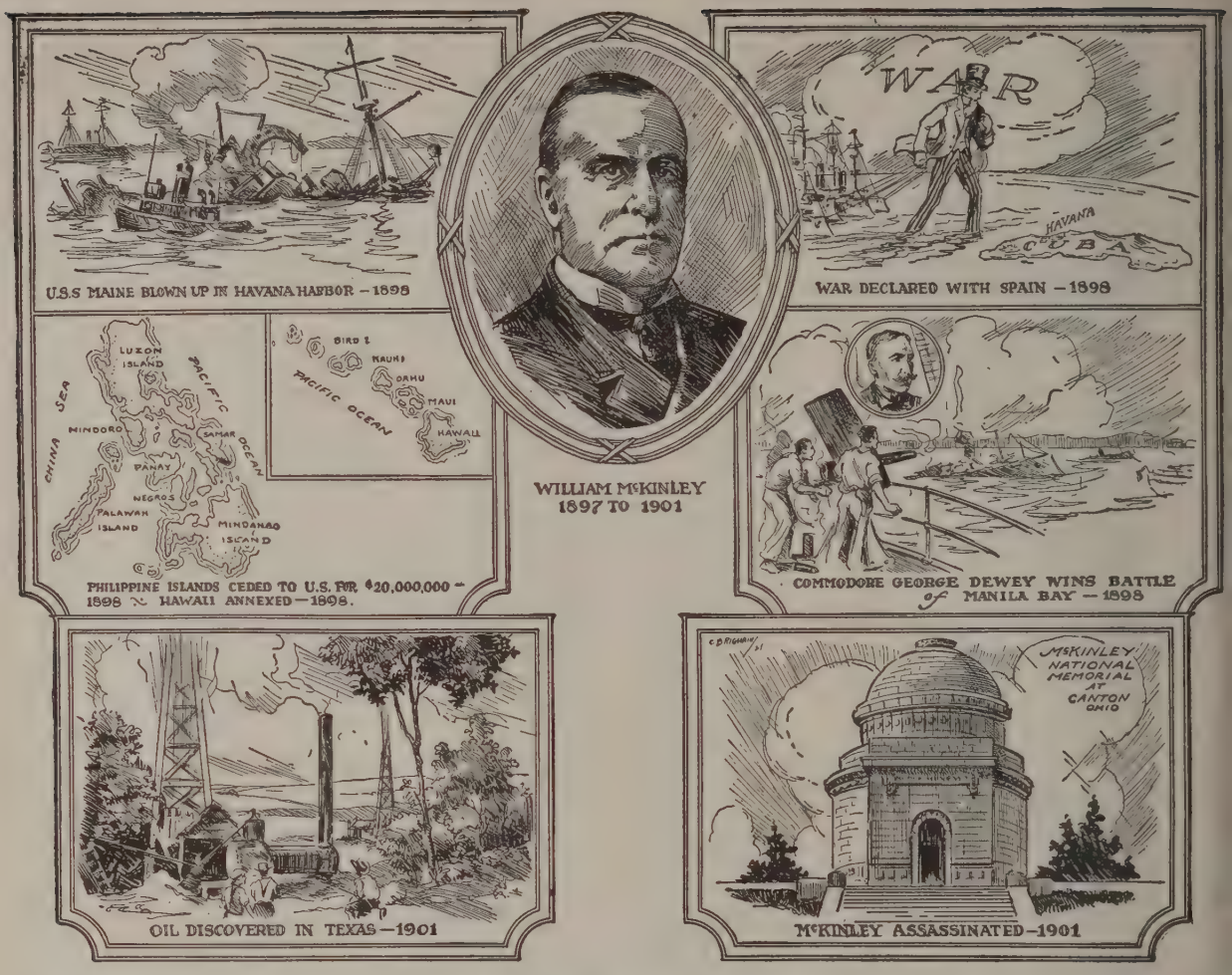
Half the population of Germany and two-thirds of the personal property had been destroyed. Farmers had ceased to labor in the fields and the effects of the war on industry, trade, culture and morals were even worse. Education and the moral law were neglected and the peasantry did not recover for two hundred years. Such were the results of this one era of religious strife.

Trent Affair.—In the first part of the American Civil War (1861), Jefferson Davis, President of the Confederacy, sent two representatives, Mason and Slidell, to solicit aid from England. They embarked as missionaries at Havana on the English Steamer *Trent*. The *Trent* was stopped by an American Warship and Captain Wilkes, in command, seized the two Confederates and took them as prisoners to Boston. The British government, which had hitherto been neutral in the conflict, protested against this abuse of her naval rights and sent troops to Canada, prepared to cross the border to attack the United States. After Seward, Secretary of State, had negotiated with Great Britain, Mason and Slidell were released and allowed to continue their voyage to England, where, however, they failed to secure support for their cause.

Tweed Ring.—During Grant's administration a hotbed of political corruption was brought to light, known as the Tweed Ring. This society of political crooks under the leadership of "Boss Tweed" ruled the elections of New York State and influenced those of the nation. Their headquarters was Tammany Hall. Their strength lay in their control over the ignorant foreign vote and in the band of thugs which they employed to cast many times their given number of votes. They influenced the law making of the state by bribing the legislators and they amassed great fortunes by appropriating public funds.

For some time New York tolerated their tyranny—but the New York Times conducted a vigorous campaign against them, Thomas Nast ridiculed them in cartoons and at length the more honorable citizens drove them out of power.

Coincident with the disclosure of the Tweed Ring's activities came the disclosure of the Whiskey Ring. This was an agreement between distillers of whiskey and internal revenue officers to rob the government of the tax on whiskey. Suspicion



centered about Grant's secretary as one of the leaders of this ring, but his guilt was never proved.

Turkestan.—Turkestan is that region in Central Asia which is bounded on the north by Russia and the Caspian Sea, on the west by the Mongolian Desert, on the south by Afghanistan, and on the east by Thibet, India and Persia. It is divided politically into Russian and Chinese Turkestan, the former having an area of nearly a half million square miles. The climate is very severe and dry, the river countries being irrigated by canals connected with the streams and these areas produce, in addition to live stock, considerable wheat, rice, millet, oats and cotton.

The Russians invaded Turkestan soon after the conquest of Siberia. Peter the Great's expedition ending in disaster, but by the middle of the nineteenth century a chain of Russian forts began to appear across the southern frontier. In 1867 the Governor-Generalship of Turkestan was established with the capital at Tashkent. Later Bokhara was taken, then the khanates of Khiva and Khokand. In 1887 the Afghan boundary was laid out by an Anglo-Russian commission. During the whole nineteenth century the Mohammedans made repeated efforts to wrest control from China.

Turkey and the Turks.—Turkey in Europe has represented, since 1483, when Mohammed II. entered Constantinople, the most significant, the most far-reaching and the most terrible encroachment of the spirit of Asia upon that of Christendom which more or less has dominated Western Civilization. There have been many invasions of the denizens of the largest of all the continents which knows nothing of the spirit of human liberty, but the descent of the Turks upon Europe resulted in the establishment of an anomaly unknown to history. This thorn has been in the side of Europe, and at one time well toward the heart, since before Columbus discovered America. It has been held there by civilized European nations which have been played like the men on a chess board by the Sultan—for his own purposes—and through holding and upholding here this nation which has by sheer force of character earned for itself the sobriquet of the "Unspeakable Turk," doubtless these nations have enhanced their commercial relations and laid by many ducats.

At the beginning of the Great War Turkey in Asia covered about 700,000 square miles, while that of Turkey in Europe in 1815 was but 10,882 square miles. Besides Asia Minor the dominion included Armenia, Kurdistan, Mesopotamia, Syria and a part of Arabia. The people of Turkey have few industries and these are feeble. They are supported by farming and sheep raising done in the most primitive manner. They raise cereals and fruits, olives, coffee, tobacco, opium, flax and hemp and expor annually 200,000 bales of cotton. In 191 Turkey had a population of 21,273,900, th ruling element being the Osmanli Turk although they are in a numerical minorit except in the interior of Asia Minor, whe their blood is mixed with that of Slav Greeks and Albanians.

During the Mongol invasions of Gheng Khan early in the 13th century, a sma group of Mohammedan Turks from Ira went into Asia Minor under Ertogr entering the service of the Sultan of Rur the last remnant of the Seljukian Turks western Asia. His son, Osman or Othm laid the foundations of the Ottom Empire to which he gave his own name, the ruins of that of his host and he destro ed the Seljukians in return for their hosp tality. Orkhan, the son of Othman, ma Brusa his capital in Bythinia, which wi Gallipoli he took from the Byzantines, t latter giving him his first foothold Europe. Orkhan was the organizer of t Ottoman Empire and the founder of t Janizaries, that devilish institution ma up of the children of Christians who h been destroyed and their seed turned ir an engine with which to destroy Christi ity. The Janizaries were as efficient a fig ing force as is known to history, and t force was turned against its own race a religion. Under Amurath, his successor, Ottoman Empire became a European well as an Asiatic power with Adriano

as the Turkish capital. One by one the Byzantine dependencies were taken away until the Turks had surrounded Constantinople. Bajazet was defeated by Tamourlane, upon which his son, Mohammed I. ruled Islam and subdued Macedonia, Hungary and a part of Greece. At last Constantinople fell, in 1453, ending the Byzantine Empire. Servia, the Crimea and a part of Venetian territory in turn fell to the Turks who forged ahead under Selim I. (1512-20), who conquered Syria in 1516, annexed Egypt in 1517 and assumed guardianship of the sanctuary of Mecca proclaiming himself the successor of the Caliphs. Under Solyman, the Magnificent, (1520-66), the Empire rose to the height of its power, having taken much additional territory and acquired control of the Eastern Mediterranean. This shut off the trade with the Orient and destroyed Venice. Under Selim II., a Holy League was formed between Venice, Spain and the Pope, and their combined fleet defeated that of the Turks at the battle of Lepanto, which was the first great setback for the Moslem. But Cyprus, and Yemen and Spain fell to the Turks. With the disaster of Lepanto, Turkish power began to wane. The tides of Moslem swept up to the gates of Vienna and the fate of Europe and of human civilization hung in the balance, when John Sobieski, king of Poland came to the aid of the Germans and stopped the tidal wave of Ottoman power. Since that day the history of Turkey has been the record of the bloody struggle between East and West, smeared with the gore of assassination and murder and pillage. There is probably no lesson in human history more needed today, facing the problems of new Asia as we do, than the lesson of Asia in Europe during these four hundred years. Little by little the European Empire of the Oriental despot has been whittled down, in this tragic struggle of two unassimilable civilizations, the one that of Christian civilization, the other that of a tribe of more than wild beasts who sprang from the Huns.

The United States of America.—In 1787 the thirteen colonies of America, which had revolted from England in the War for Independence (see American Revolution), found themselves in so weak and helpless a condition that they were in danger of falling again under the yoke of a foreign nation. To protect the freedom they had fought valiantly to win, they decided to join together under a strong national government and to call themselves the United States of America. A conference of delegates from the different colonies drew up a Constitution for the new government.

Under this Constitution the power of making laws was given to a Congress chosen by the people, the power of enforcing these laws to an elected President and his chosen cabinet, the task of administering national justice to a Supreme Court appointed by the President.

The new order of things went into effect on March 4, 1789, with George Washington as President. The eight years of his administration might be called the building of the American Nation.

Alexander Hamilton, Secretary of the Treasury, established a sound financial system throughout the country, undertook the payment of state and national debts and made good the credit of the United States with foreign nations. John Jay, ambassador to England, with much difficulty placed us on friendly relations with that country through Jay's Treaty. A national standing army was formed as a result of skirmishes with the Indians in the western territory. Washington, realizing the weakness of the new nation, wisely resisted the pleas of France for military aid in her war against England and Holland.

The strongest believers in individual freedom opposed the power taken over by the national government and held that all matters should be decided by the states separately. These people formed a political party called Republican. Those who upheld the national government were called Federalists.

During the Presidency of John Adams, (1797-1801), the French government, enraged at our refusals of aid, declared war on the United States. The peril seemed so real that Washington was called to prepare an army. When Napoleon came into power in 1799, however, a friendly agreement was reached.

The country suffered so at this time from treason and disloyalty among its own citizens that the Alien and Sedition Laws were passed, inflicting a heavy penalty on anyone who spoke or acted against the government.

The first Republican President, Thomas Jefferson, was elected in 1801. In 1803 he effected the Louisiana Purchase, by which the United States bought from Napoleon, not only the State of Louisiana, but all the territory stretching west of the Mississippi to the Rocky Mountains.

Had Jefferson not been a pacifist, the United States would surely have been drawn into war during his second term (1805-1809). France and England were engaged in a bitter struggle on the sea and, in their desperation, they made use of American ships in a way that utterly disregarded our rights as a nation. French and British warships robbed American merchant vessels of their cargoes and the British captured American seamen as well, forcing them to fight in her battles.

Jefferson issued protests to both nations in vain and in 1807 he put through Congress the Embargo Act, which forbade American ships to leave their harbours and shut the United States off from foreign commerce for more than a year. The Embargo Act was repealed in 1809 and trading forbidden only with France and England—yet the pillage continued.

Madison became President in 1809. He tried to follow Jefferson's policy of peace, until the anger of the American people at foreign outrages demanded war.

It was impossible to fight both England and France; France had showed less offence and some recent inclination to friendliness. Therefore, in 1812, the United States declared war on England as an ally of France. (For particulars see War of 1812.)

On land the American army suffered considerable defeat, but in naval encounters the American warships startled all with their victories. At the battle of New Orleans in 1815 the British troops surrendered and following this a treaty of peace was signed

No territorial gains were made by either side; but the rights of the United States were thereafter respected on land and sea.

Acknowledged by all as a nation, the United States now entered on a period of great internal development and growth.

In 1807 Robert Fulton had launched the first steamboat, a tiny craft which crawled up the Hudson at the rate of four miles an hour. New and better steamboats were being built and began to navigate the inland lakes and rivers. In 1825 was completed the Erie Canal, connecting Lake Erie with the Hudson River and thus making a direct route between the Great Lakes and the Atlantic Ocean. The steam railroad, started on a small scale in 1829, began rapidly to spread its network of tracks over the country. It was due to these new methods of transportation that the middle western territory now became populated; between 1815 and 1845 ten middle western states were admitted to the Union.

When Missouri sought admission in 1820, a dispute arose between northerners and southerners in Congress as to whether slavery should be allowed in the new territory. An agreement known as the Missouri Compromise was reached, stating that Missouri should be a slave state, but that thereafter slavery would be prohibited in all states admitted from the new western territory.

In 1823 President Monroe sent out a proclamation known as the Monroe Doctrine, which has influenced America's foreign policy ever since. In this the President aimed to protect the new republics of South and Central America from the designs of the European powers and stated that any attempt of a foreign nation to establish colonies on the American Continent would be opposed by the United States.

Under the Presidency of Monroe, the old Federalist party gradually disappeared and the Whig party grew up under the leadership of Henry Clay.

The first victory for the Whigs came with the election of John Quincy Adams in 1824. Party strife between the Whigs and the Republicans (then called Democrats), was so high that Adams was opposed by a Democratic Congress in everything he attempted.

In Georgia trouble arose with the Cherokee Indians in which Adams tried to secure justice for the Indians, but the Georgians, disobeying the President, drove the Cherokees from their territory and annexed the new land to the state of Georgia.

Andrew Jackson, a Democrat, who became President in 1829, started the "Spoils System," in which most Presidents have followed him since. He discharged all government officials who had been Whigs and replaced them with his supporters, Democrats.

In 1832 South Carolina, which had suffered under the heavy taxes imposed by the national tariff, threatened to withdraw from the Union to avoid these taxes. Her withdrawal was prevented both by the firmness of Jackson and the conciliation of Henry Clay, who brought about a reduction of the tariff.

In his headstrong fashion, Jackson abolished the National Bank and divided the government funds among State banks, causing heavy financial disasters. When Van Buren became President, in 1837, he established a National Treasury which should keep the funds of the government apart from the risks of bank transactions.

The territory of Texas had revolted from the rest of Mexico and now asked to be admitted to the United States. Admission was granted in 1845.

In the same year, under Polk's Presidency, a dispute arose with Mexico over the boundary line of Texas, a dispute which resulted in the Mexican War. The United States was victorious and, by the peace treaty, obtained the territory now

covered by California, New Mexico and Utah. (See Mexican War.)

Meanwhile beneath the surface of these events, the current of anti-slavery feeling, first observed in the Missouri Compromise (see above), was gaining greater strength.

In 1831, in Boston, William Lloyd Garrison had begun to publish a paper called The Liberator, in which he violently denounced slavery. At the same time groups of northerners called abolitionists were working for the freeing of the slaves. So troubled was Congress with petitions demanding the freedom of the slaves, that in 1836 the Gag Resolution was passed, decreeing that all such petitions be ignored. Protesting against the injustice of the Gag Resolution, many freedom-loving northerners, hitherto unconcerned, began to side with the abolitionists.

When the Mexican territory was annexed in 1846 a Congressman named Wilmot moved that slavery be prohibited in this territory, but his resolution (the Wilmot Proviso), did not pass the Senate. Those who had sided with Wilmot formed the Free Soil party and continued to fight for freedom in new states and territories. The Democrats took their stand for slavery; the Whig party gave way to the Free Soilers.

The strife between the southerners (mostly Democrats), and the northerners (largely Free Soilers), became so bitter in 1850 that a compromise seemed necessary to preserve the Union. The Compromise of 1850 abolished slavery in the District of Columbia, but made more strict the rules about the return of the runaway slave to his master. It also deprived Congress of the right to regulate slavery in the new western territory.

So evenly divided was the feeling in Congress on the slavery question that the attitude of any new state admitted to the Union might determine which way the vote would turn. Therefore, when, by the Kansas-Nebraska Act of 1854, Kansas was given the right to decide for herself whether she should be slave or free, both sides determined to force their way of thinking on the new state. Northerners and southerners moved rapidly into this thinly populated area in the hope of winning a majority in the first state election. So fiercely did the two groups of newcomers hate each other that a barbaric sort of warfare existed between them in Kansas for more than a year, in which over 200 lives were lost.

The old Whig party now disappeared entirely and the Free Soilers, calling themselves Republicans, held their first national convention in 1856. In spite of their efforts, a Democrat, James Buchanan, was elected President.

In 1857 the Supreme Court made the famous Dred Scott decision, forcing a slave who had escaped to free territory to be returned to his master. According to this decision a negro was a piece of property, not a person.

In 1859 an ardent abolitionist, John Brown, captured a national arsenal in Virginia and used this vantage point for freeing the slaves in the neighborhood. He was arrested by Federal troops, accused of treason and shot.

In the Fall of 1859 the Republicans elected Abraham Lincoln President. With the admission of Kansas as a free state, the southerners had felt that they were losing ground; and now, with the Republican party in power, they were certain that their right to own slaves would soon be denied them. They resolved to withdraw from a Union in which their best interests would not be preserved. In December, 1860, South Carolina declared herself separate from the Union. Georgia, Alabama, Florida, Mississippi, Louisiana and Texas followed her example.

No decisive action was taken by President Buchanan.

In February, 1861, six of the seceded states joined together as the Confederate States of America, with Jefferson Davis as President, and proceeded to take over the fortifications within their territory.

In South Carolina Major Anderson refused to give up Fort Sumter to the Confederates. A long siege followed which resulted in the firing on Fort Sumter by the southerners. (See Fort Sumter.) Lincoln, who had then just become President, now called for volunteers to fight the Confederacy and thus the Civil War began. (For particulars see Civil War.)

The Civil War started only as a struggle to preserve the Union, but in 1863 Lincoln issued the Emancipation Proclamation, declaring all slaves free, and from then on it was a war for freedom.

When the Confederacy surrendered in 1865, the seceded states returned to the Union and all slaves were released.

Soon after the northern victory, President Lincoln was shot by a half-insane southern sympathizer.

Vice-President Johnson, who then became President, wished at once to readmit the southern states to all their former privileges. Congress, on the other hand, wished first to make these states alter their constitutions so as to assure the negro full rights. The President and Congress fought each other at every step. Congress succeeded in passing the Fourteenth Amendment, making the negro a citizen, but leaving the question of his vote to individual states to decide. When the southern states rejected the Fourteenth Amendment, Congress ordered troops to be stationed in the South to supervise the lawmaking. Under this supervision the state legislatures passed such measures as Congress wished and were gradually readmitted to the Union.

In 1867 the United States purchased Alaska from Russia.

In 1868 President Johnson, accused of disobeying a law of the land, was impeached, i. e., ordered for trial by the the Senate. The Senate did not find him guilty.

In 1869 Grant, the renowned general of the Civil War, became President. At that time there was a serious dispute with England over the aid and protection given by that country to the southern states during the Civil War. The United States demanded that England should pay for the losses thus caused our government. The question was submitted to a tribunal of five nations, which decreed that England should pay the United States $15,500,000.

In the South had arisen the Ku-Klux-Klan, a band of southern gentlemen who had resolved to put down the disorder resulting from the negroes' freedom. They met in secret and acted in secret, punishing where they thought punishment was needed. By the "Force Bills" (1870-2), U. S. troops were ordered to suppress the Ku-Klux-Klan.

During Grant's administration a vast amount of political graft was revealed and the Liberal Republican party was formed to fight political graft.

When Rutherford Hayes became President in 1877, his first act was to withdraw the Federal troops from the South and after this the uprisings there gradually subsided.

The period of rebuilding the Union after the destruction of the Civil War was now ended.

A nation-wide railroad strike in 187? marked the beginning of a new era—the era of modern industrialism.

It was now a very different United States from that which had drawn together under the Constitution in 1789. Not only had its area more than doubled, its population also had been increased many times by the immigration of vast hordes of foreign laborers—Irish, Germans, Italians, Swedes, Chinese—who came to do the work needed in the large factories, recently sprung up, on the new railroads, or in the newly discovered mines. The inferiority of this large part of the population to those for whom they worked made impossible the same sense of equality which had existed in the early Republic.

In 1881 the American Federation of Labor was formed, an organization of workmen for the purpose of bettering their conditions.

In 1882 Congress forbade the immigration of Chinese workmen to this country for ten years to come. In 1885 a law was passed prohibiting employers from bringing any foreign workmen to this country by contract.

The injustices of the large groups of manufacturers (or trusts) in ruining the business of the small manufacturer led to the establishment of the Interstate Commerce Commission in 1887, the aim of which was to prevent the trusts from taking unfair advantage of the small merchant in the transportation of their goods from state to state.

During the Presidency of Cleveland (1885-9), the Department of Agriculture first became a part of the National government.

The growth of industry had caused an increase in World Trade. During the Presidency of Harrison (1889-93), representatives from the South American Republics met with representatives of our government at Washington in the first Pan-American Congress—for the purpose of establishing better trade relations between American nations.

In 1893 the World Columbian Exposition was held at Chicago.

In 1898, under McKinley's Presidency, the United States was involved in a war with Spain (see Spanish War). As a result of the American victory, the Philippine Islands, Porto Rico and Cuba were ceded to the United States. In the same year the request of the Hawaiian Islands for annexation was granted.

President Roosevelt (1901-9), did more than any President before him to reform the industrial situation. He established a Department of Commerce and Labor, as well as a Bureau of Immigration. He conducted vigorous investigations into the affairs of the large trusts, with the result that two of these trusts were later broken up. During his administration the railroad rates were equalized and the Pure Food Bill became law. He set on foot a movement for the conservation of forests and other natural resources of the country.

He was active in world affairs as well and brought about peace in 1905 between the warring parties in the Russo-Japanese War. He also secured the rights to, and began the work on, the Panama Canal, which was completed by President Taft (1909-13), who was expected to carry on Roosevelt's work, but who was interfered with by the conservative element in power and could accomplish little. A Commerce Court was established to act with the Interstate Commerce Commission, the tariff was slightly reduced, and a literacy test was required for immigrants.

A series of revolutions in Mexico seemed to endanger the American citizens on the border. Taft refused to recognize President Huerta, a murderer and a brigand, and for a time forbade the sale of weapons to the Mexicans.

On Wilson's accession to the Presidency in 1913, Congress held the longest session in its history, and many reform measures were passed under the leadership of the new President.

Twice Mexico showed open hostility to the United States and American troops were sent across the border to exact reparation; but after Pershing's punitive expedition in pursuit of Villa, the trouble subsided.

The European War had begun in 1914. The United States remained neutral in the great conflict for nearly three years; but after the sinking of the *Lusitania* and other attacks of German submarines on American vessels and after Germany openly declared her intention to destroy neutral vessels within certain zones, war was declared on Germany in April, 1917. The American forces under General Pershing were added to those of the Allies in Europe.

After the bloodiest conflict in the history of the world, the Central Powers (Germany, Austria and others), surrendered to the Allies (England, France, United States, Italy, Belgium and others). The armistice was signed on November 11, 1918.

The Peace Conference at Paris was attended by President Wilson in person, who played a large part in the drawing up of the Covenant of the League of Nations.

The United States Senate failed to ratify this Covenant on the President's return.

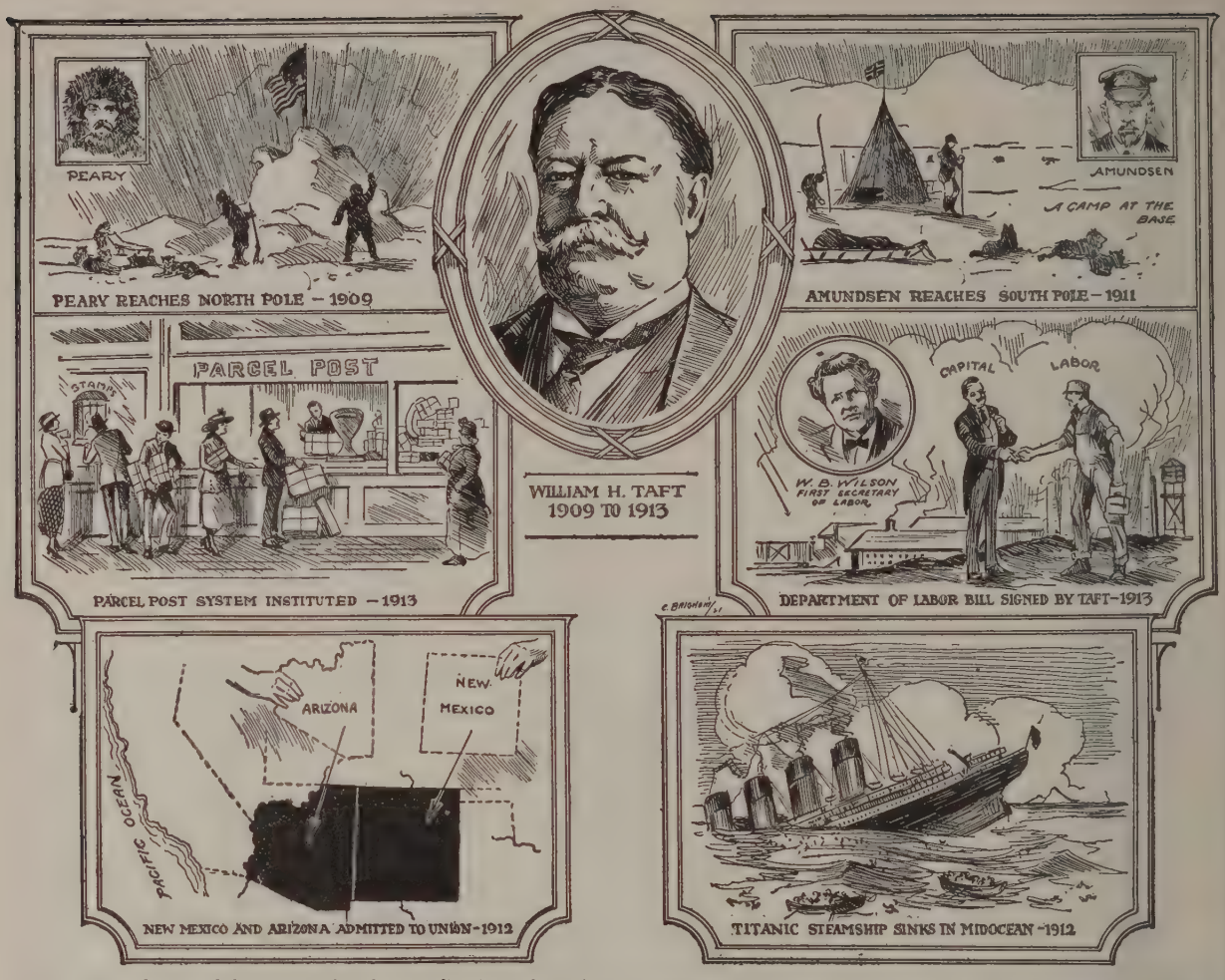
In 1920 Warren G. Harding, Republican, was elected President, largely as a protest against Wilson's foreign policy.

United States and World Power.—The close of the nineteenth century marked the close of an era in United States History. The Spanish War had broken down the "Chinese Wall" of American exclusion with what the French call "Village spire patriotism," and the United States emerged with a foothold outside the main continental domain, ready to reach out for the world trade her growing industries had been preparing for. Some glimpses of the conception began to appear that political and commercial policies must coincide, and that if this country is to be a commercial world power, it must be a political world power. This conception was forced upon us by events: it did not guide events. The general upheaval of war and foreign acquisition started the awakening which on the part of the masses had been very slow, and is even to this day, after the Great War has been fought. There are a few men of affairs who realize that the planet is one place, and the United States is but a part of it, and related to all of it. Henceforth we must reckon with this fact.

Van Buren's Administration (1837-1841).

I. Panic of 1837.—When Jackson had ordered the cessation of deposits of the national funds in the United States Bank, certain other banks were chosen which were called "pet banks". Large amounts were put into circulation, fostering speculation, to the extent that soon there was no money for anything. These banks began to issue bills payable in gold and silver without the specie with which to meet the obligations. "Wild Cat" banks were formed with little or no capital and this was the legacy left over from "Jackson's Reign" to the Van Buren incumbency. Since the greater part of the speculaton was in public lands, Jackson's order that agents should receive nothing but gold for land precipitated the panic which extended to all branches of trade. Everywhere banks failed—even the national banks, and the Treasury suspended payment upon its obligations and was compelled to issue notes to the amount of $10,000,000.

II. Repudiation (1837).—During the period of speculation states had undertaken the construction of railroads, canals and other public works, issuing bonds, whose obligations they could not pay. In some cases the money had been squandered, in others



plundered, and some of the states refused to pay their debts, taking refuge behind the clause of the Constitution which forbids a state to be sued by an individual. Later some states paid up, as for example Pennsylvania, but some never did. Since much of this money had been invested in Europe, American honour received a deadly blow and American credit fell so low that even the United States government was unable for years afterwards to place a loan in Europe.

III. Subtreasury Established (1840).—Van Buren, who had run for office on the platform of walking in the footsteps of his illustrious predecessor, hurried to find a way to remedy his mistakes and proposed the Subtreasury System which severed all connection between the government and banks of issue and allowed the government to do its own banking. Vaults were built and government monies deposited, to be paid out by government agents under heavy bonds, but this scheme had the disadvantage of holding such money out of circulation, except through the payment of salaries and interest and the purchase of its own bonds. This also worked much hardship.

IV. Abolition Movement (1834-1840).—For some years the Abolition Movement had been in progress, resulting in riots and sometimes in bloodshed. In 1835 a mob broke up a meeting in Boston and dragged Garrison through the streets with a rope around his body and in 1837, Elijah P. Lovejoy was murdered in front of the office of his own paper at Alton, Illinois. Whittier, the poet, lost his books and papers through a mob in Philadelphia, and large rewards were offered in the South for the miscreants who opposed slavery. The feeling grew in depth and power both North and South and was hastening the day of reckoning, which even then seemed to be inevitable—as J. Q. Adams had said long before: that the Union would ultimately split on the slavery issue.

Washington's Administration (1789-1797).

I. The Constitution of the United States, Effective (1789).—The consolidation of the national life under the Constitution is in both time and importance the first element of the history of the United States. The alternative had been the Constitution or anarchy and civil war. Patrick Henry voiced the sentiments of the opposition in that it would establish "one great, consolidated, national government of all the people of the states." The report of the Framers to Congress stated that they had kept forward the greatest interest of every true American: "the consolidation of our Union, in which is involved our prosperity, felicity, safety, perhaps our national existence." It is probable that the Union would not have lasted till the year 1800 if the opponents of liberalism had had their way.

II. Cotton Gin, Invention of the (1793).—"If the Cotton Gin had never been invented, it is probable that slavery would have been abolished in the South before 1825." (Channing, Student's History of the United States, p. 2.) Eli Whitney, the inventor was a Connecticut schoolmaster, resident in Georgia, and by conceiving a device by which cotton fibre could be drawn by saw teeth through openings too small to admit of the passage of the seed, he multiplied the capacity of a slave in cleaning cotton about three hundredfold. His invention made billions of dollars for the South, but he was mobbed when he sought to enforce his rights in his own invention. The year before the appearance of the Cotton Gin, the South exported 189,000 pounds of cotton; by 1824 the amount had been increased to 142,000,000 pounds exported. It is probable that if the states north of the Ohio River had been cotton states, slavery would be flourishing yet.

III. Mint, Establishment of the United States.—The first institution for the coining of money was established through the efforts of Robert Morris in Philadelphia, in 1792. In 1854 a second mint was erected at New Orleans. The country had been filled with base coin which made an alarming situation Counterfeiters were busy imitating paper money and coin and

the finances of the country were in a state of anarchy. The Act creating the United States Mint was passed April 2, 1792, and the same year three pieces were struck, the Dime, the Half-Dime, and a trial Cent with a silver center. But the first regular issue of money was the copper cent of 1793, of which there are now extant eleven varieties. A local wit published a skit: "Alexander the coppersmith has done me much harm (Alexander being Hamilton, the first Secretary of the Treasury), the Lord reward him, according to his works." (Paul.)

V. Jay's Treaty.—Neither England nor the United States had complied with all of the stipulations of the Treaty made at the close of the Revolution and the tension was so great that but little would have precipitated another war. Added to this was the new war between France and Great Britain, in which both nations bore down heavily upon American shipping. To settle the mooted questions Washington sent John Jay, Chief Justice of the United States, as Minister to Great Britain to negotiate a new treaty. Jay was one of the ablest of American statesmen and one of the most unselfish, but the treaty he negotiated in 1794, notwithstanding, aroused fierce opposition. Britain agreed to evacuate the posts held by her by June 1, 1796; joint commissions were to settle the matter of debts; also the indemnity for negroes taken away and the boundary disputes on the northwestern frontier were to be settled, but the British government would not yield on the matter of impressment and neutral trade. Jay was burned in effigy and Washington was abused, but it postponed the second war with Great Britain for many years.

V. Addition of New States.—Acts were passed by the First Congress, third session, admitting Vermont (1791), and Kentucky (1792), and Tennessee in 1796. Already the slavery question had entered American political life and it became bound up with the admission of states. There were also anti-slavery petitions and a Fugitive Slave Act, delivering slaves escaped from one state to another.

Waterloo, Battle of.—The battle of Waterloo was fought at the little village of that name in Belgium, eleven miles south of Brussels, on June 18, 1815. Preliminary battles had been fought at Ligny two days before, where Napoleon had defeated the Prussians under Blucher, and at Quatre-Bras, on the same day, where Wellington compelled Marshal Ney to retreat. Wellington had 67,000 men and Napoleon had about 72,000. The most of the day's battle consisted of attacks by the French which were met by a dogged resistance by Wellington's army. Meanwhile Napoleon sent troops to stop Blucher, who was advancing with 50,000 men. At seven o'clock in the evening Napoleon decided to make a last stroke for victory, Wellington having used up nearly all of his cavalry, and he stormed the whole line. The famous French Guard in four divisions was defeated one by one by British troops who had been hidden, and the French army began to disappear in a rout, Blucher joining just in time. The losses of Blucher and Wellington were about 20,000 men, while the French army was well nigh annihilated, losing 35,000 men killed and many wounded and captured. This battle ended the menace of Napoleon, who was soon retired to St. Helena, where he died May 5, 1821.

White Leagues.—After the Ku-Klux-Klan and other mysterious brotherhoods of southern gentlemen had been disbanded by the Force Acts of 1870 and 1871 (see Ku-Klux-Klan), the same groups of southerners formed White Leagues, through which they strove to deprive the negro of political power and restore order. These leagues did not employ the supernatural trickery of the Ku-Klux-Klan; they worked with as much openness as any political party, but with the military methods of a police force.

The White League was strongest in Louisiana, where the white people were least sundered by class distinctions. Here in 1872 they protested that Governor Kellogg, a Republican, had been unlawfully elected by keeping white citizens from the polls and they set up McEnery, the Democratic candidate, as rightful governor. Two opposing state governments existed side by side until Grant recognized Governor Kellogg. In September, 1874, Governor Kellogg ordered the White League to give up their firearms and so started an uprising of the white citizens of New Orleans headed by the White League, which ended in Kellogg's flight, the defeat of the Federal troops and the establishment of a new state government under McEnery. Grant condemned the action of the White League and sent fresh troops to replace Kellogg in power. However, another election soon followed, with victory for the White League.

Wilson's Election (1912).—The split in the Republican party owing to the repudiation of the Taft Administration by many republicans principally on account of his attitude towards Big Business, resulted in the election of Woodrow Wilson as President of the United States, receiving on a popular vote, 2,000,000 less than his combined opponents. Nevertheless, the Democrats got control of the Senate (51 to 45), and of the House (291 to 144), something that had not occurred before excepting in the session of 1893 to 1895, since the Presidency of James Buchanan.

Wilson's Administration (1913-1921).

I. Seventeenth Amendment (1913).—On May 31, 1913, the Seventeenth Amendment of the Constitution of the United States, providing for the direct election of Senators by the people, having been duly ratified by a sufficient number of states, was declared in force. To make that body truly representative, there remains another Amendment to be submitted and declared, to make Senators elected according to populations, so that Rhode Island, for example, cannot pair with New York or Texas.

II. Panama Canal Opened (1914).—The Panama Canal was opened for world traffic in August, 1914, the American steamer *Ancon* going through the locks crowded with officials and guests. In January, 1914, Colonel Goethals, the engineer who had completed the great task, was made the first governor of the Panama Canal Zone. The tonnage passing through the canal increased from nearly five million tons in 1916, to eight million tons in 1919.

III. League of Nations.—Incorporated in the Peace Treaty, President Wilson being at Paris, was a Covenant of a League of Nations with 26 articles. When the matter became known in the United States enough Senators to defeat it signed a round robin declaring their opposition. When it became known that our Allies had, unknown to us, made secret treaties with each other and against those principles for which Americans contended, there was a strong revulsion which was given a great impluse when the American representatives among other things deliberately betrayed China to Japan, which had done little in the war without careful reference to her own selfish interests. The consequence was, that after much opposition in the senate and elsewhere, the whole treaty was rejected, November 19, 1919, by a vote of 55 to 39.

World War.—Open wars for conquest, such as Cyrus the Persian and Alexander the Great had waged in centuries past, were not the practice among civilized nations of the twentieth century, and hence it was thought that the modern world had grown beyond warfare. But, among the great European powers, the same desire for conquest existed as in earlier days and, hidden beneath the cloak of diplomacy, the rulers wrestled with each other more fiercely than ever for territorial gains. Nationalism, Militarism, Imperialism, were the watchwords of the times. In some quarters, to maintain peace it was thought necessary for each nation to terrify its neighbors by the size of its army or navy, and if any one nation seeemd acquiring dangerous power, the others allied against it. In 1900 two great alliances dominated Europe:

(1) The Triple Entente—an agreement between France, Russia and England for mutual help in case of attack.

(2) The Triple Alliance—a similar agreement between Germany, Austria and Italy.

The strength of these two alliances was so nearly equal that each of the six nations involved felt able to hold its own in case of war, while neither group was enough stronger to dare make war on the other. Thus a perfect balance of power kept the peace of Europe for the first decade of the twentieth century.

In 1912 and 1913 a few of the Balkan states rebelled from the rule of Austria and sought independence under the protection of Russia. The weakening of Austria and the strengthening of Russia which resulted upset the equilibrium between the two alliances—the Triple Entente was now undoubtedly the stronger. Austria prepared for war to regain her Balkan provinces and Germany followed her in order to prevent the aggrandizement of Russia. The other nations of Europe, scenting the danger, plunged likewise into an orgy of preparedness. England attempted conciliation with Germany, in the desperate hope of averting a European war.

On June 28, 1914, the Archduke Francis Ferdinand of Austria and his wife were murdered by a Serbian anarchist while they were visiting in Bosnia, a Serbian territory which the Austrians had subjugated. This gave the provocation for which Austria had been waiting. Without real ground for suspicion, she accused the Serbian government of causing the murder and sent to Serbia an ultimatum with the following demands:

(1) That she suppress all anti-Austrian propaganda.

(2) That she dismiss from the army and from civil service anyone obnoxious to Austria.

(3) That she allow Austrian officials to sit in Serbian Courts.

To the last of these humiliating demands Serbia refused to submit and offered to settle the dispute at the Hague Tribunal, but Austria wanted absolute submission and declared war on Serbia. Russia, the avowed protector of Balkan freedom, began to mobilize her army to protect the

tiny Balkan nation from so formidable a foe. Germany at once declared war on Russia, on August 1st, saying that she was required to defend her ally, Austria. France, as an ally of Russia, began to mobilize, whereupon Germany declared war on France August 3rd.

Germany's first move was the sending of three military expeditions against France —one to the southeast through Luxemburg, one from Metz across the Franco-German borderline and one through Belgium. The troops passed through Luxemburg without armed resistance but Belgium forbade their entrance, and when the Germans forced their way in on August 4th, rose in arms to oppose them. England, among other European nations, had guaranteed the neutrality of Belgium, that is, had promised that there should be no fighting on her territory. She now threatened war if Germany would not withdraw her troops from Belgium. Germany replied that entrance through Belgium was a military necessity and that "necessity knows no law." England declared war on Germany on August 5th. Soon afterward Japan, as an ally of England, joined the war and in November Turkey allied herself with Austria and Germany, who were known as the Central Powers. The Triple Entente and its supporters were called the Allies. Italy, although bound by the Triple Alliance, would not join the Central Powers as she believed them unjustified in causing the war. In 1914 the opposing sides in the conflict were as follows:

The Allies	The Central Powers
Russia	Austria
France	Germany
England	Turkey
Belgium	
Serbia	
Montenegro	
Japan	

"Paris within a month" had been the boast of the Germans as they began their French campaign, but the small Belgian army halted them for ten days on their first advance and laid low their hopes. By the time the Germans had rallied sufficiently to crush the Belgian forces, destroy the town of Liege and take possession of Brussels, the French had been able to strengthen their defence and guarded the Belgian border.

Elsewhere the danger seemed greater.

The German division which had entered through Luxemburg stood within twenty-five miles of Paris on September 1st and, joined with the division which had taken the fortress at Namur, formed a line of attack one hundred miles long. At that moment Von Kluck moved the joined forces eastward with the intention of surrounding the enemy, but he had miscalculated and walked his men into a trap surrounded by French and English. The battle of the Marne ensued (Sept. 5-10), in which the Germans were driven back to the River Aisne.

After their defeat at the Marne the Germans wreaked their anger on Belgium. They destroyed great cathedrals and other works of art; they extracted large tribute from the people; they confiscated machinery and other supplies; they burned a great part of the city of Louvain. But that which brought upon them the violent hatred of all the world was the brutality with which they maimed and murdered unarmed civilians. By October 10th the German army had occupied all but the small southwestern corner of Belgium.

The opposing armies along the Aisne, unable to break through each other's defences, tried to outdo each other by extending their trenches to the north and to the south. By the end of October the line of entrenchment reached from Switzerland to the coast of Belgium and for the next three years the French and British opposed the Germans along this line without important gains on either side. In the Fall of 1915 the British centered their effort on a drive to the northeast of Arras, but in spite of their fresh supply of men and munitions they only succeeded in forcing back the Germans two or three miles on a twenty-mile front. Between February and July, 1916, the German attack on the French fortress Verdun threatened to bring about a collapse of the Allied armies; but when defeat seemed most certain the French forces rallied in accord with General Joffre's words "They shall not pass," and drove back the army of the German Crown Prince. From July to November, 1916, the battle of the Somme raged, east and northeast of Amiens. Here the British tanks were first used. The Germans retreated a few miles, each side having lost from 600,000 to 700,000. In 1917 the British held the enemy at Arras, where the battle of Vimy Ridge occurred and the French fighting was fiercest along the Aisne, about the Chemin des Dames. During the course of the year the Germans shortened their line to a direct route from Noyon to Arras, thus cutting off one-eighth of their French gains.

Meanwhile in eastern Europe the Russians fluctuated between success and disaster. In 1914 they forced their way into East Prussia, but after the battle of Tannenberg were driven back. They invaded victoriously the Austrian province of Galicia, but had to abandon all they had gained when they withdrew their troops to combat the Germans in Poland. Here they were ineffective and in the summer of 1915 surrendered the important Polish towns to Germany. In 1916 Russia held her ground against the enemy and for a time threatened to invade Hungary, but the ever-watchful Germans and Austrians halted her advance. Early in 1917 revolution seized the ancient empire—the Czar abdicated and a republic was established in which Kerensky became military and political leader. The lapse in discipline resulting from the new freedom steadily weakened the Russian army. When the Bolsheviki took hold of the government in November, the new leaders, Lenine and Trotzky, offered to make peace with Germany, but the German demands for territory were so preposterous that the treaty was not signed. Germany then advanced her army on a five-hundred-mile front into the heart of revolution-torn Russia and forced her terms of peace. By the Treaty of Brest-Litovsk, March, 1918, Russia ceded to Germany one-half million square miles of territory, including Poland, the Ukraine, Lithuania, Courland, Livonia. Thus the strength of Russia, with her vast population and wealth of resources, was wrenched from the Allies to the profit of the Germans.

The first marked activity in southern Europe was the fatal expedition of French and English against Constantinople. They landed at Gallipoli on the Dardanelles in April, 1915, but the Turks and Germans lay in waiting and would not allow them to gain a footing. The Allies withdrew after heavy losses of men and battleships.

In May, 1915, Italy joined the Allies. It is believed that she hoped through victory to regain her territory along the Adriatic, where Austria then ruled.

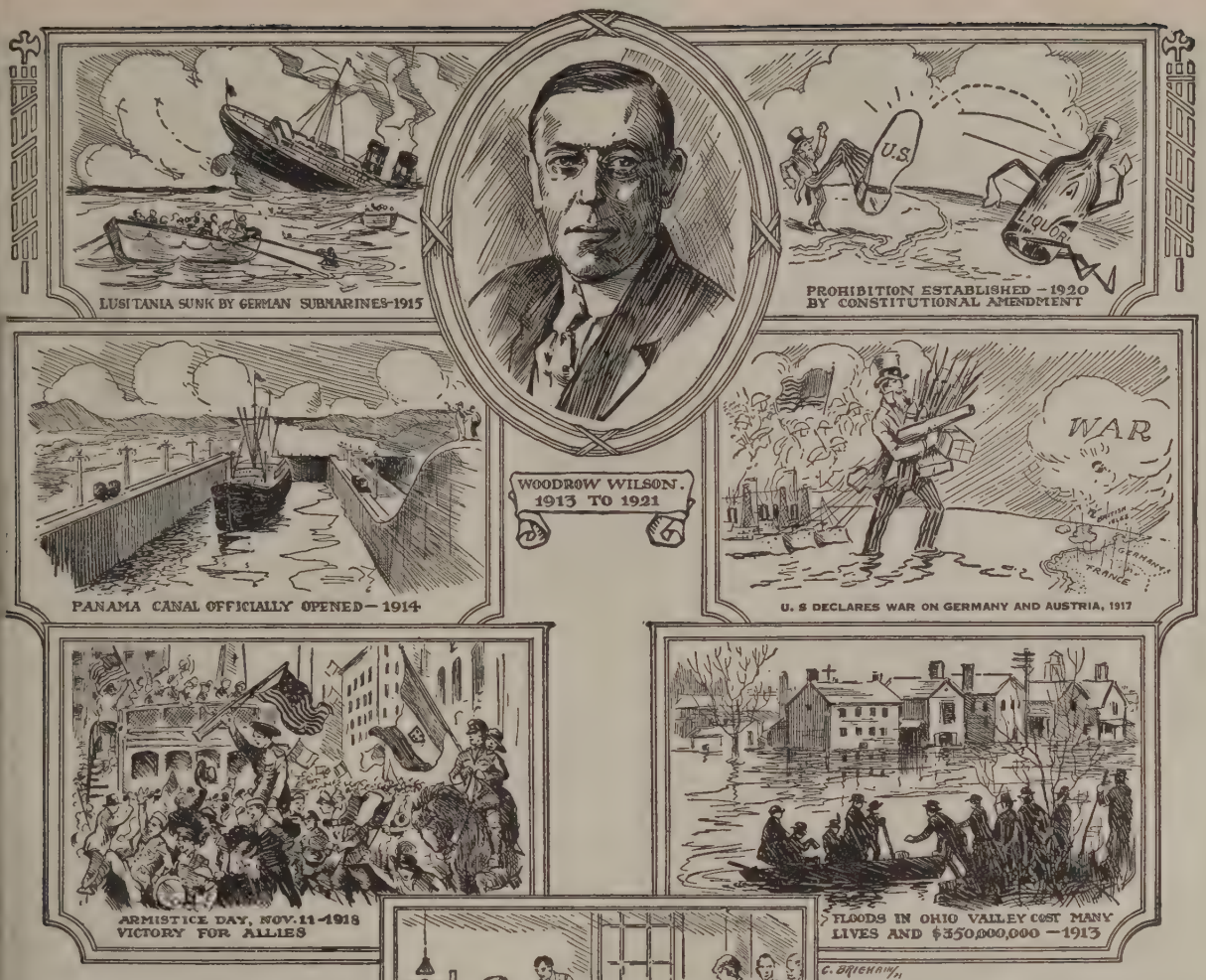
In October the Germans invaded Serbia with the aid of Bulgaria who, seeing a fair prospect for booty in the project, at this moment joined the Central Powers. The British and French sent troops to Salonika to protect Serbia, but before these arrived the small nation had surrendered to the overpowering numbers of her enemy.

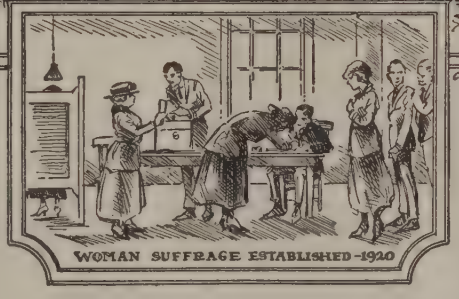
In May, 1916, the Italians, who had made slight gains along the Dalmatian Coast, were suddenly pushed back into their own territory by an Austrian drive. Just then the Russians became a menace in Hungary, the Austrian troops were dispatched thither and the Italians once more advanced, this time as far as the important city of Göritz. Encouraged by Russia's temporary success, Roumania now joined the Allies and began an invasion of Transylvania. At once a German army was sent which drove the Roumanians back into their own country and took from them their capital. Before long Germany was in possession of two-thirds of Roumania, exploiting her grain fields and oil wells.

Through the summer of 1917 Italy's advance on the Austrian front continued. But in the autumn, after the breakdown of Russia, the German forces released from that region joined the Austrian defence and caused a disastrous retreat of the Italians far beyond their gains. Once more in Italy they took their stand along the Tagliamento and were driven from there to the Piave. Had not the French and British at this moment reinforced the Italians and halted the Austro-German advance it is probable that the city of Venice would have fallen and all Italy surrendered.

Meanwhile in remote regions decisive events were occurring. It was not alone the capture of Kiao-Chou and all other German strongholds in the Pacific by Japan, Australia and New Zealand, nor the conquest of German South Africa by British subjects. The war in the air, the war beneath the sea had far-reaching effects. The German Zeppelins, hovering over England at the dead of night, dropped bombs which killed many thousands and shook the morale of the country. The German battleships never encountered the British navy in open fight, but German submarines, unseen, destroyed English warships and merchant vessels. England's position had made it possible for her to cut off all German commerce at the beginning of the war by blockading the harbours of Hamburg and Bremen. She also searched all vessels bound for Holland, Norway or Sweden to see if these contained any contraband of war, destined for German use. Germany argued that submarine warfare was her only weapon against these English injustices. In February, 1915, Germany confiscated all grain in her territory, that she might better feed her army. England then declared that all foodstuffs sent to Germany should be considered contraband of war and as such removed from the ships bearing them to German destinations. Germany claimed that England was trying to conquer her through starvation and struck back by declaring a zone of war in the waters about the British Isles. Within this zone enemy merchant vessels would be sunk by submarines with or without warning and neutral ships passing through would be in danger of destruction.

In May, 1915, the British ship the *Lusitania* was sunk without warning and 1,200 of its passengers, among whom were 100





Americans, perished. President Wilson's note of protest to Germany was ignored. Other such disasters occurred and the notes of protest continued.

In January, 1917, England extended the area of her German blockade and Germany so extended her war zone that commerce between Europe and America would not be safe for any neutral vessel. Unable to make her repeal this drastic measure, the United States declared war on Germany April 6, 1917, and planned to fight in co-operation with the Allies on the French front.

Only a fraction of the American forces reached France in 1917, and fought bravely without making any change in the course of events.

Following the United States, seven other countries declared war on Germany, namely: Cuba, Panama, Greece, Siam, Liberia, China and Brazil.

In March, 1918, the Germans braced themselves to their greatest drive against the Allied front. Attacking the British on March 21st, at a point of weakness, along the Somme they pushed through the line of defence and on to Amiens. Within a week the Germans captured six French towns. On April 12th the English retreated from the Flanders front, but took a firm stand at Ypres, beyond which they could not be moved. On May 19th Soissons fell into alien hands and on May 31st the Germans were at the Marne, within forty miles of Paris. They had with them a tremendous machine gun by which they bombarded Paris from afar.

The Americans were now winning glory by their advance into Belleau Wood.

After the fall of Chateau-Thierry on July 15th General Foch, as Commander-in-Chief of the Allied forces, undertook an offensive along the Marne that completely reversed the fortune of war. From Chateau-Thierry to the Aisne the French advanced six miles and reclaimed twenty villages. With steady pressure all along the front and daring thrusts at important points, the Allies pushed back the Germans beyond their recent gains. General Pershing's troops wrecked the St. Mihiel salient on September 12th and 13th. By the end of September the Germans were back on the Hindenburg line where they waged a fierce battle of defence. In Belgium the British broke through the German line and drove the Germans back from the coast, while in France the Americans advanced along the Meuse. German retreat continued steadily and surrender was only a question of time.

The success of the Allies was strengthened by the triumphs of the British General Allenby in Asia Minor. By October, 1918, he had freed Mesopotamia, Syria, Palestine and Arabia from Turkish rule. In September of the same year Bulgaria surrendered to an army of French, British, Greeks, Serbians and Italians. Serbia's independence was restored.

In October Italy again advanced against the Austrians, who now retreated with heavy losses.

On October 31st Turkey signed an armistice of unconditional surrender, opening the Dardanelles and the Bosphorus to the Allies.

On November 4th Austria surrendered, abandoning all territory gained in the war and relinquishing certain regions along the coast of Italy.

The German Emperor, now facing more bitter defeat every hour, asked for a peace conference. But before the terms of an armistice had been presented a mutiny among the army and navy and a revolution among the population of Germany had broken out. On November 9th the Emperor abdicated and fled to Holland and on November 11th the Allies signed an armistice with the provisional German government.

The WORLD WAR

(1) Archduke Franz Ferdinand, heir apparent of Austria-Hungary, was assassinated by a Serbian student at Sarajevo, Bosnia, on June 28, 1914 —— a direct cause of the war.

(2) War actually began on Sunday, August 2, 1914, when German troops invaded Luxemburg.

The German War Cloud advancing under General von Kluck in 1914 — an indirect cause of the World War.

(3) On August 4th, 1914 Germany invaded Belgium—a pitiless destruction of homes, churches, cemeteries etc. —

(4) German invaders hurled back across the Marne by French and British in the First Battle of the Marne - September 1914

(6) Belleau Woods - where the Marines stopped the Kaiser on his way to Paris.

(5) American Army swarms across the Ocean 1917-18 —— the Convoy shown above.

(7) Gallantry of our soldiers at Chateau Thierry turned fighting in favor of the Allies — 1918

(9) Bagdad Railway Line and German world empire broken by gallant Italians at the Piave River, 300,000 prisoners and 5000 guns captured October 1918

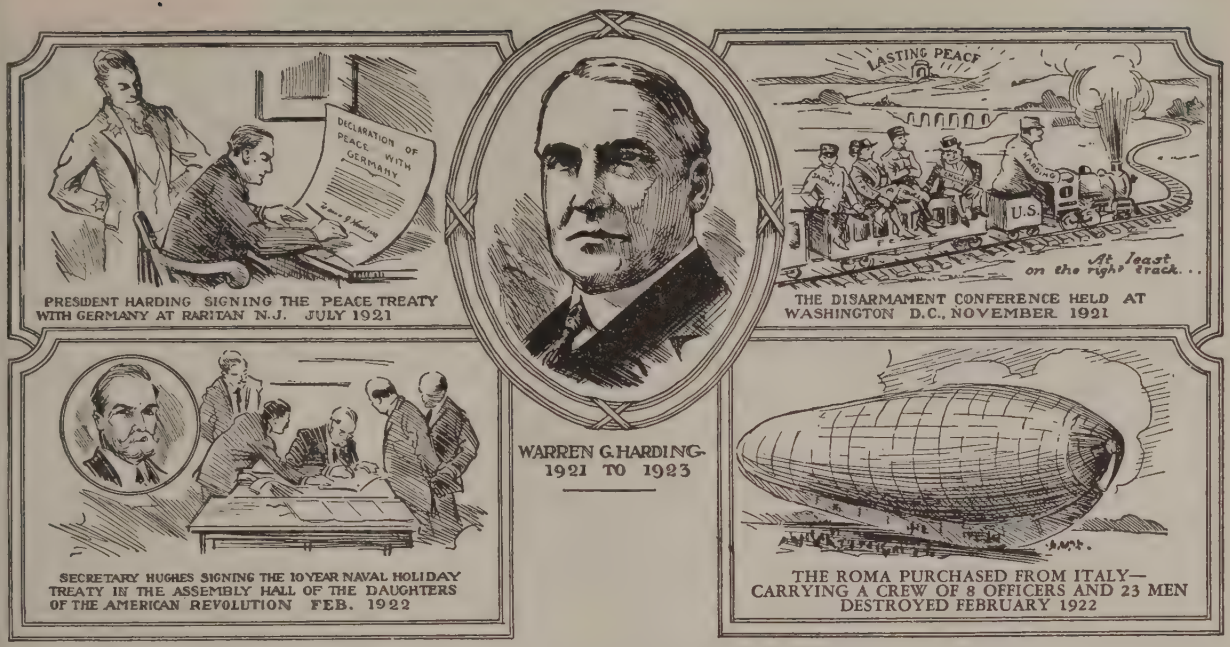
(8) The greatest battle of the war. The Argonne Sept. 26-1918 American troops with superhuman persistence push on to a glorious victory.

(10) First great naval battle of the war was fought by German and British Fleets off Jutland, Denmark, May 31, 1916. Both sides claim victory.

(11) American and British troops force their way through twelve miles of defense between Cambrai and St. Quentin. Oct 1918

(12) Under the White Flag — Preceded by a trumpeter and carrying white flags. German plenipotentiaries present themselves to French outposts on the night of Nov. 7, 1918. The beginning of the end of the world's great war — Armistice signed November 11-1918 Germany conquered. Treaty of Versailles signed - 1919 & League of Nations formed.

Grigsby



PRESIDENT HARDING SIGNING THE PEACE TREATY WITH GERMANY AT RARITAN N.J. JULY 1921

WARREN G. HARDING
1921 TO 1923

THE DISARMAMENT CONFERENCE HELD AT WASHINGTON D.C., NOVEMBER 1921

SECRETARY HUGHES SIGNING THE 10 YEAR NAVAL HOLIDAY TREATY IN THE ASSEMBLY HALL OF THE DAUGHTERS OF THE AMERICAN REVOLUTION FEB. 1922

THE ROMA PURCHASED FROM ITALY— CARRYING A CREW OF 8 OFFICERS AND 23 MEN DESTROYED FEBRUARY 1922

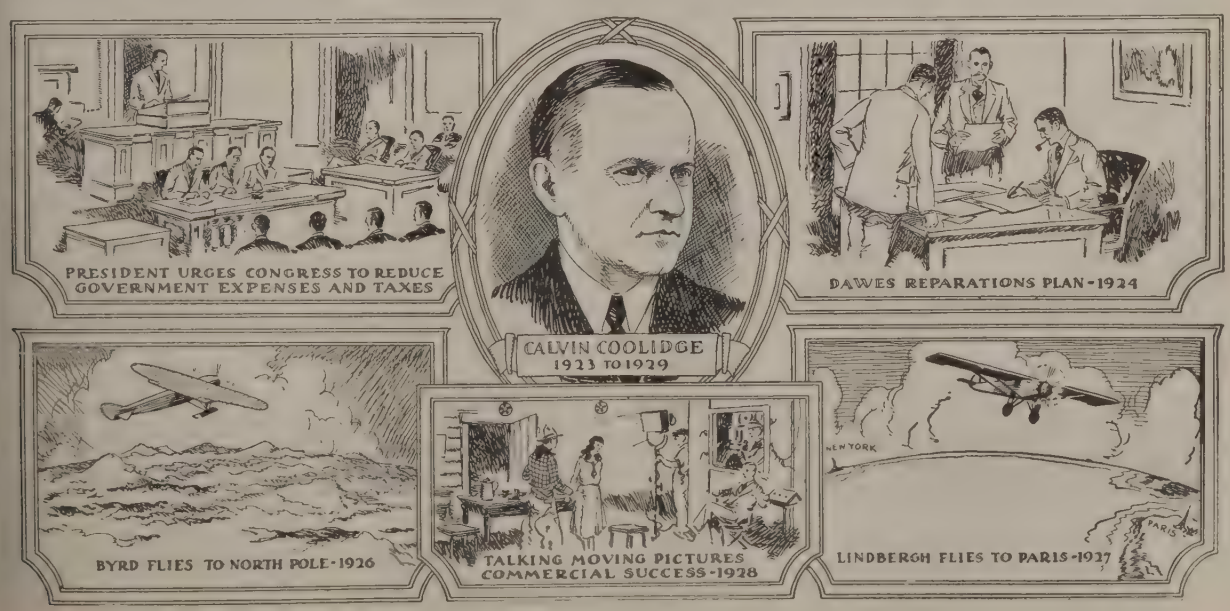
THE LEAGUE OF NATIONS

Charles Seymour

The League of Nations was organized at the Paris Peace Conference, 1919, and came into operation January 10, 1920. During the World War the centuries-old plan of organizing the nations into an association for the preservation of peace and the supervision of international affairs was actively discussed. In the United States various organizations were formed (League to Enforce Peace, League of Free Nations Association) to familiarize the public with the idea, which was warmly advocated in America by ex-President Taft, in England by Sir Edward Grey and Lord Robert Cecil, in France by Léon Bourgeois, and in South Africa by General Smuts. It received the approval, in 1916, of President Wilson, who ultimately made it the cornerstone of his foreign policy. Government commissions in the United States, Great Britain and France studied alternative plans. At Paris, the principle of a League was approved by the Peace Conference on January 25, 1919, and a draft Covenant of the League on February 14. The final draft of the Covenant was approved April 28 and, largely because of the insistence of President Wilson, was embodied in the Treaties of Peace.

The basic machinery provided by the Covenant consists of the Assembly, the Council, and the Secretariat. The Assembly is representative of all the member states, each of which, with three delegates, has a single vote. The Council is composed of delegates of the five principal powers, and of delegates of nine other powers elected by the Assembly. The permanent Secretariat established at the seat of the League, (Geneva) is headed by a Secretary-General, to be appointed by the Council with the approval of the majority of the Assembly. The first Secretary-General named was Sir Eric Drummond.

No specific duties are assigned at the Assembly by the Covenant. It "shall meet at stated intervals and from time to time as occasion may require," and may deal "with any matter within the sphere of action of the League or affecting the peace of the world" (Article 3). The approval of two-thirds of the Assembly is necessary to the admission of a new state to membership in the League (Article 1). The Council must meet at least once a year. Aside from certain specific duties such as responsibility for the territorial regions entrusted to the League (the Saar, Danzig, mandated territories), the formulation of plans for the reduction of armaments and for a Court of International



PRESIDENT URGES CONGRESS TO REDUCE GOVERNMENT EXPENSES AND TAXES

CALVIN COOLIDGE
1923 TO 1929

DAWES REPARATIONS PLAN-1924

BYRD FLIES TO NORTH POLE-1926

TALKING MOVING PICTURES COMMERCIAL SUCCESS-1928

LINDBERGH FLIES TO PARIS-1927

Justice, it is given general duties connected with the settlement of international disputes. The Covenant provides that in case of war or threat of war, upon the request of any member of the League, the Secretary-General shall summon a meeting of the Council. Any dispute likely to lead to a rupture which is not submitted to arbitration, is to be investigated by the Council, which shall endeavor to effect a settlement; if unsuccessful the Council is to publish a report containing its recommendations It may refer the case to the Assembly and must so do if demanded by either party to the dispute (Articles 12, 15). Should any member of the League resort to war in disregard of its Covenants, it is the duty of the Council to recommend what effective military, naval, or air force should be contributed by the several governments to protect the Covenants of the League (Article 16). Except where expressly provided, decisions of the Council as of the Assembly, must be unanimous (Article 5). They take the form, furthermore, not of instructions to the several governments, but merely of recommendations.

The Secretariat is a permanent expert body, providing the information and arranging for the organization necessary to the functioning of the Assembly and Council.

Although the functions of the League in the organization of international activities in time of peace may ultimately become of chief significance, its more obvious functions lie in the field of international disputes. The Covenant provides in the first place against wars of aggression by requiring each member-state "to respect and preserve as against external aggression the territorial integrity and existing political independence of all members of the League" (Article 10). In the second place the Covenant provides (Article 12, 13), for the continuation of arbitration as a method of settling disputes. The members agree that whenever any dispute shall arise between them which they recognize to be suitable for submission to arbitration and which cannot be satisfactorily settled by diplomacy, they will submit the whole subject matter to arbitration." If the dispute cannot be submitted to arbitration the members agree before going to war, to submit the matter to the Council, which shall initiate the processes of conciliation, as stated above (Article 15). Should any member resort to war in disregard of these Covenants it is regarded as having committed an act of warfare against all members of the League which agree to institute an immediate economic boycott (Article 16). Furthermore, any war or threat of war is declared a matter of concern to the whole League which "shall take any action that may be deemed wise and effectual to safeguard the peace of the nations" (Article 11).

The membership of the League includes most of the sixth-three nations of the world, the German Republic being admitted in 1916 as the fifty-sixth member. The United States, though not a member, participates officially and unofficially in various committees and activities, and registers its treaties in the Geneva office. In addition to unofficial relations, the work in which this government took active official part during 1927 included the International Economic Conference, the Special Commission on the Private Manufacture of Arms, the Ninth Session of the Advisory Committee on Traffic in Opium and Other Dangerous Drugs, the Meeting of Government Experts on Double Taxation and Fiscal Evasion the Advisory Committee for the Protection of Children and Young People, the Joint Conference on Communications and Transit, and the Conference on Import and Export Prohibitions and Restrictions.

The Council of the League meets four times a year and upon special occasions. The Assembly convenes each year in September, when it receives a formal report from the Secretariat on the activities of the Council, and reports of conferences and committees.

The work of the League is described in its numerous reports. Threatened wars regarding the AAland Islands, Upper Silesia, Vilna, Albania, Greece, Mosul, etc., were averted. The Outlawry of war, by means of the "Protocol for Pacific Settlement of International Disputes," approved by the Fifth Assembly, though not accepted in practice, paved the way for the famous Locarno pact. Disarmament remains a subject for intensive study in conference.

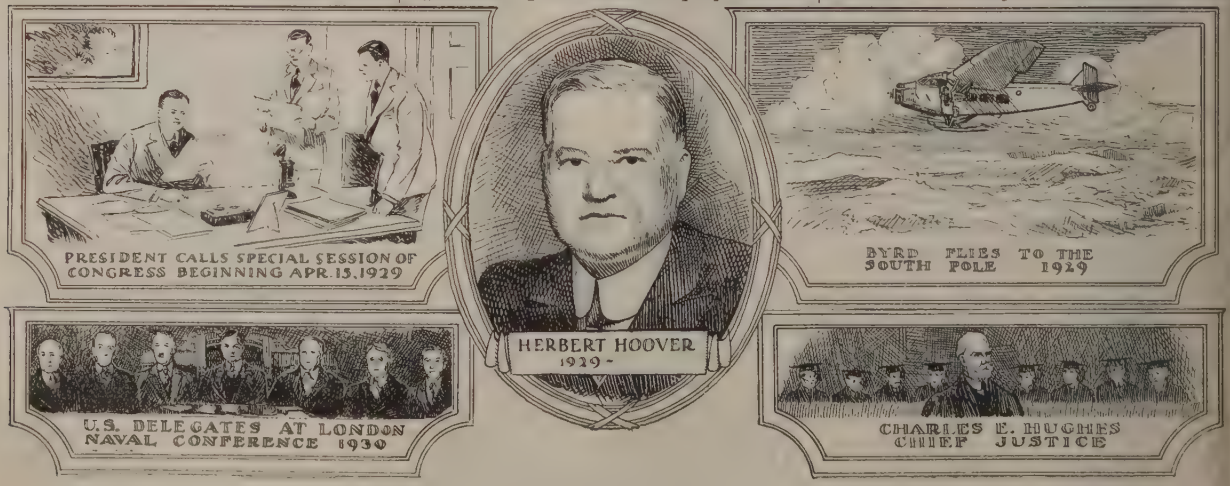
Reconstruction has been furthered by the economic restoration of Austria and Hungary by means of commissions of the League. War prisoners, numbering half a million were restored to twenty-six different nations. The Refugee Settlement Commission has aided in the settlement of homeless millions. There are commissions to safeguard the rights of backward peoples and of the racial, religious and linguistic minorities whose status was changed as a result of the war. The International Labor Organization has been established as a central agency to study and improve the condition of labor. The protection of children is a subject of international inquiry. The Public Health Organization exchanges information with the health authorities of all countries and maintains a warfare against epidemic diseases in danger zones. The control or suppression of traffic in opium, in women and children; and the complete abolition of slavery are subjects proposed for international agreement.

Intellectual Cooperation is the object of one of its commissions, and one of the chief aims of the League which provides an international center for information, discussion and agreement.

The Permanent Court of International Justice was established in 1921. Its judges are elected by the Assembly and Council of the League, meeting simultaneously; its budget is part of that of the League; the Council of the League may ask the Court for advisory opinions. The Court sits at The Hague. Its competance is determined by any two states agreeing to submit any dispute to it; by those states which recognize its compulsory jurisdiction; and by a mass of treaties and international agreements which provide for the submission of any dispute arising under them to be submitted to the Court.

On January 27, 1926, the Senate of the United States voted to adhere to the Court with five reservations. The fifth, which provides among other things that the Court should not, without the consent of the United States, render any advisory opinions "touching any dispute or question in which the United States has or claims an interest," was considered too drastic by Court powers. In the spring of 1929, Elihu Root took advantage of his service on the Committee of Jurists which was invited by the League to revise the statutes of the Court, to submit a protocol for rewording the Senate's fifth Reservation. This revised protocol, commonly known as the Root-Hurst Protocol, has been accepted by the Committee of Jurists and will probably be submitted to the United States Senate in 1929.

The Court has rendered thirteen judgments and sixteen advisory opinions. Its work has increased so rapidly that plans are now under way for continuous sessions.



Chronological History of the World

HISTORY. Universal history is usually treated in three principal divisions:

I. Ancient History, which begins with the earliest written records and terminates A. D. 476, with the destruction of the Roman empire.

II. The Middle Ages, which extend from the fall of Rome, A. D. 476, to the discovery of America, A. D. 1492.

III. Modern History, which commences at the latter epoch, and continues to the present time.

The events which mark the separation between the *first* and *second* periods, are the irruption of the Teutonic tribes, the consequent fall of the western Roman empire, and the foundation of the modern European states; between the *second* and *third*, are the extension of learning by the invention of printing, the taking of Constantinople, the maritime discoveries of Spain, Portugal, and other European countries, with the more extensive use of firearms.

I. Ancient History may be subdivided into six periods:

1. The nebulous period, comprising the fragmentary accounts of the early Assyrians, Babylonians, Egyptians, Chinese, Hindus and Hebrews, down to 2000 B. C.

2 The Mosaic period, from the time of Abraham to 1200 B. C., during which Moses promulgated his great code of moral and political laws.

3. The Assyrian-Babylonian period, which witnessed a long series of Assyrian conquests, the zenith of Babylonia, the rise of Greece and Rome, and the foundation of the Persian empire,—1200 to 529 B. C.

4. The Persian-Macedonian period, from 529 to 323 B. C., during which both the Persians and the Greeks reached their greatest achievements.

5. The Greek-Roman period, from 323 B. C. to the Christian era, saw the decline of the Greeks and the coming universal power of the Romans.

6. The period of the Roman empire, from the time of Christ to 476 A. D., was notable for the foundation of Christianity, Christian persecutions, the division of the empire, Roman luxury and corruptions, and the incursion of the Teutonic hordes.

II. The Middle Ages may be treated in the following six periods:

1. *First*, the foundation of the modern states of western Europe, A. D. 476–622, when the Saxons invaded Britain, A. D. 449; the Visigoths settled in Spain, A. D. 507; the Ostrogoths in Italy, A. D. 489; and the Franks began the formation of the French monarchy, A. D. 481.

2. The *second* comprehends the age of Mohammed, with the propagation of his creed, and the establishment of the states which embraced his religion, to the treaty of Verdun, A. D 622–843.

3. The *third* embraces the period from the treaty of Verdun, when the empire of the West was divided, to the Dark Ages, 843-936.

4. The *fourth* is the interesting period of the Dark Ages A. D. 936-1096, during which the monarchy of Charlemagne fell to ruin. the Capetian dynasty began to reign in France Italy was parceled out among a number of petty princes, while in Germany, Otho commenced the long-continued struggle against feudalism.

5. The *fifth* is the romantic or heroic period of the Crusades, A. D. 1096-1273, in which the Roman legal code, the foundation of modern jurisprudence, began to be studied.

6. The *sixth*, from 1273 to 1492, beheld the revival of the fine arts in Italy, the taking of Constantinople and diffusion of its learned men, the revival of letters, the discovery of America, A. D. 1492.

III. Modern History falls conveniently into five periods:

1. The period of the Reformation, including its commencement by Luther, A. D. 1517, till the termination of the long series of religious wars, by the treaty of Westphalia in 1648. This period produced many important changes in Europe.

2. The period from 1648 to the death of Louis XIV., in 1715, during which Russia entered European politics, and Great Britain began to assume large influence on the Continent.

3. The period from the death of Louis XIV. to the Congress of Vienna, 1815, which marked the fall of Napoleon. In this period was established the independence of the United States, Prussia advanced to the front rank of European powers, the French Revolution occurred, and the world witnessed the rise and fall of Napoleon.

4. From the Congress of Vienna, 1815, to the American Civil war, the most momentous period in American history.

5. From the close of the American Civil war to the present time, a period of unprecedented development and expansion.

PARALLEL OUTLINES OF UNIVERSAL HISTORY

FROM THE DAWN OF HISTORY TO THE TIME OF ABRAHAM, B. C. X-2000 (?)

Characteristics of the Centuries	Babylonia—Assyria	Egypt	Arts and Sciences	Literature
B. C. 5000—4000 Modern research shows the existence of flourishing city states in the Mesopotamian region, whose origin and growth far antedate this period. Early Babylonian and Egyptian civilization.	5000 (?) Kengi, or Sumerians, seem to be the advance guard of Babylonian civilization. 4500 (?) Struggles for mastery among petty Babylonian Kings. Kingdom of Shirpurla dominates, with Sungir (Shinar) as its capital. 4100 (?) Dynasty of Erech begins about this time.	5000 (?) Tombs of pre-dynastic Kings at Abydos reveal an advanced state of civilization. 4400 (?) Menes founds the old Egyptian empire, Memphis, the capital. Animal worship becomes prominent in Egyptian life.	5000 (?) At this date many of the industrial arts had made considerable advancement both in Babylonia and Egypt. 4100 (?) Architecture in stone begun in Egypt; copper tools introduced, and artisanship fostered.	
B. C. 4000—3000 Period of the pyramid builders. The Accadians flourish in the Euphrates valley.	4000 (?) Nippur becomes the religious center. 3900 (?) Agade becomes the chief center of Northern Babylonia. 3800 (?) Sargon I., of Accad, reached the Mediterranean, and conquered Elam, a kingdom east of Babylonia. 3700 (?) Babylon made capital. 3200 (?) End of the dynasty of Sargon.	4000 (?) Athothis, King. 3733 (?) Khufu (Cheops) builder of the great pyramid, reigns. 3666 (?) Khafra (Chefren), pyramid builder, reigns. 3633 (?) Menkaura (Mykerinos), pyramid builder, reigns. (Egyptian history almost a blank until the 11th dynasty.)	3900 (?) Great Pyramid at Gizeh The Sphinx carved. 3750 (?) Temples to the gods built by Sargon I. at Nippur and Agade. 3300 (?) Canals and irrigation in Egypt begun.	"Moral Precepts" of Ptah-hotep.

FROM THE DAWN OF HISTORY TO THE TIME OF ABRAHAM, B. C. X-2000 (?)—Continued

Characteristics of the Centuries	Babylonia—Assyria	Egypt	Arts and Sciences	Literature
B. C. 3000—2000 Invasions of Accad and Babylonia by the Kings of Ur and the Elamites, respectively. Babylonian dominions extended. First migrations from the Aryan center; Celts move westward; Indo-Persic tribes, south. Chinese civilization evident. Flood narratives accepted, and Sabbath observed among Semites.	3000 (?) Accad under Kings of Ur. 2500 (?) Isin takes high rank among Babylonian cities, and a dynasty is founded there. 2450 (?) Arabians and Elamites irrupt into Babylonia. 2400 (?) City of Babylon first rises into prominence. 2300 (?) Elam supreme in Babylonia. 2300-2250 (?) Hammurabi unites Babylonia.	3000 (?) Herakleopolis becomes the seat of government. 2800 (?) Amenemhat I., first of the 12th dynasty. 2650 (?) Usertesen III., King, conducts expedition against Ethiopia. 2400 (?) Government moved to Thebes. 2100. Egypt conquered by the Hyksos, or Shepherd Kings.	3000 (?) Era of palace and temple building renewed in Babylonia; statues of Gudea. 2750 (?) Temple at Heliopolis built; also temple of Osiris at Abydos. 2371-25. Egyptian obelisks erected. 2300 (?) Amenemhat III. constructs Lake Mœris, and the labyrinth near it. 2200. Astronomy known in Chaldea.	Inscription of Una, found at Abydos. Egyptian *Book of the Dead.* *Code of Hammurabi.*

FROM ABRAHAM TO THE PERIOD OF ASSYRIAN ASCENDENCY, B. C. 2000–1200.

Characteristics of the Centuries	Hebrews	Babylonia-Assyria	Egypt	Europe	Arts and Sciences	Literature
B. C. 2000—1200 Egyptian revolt from the Shepherd Kings. New Egyptian empire. Rise of Assyria—originally settled by emigrants from Babylonia. Wars with Babylonia. Sidon, a Phenician city at its zenith. Phenician colonies established round the Mediterranean. Advanced civilization in Crete. Exodus of the Hebrews from Egypt under Moses. Hittites rise to great power, contending equally with Egypt and Assyria.	2000(?). Abraham, Hebrew patriarch. 1728 (?). Joseph. Migration of the Hebrews into Egypt. 1491 (?). Moses; Exodus from Egypt. 1451 (?) Hebrews conquer the promised land, Canaan. Hebrew theocracy established.	2000 (?). Kassites (Arabians) conquer Babylonia. 1900. Assyria settled by Babylonian emigrants, Nineveh made the capital. 1700. Phenicia conquered by Egypt. 1500. Long series of wars begun between Babylonia and Assyria. 1310. Tiglath-Adar I. conquers Babylonia. 1300 (?). Shalmaneser I. rules in Assyria. 1220. Assyria again independent.	(Period of great obscurity.) 1800 (?). Revolt of Thebes against the Hyksos. 1670. New Empire expands under Thothmes III.; Palestine, Phenicia and part of Asia Minor conquered. 1524-1488. Expeditions against Syrians and Ethiopians, under Seti I. 1500. Egyptus reigns, and gives his name to the country. 1333. Rameses II. wages war against the Hittites; oppresses the Hebrews. 1322. Menephthah, the supposed Pharoah of the Exodus. 1269. Rameses III. 1244-1091. Decay of the Empire under the Rameses Pharaohs.	2000. Celts reached western Europe. Principal settlements made in central France. 1700. Arcadians migrate to Italy. 1582. Earliest date in the Parian chronicles of Greece, preserved in the Arundelian marbles. 1504. Areopagus established. 1457. Kingdom of Mycenæ founded. 1453. First Olympic games at Elis. 1400. Minos reigns in Crete. 1384. Founding of Corinth. 1356. Eleusinian mysteries instituted by Eumolpus. 1266. Œdipus, King of Thebes. 1263. Argonautic expedition of Jason. 1239. Latinus reigns in Italy. 1235. Theseus reigns in Athens for 30 years. 1233. Carthage founded by the Tyrians. 1225. First Theban war. 1220. Priam, King of Troy. 1216. Second Theban war. 1213. Helen (later of Troy), carried off by Theseus, afterward marries Menelaus.	2000. Babylonian industry flourishes under the Kassite kings. Phenicians skilled artisans. 1650. Library founded at Thebes; manuscripts transcribed. 1524-1488. Magnificent palaces and temples erected at Thebes. 1400. Babylonian language in commercial use among eastern Mediterranean countries. 1388-1322. Rameses II. builds many palaces and temples in Egypt. 1370. Bucklers used in single combat. Music and poetry cultivated in Greece. 1263. Temple of Apollo at Delphi built. Jason leads first naval expedition on record. 1240. The ax, wedge, wimble, and lever also masts and sails for ships, invented by Dædalus of Athens. 1224. Game of backgammon invented by Palamedes, of Greece.	*Pentaur*, a descriptive poem, in epic form. Thothmes III. causes chronology of Egyptian kings to be made. *Papyrus Ebers.* The *Vedas* of India. The *Amarna Letters.* Chinese *Book of Changes.*

THE ASSYRIAN-BABYLONIAN PERIOD, B. C. 1200-529

Characteristics of the Centuries	The Hebrews	Asia and Africa	Europe	Arts and Sciences	Literature
B. C. 1200—1000		1194. Trojan war. 1184. Troy taken.			
Heroic age of Greece; Hebrews reach their highest point of national power. Beginning of the Medo-Persian nations. Celts disperse over western Europe and into British Isles.	1161. Israel enslaved by the Philistines. Samson born. 1136 Samson slays 1,000 Philistines.	1140 Tiglath-Pileser real founder of the Assyrian empire.	1152. Alba Longa built by Ascanius.		
	1116. Samuel, last Judge of Israel.	1123. Chow dynasty begins in China.	1124. Æolian migration. Thebes, capital of Bœotia, founded. 1104. Return of the Heraclidæ. End of the Kingdom of Mycenæ.	1115. Mariner's compass known in China.	
	1095. Saul becomes King of Israel. 1085. David born.				Dictionary of Chinese completed by Pa-out-she.
	1055. Death of Saul; accession of David. 1048. David, King of all Israel.		1070. Heremon, of Galicia, conquers Ireland. 1060. Athens governed by Archons.		
	1042. The Ark removed to Jerusalem. 1036. Revolt of Absalom. 1033. Solomon born. 1016. Death of David. 1015. Solomon anointed King. 1012. Solomon begins the Temple. 1004. Dedication of Temple.	1044. Ionian emigrants settle in Asia Minor.		1015. Minos gives Crete his code of laws.	
B. C. 1000—900	975. Death of Solomon. Revolt of the Ten Tribes. Two kingdoms formed.	1000. Solomon and Hiram, King of Tyre, form an alliance; also Solomon and Pharaoh. 986. Utica built. Samos built.		1000. Solomon extends his commerce to India; builds Palmyra, Baalbec, and other cities.	
...ge. ...dy in Britain, ...onze in use ... trade extended from Senegal to India. Temporary decline of Assyria.	**Judah** / **Israel** 971. Shishak, King of Egypt, takes Jerusalem.	975. Jeroboam establishes idolatry. 971. Shishak, of Egypt, plunders Jerusalem.	976. Capys reigns in Alba Longa.		The *Zend-Avesta* of Zoroaster. Homer, Greek poet.
B. C. 900—800			935. Bacchus, King of Corinth.	916. The Rhodians begin navigation laws.	
	918. Ahab and Jezebel. 901. The Syrians besiege Samaria 896. Elijah translated to heaven.				
Accurate Assyrian chronology begins. Decline of Phenician cities.	888. Philistines plunder Jerusalem.		895. Tiberinus, King of Alba, drowned in the river Albula, which is thenceforward called the Tiber.		Homer's poems brought into Greece.
	884. Usurpation and death of Athaliah.	884. Jehu, King.		884. Lycurgus reforms the constitution of Sparta. 869. Gold and silver coined by Phidon, ruler of Argos.	
	840. Jehoash defeats King Benhadad of Syria.	825. Dynasty of the Tanites in Egypt. 820. Arbaces, King of Assyria.	864. Romulus, King of Alba Longa.		
B. C. 800—700		797. Ardyssus, first King of Lydia.	814. The Kingdom of Macedon founded by Caranus.	786. Corinthians employ triremes, or vessels with three banks of oars.	Hindu "Brahmanas."
Ethiopian supremacy in Egypt. Assyrian conquests continue; Tiglath-Pileser III.; Sargon; Babylonia rises to height of its power.	770. Pul invades Israel, and is bribed to depart.	767. Sardanapalus, King of Assyria. Media subjected to Assyria.	769. Syracuse founded by Archias of Corinth. 753. Building of Rome. 750. Sabine war. 747. Union of Romans and Sabines. 743. First Messinian war.	772. Sculpture first mentioned among the Egyptian arts.	
	741. Pekah, King of Israel, besieges Jerusalem; 120,000 of his men slain.	747. Era of Tiglath-Pileser III.; old Assyrian dynasty destroyed.			
	726. Hezekiah abolishes idolatry.	736. Tiglath-Pileser III. conquers Syria and part of Israel.			
	721. Samaria taken by the Assyrians; Ten Tribes carried into captivity.	721. Shalmaneser, King of Assyria, takes Samaria; Sargon II. carries the Ten Tribes into captivity.		721. First eclipse of the moon observed by the Chaldeans at Babylon. Religion of Buddha introduced in India.	
	Hebrews				
	717. Hezekiah, King	717. Sennacherib, King of Assyria.			
	712. Sennacherib invades Judah.		716. Romulus reputed murdered.		
	711. His army (185,000) destroyed by pestilence.	710. Media becomes a kingdom.		710. Roman calendar reformed; year divided into 12 months instead of 10, as before.	Greek lyric poetry flourishes.
	696. Manasseh, King.				

THE ASSYRIAN-BABYLONIAN PERIOD, B. C. 1200-529—Continued

Characteristics of the Centuries	Hebrews	Babylonia	Egypt	Europe	Arts, Sciences, Etc.	Literature
B. C. 700—600				685. Second Messinian War.		Iambic verse introduced.
Zenith and fall of Nineveh, and Assyrian empire. Media rises to power. Perhaps last migrations from the Aryan center—Teutonic and Slav races.	677 Manasseh, carried to Babylon, is afterward restored.	680. Babylon and Nineveh are united under Esarhaddon.		678. Argæus, first King of Macedon. 672. Tullius Hostilius, King of Rome. 664. First sea-fight on record—between the Corinthians and Corcyreans.	680. Chess invented.	
		660. Assyria at height of power.	660. Psammetichus, King of Egypt. Memphis becomes the capital.	658. Byzantium founded.		Attempt to discover the primitive language of mankind.
		648. Saracus, King of Babylon and Nineveh.		640. Latins conquered by the Romans. Philip I., King of Macedon.	640. Spherical form of the earth and true cause of lunar eclipses taught by Thales. 621. Draconian code formulated	
		612. Nineveh a second time destroyed.		616. Tarquinius Priscus, King of Rome.		
	606. Conquest of Jerusalem by Nebuchadnezzar.	606. Nebuchadnezzar defeats Necho of Egypt, invades Judea and takes Jerusalem.	610. Pharaoh-Necho, King of Egypt.		610. Pharaoh-Necho begins a canal between the Mediterranean and Red Sea. Many lives lost in the attempt. He also sent out a Phenician fleet which circumnavigated Africa.	Alcæus and Sappho, Greek poets.
B. C. 600—500		604. Nebuchadnezzar, King of Babylon.	600. Psammis, King of Egypt.	602. Illyria conquered by Macedon.		
Zenith and fall of Babylon. Long reign of Nebuchadnezzar; he ravages Egypt. The seventy years' captivity of Judah. Rise of Persia.		599. Birth of Cyrus.				
	591. Ezekiel prophesies in Chaldea. 586. Captivity of Judah completed, Jerusalem destroyed. Temple burnt. 579. Jews carried to Babylon.	589. Invades Phœnicia.	594. Pharaoh-Hophra (Apries), King of Egypt. 581. Egypt invaded by Nebuchadnezzar.	594. Solon, Archon of Athens.	594. Solon's code supersedes that of Draco in Athens.	
		572. Takes Tyre.	569. Amasis, King of Egypt, makes alliance with Greece.	578. Servius Tullius, King of Rome. 567. Conquest of Etrurians by Rome.	578. Money coined at Rome by Servius Tullius.	
	Persia	562. Crœsus, King of Lydia, subjects Asia Minor.		565. First census of Rome; 84,700 citizens.		Gautama, Founder of Buddhism.
	560. Cyrus, King of Persia. 548. Cyrus conquers Lydia. 538. Takes Babylon.	538. Babylon taken by Cyrus the Persian.		539. The Phœnicians emigrate to Gaul and build Massilia (now Marseilles).		
	536. Persian empire founded by Cyrus, composed of Assyria, Media, and Persia. Captivity of the Jews ended. 535. Temple rebuilt at Jerusalem. 529. Death of Cyrus; Cambyses, King of Persia.		536. Pythagoras visits Egypt. 535. Made tributary by Cyrus.			
				528. Thrace comes into view.		Poems of Anacreon.

THE PERSIAN-MACEDONIAN PERIOD, B. C. 529-323

Characteristics of the Centuries	Persia	Greece	Macedonia	Rome, Etc.	Arts, Sciences, Etc.	Literature
B. C. 600—500 Continued		527. Pisistratus dies, after seizing Athens.		530. Cadiz built by the Carthaginians.	First public library founded at Athens.	
	525. Cambyses conquers Egypt and makes it a Persian province, Psammenitus, last King of Egypt. 521. Darius I., King of Persia.	510. Followers of Pisistratus expelled; Democracy established at Athens.				
	508. Darius extends his rule to the Indus.			509. The Tarquins expelled from Rome. Brutus and Collatinus first Consuls. 507. The Capitol finished.	Abolition of regal government at Rome, and establishment of a republic.	Confucius, the Chinese philosopher.
B. C. 500—400	500. The Ionians revolt and burn Sardis.		497. Alexander I., King.		Phœnician letters carried to Ireland from Spain.	
Zenith of Persia; and the glorious century of Greece. Struggles of Patricians and Plebeians at Rome.	490. Darius sends an army of 500,000 into Greece.	490. Battle of Marathon.		494. Tribunes of the people chosen. 491. Coriolanus banished.	The Temple of Minerva built.	Pindar, the greatest of the Greek lyric poets.
	487. Egypt revolts, and is subdued by Xerxes.	483. Aristides banished.				
	485. Xerxes, King of Persia.				Etrurians excel in music, drama, and architecture.	Æschylus, Sophocles.

THE PERSIAN-MACEDONIAN PERIOD—Continued

Characteristics of the Centuries	Persia, Etc.	Greece	Macedonia	Rome, Etc.	Arts, Sciences, Etc.	Literature
B. C. 500—400 Continued	481. Expedition of Xerxes into Greece; destroys Athens.	480. Battle of Thermopylæ. Battle of Salamis and defeat of Persians.		480. Carthaginians defeated. Hamilcar killed in battle.		
	479. Returns defeated.	479. Battle of Platæa; Persian fleet destroyed at Mycale.				Euripides, writer of tragedies.
		476. Themistocles rebuilds Athens.				
	465. Xerxes assassinated. Artaxerxes I., King.	465. Third Messinian War.			Voyage of the Carthaginians to Britain for tin.	
		461. Pericles impresses himself upon Grecian affairs.		460. Cincinnatus, Consul.		
		457 Long walls of Athens begun.				
	456. Esther.			456. Cincinnatus, Dictator.		Aristophanes, the ablest writer of Greek comedy.
	449. Persians defeated at Salamis.			451. Laws of the 12 tables.		
	445. Jerusalem rebuilt by Nehemiah				441. The battering ram invented.	
	440. Siege of Samos by Pericles	431. Peloponnesian War.				
		429. Death of Pericles, having governed Athens 40 years.				Plato, the greatest of the Athenian philosophers.
		416. War with Sicily.	413. Archelaus, "Patron of Learning," seizes the throne.	413. Egypt regains independence.		
		411. Athens governed by the "400." Alliance of Sparta with Persia.		411. Roman famine.		
		408. Capture of Byzantium.				
	401. Cyrus the Younger defeated. Retreat of the 10,000 under Xenophon.			407. Carthaginians war on Sicily.		
B. C. 400—300						
Decline and fall of Persia before Alexander the Great; Greek language and Greek civilization extended all through the Levant. Roman wars with the Samnites. Internal quarrels of the Romans diminish.	400. Delhi founded.	400. Return of the 10,000.	399. Archelaus murdered.		399. Catapults invented by Dionysius.	Sanskrit grammar, *Panini*.
	387. Greek cities of Asia made tributary to Persia.		392. The Illyrians invade Macedonia, and possess the throne.	390. Rome destroyed by the Gauls.	380. Treatise on conic sections by Aristæus.	
				376. War between patricians and plebeians. Lucius Sextus, first plebeian Consul.		Aristotle, the founder of the Peripatetic school of philosophy.
		370. Predominance of Thebes.		371. Curule magistrates appointed.		
				369. Military tribunes abolished.	368. A celestial globe brought into Greece from Egypt.	Mencius, Chinese philosopher.
		360. War of the Allies against Athens. Decline of Grecian republics.	360. Philip II., King; institutes the Macedonian phalanx; defeats Athenians.		360. Philippics of Demosthenes delivered.	Xenophon, an Athenian historian.
		356. Second Sacred War.	356. Philip II. conquers Thrace and Illyria. Birth of Alexander the Great.			
		344. Philip subdues Sparta. Aristotle visits Mitylene.		343. Samnian war, continued 53 years.		Orations of Demosthenes and Æschines delivered.
			341. War against the Athenians. Siege of Byzantium.	340. War with the Latins.		
		339. War with Macedonia.				
	338. Royal family destroyed with poison.		338. Athenians and Thebans defeated at Chæronea. Philip master of Greece.	337. First plebeian Prætor.		Aristotle begins his philosophical works.
	336. Darius III., King.		336. Philip assassinated by Pausanias; Alexander III., surnamed the Great, succeeds to the throne.		336. Eclipses calculated by Calippus the Athenian.	
		335. Greeks conquered by Alexander the Great. Thebes destroyed.	335. Enters Greece, conquers Greeks, and succeeds to head of army against Persians.		335. Caustic art invented.	
	334. Alexander the Great invades Persia. (See under Macedonia.)		334. Invades Persia. Defeats Persians at the Granicus.			
			333. Battle of Issus.			
		332. Egypt conquered by Alexander, and Alexandria built.		332. Caledonian monarchy (Scotland) founded by Fergus I. Roman treaty with Alexander the Great.		
	331. Battle of Arbela. Darius III. murdered. Alexander founds the Grecian or Macedonian monarchy.	330. Æschines, the orator, banished.			328. Voyage of Nearchus from the Indus to the Euphrates.	
		327. Alexander invades India.		327. Second Samnite war.		
		325. Demosthenes banished.				
		323. Ptolemy I. restores the independence of Egypt.				

Alexander the Great dies in Babylonia. The Grecian cities revolt from Macedonia, and in 321 Antipater becomes Regent of Greece. Persia was reconquered from the Greeks, and remained tributary to Parthia till about A. D. 250.

THE GREEK-ROMAN PERIOD, B. C. 323-1 A. D.

Characteristics of the Centuries	Rome, Etc.	Macedonia	Greece	Syria, Judea	Egypt, Carthage	Arts, Sciences, Etc.	Literature
B. C. 400—300 Continued	321. Roman army surrenders to the Samnites.						
	320. Samnites defeated at Luceria.		319. Polysperchon succeeds Antipater, and proclaims liberty to the Grecian cities.		320. Ptolemy I. (Soter) carries 100,000 Jews into Egypt.		First work on mechanics written by Aristotle.
	317. Syracuse and Sicily usurped by Agathocles.	317. Cassander assumes the throne of Macedon.	317. Demetrius Phalerius governs Athens. 315. Cassander rebuilds Thebes.			317. Commerce of Macedon with India through Egypt.	
	312 War with the Etruscans.		312. Pyrrhus II. greatest hero of his time. 306. Democracy established at Athens by Demetrius.	312. Seleucus I. retakes Babylon.		312. The Appian Way constructed. 310. Aqueducts and baths in Rome.	
B. C. 300—200				301. Battle of Issus. Alexander's empire divided anew, into four parts: Syria, Macedon, Greece, Egypt.	301. Phenicia united to Egypt. 300. Golden Age of the Ptolemies.		
Semi-Greek kingdoms built on the ruins of the Persian empire; in Egypt the Ptolemies; in Syria, the Antiochi.		296. Philip IV.	294. Demetrius murders Alexander, and seizes throne of Macedon.	291. Seleucus founds Antioch, Edessa, and Laodicea.		293. Sun-dial erected at Rome, and time divided into hours. 290. Fabius introduces painting at Rome. The Colossus of Rhodes built by Chares.	Euclid, the celebrated mathematician.
Many Jews at Alexandria.	286. Law of Hortensius, by which the decrees of the people had force of those of the senate.	286. Lysimachus, King of Thrace, subjects Macedonia.		285. The Scythians invade Bosporus.		285. Dionysius founds the solar year, to consist of 365 days 5 hours 49 minutes.	
Rome mistress of Italy; then, victorious over Carthage, extends her influence to Greece and Spain. Peasant proprietors replaced by slaves in Italy.			284. Achæan republic.				The Septuagint begun at Alexandria.
	281. The Tarentine war.	279. Irruption of the Gauls. 277. Reign of Antigonus. 272. Antigonus restored.		281. Antiochus Soter succeeds Seleucus.	283. Death of Ptolemy Soter. Ptolemy Philadelphus, King of Egypt.	283. The Pharos built at Alexandria, first lighthouse on record.	
		268. Second incursion of the Gauls.	268. Athens taken by Antigonus.		269. Egypt first sends ambassadors to Rome.	267. Ptolemy makes a canal from the Nile to Red Sea.	Persian Chronicle written.
	266. Rome mistress of all Italy.					266. Silver money first coined.	Berosus, Babylonian historian.
	264. First Punic war.	250. Parthia revolts from Macedon.	255. Athens joins the Achæan League.	262. Invasion of the Gauls. 246. Antiochus II. poisoned by his wife.	246. Ptolemy Euergetes subdues Syria.		
	241. End of first Punic war.			226. Seleucus III., King of Syria.			
	225. The Gauls repulsed in Italy.				221. Ptolemy Philopator, King.	224. Archimedes makes known his discoveries in mechanics.	
	219. Hannibal takes Saguntum, and crosses the Alps.	220. Philip assists the Achæans.	220. The Social war begins.	219. War with Ptolemy.		219. Art of surgery introduced.	Plautus, Latin poet.
	218. Second Punic war. Hannibal defeats the Romans at Ticinus and Trebia.						
	216. Varro at Cannæ totally defeated by Hannibal.	211. Alliance of Philip and Hannibal.		211. Antiochus the Great, King of Syria.			
	206. Carthaginians driven out of Spain.		206. Spartans defeated at Mantinea.		205. Ptolemy Epiphanes, King.	206. Gold coined at Rome.	
	204. Scipio carries the war into Africa.			203. Judea conquered by Antiochus.	204. Roman general Scipio defeats Asdrubal and Syphax, an ally of Carthage.		Ennius, Roman poet.
	202. Hannibal defeated at battle of Zama. End of war.				202. End of second Punic war.	202. Art of printing known in China.	Moschus, bucolic poet.

THE GREEK-ROMAN PERIOD—Continued

Characteristics of the Centuries	Rome, Etc.	Macedonia	Greece	Syria, Judea	Egypt Carthage	Arts, Sciences, Etc.	Literature
B. C. 200—100 Greece, Macedonia, Carthage, and Spain under Roman rule; decline of the Roman oligarchy; the Gracchi begin the democratic revolution which ends in the empire. Eastern luxury introduced among the Romans.	200. Second Macedonian war. 188. Syria is made a Roman province. 181. Plague at Rome. 170. Tiberius and Caius Gracchus. 167. Census of Rome, 327,000 citizens. 155 Romans unsuccessful in Spain. 149. Third Punic war. Conquest of Carthage and of Corinth. Greece annexed to the Roman empire. 133. Spain becomes a Roman province. 123. Caius Gracchus, Tribune. 113. First great migration of the German nations.	199. Second war with Rome. 179. Reign of Perseus. 171. Third War with Rome. 168. Macedon becomes a Roman province.	198. Achæans and Spartans join the Romans against Macedon. 165. Romans enter Achaia. 146 Corinth destroyed by the Romans. Greece becomes a Roman province under the name Achaia.	198. Jews assist Antiochus in expelling the Egyptian troops from Jerusalem. 196. Hannibal joins Antiochus. 190. Scipio Asiaticus defeats Antiochus at Magnesia. 188. Antiochus killed. Syria becomes temporarily a Roman province. 185. SeleucusI V., King. 172. Antiochus IV., King. Greatly hated by the Jews. 170. Jerusalem plundered by Antiochus Epiphanes. 165. Judas Maccabeus expels the Syrians. 161. Treaty with the Romans. 142. Antiochus VI., King. 134. Invasion of Judea. 130. John Hyrcanus delivers Judea from Syria. 130. Conquered by Parthia. 105. War with Egypt.	198. Egypt loses her Syrian possessions. 180. Ptolemy Philometer, King. 174. Cato's embassy to Carthage. 152. Masinissa defeats the Carthaginians. 151. Joint reign of Philometer and Physcon in Egypt. 146. Carthage taken and destroyed by the Romans. 145. Ptolemy Physcon becomes sole King of Egypt. 129. Physcon driven from his throne for cruelty. 128. Pestilence in Egypt. 123. Carthage rebuilt. 116. Ptolemy Lathyrus, King of Egypt. 107. Alexander I., King of Egypt.	198. Books, with leaves of vellum, introduced by Attalus, King of Pergamus. 170. Paper invented in China. 162. Hipparchus fixes the first degree of longitude and latitude; founds trigonometry. 159. Clepsydra invented by Scipio Nascia. 146. Alexandria the center of commerce. 140. Clock wheels invented by Ctesibius. 133. Equestrian order a distinct class. 130. Revival of learning in China. 120. Theory of eclipses known to Chinese. 110. First sumptuary law at Rome.	Polybius, one of the most important Greek historians. Plautus, *Comedies: Aululuria, Captivi, Pseudolus*, etc. First library opened in Rome. Terence, *Comedies: Andria, Phormio*, etc. Aristarchus, greatest of Greek scholars. Lucilius, first Roman satirist.
B. C. 100—1 A. D. The Romans govern all the countries around the Mediterranean. Corrupt rule of the Roman oligarchy is followed by civil wars, and establishment of the empire.	104. Teutoni defeat 80,000 Romans on banks of the Rhone. 99. Birth of Julius Cæsar. 91. Social war in Italy. 88. War with Pontus. 82. Sylla defeats Marius, and is created perpetual dictator. Plunder of the temple of Delphi. 75. Bithynia a Roman province. 65. Syria becomes a Roman province. 63. Catiline's conspiracy detected and suppressed by Cicero. 60. First triumvirate—Pompey, Crassus, and Cæsar.			97. Alexandra, Queen of Janneus, governs Judea. Mithridates conquers Cappadocia. 86. Takes Bithynia. 66. Defeated by Pompey, Syria passes under Rome. 63. Judea a Roman province.	82. Revolt in Upper Egypt. Thebes destroyed. 81. Alexander II., King of Egypt. 65. Ptolemy Auletes, King.	98. Roman schools of oratory on Greek models instituted. 79. Posidonius calculates the height of the atmosphere. 74. The Romans possess gold mines in Asia Minor, Macedonia, Sardinia and Gaul; and silver mines in Spain.	Plutarch's *Lives*. Libraries of Athens sent to Rome by Sylla. Cæsar, Julius, *Commentaries*.

THE GREEK-ROMAN PERIOD—Continued

Characteristics of the Centuries	The Roman Empire	Egypt, Carthage	Arts, Sciences, Etc.	Literature
B. C. 100—1 A. D. Continued			62. Magnificent houses for Roman nobles erected. Also marble theater of Scaurus to hold 30,000 spectators.	Cicero, *Orations, Essays, Letters.*
	55. Cæsar passes the Rhine, defeats the Germans and Gauls, and invades Britain. 53. Crassus defeated and killed in Parthia. 51. Cæsar completes conquest of Gaul, which becomes a Roman province.	55. Auletes restored.	55. Iron chain cables used by the Venetians.	
	49. Civil war between Cæsar and Pompey. Pompey defeated; Cæsar, Dictator. 48. Battle of Pharsalia—Pompey defeated by Cæsar. Death of Pompey in Egypt. 47. Cæsar takes Alexandria, and conquers Egypt.		50. A water mill erected on the Tiber at Rome.	Sallust, *Histories: Catiline's Conspiracy, War with Jugurtha, Memoirs.*
		46. The African war.		The Alexandrian library burnt—400,000 volumes.
	44. Cæsar assassinated in Roman Senate. Antony master of Rome.	45. Cæsar rebuilds Carthage.	45. Cæsar reforms the calendar by introducing the solar for the lunar year.	
	43. Second triumvirate—Octavius Cæsar, Marc Antony, and Lepidus. 42. Battle of Philippi; defeat and death of Brutus and Cassius.	43. Cleopatra poisons her brother, and rules alone. 36. Cleopatra obtains from Antony a grant of Phenicia, Cyrene, and Cyprus.		Vergil, *Georgics, Æneid.*
	32-31. War between Antony and Octavius. By the battle of Actium (31), Octavius acquires the empire.	31. Defeat at Actium		
	30. Republic of Rome becomes a monarchy. Population of Rome 4,100,000 citizens.	30. Suicide of Antony and Cleopatra; Egypt passes to Rome.	30. Direct trade of Rome with India. Silk and linen factories in the empire.	Horace, *Odes, Satires, Letters.*
	27. Titles of Augustus and Emperor conferred on Octavius for ten years.		27. Treasures of Egyptian art brought to Rome. The Pantheon built.	
	23. Agrippa subdues all Spain.			
	21. Athens finally subjected to Rome.		22. Pantomimic dances introduced on the Roman stage.	Golden age of Roman literature begins.
	19. Death of Vergil. 18. Parthians defeated. 15. Cantabria, Austria, and other territory conquered by Drusus, is added to the empire. 13. Augustus assumes the title of Pontifex Maximus.		19. Aqueducts constructed by Agrippa.	
	11. Germany subdued by Germanicus. 10. Egyptian religion displaces national religion.		12. Roman legions distributed over the provinces in fixed camps, which soon grew into cities—among them were Bonn and Mayence.	Livy, *History of Rome.*
	5. Varrus appointed Governor of Syria, and Cyrenius Governor of Judea. 4. Cymbeline, King of Britain. Advent of Christ, four years before the so-called Christian era. 3. Death of Herod. 2. Cæsar confirms the will of Herod.		8. Calendar corrected by Augustus.	

PERIOD OF THE ROMAN EMPIRE, A. D. 1-476

Characteristics of the Centuries	Development of Christianity	The Roman Empire	Arts, Sciences, Etc.	Literature
1—100 A. D. Christianity founded amid persecutions.	8. Jesus reasons with the doctors.	1. Caius Cæsar makes peace with the Parthians. Tiberius returns to Rome. 6. Varrus, encamped on the Weser, governs lower Germany like a Roman province.		Ovid *Metamorphoses, Heroides,* etc.
		14. Augustus dies at Nola; is succeeded by Tiberius as Emperor. 19. The Jews are banished from Rome.	9. Celsus advances the science of medicine.	Appion of Alexandria writes on grammar.
	25. Pontius Pilate, Governor of Judea. 26. John the Baptist begins his ministry. 27. Jesus baptized by John. 29. Twelve Apostles sent abroad.	26. Thrace becomes a Roman province.	26. The Druids in Germany.	
	30. Crucifixion of the Saviour, Friday, April 3, at 3 p. m. 34. St. Paul converted to Christianity.	30. Agrippina banished.		
	40. Disciples first called Christians at Antioch. 41. Herod's persecutions.	37. Tiberius succeeded by Caligula, noted for his profligacy.		
	50. Paul preaches at Athens.	48. Census of the city, 6,900,000.	50. Columella, born in Spain, writes on husbandry.	Plutarch *Lives, Morals, Table Talk.*
	59. Paul appeals to Cæsar. 60. Paul imprisoned in Rome.	54. Nero, Emperor; a profligate and tyrant. 61. Revolt of the Britons under Queen Boadicea.		

PERIOD OF THE ROMAN EMPIRE—Continued

Characteristics of the Centuries	Development of Christianity	The Roman Empire	Arts, Sciences, Etc.	Literature
1—100 A. D. Continued	64. First persecution of Christians by Nero. Paul visits Jerusalem. 66. Jews at war with Romans; Paul beheaded. 70. Destruction of Jerusalem, by Titus.	64. Nero sets fire to Rome; accuses Christians. 77. A great plague at Rome, 10,000 dying in one day. 79. Pompeii and Herculaneum destroyed by Vesuvius.	64. Nero's golden palace built—of great extent. 78. The Capitol at Rome rebuilt. Circumnavigation of Scotland.	Epictetus *Discourses.* Tacitus *Germania, History, Annals,* etc.
	95. Second persecution of the Christians by Domitian.	80. Agricola governs Britain, reduces Wales and enters Caledonia.	80. Paintings executed for the baths of Titus; the group of the Laocoon.	
100—200 A. D. Zenith of Roman empire. The good emperors. Persecutions of the Christians continued.	107. Third persecution by Trajan. 118. Fourth persecution by Adrian.	98. Trajan, Emperor; Roman empire at its greatest extent. 100. The Huns migrate westward. 117. Hadrian, Emperor; makes a journey through the provinces; visits Britain, and builds there a wall from the Tyne to Solway Firth; builds a wall from the Rhine to the Danube.	98. The Ulpian library. Jurisprudence flourishes. Forum built. Pillar of Trajan, and Baths. Bridge built over the Danube. 120. Great buildings of Palmyra. The Roman mosaics. 132. Ptolemy, celebrated Egyptian astronomer and geographer.	Quintilian *Rhetoric and Criticism.* Galen, a celebrated physician and prolific writer.
	134. Heresy of Marcion. 150. Canon of Scriptures fixed about this time.	138. Antoninus, Emperor; 145-152 defeats the Moors, Germans, and Dacians; stops the persecution of the Christians. 161. Marcus Aurelius, Emperor; 169, war with Marcomanni. 189. The Capitol at Rome destroyed by lightning. The Saracens defeat the Romans. 193. Septimus Severus, Emperor. A vigorous ruler. 194. Besieges Byzantium.	180. Equestrian statue of Marcus Aurelius.	Kalidasa (In.) *Dramas.*
200—300 A. D. Emperors chosen by the army. Frontier tribes troublesome. Persecutions continue.	202. Fifth persecution under Severus. 235. Sixth persecution under Maximinus. 250. Seventh persecution of the Christians.	202. Persecutes the Christians; builds the wall of Severus in Britain. 211. Dies at York, in Britain. 223. Artaxerxes begins the new kingdom of Persia. 232. Persian war. 241. The Franks first mentioned in history. 251. Confederacy of the Franks established between the Rhine and Elbe. The Persians victorious in Asia Minor. 256–69. Goths conduct expeditions into Asia Minor and Greece. 261. Sapor, the Persian, takes Antioch, Tarsus, and Cæsarea.	215. Caracalla grants right of Roman citizenship to all the provinces. 235. Alexandrian School of Philosophy founded.	Tertullian *Apology, Tracts.*
	262. Paul, bishop of Samosatia, denies the divinity of Jesus Christ. 272. Persecution of Christians under Aurelian.	264. Alliance with Odenatus, King of Palmyra, who is succeeded by his wife Zenobia, who reigns with the titles of "Augusta" and "Queen of the East." 268. Claudius II. defeats an army of 320,000 Goths. 270. Aurelian, a great warrior, becomes Emperor; 271, defeats the Goths and Alemanni; 273, reduces Palmyra, and takes Queen Zenobia prisoner; 274, Franks, Spain, and Britain reduced to obedience; 275, Aurelian killed near Byzantium. 277. Probus, Emperor; 280, defeats the Persians.	274. Rome surrounded with a wall.	
	283. The Jewish Talmud composed. Religious ceremonies multiplied. Pagan rites imitated by the Christians.	284. Diocletian, Emperor.	284. Diocletian's Oriental form of government. Diocletian's Baths. 290. The Gregorian Code.	Origen, theologian.
300—400 A. D. Constantine moves the capital of the empire to Constantinople, and professes Christianity. Rise of Christian Monasticism. Great church disputes and growing corruptions. Increasing frontier troubles.	296. Monks in Spain and Egypt. 303. Persecution under Diocletian. 306. Persecution of Christians stopped by Constantius. 325. Council of Nice. 337. Eleventh persecution.	291. The Franks master Batavia and Flanders. 296. Diocletian sends ambassadors to China. 304. Diocletian and Maximian resign the empire to Constantius and Galerius. 306. Constantine the Great, first Christian Emperor, defeats the Franks. 331. Constantine orders that all the heathen temples be destroyed. 337. Death of Constantine, and the accession of his three sons to the empire. 364. Death of Jovian, and the accession of Valentinian and Valens, under whom the empire is divided.	323. Church of St. Sophia erected at Constantinople. 330. Constantinople seat of art and literature.	
		Western Empire 364. Valentinian, Emperor.	**Eastern Empire** 364. Valens, Emperor.		
	373. Bible translated into the Gothic language. Death of Athanasius.	368. The Saxons invade Britain, but are defeated by Theodosius. 375. Valentinian gains victory over the Germans; succeeds to the Eastern Empire on the death of Valens.	376. Hungary (ancient Pannonia) invaded by the Huns, from whom it is named.	366. Forts built on the Rhine.	Gothic Bible of Ulfilas.
	379. Prerogatives of the Roman See much enlarged. 381. Second General Council of Constantinople. 384. Symmachus pleads in the Roman Senate for Paganism against St. Ambrose.	379. The Lombards first leave Scandinavia, and defeat the Vandals.	379. Theodosius the Great becomes a zealous supporter of Christianity. 388. Theodosius defeats Maximus, Tyrant of the Western empire.		Latin Bible of Jerome.

THE GREEK-ROMAN PERIOD—Continued

Characteristics of the Centuries	Development of Christianity	Western Empire	Eastern Empire	Arts, Sciences, Etc.	Literature
400—500 A. D. Continued	392. St. Chrysostom, Patriarch of Constantinople.	392. Theodosius becomes sole Emperor of the East and West. Complete downfall of Paganism. 394. Final division of empire between the sons of Theodosius. 401. Europe overrun by the Visigoths. 406. Vandals allowed to settle in Spain and Gaul. 410. The Goths under Alaric sack and burn Rome. 412. Rise of the Vandal power in Spain. 413. Burgundian kingdom begun in Alsace.	408. Theodosius II., a child, Emperor. 414. Regency of the emperor's sister, Pulcheria.	392. Impulse given to the development of mathematics at Alexandria.	Chrysostom, *Homilies, Commentaries, Epistles.*
	416. The Pelagian heresy condemned.	420. The Franks form a kingdom, under Pharamond, on the lower Rhine. 424. Valentinian III., Emperor. 426. Britain evacuated by the Romans.	420. Persian war.	425. Theodosius establishes public schools and attempts the restoration of learning.	
	431. Third General Council at Ephesus. 432. St. Patrick preaches the gospel in Ireland. 435. Nestorianism prevails in the East.	428. Romans defeated by the Franks and Goths. Franks, under Clodion, extend their conquests. 433. Attila forms an immense empire from China to the Atlantic. 439. The Vandals, under Genseric, form Kingdom of Africa, take Carthage and plunder Italy.	431. Armenia divided by the Persians and Romans. 433. A great part of Constantinople destroyed by fire. 437. Pannonia, Dalmatia, and Noricum gained from the Western empire.	435. Theodosian Code published.	Epic of Musæus, *Hero and Leander.*
	443. The Manichæan books burned in Rome. 447. Eutyches asserts the existence of only one nature in Jesus Christ. 451. Fourth General Council at Chalcedon.	441. Roman territories invaded by the Huns, Persians, and Saxons. 445. Famous embassy from Britain solliciting aid against the Picts. 448. Merovaeus I., first King of the Merovingians. 451. Arrival of Saxons in Britain under Hengist and Horsa. 452. City of Venice founded.	450. Marcian, Emperor, refuses to pay tribute to the Huns. 457. War with the Goths. 461. Peace with the Goths.		
	465-476. Oligarchy of the bishops of Rome, Constantinople, Alexandria, Antioch, and Jerusalem. The church now begins to assume a political aspect.	458. Franks, under Childeric I., conquer as far as the Loire and take Paris. 468. The Visigoths under Eric establish their kingdom in Spain. 476. Odoacer, King of the Herulii, takes Rome, and the Western empire ends 1228 years after the founding of the city. Commencement of the Kingdom of Italy under Odoacer.	474. Zeno, Emperor; a turbulent reign marked by debauchery and conspiracies. 475. Theodoric becomes chief of the Ostrogoths and invades the empire.	468. The principle of law established that the accused shall be tried by his peers, or equals. 476. Odoacer's sack of Rome changed the course of events in Europe. The form of the old Roman government remained, but Italy, ravaged by a succession of wars, plagues, famines, and every form of public tyranny, was almost a desert.	

FROM THE FALL OF ROME TO THE AGE OF MOHAMMED, A. D. 476-622

Characteristics of the Centuries	The Eastern Empire	Great Britain and Ireland	Italy and the Church	France	Arts, Sciences, Etc.	Literature
400—500 A. D. Continued	480. An earthquake destroys greater part of Constantinople.		484. Christians persecuted by the Vandals.	481. Clovis I., founder of the French monarchy. 485. Battle of Soissons gained by Clovis.		
		487. The Saxons defeated by Prince Arthur. 490. Sussex becomes a kingdom.			486. Rise of the feudal system in France under Clovis.	
	491. The Green and Blue factions.		493. Italy conquered by Theodoric. Odoacer put to death. 494. The Roman Pontiff asserts his supremacy. 496. Christianity introduced into France.	491. Clovis subdues Thuringia.	493. Theodoric introduces Greek architecture into Italy.	Boethius' *Consolation of Philosophy.*
500—600 A. D. Great disorders in the West. Beginnings of Feudalism; power of the clergy increases. In the East, the great reign of Justinian.	502. Invasions by the Persians. 511. Great insurrection in Constantinople.			510. Clovis makes Paris his capital.	511. The Salic law in France.	

FROM THE FALL OF ROME TO THE AGE OF MOHAMMED, A. D. 476-622—Continued

Characteristics of the Centuries	The Eastern Empire	Great Britain and Ireland	Italy and the Church	France	Arts, Sciences, Etc.	Literature
500—600 A. D. Continued	514. Constantinople besieged by Vitalianus, whose fleet is consumed by the burning glass of Proclus. 518. Justinian I. begins a brilliant reign over the Eastern or Byzantine empire. 527. Celebrated Justinian code of laws. 529. Belisarius, the famous general, defeats the Persians. 534. Defeats the Vandals in Africa. 535. Subdues Italy. 536. Takes Naples. 537. Takes Rome. 540. North Africa, Corsica, and Sardinia annexed to the Eastern empire. 548. The Turkish monarchy founded in Asia. 554. Italy governed by Greek exarchs. 558. A plague extends over Europe and Asia and lasts about 50 years. 569. The Turks first mentioned in history. They send an embassy to Justin II., and form an alliance. 600. Eastern empire spread over Hungary, Poland, and Prussia, under Tiberius II. 602. Invasion of the Persians. 610. Heraclius takes Constantinople, kills Phocas, the emperor, and makes himself ruler. 612. Mohammed publishes the Koran. Syria ravaged by the Arabs. 614. Jerusalem taken by the Persians.	519. Prince Arthur defeated by Cedric, who begins the third Saxon Kingdom of Wessex. 530. Kingdom of Essex. 542. Prince Arthur murdered in Cornwall. 559. Saxon heptarchy begins. 575. East Anglia formed into a kingdom, whence the origin of the name England. 604. St. Paul's church founded by Ethelbert of Kent. 607. Supremacy of the pope acknowledged. 617. St. Peter's (now Westminster Abbey) founded by Sabert, King of Kent.	529. Order of the Benedictine Monks instituted at Monte Cassino, near Naples. 537. Italy conquered by Belisarius, for Justinian. 539. War, famine, and pestilence. Milan ravaged by the Goths. 568. Italy conquered by the Lombards. 575. First monastery built in Bavaria. 598. St. Augustine, first archbishop of Canterbury, introduces Christianity into Britain. 607. The Pantheon of Rome dedicated to Christianity.	532. Burgundy conquered by Childebert. 536. Ostrogoths surrender their possessions in Gaul to the French king. 557. Church of St. Germain de Pres built at Paris. 558. Clotaire I., King.	514. Use of the burning glass in warfare. 516. The Christian era proposed and introduced by Dionysius, a monk. 529. The schools of Athens suppressed. 551. Manufacture of silk introduced from China into Europe by monks. 559. The Saxon laws promulgated. The king's authority limited by the Witten agemot. Three orders: the noble, the free, and the servile. 568. The feudal system established in Italy by the Lombards. Written laws compiled by the Visigoths in Spain. The aristocracy acquire great power in France. Rites and superstitions increase all over Europe. 617. Ethelbert publishes the first code of laws in England.	Writings of Gregory the Great. *Beowulf*, epic poem.
600—700 A. D. Rise and wonderful spread of Mohammedanism from Arabia to Siude on the east, and Carthage on the west. Christianizing of Germany.						The *Koran*.

THE AGE OF MOHAMMED TO THE TREATY OF VERDUN, A. D. 622-843

Characteristics of the Centuries	The Eastern Empire	Great Britain and Ireland	Italy and the Church	France	Arts, Sciences, Etc.	Literature
600—700 A. D. Continued	622. The Hegira, or Mohammed's flight from Mecca to Medina. 632. Death of Mohammed. 633. Omar, Caliph, takes Jerusalem, which is held by the Saracens 463 years. 673. Siege of Constantinople by the Saracens, whose fleet is destroyed by the Greek fire of Callinicus. 680. Kingdom of Bulgaria founded.	633. Bretwold V. embraces Christianity. 690. The name England first used.	625-640. Churches of Jerusalem, Antioch and Alexandria lost to the Christian world by the sweep of Mohammedanism. 680. The Sixth General Council called at Constantinople.	628. Dagobert I. builds the Church of St. Denis, the sepulture of the French kings. 638. Kingdom divided by Clovis II. and Sigebert, the latter King of Austrasia. 690. Pepin d'Heristal, King.	632. Islamism and the power of the caliphs established in the East. In the caliphs were united the highest spiritual and regal authority. 674. Stone buildings and glass come into use in England. The Anglo-Saxons advance in civilization and power by the introduction of Christianity.	Cædmon's *Paraphrase of Scripture*.

THE AGE OF MOHAMMED TO THE TREATY OF VERDUN—Continued

Characteristics of the Centuries	The Eastern Empire	Great Britain and Ireland	Italy and the Church	France	Arts, Sciences, Etc.	Literature
700-800 A. D. Christianizing of Germany continues. Hostile caliphates of Bagdad and Cordova. Mohammedan advance in the West checked by Charlemagne, who nominally restores the Western Roman empire. Norse ravages begin.	698. Carthage destroyed by the Saracens, and the north coast of Africa subjugated. 709. All Africa subdued by the Saracens. 716. Leo III., Emperor. The Saracens invest Constantinople, by land and sea. City saved by Greek fire. 746. Saracens defeated by Constantine V. 762. Caliph Almanzor builds Bagdad and makes it his capital. 766. Asia Minor ravaged by the Turks. 785. Empire invaded by Haroun-al-Raschid, caliph of Bagdad.	700. Anglo-Saxon octarchy. 705. Alfred the Wise in Northumbria. 727. Ina, King of Wessex, begins collection of Peter's pence to support a college at Rome. 735. Death of the Venerable Bede. 787. First recorded invasion of the Danes, the sea kings and vikings.	698. Picts adopt Christianity. 704. The first province given to the pope, John VI. 726. The Emperor Leo forbids image worship. 752. The pope dethrones Childeric, King of France, by a papal decree. 755. Beginning of the pope's temporal power. 787. Seventh General Council of Nice.	700. Aquitaine, Burgundy, and Provence become separate dukedoms. 714. Charles Martel, duke of Austrasia. 725. Charles Martel subdues Bavaria. 732. Defeats the Saracens at Tours. 752. End of Merovingian line of French kings. Pepin the Short, first of the Carlovingian line. 764. Extirpates the Huns. 791-6. Establishes the margravate of Austria.	698. Christianity greatly extended among the German nations in the north of Europe, but almost exterminated in Africa by the progress of Mohammedanism. 716. The art of making paper introduced by the Arabs. 740. Saracens encourage learning. Ignorance, profligacy, and misery characterized the age preceding Charlemagne. 785. Golden period of learning in Arabia under the Caliph Haroun-al-Raschid. 788. Pleadings in courts of justice first practiced. 793. Foundation of schools in monasteries and cathedrals by Charlemagne.	Golden age of Saracen literature begins. *Romance of Antar.* Alcuin's letters and biographies.
800-900 A. D. Norse ravages continue. Private wars. Charlemagne's empire falls to pieces.	803. The Saracens ravage Asia Minor. 822. Constantinople besieged by the Saracens. The Bulgarians raise the siege. 829. Theophilus, Emperor.	813. Egbert, King of Wessex, defeats the Britons. 827. The seven kingdoms of heptarchy united by Egbert under the name of England, or the land of the Angles. Invasion of the Danes. 838. Ethelwolf, King. Kenneth, King of the Scots, defeats and extirpates the Picts, and becomes sole monarch of Scotland.	800. The pope separates from the Eastern empire and becomes supreme bishop of the Western. Charlemagne reforms the church. Many bishoprics founded. 817. College of Cardinals founded. 824. Christianity carried to Denmark and Sweden.	800. Charlemagne founds the new Western empire and is crowned at Rome. 802. Receives an embassy from Haroun-al-Raschid. 806. Charlemagne divides the empire among his sons, only one of whom survived him—Louis I. 817. Louis I. divides the empire. 841. Another division of the empire. Charles I., King of France; Louis I., King of Germany; Lothaire, King of Italy.	800. Agriculture and horticulture encouraged by Charlemagne; both flourish in Spain under the caliphs. 802. Arabian horses introduced into Spain. 813. Transient revival of learning under Charlemagne. The reign of Caliph Mamun the golden epoch of Arabian literature. 828. St. Mark's church at Venice built. 840. Feudal system in its power.	Beginning of the Icelandic skalds. Arabian histories of Mecca and Medina.

FROM THE TREATY OF VERDUN TO THE DARK AGES, 843-936 A. D.

Characteristics of the Centuries	Eastern Empire	The British Isles	Italy and the Church	France and Germany	Spain, Russia and Lesser Countries	Arts, Sciences, Etc.	Literature
800-900 A. D. Continued	844. Decline of the caliphate begins. Frequent wars between the Greeks and the Saracens.	849. Alfred the Great born.	844. Ignatius, patriarch of Constantinople. Persecution of the Christians in Spain. 846. The Saracens destroy the Venetian fleet and besiege Rome.	841. Louis I., King of Germany. 843. Treaty of Verdun, Charles I. (the Bald), King of France.	843. Ramiro I. elected king of Oviedo. 846. The Saracens destroy the Venetian fleet and besiege Rome.	841. Hereditary nobility and the clergy dominant in matters of state. 850. Roman and common law introduced.	Orfrid's *Gospel Book.*

FROM THE TREATY OF VERDUN TO THE DARK AGES—Continued

Characteristics of the Centuries	Eastern Empire	The British Isles	Italy and the Church	France and Germany	Spain, Russia and Lesser Countries	Arts, Sciences, Etc.	Literature
			856. Louis II. establishes his court at Pavia, and rules Italy.		857. Garcia Ximines founds the kingdom of Navarre.		
			860. Schism of the Greeks begins.	858. Invasion of France by Louis the German, who is defeated.	860. Gorm unites Jutland and the Danish isles.		
			864. Bible translated into Slavonian.		862. Ruric the Norman, grand duke of Novgorod.		
	867. Basil inaugurates the Macedonian dynasty.	867. The Danes conquer Northumberland.	867. Eighth Council at Constantinople.	868. Lorraine annexed to France.			*Translations* of Alfred the Great.
		872. Alfred the Great defeats the Danes.			873. Sancho Inigo, count of Navarre.	872. Clocks exported from Venice.	
				879. Louis III. and Carloman reign jointly.	875. Harold, first king of Norway.		
900-1000 A. D.				885. Paris besieged by the Normans.			
	886. Leo VI., Emperor.			887. Arnold, Emperor.			
Norse ravages and conquests continue; also private wars.	890. Southern Italy subject to the Greek empire.	891. Renewed invasion of the Danes.		890. Arnold takes Rome.	889. Arpad lays the foundation of Hungary.	890. Oxford University founded by Alfred the Great.	
The people in terrible suffering.				893. Charles III., King.		Trial by jury; fairs and markets in England.	
				899. Invasion of the Hungarians.			
		901. Edward the Elder the first to take the title of "Rex Anglorum."			901. Republics of Venice and Genoa founded.	900. England divided into counties, hundreds, and tithings.	
	904. Russian expedition against Constantinople.		912. The Normans in France embrace Christianity.	912. Conrad I., Emperor.	914. Beginning of the heroic age in Spain.	915. University of Cambridge founded.	The *Elder Edda.*

PERIOD OF THE DARK AGES, 936-1096 A. D.

Characteristics of the Centuries	Eastern Empire	The British Isles	Italy and the Church	France and Germany	Spain, Russia and Lesser Countries	Arts, Sciences, Etc.	Literature
900-1000 A. D. Continued	937. Romanus gains a naval victory over the Russians.			936. Louis IV., King. Otho the Great, Emperor.		939. Cordova, in Spain, becomes famous as a center of science, learning, industry, and commerce.	
					940. Ramiro, King of Leon, defeats the Moors at Simancus.	940. Mints established in England.	
	945. The Empress Helen usurps the throne.	952. Malcolm I., King of Scotland.		950. Bohemia annexed.	945. Swatoslav, King of Russia.	941. The figures of arithmetic brought into Europe by the Saracens. Linens and woolens manufactured in Flanders.	
		955. Dunstan, abbot of Glastonbury, rises to great power.	955. Baptism of Olga, and conversion of Russia to Christianity.	954. Lothaire I. confers the dukedoms of Burgundy and Aquitaine on Hugh the Great.	955. Sancho I., King of Leon.		
	959. Emperor Romanus II.		959. St. Dunstan archbishop of Canterbury, attempts to reform the church.	960. Hugh Capet, duke of France.			
				964. Italy united to the empire of Germany. Tuscany becomes a dukedom.	973. St. Stephen, first hereditary king of Hungary. Gives it written laws.		
					981. Vladimir the Great, the first Christian ruler of Russia.	982. Dublin a trade center.	
		985. Danish invasion under Sweyn.		986. Louis V., last of the Carlovingians.	985. Sweyn I. of Denmark invades England.		Firdusi's *Book of Kings.*
1000-1100 A. D.			989. Greek Christianity propagated in Russia by Vladimir.	988. Hugh Capet, King, and founder of the Capetian line of French kings.			
Increasing and beneficent power of the church exerted in the direction of order.			999. Hungary becomes a fief of the church.		1015. Russia divided among the 12 sons of Vladimir.	997. Venice and Genoa rise to great importance in commerce.	
Normans in Italy and Sicily.		1016. Edmund II. fights six battles with Canute, King of the Danes, with whom he divides the kingdom.			1016. Canute II., King of Denmark.		Avicenna's writings on philosophy and science.
The Norman conquest of England; which as regards good government far surpasses all other countries.	1018. Bulgaria again reduced to a Grecian province.		1024. John XIX., Pope.	1024. Conrad II., first of the Franconian line.	1019. Norway conquered by Canute. Danish ascendancy.	1024. Musical scale of six notes invented by Guido Aretius.	
Quarrels between popes and emperors begin.		1031. Canute subdues Scotland.		1031. Henry I., King.			

PERIOD OF THE DARK

Characteristics of the Centuries	Italy and the Church	Eastern Empire	The British Isles	France
1000—1100 A. D. Continued		1042. First invasion of the Seljuk Turks. 1043 The Russians invade Thrace with 100,000 men and are repulsed by the Greeks.	1042. The Saxon line restored under Edward the Confessor.	
	1048. Leo IX. the first Pope to keep an army.		1051. William, Duke of Normandy, visits England.	1046. Dispute between William the Conqueror and William of Arques for the duchy of Normandy.
	1054. Excommunication of the Patriarch of Constantinople and the Greeks.	1054. Theodora, last of the Macedonian dynasty.		
	1059. Quarrel between the popes and the German emperors.			
	1066 Pope Alexander II. deposes Harold, and gives England to William the Conqueror. The papacy at the height of its power.	1067. Emperor Romanus III. defeated and taken prisoner by the Turks.	1066. Harold II., King, killed at the battle of Hastings William the Conqueror, King. End of the Anglo-Saxon line.	1066. William, Duke of Normandy, claims the crown of England and wars on Harold to obtain it.
	1070. Lanfranc, Archbishop of Canterbury.		1070. Feudal system introduced.	1070. Rise of the troubadours in Provence.
	1073 Quarrel of Pope Gregory VII. (Hildebrand) with the Emperor Henry IV. 1075. The Pope sends legates to the various courts of Europe. 1076. Submission of Henry IV. to the Pope.	1074. Syria and Palestine subdued by Melek Shah.	1076. Rebellion in Normandy.	
				1079. Birth of Abelard.
	1084. Triumph of Henry IV. over Gregory. The order of the Carthusians instituted by Bruno.	1081. Alexius I. (Comnenus), Emperor. Robert Guiscard invades the empire and defeats Alexius.		
			1087. William invades France and is killed at Nantes. 1093. Malcolm III., of Scotland, invades England and is slain near Alnwick castle.	1087. War with England. Robert, Duke of Normandy, opposes William Rufus.
	1095. Peter the Hermit preaches against the Turks.			

PERIOD OF THE CRUSADES,

Characteristics of the Centuries	Italy and the Church	Eastern Empire	The British Isles	France
	1096. The First Crusade.	1099. Invasion by the Crusaders.		1096. Many French noblemen take part in the First Crusade.
1100—1200 A. D. Quarrels between popes and emperors continue; zenith of papal power; Frederick Barbarossa. Criticism revived. Private wars lessen; advance in power of kings and of towns at expense of the feudal baronage. The Crusaders. Improved judicial arrangements in England.	1100. Study of theology receives new impulse.	1104. Battle of Acre.	1100. Henry I., King of England, unites the Normans and Saxons. 1107. Henry quarrels with Anselm.	
		1109. Tripolis taken by Crusaders.		1108. Abbe Suger, minister to Louis VII. of France.
		1118. John I. reforms the manners of his people. Tyre taken by Crusaders.		
	1123. First Lateran, or Ninth General Council.		1124. David I. promotes civilisation in Scotland.	1120. Rivalry between England and France begins.
	1127. Pope Honorius II. makes war against Roger, King of Sicily 1139. Second Lateran, or Tenth General Council.			
	1147. The Second Crusade.	1143. Manuel Comnenus, Emperor.		1147. Louis VII. joins the Second Crusade.
	1154. Pope Adrian IV., an Englishman.	1156. Manuel forms the design of conquering Italy and the West but fails.	1154. Henry II., King of England.	
	1160. Albigenses begin to appear. 1167. Rome taken by Frederick Barbarossa.		1158-1164. Ascendancy of Thomas à Becket, Archbishop of Canterbury.	1159. War with the English.
			1172. Henry conquers Ireland.	1170. Rise of the Waldenses.

AGES, 936-1096—Continued

Germany	Spain	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
	1035. Ramiro I., King of Aragon.	1036. Russia reunited by Jaroslav.			
1039. Henry III. defeats the Bohemians and Hungarians.					
1053. Henry causes his son, Henry, to be proclaimed King of the Romans. This title was applied for several centuries to the emperor's eldest son.		1054. Russia divided a second time. Civil wars and great distress.	1055. The Turks reduce Bagdad and overturn the empire of the caliphs.	1055. First age of scholastic philosophy.	Runic inscriptions.
			1059. Ingo I., first Christian King of Sweden.		
			1060. Robert Guiscard, Duke of Apulia.		
	1065. Alphonso, King of Castile and Leon.		1065. Jerusalem taken by the Saracens.	1062. Surnames first used among the English nobility.	
			1067. Polish conquests in Russia.		
	1068. Flight of Alphonso to Toledo.		1068. Olaf III., King of Norway.	1068. Shoeing horses introduced into England.	
1072. Henry IV. summoned before the Pope for selling the investiture of bishops; treats the mandate with contempt.			1070. Bergen, Norway, built.		
1073. Summoned again.				1073. Booksellers first heard of.	
1076. Henry sends an ambassador to depose the Pope, and is excommunicated. Undergoes penance and submission.	1076. Time of the Cid.				
1080. Henry degrades the Pope and triumphs.					
	1085. Toledo taken from the Moors by the Cid.		1084. Bohemia made a kingdom by Henry IV. of Germany.	1084. Rigid police system established in England.	
	1086. Battle of Zalacca.				*Song of Roland.*
1093. The Popes continue their struggle against the empire.			1090. Sicily taken from the Saracens by Roger the Norman.	1090. Fortresses at Newcastle and Carlisle built.	
	1094. Pedro I., King of Navarre and Aragon.				

A. D. 1096-1273

Germany	Spain	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
					William of Poitou, first troubadour of note.
	1104. Alphonso I., King of Navarre and Aragon.		1105. War between Norway and the Wends.		
1109. Henry V. enters Italy, takes the Pope prisoner, and compels him to crown him.					
1114. Henry V. marries Matilda, of England.	1118. Alphonso captures Saragossa.			1118. Knights Templar instituted.	
			1119. War between Pisa and Genoa.		Scholastic philosophy reaches a high point under Abelard. Aristotle's logic comes into repute.
1125. Lothaire II. opposed by Frederick, and Conrad, Duke of Suabia.		1128. Riga on the Baltic founded.			
	1139. Portugal becomes a kingdom under Henry of Besancon.			1140. Gratian collects the canon law.	
1141. Dissensions of the Guelphs and Ghibelines.		1147. Moscow founded.			*Nibelungenlied.*
1152. Frederick I., Emperor of Germany and Italy.			1150. Eric X., King of Sweden.	1150 Magnetic needle known in Italy.	
	1157. Castile and Leon divided.				
1158. The Emperor Frederick receives the title of King of Bohemia.			1158. Venice a great maritime power.	1158. Bank of Venice established. Colleges of theology, philosophy, and law at Paris.	
1167. Rome taken by Frederick.			1167. League of the Italian cities.	1168. Colleges of law, philosophy, and theology at Paris.	
			1171. Saladin, Sultan of Egypt, extends his dominions. Conquers Syria, Assyria and Arabia.		

Characteristics of the Centuries	Italy and the Church	Eastern Empire	The British Isles	France
				1183. The peace of Constance reëstablishes the independence of the Italian republics.
	1190. Third Crusade.	1190. Iconium taken by Frederick Barbarossa but afterward restored.	1189. Richard I. engages in the Third Crusade.	1190. Philip Augustus one of the leaders of the Third Crusade.
	1198. Power of the Pope supreme over temporal matters.		1193. John attempts to seize the crown in the absence of Richard.	
1200—1300 A. D.	1202. The Fourth Crusade. Constantinople taken.	1204. The Crusaders plunder Constantinople.	1200. John, King of England.	1204. Normandy reunited to France.
Rise of Universities, and of Mendicant Friars.	1215. Fourth Lateran Council, against the Albigenses.		1215. Magna Charta signed at Runnymede.	
Quarrels between popes and emperors still continue; Frederick II. of Germany.	1217. Fifth Crusade.		1216. Henry III., King.	1223. Louis VIII. conducts crusade against the Albigenses.
Last Crusades.				1226. Louis IX., King.
English liberties recognized by the crown.				
Hanse League established.				
Great conquests of Tartars in Asia; they overrun Russia and establish a dynasty at Moscow.	1243. Struggle of Pope Innocent IV. with the Emperor Frederick.		1246. Henry marries Eleanor of Provence.	1248. Louis IX. leads the Seventh Crusade.
			1258. Famous parliament at Oxford.	
		1260. Emperor Michael Palaeologus recovers Constantinople.		
	1265. Dominion of Italy passes to the Pope.		1265. First regular parliament. Civil war.	1267. Burgundy falls to the crown.
		1268. The Mongols invade Asia Minor and take Antioch.		1270. Louis IX. sets out on the last Crusade.

Characteristics of the Centuries	Italy and the Church	Eastern Empire	The British Isles	France
	1274. Fourteenth General Council at Lyons.	1281. Othman establishes an independent rule in the north of Asia Minor.	1276. War between England and Wales.	1276. France at war with Castile.
			1283. England and Wales united. Robert Bruce and John Balliol contend for the crown of Scotland.	
	1296. Struggle of the church with France.		1296. Scotland submits to England.	
		1299. Othman invades Nicomedia, and establishes the Ottoman empire.	1297. Scotland rebels. War between England and Scotland follows.	1297. Invasion of Flanders.
1300—1400 A. D.			1300. Silverplate used in England.	
Growth of cities and trade—especially in Italy, where also literature and art, inspired by Dante and Giotto, make progress.				1302. First convocation of the states-general in France.
	1303. Papal power declines.	1303. Genoese control trade of Black Sea.		1304. War with Flanders.
Popes at Avignon; papacy now terribly corrupt.			1306. Robert Bruce proclaimed King of Scotland. War with England continued.	
Era of Wyclif: his teaching spreads in Bohemia.	1309. Seat of the popes transferred to Avignon.			
	1311. General Council at Vienna.			
Invention of gunpowder.				1316. Philip V. succeeds by virtue of the Salic law, now first established.
Mariner's compass comes into use in the West.				
		1320. Civil war in the eastern empire between the emperor and his son.		
		1326. Orkhan, Sultan of the Turks, makes Prusa his capital.		
			1327. Peace. Independence of Scotland.	
				1332. Revolt of the Flemings.
	1339. Struggle in Rome between the Colonna and the Ursini.		1338. Struggle for the French crown begins; lasts 120 years.	1338. War with England.
	1347. Democracy in Rome under Rienzi, last of the Tribunes.		1346. Battle of Cressy.	1346. Normandy overrun by Edward of England.

RUSADES—Continued

Germany	Spain	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
1183. Italy independent by treaty of Constance.		1186. Incursion of Huns and Poles into Russia.	1186. Saladin directs all his efforts against the Crusaders.		
	1188. Alphonso IX., King of Leon.			1190. The Jews become the principal bankers of the world.	
1190. Henry VI., Emperor and King of Italy.			1193. Battle of Ascalon. Saladin defeated. Death of Saladin.		*Arabian Nights.*
				1200. University of Bologna has 10,000 students.	Prose *Edda.*
					Period of the troubadours in France; the minstrels in England; minnesingers in Germany.
1212. Frederick II., Emperor.	1212. The Christians gain the Battle of Navas de Tolosa.	1213. Jurje II.			
	1217. Ferdinand, King of Castile.		1216. Tartary overrun by Genghis Khan.		Poem of *The Cid.*
			1222. Hungarian liberty assured by Charter of Andrew II.	1222. University of Padua founded.	
		1224. Mongolian invasion known as the "Golden Horde."			
	1230. Castile and Leon united by Ferdinand III., who takes large territory from the Moors.	1236. Second Mongolian invasion. Moscow burned.	1236. Mongolian invasion of Europe under Batu Khan.	1234. China uses gunpowder in cannon.	
1243. The Hanseatic League.		1238. Russian independence overthrown by the Tartars. Khan of Kiptchak, Grand Duke.			Sadi, the Persian poet.
				1247. First war fleet in Spain.	
1250. Conrad IV., Emperor.	1253. The Alhambra founded.				Roger Bacon writes on natural science.
			1259. Kublai Khan builds Peking and makes it his capital.		
				1261. Parliament in England.	
	1266. Henry of Castile a Roman senator.				

–A. D. 1273-1492

Germany	Spain	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
1273. Rudolf, Emperor, founds House of Hapsburg.				1273. First patent of nobility granted in France.	Literature and science flourish in Spain under Alphonso the Learned.
	1274. Crown of Navarre passes to France.				
				1285. Institution of the three great courts of law in England.	
	1291. James II., King of Aragon.	1290. Khan of Kiptchak wields strong rule in Russia.	1290. Wenceslas, King of Bohemia, takes Cracow.	Cimabue, the first of modern painters at Florence.	Master Eckart, mystic.
1298. Adolphus, Emperor, deposed, and Albert I. enthroned.			1299. Foundation of the Ottoman Empire.		
	1300. Dissensions in the Moorish state.	1300. Moscow made the capital.		1300. Rapid advances in civilization—revival of ancient learning—improvements in the arts and sciences—and general expansion of liberty.	*Romance of the Rose.*
1304. Rise of the Swiss towns.				1302. Mariners' compass invented at Naples.	
1306. Rudolf of Austria, Emperor.				1303. University Avignon.	
				1305. University Orleans.	
1308. Henry of Luxemburg, Emperor. General insurrection in Switzerland.			1307. Swiss Republic founded.	1307. University Perugia.	
				1308. University Coimbra.	Tauler's *Sermons.*
	1312. Alphonso XI., King of Castile and Leon.			1311. Governmental reforms extorted from Edward II. in England.	
1314. Louis of Bavaria and Frederick of Austria contend for the crown.					
		1318. Finland invaded by Russians.	1319. The Oligarchy of Venice established.		
1322 Frederick of Austria defeated.					
			1326. Tamerlane born at Kesh, Tartary.	1326. Clocks constructed on mathematical principles.	
	1327. Arrival of 200,000 Moors to assist Granada.				Wyclif's *Translation of the Bible.*
				1340. Gunpowder used at battle of Cressy.	
	1340. Moors defeated at Tarifa.			1347. Manufactures and commerce improve in England.	
			1353. Establishment of the Ottomans in Europe.		

PERIOD OF

Characteristics of the Centuries	Italy and the Church	Eastern Empire	The British Isles	France
	1354. Rienzi killed; papal dominion restored.	1355. John Palæologus, emperor.	1356. Edward, the Black Prince, wins the battle of Poitiers.	1356. King John defeated and taken prisoner at Poitiers. Charles the Dauphin, Regent.
		1373. Treaty with Murad, the Ottoman emperor.	1376. Death of the Black Prince.	
	1378. Schism of the west; Pope Urban VI. acknowledged in England; Clement VII. in France, Spain and Scotland.			1380. Charles VI., King. Defeat of the Flemings at Rosbecq.
			1384. The Scots, assisted by France, invade England.	1386. Fruitless attempt to invade England.
		1389. Bajaset, Sultan of the Turks.		
1400—1500 A. D.			1399. Henry IV., King. House of Lancaster begins.	
Failure of the Council of Constance to reform the Church.		1402. Bajazet defeated and made prisoner by Tamerlane, at the battle of Angora.		
Turks take Constantinople.		1403. Solyman I., Sultan of the Turks.	1406. James I., King of Scotland.	
Revival of learning and advance of art in the west—especially in Italy.	1409. The Council of Pisa.			1410. Civil war between Orleans and Bergundy.
Consolidation of France and Spain.	1414. Council of Constance.		1414. Henry V. claims the French crown.	
End of Tartar rule in Russia.	1416. Huss and Jerome burned for heresy.		1415. Gains the battle of Agincourt.	1415. Defeat by the English at Agincourt.
Invention of printing.		1425. Emperor John VII. visits Italy to obtain help against the Turks.	1422. Death of Henry V. Ascension of Henry VI. War with France.	1422. Henry VI. proclaimed at Paris King of France and England.
Gunpowder begins to be of great importance.				1427. Orleans besieged by the English.
Formation of modern "middle classes."	1429. Schism of the west ended.			1429. Saved by Joan of Arc. Charles VII. crowned at Rheims.
Maritime discoveries: The cape route to India; The "New World."				1431. Joan of Arc burned.
End of the Middle Ages.		1444. Vladislas, King of Poland, defeated and killed by the Turks.	1444. Truce with France. Marriage of Henry to Margaret of Anjou.	
	1448. Concordat of Aschaffenburg, by which the liberties of the German church are compromised.	1448. Constantine XII., last of the Greek emperors.	1450. Insurrection of Jack Cade. Wars of the Roses. Richard, Duke of York, claims the throne.	1453. End of the French and English wars.
		1453. Siege and capture of Constantinople by the Turks, ending the Eastern Empire.		
	1454. Struggle between Cosmo de'Medici and the aristocracy.	Ottoman Empire	1455. Wars of the Roses begin.	
	1458. The French rule in Genoa.	1458. Greece subjected to the Turks.	1460. James III., King of Scotland.	
			1461. Edward IV., King. House of York.	1461. Louis XI., King.
	1463. War of Venice with the Turks.	1464. War with Hungary.		
	1469. Lorenzo de' Medici succeeds Piero at Florence.		[Warwick.	
	1471. Increase of the power of the Medici. Rise of learning. Sixtus IV., Pope.		1470. Henry VI restored by 1471. Return of Edward IV. Deaths of Warwick and Henry VI.	
			1475. Edward IV. invades France.	1475. War between France and Bergundy.
				1477. Artois and Burgundy united to France.
		1480. Otranto taken. 1481. Bajazet II., Sultan.	1480. War between England and Scotland.	
				1491. Bretagne united to the crown.

PERIOD OF THE REFORMATION AND

Characteristics of the Centuries	Italy and the Church	Great Britain	Germany	Spain and Portugal	France
	1492. Alexander VI., Pope.	1492. Henry VII. invades France.	1493. Maximilian I., Emperor.	1492. Conquest of Granada. Discovery of America by Columbus.	
1500—1600 A. D.				1498. Vasco da Gama reaches India via Cape of Good Hope.	
	1500. Partition of Naples between France and Spain.				1499. Conquest of Milan.

ENAISSANCE—Continued

Germany	Spain	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
1355. Promulgation of the Golden Bull.			1359. Hungarian conquests on the Danube. 1369. Tamerlane makes Samarcand the capital of his new empire.		Froissart's *Chronicles.*
1378. Wenceslas (King of Bohemia), Emperor.		1380. Tartar war. Dimitri Ivanovitch checks them at the Don. 1382. Moscow burned.			
			1385. War between Austria and Switzerland.	1386. Jan Van Eyck invented oil painting.	
1394. The Emperor imprisoned at Prague. 1400. Robert, Count of Palatine, Emperor.		1395. Tamerlane invades Russia. Russia under the Mongol Tartars until 1462.	1399. Invasion of India by Tamerlane.		
	1407. John II., King of Castile.			1409. University of Leipsic founded.	Villena's *Labors of Hercules.*
1411. Sigismund (King of Hungary), Emperor.					
	1416. Alphonso V., King of Aragon and Sicily.		1419. The Hussite war in Bohemia.	1425. Arts promoted in Italy.	
	1430. War between Castile and Granada.				
1438. House of Austria established. Albert II. (King of Bohemia and Hungary), Emperor. 1446. War with Hungary.		1441. Kiptchak Mongols divide Russia.	1437-1438. Rise of Portugal.	1439. Invention of printing at Mainz. 1447. Library of the Vatican founded.	
1453. Austria made an hereditary duchy by emperor Frederick III.	1452. Civil war in Navarre, in which Castile and Aragon join. 1454. Henry IV. of Castile, King of Spain.		1450. Kingdom of Delhi enlarged. 1453. Poland's independence confirmed by diet of Petrekin. 1454. Poland at war with the Teutonic order. 1458. Hungary vigorous under Matthias Corvin.	1450. Flourishing period of trade in western Europe, particularly in Flanders, New Netherlands, Belgium, and a portion of France. 1460. Wood engraving invented.	Malory's *Morte d'Arthur*
1462. The Emperor besieged in court at Vienna.		1462. Ivan the Great takes the title of Czar.	1466. Prussia a fief of Poland. 1468. Uzun Hassan, master of Persia.	1464. Post-offices in France and England.	
1469. Invasion of the Turks.	1469. Marriage of Ferdinand of Aragon with Isabella of Castile.		1470. Sten Sture, Regent of Sweden.	1470. Beerhard invents the pedal to the organ.	
		1472. Ivan marries Sophia, niece of the Greek emperor.		1473. Printed musical notes. Large library founded at Ofen.	
1477. Marriage of Maximilian and Maria of Burgundy.	1479. Union of Castile and Aragon.	1479. Great invasion of the Tartars. 1481. Power of the Tartars annihilated.	1481. John, King of Denmark, partially acknowledged in Sweden. 1485. Matthias of Hungary takes Vienna.	1477. Watches made at Nuremberg.	Machiavelli's *Prince.*

ELIGIOUS WARS, A. D. 1492-1648

Russia	Scandinavia	Ottoman Empire	Lesser Countries	Arts, Sciences, Etc.	Literature
		1493. War with Egypt, Hungary and Venice.	1492. America discovered by Columbus.	1493. Printing press at Copenhagen. Era of discovery in the New World begins.	
			1499. Voyage of Amerigo Vespucci.		More's *Utopia.*
			1502. Sufi sole Sovereign of Persia.	1502. St. Peter's and other great churches built.	Luther's *Bible.*

Characteristics of the Centuries	Italy and the Church	Great Britain	Germany	Spain and Portugal	France
1500-1600 A. D.	1503. Naples annexed to the Spanish crown. Julius II., Pope.				
The Reformation. Immense development of new life in Europe.		1509. Henry VIII., King.		1506. Columbus dies at Valladolid.	1510. Council of Tours.
Power of Spain, and her conquests in America.	1511. Council of Pisa.	1512. War with France.	1512. Maximilian divides the empire into 10 circles.		
The monarchy strong in England.	1513. Pope Leo X. patron of literature and the arts.	1513. Battle of Flodden; James IV. killed. 1515. Wolsey, chancellor and cardinal.			1515. Francis I. invades Italy.
			1517. Beginning of the Reformation.	1516. Charles, King of all Spain and the Netherlands.	
			1519. Charles V., King of Spain.	1519. Conquest of Mexico by Cortez.	
			1521. Diet of Worms.		1521. First war with Charles.
	1525. Spanish ascendency by the victory of Pavia.				1525. Francis defeated and taken prisoner at Pavia. 1527. Second war with Charles V.
			1529. Turks invade Germany.		
		1532. The King marries Anne Boleyn. 1535. Henry excommunicated by the Pope.			1532-1544. Struggle for possession of Italy.
	1540. Order of Jesuits founded by Loyola. 1545. Council of Trent.	1543. Invasion of France.	1543. Alliance with England against France.	1540. Lisbon the market of the world.	
		1547. Formal establishment of Protestantism. Edward VI., King.			1547. Henry II., King; Catherine de' Medici, Queen.
	1550. Julius III., Pope.				
			1551. Treaty of Passau secures religious liberty to the Protestants.		1552. Fifth war with Charles V.
		1553. Mary, Queen of England. 1554. Lady Jane Grey executed. 1555. Persecution of the Protestants.			
	1559. Termination of French wars in Italy.	1558. Elizabeth, Queen. Rise of the Puritans.	1556. Charles V. abdicates.		
			1564. Maximilian II., Emperor.	1564. Acquisition of the Philippines. 1567. Duke of Alva, Governor of the Netherlands.	1562. Religious liberty granted to the Huguenots. Huguenot wars.
	1569. Florence a grand duchy.	1568. Mary, Queen of Scots takes refuge in England.			
				1571. Battle of Lepanto.	1572. Massacre of St. Bartholomew.
			1576. Rudolph II., (King of Bohemia and Hungary), Emperor.		1576. The Catholic league. 1577. Sixth religious war.
		1584. Raleigh's colony in Virginia.		1580. Portugal passes under Spanish dominion.	
	1585. Pope Sixtus V. restores the Vatican library.	1585. War with Spain.			
		1588. Spanish Armada destroyed.		1588. Defeat of the Spanish Armada.	1588. Revolt of Paris. 1589. House of Bourbon begins with Henry IV. 1590. Siege of Paris raised by the Spaniards.
	1592. The Rialto and Piazza di San Marco built at Venice.		1594. Union of Protestants at Heilbronn.		
1600-1700 A. D.		1599. Troubles with Ireland.			1598. Edict of Nantes—toleration granted to the Protestants.
The Thirty Years' war, at first a life struggle of Roman Catholics and Protestants, results in downfall of Spain, and the ascendency of France, which reached its zenith under Louis XIV.		1603. Union of England and Scotland.			
	1609. Leghorn becomes the emporium of the Levant trade.	1607. English settlement at Jamestown.	1608. Protestant union under Frederick the Elector.	1609. Expulsion of the Moors.	1610. Assassination of Henry IV.
The battle of civil and religious liberty fought out in England under the Stuarts.					1614. Last assembly of the states-general.
	1618. Conspiracy of De Bedmar to subject Venice to Spain.	1617. Sir Francis Bacon, lord chancellor.	1618. Thirty Years' war begins.		
Rise of modern science and philosophy.		1620. Pilgrims sail in Mayflower.	1620. Massacre of Prague.	1621. Dutch war.	

AND RELIGIOUS WARS—Continued

Russia	Scandinavia	Ottoman Empire	Lesser Countries	Arts, Sciences, Etc.	Literature
		1505. War with Persia.	1506. Poland under Sigismund the Great.		*Poems* of Vittoria Colonna.
1510. Renewed Tartar invasions.		1512. Selim I. dethrones and puts to death his father.	1511. Cuba conquered. 1512. Florida discovered.		
	1513. Christian II., King of Norway and Denmark.	1514. Persians defeated; Kurdistan added to the empire. 1516. Cairo taken.	1513. Discoveries of Balboa.		
			1517. First patent granted by Spain for the importation of negroes into America. 1519. Spaniards, under Cortez, conquer Mexico.	1517. Luther and the Protestant Reformation.	Hans-Sachs founds the German drama.
	1520. Christian, King of Sweden. 1521. Gustavus Vasa throws off the Danish yoke. 1523. Gustavus Vasa, King of Sweden. Union of Calmar dissolved.	1520. Soliman the Magnificent, Sultan. 1521. Belgrade taken. 1526. Invasion of Hungary.		1522. Circumnavigation of the globe by Magellan. Xavier plants Christianity in India.	
1533. Ivan the Terrible, Czar.	1532. Union of Norway and Denmark.	1529. Invasion of Germany. Siege of Vienna. 1535. Barbarossa seizes Tunis.	1533. Pizarro conquers Peru.	1530. Jorgens invents the spinning wheel for flax.	Calvin's *Institutes of Religion.*
	1543. First standing army in Sweden.	1547. Turks invade Persia.	1545. Mines at Potosi discovered.	1545. Vesalius makes important contributions to the study of anatomy. 1548. Orange trees introduced into Europe.	Vasari's *Lives.*
1554. Siberia discovered.		1551. Tripoli taken. 1552. Invasion of Hungary.			Camöens' *Lusiad.*
		1559. Military power of the Turks at its greatest height under Soliman.	1556. Akbar raises the Indian empire to its greatest splendor.	1559. Carriages introduced into Paris. 1560. Knives first made in England.	Fox's *Book of Martyrs.*
	1560. Eric XIV., King of Sweden. War between Sweden and Denmark.		1564. Coligny sends a colony of Huguenots to Florida.		Tasso's *Jerusalem Delivered.*
1571. Russia devastated by the Tartars, and Moscow burned.	1570. Peace of Stettin.	1570. War with Venice. 1571. Battle of Lepanto.		1573. Titian, colorist painter, at height of fame.	Ronsard's *Poems.*
1578. Alliance of Sweden and Poland against Russia.	1578. Alliance with Poland.		1579. Beginning of the Republic of Holland.		Spenser's *Faërie Queene.*
	1588. Christian IV., King of Denmark.	1589. Revolt of the Janizaries.	1585. Persia acquires great power under Abbas the Great.	1586. Tobacco introduced into Europe. 1588. First newspaper in England. 1590. Telescopes invented by Jansen, a German. Napier invents logarithms.	Montaigne's *Essays.*
1598. Boris Godunow begins a new dynasty.		1595. Power in Hungary declines; revolt of Wallachia.			Shakespeare's *Dramas.*
	1604. Charles IX., King of Sweden.	1605. Revolt in Syria. 1606. Commercial treaty with France and Holland.	1605. Jehangir, Mogul emperor of India.	1602. English East India Company founded. 1606. Gilbert's electrical discoveries.	Bacon's *Essays.*
	1609. Gustavus Adolphus, King of Sweden. 1611. War between Sweden and Denmark.		1609. First English envoy of the East India Company sent to India.		
1613. Michael Fedorovitz, Czar, founds the house of Romanoff. 1617. Finland ceded to Sweden.	1616. Sweden dominates the North.	1618. Great Persian victory at Shibi. 1620. War with Poland.		1615. Coffee in Venice. 1618. Harvey discovers the circulation of the blood. 1620. Thermometers said to have been invented by Van Drebbel. Negro slavery begins in Virginia.	Lope de Vega's *Dramas.*

PERIOD OF THE REFORMATION

Characteristics of the Centuries	Italy and the Church	Great Britain	Germany	Spain and Portugal	France
1600—1700 A. D. Continued	1626. St. Peter's dedicated. 1628. War following death of the Duke of Mantua. 1631. Influence of France increases. 1646. Revolt of Naples under Masaniello.	1625. Charles I., King. 1627. war with France. 1642. Civil war and revolution.	1628. Victories of Wallenstein. 1630. Gustavus Adolphus lands in Germany. 1632. Battle of Lutzen. 1640. Frederick William of Prussia. 1648. Treaty of Westphalia.	1625. Naval war with England. 1639. Loss of the Japanese trade. 1640. Portugal regains independence.	1624. Ministry of Cardinal Richelieu. 1627. War with England over the Huguenots. 1638. Invasion of Spain. 1640. Turin taken by the French. 1643. Louis XIV., King. 1648. Wars of the Fronde.

FROM THE PEACE OF WESTPHALIA TO

Characteristics of the Centuries	Italy and the Church	Great Britain	Germany	Spain and Portugal	France
1600—1700 A. D. Continued	1669. Candia taken from Venice. 1670. War between Genoa and Savoy. 1676. Messina blockaded by the Dutch and Spanish fleets. 1689. Alexander VIII., Pope. 1693. Battle of Marsaglia. 1702. French victory at Luzzara over the Imperialists. 1706. French driven from Italy by Prince Eugene. 1707. All Spanish possessions in Italy abandoned. 1715. Siege of Corfu raised.	1649. Commonwealth under Cromwell. 1652. War with Holland. 1653. Cromwell, Lord Protector. 1660. Charles II., King. Stuarts restored. 1666. Great fire in London. 1668. Triple alliance of England, Sweden and Holland against France. 1679. Habeas Corpus act passed. 1685. James II., King. Rise of the Whigs and Tories. 1688. Revolution. 1689. William III., King, and Mary II., Queen. War with France. 1690. Battle of the Boyne. James defeated, returns to France. 1697. General peace. 1701. War of the Spanish succession. 1702. Queen Anne war against France and Spain. 1704. Gibraltar taken by English. 1707. Act of union of England and Scotland. First united parliament of Great Britain meets. 1713. Peace of Utrecht. England acquires large American possessions.	1657. Leopold I., emperor. 1665. Tyrol united to Austria. 1673. War of Austria and France. 1676. General revolt of the Hungarians. 1680. Greater part of Alsace seized by France. 1683. Siege of Vienna by the Turks. 1686. Buda taken after being held by the Turks 145 years. 1687. Joseph I., King of Hungary. 1690. Joseph I., elected King of the Romans. 1697. Victories of Prince Eugene over the Sultan Mustapha at Zenta. 1701. Hague alliance. 1711. Charles VI., emperor.	1654. Brazil recovered from the Dutch. 1655. War with England. 1661. Invasion of Portugal. 1673. War with France to protect Holland. 1689. Revolt in Catalonia in favor of France. 1691. Incursion of the French into Aragon. 1701. Philip V., King. 1705. Barcelona taken by the Allies.	1649. Siege of Paris. 1653. Mazarin enters Paris in triumph. 1659. Peace of the Pyrenees. 1667. War with Spain. 1672. War with Holland. 1678. Peace with Holland and Spain restores tranquillity to Europe. 1680. France the most formidable power in Europe. 1685. Revocation of the edict of Nantes. 1688. War of the allies against France. 1697. General peace of Ryswick between France and the allies. 1702. Invasion of Holland. Revolt of the Huguenots. 1704. Defeat at Blenheim. 1713. Peace of Utrecht—perpetual separation of the crown of France and Spain. 1715. Death of Louis XIV.; Louis XV., King.
1700-1800 A. D. Astounding growth of the British empire. Government in England now and henceforth carried on by a Cabinet Ministry more or less representing the will of the people. Development of manufactures in England. Inventions and discoveries. Immense advance in arts and sciences. Independence of the United States. Gross misgovernment of Roman Catholic Ireland by an English Protestant minority. The French revolution which powerfully influences social, political, and intellectual progress for the next hundred years.					

AND RELIGIOUS WARS—Continued

Russia	Scandinavia	Ottoman Empire	Lesser Countries	Arts, Sciences, Etc.	Literature
				1628. Kepler's laws discovered.	Grotius' treatises on law.
				1630. Gazettes first published in Venice.	
1632. War with Poland. Poles advance to Moscow.	1632. Christina, Queen of Sweden; Oxenstiern, Regent.	1634. Murad invades Persia. 1637. Troubles on the Tartar frontier. Bagdad taken by the Turks.	1639. Great naval victory of Van Tromp, of Holland, over the Spanish fleet at the Downs. 1640. Madras, India, founded.	1639. Printing in America. 1640. Manufacturing in Sweden. 1643. Conde and Turenne the greatest generals of the time.	
	1645. Peace between Sweden and Denmark.	1645. War with Venice.			

THE DEATH OF LOUIS XIV. A. D. 1648-1715

Russia	Scandinavian	Ottoman Empire	Lesser Countries	Arts, Sciences, Etc.	Literature
			1653. John de Witt, Grand Pensionary of Holland.	1654. Air pumps invented.	Corneille's *Tragedies.*
1654. Russian victories in Poland.					
	1657. War between Denmark and Sweden.	1657. Alliance with Sweden against Poland.			Milton's *Poems.*
	1660. Arts and sciences flourish.	1661. War with Austria. 1662. Invasion of Hungary.	1660. Sobieski, Polish general, wins great victory over the Tartars.	1666. Canal of Languedoc built. 1667. Gobelin tapestry manufactured in Paris.	Molière's *Dramas.*
1671. The Cossacks subjugated.		1672. Invasion of Poland.	1674. Sobieski, King of Poland.	1671. Foundation of the Academy of Architecture at Paris.	Bunyan's *Pilgrim's Progress.*
		1678. First war with Russia.			Locke's *Essays.*
	1680. Diet of Stockholm.				Bossuet's *Sermons.*
1682. Ivan and Peter, Czars.		1682. War with Austria. 1683. Defeat at Vienna.		1681. Museum of Natural History founded in London.	Racine's *Tragedies.*
		1686. Russia declares war.	1686. Deccan, India, conquered.	Jardin des Plantes founded at Paris.	
1689. Peter the Great.		1687. Revolution in Constantinople, Solyman II., Sultan.		1687. Telegraph invented.	
		1690. Recovery of Belgrade from the Austrians.		1690. White paper first made in England.	
1692. First trade with China.	1693. The King of Sweden declared absolute.		1692. Mogul power at its height in India. Jesuits gain large influence in China. 1695. Brussels bombarded by the French.	1692. First opera in London. 1693. Bank of England founded.	
	1699. Charles XII. begins to reign. Denmark, Poland, and Russia form an alliance against Sweden.	1699. Peace of Carlowitz. The Ottoman power broken.			Newton's *Principia.*
1700. Peter the Great wars with the Northern Powers.	1700. Defeat of the Allies at Narva.				
1703. St. Petersburg founded.	1702-1706. Charles XII. sweeps Poland and Russia.	1703. Mustapha II. deposed by the Janizaries.	1704. Stanislaus I., King of Poland.	1703. Russian newspaper established at St. Petersburg. Flourishing period of French literature.	
1707. Revolt of the Cossack Mazeppa. 1708. Charles XII. of Sweden invades Russia. 1709. Is defeated at Pultowa.				1709. Prussic acid discovered.	Flourishing period of French literature.
1714. Finland conquered.				1714. Rise of commerce in Austria.	
	1715. Charles returns to Sweden.		1715. Treaty of Antwerp with Austria.		

Characteristics of the Centuries	Italy and the Church	Great Britain	Germany	Spain and Portugal	France
1700-1800 A. D. Continued					
	1719. Sicily invaded by the Spanish.	1718. War with Spain.	1718. Quadruple alliance against Spain.		1718. The Quadruple alliance against Spain.
	1730. Clement XII., Pope.	1727 George II., King of England.	1733. War of the Polish succession.	1734. Conquest of Sicily and Naples by Don Carlos.	1733. The Polish succession involves France in war.
	1744. Italy invaded by the French and Spaniards.	1739. War with Spain.	1740. War of the Austrian succession. Maria Theresa succeeds to the hereditary states.		1740. The Austrian succession. 1744. War with England and Austria.
	1746. French and Spaniards driven from Lombardy.	1745. Troubles in Scotland.	1745. Francis I., husband of Maria Theresa, Emperor.	1746. Ferdinand VI., King.	1747. War with Holland.
		1756. Alliance with Prussia.	1756. Seven years' war—Austria and Prussia.		1760. Loss of all Canada.
		1762. War with Spain. 1763. Peace of Paris.			
				1767. Jesuits expelled from Spain.	
	1773. Jesuits expelled from Rome.		1772. Dismemberment of Poland.		1770. Marriage of the dauphin to Marie Antoinette. 1774. Louis XVI., King.
		1775. War with the American Colonies. 1776. British army takes possession of New York. Hessians hired for service in America.			1776. Franklin in Paris.
		1781. Surrender of Cornwallis at Yorktown.	1778. War of the Bavarian succession. Bavaria seized by Germany.		1778. Alliance with America. 1780. Rochambeau sent to aid the Americans.
	1782. Pontine marshes drained.	1783. Treaty of Versailles. Independence of the United States acknowledged.			
			1788. The emperor tries to control the universities.	1788. Charles IV., King.	1789. French revolution begins. Lafayette commander of the national guards.
			1792. War with France.		1792. War with Germany. France declared a republic.
		1793. First coalition against France directed by England.	1793. First coalition against France.		1793. King and Queen beheaded. Reign of Terror.
	1796-1797. Napoleon's Italian campaign.				1795. Napoleon Bonaparte commands the army. 1796. War in Italy.
		1797. Nelson destroys French fleet near Alexandria.	1797. Napoleon's Austrian campaign.		1797. Napoleon in Austria
	1798. Roman republic proclaimed by the French.	1798. Second coalition against France. 1800. Union of England and Ireland.			1798. Expedition to Egypt 1799. Swiss campaign. 1800. Battle of Marengo.
1800-1900 A. D.	1802. Napoleon, President of the Italian Republic.	1803. Successful war in India.			1802. Napoleon, President of the Italian republic. War with England.
Napoleon's colossal power and downfall. Fall of despotisms; great political advance of European people. Continued rapid advancement of science, inventions and discoveries. Increased philanthropic effort and intellectual enlightenment.	1805. Napoleon crowned King of Italy.	1805. Napoleon defeated at Trafalgar. 1806. Fourth coalition against France.	1804. The emperor of Germany assumes the title of emperor of Austria. Battle of Austerlitz. Confederation of the Rhine.	1805. Battle of Trafalgar.	1804. Napoleon I., Emperor of the French. 1805. Battle of Austerlitz.
	1808. Rome annexed by Napoleon to the kingdom of Italy.			1808. Madrid taken by the French. Joseph Bonaparte, King.	1807. War with Russia. Invasion of Portugal.
			1809. Peace of Vienna.		1809. Battle of Wagram. 1810. Continental peace except with Spain.
		1812. War with the United States.	1812. Austria in alliance with France against Russia. 1813. War of German independence.	1812. Battle of Salamanca.	1812. Russian campaign.
	1814. Fall of Napoleon. Kingdom ceases.			1814. Ferdinand VII. restored.	1814. Allies enter Paris. House of Bourbon restored.
		1815. British defeated at New Orleans. Wellington victorious at Waterloo. The Allies enter Paris, and Napoleon is banished to St. Helena.	1815. German League. Congress of Vienna.		1815. Napoleon returns from Elba. Hundred days' war. Battle of Waterloo and defeat of Napoleon. Abdication of Napoleon.

THE FALL OF NAPOLEON, A. D. 1715-1815

Russia	Scandinavia	Ottoman Empire	Lesser Countries	Arts, Sciences, Etc.	Literature
		1717. Turks lose Belgrade.			Pope's *Poems.*
	1718. Charles XII invades Norway and is killed at the siege of Frederickshall.				
	1720. Peace of Stockholm.				
1721. Peter assumes the title "Emperor of all the Russias."		1723. Turks and Russians attempt to dismember Persia.	1723. Christians expelled from China.	1721. Inoculation for smallpox introduced.	
1727. Treaty with China.				1728. Behring Strait discovered.	
1730. Peter II., last of the Romanoffs.	1730. Christian VI., King of Denmark.		1733. Frederick Augustus II., King of Poland.		
		1734. Turks driven from Persia by Nâdir Shah.	1739. India invaded by Nadir Shah, who takes Delhi.		
	1741. Swedes driven out of Finland.	1740. Renewed invasion of Turkey.		1740. Irish linen manufactories and English steel and cutlery factories flourish.	
			1744. Hostilities between the French and English in India.		
		1745. Defeat of Turks at Kars.			Hume's *History.*
			1756. Calcutta taken by the Nabob of Bengal.	1750. Franklin's discoveries in electricity.	Voltaire's writings.
1762. Catherine II. reigns.				1761. Potatoes first planted in France.	Franklin's *Poor Richard's Almanac.*
			1765. Establishment of the English in India.		
1768. War with the Ottoman Empire			1766. Power of the Mamelukes revived in Egypt under Rodyan and Ali Bey.	1767. First spinning machine in England.	Lessing, Burke, Blackstone, Goldsmith, and Adam Smith.
	1772. Despotism reestablished in Sweden by Gustavus III.				
1774 Revolt of the Cossacks.			1774. Warren Hastings first governor-general of India.	1774. Spinning-jenny invented by Arkwright. Steam engines improved by Watt and Bolton.	
			1776 Lord Pigot governor-general of the East Indies.		Kant's critical philosophy.
					Gibbon's *History.*
1787. War with the Turks.		1787. Disastrous war with Austria and Russia.			
					Burns' *Poems*
	1792. Gustavus III. assassinated. Gustavus IV., King.				
			1794. Polish revolt at Cracow.		
1796. Unsuccessful war with Persia.			1797. Swiss revolution. Helvetian republic declared.		Schiller's works.
		1798. War with the French in Egypt.			
1801. Alexander, Czar.	1801 Denmark and Sweden accede to the alliance between England and Russia.			1801. Iron railways in England.	Goethe's *Dramas* and *Poems.*
1804. War with Persia.		1803. Insurrection of Mamelukes at Cairo.			
1805. Russia joins the coalition against France.					
1807. Treaty of Tilsit.		1807. War against Russia and England.	1806. Louis Napoleon, King of Holland.	1807. Fulton invents the steamboat.	
	1808 Finland invaded by the Russians.			1808. Lithography invented.	Cuvier's *Natural History.*
	1809. Charles XIII., King of Sweden.	1809. Russians defeated at Silistria.		1810. First steamboat built in Europe.	
1812. Invasion of Napoleon. Moscow burned.			1812. The Poles declared a nation by Napoleon. Diet of Warsaw. American war with England.		
		1813. Servia invaded by Turkish army.			
	1814. Union of Sweden and Norway as two kingdoms under one monarch.	1814. Malta falls to England.		1814. Steam carriages in England. Gas used for lighting the streets in London.	
1815. The Holy Alliance formed.			1815. William I., King of the Netherlands.	1815 Safety lamp invented by Davy.	Wordsworth's *Poems.*

Characteristics of the Centuries	United States	Great Britain	Prussia	Austria	France
1800-1900 A. D. Continued	1816. U. S. Bank incorporated. 1817. James Monroe, President.	1816. Bombardment of Algiers. The Bey compelled to abolish slavery.		1817. Population, 28,000,000.	
			1818. The Zollverein formed. 1819. Death of Marshal Blucher.	1818. Napoleon's son made Duke of Reichstadt.	1818. France joins in Holy Alliance.
	1821. Monroe reëlected. Missouri compromise bill passed.		1821. Congress of monarchs at Laybach. Insurrection in Moldavia and Wallachia.		1821. Death of Napoleon at St. Helena.
	1824. Visit of Lafayette.	1823. The Canning ministry. The Ashantees in Africa defeated.			1824. Charles X. king.
	1825. Erie Canal opened. Protective tariff enacted. J. Q. Adams, President.				
	1829. Andrew Jackson, President.	1828. Wellington ministry. Irish disturbances. 1830. William IV., King. Difficulties with China.			1830. Algiers taken by the French. Revolution and abdication of Charles X. Louis Philippe, King.
	1831. Northeastern boundary between the U. S. and British provinces established. 1833. President Jackson reëlected. Bank deposits removed from the U. S. Bank.			1831. Austria interferes in Italian affairs.	1831. Abolition of hereditary peerage in France.
				1836. Visit of the Emperor of Russia. Ferdinand I., Emperor.	1836. Insurrection attempted by Louis Napoleon at Strasburg.
	1837. Independence of Texas acknowledged. Martin Van Buren, President.	1837. Victoria, Queen. 1840. War with China over the opium trade. War in Syria; Great Britain an ally of Austria and Turkey.	1840. Frederick William, King.	1838. Commercial treaty with England.	1838. Death of Talleyrand.
	1841. W. H. Harrison, President. Death of Harrison, and succession of John Tyler. 1845. Texas annexed to the U. S. Treaty with China. James K. Polk, President. 1846. War with Mexico. The Oregon treaty with Great Britain, settling the northwestern boundary of the U. S.	1841. Chinese war ended. 1844. Daniel O'Connell's trial. Sentence reversed by the House of Lords. 1846. Repeal of the English corn-laws. 1847. Severe famine in Ireland.		1847. Austria takes possession of Cracow.	1844. War with Morocco.
	1848. Treaty of Guadalupe Hidalgo, ends Mexican war. Gold discovered in California. 300,000 emigrants arrive this year.	1848. Civil war in Ireland. Habeas Corpus Act suspended.	1848. Insurrection in Berlin.	1848. Revolution in Hungary. Francis Joseph, Emperor. Kossuth withdraws his army from Vienna.	1848. Abdication of Louis Philippe, and a republic proclaimed. Louis Napoleon, President. Bloody insurrection in Paris.
	1849. Zachary Taylor, President. Railroad from Boston to New York.	1849. Mooltan in India taken.	1849. The King declines the Imperial crown. Armistice between Prussia and Denmark.	1849. New Constitution promulgated.	
	1850. Attempted invasion of Cuba by filibusters. Death of President Taylor; Millard Fillmore, President. Texas boundary settled. Fugitive Slave Law passed.	1850. The war in Lahore ended. The Punjaub annexed to the British Crown. Death of Sir Robert Peel. English forces defeated in South Africa by the Kafirs.	1850. Hanover withdraws from the Prussian alliance. Hesse-Darmstadt withdraws. Treaty of peace with Denmark. New constitution for Prussia.		1850. Jerome Bonaparte, Field-Marshal.
	1851. Erie railway opened. Charleston Convention. Vigilance committee organized in California. Kossuth arrives in New York.	1851. Continuance of the Kafir war. Kossuth visits England.		1851. Louis Kossuth sentenced to death at Pesth.	
				1852. Emperor of Austria visits Emperor of Prussia.	1852. Louis Napoleon declared Emperor.
	1853. Franklin Pierce, President. Gadsden Purchase.	1853. Kafir war ended. Queen Victoria visits Ireland.	1853. Plot to overthrow the government.		
	1854. Treaty with Japan. Kansas-Nebraska bill passed. Ostend Manifesto issued.	1854. Crimean war. Treaty of alliance with France.	1854. Treaty with Austria offensive and defensive	1854. Alliance with England and France.	1854. War declared against Russia.

F THE AMERICAN CIVIL WAR, A. D. 1815-1865

Spain and Portugal	Italy and Greece	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
815. Union of Portugal and Brazil under John VI. 817. Slave trade abolished.	1815. Kingdom of Two Sicilies restored.	1815. Poland united to Russia.	1816. Lord Amherst's unsuccessful mission to China. 1817. The Mahratta power completely overthrown in India by the British.	1815. The abolition of the slave trade by the Congress of Vienna. 1817. Public schools established in Russia.	Scott's *Novels.* Byron and Shelley. Fouque's *Tales.*
	1821. Austrian invasion of Italy 1822. Greek revolution. Declaration of Independence.	1819. Establishment of military colonies. Liberty of the press in Poland nullified.	1819. Bolivar, President of Colombia, South America. Peru and Guatemala independent. Brazil independent. 1822. Iturbide, Emperor of Mexico.	1819. The steamship "Savannah" makes the first trip across the Atlantic. 1824. Inland navigation stimulated in the United States.	Tegnèr's writings. Hieroglyphics deciphered by Champolion.
830. Salic law abolished.	1825. Death of Ferdinand, after reign of sixty-six years. 1827. Treaty between Russia and Turkey respecting Greece.	1826. Nicholas I. crowned at Moscow. War against Persia. 1830. War against Poland.	1826. Missolonghi taken by the Turks. 1829. Venezuela independent. 1830. Polish struggles for nationality.	1825. Steam navigation on the Rhine.	Vast increase in periodical literature in England, France, Germany, United States, etc. Balzac's *Novels.*
833. Isabella II., Queen of Spain. Don Carlos claims the throne. Portugal a constitutional monarchy	1832. Kingdom of Greece founded.	1832. Poland made part of empire.	1831. Leopold I., King of the Belgians. 1833. Santa Anna, President of Mexico.	1832. Trades unions in Europe.	Poe's *Poems and Tales.* Hawthorne's writings.
837. The monasteries in Spain dissolved.		1838. Smuggling carried on extensively.	1836. Decree to expel all British and other foreigners from China 1839. Turkey at war with Egypt. 1840. William I. abdicates as King of Holland.	1836. Founding of the Smithsonian Institution. Luxor obelisk erected, Paris. 1837. Morse patents the telegraph invented by him in 1832. 1840. Wheatstone's telegraph patented in England.	Emerson's *Essays.*
842. Insurrection in Barcelona.	1843. King Otho of Greece compelled to accept a constitution.	1845. Emperor visits England.	1842. Insurrection in India.	1845. Lord Rosse's telescope completed. Gutta percha used.	Victor Hugo's works.
846. Marriage of Isabella to the Duke of Cadiz. Civil war in Portugal.			1847. Soulouque, President of Hayti	1847. Great canal from the Durance to Marseilles completed. Railroad building in Germany. Sewing machine invented and patented.	Longfellow's *Poems.*
	1848. Rising of the great Italian cities in revolution. Italian revolution. Roman republic overthrown.		1848. Holland receives a constitution. Insurrection in Ceylon. Hungary declared independent.	1848. Girard College opened.	
	1849. Catania, Syracuse, and Palermo taken by assault. Mazzini's proclamation of provisional government. Victor Emanuel, King. Rome surrenders to the French; Garibaldi leaves city. Bourbon rule begins.	1849. Aids Austria in subduing Hungary. 1850. Harbor of Sebastopol completed.	1850. Death of Emperor Tau-Kwang of China. Battle of Idstedt, Prussia.	1849. Tubular bridge at Anglesea, England. Magnetic clock invented by Dr. Locke of Cincinnati. 1850. Great agitation on slavery in United States. The Pekin Monitor a new paper, printed in China. Woman's Rights convention at Worcester, Mass.	Darwin, Tennyson, Dickens, and Browning.
851. Death of Godoy, "Prince of Peace."			1851. Discovery of gold in Australia. Disturbances in south of China. 1852. Buenos Ayres taken by the liberating army. War between the Turks and Montenegro.	1851. Daguerre makes important contributions to photography. Railway between Moscow and St. Petersburg opened. 1852. Telegraphs across the English channel.	George Eliot, Lowell, and Ruskin.
854. Military insurrection under O'Donnell.		1853. War declared against Turkey. 1854. War with France and England. Siege of Sebastopol. Battle of Balak-lava.	1853. Turkish-Russian War.	1853. First Norwegian railway opened. Perry's expedition to Japan. 1854. Commercial treaty between United States and Japan. First railway in Brazil.	

FROM THE FALL OF NAPOLEON TO THE END

Characteristics of the Centuries	United States	Great Britain	Prussia	Austria	France
1800-1900 A. D. Continued	1855. Panama Railroad completed. Troubles in Kansas.	1855. British fleet bombards and partially destroys Canton, China.			
				1856. Hungarians granted amnesty.	1856. Peace with Russia.
	1857. Dred Scott decision. JamesBuchanan,President. Great financial panic.	1857. Rebellion in India begins. King of Delhi proclaimed Sovereign of India. 1858. Completion of the Atlantic telegraph cable.			
	1859. John Brown captures Harpers Ferry. 1860. South Carolina passes ordinance of secession.	1860. Rebellion in India subdued. Neutrality proclaimed during the American Civil war.		1859. War with France and Sardinia. Austrians defeated at Montebello. Peace after Battle of Solferino. Death of Prince Metternich.	1859. War with Austria. 1860. Commercial treaty with England.
	1861. Secession of Southern States, and establishment of the Confederate States under Jefferson Davis. Opening of the Civil war, 1861-1865. Abraham Lincoln, President.		1861. William I., King.	1861. New constitution for the Austrian monarchy. Civil and political rights granted Protestants.	
			1862. Bismarck, Premier.	1862. Amnesty to political offenders in Hungary.	1862. Great distress caused by American Civil war.
			1863. King resolves to govern without parliament.		1863. The French occupy Mexico.
			1864. War with Denmark.	1864. Alliance with Prussia against Denmark.	1864. Maximilian accepts Mexican crown.
	1865. Assassination of President Lincoln; Andrew Johnson, President.	1865. Fenian outbreaks in Ireland.			1865. Death of Proudhon.

FROM THE END OF THE AMERICAN CIVIL

Characteristics of the Centuries	United States	Great Britain	Prussia	Austria	France
1800-1900 A. D. Continued	1866. Civil rights bill passed. Atlantic telegraph completed.	1865. British and French governments rescind their recognition of the Confederate States of America.	1866. Prussia prepares for war with Austria. Battle of Sadowa. Hanover annexed. First parliament of the German Confederation.	1866. War with Prussia and Italy.	
	1867. General amnesty proclamation.		1867. North German Constitution accepted.	1867. Autonomy for Hungary announced. Emperor crowned King of Hungary.	1867. Great exposition in Paris.
	1868. Burlingame treaty with China.				1869. New constitution promulgated.
	1869. U. S. Grant, President. Union Pacific railway opened for traffic.	1870. Irish Land Act passed.	1870. War with France. Battle of Sedan.	1870. Concordat with Rome suspended.	1870. War declared against Prussia. Battle of Sedan. Surrender of Mets.
			1871. King of Prussia proclaimed Emperor of Germany.	1871. New German empire recognized.	1871. Capitulation of Paris. Peace ratified.
		1873. Payment of Alabama claims to the United States.	GERMANY 1871. William I., Emperor.		1873. Marshal MacMahon, President. 1874. Death of Guizot.
		1876. Queen Victoria proclaimed Empress of India.			
	1877. R.B.Hayes, President.		1877. Attempted assassination of emperor.	1878. Occupation of Bosnia.	1879. Jules Grevy, President.
	1881. James A. Garfield, President. President Garfield assassinated, July 2d; Chester A. Arthur, President. 1885. Grover Cleveland, President. Apache Indian War.	1882. Attempt on life of Queen Victoria.		1882. 600th anniversary of the House of Habsburg.	
		1887. Queen's Jubilee.		1886. Army put on war footing of 1,500,000 men.	1887. Sadi-Carnot President.
	1889. Benjamin Harrison, President. Johnstown flood.	1889. Great labor strikes.	1888. Accession and death of Frederick III. William II., Emperor.		

OF THE AMERICAN CIVIL WAR—Continued

Spain and Portugal	Italy and Greece	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
	1855. Important concordat between Italy and Austria.	1855. Death of Nicholas I. Alexander II., Emperor.	1855. Santa Ana abdicates the presidency of Mexico.	1855. Panama Railroad completed. Bessemer's steel process patented.	Spencer's *Philosophy.*
		1856. Destruction of Sebastopol docks. Evacuation of Crimea.		1856. Submarine telegraph laid from Cape Breton to Newfoundland.	
		1858. Partial emancipation of the serfs.	1858. Massacre of Christians in Turkey. Sues Railroad completed.	1858. Great Eastern launched at London. Laying of the Atlantic cable. Boston Public Library opened.	
1859. War with Morocco.	1859. War with Austria.			1859. Telegraphic communication between India and England.	Huxley, Renan, and Dumas.
1860. Defeat of the Moors.	1860. Garibaldi lands in Sicily, and assumes dictatorship. Sicily and Naples liberated.				
1861. Annexation of Santo Domingo. Intervention in Mexico.	1861. Victor Emmanuel II., King of Sardinia, first King of Italy.		1861. Canton restored to the Chinese by the French and English.	1861. International exhibition at London.	
	1862. Garibaldi establishes a provisional government.	1862. Nesselrode, Chancellor.			
	Insurrection in Greece.	1863. Termination of serfdom.		1863. Abolition of slavery in the United States.	Blackmore's *Lorna Doone.*
1864. Rupture with Peru.	1864. Florence made the capital of Italy.	1864. Emigration of Caucasian tribes into Turkey.	1864. Nankin, China, taken by Gordon for the Imperialists.	1864. Convention between France, Brazil, Italy, Portugal, and Spain for telegraph to America.	
1865. Dispute with Chile.	1865. Ionian Isles made over to Greece.		Valparaiso bombarded by Spanish fleet.		

WAR TO THE PRESENT TIME—A. D. 1865-

Spain and Portugal	Italy and Greece	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
1866. Military insurrection headed by General Prim.	1866. Austrian war. Venetia proclaimed a part of Italy.	1866. Inauguration of trial by jury. War with Bokhara.		1866. Atlantic telegraph successfully completed.	Meredith, Taine, Arnold, Wallace.
1867. Death of Marshal O'Dónnell.	1867. Garibaldi and the Papal states.	1867. Russian America sold to the United States.	1867. City of Mexico evacuated by French troops. Egypt declared by the Sultan to be a separate sovereignty. Execution of Maximilian in Mexico.	1867. Great exposition at Paris.	
1868. Queen deposed.				1868. Sues canal formally opened.	
	1869. Vatican Council opened at Rome.			1869. French Atlantic telegraph completed.	
1870. Isabella II., abdicates; Amadeus, King.	1870. Rome is annexed to Italy. Declared the capital of Italy.		1870. Fenian raid in Canada.	1870. Railway from Calcutta to Bombay. Mont Cenis tunnel completed.	
1871. Sagasta, Prime Minister.		1871. Electric telegraph between Russia and Japan.	1871. Military revolt in City of Mexico suppressed. 1872. Attempt to assassinate the Mikado of Japan.		
		1873. Khiva captured.		1873. European calendar introduced into Japan.	
1874. Alfonso XII., King.			1874. Insurrection at Nagasaki, Japan.		
1875. Civil war.				1876. Railway open between Quebec and Halifax. Centennial Exposition at Philadelphia.	
		1877. War against Turkey.		1877. Telephone invented by Bell.	
	1878. Death of Victor Emmanuel II. Humbert, King. Death of Pius IX. Leo XIII., Pope.	1878. Spread of Nihilism in the empire. 1880. Many Nihilists imprisoned and executed. 1881. Alexander II. assassinated. Alexander III., Emperor.	1878. Montenegro, Servia and Roumania independent.		Ibsen, Tolstoi, Björnson.
1883. Sagasta again Minister.	1882. Death of Garibaldi.		1883. Opening of the St. Gothard Railway from Milan to Lucerne.	1883. First electric street railway in United States at Baltimore.	
	1885. War with Abyssinia.	1885. Ship canal from St. Petersburg to Cronstadt opened. Trouble with the Afghans.		1885. Revised version of Old Testament published.	
	1887. Ailiance of Italy with Austro-Hungary and Germany signed.	1886. Russia interferes in Bulgaria.	1886. Upper Burmah annexed to British India.	1887. Great railway bridge at Lachine, Canada, completed.	
1889. Trial by jury first put in force.	Crispi, Prime Minister.	1888. Central Asian railway opened.	1889. New constitution promulgated in Japan.	1888. Typesetting machines perfected. Pasteur discovers cure for hydrophobia.	

Characteristics of the Centuries	United States	Great Britain	Germany	Austria	France
1800-1900 A. D. Continued	1890. McKinley tariff bill passed.	1890. Stanley returns from Africa.	1890. Resignation of Bismarck as chancellor. 1891. Triple Alliance renewed.	1891. Renewal of Triple Alliance.	1890. War with Dahomey. 1892. Panama scandals.
	1893. Grover Cleveland, President. Chinese exclusion bill approved. World's Columbian exposition at Chicago.	1893. Behring Sea arbitration. 1894. Manchester ship canal opened.	1893. Anti-Jesuit law repealed. 1894. Commercial treaty with Russia. New parliament house opened.	1894. Commercial treaty with Russia ratified.	1894. President Carnot assassinated at Lyons. M. Casimir-Perier, President. Captain Dreyfus tried and imprisoned.
			1895. North Sea and Baltic canal opened. Restrictions imposed on American insurance companies. 1896. New civil code for the empire completed.	1895. Anti-Semitic agitation. 1896. Archduke Karl Ludwig, heir to the throne, dies. Millennial exposition at Budapest.	1895. President Casimir-Perier resigns. M. Felix Faure, President. Death of Pasteur.
	1897. William McKinley, President.	1897. Blackwell tunnel opened. The Queen's Diamond Jubilee celebrated.			1897. Ten-hour law for railway employes passed.
	1898. Destruction of the *Maine* at Havana. War with Spain. Hawaii annexed.	1898. Death of Gladstone. Irish local government bill passed. Imperial penny-postage goes into effect.	1898. Death of Bismarck. Emperor visits Constantinople and Jerusalem.	1898. Assassination of the Empress by an anarchist at Geneva.	1898. Review of Dreyfus case granted.
	1899. Cuba is relinquished by Spain. Philippines and Porto Rico acquired.	1899. The Boer war in South Africa.			
1900-1928 A. D. Japan becomes a world power. Constitutional and representative government is extended in many parts of the world — notably in Russia, Persia, Turkey, China and Portugal. Renewed impulse given to international peace and arbitration. Great commercial expansion in Germany, France, Japan, Great Britain and the United States. Unprecedented power of the public press. Era of educational and social philanthropies. Decline in creative literature. Development of African resources.	1900. Civil government established in the Philippines. Chinese troubles.	1900. Field-Marshal Roberts takes command in South Africa.	1900. Abolition of the Roman law throughout Germany.	1900. Marriage of the heir apparent, Francis Ferdinand.	
	1901. Assassination of President McKinley by the anarchist Czolgosz. Capture of Aguinaldo. Death of Ex-President Harrison.	1901. Census of the Indian empire taken. Death of Queen Victoria and accession of Edward VII.	1901. Bicentenary of the coronation of the first king of Prussia.		1901. Diplomatic relations with Turkey suspended.
	1902. Cuban independence under Platt amendment. President Roosevelt recommends the purchase of the Panama Canal company.	1902. The British-Japanese alliance signed. Boer war ended. Marquis of Salisbury resigns as premier.	1902. Prince Henry of Prussia visits the United States. England and Germany press their Venezuelan claims.	1902. Triple Alliance renewed. The language question between Germany and Czechs.	1902. M. Combes forms a new French ministry.
	1903. Panama canal treaty signed with Colombia. Commercial treaty with China signed. Independence of Panama recognized.	1903. King Edward visits the King of Italy. Irish land bill passed the House of Parliament.		1903. New tariff bill. Visit of the Czar of Russia.	1903. Dreyfus case reopened. President Loubet visits King Edward.
	1904. Great Baltimore fire. U. S. Senator Burton convicted of malfeasance in office. St. Louis exposition opened.	1904. Col. Younghusband enters Tibet.	1904. German troops defeated in Africa.	1904. Ultimatum to the Sultan issued. Great railway strike.	1904. Arbitration treaties with Holland, Spain, Sweden, Norway, and the United States. Bill for separation of church and state introduced.
	1905. Protocol with Santo Domingo.	1905. Resignation of Lord Curzon as viceroy of India.	1905. Intervention of Germany in Moroccan affairs. The new commercial treaties. Marriage of the crown prince.	1905. Treaty with Germany ratified. Universal suffrage on an educational basis advocated.	1905. The Moroccan situation grows in complexity.
	1906. Riot at Brownsville, Texas. The President visited Panama. Great earthquake at San Francisco.	1906. King Edward visits Paris.	1906. Propaganda against Socialism.	1906. Prince Schillingfurst succeeds Baron Gautch.	1906. M. Falliéres, President. The church controversy. The Pope's encyclical. M. Sarcier, Premier.
	1907. Philippine assembly opened.	1907. King Edward and Emperor Francis Joseph meet at Ischl.	1907. German emperor visited London.	1907. Universal suffrage bill passed.	1907. Wine growers, agitation. French occupation of Morocco.
	1908. Voyage of the Pacific fleet to Asiatic waters. 1909. Tariff revised.			1909. Bosnia and Herzegovina acquired.	
	1910. Elections result in great Democratic gains.	1910. Death of King Edward VII. Accession of George V.	1910. Emperor William received Ex-President Roosevelt.		1910. Briand cabinet resigned.
	1911. Extra session of Congress called by President Taft. Canadian reciprocity bill passed. 1912. Tariff revision begun by Congress.	1911. King George formally opens the British Parliament. 1912. King George returns from Durbar in India. Steamship "Titanic" sinks with appalling loss of life.	1911. The Emperor urged a policy of reclamation. 1912. Large Socialist gains in German Diet.	1911. Austria strengthens her army and navy. 1912. Death of Premier Aerenthal.	1911. New ministry formed by Premier.

WAR TO THE PRESENT TIME—Continued

Spain and Portugal	Italy and Greece	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
1890. Castillo, Premier.		1890-1892. Famine through the empire.	1890. First Japanese Parliament opened.	1890. Polygamy abolished in Utah.	Hardy's *Novels.*
	1891. Treaty of Italy with Great Britain relative to East Africa. Triple Alliance renewed.			1891. Canadian Pacific railway completed.	
1893. War with Morocco.	1893. Pope's Jubilee at Rome.		1893. Krüger, President of the Transvaal.	1893. World's parliament of religions at Chicago.	
		1894. Death of Alexander III. Nicholas II., Czar.	1894. War between China and Japan.	Electrical measurements established.	Brandes' *Essays.*
		1895. Diplomatic relations with Abyssinia. Persecution of the Jews.	1895. Cecil Rhodes a power in South Africa. Federation of Australia approved. Kongo State annexed to Belgium.	1895. Great refracting telescope made by Clark for Lick observatory. Discovery of Roentgen rays.	
	1896. (Italy) Peace with Abyssinia.	1896. First official census of the empire.	1896. Jameson raid in South Africa.		Mitchell's *Novels* and *Poems.*
1897. Assassination of Premier Canovas del Castillo. Scheme of Cuban autonomy approved.		1897. Judicial reform in Siberia.	1897. Turko-Grecian war.	1897. Universal postal congress at Washington.	
1898. Spanish-American war. Treaty of Paris.	1898. Pope offers to mediate in the Cuban question.	1898. Port Arthur leased from China.	1898. Hawaii annexed to the United States. Switzerla d votes to take over railroads within her borders. Wilhelmina, Queen of Holland.	1898. Reform edict issued in China.	James' *Novels.*
		1899. Czar proposes universal peace.	1899. Venezuela-Guiana boundary line established.	1899. The "open-door" policy for China agreed to. Jubilee of the year 1900 proclaimed by the Pope.	Howell's *Novels.*
	1900. Assassination of King Humbert of Italy, Victor Emmanuel III., King.		1900. Outbreak of the Boxers in China.	1900. Opening of the Elbe and Trave canal, Germany.	
		1901. Count Tolstoi excommunicated.	1901. Submission of China to the allied powers. Inauguration of the federal government of the Commonwealth of Australia.		Kipling's *Stories* and *Poems.*
1902. Alfonso XIII., King.				1902. Marconi wireless system established on Italian warships.	Lagerlöf's *Novels.*
	1903. Death of Pope Leo XIII. Pope Pius X.		1903. Peter I., King of Servia.	1903. Completion of the Pacific cable. Message sent around the world in twelve minutes.	
1904. Death of Ex-Queen Isabella at Paris.	1904. King and Queen of Italy visit England.	1904. War with Japan over Manchuria begun.	1904. President Diaz of Mexico reelected. Death of Paul Krüger, in Switzerland.	1904. New York subway opened.	Zangwill's *Novels.*
1905. Attempted assassination of the King in Paris.	1905. The railway bills passed in Italy.	1905. Fall of Port Arthur, and end of war. Great railway strike at St. Petersburg, Warsaw, and Moscow. Constitution granted by Czar, and the Duma authorized.		1905. Gigantic power plants erected at Niagara falls.	Sienkiewicz's *Novels.*
1906. King Alfonso married to Princess Victoria of England.	1906. Sonnino, Premier. International exhibition at Milan.	1906. The Czar opened the first Russian Duma.	1906. Death of King Christian of Denmark. Norway and Sweden independent kingdoms.	1906. The Simplon tunnel opened. Pan-American conference meets at Rio de Janeiro. Wireless telegraphy conference at Berlin.	Phillips' *Poems.*
1907. King and Queen visit England.	1907. Italy signs arbitration treaty with Argentina.	1907. Third Russian Duma convened.	1907. Abdication of Korean emperor. Death of Oscar II. of Sweden.	1907. The *Lusitania* makes her first voyage.	
				1909. Great progress in aeronautics.	
1910. Spain recalled its envoy to the vatican. Portugal becomes a republic.	1910. Decree issued by the King of Greece for a revision of the constitution.	1910. Death of Count Tolstoi.	1910. Montenegro became a kingdom with Nicholas as king. Revolutionary outbreaks in Mexico. Japan annexed Korea.		Lemaître's *Essays.*
1911. Further creation of religious orders prohibited.	1911. Second parliament assembles.	1911. Russian army mobilized on Chinese frontier.	1911. Insurrections in Mexico. President Diaz forced to resign. Madero elected President.	1911. Andrew Carnegie gives funds for the construction of the most powerful telescope in the world.	
	1911-12. War with Turkey over Tripoli.	Premier Stolypin assassinated.	1912. China a republic; Yuan, president. Death of Mutsuhito; Yoshihito becomes Mikado of Japan.		

CHARACTERISTICS OF THE CENTURIES	UNITED STATES	GREAT BRITAIN	GERMANY	AUSTRIA	FRANCE
War: Great Britain, France, Russia, Belgium, Serbia, Italy, Portugal, Roumania, Montenegro, Japan; the United States, Greece vs. Germany, Austria-Hungary, Turkey and Bulgaria on the other. The war becomes a great struggle between autocracy and democracy. Fall of German military autocracy and the establishment of several republics. Peace of Versailles accepted by all powers except U. S. Economic distress, depreciated currency, shortage of labor and raw materials. Numerous strikes. Most countries in Europe accept League of Nations. Diplomatic problems with Russia. Propaganda. Hythe, Boulogne and Spa Conferences. Labor party in power in Great Britain for first time in history. **1925.** Locarno Pact ratified. **1927.** Coolidge invites leading Naval Powers to disarmament conference. **1928.** Congress of Pan-American Union held at Havana, Cuba. **1929.** Fifteen nations sign pact for renunciation of war. **1930.** Economic world marked by considerable unemployment. Many mergers in big business. Partial success in naval limitation.	**1913.** Woodrow Wilson inaugurated President. **1914.** Regional Banking System. **1915.** Panama Exposition. Lusitania torpedoed. **1917.** War declared against Germany. **1918.** President Wilson formulates terms of peace. Allies win World War. **1919.** National Prohibition and Woman Suffrage. **1920.** Harding elected President. **1921.** Peace with Germany. International Disarmament Conference called. **1923.** Death of President Harding. Calvin Coolidge President. **1924.** Death of ex-president Woodrow Wilson. Strict immigration law. **1927.** Devastating Mississippi floods. Lindbergh makes first non-stop flight, N. Y. to Paris. **1928.** Col. Lindbergh makes aerial good-will tour. Prosecution of those who made fraudulent leases of government oil lands. Hoover elected President. **1929.** Oil conservation policy announced. Special session of Congress to handle farm relief, etc. Byrd flies over South Pole. **1930.** Hughes made Chief Justice.	**1914.** England declares war on Germany. **1915.** Government takes control of industries. **1917.** Jerusalem surrenders to Britain. **1918.** Woman Suffrage adopted. **1921.** Irish Revolution. Armistice Peace Conference. **1922.** Irish Free State organized. **1923.** War Debts agreement with the U. S. **1925.** Conservative Party in power. Stanley Baldwin, Prime Minister. England adopts Gold Standard. **1926.** General strike. **1927.** Diplomatic relations with Russia severed. **1928.** Woman suffrage. Unemployment lessened and conditions improve. **1929.** Maj. Seagrave breaks world's automobile racing record for mile, in 231.36 mi. per hr. Tea tax abolished. **1930.** Death of Balfour. Naval Arms Conference (United States, England, Japan, France, Italy) met and made a limited agreement.	**1914.** Invades Belgium and Northern France. Defeated at the Marne. Government controls industries and food. **1915.** Russians driven back. **1916.** Roumanians crushed. **1918.** Collapse of German military power. Loses War. Revolution. German republic. Emperor William flees. **1922.** Republic stabilized by President Ebert. **1923.** The Ruhr invaded by France. Currency inflation and depreciation of the mark to practically no value. **1924.** New currency. Dawes' Plan accepted. **1925.** Allies still occupy some parts of Germany. Von Hindenburg elected President of Germany. Ruhr evacuated. **1926.** Germany becomes member of League of Nations. **1927.** Interallied control of Germany ceased. **1928.** Commercial conditions improve. **1929.** Einstein publishes new theory identifying gravitation with electro-magnetism. Dirigible Graf Zeppelin flew around the world. **1930.** Young plan adopted. Chancellor Mueller resigned. Bruening became chancellor.	**1914.** The Austrian Crown Prince assassinated, June 28. Austria declares war on Serbia. **1916.** Francis Joseph dies and is succeeded by Charles I of Austria and Charles IV of Hungary. **1917.** U. S. declares war against Austria. **1918.** Hungary declares a republic, followed by Austria. Unconditional surrender and the abdication of the Emperor. **1919.** Famine in Vienna. **1920.** Horthy, conservative leader, in control of Austria. General social stagnation. Industrial paralysis because of lack of raw materials. **1923.** Expenditures reduced, revenue increased. Nearly 50,000 superfluous officials dismissed by end of June. **1925.** June, new Shilling currency goes into effect. **1926.** Union of Germany and Austria proposed. **1928.** Industrial conditions improve. **1929.** Chancellor Seipel and his cabinet resign. **1930.** One-fourth of workers reported unemployed.	**1914.** Resists German invasion. **1916.** Conference of the Allies at Paris plans to paralyze German trade after the war. Verdun defeated. **1917.** Germans driven back to Hindenburg line. **1918.** Five violent offensives of the Germans. Grand allied offensive. Nov. 11 armistice signed at Senlis. Victory. **1919.** Peace Congress at Versailles. **1920.** Deschanel elected president. Occupation of Frankfurt and dissatisfaction with German policy. Understanding with Belgium and Poland. **1922.** Reconstruction proceeded rapidly and the devastated areas rebuilt. **1923.** Germany ignored and partly repudiated war indemnity and therefore France invaded the Ruhr to levy collection. **1924.** Doumergue elected President. **1925.** War with Riffians in Morocco. **1927.** Treaties signed with Germany and Jugo Slavia. **1928.** Treaty signed with United States. **1929.** Death of Marshal Foch. **1930.** Changes of cabinets.

PARALLEL OUTLINES OF AMERICAN HISTORY BY F. F. STEPHENS, Ph.D.

Historical events owe much of their importance to their relations with one another. The use of parallel outlines often enables the reader to see these relationships at a glance. It is recommended that when using these Parallel Outlines of American History the reader turn frequently to the preceding Parallels of Universal History for the same periods and turn also to the brief articles in the following pages on the History of Important Nations and their Dependencies as well as to the Dictionary of Biography in the latter part of the volume.

I. PERIOD OF DISCOVERY AND EXPLORATION, 1492-1607

RULERS	SPANISH EXPLORERS
1474-1516. Ferdinand and Isabella	**1492.** Columbus sails from Palos, Friday, Aug. 3, on his first expedition. He discovers a small island of the Bahama group, Oct. 12, Cuba, Oct. 28, and Hispaniola (now Hayti), Dec. 6. He returns to Spain the next year.
	1493-1496. Columbus makes his second expedition, discovers Jamaica, May 3, 1494, and explores various islands.
	1498-1500. Columbus sails on his third expedition, discovers various islands, lands on the mainland without knowing it to be a new continent, but is sent back to Spain in irons, where he is received with honor and the charges against him dismissed.
	1499-1507. Amerigo Vespucci on the coast of South America. He writes letters describing his exploration and an Alsatian geographer suggests that the land be named for him.
	1502-1504. Columbus makes his fourth and last voyage to America, discovers more islands, and explores the coast of the Isthmus.
	1510. Alonso de Ojeda founds San Sebastian, the first colony in South America.
	1513. Ponce de Leon discovers Florida, and takes possession in the name of Spain.
	Balboa crosses the Isthmus and discovers the Pacific.
1516-1556. Charles I.	1519. Francis de Garay discovers mouth of Mississippi. Cortes overthrows Aztec power in Mexico.
	1519-1521. Magellan's circumnavigation of the globe.
	1520-1527. Exploration of Atlantic coast of North America by Spanish explorers.
	1528. Explorations of Narvaez from Florida westward.
	1539-1542. De Soto penetrates the Mississippi Valley region as far northward as the later state of Arkansas.
	1540-1542. Coronado's expedition northward from Mexico to the present site of Santa Fe, and to Quivera (Kansas).
1556-1598. Philip II.	1556. Pedro Menendez de Aviles discovers and names the harbor of St. Augustine, takes possession of the land in the name of the king of Spain, and destroys the Huguenot settlements.
1495-1521. Emanuel the Great. (Golden age of Portugal).	**PORTUGUESE EXPLORERS**
	1498. Vasco da Gama reaches India by sailing around Africa.
	1500. Cabral discovers the coast of Brazil. Garper Cortereal, in the service of Portugal, discovers Labrador.

RULERS	FRENCH EXPLORERS
1515-1547. Francis I.	1524. Giovanni da Verrazano, in the service of the King of France, coasts between the 28th and 50th degrees of north latitude, and discovers New York harbor.
1547-1559. Henry II.	1534-1535. Discovery and exploration of St. Lawrence Bay and River by Jacques Cartier.
1559-1560. Francis II.	1562. Jean Ribault establishes a Huguenot settlement at Port Royal
1560-1574. Charles IX.	1563. Laudonniere establishes a Huguenot settlement at the mouth of St. John's river, naming it Fort Caroline.
	1565. The Huguenot settlement destroyed by Menendez.
1574-1589. Henry III.	1567. De Gourgues avenges the destruction of the Huguenots by destroying the Spanish forts in Florida.
1589-1610. Henry IV.	1603. Samuel de Champlain explores the St. Lawrence.
	1604. Champlain founds a settlement on St. Croix island.
	1605-1606. Champlain explores the coast of New England.
1485-1509. Henry VII.	**ENGLISH EXPLORERS**
1509-1547. Henry VIII.	1497. John Cabot discovers the North American continent.
1547-1553. Edward VI.	1527. Captain John Rut explores the coast of North America.
1553-1558. Mary.	1565. John Hawkins passes along the coast of Florida.
1558-1603. Elizabeth.	1566. Charter is granted to Sir Humphrey Gilbert to open a northwest passage.
	1576-1578. Voyages of Sir Martin Frobisher to discover a northwest passage.
	1577-1580. Circumnavigation of the globe by Sir Francis Drake. He takes possession of New Albion, (California) in 1579 in the name of Queen Elizabeth.
	1578. Attempt of Sir Humphrey Gilbert to plant a colony in Newfoundland.
	1584. Raleigh's expedition, under command of Amadas and Barlowe, takes possession of coast of Virginia in the name of Queen Elizabeth.
	1585. Raleigh's second expedition leaves 107 men on Roanoke Island. They are afterward rescued by Sir Francis Drake.
	1587. Raleigh's third expedition, under John White, lands 120 people. The colony disappears entirely.
	1602. Gosnold's exploration along the coast of New England.
	1603. Martin Pring enters the present harbor of Plymouth.
1603-1625. James I.	1606. Charter for colonization granted to the London and Plymouth Companies. The former promptly sends an expedition which founds the colony of Virginia by planting a settlement at Jamestown, May 13, 1607.

II. THE COLONIAL PERIOD, 1607-1775

The Southern Colonies	The Middle Colonies	New England Colonies	English Rulers and Events
1607. The first permanent English settlement at Jamestown.	1609. Henry Hudson on the Hudson River.	1608-1620. The "Pilgrim Fathers" in Holland.	1603-1625. James I. develops the Divine Right of Kings theory.
1612-1616. Introduction of tobacco culture into Virginia.	1614. Beginnings of settlements on Manhattan Island.		Development of Puritanism.
1619. Meeting of the House of Burgesses in Virginia, the first representative body in America.	1617-1623. Beginnings of the settlement of New Jersey by the Dutch.		

WAR TO THE PRESENT TIME—A. D. 1865-

Spain and Portugal	Italy and Greece	Russia	Lesser Countries	Arts, Sciences, Etc.	Literature
1913. Attempted assassination of King Alfonso.	1912. Balkan war against Turkey.	1913. Serfdom abolished.	1913. Peace treaty with Turkey. War among Balkan Allies over spoils.	1912. New chemical element discovered—Niton. Lewis machine gun invented.	Tagore's **Poems.**
1915. Revolutionary outbreaks in Portugal. Military clique overthrown by Democrats.	1913. King George of Greece assassinated.	1914. Russia enters war against Teutonic Alliance.	1914. Japan, Servia, Belgium enter war on side of Entente.	1916. German submarine Deutschland makes voyage to U. S.	Rolland's **Novels.**
1916. Portugal enters war.	1915. War: Italy vs. Austria.	1917. Revolution. Czar abdicates. Bolsheviki governmcnt set up.	1915. Bulgaria enters war on side of Teutons.	1917. Invention of "Liberty Motor" and depth bomb. Browning gun adopted.	Heidenstam's **Poems.**
1917. Serious strikes in Madrid.	1917. Constantine abdicates. Greece joins Entente. Pope appeals for peace. Italians driven back to Piave River. General Diaz succeeds Cardorna.	1918. "Ukraine Republic" makes peace with Central Powers. Bolsheviki sign peace treaty with Germany. Great internal disorder.	1916. Roumania declares war on Austria.	1918. First fabricated steel ship launched.	France's **Novels.**
1919. Royalist revolution in Portugal. Peace Treaty signed.	1921. Greece at war with Turkey. The Fascisti under Mussolini put down Syndicalism and seize the government.	1920. Defeat of Wrangel. Wins in war with Poland. Negotiations at Warsaw.	1917. Siam, China and Brazil enter war against Teutonic Allies.	1919. Transatlantic aerial navigation. Discovery of helium gas, non-explosive.	Yeat's **Poems.**
1923. Senbor Teixeira Gomes installed as president of Portuguese Republic.	1922. Mussolini becomes Premier. Greek army driven out of Asia Minor by the Turks.	1921. Commercial peace with United States. Lenine and Trotsky have stabilized Russian affairs.	1918. Roumania makes peace with Central Powers. Bulgaria and Turkey surrender unconditionally.	1921. Wireless telephone perfected. The Einstein Theory was announced.	Bergson's **Writings.**
1925. Direct cable to United States inaugurated.	1924. By a plebiscite, Greece becomes a Republic.	1924. Death of Lenin. Alexis Ivanovitch Rykoff new head of Soviet government.	1919. Independence of Czecho-Slovakia, Jugo-Slavia, Poland, Lithuania.	1923. Radio broadcasting was perfected. The Tomb of King Tut-Ankh-Amen discovered.	Wells' Outline of History (1922). The education of Henry Adams.
1926. Spanish Criminal Code revised. Spanish Victories in Riffian War.	1925. All Greeks compelled to leave Turkey.	1925. Trotsky deposed. Diplomatic relations resumed with Japan.	1921. Ireland given freedom.	1926. Aircraft used to explore North Polar Regions.	Conrad's **Novels.**
1927. Revolution in Portugal. Arbitration Treaty signed, between two countries.	1926. Fascisti controls Italy.	1927. England severs Diplomatic Relations.	1923. Devastating earthquake in and about Tokio, Japan.	1926. Aeroplanes used to explore Polar Regions.	Benavente's **Dramas.**
1929. Premier Rivera of Spain orders newspaper censorship.	1928. Italy returns to gold standard. Alliance made by Italy with Albania.	1929. Death of Grand Duke Nicholas.	1926. Arbitration Treaty, outlawing war, made between Sweden, Norway, Denmark and Finland.	1927. Television successful. Radiotelephony between U. S. and England.	Hamsun's **Novels.**
1930. Rivera resigned. Died. Gen. Berenguer made premier.	1929. Italo-Vatican treaty.	1930. Drive against the churches.	1927. Revolutions in China and Nicaragua.	1929. Cascade tunnel opened.	Shaw's **Plays.**
	1930. Crown Prince Humbert of Italy wed Belgian Princess, Marie Jose.		1928. Conditions in Belgium improve. Hungary disputes shipment of arms from Italy.	1930. Discovery of ninth planet.	Undset's **Novels.**
			1929. Dictatorship in Jugoslavia.		
			1930. Carol returned as King of Rumania.		

PARALLEL OUTLINES OF AMERICAN HISTORY—Continued

II. THE COLONIAL PERIOD, 1607-1775—Continued

The Southern Colonies	The Middle Colonies	New England Colonies	English Rulers and Events
1619. Negro slaves first imported into Virginia. Coming of the "ninety maidens" to Virginia, resulting in the introduction of family life.	1621. The Dutch West India Company chartered.	1620. Landing of the Pilgrims at Plymouth, Dec. 21.	
1622. Indian massacre in Virginia.		1622. First settlement in New Hampshire, at Piscataqua.	
1624. Virginia becomes a royal province.	1626. Founding of New Amsterdam (later New York City).		1625-1649. Charles I.
			1628. Petition of Right.
	1629. Establishment of the patroon system to encourage settlement in New Netherland.	1629. Charter granted to the Massachusetts Bay Company.	
		1629-1640. The "Great Migration" of Puritans to Massachusetts.	
1634. Maryland founded by Lord Baltimore.		1633-1636. Colonization of Connecticut River valley.	
		1636. First college in America founded by Massachusetts. Two years later it is named Harvard, in honor of John Harvard.	
	1638. Swedish settlement on the Delaware River.	Roger Williams settles Rhode Island.	
		1639. The "Fundamental Orders" of Connecticut. First printing press in America set up at Cambridge.	1640. Meeting of the Long Parliament.
1642-1652. Governor William Berkeley's first ministration in Virginia.			1642. Civil war begins.
1649. The Maryland Toleration Act.	1647-1664. Peter Stuyvesant governor of New Netherland.	1643. Organization of the New England Confederation.	1649. Execution of Charles I.
	1655. The Swedish settlements on the Delaware conquered by the Dutch.		1649-1660. The Commonwealth.
Governor Berkeley's second administration in Virginia.			1660. Restoration of the Stuarts.
		1662. Charter granted to Connecticut.	1660-1685. Charles II.
1663. Carolina granted to eight proprietors.	1664. New Netherland, conquered by the English, becomes New York.	1663. Charter granted to Rhode Island.	The Navigation Acts (1651, 1660, 1663, 1672, 1696.)
	1664. New Jersey granted to Berkeley and Carteret.		
1669. Lock's Fundamental Constitutions for the Carolinas drawn up.			
1670. Charleston, S. C., founded.			
		1675-1676. King Phillip's war in New England.	
1676-1677. Bacon's Rebellion in Virginia.	1681. Grant of Pennsylvania to William Penn.		
	1682. Philadelphia laid out by Penn.		
	1683. First Assembly in New York under English rule.		
		1684. Massachusetts becomes a royal colony.	1685-1689. James II.
		1686-1689. Andros, governor of New England.	1688-1689. The "Glorious Revolution"
	1689-1690. Leisler's rebellion in New York.		1689-1702. William III and Mary.
		1691. Incorporation of Plymouth and Maine with Massachusetts.	
1692. William and Mary College founded.	1702. New Jersey becomes a royal province.	1691-1693. Salem witchcraft episode.	
		1700. Yale College founded.	1702-1714. Queen Anne.
		1704. Appearance of "The Boston News Letter," the first newspaper in America.	1714-1727. George I.
1721-1729. The Carolinas become royal colonies.			1727-1760. George II.
1732. Organization of the Georgia Trustees to assist poor debtors and to form a military outpost against Spain.	1732. Zenger's trial and acquittal in New York, establishes freedom of the press.		
1733. Savannah founded.			1733. Molasses Act.
1736. Appearance of "The Virginia Gazette," first newspaper in the South.	1752. Franklin experiments with electricity.		
	1765. First medical school in America at the University of Pennsylvania.		

II. THE COLONIAL PERIOD, 1607-1775—Continued

French Rulers	French Colonies	Spanish Rulers	Spanish Colonies
1589-1610. Henry IV.	1608. Champlain founds Quebec.	1598-1621. Philip III.	1610. Leon, Central America, is founded.
1610-1643. Louis XIII.	1611. French Jesuits settle at Port Royal.		1611. Talamanca Indians of Central America massacred by the Spanish.
	1615. Champlain explores Lake Huron, and establishes Indian missions.		1617. Separation of Rio de la Plata (modern Argentina) from Paraguay.
	1620-1635. Champlain governor of (New France) Canada.		
	1629-1632. English capture and restore the French settlements in New France.	1621-1665. Philip IV.	1630. Alvarado subdues Central American Indians.
			Hayti seized by French buccaneers.
	1634. Jean Nicolet explores Lake Michigan.		1630-1644. The Dutch get control of Brazil.
1643-1715. Louis XIV.	1641. Montreal founded.		1638. Discovery of the use of quinine in Peru.
	1659. French fur traders explore Lake Superior.		1644-1655. Portuguese expel the Dutch from Brazil.
	1668. Marquette establishes mission at Sault Ste. Marie.	1665-1700. Charles II.	1665. St. Augustine pillaged by English buccaneers.
	1669. La Salle explores the Ohio River.		1671. The Danes occupy St. Thomas.
	1671. The French take formal possession of the Northwest.		1685. Dampier, an English buccaneer, sacks Leon.
	1673. Marquette and Joliet discover the Upper Mississippi.		1693. Gold mining begins in Brazil.
	1681-1682. La Salle descends the Mississippi to its mouth.		1695. Capture of Cartagena by the French.
	1685-1687. La Salle attempts to colonize the lower Mississippi, fails to find its mouth, plants a short-lived settlement at Matagorda Bay, Texas, and is killed by his own men while journeying overland to Canada.	1700-1746. Philip V.	1698. The Darien scheme; 1,200 Scotchmen attempt to settle on the Isthmus but fail.
			1711. French capture Rio de Janerio, but restore it.
			1713. By the Treaty of Utrecht, England gains right of supplying Spanish colonies with African slaves.
	1699. Biloxi founded by Iberville and Bienville.		1726. Founding of Montevideo.
	1702. Settlement in Alabama on the Mobile river.		1740. Oglethorpe attacks St. Augustine, Florida, but is repulsed.
	1710. Port Royal captured by an English fleet.		1742. The Spanish invade Georgia unsuccessfully.
1715-1774. Louis XV.	1718. New Orleans founded.		1746. Lima destroyed by an earthquake.
	1729. Massacre of French at Natchez by Indians.	1746-1759. Ferdinand VI.	1759. Expulsion of Jesuits from Brazil.
	1749. French take possession of Ohio Valley. Fort Rouille (Toronto) built.		

STRUGGLE OF FRANCE AND ENGLAND FOR NORTH AMERICA: THE INTERCOLONIAL WARS.

Causes	Events	Results
General:	**1689-1697. King William's war.**	1697. Peace of Ryswick.
Historical rivalry between the French and English nations.	1690. Destruction of Schenectady and other towns by the French and Indians. Seizure of Port Royal by the English.	Restoration of conquests by both nations.
Opposite tendencies and characteristics of their colonists.	**1702-1713. Queen Anne's war.**	1713. Treaty of Utrecht.
Simply the American phase of European wars.	1704. Deerfield destroyed by French and Indians.	France ceded to England the Hudson Bay region, Nova Scotia (Acadia), Newfoundland, and St. Christopher island (in the West Indies).
Special:	1706. Invasion of Carolina by French and Spanish. Their repulse by William Rhett.	
Conflicting claims regarding Acadia and New France.	1710. Capture of Port Royal, Acadia, by an English fleet, and change of name to Annapolis.	
Conflicting claims for the Ohio Valley.	**1744-1748. King George's war.**	1748. Treaty of Aix-la-Chapelle.
Disputes over boundaries.	1745. Siege and capture of Louisburg, Cape Breton Island, by colonial troops.	Mutual restoration of conquered territory.
Clashes between the frontiersmen of the two nations.	**1754-1763. Old French and Indian war.**	1763. Treaty of Paris.
The Indian policies of the two nations, resulting in incessant Indian troubles.	1754. Congress of Albany. The Albany Plan of Union.	France ceded to England all Canada (except two unfortified islands in the Gulf of St. Lawrence), and all her territory east of the Mississippi except New Orleans; and to Spain all her territory west of the Mississippi, and New Orleans.
	1755. Banishment of Acadians (French) from Nova Scotia.	Spain ceded to England Florida in exchange for Havana.
	1755. Braddock's defeat.	The war created a bond of union among the colonists and gave the colonists some experience in warfare.
	1757. Capture of Fort William Henry by the French.	
	1758. Capture by the English of Louisburg, and of Fort du Quesne. The latter place is renamed Fort Pitt (Pittsburg).	
	1759. Capture of Quebec by General Wolf, Sept. 13.	
	1760. Capture of Montreal by the English.	
	1761. Capture of Havana by the English.	

III. PERIOD OF UNION AND INDEPENDENCE, 1761-1783

Spanish Colonies	Causes of the Revolution	British Colonies
	Increasing divergence of English and American institutions.	1761. James Otis argues against the legality of the issuance of Writs of Assistance.
	The colonial policy of England (the "mercantile system"), by which the colonies were arbitrarily governed.	1763. Patrick Henry, in the "Parson's Cause," attacks the king's veto power.
	Restrictions on external and internal trade through the Navigation acts.	1765. Passage of the Stamp act by the English Parliament. The Stamp Act Congress, representing nine colonies, meets in New York, October 7, to protest against the Stamp act.
	Restrictions on manufactures.	Adoption of resolutions by the Virginia House of Burgesses, proposed by Patrick Henry, against the exercise of the taxing power by England.
	Arbitrary methods of enforcing the trade laws.	Organization of the Sons of Liberty.
	Insistence of the colonists upon their rights as Englishmen.	1766. The Stamp act is repealed, but the Declaratory act passed by the English Parliament.
	Contests between the royal governors and the popular assemblies.	1767. Passage of the Townshend acts, levying new duties, providing for the reorganization of the Colonial Customs Service, and providing for the coercion of the New York Assembly.
1765-1778. Abrogation of restrictions upon Spanish colonial trade.	Fear that the crown would appoint a bishop to control the colonial church.	1768. The circular letter of Massachusetts sent to the other colonies. Troops sent to Boston.
	Taxation of the colonists without representation.	1769. The second set of Virginia resolutions adopted.
	Maintenance of a standing army in the colonies.	1770. The "Boston Massacre," March 5.
	(See the Declaration of Independence for an American statement of the causes of the war.)	Repeal of duties, except on tea.
1768. Unsuccessful revolt of the French against Spanish rule in Louisiana; severely punished.		1772. Organization of local Committees of Correspondence.
		1773. Organization of colonial Committees of Correspondence.
		The Boston Tea Party.
		Daniel Boone in Kentucky.
1773-1774. Earthquakes and volcanic eruptions in Central America destroy Santiago and Old Guatemala.		1774. Passage of the "Intolerable Acts" by Parliament to punish Massachusetts.
		Meeting of the First Continental Congress at Philadelphia, September 5.
1776. Creation of the viceroyalty of Buenos Ayres, including also Uruguay, Paraguay, and Bolivia.		1775. Passage of the New England Restraining Act by Parliament.
		The beginning of war between England and her colonies at Lexington, April 19.
		Meeting of the Second Continental Congress, May 10.
		1776. Appointment of committees in Congress to draft a form of confederation for the colonies, to draft a Declaration of Independence, and to form foreign alliances.

Results of the Revolution

By Treaty of Paris:
England acknowledges the independence of the United States.
The boundaries of the United States are fixed.
Free navigation of the Mississippi and the Great Lakes is given the United States.
Certain rights in the fisheries are given the United States.
England cedes Florida to Spain.

PRINCIPAL CAMPAIGNS AND BATTLES OF THE AMERICAN REVOLUTION.

The leading battles are indicated in **bold-face**; successful commanders in *italics*

Date	Names and Places of Battles	Commanders		Engaged	
		American	British	Amer	British
1775-1776	**Campaign in New England.**				
April 19, 1775	**Lexington, Concord**	Barret and Butterick.	*Smith* and *Lord Percy*	.....	1700
May 10, 1775	Ticonderoga	Ethan Allen and *Eaton*.	Delaplace.	83	48
June 17, 1775	**Bunker Hill**	Warren, Prescott and Putnam.	*Howe* and *Pigot*.	3000	4500
Dec. 6-31, 1775	Quebec	Schuyler, Montgomery and Arnold.	*M'Lean* and *Carleton*.	900	1200
Dec. 9, 1775	Norfolk, Va.	Woodford.	Lord Dunmore.	.....	.....
Mar. 17, 1776	Boston	The British evacuate the city and harbor.			
June 28, 1776	Charleston (Ft. Moultrie).	*Moultrie, Lee* and Armstrong.	Clinton.	400	4000
1776-1778.	**Campaign in Middle States.**				
Aug. 26, 1776	Brooklyn, L. I.	Green and Sullivan.	*Howe, Clinton* and *Cornwallis*.	10000	20000
Sept. 16, 1776	Harlem Plains, N. Y.	Washington.		.....	.....
Oct. 28, 1776	**White Plains, N. Y.**	Washington.	*Howe*.	1600	2000
Nov. 16, 1776	Fort Washington, N. Y.	Magaw.	*Howe*.	3000	5000
Dec. 26, 1776	**Trenton, N. J.**	*Washington*.	Lord Cornwallis and Rahl.	2400	1000
Jan. 3, 1777	**Princeton, N. J.**	*Washington*.	Mawhood.	3000	1800
Aug. 15, 16, 1777	**Bennington, Vt.**	*Stark* and *Warner*.	Baum and Beyman.	.....	1200
Sept. 11, 1777	Brandywine, Pa.	Washington.	*Howe*.	11000	18000
Sept. 19, 1777	**Bemis Heights, N. Y.**	*Gates*.	Burgoyne.	2500	3000
Oct. 4, 1777	Germantown, Pa.	Washington.	*Howe*.	11000	15000
Oct. 7, 1777	**Stillwater** (Saratoga).	*Gates*.	Burgoyne.	8000	6000
June 28, 1778	**Monmouth, N. J.**	*Washington*.	Sir Henry Clinton.	12000	11000
1778-1781.	**Campaign in the South.**				
Dec. 29, 1778	Savannah, Ga.	Robert Howe.	*Campbell*.	900	2000
Mar. 3, 1779	Brier Creek, Ga.	Ashe.	*Prevost*.	1200	1800
July 16, 1779	Stony Point, N. Y.	*Wayne*.	Clinton.	1200	600
Aug. 29, 1779	Chemung, N. Y.	*Sullivan*.	Brant.	4000	1500
Oct. 9, 1779	Savannah, Ga.	Lincoln.	*Prevost*.	4500	2900
May 12, 1780	Charleston, S. C.	Lincoln.	*Clinton*.	3700	9000
Aug. 15, 1780	Camden, S. C. (Sanders Creek).	Gates.	*Cornwallis*.	3000	2200
Oct. 7, 1780	**Kings Mountain, N. C.**	*Campbell*.	Ferguson.	900	1100
Jan. 17, 1781	**Cowpens, S. C.**	*Morgan*.	Cornwallis and Tarleton.	900	1100
Mar. 15, 1781	Guilford C. H., N. C.	Greene.	*Cornwallis*.	4400	2400
April 25, 1781	Hobkirk's Hill, S. C.	Greene.	*Rawdon*.	1200	900
Sept. 6, 1781	New London, Conn., Fort Griswold.	Ledyard.	*Benedict Arnold* and *Eyre*.	150	800
Sept. 8, 1781	**Eutaw Springs, S. C.**	*Greene*.	Lord Rawdon.	2000	2800
Oct. 17-19, 1781	**Yorktown, Va.**	*Washington*.	Cornwallis.	16000	7500

THE UNITED STATES

1776. Adoption of the Declaration of Independence, July 4. It is signed August 2. Delaware forbids the further importation of slaves.

1777. The Articles of Confederation are sent to the states for ratification.

1778. An offensive and defensive alliance is concluded with France (the first and only such alliance concluded in the history of the United States). A commercial treaty is also signed with France.

1779. Sept. 23. Victory of the *Bon Homme Richard*, John Paul Jones, commander, over the *Serapis*, Captain Pearson, commander. The most daring naval exploit of the war.

1780. Massachusetts adopts a state constitution containing a clause in the bill of rights which in 1784 was interpreted to prohibit slavery.

Pennsylvania provides for gradual emancipation.

The treason of Benedict Arnold at West Point and the capture and execution of Major André.

1781. Articles of Confederation go into effect.

IV. PERIOD OF THE CONFEDERATION, 1781-1788

THE UNITED STATES

Foreign and Commercial Affairs	Domestic Affairs
	1781. The "Five per cent. Amendment" to the Articles of Confederation is proposed but is later defeated by Rhode Island.
	1781-1802. Cession to Congress of the claims of various states to western lands.
1782. Holland recognizes the independence of the United States.	
1783. Denmark, Sweden, Spain and Russia recognize American independence.	1783. The revenue amendment is proposed. Is defeated later by New York.
Peace signed with Great Britain, Sept. 3.	Washington resigns his command December 23.
1784. Congress adopts the decimal system of coinage.	1784. Congress passes the Jefferson ordinance for the government of the West.
	Dispute between Connecticut and Pennsylvania over the Wyoming Valley.
	Organization of the Methodist Episcopal church in America.
	1785. Passage of the ordinance for the survey and administration of the Western territory.
1785. Benjamin Franklin returns from his post in France, and is succeeded by Thomas Jefferson. John Adams is appointed minister to England.	Disestablishment of the Anglican Church in Virginia by the passage of the Religious Freedom Act.
1785-1787. Commercial disputes between various ones of the States.	
1786. A convention at Annapolis to adjust the commercial difficulties between the states leads to the call for the Philadelphia Convention of 1787.	1786. Shays's rebellion in Massachusetts.
Commercial treaty is concluded with Prussia.	The craze for paper money results in its issue in seven states.
	Culture of sea-island cotton introduced into Georgia and South Carolina.
	1787. The "Ordinance of 1787" guarantees to the Northwest religious freedom, freedom from slavery, encouragement of education, civil liberty, and the admission into the Union of new states from that section.
	The Philadelphia Convention, in session from May 25 to Sept. 17, formulates a new Constitution and sends it to the states for ratification.
	1788. The new Constitution is ratified by a sufficient number of states to put it into force.

British North America	Latin America and the West Indies
	1780. Peruvian insurrection led by Amaru.
1783. Treaty of Paris leaves Canadian boundaries and fishing rights ambiguous.	
1784. About 40,000 Loyalists from U. S. settle in Nova Scotia and Upper Canada (west of Ottawa river).	
Province of New Brunswick, with Loyalist population, separated from Nova Scotia.	
1785. Lieut-Gov. Hope reports dissensions regarding laws, land tenure, religion and education between French Canadians, (200,000) on lower St. Lawrence river, and "United Empire Loyalists" (some 10,000) settled between Montreal and Kingston.	
1786. Sir Guy Carleton, soon afterward made Lord Dorchester, appointed Gov.-Gen. over whole of British North America.	1786. Pacification of the negroes and Indian tribes in Dutch Guiana.
1788. Lord Dorchester, in spite of racial disputes, advises against dividing province of Canada into two. But British Government, in response to popular demand, prepares to divide the province and provide for representative government.	

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR, 1789-1861

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1789. Organization of the executive, legislative, and judicial departments of the new government. The first Congress meets in New York. 1790. First decennial census is taken. Congress decides to locate the national capital on the banks of the Potomac. Assumption of the public debts previously contracted by the several states. Passage of the first excise law. 1790-1795. War with the Indians north of the Ohio. 1791. Organization of the First National Bank. Ratification of the first ten amendments to the Constitution. Admission of Vermont into the Union.	**George Washington.** *President.* John Adams, *Vice-President.* Thomas Jefferson, *Secretary of State.* Alexander Hamilton, *Secretary of Treasury.* Henry Knox. *Secretary of War,* Edmund Randolph, *Attorney-General.*	1789. Control over foreign commerce passes from the states to the federal government. North Carolina establishes the first of the state universities. 1790. Samuel Slater sets up first complete cotton machinery at Pawtucket, Rhode Island. First patent law is passed. Organization of the "Pennsylvania penal system." 1790-1799. Rapidly increasing demand for cotton. 1791. Alexander Hamilton's Report on Manufactures. Formation of the New York Society for promoting Agriculture.	1789 and 1793. Sir Alexander Mackenzie explores the Athabasca region. 1790. British Parliament appropriates £3,110,000 to reimburse the Loyalists for their losses in the American Revolution. 1791. "Constitutional Act" passed by British Parliament separating Canada into Upper and Lower provinces, with Ottawa river as boundary. Each province was granted a legislature comprising an appointed upper house and an elected lower house. Accordingly French law was continued in Lower while English law was established in Upper Canada. Protests came only from the small British element in Lower Canada.	1791. Beginning of the negro insurrection in Hayti, prompted by French revolutionary doctrines.
1792. Admission of Kentucky. Formation of the first political parties under the Constitution.		1792. Founding of Williams College. Formation of the Massachusetts Society for promoting Agriculture.	1792. 1200 negroes previously carried from U. S. by Loyalists and emancipated, deported from Nova Scotia to Sierra Leone in West Africa as colonists.	
1793. The first proclamation of neutrality as to the war in Europe issued, April 22. First fugitive slave act passed. Cornerstone of national capitol laid by Washington. Case of Chisholm *vs.* Georgia decided. Genet's meteoric career as minister from France.	**George Washington,** *Reëlected President.* John Adams, *Reëlected Vice-Pres.* Thomas Jefferson, E. Randolph, T. Pickering, *Secretaries of State.* Alexander Hamilton, O. Wolcott, *Secretaries of Treasury.* Henry Knox, T. Pickering, J. McHenry, *Secretaries of War.* E. Randolph, W. Bradford, C. Lee, *Attorney-Generals.*	1793. Whitney invents the cotton gin; cotton production greatly stimulated. Establishment of a mint at Philadelphia. Appearance at Cincinnati of the first newspaper north of the Ohio, *The Sentinel of the Northwestern Territory.* Rapid expansion of American carrying-trade, resulting from American neutrality.	1793. Legislature of Upper Canada provides for gradual abolition of slavery.	
1794. Whisky insurrection in Western Pennsylvania. Jay treaty concluded with England. Ratified the next year. Wayne defeats the Indians at Maumee Rapids. 1795. Treaty of the Escurial with Spain. Treaty at Greenville with the Indians north of the Ohio. 1796. Admission of Tennessee. Washington issues his farewell address, September 17. The French Directory issues a decree against American commerce.		1794. Mail boats and passenger boats are established on the Ohio from Wheeling to Limestone (Maysville). Founding of Bowdoin College. 1795. Jacob Perkins patents a machine for cutting and heading nails. 1796. The first permanent type-foundry is established at Philadelphia. The New York Insurance company is incorporated.	1794. Toronto, previously called York, made capital of Upper Canada. Jay Treaty affects Canadian Commerce. 1794-1795. Political disputes in Lower Canada over liquor licenses and fees. 1796. Resignation of Lord Dorchester after a decade of splendid service as Governor-General. Surrender by Great Britain of military posts in United States Northwest Territory.	1794. Toussaint L'Ouverture becomes leader of the Haytian revolt. 1795. Subjugation and deportation of Jamaican Maroons (descendants of runaway slaves dwelling in mountain fastnesses). Etienne Boré founds the sugar industry in Louisiana.
1797. Special session of Congress to consider relations with France. The X. Y. Z. overtures. 1798. Adoption of the Eleventh amendment. Passage of the Alien and Sedition laws. The Virginia and Kentucky Resolutions. The navy department is established. Naval quasi-war with France. 1799. Second set of Kentucky Resolutions. Death of Washington. 1800. The capital is removed from Philadelphia to Washington. Treaty with France abrogates the treaty of alliance of 1778.	**John Adams,** *President.* Thomas Jefferson, *Vice-President.* T. Pickering, John Marshall, *Secretaries of State.* O. Wolcott, Samuel Dexter, *Secretaries of Treasury.* J. McHenry, Samuel Dexter, R. Griswold, *Secretaries of War.* Chas. Lee, *Attorney-General.* Benjamin Stoddert, *Secretary of Navy,*	1797. The first patent for a cast-iron plow is granted Charles Newbold of New Jersey. A financial panic. 1798. "Hail Columbia" is composed by Joseph Hopkinson. First salt manufactory established in Ohio. Merino sheep are introduced from Spain. 1799-1800. The "Great Revival" of evangelical religion. 1800. An act passed to permit the sale of small tracts of public land on credit. India rubber is first imported into the United States. 1800-1825. Beginning of labor organizations.	1797. Beginning of construction of Sault Ste. Marie Canal. 1800-1812. Many Americans and Scotch immigrate into Upper Canada.	1800. Transfer of Louisiana from Spain to France.
1801. John Marshall is appointed Chief Justice. The "party revolution" by which the Republicans displace the Federalists. 1801-1805. War with Tripoli. 1802. Spain withdraws the right of deposit at New Orleans.	**Thomas Jefferson,** *President.* Aaron Burr, *Vice-President.* James Madison, *Secretary of State.* Samuel Dexter, Albert Gallatin, *Secretaries of Treasury.* Henry Dearborn, *Secretary of War.* Levi Lincoln, *Attorney-General.*	1801. New York *Evening Post* is founded by Alexander Hamilton. Beginning of sheet-copper manufacturing at Canton, Mass. 1802. The Du Pont powder works established.		1801. Toussaint L'Ouverture declares Haytian independence and is made president of the "Black Republic" for life. 1802. Toussaint, after capitulation to a French Army, is imprisoned in France, where he dies in 1803. 1802. Dutch recapture British Guiana.

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR—Continued

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress
1803. Louisiana is purchased from France for $15,000,000. Admission of Ohio. Case of Marbury *vs.* Madison is decided. 1804. Adoption of the twelfth amendment. Hamilton killed in a duel by Aaron Burr. 1804-1806. Lewis and Clark expedition. 1805. Failure of the Chase impeachment. 1805-1807. Conspiracy of Aaron Burr. 1806-1808. The European "Continental System" brings distress on American shippers. 1807. The Embargo act passed. Chesapeake-Leopard affair. Congress prohibits foreign slave-trade after January 1, 1808. 1809. The Embargo act is repealed and a non-importation act passed. 1810-1814. The United States takes possession of West Florida. 1811. Battle of Tippecanoe with the Indians. Henry Clay and John C. Calhoun first appear in the House of Representatives. 1812. War declared against Great Britain. Admission of Louisiana.	Benjamin Stoddert, Robert Smith, *Secretaries of Navy.* **Thomas Jefferson,** *Reëlected President.* George Clinton, *Vice-President.* James Madison, *Secretary of State.* Albert Gallatin, *Secretary of Treasury.* Henry Dearborn, *Secretary of War.* Levi Lincoln, Robert Smith, J Breckenridge, C. A. Rodney, *Attorney-Generals.* Robert Smith, J. Crowninshield, *Secretaries of Navy.* **James Madison,** *President.* George Clinton, *Reëlected Vice-Pres.* Robert Smith, James Monroe, *Secretaries of State.* Albert Gallatin, *Secretary of Treasury.* William Eustis, J. Armstrong, *Secretaries of War.* C. A. Rodney, Wm. Pinkney, *Attorney-Generals.* Paul Hamilton, William Jones, *Secretaries of Navy.*	1803. Tobacco is exceeded by cotton as an export crop. South Carolina opens her ports to the foreign slave trade. First shipment of anthracite coal from Lehigh to Philadelphia. Grain-cradle is patented. 1805. Robert Fulton originates the marine torpedo. 1806. Passage of a bill for the construction of the Cumberland Road. Gas for lighting is first used by David Melville, Newport, R. I. 1807. Gallatin's famous report on Roads, Canals, Harbors, and Rivers. Successful trip of Fulton's steamboat, the *Clermont*, from New York to Albany. 1808. American Fur Company founded by J. J. Astor. 1810. Exhibition at Pittsfield, Massachusetts, of Merino sheep; is called the first county fair. Metallic pens first made by Peregrine Williamson of Baltimore. 1811. The first steamboat leaves Pittsburgh for New Orleans via the Ohio and Mississippi Rivers. Wooden shoe pegs invented. Beginning of an era of state banking activity. 1812. First metallic pen factory is established in New York. Invention of stoves built with grates to secure draft.

British North America	Latin America and the West Indies
1803. Slavery made illegal in Lower Canada. 1806. Quarrels in Lower Canada between French and English over taxation system. First French-Canadian newspaper, *La Canadian*, established to lead crusade against English element as alien intruders. 1807. Governor Sir James Craig suppresses *Le Canadian* temporarily. 1807-1812. Struggle between Craig, supported by an English clique, and the French majority in the assembly. 1812-1814. War between United States and Great Britain evokes Canadian loyalty to British Empire. American attempts to invade Canada repulsed.	1803. Great Britain reacquires British Guiana by treaty. France abandons effort to subjugate Hayti. 1804-1806. Dessalines Emperor of Hayti; Massacre of White population. 1806. British Parliament prohibits slave-trading in British ships and the importation of slaves into British colonies. 1806-1811. Christopher President (King 1811-1820) of Hayti. 1808. Royal family of Portugal emigrates to Brazil. 1810. Revolutionary movements begin in Argentina and Chile. 1810-1815. Revolt led by Hidalgo in Mexico unsuccessful. 1811. Paraguay declares independence. Revolution begins in Columbia and Venezuela. 1811-1812. Francisco Miranda, Dictator of Venezuela.

THE WAR OF 1812, 1812-1815

Causes	Results	New England Opposition
Violation of the American flag on the high seas. The blockade of American ports. Impressment of American seamen. The destruction of American commerce by the Orders in Council. Aid given by the British traders to the Indians of the Northwest, thus inciting them to war. The desire on the part of the westerners to get possession of Canada.	Treaty of Ghent, Dec. 24, 1814, provided: For the cessation of hostilities. For the appointment of commissioners to settle boundaries. Restoration of conquests. The war developed a consciousness of nationality. It gained fame for Jackson and Harrison, thus affecting our later political history. It promoted the growth of American manufactures.	Caused by the destruction of New England commerce through the commercial policy of the "Virginia dynasty," the declaration of war being regarded as the culmination of this policy. The Opposition was shown: By the vote of New England Congressmen against the war. By the refusal of New England states to furnish their military quota. By the refusal of their financiers to make loans to the government. By the sale of provisions to the English armies. By the Hartford Convention.

PRINCIPAL LAND BATTLES

1812. Aug. 15, Surrender of Hull to Brock at Detroit.
Oct. 13, defeat of Van Rensselaer by Brock at Queenstown.

1813. April 27, York is taken by Gen. Dearborn and the Parliament House burned.
Oct. 5. Harrison defeats Proctor at Thames, Canada.
Nov. 11, at Chrysler's Farm, near Montreal, the Americans are defeated and driven from Canada.
1814. July 25, Battle of Lundy's Lane, claimed by both sides as a victory.
Aug. 24, capture of Washington and burning of public buildings.
1815. Jan. 8, Battle of New Orleans.

PRINCIPAL NAVAL BATTLES

1812. Aug. 19, The *Constitution* destroys the *Guerriere*.
Oct. 18, the *Wasp* captures the *Frolic*. Both are afterwards captured by the British frigate *Poictiers*.
Oct. 25, the *United States* captures the *Macedonia*.
Dec. 29, the *Constitution* captures the *Java*.
1813. Feb. 24, the *Hornet* captures the *Peacock*.
June 1, the *Chesapeake* is captured by the *Shannon*.
Sept. 10, Commodore Perry with a fleet of nine vessels destroys the British squadron of six vessels on Lake Erie.

1814. Sept. 3, naval attack on Fort McHenry by the British fails.
Sept. 11, Captain Macdonough destroys a British fleet on Lake Champlain, resulting in retreat of British from the U. S.

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress
1812-1815. Algerine War. 1813-1814. War with the Creeks. 1814. The Hartford Convention proposes seven amendments to the Constitution.	**James Madison,** *Reëlected President.* Elbridge Gerry, *Vice-President.* James Monroe, *Secretary of State.* Albert Gallatin, G. W. Campbell,	1814. "First complete factory in the world" established at Waltham, Massachusetts, by Francis Cabot Lowell. Francis Scott Key composes "Star Spangled Banner."

British North America	Latin America and the West Indies
1813. Lord Selkirk plants an agricultural colony on Red River, which survives in spite of litigation and violence by the North-West Company and suffering from cold, hunger and poverty.	1814. Simon Bolivar made revolutionary dictator of Venezuela, but is driven out by royalist army.

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR—Continued

THE UNITED STATES			BRITISH NORTH AMERICA	LATIN AMERICA AND THE WEST INDIES
POLITICAL EVENTS	PRESIDENTS AND CABINET OFFICIALS	SOCIAL AND INDUSTRIAL PROGRESS		
1815. Captain Decatur forces Dey of Algiers to renounce tribute. Treaty of peace with England ratified.	A. J. Dallas, W. H. Crawford, *Secretaries of Treasury.* J. Armstrong, James Monroe (*Acting*).	1815. First ocean steam-boat trip, New York to Norfolk. North American Review begins publication.		1815-1821. Guerrilla warfare in Mexico. 1815. Congress of Vienna unites European powers in prohibition of African slave-trade.
1816. Second Bank of the United States is chartered. Admission of Indiana. American colonization Society formed. It founds Liberia. Increased agitation for internal improvements. First tariff primarily for protection is passed.	A. J. Dallas, W. H. Crawford, *Secretaries of War.* William Pinkney, Richard Rush, *Attorney-Generals.* William Jones, B. W. Crowninshield, *Secretaries of Navy.*	1816. Inception of the "Auburn penal system." Church of the Disciples is formed. The first steamer on Lake Ontario appears. The first savings bank in America is opened at Philadelphia.		
1817. Admission of Mississippi. Congress prohibits foreign vessels engaging in the United States coasting trade. 1817-1818. Seminole war.	**James Monroe,** *Preisdent.* D. D. Thompkins, *Vice-President.*	1817. Ground broken for the construction of Erie Canal. First instruction of deaf mutes in America by T. H. Gallaudet, at Hartford, Connecticut.		1817-1823. Bernardo O'Higgins, Director of the Chilian state.
1818. Fisheries and boundary convention with Great Britain. Admission of Illinois.	John Q. Adams, *Secretary of State.* W. H. Crawford, *Secretary of Treasury.* Isaac Shelby, Geo. Graham,	1818. First steamer on Lake Erie, the "Walk-in-the-Water." Congress grants increased protection to the iron industry.	1818. Agitation in Upper Canada, led by Gourlay, against the reserves of public land for support of Anglican clergy.	1818. Bolivar renews war for Venezuela and Colombian independence.
1819. Admission of Alabama. Florida purchased by the United States. Financial panic. Maine separated from Massachusetts. Dartmouth College case, and case of McCulloch *vs.* Maryland decided by Supreme Court.	John C. Calhoun, *Secretaries of War.* William Wirt, *Attorney-General.* B. W. Crowninshield, S. Thompson, *Secretaries of Navy.*	1819. Combination sail and steamship *Savanah* amde trans-atlantic trip.	1819. In Lower Canada a long deadlock begins between governor and assembly upon financial questions.	1819-1830. Civil war and confusion in Argentina. 1819. Republican of Colombia founded, comprising New Granada, Venezuela and Ecuador.
1820. African slave-trade made piracy. Admission of Maine. Tenure of Office Act passed. The Missouri Compromise adopted.			1820. Gourlay is crushed, but the agitation in Upper Canada is continued by the Bidwells, father and son. Dalhousie College founded at Halifax.	
1821. Case of Cohens *vs.* Virginia decided. The second Missouri Compromise and the admission of Missouri.	**James Monroe,** *Reëlected President.* D. D. Tompkins, *Reëlected Vice-Pres.* John Q. Adams, *Secretary of State.* W. H. Crawford, *Secretary of Treasury.* J. C. Calhoun, *Secretary of War.* William Wirt, *Attorney-General.*	1821. Credit sales of public lands stopped. Statistics of immigration first kept. Daily meeting with regular call of stocks begun on "Change" in New York. First public high school in United States opened in Boston. Publication of Edward Livingston's reformed code of laws for New York.		1821. Independence proclaimed in Peru, Nicaragua, Salvador and Costa Rica. John VI. returns from Brazil to Portugal, leaving his eldest son, Dom Pedro as regent. Iturbide revolution in Mexico. 1821-1830 Blivar president and dictator of Colombia.
1822. The independence of South American republics recognized. Reciprocity treaty with France concluded.	S. Thompason, J. E. Rogers, S. L. Southard, *Secretaries of Navy.*	1822. Gaslight introduced into Boston.	1822. Proposal is made in British House of Commons for a reunion of Upper and Lower Canada. In response to protest from French Canadians the bill is withdrawn.	1822. Braxil declares independence and makes Dom Pedro its Emperor. 1822. Iturbide declared Emperor of Mexico. 1822-1843. Boyer, President of Haytai.
1823. President Monroe states the "Monroe Doctrine" in his annual message to Congress.		1823. Champlain canal, connecting the Hudson at Albany with Lake Champlain, opened.		1823. Revolt led by Santa Anna overthrows Iturbide, who is executed, 1824.
1824. Protective policy greatly extended by an act of Congress. Case of Gibbons *vs.* Ogden decided. Visit of La Fayette to the United States.		1824. Glazed-ground wall-papers are first made. Hemlock tanning factory established in Green County, New York.	1824. Founding of the Canada Co. to promote colonization in the district about Lake Huron. W. L. McKenzie founds the *Colonial Advocate* to attack the administration in Upper Canada. A mob wrecks the printing office, but this increases the influence of the paper. McKenzie is repeatedly expelled from the legislature.	1824. Mexico adopts federal republican constitution. Bolivar establishes Peruvian independence and is made dictator. 1824-1839. Federal republic of Central America. Chronic disorder.
1825. Presidential election is thrown into the House of Representatives and results in the choice of Adams. Treaty of 1824 with Russia regulating navigation and fisheries in the Pacific is ratified. 1825-1831. Dispute with Georgia over Indian land cessions.	**John Q. Adams,** *Presidnet.* J. C. Calhoun, *Vice-President.* Henry Clay, *Secretary of State.* Richard Rush, *Secretary of Treasury.* James Barbour, P. B. Porter, *Secretaries of War.* William Wirt, *Attorney-General.*	1825. Erie canal is completed. Appearance of *The Workingman's Advocate*, the first representative of the labor press in the U. S. Isaac Babbitt of Taunton, Mass., invents babbitt metal.		1825. Portugal recognizes Brazilian independence. Uruguay revolts from Brazil, achieving independence in 1828. Upper Peru separates from Peru, taking name of Bolivia and adopting curious constitution framed by Bolivar.
1826. Death of Thomas Jefferson and John Adams, July 4th.	S. L. Southard, *Secretary of Navy.*	1826. The Quincy tramway, sometimes wrongly called the first railroad in the U. S., is built from Quincy to tidewater, three miles away.		1826. Panama Congress called by Bolivar, with a view to general Latin-American federation. Various treatics are arranged; but the main purpose is defeated by non-participation of Chile and Argentina.
1827. Convention between U. S. and Great Britain to settle northeastern boundary. Anti-Masonry has its rise.		1827. Baltimore and Ohio railroad is chartered. First rail laid July 4, 1828.	1827. French malcontent majority in Lower Canada assembly elect the agitator, Papineau, as speaker. Gov. Lord Dalhousie refuses his sanction on ground of Papineau's unfitness.	

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR—Continued

THE UNITED STATES			BRITISH NORTH AMERICA	LATIN AMERICA AND THE WEST INDIES
POLITICAL EVENTS	PRESIDENTS AND CABINET OFFICIALS	SOCIAL AND INDUSTRIAL PROGRESS		
1828. Tariff of Abominations passed. Publication of Calhoun's "Exposition" in protest.			1828. British Parliament appoints committee of investigation, but its report offers no solution of the Lower Canadian problem. Beginning of demand for responsible government in Upper Canada.	1828. Mexican presidential election produces civil war.
1829. The Postmaster General made a member of the President's Cabinet. Sweeping changes in the civil service.	**Andrew Jackson,** *President.* John C. Calhoun, *Reelected Vice-Pres.* M. Van Buren. Edw. Livingston, *Secretaries of State.*	1829. The steam locomotive is first successfully used. Process of manufacturing galvanized iron is perfected.	1829. Opening of Welland Canal. 1829-1830. Quarrel in Nova Scotia over quit-rents, and popular discontent at the dominion of an oligarchy. Discontent also in New Brunswick, Prince Edward's Island and Cape Breton.	1829. Venezula withdraws from Republic of Colombia. Slavery abolished in Mexico. 1829-1833. Santa Anna dictator in Mexico.
1830. First general pre-emption law passes. West Indian trade is opened to American vessels. The famous Webster-Hayne debate in the U. S. Senate.	S. D. Ingham, Louis McLane, *Secretaries of Treasury.* J. H. Eaton, Lewis Cass, *Secretaries of War.* J. McP. Berrien, R. B. Taney, *Attorney-General.* John Branch, Levi Woodbury, *Secretaries of Navy.* W. T. Barry, *Postmaster-General.*	1830. Organization of the Church of Latter Day Saints (Mormons). Baldwin Locomotive works established in Philadelphia. Chloroform discovered by Samuel Guthrie.	1830-1831. Efforts at conciliation in Lower Canada thwarted by Papineau.	1830. Ecuador separates herself from Colombia.
1831. The Anti-Masonic party holds the first national nominating convention. Rise of the Abolitionists. Garrison publishes the *Liberator.* Treaty with France for the payment of claims.		1831. Wm. Manning patents the first mowing machine. Opening of the first school for the blind. McCormick invents (but does not patent) the first successful reaper.		1831. Upon abdication of Dom Pedro I., his son, Dom Pedro II., becomes Emperor of Brazil.
1832. National Republican party frames the first party platform with Henry Clay as its presidential candidate. Black Hawk War. New tariff law enacted. Nullification in South Carolina. Jackson vetoes the U. S. Bank bill.		1832. The Onio river joined to Lake Erie by the Ohio canal. First street railway in the U. S. commences running in New York. Pork packing industry begins in Chicago.	1832. Opening of Rideau canal.	1832. Residue of Republic of Colombia adopts name of New Granada, with new constitution. Santa Anna elected President of Mexico. Continues, with occasional vicissitudes, to be virtual dictator during remainder of his long life. 1832-1836. Santander, President of New Granada. Interlude of peace.
1833. U. S. bank deposits removed from the National Bank and placed in "pet" banks. Compromise tariff is passed, providing a gradual reduction of duties.	**Andrew Jackson,** *Reelected President.* Martin VanBuren, *Vice-Pres.* Edw. Livingston, Louis McLane, John Forsyth, *Secretaries of State.* Louis McLane, Wm. J. Duane, Roger B. Taney, Levi Woodbury, *Secretaries of Treasury.* Lewis Cass, B. F. Butler, *Secretaries of War.* Roger B. Taney, B. F. Butler, *Attorney-Generals.* Levi Woodbury, M. Dikerson, *Secretaries of Navy.* Wm. T. Barry, Amos Kendall, *Postmaster-Generals.*	1833. Railroad from Charleston, S. C., to Augusta, Ga., completed. The first patent for a successful reaper is granted Obed Hussey of Ohio. Ross Winans builds the first typical American passenger cars.		1833. British Parliament enacts law for emancipation of all slaves in British colonies, to be completed in 4 to 6 years; appropriates £20,000,000 in compensation to owners.
1834. Congress creates the Indian Territory. Resolution of Censure of Jackson passes the Senate. National debt is extinguished. Whig party first takes its name.		1834. McCormick patents an improved reaper. 1834 and 1837. Congressional acts change ratio of gold and silver from 15 to 1 to 16 to 1.	1834. The Ninety-two Resolutions, a French Canadian declaration of rights, claiming exaggerated powers for the provincial legislature.	1834-1839. Confederation of Peru and Bolivia.
1835-1836. Controversy over the dissemination of abolition literature through the U. S. mails. 1835-1842. Second Seminole War.		1835. Morse invents magnetic telegraph. Steam first applied to printing press. J. G. Bennett begins publication of New York *Herald.*	1835. A royal commission investigates but fails to relieve the deadlock by which the governor and assembly of Lower Canada keep each other impotent.	1835. Anglo-American settlers in Texas declare Texas independent of Mexico. 1835-1852. Rosas dictator in Argentina.
1836. Admission of Arkansas. Bill passes Congress for the distribution of the surplus revenue among the states. Jackson issues the "Specie Circular." 1836. Roger B. Taney is made Chief Justice. 1836-1844. J. Q. Adams fights the "gag resolution" excluding anti-slavery petitions from Congress.		1836. Friction match is patented. First American patent for a typewriting machine. Over 20,000,000 acres of public land sold in one year. 1836-1838. Invention of the screw propeller.		1836. Massacre of captives by Mexican troops at Alamo, Texas. Samuel Houston, President of Texan Republic, defeats Mexican army at San Jacinto, and captures Santa Anna.
1837. Admission of Michigan. Formation of the Liberty party. The Caroline Affair. Passage of the "expunging resolution." Great financial panic.	**Martin Van Buren,** *President.* R. M. Johnson, *Vice-President.* John Forsyth, *Secretary of State.* Levi Woodbury, *Secretary of Treasury.* J. R. Poinsett, *Secretary of War.*	1837. Massachusetts State Board of Education is organized with Horace Mann as its first secretary. Invention of the hot-air blast in iron smelting.	1837. French and British factions in Lower Canada take arms. Clash at Montreal, November 6. Insurrection by French on Richelieu river quickly crushed by British army. Insurrection of radicals in Upper Canada, led by McKenzie and M. S. Bidwell, promptly put down by Lieut-Gov. Head.	1836-1848. The New Granada "twelve years" of clerical and oligarchial oppression.

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR—Continued

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1838. "Underground railroad" begins aiding fugitive slaves to escape from the South. 1838-1839. "Aroostook War" between Maine and New Brunswick.	B. F. Butler, Felix Grundy, Henry D. Gilpin, *Attorney-Generals.* M. Dickerson, J. K. Paulding, *Secretaries of Navy.* Amos Kendall, John M. Niles, *Postmaster-Generals.*	1838. First shipment of grain from Chicago. *Great Western* and *Sirius* cross the Atlantic.	1838, May. Earl of Durham, a liberal imperialist, appointed governor. Proclaims amnesty and investigates conditions in both Canadas. Resigns in November to present his views in the British Parliament.	1838. Revolt of Carrera in Guatemala overthrows Central American Union. Emancipation of slaves completed in British colonies, Jamaica, Barbadoes, Bahama, Bermuda, Guiana, etc. 1838-1841. Mirabeau B. Lamar, President of Texas.
1839-1847. "Anti-Rent" agitation in New York.		1839. Vulcanized rubber patented by Goodyear. J. W. Draper takes the first photograph from life.	1839. Lord Durham's famous report, advising reunion of two Canadas into single province to overcome French majority in Lower Canada and advocating responsible government. With consent of legislatures of both Canadas, Parliament passes Union Act on the Durham plan. Upper and Lower Canada, in spite of latter's much larger population, given equal representation in Union Legislature.	1839-1841. War between Peru and Chile.
1840. Passage of Sub-Treasury bill.		1840. Van Buren introduces the ten-hour system into the public establishments. Adams Express Company begins operation between New York and Boston.	1840-1847. In Nova Scotia agitation, led by Joseph Howe, for responsible government. Similar movement in New Brunswick.	
1841. The Sub-Treasury act repealed. Death of President Harrison, April 4. 1841-1842. Quarrel between President Tyler and the Whigs. Friction with England over the McLeod affair. 1842. Decision in case of Prigg *vs.* Pennsylvania renders ineffective the old fugitive slave law. A new tariff act raises the existing rates. Webster-Ashburton treaty with England. Dorr's rebellion in Rhode Island. 1842-1848. Fremont's explorations of the West.	**Wm. H. Harrison,** *President.* John Tyler, *Vice-President.* (Harrison dies April 4, 1841, and is succeeded by **Tyler**). Daniel Webster, H. S. Legaré, A. P. Upshur, J. C. Calhoun, *Secretaries of State.* Thos. Ewing, Walter Forward, J. C. Spencer, Geo. M. Bibb, *Secretaries of Treasury.* John Bell, John McLean, John C. Spencer, Jas. M. Porter, Wm. Wilkins, *Secretaries of War.* J. J. Crittenden, H. S. Legaré, John Nelson, *Attorney-Generals.* Geo. E. Badger, A. P. Upshur, David Henshaw, T. W. Gilmer, John Y. Mason, *Secretaries of Navy.* Francis Granger, C. A. Wickliffe, *Postmaster-Generals.*	1841. Dorothy Dix begins her forty years' crusade for the better treatment of the insane. Horace Greeley establishes the New York *Tribune*. First steam fire-engine built and used in New York. 1842. Buffalo connected with the East by railway. Nasmyth steam-hammer invented. First factory for pocket knives established in Connecticut. First use of anaesthesia in a surgical operation by Dr. Crawford W. Long, of Athens, Ga., who failed to announce his discovery. 1843. The manufacture of manila paper is begun in Boston. 1844. Manufacture of iron rails in this country begins. First successful use of the telegraph. Independent discoveries of anaesthesia claimed to have been made by W. T. G. Norton, C. T. Jackson and Horace Wells, New England dentists.	1841. First parliament of the United Canadas opens, June 14. 1842. Webster-Ashburton treaty adjusts boundary between Maine and New Brunswick. 1843. Opening of McGill University (chartered 1821) at Montreal. Opening of King's College at Toronto; renamed the University of Toronto, 1850. 1843-1845. Quarrel between Gov. Metcalf and Canadian Ministry, controlled by the French, over governor's prerogative.	1841-1845. Samuel Houston again President of Texas. 1842. Second federation of Central America established; had little success. 1843. Eastern (Spanish) port of Island of Hayti, taking name Dominican Republic, separates from Haytian Republic; former dominated by negroes, latter by mulattoes.
1844. First treaty with China secures commercial rights for U. S. Treaty for the annexation of Texas rejected by the Senate.				
1845. Admission of Florida. Annexation of Texas by joint resolution and admission of Texas as a state. 1845-1846. The Slidell mission to Mexico. U. S. Naval Academy established at Annapolis.	**Jas. K. Polk,** *President.* Geo. M. Dallas, *Vice-President.* Jas. Buchanan, *Secretary of State.* R. J. Walker, *Secretary of Treasury.* Wm. L. Marcy, *Secretary of War.*	1845. Petroleum discovered near Pittsburg. Separation of Southern from Northern Methodist and Baptist churches, resulting from quarrels over slavery. Invention of a leather rolling machine used in shoe-making.		
1846. Oregon Treaty with Great Britain. Admission of Iowa. The Walker tariff reduces rates. Independent treasury reëstablished.	John Y. Mason, Nathan Clifford, Isaac Toucey, *Attorney-Generals.* Geo. Bancroft, J. Y. Mason, *Secretaries of Navy.*	1846. The sewing machine is invented by Elias Howe. Anaesthesia begins to enter general use. First slate quarry in Vermont is opened.		1846. Treaty between New Granada and U. S., giving U. S. right of way across Isthmus of Panama.
1846-1848. War between Mexico and the U. S.	Cave Johnson, *Postmaster-General.*	1846-1848. Great wave of immigration from Ireland.		

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR—Continued

THE MEXICAN WAR

PRINCIPAL BATTLES

The Americans were victorious in every conflict.

Place of Battle	Dates	Commanders		Engaged	
		American	Mexican	Amer.	Mexican
Bracite.	Dec. 25, 1846	Doniphan.	Ponce de Leon.	500	1200
Buena Vista.	Feb. 23, 1847	Taylor.	Santa Anna	4700	17000
Cerro Gordo.	April 18, 1847	Scott.	Santa Anna.	8500	12000
Chapultepec.	Sept. 13, 1847	Scott.	Santa Anna.	7200	25000
Contreras.	Aug. 20, 1847	Scott.	Valencia.	4000	7000
Churubusco.	Aug. 20, 1847	Scott.	Santa Anna.	8000	25000
Huamantla.	Oct. 9, 1847	Lane.	Santa Anna.	500	1000
Mexico.	Sept. 14, 1847	Scott.	Santa Anna.	6000	.....
Molino del Rey.	Sept. 8, 1847	Worth.	Alvarez.	3500	14000
Monterey.	Sept. 24, 1846	Taylor.	Ampudia.	6600	10000
Palo Alto.	May 8, 1846	Taylor.	Arista.	2300	6000
Resaca de la Palma.	May 9, 1846	Taylor.	Arista.	2000	5000
Sacramento.	Feb. 28, 1847	Doniphan.	Trias.	900	4000
Vera Cruz.	Mar. 27, 1847	Scott.	Landero.	12000	6000

The only naval engagements of importance during the war with Mexico were the bombardment of Vera Cruz, by Commodore Conner, which lasted four days, and the bombardment of Monterey, Commodore Sloat, both cities being forced to surrender.

Causes of the War

Long-standing irritation over claims of American citizens upon Mexico, which the latter refused to pay.
The annexation by the U. S. of Texas which Mexico claimed as still a part of her territory.
Disputes as to whether the Rio Grande or Nueces River was the boundary of Texas.

Results of the War

The Treaty of Guadalupe Hidalgo.
a. The Rio Grande was made the boundary between Texas and Mexico.
b. California and New Mexico were ceded to the United States.
c. The United States paid Mexico $15,000,000, and assumed $3,500,000 due American citizens.
It intensified the slavery question in American politics.

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress
1846-1847. Attempt to pass the Wilmot Proviso fails.		1847. Richard M. Hoe invents the rotary printing press. Use of adhesive postage stamps authorized.
1848. Organization of the Free-Soil party. Admission of Wisconsin. Organization of Oregon without slavery.		1848. The Associated Press first organized. First school for the feeble-minded opened. Discovery of gold in California.
1849. Creation of the Department of Interior. California applies for statehood. Angry debates in Congress over the status of California, New Mexico and Utah, the Texas boundary, fugitive slave rendition, the inter-state slave trade, and slavery and the slave trade in the District of Columbia.	**Zachary Taylor,** *President.* Millard Fillmore, *Vice-President.* John M. Clayton, *Secretary of State.* Wm. M. Meredith, *Secretary of Treasury.* Geo. W. Crawford. *Secretary of War.* R. Johnson, *Attorney-General.* Wm. B. Preston, *Secretary of Navy.* Jacob Collamer, *Postmaster-General.* Thomas Ewing, *Secretary of Interior.*	1849. Rush of gold-seekers to California.
1850. "Compromise of 1850" admits California and adjusts other slavery questions. Death of Calhoun. Nashville Convention to consider Southern situation and policies. The Hulsemann letter. Clayton-Bulwer treaty with Great Britain ratified. Death of President Taylor. 1850-1856. Passage of Personal Library laws in Northern states. 1851-1852. Visit of Louis Kossuth to the United States. "Finality Resolutions" adopted by Congress.	(Death of President Taylor July 9, 1850. **Fillmore** becomes *President.*) Daniel Webster, Edw. Everett, *Secretaries of State.* Thos. Corwin, *Secretary of Treasury.* Chas. M. Conrad, *Secretary of War.* J. J. Crittenden, *Attorney-General.* Wm. A. Graham, J. P. Kennedy, *Secretaries of Navy.*	1850. First national labor organization, that of the printers, formed. Government grant of land to the Illinois Central Railroad, inaugurating a new plan for stimulating railroad building. First census of manufactures made by federal government.
1852. Death of Clay and Webster.	Nathan K. Hall, S. D. Hubbard, *Postmaster-Generals.* A. H. H. Stuart, *Secretary of Interior.*	1850-1860. Period of railroad consolidation. 1851. H. J. Raymond founds the New York *Times*. The B. and O. railroad reaches the Ohio. Western Union Telegraph Company established. Hudson River railroad reaches Albany. 1852. Publication of "Uncle Tom's Cabin."
1853. The Gadsden Purchase from Mexico.	**Franklin Pierce,** *President.* Rufus King, *Vice-President.*	1853. N. Y. clearing house established. Chicago is reached by rail.
1854. Commodore Perry secures favorable commercial treaty from Japan. Native American party (the "Know-Nothings") becomes prominent. Black Warrior affair. Ostend manifesto. Kansas-Nebraska Act. Organization of the Republican party.	Wm. L. Marcy, *Secretary of State.* James Guthrie, *Secretary of Treasury.* Jefferson Davis, *Secretary of War.* Caleb Cushing, *Attorney-General.* J. C. Dobbin, *Secretary of Navy.* Jas. Campbell, *Postmaster-General.* R. McClelland, *Secretary of Interior.*	1854. The Mississippi river is reached by rail from the East. Hotel elevator patented by Otis. First marble soda fountain erected in Boston.
1855. Troubles in Kansas. First Agricultural college in U. S. opened at Cleveland, Ohio.		1855. St. Louis is reached by rail. Bessemer process patented.

British North America	Latin America and the West Indies
1847-1854. Earl of Elgin, governor of Canada, pursues policy of pacification. Industrial depression resulting from British free-trade legislation.	1847. Faustin Soulouque, a negro, elected President of Hayti. Third Central American federation established. 1848. Peace between Mexico and U. S.
1849. Rebellion Losses Bill, to pay both loyal and disloyal for property destroyed in rebellion of 1837, passed by Canadian legislature and approved by Elgin on ground of popular demand. In protest rioters burn the Parliament House at Montreal. University of Toronto founded.	1849. Soulouque proclaimed Emperor of Hayti; establishes a grotesque imperial court. Liberal success in New Granada; Jesuits expelled. War of Central American Federation against Guatemala. Confederation defeated and virtually destroyed. 1850. Cuba invaded by American filibusters under Lopez. African slave-trade abolished in Brazil.
1851. Renewed agitation over clergy reserves. Parties split into factions.	1851. Second filibustering expedition against Cuba; Lopez captured and shot.
	1853. Republican constitution framed for Argentine Confederation; civil war prevents its use until 1862.
1854. Led by John A. McDonald, Conservatives of Upper Canada fuse with Liberals (French) of Lower Canada, establishing an effective ministry which settles the clergy reserves question, abolishes seigniorial tenure, and makes a reciprocity traty with U. S.	1854. Castilla revolution in Peru; slavery abolished. Gradual abolition of slavery, initiated by law of 1821, completed in New Granada, Venezuela and Ecuador.
	1855. Completion of railroad across Isthmus of Panama. William Walker, filibuster from U. S., invades Nicaragua.

V. FROM THE ADOPTION OF THE CONSTITUTION TO THE CIVIL WAR—Continued

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1856. First Republican national convention. Assault of Brooks upon Sumner. Civil strife in Kansas.		1856. First bridge across the Mississippi built at Rock Island, Illinois. University of Iowa admits women to various departments.	1856. Legislature for Vancouver Island established. Gold discovered on Fraser river, British Columbia.	1856-1857. Walker, president of Nicaragua; driven out in 1857 but returns for another attempt at end of year.
1857. The Dred Scott Decision. Mormon rebellion in Utah. Great financial panic.	**James Buchanan,** *President.* J. C. Breckenridge, *Vice-President.* Lewis Cass, J. S. Black, *Secretaries of State.*	1857. Attempt to lay first telegraphic cable across the Atlantic fails. New York organizes a system of metropolitan police.	1857. Ottawa selected as capital of Canada. Confusion in politics; ministries feeble and short-lived.	1857. Mexico adopts a new constitution. 1857-1863. Civil war in New Granada; victory of revolutionists under Mosquera.
1858. Lincoln-Douglas debates in Illinois. Admission of Minnesota. Second treaty with China ratified.	Howell Cobb, P. F. Thomas, John A. Dix, *Secretaries of Treasury.* John B. Floyd, Joseph Holt, *Secretaries of War.* J. S. Black, E. M. Stanton, *Attorney-Generals.*	1858. Second attempt to lay cable successful temporarily. First transatlantic message. Gold discovered near Pike's Peak. 1858-1861. Division of Presbyterian church over slavery.	1858. Canadian delegation visits England to ask for changes in system of government. Governor is appointed for British Columbia, but no legislature provided.	1858. Soulouque dethroned, Haytian Republic reëstablished; regime of chronic disorder ensues.
1859. Admission of Oregon. John Brown's raid on Harper's Ferry.	Isaac Toucey, *Secretary of Navy.* A. V. Brown, J. Holt, H. King, *Postmaster-Generals.*	1859. First petroleum well dug. Photolithography for maps in colors introduced.	1859. Convention of reformers at Toronto demands separation of Upper from Lower Canada in matters of local government.	
1860. Democratic Party splits asunder on slavery question. Constitutional Union party formed. Lincoln elected over Breckenridge, Bell and Douglas. South Carolina secedes, Dec. 20.	Jacob Thompson, *Secretary of Interior.*	1860. Salt first attains commercial importance in Michigan. Oil fever in the Allegheny river valley.	1860-1864. George Brown urges a federation of all British North American provinces.	1860. William Walker, on a filibustering expedition against Honduras, is captured and shot.

VI. PERIOD OF THE CIVIL WAR AND RECONSTRUCTION, 1861-1876

THE CIVIL WAR, 1861-1865

Causes	Executive of the Confederacy	The Southern Confederacy	Campaigns and Battles (See American Battles for further details)
The underlying causes of the war were: (a) Conflict between the doctrines of state sovereignty and nationalism. (b) Sectional antagonism over numerous issues concerning negro slavery. The immediate cause was the secession of southern states. The reasons for secession, as given by southern leaders, were: (a) Northern hatred of slavery and slander of slaveholders; the political campaign against the slave holding interest, and the endorsement of such exploits as the John Brown raid. (b) The misinterpretation of the Constitution by the North in its refusal to admit the doctrine of state sovereignty, the repudiation of the Dred Scott Decision, and the enactment by Northern states of "personal liberty laws." (c) The sectional election of Lincoln. The purpose of the North was to maintain the supremacy of the federal government under the Constitution and to preserve the Union. The purpose of the South was to set up an independent slave-holding Confederacy.	**Jefferson Davis,** *President.* A. H. Stephens, *Vice-President.* Robt. Toombs, R. M. T. Hunter, Judah P. Benjamin, *Secretaries of State.* C. G. Memminger, G. A. Trenholm, *Secretaries of Treasury.* L. P. Walker, Judah P. Benjamin, G. W. Randolph, Jas. A. Seddon, J. C. Breckenridge, *Secretaries of War.* S. R. Mallory, *Secretary of Navy.* J. P. Benjamin, Thos. Bragg, Thos. H. Watts, George Davis, *Attorney-Generals.* John H. Reagan, *Postmaster-General.*	The Confederacy comprised the states of Va., N. C., S. C., Ga., Fla., Tenn., Ala., Miss., Ark., La. and Tex. 1861. Feb. 4. Convention of seceded states at Montgomery, Ala., which established a provisional government and framed a constitution. May 13. Recognition of the belligerency of the Confederacy by England, followed by other nations. April-June. Provision made by the Confederate Congress for establishing a larger army and floating loans. 1862. Feb. 22. Permanent constitution goes into effect. Military conscription act. Beginning of huge issues of bonds and paper money. 1863. Provision for seizure of food supplies at rates fixed by Confederate commissioners. 1864. Drastic military conscription act. Controversies of President Davis with Vice-President Stephens, Governor Vance of N. C. and Governor Brown of Ga. 1865. April. The Confederacy collapses. May 11. Davis is captured.	(Note: "F" indicates Federal victory, "C" Confederate, and "Ind." Indecisive.) 1861. April 13-14, bombardment of Fort Sumter (C). July 21, first battle of Bull Run (C). Aug. 10, battle of Wilson Creek (C). 1862. **In the East:** March 9, naval battle of the *Monitor* and *Merrimac* (Ind.) May-July, the Peninsular Campaign (C). Lee's first invasion of the North, resulting in the capture of Harper's Ferry, Sept. 15 (C), and the battle of Antietam, Sept. 17 (F). **In the West:** Feb.-April, Grant's West Tennessee campaign (F). April 25, capture of New Orleans (F). Dec. 31-Jan. 2, battle of Murfreesboro (F). 1863. **In the East:** May 2 and 3, battle of Chancellorsville (C). June-July, Lee's second invasion of the North. Gettysburg, July 1-3 (F). **In the West:** July, opening of the Mississippi by the capture of Vicksburg, July 4 (F), and Port Hudson, July 9 (F). Sept. 19-20, battle of Chickamauga (C). November, Chattanooga campaign (F). 1864. **In the East:** May 5-7, battles of the Wilderness (Ind.); this was the beginning of Grant's campaign for Richmond. June 19, naval battle of the *Alabama* and *Kearsarge* off the coast of France (F). Oct. 19, battle of Cedar Creek (F). **In the West:** May-Sept., Sherman's campaign before Atlanta (F). Aug. 5, battle of Mobile Bay (F). Nov. Dec., Sherman's march to the sea. Dec. 15-16, battle of Nashville (F). 1865. **In the East:** End of the Richmond campaign by the surrender of Lee at Appomatox Court House, Virginia, Aptil 9 (F). April 26, surrender of Johnston (F). **In the West:** May 4, surrender of Gen. Taylor (F). May 26, surrender of all the remaining Confederate troops west of the Mississippi by Gen. Kirby Smith, adn end of the war.

Results

The Union was preserved.
Slavery was abolished.
Secession as a working program was shown to be impracticable.
The war cost the lives of nearly one million able-bodied men.
The national debt was increased to $2,750,000,000.
An incalculable amount of property was destroyed.

VI. PERIOD OF THE CIVIL WAR AND RECONSTRUCTION, 1861-1876—Continued

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1861. Admission of Kansas. Peace convention at Washington fails. Morrill high tariff bill enacted. Trouble with England over the *Trent* affair. Southern states form a confederacy.	**Abraham Lincoln,** *President.* Hannibal Hamlin, *Vice-President.* Wm. H. Seward, *Secretary of State.* Salmon P. Chase, W. P. Fessenden, *Secretaries of Treasury.* Simon Cameron, E. M. Stanton, *Secretaries of War.* Edward Bates, James Speed, *Attorney-Generals.* Gideon Welles, *Secretary of Navy.* M. Blair, Wm. Dennison, *Postmaster-Generals.* Caleb B. Smith, John P. Usher, *Secretaries of Interior.*	1861. McKay invention for sewing soles on uppers. Invention of the stereotyping process and its adoption by New York papers. First message sent over transcontinental telegraph line.	1861. Nova Scotia legislature asks for a general federation.	1861-1864. Hayti temporarily subject to Spain.
1862. Slavery abolished in the District of Columbia. Legal tender notes, "greenbacks," issued. Slavery abolished in the territories. Preliminary proclamation of emancipation, Sept. 22. Treaty with Great Britain for the suppression of the slave-trade.		1862. Passage of the Morrill Act to found agricultural colleges. Passage of the Homestead Act. Union Pacific railroad chartered. Chicago becomes the recognized center of the packing industry.		1862. Napoleon III. plans to erect Mexican Empire for Archduke Maxmilian.
1863. Proclamation of Emancipation, Jan. 1. Draft riots in New York. Admission of West Virginia. National banking act passed.		1863. Organization of the Brotherhood of Locomotive Engineers. Delivery of mail by carriers begins.		1863. New Granada renames itself the United States of Colombia and adopts a federal constitution, comprising eight states including Panama. Mexico occupied by French army under Bazaine.
1864. Fugitive Slave act (of 1850) repealed. Admission of Nevada. Very high tariff act. Grade of vice-admiral in the navy provided.		1864. Postal money orders first issued. First sleeping-car is built. Northern Pacific railroad chartered.	1864. June. Canadian ministry is forced by Brown to endorse federation. Oct. 10 to 28. Delegates from Canada, Nova Scotia, New Brunswick and Prince Edward Island meet at Quebec and adopt 72 resolutions presenting a plan for federation.	1864. Maximilian crowned Emperor of Mexico.
1865. Thirteenth amendment ratified. President Lincoln shot at Ford's theatre Washington, April 14th; dies next day. General amnesty is proclaimed, following the end of the war.	**Abraham Lincoln,** *Reëlected President.* Andrew Johnson, *Vice-President.* (On death of Lincoln **Johnson** becomes president and keeps Lincoln's cabinet.) Wm. H. Seward, *Secretary of State.* Hugh McCulloch, *Secretary of Treasury.* E. M. Stanton, U. S. Grant, L. Thomas, J. M. Schofield, *Secretaries of War.* James Speed, Henry Stanberry, Wm. M. Evarts, *Attorney-Generals.* Gideon Welles, *Secretary of Navy.* Wm. Dennison, A. W. Randall, *Postmaster-Generals.* John P. Usher, James Harlan, O. H. Browning, *Secretaries of Interior.*	1865. First organization of the Standard Oil Company.	1865. Canadian legislature endorses Union Resolutions.	1865. Insurrection in Jamaica led by Gordon, a mulatto, quickly suppressed by Gov. Eyre. U. S. protests against French interference in Mexico.
1866. Civil rights bill passed over the president's veto. Organization of the Ku-Klux-Klan. Fenian raid into Canada.		1866. Formation of the National Labor Union. First permanently successful cable laid. Salmon-canning on the Columbia river begins. Massachusetts passes an eight-hour law for children.	1866. Union Resolutions endorsed by Nova Scotia and New Brunswick, rejected in Prince Edward Island and Newfoundland. Reciprocity treaty with U. S. expires; not renewed. Fenian raid from U. S. into Canada fruitless. Vancouver and British Columbia united by Imperial Act.	1865-1870. Brazil and Argentina in alliance at war with Paraguay.
1867. Plan of military reconstruction of the South adopted by Congress. Admission of Nebraska. Purchase of Alaska from Russia. Passage of the Tenure of Office act Organization of the Grangers.		1867. Introduction of the Bessemer process in making steel. Beginning of the manufacture of steel rails in the U. S. Ground wood-pulp first used for making paper.	1867. Canadian Union Act passed by Imperial Parliament, approved Mch. 28, providing federation of all British North American provinces ratifying. Created central government of a royally appointed Governor-General, a Senate of 78 appointed life members, a House of Commons of elected members apportioned to population, and a Cabinet responsible to the House of Commons. Term of House five years maximum, and subject to dissolution by Gov.-Gen. Each province to have a Lieut.-Gov., a legislature and a responsible ministry. Upper Canada, renamed Ontario, separated from Lower Canada, renamed Quebec. Specified local powers assigned to provincial governments; general and residuary powers entrusted to Dominion Parliament. 1867-1868. Lord Monck, Gov.-Gen. 1867-1873. Sir John A. McDonald, Dominion Premier.	1867. French troops withdraws from Mexico. Native forces overthrow Maximilian's government and put him to death. Republic reëstablished.
1868. President Johnson impeached, tried and acquitted. Six southern states readmitted to representation in Congress. Fourteenth amendment ratified. Burlingame treaty with China signed. 1868-1874. "Carpet-bag" rule in the South.		1868. Westinghouse airbrake first successfully applied. First Siemens-Martin open-hearth furnace built. Founding of Cornell University.	1868-1872. Sir John Young, afterward Lord Lisgar, Gov.-Gen.	1868-1878. Cespedes insurrection in Cuba.
1869. Attempt to annex Santo Domingo. Organization of National Prohibition Party. Disbandment of the Ku-Klux-Klan. Decision in the case of Texas *vs.* White. Soldiers' monument at Gettysburg dedicated. Woman suffrage, upon equal terms with men, established in Wyoming.	**U. S. Grant,** *President.* Schuyler Colfax, *Vice-President.* E. B. Washburne, Hamilton Fish, *Secretaries of State.* Geo. S. Boutwell, *Secretary of Treasury.* J. A. Rawlins, W. W. Belknap, *Secretaries of War.*	1869. Passage of eight-hour law for federal employees. First provision made for bureau of statistics of labor. Formation of the Knights of Labor. Institution of the "Elmira penal system." Invention of the refrigerator car. First transcontinental railroad completed.	1869. Dominion purchases the vast territory of the Hudson Bay Co. 1869-1870. Rebellion of half-breeds led by Louis Riel in Red river valley; crushed by troops under Col. (afterward Lord) Wolseley.	1869. Negotiations by President Grant for acquisition of Santo Domingo by U. S.; project failed of support in U. S. Senate.

VI. PERIOD OF THE CIVIL WAR AND RECONSTRUCTION, 1861-1876—Continued

THE UNITED STATES			BRITISH NORTH AMERICA	LATIN AMERICA AND THE WEST INDIES
POLITICAL EVENTS	PRESIDENTS AND CABINET OFFICIALS	SOCIAL AND INDUSTRIAL PROGRESS		
1870. Fifteenth amendment ratified. 1870-1872. Organization of the Liberal Republican party.	E. R. Hoar, A. T. Akerman, G. H. Williams, *Attorney-Generals.* A. E. Borie, G. M. Robeson, *Secretaries of Navy.*	1870. Opening at Boston of first kindergarten in the U. S. Steel rails first used on railroads. 1870-1871. First war correspondence by cable appears in the New York *Tribune*.	1870. Manitoba enters Dominion as a province. 1870-1871. Fisheries dispute with U. S. adjusted by treaty of Washington, 1871, which also refers western boundary dispute to arbitration.	
1871. First Civil Service Reform bill enacted. Legal Tender act is decided to be constitutional. "Tweed Ring" in New York is exposed. Treaty of Washington with Great Britain.	J. A. J. Creswell, *Postmaster-General.* J. D. Cox, C. Delano, *Secretaries of Interior.*	1871. Hoe perfecting press completed. Texas Pacific railroad incorporated.		1871. Brazil provides for gradual abolition of slavery.
1872. Act for removing political disabilities passes Congress. Geneva award of $15,000,000 to U. S. Modoc Indian war in California. First nominating convention of the Prohibition party held.		1872. Invention of duplex telegraphy. Import duties on tea and coffee abolished. Water-gas process patented by Lowe. Bonanza mines on the Comstock lode discovered.	1872. Dominion Parliament offers subsidy to promote building of Canadian Pacific R. R. Rival companies contend for the grant. Scandals investigated, 1873. 1872-1878. Earl of Dufferin, Gov.-Gen.	
1873. Crédit Mobilier investigation by Congress. One-cent postal cards issued. The demonetization of silver. "Salary Grab" act. The *Virginius* affair.	**U. S. Grant,** *Reelected President.* Henry Wilson, *Vice-President.* Hamilton Fish, *Secretary of State.*	1873. Great financial panic throughout the country. The Westinghouse automatic air-brake is introduced.	1873. Prince Edward Island enters Dominion. 1873-1878. Alexander McKenzie, Premier, with Liberal ministry.	1873. Slavery abolished in Porto Rico.
1874. Organization of the Greenback party. Democrats control the House of Representatives for first time since 1856.	W. A. Richardson, B. H. Bristow, Lot M. Morrill, *Secretaries of Treasury.* Wm. W. Belknap, Alphonso Taft, J. D. Cameron, *Secretaries of War.*	1874. The Eads bridge across the Mississippi at St. Louis completed. First trunk pipe-line from oil regions to Pittsburg. Barbed-wire manufacture begins.	1874. Dominion Parliament votes to construct Canadian Pacific by public contracts. Friction between Dominion government and British Columbia, relieved by mediation of Dufferin, 1876.	1874. Religious orders suppressed in Mexico.
1875. Exposure of the Whisky ring. Act authorizing the resumption of specie payments.	G. H. Williams, Edw. Pierrepont, Alphonso Taft, *Attorney-Generals.*	1875. Hoosac tunnel is completed. Founding of Smith and Vassar colleges for women.	1875. Dominion Court of Appeals (Supreme Court) established. Mounted police organized in western territories.	1876. Venezuela repudiates Papal authority.
1876. Sioux War. Massacre of Custer's troops by Sitting Bull. Admission of Colorado. Great corruption found in War Department. Formation of the National Greenback party.	G. M. Robeson, *Secretary of Navy.* J. A. J. Creswell, J. W. Marshall, M. Jewell, J. N. Tyner, *Postmaster-Generals.* C. Delano, Zach. Chandler, *Secretaries of Interior.*	1876. Export of dressed beef begins. Great centennial exposition at Philadelphia. Bell secures his first patent for the telephone. Founding of Johns Hopkins University.		

VII. PERIOD OF ECONOMIC DEVELOPMENT, 1877-1896

THE UNITED STATES			BRITISH NORTH AMERICA	LATIN AMERICA AND THE WEST INDIES
POLITICAL EVENTS	PRESIDENTS AND CABINET OFFICIALS	SOCIAL AND INDUSTRIAL PROGRESS		
1877. The Electoral Commission decides the contested election in favor of Hayes. Withdrawal of troops from the South. "Molly Maguires" hanged in Pennsylvania. War with the Nez Perce Indians.	**R. B. Hayes,** *President.* W. A. Wheeler, *Vice-President.* Wm. M. Evarts, *Secretary of State.* John Sherman, *Secretary of Treasury.*	1877. Bell's improved telephone put into general use. Great railroad strike at Pittsburg. Col. A. A. Pope has the first bicycle built in this country. Goodyear welt machine brought into use.		1877. Porfirio Diaz leads a Mexican revolution and becomes President; term expires 1880.
1878. Bland-Allison silver bill passed over the President's veto.	G. W. McCrary, Alex Ramsey, *Secretaries of War.* Charles Devens, *Attorney-General.*	1878. Introduction of the probation system for criminal offenders. Introduction of incandescent lights.	1878. Election endorses Conservative "national policy" of protective tariffs. 1878-1883. Marquis of Lorne, Gov.-Gen.	1878. Argentine and Paraguay boundary arbitrated.
1879. United States government resumes specie payment. Women permitted to practice before United States courts.	R. W. Thompson, Nathan Goff, Jr., *Secretaries of Navy.* D. M. Key, H. Maynard, *Postmaster-Generals.*	1879. French Atlantic cable laid. Steamboat traffic on the Mississippi reaches maximum. Organization of First Christian Scientist Church.	1878-1891. Sir John A. McDonald, Premier, with Conservative ministry.	1879-1884. Chile makes war on Peru to acquire region of nitrate deposits. Chile victorious, Peru exhausted.
1880. National Civil Service league formed. The Kearney agitation in California.	Carl Schurz, *Secretary of Interior.*	1880. Edison builds the first electric railroad at Menlo Park. U. S. takes first rank among the nations in agricultural products. 1880-1890. Decade of great railroad building.	1880-1881. Commission investigates Canadian Pacific R. R., and censures system of public contracts.	1880-1884. Gonzalez, a lieutenant of Diaz, President of Mexico.
1881. President Garfield is shot by Charles J. Guiteau, July 2; dies September 20.	**J. A. Garfield,** *President.* C. A. Arthur, *Vice-President.*	1881. Organization of the American Federation of Labor. International Cotton Exposition at Atlanta, Georgia.		1881. Treaty between Chile and Argentina divides Patagonia between them.
1881-1884. Lieutenant Greeley's Arctic explorations.	J. G. Blaine, *Secretary of State.* Wm. Windom, *Secretary of Treasury.*		1881. Contract made with new Canadian Pacific R. R. Co. for completion and operation of the transcontinental road. Company receives heavy subsidies for construction.	
1882. Congress passes act to exclude Chinese laborers for ten years. Edwards law for the suppression of polygamy. "Star Route" trials begin. Apache Indian War.	R. T. Lincoln, *Secretary of War.* Wayne MacVeagh, *Attorney-General.*	1882. Reorganization of the Standard Oil Company as a trust. Tolls abolished on the Erie Canal. District school system abolished by Massachusetts.		
1883. Pendleton Civil Service Act passed. Tariff lowers slightly the average rate of duties.	W. H. Hunt, *Secretary of Navy.* T. L. James, *Postmaster-General.* S. J. Kirkwood, *Secretary of Interior.*	1883. Brooklyn suspension bridge opened. First canneries for Alaska salmon established. Northern Pacific railroad completed.	1883-1888. Marquis of Lansdowne, Gov.-Gen.	

VII. PERIOD OF ECONOMIC DEVELOPMENT, 1877-1896—Continued

THE UNITED STATES			BRITISH NORTH AMERICA	LATIN AMERICA AND THE WEST INDIES
POLITICAL EVENTS	PRESIDENTS AND CABINET OFFICIALS	SOCIAL AND INDUSTRIAL PROGRESS		
1884. Creation by Congress of the Bureau of Labor in the Department of the Interior.	**C. A. Arthur,** *President.* J. G. Blaine, F. T. Frelinghuysen, *Secretaries of State.* Wm. Windom, C. J. Folger, W. Q. Gresham, Hugh McCulloch, *Secretaries of Treasury.* R. T. Lincoln, *Secretary of War.* Wayne MacVeagh, B. H. Brewster, *Attorney-Generals.* W. H. Hunt, W. E. Chandler, *Secretaries of Navy.* T. L. James, T. O. Howe, W. Q. Gresham, Frank Hatton, *Postmaster-Generals.* S. J. Kirkwood, H. M. Teller, *Secretaries of Interior.*	1884. Great floods in the Ohio Valley. Telephone wires first put underground.		1884-1911. Diaz, president of Mexico.
1885. Apache war in New Mexico.	**Grover Cleveland,** *President.* T. A. Hendricks, *Vice-President.*	1885. International exposition at New Orleans. Long-distance telephone introduced.	1885. Canadian Pacific R. R. completed.	
1886. Repeal of the Tenure of Office Act of 1867. Passage of the Presidential Succession law. Silver certificates authorized.	T. F. Bayard, *Secretary of State.* Daniel Manning, C. S. Fairchild, *Secretaries of Treasury.* W. C. Endicott, *Secretary of War.* A. H. Garland, *Attorney-General.*	1886. Railroad strikes and anarchistic riots in Chicago. Wire nails first manufactured. Formation of Stove Founders' National Defence Association, first national association of employers. Bartholdi's Statue of Liberty unveiled.	1886. Dispute with U. S. as to jurisdiction and fishing rights in Behring Sea referred to arbitration and settled in Canada's favor (concluded in 1897).	1886. Colombia adopts new constitution. Slavery abolished in Cuba.
1887. Passage of the Interstate Commerce bill. Edmunds-Tucker Act dissolves corporation of the Mormon church. Dawes Indian Bill.	W. C. Whitney, *Secretary of Navy.* Wm. F. Vilas, D. M. Dickinson, *Postmaster-Generals.* L. Q. C. Lamar,	1887. First vestibuled Pullman train in service. Beet sugar first successfully produced in U. S. at Alvarado, Cal.	1887. Liberal party agitates for reciprocity with U. S.; Conservatives oppose it.	
1888. The states begin the introduction of the Australian ballot. New Chinese exclusion bill enacted by Congress.	Wm. F. Vilas, *Secretaries of Interior.* N. J. Colman, *Secretary of Agriculture.*	1888. First electric street railway built by F. J. Sprague at Richmond, Va.	1888. Quebec legislature appropriates $400,000 to quiet Catholic claims to former Jesuits' estates. 1888-1893. Lord Stanley of Preston Gov.-Gen.	1888. Final act of Brazil abolishing slavery immediately.
1889. Admission of North Dakota, South Dakota, Washington and Montana. Head of Department of Agriculture, established in 1862, is given cabinet rank. Pan-American Congress meets in Washington.	**Benj. Harrison,** *President.* Levi P. Morton, *Vice-President.* Jas. G. Blaine, John W. Foster, *Secretaries of State.* Wm. Windom, Chas. Foster, *Secretaries of Treasury.*	1889. Oklahoma is opened for settlement.		1889. Revolution in Brazil expels Emperor and establishes republic.
1890. Admission of Idaho and Wyoming. McKinley Tariff act. Sherman silver purchase act. Sioux War; Sitting Bull killed. Passage of Dependent Pension Bill.	R. Proctor, S. B. Elkins, *Secretaries of War.* W. H. H. Miller, *Attorney-General.* Benj. F. Tracy, *Secretary of Navy.*	1890. The United States takes first place among the nations in the production of iron. Passage of the Sherman Anti-Trust Law.		1890. Revolution and financial revulsion in Argentina.
1891. Formation of the People's Party. Massacre of Italians in New Orleans.	John Wanamaker, *Postmaster-General.* John W. Noble, *Secretary of Interior.* J. M. Rusk, *Secretary of Agriculture.*	1891. Opening of the cog railroad to the top of Pike's Peak.	1891-1892. Sir John Abbot, Premier.	1891. Civil war in Chile.
1892. Passage of the Geary Anti-Chinese Act. Behring sea dispute referred to arbitration.		1892. Great strike at Homestead Iron Works. Long distance telephone line between New York and Chicago formally opened.	1892-1894. Sir John Thompson, Premier.	
1893. Equal suffrage granted to women in Colorado. Intervention in Hawaii by the United States. Settlement of the Behring Sea dispute. Repeal of law requiring purchases of silver.	**Grover Cleveland,** *President.* A. E. Stevenson, *Vice-President.* W. Q. Gresham, Richard Olney, *Secretaries of State.* J. G. Carlisle, *Secretary of Treasury.* D. S. Lamont, *Secretary of War.*	1893. Great financial depression. World's Columbian Exposition at Chicago. World's parliament of religions at Chicago. Edison patents the kinetoscope.	1893. Liberal party platform demands tariff reform, reciprocity with U. S. restriction of public land sales, senate reforms, investigation of ministerial misconduct, and the submission of the prohibition question to popular vote. 1893-1898. Earl of Aberdeen, Gov.-Gen.	1893. Naval revolt in Brazil. Insurrections in Argentina.
1894. New treaty with Japan. Passage of the Wilson tariff act. Republic of Hawaii is recognized. "Coxey's army" marches on Washington.	Richard Olney, Judson Harmon, *Attorney-Generals.* H. A. Herbert, *Secretary of Navy.* W. S. Bissell, W. L. Wilson, *Postmaster-Generals.*	1894. The U. S. attains first rank among nations in the volume of its manufactures. Great railroad strike from Ohio to the Pacific coast. Also miners' strike and "Debs insurrection."	1894. Imperial Conference at Ottawa of delegates from eight self-governing British dependencies in Australasia, South Africa and America, to discuss imperial problems and promote colonial interests. 1894-1896. Sir McKenzie Boswell, Premier.	
1895. Income tax declared unconstitutional by the Supreme Court. Special message of the president on the Venezuelan question.	Hoke Smith, D. R. Francis, *Secretaries of Interior.* J. S. Morton, *Secretary of Agriculture.*	1895. Harlem ship canal opened. Formation of the National Association of Manufacturers. The name "yellow journalism" first applied to sensational papers.		1895. Boundary dispute between Venezuela and Great Britain becomes critical. Cuban insurrection.

VII. PERIOD OF ECONOMIC DEVELOPMENT, 1877-1896—Continued

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1896. Equal suffrage granted to women in Utah and in Idaho. Admission of Utah. Great agitation for the free coinage of silver.		1896. Sault Ste Marie canal completed. Niagara Falls electric power turned on in Buffalo, N. Y.	1896. April-July, Sir Charles Tupper, Premier. 1896. Dispute between Manitoba legislature and Dominion courts and ministry over Catholic school rights in Manitoba deadlocks the Dominion Parliament. General election gives great victory to Liberals. 1896-1911. Sir Wilfred Laurier, Premier.	1896. Gen. Weyler administers Spanish reconcentrado policy in Cuba.

VIII. PERIOD OF NATIONAL EXPANSION, 1897-1930

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1897. Treaty for the annexation of Hawaii signed. Dingley tariff law goes into operation. 1897-1898. Decisions of the Supreme Court that railroad rate agreements violate the Anti-Trust Law.	**Wm. McKinley,** *President.* G. A. Hobart, *Vice-President.* John Sherman, Wm. R. Day, John Hay, *Secretaries of State.* R. A. Alger, Elihu Root, *Secretaries of War.*	1897. The steel rail pool collapses. Sextuplex telegraphy invented. Universal postal congress meets in Washington. Union Pacific Railroad sold to the reorganization committee.	1897. Laurier persuades Manitoba legislature to make concessions to Catholic schools. Dominion Parliament gives British imports a preferential tariff reduction of 33 1-3%. Discovery of gold in the Klondike. Rush of miners thither necessitates adjustment of ambiguous Alaskan boundary.	1897. Venezuelan boundary adjusted by arbitration.
1898. South Dakota adopts initiative and referendum. Annexation of Hawaii by joint resolution. Destruction of the *Maine* in Havana harbor, Feb. 15. Congress orders forcible intervention in Cuba; war with Spain follows.	Lyman J. Gage, *Secretary of Treasury.* Jos. McKenna, J. W. Griggs, *Attorney-Generals.* John D. Long, *Secretary of Navy.* James A. Gary, C. E. Smith, *Postmaster-Generals.* C. N. Bliss, E. A. Hitchcock, *Secretaries of Interior.* James Wilson, *Secretary of Agriculture.*	1898. Commercial treaty with France signed. Boston builds a subway. Method of mercerizing cloth under tension to make it silky is patented.	1898. Joint high commission to adjust various questions between Canada and U. S. disrupted by disagreement over Alaskan boundary. 1898-1904. Earl of Minto, Gov.-Gen.	1898. U. S. battleship Maine destroyed by explosion in Havana harbor.

SPANISH AMERICAN WAR, 1898

Causes	Results
Sympathy for the oppressed Cubans. The "reconcentrados," people driven into the towns by Weyler, die by thousands, and Americans who aided them are arrested and their property destroyed. The proximity of Cuba and its geographical position make its situation of great importance to the United States. Destruction of American property. Publication of a letter of the Spanish Minister, in which he speaks slightingly of President McKinley. The blowing up of the battleship *Maine*.	The Treaty of Paris: Spain gives up title to Cuba. Spain cedes Porto Rico, Guam and the Philippines to the United States. The United States gives Spain $20,000,000. The direct cost of the war to the United States is about $130,000,000. Soldiers killed, 430. A larger number die of disease. The United States becomes the guardian of Cuba. An increase in our navy and standing army. The war in the Philippines. The question of territorial expansion in our politics.

THE ARMY

Engagements—The Army	Our Losses	
	Killed	Wounded
Bombardment of Cienfuegos, May 11, 1898	1	11
Bombardment of San Juan, May 12, 1898	1	7
Guantanamo, June 11-20, 1898	6	16
Bombardment of Santiago, June 22, 1898	1	9
Santiago campaign, June 21-July 17, 1898	260	1341
Porto Rico campaign, July 25-28, 1898	3	40
The reduction of Manila, August 13, 1898	17	106

THE NAVY

Manila Bay, Philippine Islands. May 1, 1898.	American Vessels: *Olympia, Baltimore, Raleigh, Boston, Concord, Petrel.* American Commander: Geo. Dewey.	Spanish Vessels: *Reina Cristina, Castella, Don Antonio de Ulloa, Isla de Luzon, Isla de Cuba, General Lezo, Marquis de Duero, Cano Velasco, Isla de Mindanao, Sandoval, José Garcia, Leyte* and torpedo boat *Barcelona.* Spanish Commander: Admiral Montijo.
American Casualties: Seven men slightly injured. No damage to ships.	Spanish Casualties: All ships destroyed, 450 men killed and wounded.	
Before Santiago, July 3, 1898.	Amercian Vessels: *Brooklyn, Texas, Oregon, Iowa, Gloucester.* American Commander: Winfield Schley.	Spanish Vessels: *Almirante, Oquendo, Christobal Colon, Vizcaya, Infanta Maria Teresa,* and torpedo boats *Pluton* and *Furor.*
American Casualties: One man killed. *Brooklyn* struck thirteen times, *Texas* once, but neither badly damaged.	Spanish Casualties: All ships destroyed, more than 600 men killed and wounded, and rest surrendered.	Spanish Commander: Admiral Cervera.

The total number of vessels captured from Spain during the war of 1898 was 58.

VIII. PERIOD OF NATIONAL EXPANSION, 1897-1930—Continued

THE UNITED STATES

Political Events	Presidents and Cabinet Officials	Social and Industrial Progress	British North America	Latin America and the West Indies
1899. War in the Philippine Islands, led by Aguinaldo, against American domination. Appointment of the first Philippine commission.		1899. Great commercial and financial prosperity. American Steel and Wire Company is incorporated. First juvenile courts organized in Chicago.		1899. Cuban independence established under protectorate of U. S. Porto Rico acquired by U. S. from Spain.
1900. Congress passes act providing civil government for the Philippines. Commercial treaty with Italy ratified. Currency bill approved. Civil government established in Alaska. American forces sent to China under General Chaffee.			1900. Rapid colonization of Canadian Northwest, largely by emigrants from U. S.	1900. Civil war in Colombia.
1901. Passage of Platt amendment relating to Cuban independence. "Open door policy" for China announced. Hay-Pauncefote treaty. Commission form of government adopted by the city of Galveston. "Insular Cases" decisions. President McKinley shot by assassin, Sept. 6; dies Sept. 14.	**Wm. McKinley,** *Reëlected President.* Theo. Roosevelt, *Vice-President.* (On death of McKinley, Sept. 14, **Roosevelt** becomes president). John Hay, *Secretary of State.*	1901. Formation of the United States Steel Corporation. Pan-American Exposition held at Buffalo. Northern Securities company organized. Discovery of the Texas oil-field.		1901. War between Venezuela and Colombia. Pan-American Congress at City of Mexico. Isthmian canal treaty between Colombia and the United States signed, but not ratified.
1902. Civil government established in the Philippines and amnesty granted to political prisoners.	L. J. Gage, L. M. Shaw, *Secretaries of Treasury.* Elihu Root, W. H. Taft, *Secretaries of War.* P. C. Knox, W. H. Moody, *Attorney-Generals.*	1902. Great strike of anthracite coal miners; President Roosevelt appoints a commission for arbitration. The Carnegie Institution of Washington is established.	1902. Canadian-Australian cable laid.	1902. Revolution in San Domingo.
1903. Alaskan boundary tribunal in London decides in favor of the United States. Creation of the Department of Commerce and Labor. Reciprocity treaty with Cuba, commercial treaty with China, and canal treaty with Panama are ratified.	J. D. Long, W. H. Moody, Paul Morton, *Secretaries of Navy.* C. E. Smith, H. C. Payne, R. J. Wynne, *Postmaster-Generals.*	1903. Formation of the "Citizens Industrial Association of America."	1903. Joint commission of jurists on Alaskan boundary decides favorably to claims of U. S.	1903. Independence of Panama declared under guardianship of U. S. Treaty between Panama and U. S., ceding Canal Zone for $10,000,000.
1904. Arbitration treaty with France signed. Payment of $40,000,000 made to Panama Coal company.	E. A. Hitchcock, *Secretary of Interior.* James Wilson, *Secretary of Agriculture.* G. B. Cortelyou, V. H. Metcalf, *Sec. of Com. and Labor.*	1904. Louisiana Purchase Exposition at St. Louis. Work on Panama canal commences. Northern Securities Co. dissolved by U. S. Supreme Court.	1904-1911. Earl Grey, Gov.-Gen.	1904. Strained relations between Venezuela and U. S.
1905. President Roosevelt acts as mediator between Japan and Russia. Arbitration treaties concluded with Great Britain, Germany, Italy and other powers. Beef Trust declared illegal by U. S. Supreme Court.	**Theo. Roosevelt,** *Reëlected President.* C. W. Fairbanks, *Vice-President.* John Hay, Elihu Root, Robert Bacon, *Secretaries of State.*	1905. Investigation of insurance companies in New York begins. United States becomes greatest silk manufacturing nation in the world.	1905. Saskatchewan and Alberta become members of the Dominion.	1905. Movement to establish confederation of Canada and British West Indies.
1906. Riot at Brownsville, Texas. Dismissal of negro troops. Military occupation of Cuba. Passage of pure food and drug inspection law.	L. M. Shaw, G. B. Cortelyou, *Secretaries of Treasury.* W. H. Taft, L. E. Wright, *Secretaries of War.* W. H. Moody, C. J. Bonaparte, *Attorney-Generals.*	1906. Incorporation of the Carnegie Foundation for the Advancement of Teaching.	1906. Life-insurance investigation in Canada.	1906. Pan-American Congress at Rio de Janeiro. Destructive earthquake at Valparaiso, Chile.
1907. Admission of Oklahoma. Standard Oil Co. fined $29,240,000; decision afterwards reversed.	Paul Morton, C. J. Bonaparte, V. H. Metcalf, T. H. Newberry, *Secretaries of Navy.* G. B. Cortelyou, G. von L. Meyer, *Postmaster-Generals.*	1907. Jamestown exposition. Commercial agreement with Germany.	1907. Demonstration against Japanese at Vancouver.	1907. Finances of San Domingo reorganized and put under supervision of U. S.
1907-1909. United States fleet makes a round-the-world cruise. 1908. Conference of governors at the White House. The United States remits the Chinese Bozer indemnity of $11,000,000.	E. A. Hitchcock, J. R. Garfield, *Secretaries of Interior.* James Wilson, *Secretary of Agriculture.* V. H. Metcalf, O. S. Straus, *Sec. of Com. and Labor.*	1908. Tunnels opened under East river and Hudson river, connecting Manhattan with Brooklyn and Jersey City. National Conservation Congress meets at Washington. Great strike of coal miners in Pennsylvania.	1908. Quebec tercentenary celebration.	
1909. Payne-Aldrich tariff law enacted. Congress proposes income tax amendment.	**Wm. H. Taft,** *President.* J. S. Sherman, *Vice-President.* P. C. Knox, *Secretary of State.* F. MacVeagh, *Secretary of Treasury.*	1909. Alaska-Yukon-Pacific Exposition at Seattle. Hudson-Fulton celebration at New York. Commander Peary reaches the North Pole.		1909. U. S. withdraws army from Cuba.
1910. Equal suffrage granted to women in the state of Washington. Passage of postal savings bank law. Tariff board is established. Telegraph and telephone companies put under the jurisdiction of the interstate commerce commission.	J. M. Dickson, H. L. Stimson, *Secretaries of War.* G. W. Wickersham, *Attorney-General.* G. von L. Meyer, *Secretary of Navy.* F. H. Hitchcock, *Postmaster-General.* R. A. Ballinger, W. L. Fisher, *Secretaries of Interior.*			1910. Pan-American Congress at Buenos Ayres.

VIII. PERIOD OF NATIONAL EXPANSION, 1897-1930—Continued

THE UNITED STATES

Political Events	President and Cabinet Officials	Social and Industrial Progress
1912. Admission of New Mexico and Arizona.	James Wilson, Secretary of Agriculture. Charles Nagel, Secretary of Commerce and Labor.	**1911.** Western Union inaugurates night, day and cable letter service.
1913. Sixteenth and seventeenth amendments to Constitution ratified. Department of Labor added to Cabinet Portfolios.	**Woodrow Wilson,** President. Thomas R. Marshall, Vice-President. William J. Bryan, Robert Lansing, Bainbridge Colby, Secretaries of State.	**1913.** Parcels Post System inaugurated. Great floods in the Ohio and Mississippi Valleys.
1915 British liner Lusitania torpedoed and sunk. American lives lost.	William G. McAdoo, Carter Glass, David F. Houston, Secretaries of Treasury.	**1915.** Transcontinental telephone service inaugurated by Bell lines. Panama Expositions in San Francisco and San Diego, California.
1916. Germany torpedoes Sussex and other steamers carrying Americans.	Lindley M. Garrison, Newton D. Baker, Secretaries of War. James C. McReynolds, Thomas W. Gregory, A. Mitchell Palmer, Attorney-Generals.	**1916.** President Wilson appoints an Industrial Preparedness committee, composed of the heads of large manufacturing establishments.
1917. U. S. declares (April 6) that state of war exists with Germany, and later, Austria-Hungary. Danish West Indies pass under sovereignty of U. S.	Albert S. Burleson, Postmaster-General. Josephus Daniels, Secretary of Navy. Franklin K. Lane, John Barton Payne, Secretaries of Interior.	
1918. Army of 2,500,000 Americans operating in France. British steamer Tuscania, bearing 2,179 American troops, torpedoed and sunk. Over 100 Americans lost. Nov. 11. Armistice signed. Victory for U. S. and allies. President Wilson goes to Paris Peace Conference.	David F. Houston, Edward T. Meredith, Secretaries of Agriculture. William C. Redfield, Josh. W. Alexander, Secretaries of Commerce. William B. Wilson, Secretary of Labor. **Warren G. Harding,** President, 1921-1923. **Calvin Coolidge,** Vice-President, 1921-23. President, 1923-1929. Charles G. Dawes, Vice-President, 1925-29.	**1918.** Railroads placed under Government control for duration of war, vast reduction in number of trains and fare raised.
1919. National Woman Suffrage. Lieut. Reed was first to cross Atlantic in aircraft. Non-explosive helium gas discovered by Prof. Cody of Kansas University.		
1920. Senate rejects Peace Treaty and League of Nations. Woman Suffrage Amendment ratified. National Prohibition becomes effective.	Charles E. Hughes, Frank B. Kellogg, Secretaries of State. Andrew W. Mellon, Secretary of Treasury. John W. Weeks, Dwight F. Davis, Secretaries of War. Edwin Denby, Curtis D. Wilbur, Secretaries of Navy. Harry M. Daugherty, H. F. Stone, John G. Sargent, Attorney-Generals. Will H. Hays, Hubert Work, H. S. New, Postmaster-Generals. Albert Fall, Hubert Work, Roy O. West, Secretaries of Interior. Henry C. Wallace, William M. Jardine, Secretaries of Agriculture. Herbert C. Hoover, William F. Whiting, Secretaries of Commerce. James J. Davis, Secretary of Labor. **Herbert C. Hoover,** President, 1929.— Charles Curtis, Vice-President.— Henry L. Stimson, Secretary of State. Andrew W. Mellon, Secretary of Treasury. J. W. Good, P. J. Hurley, Secretaries of War. Charles F. Adams, Secretary of Navy. Walter Brown, Postmaster General. Ray L. Wilbur, Secretary of Interior. Robert P. Lamont, Secretary of Commerce. Arthur M. Hyde, Secretary of Agriculture. William P. Mitchell, Attorney General. James J. Davis, Secretary of Labor.	**1919.** Peace celebrated. Great progress in reconstruction.
1921. Peace made with Germany.		**1921.** Prices drop. General decline. Federal Reserve Banking system averts panic.
1922. Disarmament Conference held in Washington.		**1924.** Immigration limited to 2 per cent of 1890 population. U. S. Aviators first to encircle the world.
1925. Harlan F. Stone succeeds Joseph McKenna in U. S. Supreme Court. Crown Prince of England visits United States. Coolidge inaugurated President, and Chas. G. Dawes Vice-President. Italy and Belgium reach debt agreement with U. S.		**1925.** Severe tornado in Middle West. Henry Ford starts airplane freight line between Detroit and Chicago. Airship Shenandoah wrecked.
1926. U. S. conditionally accepts World Court protocol. Queen Marie of Roumania visits U. S.		**1926.** Anthracite coal strike ended. Disastrous hurricane in Southern Florida.
1927. Coolidge reviews greatest American fleet. Arbitration treaty signed with France.		**1927.** Charles A. Lindbergh makes first non-stop flight from New York to Paris. Greatest Mississippi flood. Non-stop flights, California to Honolulu; Washington to Mexico City. Haldeman and Stinson set new endurance record of 53 hours and 36 minutes at Jacksonville, Fla.
1928. Good-will flight from U. S. through Mexico, Central and South Americas by Col. Lindbergh. Treaty signed with France. Pres. Coolidge attends Pan-American Congress in Cuba. Hoover elected President. Fifteen nations signed anti-war treaty.		**1928.** April. Koehl, Fitzmaurice and von Huenefeld fly from Berlin to United States. U. S. wins Olympic Track and Field Sports at Amsterdam.
1929. Oil conservation policy enunciated. Special session of Congress.		**1929.** Airplane Question Mark breaks all endurance records with 150 hours in air. Tornadoes in Arkansas and Mississippi.
1930. Hughes made Chief Justice. Henry L. Stimson signed Naval Arms Agreement for United States.		**1930.** Report of law enforcement commission.

British North America	Latin America and the West Indies
1911. April Preferential trade agreement made with British West Indies. **1911.** H. R. H., the Duke of Connaught, Governor-General. Robert L. Borden, Premier.	**1911.** Revolution in Mexico expels Diaz and makes Francisco I. Madero President. Ramon Caceres, President of San Domingo since 1906, assassinated.
1914. Canada establishes a Parcels Post service. Extends hearty support to the Mother country in the European war by training and sending overseas large numbers of soldiers.	**1913.** Madero government overthrown; Gen. Huerta made provisional President.
1915. Winnipeg post office institutes monthly rural free mail delivery to points within Arctic Circle.	**1914.** Huerta regime is overthrown. United States troops occupy Vera Cruz in an effort to enforce respect for the American flag and American rights.
1917. Canada adopts conscription. Unionist Government of Sir Robert Borden defeats liberals, headed by Sir Wilfred Laurier. Conscription law confirmed by heavy vote.	**1915.** U. S. government assumes control of Haitian financial affairs, including administration of customs and police, for a period of ten years. U. S., followed by European and South American nations, formally recognizes Carranza as chief executive of the Mexican de facto government, after two years and eight months' cessation of diplomatic intercourse. Permission is given for the importation of arms to defeat Villa, the revolutionist.
1918. Grim war activities. Draft riots in Quebec.	
1919. Peace celebrated. Great progress in reconstruction.	**1920.** Military revolution in Bolivia. Chili mobilizes army. Bolivia and Peru draw together.
1922. President Harding signed postal treaty between U. S. and Canada.	**1921.** War averted.
	1923. Pan-American Conference unites in new peace assurance for all Central and South American Governments.
	1925. Gerardo Machado becomes President of Cuba. **1925.** Coolidge as arbitrator orders plebiscite in deciding Chile and Peru's dispute over Tacan and Arica.
1926. Gold Rush in Ontario. Canada protests against Chicago drainage canal diverting water from Great Lakes.	**1926.** U. S. protests confiscation of alien lands by Mexico. Mexico expels foreign clergy. Conditions greatly improved in South America.
1927. New diplomatic policy established. Canada sends minister to U. S.; and U. S. sends minister to Canada. 120,000 square miles of Labrador added to Newfoundland. Ontario discards Prohibition. Peace Bridge opened between Buffalo and Fort Erie, Canada.	**1927.** Great unrest in Mexico. Revolution in Nicaragua.
1928. General prosperity.	**1928.** Sandino causes uprising in Nicaragua. U. S. Marines attack forces of Sandino. Mexico changes alien land laws, to obtain good-will of United States. Pres.-elect Obregon assassinated.
1929. Canadian rum runner **I'm Alone** sunk by U. S. cutter **Dexter**	**1929.** Portes-Gil, Provisional President of Mexico. Uprisings in Mexico.
1930. House of Commons passed bill to stop export of liquor into United States.	**1930.** Rubio inaugurated President of Mexico.

NOTABLE WARS OF HISTORY

The figures prefixed to the names of leaders and battles, etc., indicate to which of the two contesting parties the leader belonged, or by which the victory was won; they correspond to the numbers used in the column giving the names of the contesting parties. D. B. = Decisive Battles of the world as given by Creasy.

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
1. TROJAN WAR. (Mythical)—circa 1200 B. C. (1) Greeks vs. (2) Trojans	Greeks avenge the abduction of Helen of Troy by Paris.	(1) **Agamemnon, Achilles, Ulysses.** (2) Hector.	(1) **Siege of Troy.**	Capture and destruction of Troy. Schliemann's excavation identify Ilium on the Hellespont as the site of ancient Troy.
2. FIRST MESSENIAN WAR— 8th Century B. C. (1) **Spartans** vs. (2) Messenians.	Spartans covet Messenian land.	(2) **Aristodemus.**	(1) **Siege of Mount Ithome.**	Messenians become tributary of Sparta and their land is, in part, confiscated.
3. SECOND MESSENIAN WAR— c. 630-600 B. C. (1) **Spartans** vs. (2) Messenians.	Spartan oppression causes Messenian revolt.	(1) **Tyrtaeus** (poet). (2) Aristomenes.	(1) **Eira.**	Greater part of Messenians flee to Sicily. Those remaining become Helots (Spartan serfs).

NOTABLE WARS OF HISTORY—Continued

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
FIRST SACRED WAR—c.590-589 B.C.) **Amphictyonic League** vs.) Crisæans.	People of the city of Crisa (port of Delphi) oppress pilgrims to the oracle.	(1) **Cleisthenes of Sicyon.**	(1) **Siege of Crisa.**	For the first time Greek cities join in an effective league. Crisa destroyed.
PERSIAN WARS—500-579 B.C.) **Persians** vs.) Greeks.	Aid given by Athens and Eretria to revolting Ionic Greek cities, leading to burning of Sardis, C. 497.			
First Persian Expedition—493 B.C.	Continued plans of Darius for subjugating Greece.	(1) **Mardonius.**	(1) **300 ships lost by storm off Mt. Athos.**	Partial success against Macedonians and Thracians.
Second Persian Expedition—490 B.C.		(1) **Datis, Artaphernes.** (2) Miltiades.	(1) **Naxos, Eretria.** (2) Marathon (490).	The Athenians are victorious and the Persians retreat to Asia Minor.
Third Persian Expedition—481-480 B.C.	Xerxes desires to avenge his father's defeat.	(1) **Xerxes.** (2) Leonidas, Eurybiades, Themistocles	(1) **Thermopylæ, Artemisium, Athens burned.**	Xerxes retreats to Persia after his defeat at Salamis.
Fourth Persian Expedition—479 B.C.	War continued by troops which Xerxes left behind.	(1) **Mardonius.** (2) Pausanias, Aristides.	(2) Athens laid waste. (2) **Platæa, Mycale.**	All Persian invasions and attempts to subjugate Greece cease.
THIRD MESSENIAN WAR—464-456 B.C.) **Helots of Messenian descent** vs.) Spartans.	Confusion following earthquake gives Helots courage to revolt.		(2) Mt. Ithome besieged. Sparta sent home her Athenian allies.	Messenians capitulate and are allowed to leave the Peloponnesus never to return. Athens retaliates by settling them at Naupactus.
PELOPONNESIAN WAR—431-404 B.C.) **Sparta and Allies** vs.) Athens and Allies.	Envy of Sparta and her allies at Athens' growing power and influence. Discontent among some of the Athenian subject states.	(1) **Archidamus, Agis, Brasidas.** (2) Demosthenes, Cleon, Nicias.	(1) **Invasion of Attica, Plague in Attica, Siege of Platæa, Delium, Amphipolis.** (2) Mitylene, Sphacteria.	By the peace of Nicias (421) both sides are to restore conquests and prisoners but terms are imperfectly carried out.
First Period—431-421 B.C. Second Period or Decelean War—413-404 B. C.	Sparta takes advantage of Athens' weakness, resulting from the failure of the expedition to Syracuse, to renew the war.	Alcibiades serves Athens, Sparta and Athens in turn. (1) **Lysander** (2) Conon.	(1) **Decelea occupied. Attica ravaged. Many subject states of Athens revolt. Notium, Ægospotami, Surrender of Athens.** (2) Abydos, Cyzicus, Arginussæ.	The Spartans tear down the walls of Piræus and Athens. Athens loses her foreign possessions and fleet but becomes an independent ally of Sparta. Sparta is now supreme in Greece.
GAULS' INVASION OF ITALY—390 B.C.) **Gauls** vs.) Romans.	Roman people refuse to surrender Roman ambassadors who had aided the Etruscans against the Gauls.	(2) M.Manlius, Capitolinus, Camillus.	(1) **Battle of the Allia. Sack of Rome.**	Gauls retire on payment of ransom. The overthrow of Rome had no permanent effect on her fortunes.
SECOND SACRED WAR—c. 356-346 B.C.) **Phocians** vs.) Amphictyons.	Phocians seize and plunder Delphi because of fine imposed by Amphictyonic Council.	(1) **Onomarchus.** (2) Philip of Macedon.		Thebans and Thessalians invite aid of Philip against Phocians and he takes their place in the Amphictyonic Council.
THIRD SACRED WAR—339-338 B.C.) **Macedonians** vs.) Athenians, Thebans.	Amphictyons call in Philip to punish Amphissa, whereupon he seizes Elatea, thereby threatening Athens. Athenians aroused by Demosthenes.	(1) **Philip of Macedon.**	(1) **Chæronea.**	Philip gains leadership of Greece. Henceforth Greece is under the control of Macedonia.
SAMNITE WARS—343-290 B.C.) **Romans** vs.) Samnites.	A duel between two rival races for supremacy in Italy.	(1) **Marcus Valerius Corvus, P. Decius Mus.**		Capua is retained by the Romans and Teanum surrendered to Samnites.
First Samnite War—343-341 B.C.	Campanians implore aid of Romans against Samnites who are laying waste their territories in revenge for aid given the Sidicini of Teanum.			
Second or Great Samnite War—327-304 B.C.	The occupation of Palaeopolis by the Samnites. In 311 the Etruscan cities joined in the war against Rome.	(1) **Papirius Cursor.** (2) Fabius Rullianus Gavius Pontius.	(1) **Fregellæ, Sutrium, Lake Vadimonis, Bovianum.** (2) Caudine Forks.	Samnites sue for peace. They resign all their conquests but retain their independence within their native mountains.
Third Samnite War—298-290 B.C.	While Romans are engaged with the Gauls the Samnites enter Lucania and refuse to withdraw.	(1) **Q. Fabius Rullianus, P. Decius Mus (son).** (2) Gellius Egnatius, Gavius Pontius.	(1) **Sentinum.**	Samnites defeated but not crushed.
WARS OF ALEXANDER THE GREAT IN ASIA—334-328 B.C.) **Greeks** vs,) Persians. Egyptians, Bactrians, Indians.	A war of conquest, a scientific expedition and a journey of discovery.	(1) **Alexander the Great, Nearchus.** (2) Darius III., Memnon.	(1) **Granicus, Issus, Siege of Tyre, Arbela.**	Alexander conquers Asia from the Mediterranean Sea to the Indus R. and from the Arabian Sea to the Jaxartes R. and begins the Hellenizing of the East. Founds Alexandria in Egypt. The empire breaks up after Alexander's death 323.
ROMAN WAR WITH TARENTUM AND EPIRUS—282-272 B.C.) **Romans** vs.) Tarentum and King Pyrrhus.	The people of Tarentum capture Roman ships and insult Roman embassy. They call in King Pyrrhus of Epirus.	(1) **Manius Curius.** (2) Pyrrhus.	(1) **Beneventum, Tarentum.** (2) Heraclea, Asculum.	Pyrrhus returns to Epirus and his allies one by one submit to Rome, which is left supreme from Straits of Messina to the River Arno and the headland of Ancona.
FIRST PUNIC WAR—264-241 B.C.) **Romans** vs.) Carthaginians.	A struggle for supremacy in Sicily. Pretext, Campanian mercenaries, having seized Messina, appeal to Rome for aid.	(1) **C. Duilius. M. Atilius Regulus. P. Claudius Pulcher. C. Lutatius Catulus.** (2) Hamilcar Barca, Himilco, Hanno.	(1) **Agrigentum, †Mylæ, Ecnomus, †Panormus, †Ægadian Islands,** (2) Siege of Lilybæum, (2) Drepana.	Carthaginians surrender Sicily and pay a war indemnity. Carthage retains the Western Mediterranean and Rome is launched on her career of conquest.
SECOND PUNIC WAR—218-201 B.C.) **Romans** vs.) Carthaginians.	A duel to the death between East and West. Pretext, Hannibal's attacks on Saguntum in Spain.	(1) **Q. Fabius Maximus, Publius Scipio. P. Cornelius Scipio Africanus.** (2) Hannibal, Hasdrubal.	(1) **Syracuse, Capua, Metaurus, Zama.** (2) Ticinus, Trebia, Trasimene, Cannæ.	Hannibal succumbs as a result of the loyalty of Italy. Carthage forced to give up Spain, to pay an annual tribute, to surrender her fleet, and to agree not to go to war without the permission of Rome.
FOUR MACEDONIAN WARS—214-146 B.C.) **Romans** vs.) Greeks.	Alliance of Philip, King of Macedon, with Carthage.	(1) **T. Quinctius Flaminius. L. Aemilius Paulus.** (2) Philip of Macedon, Perseus.	(1) **Cynoscephalæ, Pydna**	Macedonia becomes a Roman province.

NOTABLE WARS OF HISTORY—Continued

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
17. THIRD PUNIC WAR—149–146 B.C. (1) **Romans** vs. (2) Carthaginians.	War of Carthage with Massinissa gives Rome the pretext for completing the destruction of Carthage.	(1) **Scipio. Æmilianus. Africanus.**	(1) **Siege of Carthage.**	Carthage destroyed. Most of her territory becomes a Roman province of Africa.
18. JUGURTHINE WAR—111–105 B.C. (1) **Romans** vs. (2) Jugurtha of Numidia.	Jugurtha, disregarding intervention of Rome, captures Citra and massacres male population.	(1) **C. Marius.** (2) Jugurtha.	(1) **Muthul, Citra.**	Numidia divided. The war reveals the corruption and incapacity of the Senatorial government of Rome.
19. MARSIAN OR SOCIAL WAR—90–88 B.C. (1) **Romans** vs. (2) Italian Allies.	Italian socii (allies) are denied the right of Roman citizenship.	(1) **C. Marius. Sulla.**	(1) **Asculum.** Italians form a Federal republic, Italia, with capital at Corfinium.	Roman citizenship granted to all Italian residents.
20. FIRST ROMAN CIVIL WAR—88–82 B.C. (1) **Optimates** vs. (2) Democrats.	Reform measures of Sulpicius are carried by means of violence. Command of army of Asia is transferred from Sulla to Marius.	(1) **Sulla, Pompey.** (2) Marius, Cinna, Sertorius. Carbo.	(1) **Sacriportis, Colline Gate, Sulla's proscription.** (2) Marius's Reign of Terror.	Sulla is appointed dictator.
21. THREE MITHRIDATIC WARS—88–63 B.C. (1) **Romans** vs. (2) Pontines and Armenians.	Ambition of Mithridates VI. and Roman interference.	(1) **Sulla, Lucullus. Pompey.** (2) Mithridates. (Pontus). Tigranus. (Armenia).	(1) **Chæronea, Orchomenus, Cabira, Tigranocerta.** (2) Massacre of Italians in Asia.	Reorganization of the East, Pontus, Syria and Cilicia become Roman provinces.
22. GLADIATORIAL AND THIRD SERVILE WAR—73–71 B.C. (1) **Romans** vs. (2) Revolted Gladiators and Slaves.	Uprising of a band of gladiators, escaped from Capua and joined by many slaves of southern Italy.	(1) **Crassus, Pompey.** (2) Spartacus.	(1) **Silarus.** (2) Mt. Vesuvius.	Revolt put down with cruelty, 6,000 crucified.
23. GALLIC WAR—58–51 B.C. (1) **Romans** vs. (2) Tribes of Gaul.	Deisre to extend the Roman empire.	(1) **Julius Cæsar.** (2) Vercingetorix. Ariovistus.	(1) **Siege of Alesia.**	Conquest and organization of Gaul by Cæsar. Gauls Romanized; boundaries of the old world enlarged (Cæsar's expedition to British 55–54 B. C.); means acquired for changing Rome into a monarchy.
24. SECOND ROMAN CIVIL WAR—49–31 B.C. First Period, 49–45 B.C. (1) **Followers of Cæsar (democrats)** vs. (2) Followers of Pompey (republican aristocrats).	Struggle for mastery between Cæsar, conqueror of Gaul, and Pompey, conqueror of the East.	(1) **Cæsar.** (2) Pompey and his sons.	(1) **"Crossing the Rubicon." Pharsalus, Thapsus, Munda.**	Cæsar is appointed dictator for life. He is the founder of the new monarchy at Rome.
Second Period, 43–42 B.C. (1) **Friends of Cæsar (Second Triumvirate)** vs. (2) Cæsar's Assassins.	Assassination of Cæsar, 44 B. C.	(1) **Antony, Octavius, Lepidus.** (2) Brutus, Cassius, Sextus Pompey.	(1) **New proscription (Murder of Cicero). Philippi.**	Brutus and Cassius, defeated, commit suicide.
Third Period—31–30 B.C. (1) **Octavius** vs. (2) Antony.	A continued struggle for supreme power.	(1) **Octavius.** (2) Antony. Cleopatra.	(1) **Actium.** (A. D. 9.) Arminius. **5th D. B.**	Triumph of Octavius, grand nephew of Julius Cæsar. End of the republic and beginning of the empire.
25. JEWISH WAR—A.D. 66–70. (1) **Romans** vs. (2) Jews.	Revolt of the Jews against Rome.	(1) **Titus, son of Emperor Vespasian.**	(1) **Siege of Jerusalem.**	Destruction of Jerusalem and the temple.
26. DACIAN WARS—86–90, 101–102, 105–107. (1) **Romans** vs. (2) Dacians.	Rome desire to extend her conquests.	(1) **Domitian, Trajan.** (2) Decebalus.		Dacia is made a Roman province. Roman conquest and empire reaches its highest point.
27. CIVIL WARS OF THE ROMAN EMPIRE—193–284.	Contests for the throne among rival generals (barrack emperors).			Reorganization of empire by Diocletian (284–305).
28. WARS OF CONSTANTINE THE GREAT FOR THE EMPIRE—310–323. (1) **Constantine** vs. (2) Others. Augusti.	Confusion following abdication of Diocletian.	(1) **Constantine.** (2) Maxentius, Maximinus. Licinius.	(1) **Turin.**	Constantine becomes sole ruler of Roman Empire. He redistricts the empire, moves the capital to Constantinople and recognizes Christianity.
29. INVASION OF ROMAN EMPIRE BY NORTHERN BARBARIANS—375–493. (1) **Romans** vs. (2) Teutons and (Huns) Teutonic Tribes; Visigoths, Vandals, Suevi, Franks, Burgundians, Ostrogoths, Alemanni, Jutes, Saxons, Angles, Lombards.	The Huns (Mongolians) press upon the Teutons, who are forced to seek new lands within the boundaries of the Roman empire.	(1) **Valens, Stilicho Ætius, Leo (bishop of Rome)** (2) Alaric, Walja (Visigoth); Genseric (Vandal); Hengist and Horsa (Saxons); Attila (Hun); Theodoric the Great (Ostrogoth).	(1) **Battle near Chalons (451). 6th D. B.** (2) Adrianople, Sack of Rome. Visigothic kingdom of Tolosa (Toulouse), (415–507). Vandals settle in Africa (429–534). Carthage (439). Burgundians occupy Rhone Valley (443). Angles, Saxons and Jutes invade England (449). Huns and Ostrogoths ravage Gaul. Huns destroy Aquiliea and Venice founded (452). Vandals plunder Rome (455). Odoacer gains ascendency in Rome. The fall of the Roman empire (476). Ostrogothic kingdom in Italy (493–555).	Overthrow of the Roman empire in the west, though it continued in the east until 1453. This blending of Roman and Teutonic elements under the influence of the Christian religion and what remained of classic civilization formed the civilization of the middle ages.
30. WARS OF JUSTINIAN,—533–534. (1) **Eastern Empire** vs.— (2) Vandals in Africa and (3) Ostrogoths in Italy—535–555.	Desire to restore west to eastern empire.	(1) **Belisarius, Narses.** (3) Vitiges, Totila.	(1) **Battle of Taginae (552).**	Destruction of Vandal power in Africa and of the Ostrogothic kingdom in Italy. Exarchat established at Ravenna.

NOTABLE WARS OF HISTORY—Continued

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
. WARS OF THE FRANKS—486–814. (1) **Franks** vs. (2) Neighboring Peoples.	Desire to extend the limits of Frankish territory and to ward off attacks from without.	(1) **Clovis (486-511), Charles Martel (714-741), Pepin the Short (751-768). Charlemagne (768-814).**	(1) **Soissons (486), Clovis conquers Alemanni and becomes a Catholic Christian (496); Battle of Tours (732). 7th D. B. Conquest of Bergundy (534), Charlemagne conquers Lombards (774-776), Saxons (772-804), Bavarians (788), Avars (791), Northern Spain (778).**	Franks becomes leading power in the west and revive the western empire. (Christmas day, 800.)
. HEPTARCHIC WARS IN ENGLAND—588–828.	Struggle for supremacy among the seven Teutonic kingdoms.	Ethelbert (Kent). Edwin (Northumbria). Offa (Mercia). Egbert (Wessex).	The supremacy was successively held by kings of Kent, Northumbria, Mercia, and Wessex, Maserfield (642), Elandun (825).	"The indistinct noise of many battles and devastations of many kingdoms overrun and lost." (Milton.) All England at last united under Egbert, king of Wessex (802-837).
. NORTHMEN INVASIONS—ninth and tenth Centuries. 1) **Northmen** vs. 2) People of Western and Southern Europe.	Opportunity for plunder and conquest and later the driving out of adventurous spirits by the organization of settled kingdoms of the north.	(1) **Hastings, Rolf, Sweyn, Canute.** (2) Alfred (England). Odo (France).	*In England.* Treaty of Wedmore. Massacre of Danes (1002). *In France.* (2) Siege of Paris. Grant of Normandy to Rolf (977).	The Northmen are the last swarm of Teutonic conquerors. They readily assimilate civilization and infuse new energy into western Europe.
. SARACEN OR MOHAMMEDAN WARS—632–1492.	Saracens are ambitious to found a world wide Mohammedan empire.	(1) **Omar, Amru, Hassan, Mousa, Tarik, Abderrahman, Mohammed II. Abdallah.** (2) Yezdegerd (Persia), Leo the Isaurian, Charles Martel, Constantine, Palæologus, Ferdinand of Aragon.	(1) **Yarmouk (Syria). Damascus, Jerusalem Cadesia (Persia), Alexandria, Carthage, (697), Xeres (Spain), Granada, Toledo.** (2) Constantinople (716), Tours, Jerusalem, Las Navas de Tolosa (1212). (1) **Constantinople** (1453). (2) Granada (1492).	The Saracens attempted to conquer and convert Europe at three different times between 710 and 1492. Their power began to wane from the latter date.
5. NORMAN CONQUEST—1066. (1) **Normans** vs. (2) English.	William, duke of Normandy wishes to increase his territory and his power.	(1) **William the Conqueror.** (2) Harold, king of England.	(1) **Hastings. (A. D. 1066.) 8th D. B.**	The king received added power and a modified feudalism introduced into England. Southern Italy and Sicily were also conquered by bands of Normans in the eleventh century and the kingdom of Naples founded.
6. CRUSADES—1096–1270. (1) **European Christians** vs. (2) Turks and Moslems.	The appeal of the eastern emperor for aid, the desire to recover the Holy Sepulcher from the infidels, the love of adventure, and hope of gain.	(1) **Peter the Hermit, Godfrey of Bouillon, Bohemond of Tarentum. Robert of Normandy.**	(1) **Nicæa, Antioch, Jerusalem.**	Jerusalem is subdued and a transient kingdom is founded at Jerusalem.
First Crusade—1096–1099.				
Second Crusade—1147–1149.	The Conquest of Edessa by the Moslems threatens Jerusalem. Preaching of Saint Bernard.	(1) **Conrad III. of Germany, Louis VII. of France.**	Unsuccessful attack on Damascus.	Armies almost annihilated by hunger, disease and the enemy.
Third Crusade—1189–1192.	Capture of Jerusalem by Saladin.	(1) **Richard I. of England, Philip Augustus of France. Frederick Barbarossa of Germany.** (2) Saladin.	(1) **Acre.**	The Latin Christians secure by treaty the privilege of visiting the tomb of Christ for three years without molestation.
Fourth Crusade—1201–1204. (1) **Crusaders** vs. (2) Eastern Empire.	Appeals of Innocent III. Through influence of the Venetians the Crusaders turn aside to attack Constantinople.	(1) **Dandolo, Doge of Venice, Baldwin of Flanders.**	(1) **Sack of Constantinople.**	Division of eastern empire. The Venetians get the monopoly of trade and most of the islands and coast lands of the Ægean and Ionians seas. The remainder is erected into a feudal state, the Latin empire.
Children's Crusade (legendary)—1212.	Ignorant enthusiasm aroused by visions and miraculous tales.	A shepherd lad, Stephen of Vendome.	Thousands of children, women and peasants march from France and Germany to the Mediterranean.	Only a small number return home; the others perish on the way or are sold into slavery by French merchants.
Fifth Crusade—1228–1229.	Vow of Frederick II. of Germany. He goes under pope's excommunication.	(1) **Frederick II.**		Frederick, by treaty with the sultan, secures a truce for ten years and the restoration of Bethlehem, Nazareth and Jerusalem to the Christians. Jerusalem is finally lost in 1244.
Sixth Crusade—1248–1254.	Louis IX. of France starts on a crusade via Egypt.	(1) **Louis IX., later St. Louis.**	(1) **Damietta.** (2) Expedition to Cairo.	Louis is captured in battle and released on payment of heavy ransom and evacuation of Damietta.
Last, Seventh Crusade—1270–1291.	Louis IX goes against Mohammedans of Tunis, Prince Edward of England to Syria.	(1) **Louis IX. Prince Edward.**	Death of Louis by the plague. (2) Acre, last Christian stronghold in Syria, falls (1291).	The results of the crusades were development of commerce, introduction of new customs, products and manufactures, increase in freedom of lower classes, especially townsmen, and the power of the crown.
7. WAR OF THE (1) **Empire** vs. (2) Italian Communes—1158–1183.	Frederick Barbarossa's attempt to restore imperial rights over the cities of northern Italy.	(1) **Frederick I. Barbarossa.** (2) Pope Alexander III.	(1) **Milan (1162).** (2) Legnano (1176).	By treaty of Constance (1183) the cities of Lombardy are recognized as practically self-governing republics, the barest overlordship remaining to the emperor.
8. WARS OF THE BARONS IN ENGLAND—1215–1265. (1) **Barons** vs. (2) Kings John and Henry III.	Misgovernment of John and Henry III.	(1) **Stephen Langton, Simon de Montfort.** (2) King John, Prince Edward, later Edward I.	(1) **Signing of Magna Charta. Lewes, Simon de Montfort's Parliament.** (2) Evesham.	The beginning of constitutional monarchy—henceforth the king is below the law, not above it.

NOTABLE WARS OF HISTORY—Continued

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
39. HUNDRED YEARS' WAR 1337–1453. (1) **English** vs. (2) French.	The conflict of interests of the French and English kings in Guienne, Flanders and Scotland. Edward III. advances claim by descent to the throne of France.	(1) **Edward III. Edward the Black Prince. Prince Henry V. Duke of Bedford.** (2) Du Guesclin, Charles V., Joan of Arc.	(1) **Crécy, Calais, Poitiers, Peace of Bretigny, Agincourt. Treaty of Troyes.** (2) Orleans (1429), Castillon (1453).	England loses all her land in France except Calais. During the earlier stage of this war about one-third of the population of western Europe perished from the Black Death.
40. AUSTRO-SWISS WAR—1315–1388. (1) **House of Hapsburg** vs. (2) Swiss Confederation.	Hapsburgs assert feudal rights over the peasants of the Swiss cantons.	(1) **Leopold III. of Austria.** (2) Arnold von Winkelried.	(2) Morgarten, Sempach, Näfels.	Independence of Swiss secured.
41. HUSSITE WAR–1419–1436. (1) **Bohemian followers of John Huss** vs. (2) Catholic Europe.	Execution of John Huss, the Bohemian religious reformer by the council of Constance.	(1) **Ziska, Procopius the Great.** (2) Emperor Sigismund, Cardinal Cesarini, Frederick of Brandenburg.	Revolt of Prague. Four crusades repulsed.	After the overthrow of the radical Hussites (Taborites) by the conservative Hussites (Calixtines) in the battle of Lipan a Catholic reaction set in which culminated in 1462 with the revocation of the compacts made by the Council of Basel with the Hussites.
42. WARS OF THE ROSES—1455–1485. (1) **Yorkists (White Rose)** vs. (2) Lancastrians(Red Rose).	Misgovernment under Henry VI. encourages Richard, duke of York, representing the second line of descent from Edward III. to claim the throne against Henry VII. (third line).	(1) **Richard, duke of York. Edward IV. Richard III.** (2) Duke of Somerset. Queen Margaret. Earl of Warwick ("Kingmaker"). first a Yorkist and then a Lancastrian. Henry VII.	(1) **St. Albans, Northampton, Mortimer's Cross, Towton, Barnet, Tewkesbury.** (2) Wakefield, Bosworth Field.	Henry Tudor (Lancastrian in the female line) secures throne as Henry VII. By his marriage with Elizabeth of York he unites the warring factions and establishes an almost despotic rule in England.
43. WARS FOR CONTROL OF ITALY—1494–1529. (1) **French** vs. (2) Spanish.	Conflicting claims to the throne of Naples and to the duchy of Milan.	(1) **Charles VIII. Louis XII., Bayard ("Chevalier sans peur et sans reproche"), Francis I.** (2) Ferdinand of Aragon, Charles V., duke of Bourbon, Fürstenburg.	Invasion of Italy by Charles VIII. (1494). League Cambray (1508). Holy League (1511). (1) **Marignano.** (2) Pavia.	All the leading powers of western Europe were drawn into this struggle. By the peace of Cambraes (1529) France renounced her claims to Italy. One effect of these wars was to tie the hands of Charles V. so as to prevent his putting down Lutheranism in Germany.
44. SCHMALKALDIC WAR—1546–1547. (1) **Charles V.** vs. (2) League of Schmalkalden.	Charles V. attempts to crush Protestantism in Germany.	(1) **Emperor Charles V., Duke Maurice of Saxony.** (2) John Frederic, Elector of Saxony; Philip, Landgrave of Hesse.	(1) **Mühlberg.**	Protestantism temporarily crushed. Its recovery in 1552 was followed by the religious peace of Augsburg 1555.
45. RELIGIOUS WARS IN FRANCE—1562–1598. (1) **Catholics** vs. (2) Huguenots (Protestants).	Massacre of Huguenots at Vassy is a signal for uprising.	(1) **Duke of Guise, Henry III.** (2) Catherine de Medici. Conde, Coligny, Henry of Navarre (Henry IV.)	(1) **Massacre of St. Bartholomew (1572).** (2) Siege of Paris, Ivry (1590), Henry of Navarre becomes a Catholic (1593). Riots of Image Breakers. Council of Blood.	By the edict of Nantes (1598) the Huguenots are given equal political rights with Catholics, limited freedom of worship, the possession of La Rochelle and other strong places as cities of refuge.
46. WAR OF LIBERATION IN THE NETHERLANDS—1568–1648. (1) **Spain** vs. (2) Revolted provinces in the Netherlands.	Political and religious tyranny of Spain. Duke of Alva enforces the Inquisition.	(1) **Duke of Alva. Alexander of Parma.** (2) William of Orange, Jan van Olden, Barneveldt, Maurice of Nassau.	(1) **Mechlin, Haarlem.** (2) Brill, Siege of Leyden, "Spanish Fury" at Antwerp. Pacification of Ghent (1576). Union of Utrecht (1579). Declaration of Independence (1581).	By the Peace of Westphalia (1648) the independence of the seven northern provinces, the United Netherlands, is recognized. The ten southern provinces continue under Spanish rule until 1713.
47. THIRTY YEARS' WAR—1618–1648. (1) **German Protestants and their Allies, England, Holland, Sweden and France** vs. (2) Imperial German Catholics and their allies, Spain, Italy.	Disputes over interpretation of peace of Augsburg (religious and political disputes leading to the revolt of Bohemia). The war passes through four phases—(1) Bohemian–Palatinate. (2) Danish. (3) Swedish. (4) Swedish–French.	(1) **Frederick, Elector Palatine, Mansfield, Gustavus Adolphus, (Sweden) Turenne and Conde (France).** (2) Emperor Ferdinand II., Maximilian of Bavaria, Tilly, Wallenstein.	(1) **Stralsund, Edict of Restitution, Breitenfeld, Lützen.** (2) White Hill, Magdeburg, Nördlingen.	This war is closed by the peace of Westphalia. Alsace thereby goes to France, Switzerland is separated from the empire and the Palatinate is divided. The secularized lands of northern Germany are secured to Protestanism while leaving to Catholicism, Austria, Bohemia and Bavaria. Germany is left desolate.
48. CIVIL WAR IN ENGLAND—1642–1649. (1) **Royalists (Cavaliers)** vs. (2) Parliamentarians(Roundheads) allied with Scots (to 1647).	Charles I. attempts to force a personal government on England. His disputes with Parliament covered (1) taxation, (2) privileges of Parliament, (3) religion, (4) control of the militia.	(1) **Charles I., Prince Rupert, Montrose.** (2) Cromwell, Essex, Fairfax, Leslie.	(2) Marston Moor, Naseby, Preston.	The second civil war (1648) determines the army leaders to bring Charles I. to trial and execution (1649). A Commonwealth was then established without King or House of Lords but with Oliver Cromwell as Protector (1653 to 1659). The son of Charles I. restored in 1660 as Charles II.
49. FIRST THREE WARS OF LOUIS XIV.—1667–1697. (1) **France** vs. (2) a. Spanish Netherlands. b. Dutch republic. c. Grand Alliance (German states, England, Holland).	Louis XIV.'s passion for fame and desire to increase French territory in Europe.	(1) **Turenne, Conde, Luxembourg.** (2) William III., De Ruyter.	Chambers of Reunion. (1) **Ravaging of Palatinate, Steenkirke, Neerwinden.** (2) Sasbach, La Hogue, Namur.	Extension of boundaries of France to the northeast.
50. SPANISH SUCCESSION in America, **QUEEN ANNE'S WAR**—1701–1714. (1) **France, Spain and Bavaria** vs. (2) Austria, England, Holland, Portugal, Savoy.	Acceptance by Louis XIV. of the bequest of the Spanish dominion to his grandson, Philip of Anjou, in violation of the partition treaty to which he had consented.	(1) **Vendome Villars, Leopold of Dessau.** (2) Duke of Marlborough, Eugene of Savoy, Heinsius.	(2) Gibraltar, Blenheim, Ramillies, Turin, Oudenarde, Malplaquet.	By the peace of Utrecht in 1713 and that of Rastadt in 1714 Spain and the Indies go to Philip of Anjou; Naples, Milan, Sardinia and former Spanish Netherlands to the Austrians. England receives Newfoundland, Acadia and Hudson Bay Territory from France and Gibraltar from Spain.

NOTABLE WARS OF HISTORY—Continued

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
1. NORTHERN WAR—1700–1721 (1) **Sweden** vs. (2) Russia, Poland, Denmark, Saxony.	Peter the Great joins Poland, Denmark and Saxony for the purpose of despoiling Sweden, the first power of the north, of her Baltic ports.	(1) **Charles XII.** (2) Peter the Great (Russia), Augustus II. of Saxony.	(1) **Invasion of Denmark. Narva, Invasion of Saxony.** (2) Pultava.	By the peace of Nystadt (1721) Sweden cedes large territories to Russia. Russia takes the place of Sweden as the foremost power of the north.
2. WAR OF THE AUSTRIAN SUCCESSION—1740–1748. (1) **Austria, supported by Hungary, Bohemia, England, Holland and Saxony** vs. (2) Prussia, France, Spain, Bavaria	When Maria Theresa succeeded her father, Charles IV. of Austria, Frederick the Great of Prussia seized Silesia. This precipitated a struggle for Austrian territories. At the death of Charles VI. of Austria the right of Maria Theresa to the throne is contested chiefly by Frederick the Great of Prussia who seizes Silesia.	(1) **Maria Theresa, George II of England, Charles of Lorraine.** (2) Frederick the Great of Prussia, Emperor Charles VII, Schwerin.	(1) **Dettingen.** (2) Mollwitz, Chotusitz, Prague, Fontenoy, Hohenfriedburg, Soor. Peace of Dresden.	By the treaty of Aix-la-Chapelle Silesia is secured to Prussia, which state now becomes a great European power. This war is one phase of the long rivalry between France and Great Britain for seapower and dominion in America and India.
3. SEVEN YEAR'S WAR, OR THIRD SILESIAN WAR; in America, FRENCH AND INDIAN WAR—1756–1763. (1) **England, Prussia** vs. France, Austria, Russia Spain, Sweden.	Maria Theresa wishes to regain Silesia. Hostilities between French and English in America and India. George II's concern for his ancestral territory of Hanover.	(1) **Frederick the Great, Duke of Cumberland. Wolfe (America) Robert Clive, (India).** (2) Daun (Austria) Charles of Lorraine, Montcalm (America).	(1) **Dresden, Rossbach, Leuthen, Zorndorf, Minden.** (2) Kolin, Hohkirchen, Kunersdorf. *In America:* (1) **Louisburg, Fort Duquesne, Quebec.** *In India:* (1) **Plassey, Wandewash.**	The peace of Paris (1763) gives England, Canada, the supremacy in India and certain islands, especially in the West Indies. Prussia retains Silesia. This war really founded the British empire which is based on sea-power and colonial dominion.
4. AMERICAN REVOLUTIONARY WAR—1775-1783. (1) **English Colonies in America aided by France** vs. (2) England.	The revolt of the colonies against England was caused by infringements upon what they considered their rights of government, especially local self government and taxation.	See page 135.	See page 135.	Recognition of the independence of the United States in the peace of Paris (1783). The Mississippi river becomes the western boundary of the United States.
5. WARS OF THE FRENCH REVOLUTION—1792-1802. (1) **Revolutionary France** vs. (2) Coalitions of England, Austria, Prussia, Holland, and Spain. The Empire, Russia.	Intrigues of emigrés; horror of Europe at the execution of the king; French offer of aid to revolutionists in other countries.	(1) **Dumouriez, Kellermann, Jourdan, Hoche, Pichegru, Napoleon Bonaparte, Moreau.** (2) Duke of Brunswick, Coburg, Charles of Austria.	(1) **Valmy, Occupation of Nice and Savoy, Jemmapes. Execution of king (1793). Annexation of Belgium, Fleurus, Lodi, Siege of Mantua.** (2) Mainz, Neerwinden, Kaiserslautern, Wurzburg.	By peace of Campo Formio (1797) the French frontier is advanced to the Rhine, Venice is given to Austria and the Cisalpine and Ligurian republics founded in Italy under French control.
a. First Coalition—1792–1797. b. Bonaparte's Egyptian Expedition—1798–1799.	Bonaparte aims to prepare the way to attack Great Britain's power in India and dreams of rivaling early conquerors of the east.	(1) **Napoleon Bonaparte.** (2) Nelson (England).	(1) **Battle of the Pyramids.** (2) Battle of the Nile at Aboukir, Acre.	Nelson's victory removes a serious menace to British power in India, cuts off the French in Egypt and deprives France of communication with its best troops and ablest general.
c. Second Coalition.—1799–1802.	The mistakes of the government of the Directory and the prestige of Nelson's victory enable Great Britain to form the Second Coalition.	(1) **Napoleon, Joubert, Moreau.** (2) Suvaroff, Melas, Archduke John.	(1) **Marengo, Hohenlinden.** Napoleon's passage of the Alps (Great St. Bernard). (2) Novi.	The Peace of Presburg ends the contest between France and Austria. Much harsher terms are imposed on Austria. Peace of Luneville with Austria (1801); peace of Amiens with England (1802); Surrender of England's conquests except Trinidad and Ceylon; Malta to be restored to Knights of Malta.
6. NAPOLEONIC WARS—1802–1815. (1) **France under Napoleon** vs. (2) European Powers led by England. a. Third Coalition—1805.	Neither England nor France regarded the peace of Amiens as more than a truce. Among the many causes of friction leading to renewal of war chief place was given to England's refusal to restore Malta.	(1) **Napoleon.** (2) Nelson, Mack, Alexander I. (Russia), Kutusoff.	(1) **Ulm, Austerlitz.** (2) Trafalgar.	As a result of his brilliant successes Napoleon in 1802 becomes consul for life and in 1804 took the title emperor of the French. Confirmation of treaty of Campo Formio, with the recognition of Batavian, Helvetian, Cisalpine and Ligurian republics.
b. (Fourth) War with Prussia and Russia.—1806–1807.			(1) **Double battle of Jena and Auerstadt. Berlin decree. Eylau (indecisive). Friedland.**	By the treaties of Tilsit (1807) Russia recognizes Napoleon's relatives as kings of Naples, Holland and Westphalia and consents to the creation of the Confederation of the Rhine and the grand duchy of Warsaw under Napoleon's control. Alexander and Napoleon combine to dominate Europe. Prussia cedes territories containing half her population.
c. Peninsular War—1808–1814.	Rebellion of Spain against Joseph Bonaparte, whom Napoleon had placed on the throne.	(1) **Soult, Massena.** (2) Duke of Wellington.	(1) **Corunna.** (2) Talavera, Lines of Torres Vedras, Albuera, Salamanca, Vittoria, Toulouse.	French expelled from the peninsula.
d. Fifth War with Austria—1809.		(1) **Napoleon.** (2) Archduke Charles.	(1) **Aspern, Wagram.**	Austria cedes 32,000 square miles of territory, containing 3½ million inhabitants.
e. Invasion of Russia—1812.	Alexander's refusal to enforce Napoleon's continental system, and other causes of dispute.	(1) **Napoleon, Marshal Ney.** (2) Kutusoff. Barclay de Tolly.	(1) **Smolensk, Borodino.** Burning of Moscow. Retreat from Moscow. Passage of the Beresina.	Less than 20,000 of the half million men in Napoleon's army recrossed the Russian frontier.
f. War of Liberation—1813–1814.	The disastrous Russian campaign, together with the steady progress of the British in the peninsular war encourages the oppressed states of Germany to rise against Napoleon's tyranny, Prussia taking the lead.	(1) **Napoleon, Ney, Macdonald.** (2) Frederick, William III., Francis I. Alexander I, Schwarzenberg Blûcher, Bernadotte.	(1) **Lützen, Bautzen, Dresden,** (2) Dennewitz, Leipzig. (Battle of the Nations.) Allies enter Paris.	Driven from Russia in 1812, from Germany in 1813, Napoleon in 1814 was forced to surrender France itself. By the treaty of Fontainebleau he was given the Island of Elba and an annual revenue of 2,000,000 francs.
g. Waterloo Campaign—1815.	Quarrels among the allies and dissatisfaction of French with Louis XVIII tempt Napoleon to return from Elba.	(1) **Napoleon, Ney.** (2) Wellington, Blûcher.	Napoleon lands at Cannes (March 1); enters Paris March 20. (1) **Ligny.** (2) Quatre Bras, Waterloo, (June 18).	Waterloo marks the final downfall of Napoleon. He is transported to the island of St. Helena, where he died in 1821. In the Congress of Vienna the allies reconstructed Europe, restoring in general the legitimate rulers and erecting barriers against democratic movements and liberal ideas.

NOTABLE WARS OF HISTORY—Continued

Name of War, Contestants and Dates	Cause of Conflict	Leaders	Chief Battles and Incidents	Results and Comments
57. WAR OF 1812—1812–1814. (1) **United States** vs. (2) Great Britain.	Controversies over aggressions on neutral trade and British impressment of American seamen.	See page 285.	See page 285.	Peace of Ghent in 1814 led to the settlement of the northern boundary of the United States.
58. WAR OF GRECIAN INDEPENDENCE—1821–1829. (1) **Greeks, aided by England, Russia and France** vs. (2) Turks.	Revived feeling of Greek nationality, stimulated by a widespread secret society working for a restoration of a Greek empire at Constantinople.	(1) **Ypsilanti, Diebitsch** (Russia) **Codrington,** (England), **Byron,** (England). (2) Ibrahim, Pasha.	Massacre of Greeks at Chios. (1) **Navarino, Adrianople.** (2) Missolonghi.	The treaty of Adrianople, 1829, compelled Turkey to acknowledge the independence of Greece, which chose as king the Bavarian prince Otto I.
59. MEXICAN WAR—1846–1848. (1) **United States** vs. (2) Mexico.	Boundary disputes occasioned by the annexation of Texas.	See page 289.	See page 289.	By the treaty of Guadalupe Hidalgo, Mexico gives up to the United States all territory north of the Rio Grande and Gila rivers, comprising Texas, New Mexico, California, Nevada, Utah, Arizona and part of Colorado and Wyoming.
60. CRIMEAN WAR—1854–1856. (1) **Russia** vs. (2) Turkey aided by Great Britain, France and Sardinia.	The question of the political status and future of the lands of the Turkish empire. Immediate cause, the claim of Russia to a protectorate over all Greek Christians living under the sultan's rule.	(1) **Mentchikoff, Gortchakoff.** (2) Canrobert, Pelissier (France), Raglan, Simpson (England).	(1) **Balaclava.** (2) Alma, Siege of Sebastopol, Inkermann.	In the peace of Paris (1856) Russia's claim to a protectorate is disallowed, the Danube is opened to navigation and the Black Sea is closed to war vessels of all powers.
61. SEPOY MUTINY—1857–1858. (1) **Sepoys** vs. (2) English.	Uneasiness created by the rapid progress of British ways and rule causes a revolt of native Sepoy troops of India. Immediate cause the rumor that cartridges furnished troops were greased with a mixture of hog and beef fat—the one animal an object of loathing to Mohammedans, the other of religious worship to the Hindu.	(1) **Nana Sahib.** (2) Nicholson, Havelock, Campbell.	Mutiny of Sepoys at Meerut. (1) **Massacre at Cawnpore.** (2) Delhi, Relief of Lucknow.	Following the suppression of the mutiny the charter of the East India company is revoked and India passes directly under the crown, a secretary of state for India being added to the British ministry.
62. WAR OF ITALIAN LIBERATION—1859. (1) **Sardinia-Piedmont and France** vs. (2) Austria.	Since 1848 Sardinia-Piedmont had been the center of the movement for Italian unity. Following promises of aid from Napoleon III. Cavour traps Austria into declaring war over the question of disarmament.	(1) **Victor Emmanuel, Napoleon III., Garibaldi.** (2) Francis Joseph II., Gyulay.	(1) **Montebello, Magenta, Solferino.** Peace signed at Zurich, Nov. 10, 1859.	By this war Victor Emmanuel gained Lombardy. In 1860 Tuscany, Parma, Modena and the papal legations were added. In 1861 he gained Sicily and Naples, together with the title King of Italy. Venetia followed as a result of alliance with Prussia in 1866 and the addition of Rome in 1871 completed the unification of Italy.
63. AMERICAN CIVIL WAR—1861–1865. (1) **Federal Government of United States** vs. (2) Southern Confederacy.	The election of Lincoln, which marked the triumph of the Free-Soil Republican party, was made the pretext for secession and the formation of the Southern Confederacy. War followed upon the attempt of President Lincoln to supply Fort Sumter.	See page 290.	See page 290.	Resulted in the abolition of slavery and the preservation of the union.
64. DANISH WAR—1864. (1) **Austria and Prussia** vs. (2) Denmark.	Incorporation of the duchy of Schleswig with Denmark in violation of treaty of 1852.	(1) **Gablenz (Aus), Prince Frederic Charles (Prus.)** (2) Dermeza, Gerlach.	(1) **Invasion of Jutland** (1) **Storming of Düppel.**	Denmark gives up Schleswig-Holstein, which is jointly administered by Austria and Prussia.
65. AUSTRO-PRUSSIAN WAR—1866. **Prussia with smaller North German States, and Italy** vs. (2) Austria, Hanover, Saxony, and South German States.	Friction over Schleswig-Holstein enables Bismarck to force Austria into a war for supremacy in Germany.	(1) **William I., Prince Frederic Charles, Moltke, Victor Emmanuel.** (2) Benedek, Archduke Albert, Gablenz, Prince Charles of Bavaria.	*In Bohemia:* (1) **Soor, Koniggrätz or Sadowa.** (2) Trautenau. *In the West:* (1) **Aschaffenburg.** (2) Langensala. *In Italy:* (2) Custozza, Lissa.	Closed with the peace of Prague, Aug. 23, 1866, which authorized the re-establishment of the federated German states, excluding Austria; Austria ceded Venetia to Italy, and her rights in Scleswig-Holstein to Prussia. Hanover, Hesse, Nassau are also annexed to Prussia.
66. FRANCO-PRUSSIAN WAR—1870–1871. (1) **France** vs. (2) Prussia supported by all German States including South.	Jealousy of France at Prussian gains and friction over Hohenzollern candidacy for the throne of Spain. Bismarck's falsification of the "Ems dispatch" tricked France into a declaration of war.	(1) **Napoleon, Mac Mahon, Bazaine.** (2) William I. Moltke, Prince Frederic Charles, Crown Prince Frederic William.	(1) **Saarbrucken.** (2) Weissenberg, Wörth, Vionville, Gravelotte, Sedan, Capitulation of Metz, Orleans, Capitulation of Paris.	Closed in 1871 with the treaty of Versailles with the following results: (1) The French military power was destroyed; (2) the western frontier of Germany was rendered secure; (3) The German empire was established; (4) Germany acquired Alsace and Lorraine. In France Napoleon III. is deposed and the Third republic established, 1870.
67. RUSSO-TURKISH WAR—1877–1878. (1) **Russia** vs. (2) Turkey.	Turkish misgovernment and revolts in her Christian subject provinces, which were barbarously put down ("Bulgarian atrocities") arouse all Europe but Russia alone declares war.	(1) **Grand Duke Nicholas, Gurka, Grand Duke Michael, Alexander II.** (2) Suleiman Pasha, Osman Pasha, Mukhitar Pasha.	(1) **Passages of the Danube at Shitova. Shipka Pass, Plevna, Storm of Kars.**	By the peace of San Stefano as revised in the congress of the powers at Berlin, Montenegro, Servia and Roumania become independent; Bulgaria remains tributary but receives a Christian prince; Russia obtains large indemnity and part of Armenia and also Bessarabia.
68. CHINESE-JAPANESE WAR—1894–1895 (1) **Japan** vs. (2) China.	Rival claims to suzerainty over Korea.	(1) **Ito, Yamagata, Oyama, Nogi.** (2) Tso, Yeh, Wei.	(1) **Yalu River, Port Arthur, Wei-hai-wei, Niuchwang.**	Treaty of Shimonoseki, signed April 17, 1895, removed Korea from Chinese influence; ceded Formosa and the Pescadores to Japan, and awarded to the latter an indemnity of $180,000,000.

NOTABLE WARS OF HISTORY—Continued

NAME OF WAR, CONTESTANTS AND DATES	CAUSE OF CONFLICT	LEADERS	CHIEF BATTLES AND INCIDENTS	RESULTS AND COMMENTS
1. SPANISH WAR—1898. (1) **United States** vs. (2) Spain.	Interference of the United States on account of the inhuman warfare waged by Spain in an attempt to suppress Cuban independence.	See Spanish-American War, page 294	See page 294.	By the treaty of Paris, Dec. 10, 1898, recognized the sovereignty of the United States in Cuba, and ceded to this country the Philippines, Porto Rico and Guam, in consideration of $20,000,000.
3. SOUTH AFRICAN or BOER WAR—1899-1902. (1) **Great Britain** vs. (2) Transvaal, Orange Free State.	Resistance by the Boers to the British form of government in the Transvaal.	(1) **Sir George White Buller, Methuen, Roberts, Kitchener, French.** (2) Cronje, Botha, De Wet, Delarey.	(1) **Siege of Ladysmith, Paardeberg.** (2) Colenso, Spion, Kop, Vaal, Krantz, Magersfontein.	Boers surrendered May 31, 1902; are granted the right of self-government under British Sovereignty, and united with other self-governing British colonies in South Africa, in 1910, to form the Union of South Africa.
4. RUSSO-JAPANESE WAR—1904-1905. (1) **Japan** vs. (2) Russia.	Russian encroachments in Manchuria and their fortification of Port Arthur.	(1) **Togo, Kuroki, Oku, Nodzu, Oyama, Nogi.** (2) Kuropatkin, Alexieff, Makaroff, Stoessel, Stakelberg, Linievitch.	(1) **Port Arthur and Chemulpo, Vladivostok, Yalu River, Dalny, Siege of Port Arthur, Mukden, Sea of Japan.**	Closed Sept. 5, 1905, by treaty of Portsmouth by which Korea passes under control of Japan, China regains Manchuria, and Japan is granted important railroad rights.
2. THE BALKAN WAR—1912-1913. (1) **Balkan Allies; Bulgaria, Greece, Servia and Montenegro** vs. (2) Turkey.	Turkish misrule and atrocities, combined with racial and religious hatred.	(1) **Czar Ferdinand, Crown Prince Constantine, Gen. Savoff, King Peter.** (2) Nazim Pasha, Muktor Pasha. Leaders Same as above.	(1) **Lule Burgas, Adrianople, Janini, Scutari, Kirk, Kilissa.**	By treaty of peace, signed May 30, 1913, between Turkey and the Balkan Allies by which the frontiers of Turkey were greatly delimited, the war was closed.
73. Second Balkan War—**1913.** (June 30 to July 29.) (1) Greece, Serbia, Montenegro, Roumania, Turkey vs. (2) Bulgaria.	Bulgaria, dissatisfied with her portion, makes war on her allies.	(1) **Lloyd George, Haig; Joffre, Foch, Clemenceau; King Albert; Orlando, Cadorna, Diaz; Wilson, Pershing, Sims; Venezelos; Brusiloff, Rennenkampf.** (2) William II, Hindenberg, Ludendorf, Tirpitz, Hollweg; Charles II.	Roumania attacks Bulgaria from the north. Turkey recaptures Adrianople.	Treaty of Bucharest, most of land conquered in First Balkan war divided among the Allies. Roumania gets a slice in the north. Albania created a state.
4. THE WORLD WAR—(1914-1919). (1) **France, England, Belgium, Italy, Serbia, Russia, Roumania, America, Greece Japan, (China, Brazil, Portugal, Montenegro)** vs. (2) Germany, Austro-Hungary, Bulgaria and Turkey.	The assassination of Archduke Francis Ferdinand of Austria-Hungary by a Serbian peasant destroyed the equilibrium of Europe and loosed the pent up jealousies among nations, especially Germany's lust for world empire and commercial primacy.		(1) **Invasion of Belgium; First Battle of the Marne; Battle of Verdun; Second Battle of the Marne; Battle of Caporetto; Battle of the Piave; Siege of Gallipoli; Allenby takes Palestine; Battle of Jutland; Submarine Warfare; Bombardment of Paris; Fall of the Hindenberg line; The American army in Battles of Argonne Forest; Aerial combats; Armistice at request of German Great Headquarters.**	Germany lost her commercial position; surrendered her fleet; her military autocracy fell; her colonies passed to her opponents; Alsace-Lorraine and parts of Schleswig and of Silesia seceded. The map of Europe was made over; Poland, Czecho-Slovakia, Jugo-Slavia, Hungary and small states on the Russian frontier became independent. Italy recovered and redeemed her lost provinces. Europe became industrially stagnant; Russia starved and Germany, Austria and Italy were torn with internal disorders. Republics were established and monarchies fell.
			Russian Revolution; Emperor William's abdication; Communism in Russia; The Peace of Versailles.	Naval disarmament was begun and reduction of land armaments became a necessity because of crushing European National debts. The Turk was discredited but retains his hold on Constantinople.

The World War

Resources

TABLE OF RESOURCES OF THE BELLIGERENTS.

	AREA	POPULATION	MILITARY STRENGTH (1915)			TOTAL AVAILABLE	NAVAL RESOURCES, LATEST AVAILABLE FIGURES									
							BATTLESHIPS			CRUISERS						
			PEACE STRENGTH	RESERVES	TOTAL WAR STRENGTH	MILITARY STRENGTH	MODERN	CRUISER	OLD	1ST CLASS	2ND CLASS	3RD CLASS	GUNBOATS	DESTROYERS	TORPEDO BOATS	SUBMARINES	PERSONNEL
France	207,054	39,601,509	790,000	4,516,507	5,300,000	2,620,302											
Russia	8,647,657	175,137,000	1,384,000	4,016,000	29,419,920	29,419,920	17	0	15	18	4	9	6	87	173	90	60,621
British Empire	13,153,712	437,447,932	138,497	2,743,986	3,000,000	7,427,000	9	44	8	6	6	3	8	105	23	48	52,463
Italy	101,623	35,598,000	306,000	2,994,200	3,380,200	3,739,357	29	10	38	42	37	33	10	227	58	85	137,500
Japan	747,655	53,696,858	250,000	1,250,000	1,500,000	3,239,372	8	0	8	7	3	10	5	35	73	20	33,095
Belgium	11,373	7,571,381	58,033	291,967	350,000	1,164,277	9	5	13	12	10	9	5	60	54	15	51,054
Portugal	35,000	5,957,985	30,490	230,000	260,000	871,476	..	..	..	..	..	..	..	..	..	..	.....
Serbia	34,000	4,600,000	38,316	317,139	355,455	554,143	..	..	1	..	..	6	10	2	7	2	4,000
Roumania	54,000	7,000,000	113,000	466,743	580,000	921 602	..	..	..	..	..	..	..	..	..	..	.....
Greece	46,522	5,000,000	60,000	590,000	460,000	514,260	..	..	..	..	..	..	8	..	..	..	.....
China	1,861,000	413,000,000	400,000	300,000	770,000	63,430,000	0	1	3	0	0	0	..	12	10	2	4,000
Brazil	3,292,000	24,300,000	33,000	527,000	560,000	4,301,643	..	..	..	..	..	..	19	..	..	..	.....
United States	3,616,484	102,826,309	.....	.....	(1918)3,725,000	13,500,000	2	0	1	0	5	2	28	10	4	3	8,000
Montenegro	5,650	520,000	35,000	.....	35,000	68,200	14	0	25	5	5	13	..	62	27	50	64,780
Germany	208,780	66,715,000	870,000	4,530,000	5,400,000	8,162,400	19	7	20	0	6	39	7	141	47	30	.....
Austria	264,034	40,000,000	436,035	3,163,965	3,600,000	6,376,466	4	0	9	3	2	7	3	18	53	15	66,783
Bulgaria	43,000	9,755,000	66,583	433,417	500,000	377,503	..	..	..	..	..	..	..	..	..	..	17,581
Turkey	710,224	21,274,000	210,000	890,000	1,100,000	3,174,780	2	1	3	2	2	1	2	10	8	..	30,000

Outline of Military Events

1914, WEST FRONT	EAST FRONT	1914 ITALY, BALKANS, TURKEY	NAVAL AND MINOR EVENTS
Aug. 1. Germany invades Luxemburg. 2. Demands passage through Belgium, refused. 3. Ultimatum to France. 4. Belgium invaded. British ultimatum to Germany. Battles for Liege forts till Aug. 15, delaying Germans 11 days. Brussels falls Aug. 20, Namur Aug. 22. Louvain library burned. 8. English expeditionary force under Gen. French arrives. 21-23. Battle of Mons-Charleroi. English and French retreat from Belgium. Germans advance within 25 miles of Paris.	Aug. 1. Germany declares war on Russia. 6. Austria declares war on Russia. 18. Russians invade East Prussia. This causes withdrawal of troops from the west. Battle of Tennenberg destroys first Russian army. Aug. 27-Sept. 3. Russians invade Galicia, almost destroy Austria's army. Capture of Halicz, Tarnow, Lemburg.	June 28. Murder of the Austrian archduke at Serajevo. July 23. Austrian ultimatum to Serbia. 29-30. Austrians bombard Belgrade. Aug. 4. Turkey forms alliance with Germany. 7. Montenegro declares war on Austria.	Aug. 2. Great Britain promises France that her navy will oppose any attempt of Germany to attack from the Channel. 4. United States declares her neutrality. 5. President Wilson offers to mediate between belligerent nations; appeals for peace. 18. Pres. Wilson appeals for neutrality of sentiment. 23. Japan declares war on Germany. 26. British capture Togoland. 28. British naval victory off Helgoland.
Sept. 6-10. Battle of the Marne, won by French under Foch and Joffre. The Germans, beaten, retreat to the Aisne. 12-17. Allies fail to break the German lines.	Sept. 6-10. Russians under Gen. Rennenkampf annihilated at Mazurian lakes by von Hindenberg.	Oct. Turkey violates her neutrality by protecting two German battleships and shelling Russian cities on the Black Sea (Oct. 29). Nov. 3. Russia declares war on Turkey. Nov. 5. Great Britain declares war on Turkey and annexes Cyprus. Nov. 10. Austrians invade Serbia.	Sept. 3. French government moved to Bordeaux (temporarily). German colonies, New Guinea, Bismarck Archipelago, and other East Indian islands taken by the Australians. Oct. 13. Belgian government retires to Havre, France. Germans capture Ghent. Nov. 1. German naval victory off Chile. 7. Japan captures Tsingtau and a number of islands in the Pacific. 10. Embden, German raider, sunk in the East Indies.
By Oct. 8 the trench system extended from the sea to Switzerland—300 miles. Oct. 8. Fall of Antwerp. 16-28. Battle of the Yser; Belgians cut the dykes in Flanders.			
Oct. 22-Nov. 15. Battle of Ypres. The German losses at the Yser and Ypres 150,000. They occupy industrial France and Belgium.	No. 5. Russians take Jaroslav. The Germans attempt invasion of Poland, but fail in three offensives and narrowly avert disaster in the Battle of Lodz (Nov. and Dec.).	Dec. 14. Serbia expels the Austrian army from her soil.	13. United States proclaims neutrality of Panama Canal Zone. 21. British take Basra on Persian Gulf. Dec. 8. British naval victory off the Falkland Islands. 17. Khedive of Egypt deposed as a German sympathizer and a protectorate proclaimed. The British navy controls the seas.

The Great War—Continued

1915 West Front

March-April. French and English offensive in the Champagne.

March 10. Battle of Neuve Chapelle.

April 22-26. Second battle of Ypres. Germans use poison gas for the first time.

May 9-June. Battle of Arras.
Sept. 25.-Oct. Failure of the Champagne offensive.

Dec. 15. Sir John French retired from command, succeeded by Sir Douglas Haig.

East Front

Jan.-Feb. Second Russian invasion of East Prussia crushed by Hindenburg in the Mazurian Lakes (4-13 Feb.).
March 17. Russians capture Przemysl.
April-Aug. Great German offensive in Poland and Galicia under Hindenburg and Mackensen.

May 2. Battle of the Dunajec River. The Germans break the Russian lines.

June 2. Fall of Prsemysl.
22. Fall of Lemburg.

Aug. 5. Fall of Warsaw. All Poland is overrun. Capture of Courland.

Sept. 8. Grand Duke Nicholas removed from command and transferred to the Caucasian Front.

The Russian losses in the campaign: 1,200,000 killed and wounded, 900,000 captured, 65,000 sq. miles territory taken. The Russian line now runs from Riga to East Galicia.

1916 Italy, Balkans and Turkey

Feb.-March. Failure of British and French fleets to force the Dardanelles.

April 26. Allied troops landed on the Gallipoli peninsula.
30. Germans invade the Russian Baltic provinces.

May 23. Italy declares war on Austria.

Aug. 20. Italy declares war on Turkey.

Oct. 5. Russian ultimatum to Bulgaria.
13. Bulgaria joins the Central allies. Germans, Austrians, Bulgars in a combined offensive crush Serbia.
Sept. 18. Fall of Vilna.
Nov. 5. Fall of Nish.
Dec. 2. Monastir taken. Serbia completely crushed.
19. Gallipoli expedition abandoned.

Naval and Minor Events

Jan. 24. An English patrolling squadron defeats a number of German raiders on the Dogger Banks.
28. American merchantman, "Wm. P. Frye," sunk by the "Prinz Eitel Friedrich."
Feb. 10. U. S. notifies Germany that she will hold her strictly accountable for the loss of American vessels.
18. German "war zone" established around the British Islands—a so-called blockade.
20. U. S. sends identical notes to Great Britain and Germany suggesting agreement on naval warfare.
April 28. American merchantman "Cushing" attacked by a submarine.
May 1. American vessel "Gulflight" sunk, two Americans lost. Bernstorff, German ambassador, publishes warning in American papers for passengers to keep off the liners crossing the "war zone."
7. Lusitania sunk off Ireland, 1,154 dead, of whom 114 are Americans.
10. Germany expresses sympathy for lives lost on the Lusitania.
13. First Lusitania note.
25. American ship "Nebraska" attacked by a submarine.
June 8. Bryan resigns as Secretary of State.
9. Second Lusitania note.
July 21. Third Lusitania note. The U. S. complains of unsatisfactory replies.
Aug. 19. The "Arabic" sunk. Two Americans lost.
Sept. 1. Germany promises that her submarines will sink no more liners "without warning."
8. U. S. demands recall of Austrian ambassador, Dr. Dumba.
Dec. 4. U. S. demands recall of German attaches Boy-Ed and von Papen.

1916 West and East Fronts

Feb. 21. Battle of Verdun begins. The French resist heroically under Petain.
25. Fort Douaumont taken.

March 8. Germany declares war on Portugal.

July. The effort to take Verdun and open the way to Paris fails. Great losses (Germans at least 500,000 men) bring little gains.
1. British begin battle on the Somme to relieve pressure upon Verdun.

Sept. 26. Combles taken. The allies fail to break German lines. The losses on the Somme are estimated at 700,000 for the Germans and 800,000 for the French and English.

Balkans, Italy and Turkey

Jan. 8. Gallipoli evacuated.
13. Cettinje falls to the Austrians.
Feb. General Townshend besieged at Kut-el-Amara.
Grand Duke Nicholas starts a successful offensive in Armenia.
16. Capture of Erzerum.
27. Russians take Kermanshah.
April 17. Trebizond taken.
29. Relief expedition to Gen. Townshend forced back. The British in Kut surrender (13,000 men and all supplies).

May 16. Austrians start successful drive from the Trentino, but Brusiloff's drive compels them to give it up (June 3).
June. Russians under Brusiloff begin offensive in Volhynia and Bukovina.
17. Czernowitz captured and all Bukovina overrun.

Aug. 6. Italy begins offensive.

9. Garizia taken, advance upon Trieste.

27. Roumania declares war on Austria and Italy on Germany.
Sept. Roumanians invade Transylvania, unsupported by the Russians; Germans and Austrians under Mackensen and Falkenhayn drive them back. Bulgarians attack from the south and thus crush Roumania's armies. Valuable grain and oil supplies lost.

Dec. 6. Bucharest falls.

1916 Naval, Submarine and Other Events

Feb. 10. Germany sends note to neutrals that armed merchantmen will be sunk as warships without warning.

15. Secretary Lansing states that such ships have right to carry arms in self-defense.

March 24. "Sussex" sunk without warning in violation of pledge.

April 8. U. S. states that unless submarine warfare is given up, she will sever diplomatic relations.
25-28. Sinn Fein rebellion, led by Sir Roger Casement, supported by Germany.

May 4. Germany acknowledges sinking of the "Sussex," and in the main meets demands of the U. S.

25. Compulsory military service adopted in Great Britain. Basis laid for an army of 5,000,000.

27. Pres. Wilson before League to Enforce Peace states that the U. S. is ready to join any practical league to preserve peace.
31. Battle off Jutland.

June 5. Lord Kitchener drowned.
21. U. S. demands apology and reparation for the sinking of the "Petrolite."

Sept. 7. Denmark sells the Virgin Islands to the U. S. for $25,000,000.

Oct. 28. English ship "Mariana" sunk without warning. Six Americans lost.
Nov. 6. English ship "Arabic" torpedoed.
Dec. 5-7. Lloyd George displaces Asquith as head of Cabinet to infuse new energy into the war.
12. Germany offers peace, refused by the allies as empty and insincere.
14. English horse transport sunk. Seventeen Americans lost.
28. Pres. Wilson sends peace note to the belligerents to which Germany replies on Dec. 26.

1917 West and East Fronts

March 17-19. Germans retreat on a front of 100 miles to the Hindenburg Line, destroying everything, and evacuate 1,300 square miles.

19. Abdication of the Czar.

April 9. Battle of Arras. Vimy Ridge taken.

April 16. French successes about the Aisne between Soissons and Rheims.

May 15. Petain succeeds Nivelle as head of the French forces.

17. Russian Provisional Government reconstructed, Kerensky becomes minister of war.

June 7. Capture of Messines Ridge, 7,500 German prisoners.

26. First American troops reach France.

July 19. Russian army, raised by Kerensky, begins offensive in Galicia but is easily stopped.

31. Battle of Flanders (Paeschendaele Ridge).

Aug. 15. Canadians capture Hill 70 commanding Lens.

Sept. 3. Germans occupy Riga.

Nov. 22-Dec. 13. Battle of Cambrai. Great success under Gen. Byng. Battle of Bourlon Wood.

6-7. Kerensky overthrown by the Bolsheviki.

Dec. 13. Germans drive British back from Cambrai.
15. Bolsheviki government concludes armistice with Germany.
23. Peace negotiations begun at Brest Litovsk.

Italy, Balkans and Turkey

Jan. 2. Dobrudja captured by the Bulgarians.
5. Foscani falls.

Feb. 24. Gen. Maude recaptures Kut-el-Amara.

March 11. British take Bagdad and advance into Palestine.

May 15. Italians begin offensive on the Isonzo front.

June 12. Constantine, king of Greece, compelled to abdicate.

29. Greece joins in the war on the Central allies.

Aug. 9. Italians capture Gorizia.
29. Fall of Monte Santo.

Sept. 14. Capture of Monte San Gabriele.

Oct. Battle of Caporetto, beginning of the retreat to the Piave River.

Nov. 18. British capture Ascalon and Jappa.

Dec. 9. Fall of Jerusalem.

1917 United States Naval and Minor Events

Jan. 10. Allies state their terms. Germany has sunk 5,034,000 tons of shipping.
19. "Harrowdale" sunk, 72 American seamen taken prisoners to Germany.
Feb. 1. Germany declares unrestricted submarine warfare and breaks her pledge.
3. U. S. severs diplomatic relations with Germany and dismisses Bernstorff.
5. By this time the Germans had killed 14,120 non-combatant English people through their submarines.
12. U. S. informs Swiss minister she will not negotiate with Germany until submarine warfare is discontinued.
26. Pres. Wilson asks authority to arm merchant ships.
28. Disclosure of Zimmerman note to Mexico promising her New Mexico, Arizona, etc., if she would go to war with the U. S.
March 14. China breaks diplomatic relations with Germany.
March 27. Brand Whitlock, minister to Belgium, withdrawn.

April 6. U. S. declares war on Germany.
8. Relations with Austria severed.
20. U. S. breaks diplomatic relations with Turkey.

May 4. First American destroyers join British fleet.
18. Pres. Wilson signs Selective Service Act.

June 15. First Liberty Loan, $3,035,226,850, subscribed.

July 4. Dr. von Bethmann-Hollweg resigns as German Chancellor.
14. Dr. Georg Michaelis becomes Chancellor.
20. Drawing of numbers for the first draft.
30. Mutiny in German fleet in Wilhelmshaven and Kiel.

Aug. 10. Food and Fuel Control bill passed.

Sept. 8. Luxburg dispatches revealed in the U. S.

Oct. 27. Second Liberty Loan, $4,617,532,300, subscribed.
30. Count von Hertling succeeds Michaelis as Chancellor.

Nov. 13. Clemenceau succeeds Ribot as Premier of France.
29. First session of the Interallied Conference in Paris. Col. E. M. House chairman of American delegation. Sixteen nations represented.

Dec. 7. U. S. declares war on Austria.
6. U. S. destroyer "Jacob Jones" sunk by submarine. Forty men lost.
26. Proclamation issued taking over the railroads by the government. W. G. McAdoo appointed director general.

The Great War—Continued

1918 WEST FRONT

March 21. Central Allies begin unexampled drive between Arras and La Fere. First and second British lines oken and fifth British army annihilated. By the 3rd of April Allies are driven back 35 miles on a front of 60 miles. ains of 1916-17 are lost and Germans are eight miles from Amiens.

April 9. Germans start drive for the Channel ports. Fall of Bailleul. The Kemmelberg taken.

May 27. Third offensive begins. Attack from Ailette River to Berry-au-Bac, a front of 33 miles. The Aisne eights swept and the Vesle River crossed. The Germans break through the lines on the Ourcq and march towards aris. Soissons, Chateau-Thierry, Dormans fall. The Germans advance 34 miles. The first American troops op them at Cantigny and Chateau-Thierry.

June 9. The Germans strike between Montdidier and Noyon, intending to capture Compiegne and open way Paris. Checked by French.

July 15. Fifth drive from Chateau-Thierry to Main de Massiges, the Marne crossed. Americans driven back, heims menaced. Foch launches counter attack.

July-Nov. The Great Allied Offensive. German reserves exhausted. Retreat to the Vesle. British drive from miens under Rawlinson. Evacuation of the Montdidier sector. Foch next drives for the Hindenburg Line. angin crosses the Ailette. Byng in the north takes 30,000 prisoners. Evacuation of the Lys River section. Horne tacks from Arras, takes 20,000 Germans. Sept. 12-13, Pershing takes the salient of St. Mihiel. Next drives north om Verdun, takes Montfaucon, Varennes, and moves up the Meuse. The Belgians and Gen. Plumer advance to ke Roulers, Menin, and threaten Ostend and Bruges. On Oct. 8 the decisive thrust occurs. Cambrai and Douai ll. Valenciennes captured, thus outflanking the whole German positions west of the Dutch frontier, Maubeuge d Mons fall. Final American effort at Argonne and Sedan.

Nov. 11. Germany, totally defeated in the West, signs armistice at Senlis. She promises to evacuate all ter- tory held, including Alsace and Lorraine, return all people deported therefrom, surrender of large quantities of war aterial, evacuate all land west of the Rhine, return all prisoners of war, abandon treaties of Brest-Litovsk and Bucharst, surrender most of the German navy, allow occupation of Rhine valley by the Allies.

RESULTS—Fall of Germany's military autocracy. Loss of her colonies. France annexes Alsace-Lorraine. oland becomes a free republic. Austrian Empire comes to an end. Hungary and Austria become republics. Italy ets Trent and Trieste. The South Slava join Jugo-Slavia. Roumania gets Bessarabia and Transylvania. The ardanelles and Constantinople are internationalized. Armenia and Arabia become free. Czecho-Slovakia founded s a free republic. Submarine forbidden as a weapon of war. Formation of a league of nations.

1918 MISCELLANEOUS

April-May. Third Liberty Loan. $4,176,516,850, subscribed.

June 12. Austrian offensive on the Piavo defeated by Diaz.

Aug.-Sept. English advance under Allenby in Palestine north of Jerusalem with the help of the King of Hedjas.

Sept. 25. Serbian-Greek offensive destroys Bulgarian armies. which flee and retire up the Vardar valley. Battle of Samaria. Allenby envelopes the Turks, captures 40,000 prisoners, 700 guns and all their supplies. Uskib falls.

30. Prince Max of Baden succeeds Hertling as Chancellor.

Oct 1. Allenby captures Damascus.

2. Serbians enter Nish. Bulgaria makes complete surrender.

31. Unconditional surrender of Turkey.

Oct.-Nov. Fourth Liberty Loan, $6,989,047,000 subscribed.

Nov. 4. Austria surrenders without terms.

9. Berlin socialists take over the government. Signal for nation-wide revolution. Ebert becomes Chancellor.

21. Germany surrenders most of her fleet.

Dec. 3. Pres. Wilson sails for Europe.

1920. Peace Treaty signed.

KINGS OF ASSYRIA BEFORE THE DIVISION

B. C.	
2017	Semiramis (?)
1937	Arabs seize Nineveh
1446	Belochus
1433	Artossa
1421	Belatores
1183	Thaeus
1139	Thinaeus
840	Sardanapalus
820	Burned in his palace
790	Pul (?)
	After death of Sardanapalus Assyrian Empire ends, being divided into Assyrian, Babylonian and Median kingdoms.

KINGS OF SMALLER ASSYRIA

747	Tiglath-Pileser, called Arbaces
728	Shalmanezer
717	Sennacherib
712	Esarhaddon
680	Esarhaddon takes Babylon.

KINGS OF SMALLER BABYLON

747	Nabonassar
734	Merodach Baladan
680	Esarhaddon
667	Saosduchinus
647	Chinlladon
626	Nabopolassar
605	Nebuchadnezzar
571	Meordach
559	Neriglissar
556	Laborosoarchod
555	Belshazzar
538	Babylon taken by Cyrus

KINGS OF DENMARK

714	Gorm I.
750	Ragnar Lodbrog
770	Sigfrid
809	Godefrid
809	Olaus I.
811	Hemming
812	Siward and Ringon
814	Harold and Regnar
849	Siward II.
856	Eric
858	Eric II.
863	Gorm the Old
873	Canute I.
915	Frothon
920	Gorm II.
925	Harold
928	Hardicanute
930	Gorm III.
935	Harold III.
980	Suenon
1014	Canute II. the Great
1036	Hardicanute
1041	Magnus I.
1048	Suenon II.
1079	Harold IV.
1080	Canute III.
1086	Olaus II.
1097	Eric III.
1106	Nicholas
1135	Eric IV.
1138	Eric V.
1147	Suenon III.
1157	Waldemar the Great
1182	Canute V.
1202	Waldemar II.
1240	Eric VI.
1250	Abel I.
1252	Christopher I.
1259	Eric VII.
1286	Eric VIII.
1319	Christopher II.
1340	Waldemar III.

KINGS OF DENMARK—Continued

1375	Olaus III.
1375	Margaret I., Queen of Denmark and Norway.
1411	Eric IX.
1439	Christopher III.
1448	Christian I.
1481	John
1513	Christian II.
1523	Frederic I.
1534	Christian III.
1559	Frederic II.
1588	Christian IV.
1648	Frederic III.
1670	Christian V.
1699	Frederic IV.
1730	Christian VI.
1746	Frederic V.
1766	Christian VII.
1808	Frederic VI.
1839	Christian VIII.
1849	Frederic VII.
1863	Christian IX.

KINGS OF EGYPT

B. C.	
2700	Mena or Menes
2650	Khufu
2615	Khafra
2580	Menkaura
2390	Amenemhat
2371	Usurtasen I.
2325	Amenemhat II.
2276	Usurtasen II.
2254	Usurtasen III.
2221	Amenemhat III.
2100	Hyksos or Shepherd dynasty
1670	Hyksos, driven out by Aahmes
1590	Thutmosis III.
1488	Amenhotep III.
1407	Seti I.
1365	Ramessu II., the Great
1322	Mineptah
1269	Ramessu III.
1093	Hirhor or Smendes
961	Shashang I. (Shisak)
825	Petubastes
737	Shabak or Sebacon
725	So
670	Psammetikh
616	Nekho
600	Psammis
594	Hophra
571	Apries, strangled
571	Amasis
525	Psammenit
525	Cambyses conquers Egypt
414	Amyrtaeus
408	Psammetikh II.
396	Nephnren
389	Acoris
376	Psammetis
375	Nectanebis
363	Tachos
362	Nectanebis II.
350	Ochus of Persia conquers
323	Ptolemy Soter
285	Ptolemy Philadelphus
247	Ptolemy Evergetes
221	Ptolemy Philopater
204	Ptolemy Epiphanes
180	Ptolemy Philometer
145	Physcon or Evergetes II.
117	Lathyrus Soter and Cleopatra
107	Alexander and Cleopatra
83	Lathyrus
81	Alexander
65	Ptolemy Auletes
51	Ptolemy Dionysius and Cleopatra
47	Ptolemy the Younger and Cleopatra
43	Cleopatra alone
30	Egypt becomes Roman province.

KINGS AND RULERS OF ENGLAND

B. C.	
55	Julius Caesar conquers
4	Cymbeline king
A. D.	
43	Claudius Caesar conquers
51	Caractacus
61	Boadicea
61	Suetonius Paulinus rules
85	Julius Agricola rules
179	St. Lucius rules
209	Severus rules
306	Constantius
449	Vortigern rules
449	Saxon Heptarchy established
457	Hewgist founds Kent
490	Ella founds Sussex
508	Prince Arthur rules
519	Cedric founds Wessex
527	Erceuwin founds Essex
547	Ida founds Northumbria
575	Uffa founds East Anglia
586	Cridda founds Mercia
678	Cadwallader
688	Ina, king of Wessex
758	Offa, king of Mercia
827	Saxon Heptarchy ends and seven kingdoms unite as England
827	Egbert
838	Ethelwolf
854	Ethelbald
860	Ethelbert
866	Ethelred I.
872	Alfred
901	Edward the Elder
925	Athelstan
940	Edmund I.
946	Edred
955	Edwy
959	Edgar
975	Edward II., the Martyr
978	Ethelred II.
1016	Edmund II., Ironside
1013	Sweyn
1016	Canute
1035	Harold I., Harefoot
1039	Hardicanute
1041	Edward III., the Confessor
1066	Harold II.
1066	William the Conqueror
1087	William II., Rufus
1100	Henry I., the Scholar
1135	Stephen (of Blois)
1141	Matilda (or Maud)
1141	Stephen restored
1154	Henry II., Plantagenet
1189	Richard the Lion-hearted
1199	John Lackland
1216	Henry III.
1272	Edward I.
1307	Edward II.
1327	Edward III.
1377	Richard II.
1399	Henry IV. of Lancaster
1413	Henry V.
1422	Henry VI.
1461	Edward IV.
1483	Edward V.
1483	Richard III.
1485	Henry VII Tudor
1509	Henry VIII.
1547	Edward VI.
1553	Mary I.
1554	Philip and Mary
1558	Elizabeth
1603	James I., Stuart
1625	Charles I.
1653	Oliver Cromwell
1658	Richard Cromwell
1660	Charles II.
1685	James II.
1689	William III. and Mary II.
1694	William alone
1702	Anne
1714	George I.

KINGS AND RULERS OF ENGLAND—Continued

A. D.	
1727	George II.
1760	George III.
1820	George IV.
1830	William IV.
1837	Victoria
1901	Edward VII.
1910	George V.

KINGS OF FRANCE

A. D.	
481	Clovis, grandson of Merovius
511	Thierry, Childebert, Clodomer and Clotaire I.
558	Clotaire alone
561	Charibert, Gontran, Sigebert and Chilperic
583	Clotaire II. of Soissons
596	Thierry II. and Theodobert II., kings of Austrasia
614	Interregnum
628	Dagobert and Charibert
638	Siegebert II. and Clovis II.
655	Clotaire II.
660	Childeric II.
679	Thierry III.
690	Pepin Herlstal, Mayor of the Palace
692	Clovis III.
695	Childebert III.
711	Dagobert III.
714	Charles Martel
715	Childeric II.
720	Thierry IV.
742	Childeric III.
752	Pepin the Short
768	Charlemagne and Carloman
814	Louis the Gentle
840	Charles the Bald
877	Louis the Second the Stammerer
879	Louis III. and Carloman
884	Charles the Gross
888	Eudes
898	Charles III. the Simple
922	Robert, Usurper
923	Rodolph
936	Louis IV. the Stranger
954	Lothaire
986	Louis V. the Lazy
987	Hugh Capet, Usurper
996	Robert.
1031	Henry I.
1060	Philip I.
1108	Louis the VI. the Gross
1137	Louis VII.
1180	Philip II. Augustus
1223	Louis VIII. the Lion
1226	Louis IX. called St. Louis
1270	Philip III. the Bold
1285	Philip IV. the Fair
1314	Louis X. Hutin
1316	John I., eight days
1316	Philip V. the Long
1322	Charles IV. the Fair
1328	Philip VI. of Valois
1350	John II., the Good
1364	Charles V. the Wise
1380	Charles VI. the Beloved
1422	Charles VII. the Victorious
1461	Louis XI.
1483	Charles VIII.
1498	Louis XII.
1515	Francis I. the Gentleman
1547	Henry II.
1559	Francis II.
1560	Charles IX.
1574	Henry III.
1589	Henry IV. the Great
1610	Louis XIII. the Just
1643	Louis XIV. the Great
1715	Louis XV.
1774	Louis XVI.

KINGS OF FRANCE—Continued

A. D.	
1792	Louis XVI., deposed.
1793	Executed.
1804	Napoleon Bonaparte, Emp.
1814	Louis XVIII.
1824	Charles X.
1830	Louis Philip.
1848	Louis Napoleon, President.
1852	Napoleon III., Emperor of the French.

EMPERORS OF GERMANY

A. D.	
800	Charlemagne or Charles the Great.
814	Louis the Gentle.
840	Lothaire I.
855	Louis II.
875	Charles II. the Bald.
877	Interregnum.
878	Louis III.
879	Charles III. the Fat.
887	Arnulf.
899	Louis IV.
912	Conrad I.
919	Henry I. the Fowler.
936	Otho the Great.
973	Otho II.
983	Otho III.
1002	Henry II. the Lame.
1024	Conrad II.
1039	Henry III.
1055	Henry IV.
1077	Rodolphus, killed in battle.
1080	Henry IV., reinstated.
1106	Henry V.
1125	Lothaire II.
1138	Conrad III.
1152	Frederick I. Barbarossa.
1190	Henry VI.
1198	Philip.
1208	Otho IV.
1212	Frederick II.
1250	Conrad IV.
1273	Rodolph of Hapsburg.
1291	Adolphus of Nassau.
1298	Albert of Austria.
1308	Henry VII. of Luxemburg.
1314	Louis IV.
1347	Charles IV.
1378	Venceslas.
1400	Robert, Count Palatine.
1410	Sigismund.
1438	Albert II. of Austria.
1440	Frederick III.
1493	Maximilian I.
1519	Charles V.
1556	Ferdinand I.
1564	Maximilian II.
1576	Rodolph II.
1612	Matthias.
1619	Ferdinand II.
1637	Ferdinand III.
1658	Leopold I.
1705	Joseph I.
1711	Charles VI.
1742	Charles VII.
1745	Francis I.
1765	Joseph II.
1790	Leopold II.
1792	Francis II., till 1806.
1806	Confederation of the Rhine, Francis II. takes the title of Emperor of Austria.
1815	German Confederation.
1835	Ferdinand I. of Austria.
1848	Francis Joseph.

EARLY KINGS OF ITALY

A. D.	
476	Odoacer.
493	Theodoric.
526	Amalasunta and Athalric.
534	Theodotus.
536	Vitiges.
540	Interregnum.
541	Totila.
552	Interregnum.
553	Tejas. End of Gothic Kingdom in Italy.

KINGS OF MACEDON

B. C.	
814	Caranus.
786	Coenus.
774	Thurimas.
728	Perdiccas I.
678	Argaeus I.
640	Philip I.
ÆRH	Aeropas.
576	Alcetas.
547	Amyntas II.
497	Alexander I.
454	Perdiccas II.
413	Archelaos.
399	Amyntas II.

KINGS OF MACEDON—Continued

B. C.	
390	Argaeus.
390	Amyntas II.
371	Alexander II.
370	Ptolemy Alorites.
366	Perdiccas III.
360	Philip II.
336	Alexander III., the Great.
323	Philip Aridaeus.
317	Cassander.
298	Alexander and Antipater.
294	Demetrius Poliorcetes.
287	Pyrrhus.
286	Lysimachus.
280	Ptolemy Ceraunus.
278	Sosthenes.
277	Antigonus Gonatus.
242	Demetrius.
232	Antigonus Doson.
220	Philip III.
179	Perseus.
168	End of Kingdom of Macedon.
148	Macedon becomes a Roman province.

KINGS OF MEDIA

B. C.	
747	Arbaces.
709	Dejoces (?).
657	Phraortes.
634	Cyaxares I.
596	Scythians expelled.
595	Astyages.
559	Cyaxares II. or Darius.
536	Cyrus the Great, who forms the Medo-Persian Empire.

KINGS OF THE PERSIANS

B. C.	
559	Cyrus the Great.
529	Cambyses or Ahasuerus.
522	Smerdis or Artaxerxes.
521	Darius or Hystaspes.
486	Xerxes the Great.
465	Artaxerxes Longimanus.
425	Xerxes II.
425	Sogdianus.
424	Ochus or Darius Nothus.
404	Artexerxes Mnemon.
361	Artaxerxes Ochus.
338	Arses.
336	Darius Codomanus.
330	Alexander the Great conquers Darius. End of Persian Empire.

THE PATRIARCHS

B. C.	
4004	Creation of Adam and Eve.
3874	Birth of Seth.
3769	Birth of Enos.
3679	Birth of Cainan.
3609	Birth of Mahalaleel.
3544	Birth of Jarel.
3382	Birth of Enoch.
3130	Birth of Methuselah.
3130	Birth of Lamech.
2948	Birth of Noah.
2448	Birth of Japhet.
2445	Birth of Shem.
2348	The Flood.
2346	Birth of Arphaxad.
2311	Birth of Salah.
2281	Birth of Eber.
HHAN	Birth of Peleg.
2217	Birth of Reu.
2185	Birth of Serug.
2155	Birth of Nahor.
2126	Birth of Terah.
1996	Birth of Abram.
1921	Call of Abram.
1896	Birth of Isaac.
1836	Birth of Jacob.
1745	Birth of Joseph.
1574	Birth of Aaron.
1571	Birth of Moses.

GOVERNORS AND JUDGES OF THE ISRAELITES

B. C.	
1491	Moses.
1451	Joshuah.
1405	Othniel.
1323	Ehud.
1305	Shamgar.
1285	Deborah and Barak.
1255	Gideon.
1236	Abimelech.
1232	Tola.
1210	Jair.
1188	Jephthah.
1182	Ibzan.
1175	Elon.
1165	Abdon.
1157	Eli.
1137	Samson.
1116	Samuel.

KINGS OF THE JEWS

B. C.	
1095	Saul.
1055	David and Ishbosheth.
1048	David.
1015	Solomon.
975	Division of the Kingdom.

KINGS OF JUDAH

B. C.	
975	Rehoboam.
958	Abijam.
955	Asa.
914	Jehoshaphat.
889	Jehoram.
885	Ahaziah.
884	Athaliah.
878	Jehoash.
839	Amaziah.
810	Azariah.
742	Ahaz.
727	Hezekiah.
698	Manasseh.
643	Amon.
641	Josiah.
610	Jehoahaz.
610	Jehoiakim.
610	Jehoiachin.
598	Zedekiah.
588	Nebuchadnezzar destroys Jerusalem.

KINGS OF ISRAEL

B. C.	
975	Jeroboam.
954	Nadab.
953	Baasha.
930	Ela.
929	Zimri.
929	Omri.
917	Ahab.
897	Ahaziah.
896	Jehoram.
884	Jehu.
856	Jehoahaz.
841	Jehoash.
826	Jeroboam II.
773	Zachariah.
772	Shallum.
772	Menahem.
761	Pekahiah.
759	Pekah.
730	Hosheah.
721	Shalmanezer, king of Assyria, takes Samaria. End of the Kingdom of Israel.

ASSYRIA *

B. C.	
2245	Nimrod founded Babylon.
2059	Ninus united Nineveh and Babylon, forming the Assyrian Empire.

* Ancient Assyrian history defective and uncertain.

PRINCES OF JUDEA

(Called the Maccabees)

B. C.	
166	Judas Maccabeus, great-great-grandson of Asmoneus.
161	Jonathan.
143	Simon.
135	John Hyrcanus.

KINGS OF JUDEA

B. C.	
107	Aristobulus.
106	Alexander Jannaeus.
79	Alexandra.
70	Hyrcanus.
70	Aristobulus.
63	Hyrcanus restored.
40	Antigonus.
37	Herod the Great.
3	Archelaus.
A. D.	
8	Judea becomes a Roman province.

KINGS OF ROME

753	Romulus builds Rome.
716	Interregnum of one year.
715	Numa Pompilius.
672	Tullus Hostilius.
640	Ancus Martius.
616	Tarquinius Priscus.
578	Servius Tullius.
534	Tarquinius Superbus.
509	The Tarquins expelled. Consular government begins and continues 461 years, till the battle of Pharsalus.

KINGS OF PORTUGAL

A. D.	
1093	King of Lorraine, Count of Portugal.
1139	Alphonsus I. proclaimed king.
1185	Sancho I.
1212	Alphonsus II.
1224	Sancho II.
1247	Alphonsus III.
1279	Dennis.
1325	Alphonsus IV.
1357	Peter the Severe.
1367	Ferdinand I.
1385	John I.
1433	Edward.
1438	Alphonsus V.
1481	John II.
1495	Emanuel.
1521	John III.
1557	Sebastian.
1578	Henry.
1580	Anthony.
1640	John IV.
1656	Alphonsus VI.
1668	Peter II.
1707	John V.
1750	Joseph.
1777	Mary Frances Isabella.
1799	John VI.
1826	Don Pedro.
1828	Don Miguel.
1834	Maria II.
1853	Nov. 15. Death of Maria. Peter V. king. Dec. 19. King-Consort.
1861	Louis Philip.
1875	Don Luis.
1888	Don Carlos I.

EMPERORS OF ROME

B. C.	
45	Julius Cæsar.
44	Slain in the Senate House. Anarchy.
27	Augustine Cæsar.
A. D.	
14	Tiberius.
37	Caligula.
41	Claudius.
54	Nero.
68	Galba.
69	Otho.
69	Vitellius.
70	Vespasian.
79	Titus.
81	Domitian.
96	Nerva.
117	Hadrian.
138	Antoninus Pius.
161	Marcus A. Antoninus and Lucius Verus.
170	Marcus Aurelius alone.
180	Commodus.
193	Pertinax.
193	Julian, 66 Days.
193	Septimius Severus.
218	Heliogabalus.
222	Alexander Severus.
235	Maximinus.
236	Gordian the Elder.
236	Pupienus and Balbinus.
238	Gordian the Younger.
244	Philip.
249	Decius.
251	Gallus.
253	Emilianus.
254	Valerian and Gallienus, his son
260	Gallienus alone.
268	Claudius II.
270	Aurelian.
275	Tacitus.
275	Florianus.
276	Probus.
282	Carus.
283	Carinus and Numerianus.
284	Diocletian.
304	Constantius and Galerius.
211	Caracalla and Geta.
217	Marcinus.
306	Constantine the Great.
337	Constantine II., Constantius and Constans.
361	Julian.
363	Jovian.
364	Empire is divided.

ROMAN EMPERORS OF THE WEST

A. D.	
364	Valentinian.
367	Valentinian and Gratian.
375	Valentinian II. and Gratian.
383	Valentinian II. alone.
392	Eugenius.
394	Theodosius master of the whole Roman Empire, which is divided between his sons at his death, Jan. 17, 395.

ROMAN EMPERORS OF THE WEST—Continued

A. D.	
395	Honorius
423	Valentinian III.
454	Petronius Maximus
454	Avitus
455	Interregnum
456	Majorian
461	Severus
467	Anthemius
472	Olybius
473	Glycerius
474	Julius Nepos
476	Augustulus
476	Rome taken by Odoacer, at which event Western Empire ends.

ROMAN EMPERORS OF THE EAST

A. D.	
364	Valens
378	Interregnum of 5 months
379	Theodosius the Great
395	Arcadius
408	Theodosius II.
450	Marcianus
457	Leo the Great
474	Leo II.
474	Zeno
491	Anastasius I.
518	Justin I.
527	Justinian I.
565	Justin II.
578	Tiberius II.
582	Mauritius
602	Phocas
610	Heraclius
641	Constantine III.
641	Constans II.
668	Constantine IV.
685	Justinian II.
695	Leontinus
698	Tiberius III.
705	Justinian II. restored
711	Philip Bardanes
713	Anastasius II.
716	Theodosius III.
718	Leo III. the Isaurian
741	Constantine V. Copronymus
775	Leo IV.
780	Constantine VI. and Irene
797	Irene alone
802	Nicephorus I.
811	Michael I.
813	Leo III.
821	Michael II. the Stammerer
829	Theophilus
842	Michael III.

ROMAN EMPERORS OF THE EAST—Continued

A. D.	
867	Basil I. the Macedonian
886	Leo VI. the Philosopher
911	Alexander and Constantine VII. Porphyrogenitus.
919	Romanus I., Lecapenes, Christopher, Stephen and Constantine VIII.
945	Restoration of Constantine VII.
959	Romanus II.
961	Nicephorus Phocas II.
969	John Zimisces
975	Basil II. and Constantine IX.
1025	Constantine alone
1028	Romanus III. Argyrus
1034	Michael IV. the Paphlagonian
1041	Michael V. Calaphates
1042	Zoe and Theodora
1042	Constantine X. Monomachus
1054	Theodora restored
1056	Michael Stratioticus
1057	Isaac Comnenus I.
1059	Constantine XI. Ducas
1067	Eudocia
1067	Romanus III. Diogenes
1071	Michael VII. Parapinaces, Andronicus I., Constantine XII.
1078	Nicephorus Botaniates III.
1081	Alexius Comnenus I.
1118	John Comnenus I.
1143	Manuel Comnenus
1180	Alexius Comnenus II.
1183	Andronicus
1185	Isaac Angelus
1195	Alexius Angelus
1203	Isaac Angelus restored
1204	Alexius Mourzoufle
1204	Baldwin I.
1206	Henry
1217	Peter de Courtenay
1220	Robert de Courtenay
1228	John de Brienne and Baldwin II.
1237	Baldwin alone
1261	Michael Paleologue
1283	Andronicus II.
1328	Andronicus III.
1341	John Cantacuzene
1355	John Paleologue
1391	Manuel
1425	John Paleologue II.
1448	Constantine XIII.
1453	Constantinople taken by Turks, and end of Empire.

KINGS OF SCOTLAND

A. D.	
503	Fergus
843	Kenneth Mac Alpine
943	Malcolm I.
953	Indulf
959	Duff
963	Culen
970	Kenneth II.
987	Constantine III.
995	Kenneth III.
1002	Malcolm II.
1033	Duncan I.
1039	Macbeth
1057	Malcolm III.
1093	Donald III.
1094	Duncan II.
1098	Edgar
1107	Alexander I.
1127	David I.
1153	Malcolm IV.
1165	William
1214	Alexander II.
1249	Alexander III.
1286	Margaret
1292	John Baliol
1306	Robert I.
1329	David II.
1371	Robert II.
1390	Robert III.
1406	James I.
1437	James II.
1460	James III.
1488	James IV.
1513	James V.
1542	Mary Stuart
1567	James VI. who in
1603	became James I. of England

KINGS OF SYRIA

B. C.	
312	Seleucus I. Nicanor
281	Antiochus I. Soter
261	Antiochus II. Theus
246	Seleucus II. Callinicus
226	Seleucus III. Ceraunus
223	Antiochus III. the Great
187	Seleucus IV. Philopater
175	Antiochus IV. Epiphanes
164	Antiochus V. Eupator
162	Demetrius I. Soter
150	Alexander I. Balas
145	Demetrius II. Nicanor
144	Antiochus VI. Theus
143	Diodotus or Tryphon
139	Antiochus VII. Sidetes
130	Demetrius II. Nicanor
126	Alexander II. Zebina
124	Seleucus V.
123	Antiochus VIII. Grypus
97	Seleucus VI. Nicanor
93	Antiochus Eusebes
92	Antiochus IX. Grypus
91	Philip
90	Demetrius Euchares

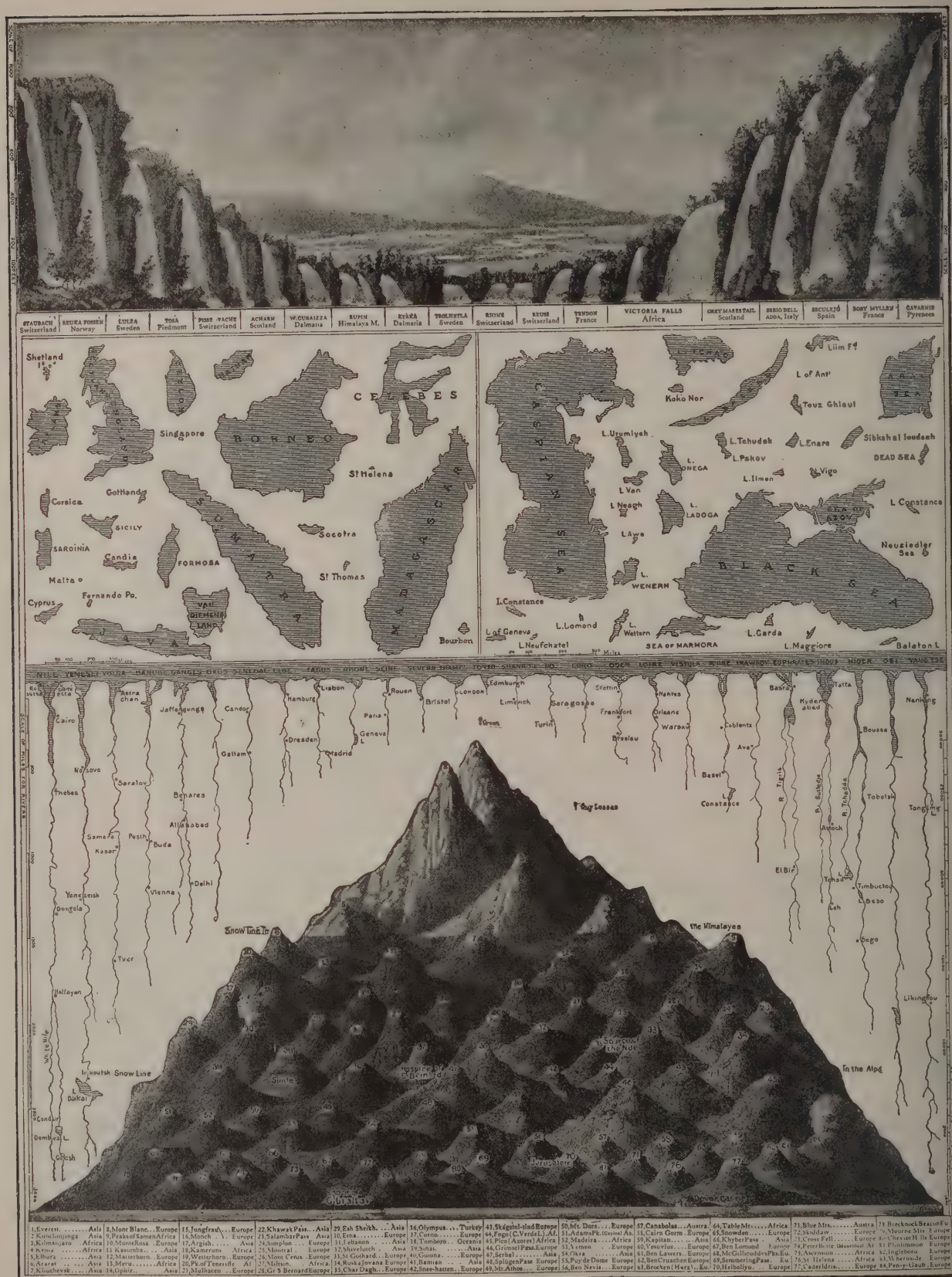
KINGS OF SYRIA—Continued

B. C.	
85	Antiochus Dionysius
83	Tigranes
69	Antiochus Asiaticus
65	Syria becomes a Roman province

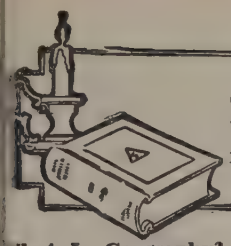
KINGS OF SWEDEN

A. D.	
825	Regnar Lodrock
	Reigns uncertain
966	Eric the Victor
994	Olaf
1026	Edmund Jacobson
1035	Edmund or Amand III.
1041	Haakon
1056	Stenkell
1060	Ingo I.
1054	Halstan
1080	Philip
1100	Ingo II.
1130	Ragwald
1133	Magnus I.
1144	Suercher II.
1150	Eric X.
1162	Charles VII.
1168	Canute
1192	Suercher III.
1211	Eric XI.
1220	John I.
1223	Eric XII.
1250	Waldemar
1276	Magnus II.
1290	Birger II.
1318	Magnus III.
1365	Albert
1397	Margaret
1411	Eric XIII.
1441	Christopher
1448	Charles VIII.
1458	Christian I.
1520	Christain II.
1528	Gustavus I. Vasa
1556	Eric XIV.
1569	John III.
1592	Sigismond I.
1606	Charles IX.
1611	Gustavus Adolphus II.
1632	Christina
1654	Charles X.
1660	Charles XI.
1697	Charles XII.
1718	Ulrica Eleonore
1720	Frederic
1750	Adolphus Frederic
1771	Gustavus Adolphus III.
1792	Gustavus Adolphus IV.
1809	Charles XIII.
1818	Charles John XIV.
1844	Oscar Frederic
1859	Charles XV.
1882	Oscar II.

AMERICAN INDIAN



1. Everest	Asia	8. Mont Blanc	Europe	15. Jungfrau	Europe	22. Khawak Pass	Asia	29. Esh Sheikh	Asia	36. Olympus	Turkey	43. Skegriol-island	Europe	50. Mt. Dore	Europe	57. Canabolas	Austra	64. Table Mt	Africa
2. Kunchinjinga	Asia	9. Peaks of Samen	Africa	16. Monch	Europe	23. Salambar Pass	Asia	30. Etna	Europe	37. Corno	Europe	44. Fogo (C. Verde Is.)	Af.	51. Adam's Pk. (Ceylon)	As.	58. Cairn Gorm	Europe	65. Snowden	Europe
3. Kilimanjaro	Africa	10. Monte Rosa	Europe	17. Argish	Asia	24. Jumplon	Europe	31. Lebanon	Asia	38. Tomboro	Oceania	45. Pico (Azores)	Africa	52. Madeira	Africa	59. Kapitan	Asia	66. Khyber Pass	Asia
4. Kenia	Africa	11. Kasumba	Asia	18. Kameruns	Africa	25. Monreal	Europe	32. Shuvelutch	Asia	39. Sinai	Asia	46. Grimsel Pass	Europe	53. Yemen	Europe	60. Vesuvius	Europe	67. Ben Lomond	Europe
5. Elburz	Asia	12. Matterhorn	Europe	19. Westerhorn	Europe	26. Mont Cenis	Europe	33. St Gothard	Europe	40. Cuzona	Europe	47. Serbal	Asia	54. Okra	Asia	61. Ben Lavers	Europe	68. McGillicuddy's Pks.	Eu.
6. Ararat	Asia	13. Meru	Africa	20. Pic of Teneriffe	Af.	27. Malvan	Africa	34. Runka Jovana	Europe	41. Bamian	Asia	48. Spligen Pass	Europe	55. Puy de Dome	Europe	62. Ben Cruachen	Europe	69. Semmering Pass	Eu.
7. Kluchevsk	Asia	14. Ophir	Asia	21. Mulhacen	Europe	28. Gr S Bernard	Europe	35. Chat Dagh	Europe	42. Snee-hatten	Europe	49. Mt. Athos	Europe	56. Ben Nevis	Europe	63. Brocken (Harz)	Eu.	70. Helbollyn	Europe
71. Blue Mts	Austra	78. Brocknock Beacon	Eu																
72. Skuldaw	Europe	79. Meurne Mts	Europe																
73. Cross Fell	Europe	80. Chevriot Hills	Europe																
74. Peterbottle Mountain	As.	81. Plinlimmon	Europe																
75. Ascension	Africa	82. Ingleboro	Europe																
76. St Helena	Africa	83. Wernside	Europe																
77. Caderidris	Europe	84. Penygaub	Europe																



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BOOK V

GEOGRAPHY

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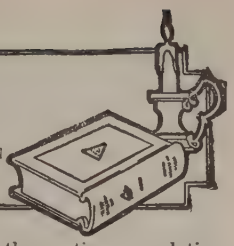


What Is Geography?—The Greek word "geography" means, literally, "description of the earth." It is plain, at the outset, that the term cannot merely refer to a knowledge of boundary lines between states and countries. If we imagine a child knows geography when he has learned to give the names of the continents, of the different empires or common wealths contained therein; if he can enumerate the states of the Union and bound them glibly—we are mistaken. It is helpful, especially for traveling, for letter communications, for commercial intercourse, for an understanding of political history, to know these things, but it is not geography, at least, not all of it, by far.

In common practice, geography includes teaching of the configuration of land and seas, of lakes and rivers and streams of all kinds; of mountain ranges and plateaus. Names of cities and hamlets, the number of inhabitants and other statistical material, are added. Some children learn to be quite proficient in this knowledge, especially those who are blessed with a good mechanical memory. Again, knowledge of this kind is helpful. It is, indeed, a description of the earth's surface.

Children so taught will even learn the definitions of various kinds of land and sea formation, such as islands, peninsulas bays, straits, and the like. Sad to say, often enough these definitions, ever so glibly recited, carry no definite meaning to the child. At one time, when a child was examined for admission to a certain school in Manhattan Borough, New York City, he was able to give the definition of an island perfectly, as being "a body of land entirely surrounded by water;" but when he was asked whether he had ever been on an island, he answered in the negative, not connecting the fact that he was standing on Manhattan Island with his word knowledge of what an island is.

Again, children may learn to "read maps" as it is called. They will find, with comparative ease, foreign countries on the map, locate the various states and provinces, rivers and mountains, oceans, lakes and watersheds, etc. They will point out the routes of travel from New York to Yokohama, and from there to the Sahara Desert. They will tell you about the vegetable and mineral staples to be obtained from these various regions.

Just the same, they may not find the way to the nearest postoffice, nor distinguish between north and south when lost in the woods, near their home.

Indeed, they would be even confused in reading their maps if you should happen to lay the atlas upside down before them so that "north" is at the bottom of the sheet, and "south" at the top, or at some other angle. For to them, "north" is "up," and "south" is "down," in accordance with the manner in which maps are usually drawn for school consumption. Thus. we speak of "up north" and "down south," as if one were really higher, and the other lower. As a matter of fact, considering the actual elevation, the distance from the center of the earth, north is lower than south, the earth's circumference being larger at the equator than at the poles, as the earth is "flattened" at the poles. In the southern hemisphere, everything is reversed.

Purpose of Geography Study.—If we were to remain stationary at any one place on this earth, or if we were entirely independent of other parts of the world for our individual or collective existence, there would be no need for us to study geography. But even Robinson Cruso, on his desert island, had to explore his surroundings, to learn about the possibilities of his exile for human existence, for making the island a home for himself, for eventual communication with the outside world.

Geography implies the exploration of our environment so that we may first of all locate ourselves within it. We must know where we are, what our immediate and more distant surroundings are, how we may get from one place to another, how we can communicate with our neighbors, how we can obtain shelter and food under the conditions under which we live, how we can protect ourselves against harmful influences in our environment, how we can adjust ourselves to it and use it for self-improvement, how we can widen our physical horizon, and so forth.

From time immemorial, when first man lived on this earth, he undertook to explore the territory in which he was placed. The instinct driving him to do so was, of course, primarily that of self-protection, and of exploiting his environment for his own maintenance. But an element of curiosity was perhaps always more or less associated with his primary instincts. From his aboriginal cave, as a center, he widened his circle of knowledge evermore; he learned all he could about the forest in which it was located, the mountain side in which it was hollowed out; the stream with its fish that flowed at its base, towards the lake, or sea, beyond; the animals inhabiting the woods, and their beneficial or dangerous qualities; the character of the vegetation, as to food value or treacherous poison; the view towards the nearest mountain tops with their possibilities of harboring an enemy tribe—and so there was an endless chain of environmental lore which the primitive gradually stored up in his mind, to transform the spot where he was placed by nature into a human habitation.

Much later, even, when tribes and races had been formed, when peoples had grown in number, when primitive nomads had to find fresh pastures for their herds of domesticated cattle, and more fertile lands for themselves, at the beginning of agriculture, this exploration of an extending environment went on. The migration of peoples opened up new concepts of the earth's surface and new possibilities, until the globe was spanned by the human race along all its perimeters.

When we study the history of the development of geographical knowledge, we shall find that it broadened with the voyages of exploration and, perhaps, conquest, which were undertaken by courageous adventurers. Courage went with military prowess, and a conquest of new territories often implied a conquest and subjugation of the native population. Nevertheless, the more important result was invariably the establishment of communication, largely of a commercial character, with the distant representatives of the human race, and an exploitation of the raw material and staples of the foreign countries.

The old military and trade routes of the Egyptians, Assyrians, Phoenicians, and later the discoveries made by the Spaniards, Portuguese, French, English, and others, opened up the world to the human race. The first maps drawn showed curious limitations. From the Babylonian map, engraved in cuneiform inscription upon a brick about eight centuries before the Christian era; the map drawn by Ptolemy, in the year 150 A. D., and which shows the eternal ocean surrounding the flat earth; and from them through the fanciful geography of the middle ages, to our own maps of the world, there has been a long, tedious and ardous development, all based upon the discoveries of intrepid explorers.

Our own knowledge is, naturally, not based altogether upon personal experience and exploration. We must rely in a large measure upon the tales brought back to us by those who have actually seen. Even now, when international travel is universal, when man has penetrated into most of the "dark continents," the great majority of us cannot see with our own eyes. We must read books of travel, study reports on explorations, commerce, and the like, and fill the gaps of our actual knowledge with material from these sources. When we go back in the history of travel and investigation, we shall soon realize how fanciful these reports used to be in the olden times. Remember the wanderings of Ulysses, the travels of Marco Polo—their stories of strange beings, animals, and plants—and even in our days the fascinating and fantastic tales about the Juju—man in darkest Africa, and the juggling fakirs of Hindustan, and you will admit that even geography has its fairy tales.

But unless we have a basis in our own mind, by personal experience and exploration within the limits of our individual possibilities of cities and their peoples, of rivers, seas, and oceans, of mountains and plateaus, and what not, we would be unable to follow the description of travelers and explorers, to understand the geographical knowledge which is mediated to us by specialists in this field, and to discount with our judgment the impossible tales of romancers. Yet, at best, our knowledge of those lands and peoples regarding which we have to rely upon "vicarious experience" that is to say, the experience of others, will always remain a bit hazy.

Geography and Astronomy.—"Locating" one's self, however, means more than merely to find our place on the surface of the earth. From the early dawn of civilization man has related himself to the stars. The sun, the moon, the constellations of the starry heavens, have played a great part in his conceptions of his place in the universe. Sun and moon were his early divinities, no less than the giant powers of

mundane forces, in ice and darkness, in mountains and seas, in electric storms and floods, and even in the whisperings of the leaves of the trees, or the babblings of a brook or cascade. More powerful than all his earthly divinities were to him the heavenly bodies from whom he felt he depended for his early existence, even though he knew not in what manner, or by what laws. Morning and evening stars, the planets and mysterious voyages across the firmament, appealed to the primitive mind strongly, and ancient observers connected them with individual human fate. Astrology, the precursor of real astronomy, read the destiny of human life in the stars, and to this day, credulous people believe in the superstition of the "horoscope." The underlying fundamental fact is that we are actually "located" in a larger world than merely our globe, which is an insignificant speck in the universe; that our "home" is this gigantic universe with the life of which our life is intimately related—not alone the change of seasons and climates, and sun radiation and moon—caused tides and tidal waves, but probably in much more complicated forms, through the interaction of solar systems upon one another, so that our outlook upon our "environment" is infinite.

Thus, the study of geography is incomplete, without a goodly admixture of astonomical knowledge.

Geography and Human Evolution.—A knowledge of the surface of the earth, in the sense of a description of the earth's opportunities, would, however, be equally incomplete if we left out the human element.

That the evolution of man has been largely determined by geographical conditions, is an established fact. Thus, we must know these conditions to understand and control them, as far as finite human powers can, in the shaping of our own national and individual history.

But the study of our environment does not mean only the study of the physical environment, it includes the study of our human surroundings—of our neighbors in space, in opportunity, and of distant people with whom the common bond of interchange associates us. We want to be—we must be—in touch with all humanity. It is the basis of human intercourse and existence.

To locate ourselves in our environment means, in a measure, to know where we may buy our bread, or find the man who can build our house. We must know something about the flour that comes from the distant city, and wherewith our bread is baked; about the men that raise the wheat, that grind the flour, that ship the bags; about the far-away forests from whence our lumber comes—the iron mines which furnish the nails, with which our dwellings are fastened together, etc.

There is the story, often told in the nursery, of the pie made by a thousand men. When the eager children came to grandfather's house, invited to see and consume that wonderful pie, they were first disappointed seeing only an ordinary apple pie. But when grandfather began to tell where the apples and the crust came from: about the orchards in the West, the wheat fields in the prairies, the flour mills, etc.; how many people had been busy to till the ground, plant the trees, harvest the apples, ship the barrels, raise the grain, make the flour, sell the fruit and the flour, prepare the apples, bake the pie; how many more were needed to make the implements with which the ground was tilled, to run the factories in which the tools were made, man the mines from which the iron for these tools was obtained, gaining the metal from the ore in blast furnaces, build the mills and furnish the machinery, build the stove in which the pie was baked, the house in which the stove stood, lumber the wood which furnished the timber of which the house was built, make the china plate upon which the pie was served, the cutlery with which it was cut and eaten, etc.; not to speak of the building of means of transportation: wagons, trucks, railroads, and of their crews—when grandfather began to open their eyes to the wonder of the thing, to the complex system of human co-operation all over the world in the production of "just a pie," they began to understand. For all they knew, many more than a thousand human beings had been instrumental in bringing it about that they could eat that particular pie at that particular day in that particular place.

The study of geography, meaning the study of how to locate ourselves, is a study of the complexity of human relationship.

How the Young Child Begins to Study Geography.—If we follow the lead of the young child, understanding his natural instincts, we shall find that he sets out precisely as his hoary ancestors did in the exploration of his environment, as soon as he can crawl. Indeed, the curiosity of children antedates their ability to move from place to place. From their crib-cave and in their mother's arms, they explore their surroundings in earliest infancy with eyes, ears and hands. They perceive light, and discover the source of light—a window, a candle, a chandelier. They notice noises and investigate their cause and nature. They grasp what they can lay their tiny fingers on, and will reach for objects on tables, chairs, walls. They will make the acquaintance of their human companions, and learn to "size them up." They will enjoy the sight, fragrance, and feel of flowers and sometimes mistake the painted flowers on the wall-paper for real ones.

But their more actual experience begins when they have the power of locomotion. They are quite fearless and adventuresome in their voyages about the nursery and the other rooms of their home. They locate and identify the pieces of furniture, playthings, windows, and doors. They will soon be dissatisfied to be shut in, and will wish to explore the great world beyond. Apart from their manifold experiments by which they wish to understand the nature of things—experiments which are as often destructive to objects, as they are constructive in mental development—they wish to locate themselves in their wider sphere of environment. Stairs and open places have no horror for them, for they do not know the dangers lurking there. It is a wise parent who knows how far a child should be allowed to extend his voyage of exploration without danger to himself, and without the restriction which would prevent him from learning what he ought to learn.

Some children develop the judgment which warns them of danger quite early. They will never need the protection of gates at the top of stairs, or guards on windows. Others will be reckless. But we must try to check them as little as possible and let them go as far as they can without actual peril. It is a child's birthright to gather experience through hard knocks—he will soon forget the knocks. And if the danger is not to the child but to cherished objects, we may well remember that useless ornaments and gimcracks are not suited to the immediate environment of a young explorer. The articles of actual use, toys and such things, should be of a nature which will make them safe against the exploits of the young vandal. But if many of them should soon become the worse for wear, we ought not to mourn: that is part of their function in the training of a child's experience. The destructive method, if we may call it so, which the child employs is analogous to the analytic method of his elder; construction, synthesis, come later.

From the house, the child will stroll forth, as soon as his legs will carry him, into the yard, the garden, the field, the street. His territory enlarges steadily, and with it his experiences and his eventual dangers. But all this will contribute to the fundamentals of his geographical knowledge.

The educator's function should become a constructive one as soon as the child stores up these early impressions and concepts. Even in the confines of the home, father and mother have endless opportunities for discreet directions and suggestions. But outside of the house, the real task begins.

It is a matter of common practice for parents, especially for mothers, to take their children with them on errands, walks, excursions. Even the child in arms or in his baby-carriage is made to undertake these journeyings. Then the child should not be considered merely as an encumbrance, or an appendage, but as a vital element in the undertaking. Each such trip, more or less extended as it may be, offers chances for new experiences, and for the re-enforcement of old ones, with opportunities for association of one with the other, and a parent should never fail to improve these chances. Trips to the grocer and the butcher, to department stores and restaurants, to resorts and friends, are full of astonishing revelations to the budding mind of the child. Each one of them will assist the child in locating himself in his environment.

Of course, few of these adventures will at once organize themselves into a systematic concept of geographical elements. They will be fragments which the child will gradually learn to piece together to construct a harmonious whole. But he needs a wealth of these fragments, for the world he lives in is a big thing, made up of innumerable single factors. If he has not the material with which to construct his inner world he will never understand his place in life.

He knows only so much of the outside world, he understands only so much of his place in it, as his senses and experiences have communicated to him. His whole world lives exclusively *in his mind*. And if his early impressions lack extent, proportion and accuracy, he will be confined to a world of unreality, of self-deception, and never be able to put himself in proper touch with his environment.

Walks, Hikes and Trips.—Few things have helped children so much in understanding the world about them as the old-fashioned walks which mothers and fathers used to undertake with them, cross-country hikes, and well-planned trips to the woods, mountains, rivers and the shore. Botanizing excursions, fishing trips, observing and gathering butterflies, making mineral collections, and the like, while they add to the

store of nature knowledge in the child's mind, also teach him much about his resources as a geographical center. For each child is the center of his little world. Everything has value only as far as it concerns him—at least in the beginning of his career as a thinking individual. Likewise, ancient nations placed their own homeland in the center of the earth, striking out along various radii towards a periphery encircling this homeland. And the nature lore thus obtained is only part of his geographical outfit.

Eyes That Do Not See.—We must guard ourselves against overrating a child's ability to derive the full benefit of observations without our guidance and direction. While it is true enough that they will observe things in spite of us, they may not always perceive the essential things for the sake of which we have started out. They have "eyes that do not see, and ears that do not hear."

The reason is simply this, that they do not possess a foundation of knowledge which can make them aware of the presence of objects, or phenomena, for which they are not prepared, for which they do not look, which have no meaning to them because they cannot connect them with previous experiences. We understand a thing only when we can link it up with some previous concept.

One of the questions asked of a child in testing his "intelligence" is this:

An Indian visited a western village and saw something which he described to his tribe on coming home as follows: "I saw a man walking along the street sitting down." What did he see? The answer is: a man riding on a bicycle. To the Indian who had no experience of a wheel propelled by a man's feet, the action he observed linked up with "walking," while the seat of the machine suggested a chair. He did *not* observe, in spite of his good eyes, the actual method of locomotion, namely, by turning the front wheel of the machine by means of pedals.

In calling our children's attention to the things we desire them to observe, we shall therefore have to make an effort immediately to connect the new impressions with previous experiences. This alone will give them an interest in the new things; an unrelated new experience makes no appeal to the child at all.

The method of the Boy Scouts, of exploring the country on hikes, might well be copied by the home forces.

The roads traveled, and the geographical facts noted, may well be plotted for future reference, and for the sake of initiating the child into the mysteries of map drawing.

Map Drawing.—This can be commenced, of course, only when the child has learned to use his hands for drawing and modeling. But there are many initial steps which can be encouraged in the home. Anyway, the more formal instruction must be left to the school, even when we are not altogether in harmony with traditional school methods.

The earliest records a child constructs of geographical facts will be merely stored up in his memory. They may be quite disconnected, and refer only to one route of exploration at a time, without connecting by-ways. The network of geographical concepts which can lead up to the formation of the complex picture of the earth's surface will be woven very slowly, out of a mass of isolated threads.

But the child will learn to locate himself, to go to particular places for particular purposes; he will run errands and follow directions given him. What he must develop is the *sense of locality*. Some children have the "bump of locality" as a special endowment; others are slow in making themselves at home in their surroundings. But all, except defective children, can be taught to find places.

One of the earliest and most attractive forms of reproduction of geographical experiences and concepts is found in *sand-pile work*. The seashore, with its great stretches of sand beaches, gives the wider opportunity, and the time may come when our schools and communities will make a systematic use of the vast expanses of beach which our coasts afford, for constructive work along these lines, in what we may foreshadow as "summer play schools" by the sea.

But with the help of building blocks, ordinary rocks and stones, and toys of all kinds, the child will reconstruct his environment. He will place his house and garden, build roads and rivers, span them with bridges and viaducts. He will raise mountains towering over the valleys between them, tunnel them with engineering skill, and lead his teams and railroads through the variegated highroads of his country. He will populate his creations with people—be they mere sticks endowed with imaginary life, or dolls dressed up by him or sister to represent various occupations and different nationalities.

The wonders of the sandtable, or the sandpile, which is better, can hardly be exhausted. No backyard ought to be without its community sandpile, hygienically kept, of course. Incidentally we may be reminded that there is a great and valuable element in the solution of our housing problem. When once our communities will wake up to a full realization of their responsibilities towards their child population, our homes and their backyards will be of a very different kind.

We shall speak later of the *home garden* as another adjunct in geographical teaching.

At first, all these reproductions will be of a more or less fanciful kind, rather unlike the real space relationship of the objects represented. But even on the sand pile, real "maps" can be constructed as soon as a child will understand what is meant by accurate representation.

However, we may not forget that the relative size of objects will be difficult, even impossible, of actual representation. This is realized by the manufacturers of so-called relief maps; on these, mountains and rivers appear on a much larger scale than actualities would justify. This is due to the fact that the actual height of mountains, and the width of rivers, in proportion to the size of the globe, are so very small that they would be hardly noticed at all if we would try to model them to actual scale. Thus we may not criticise the child when he builds his houses and mountains altogether out of proportion to relative size.

This making of *relief maps*, using clay, or putty, or papier mache (mashed paper), with the application of paint to bring out the different parts, is also a fitting transition from sand pile or sand table work to drawing with crayon, chalk, or pencil.

Whatever medium be used, we need not, at first, pay particular attention to the placing of geographical elements, like roads, houses, bridges, etc., according to their actual place in relation to the points of the compass. We shall not even be able to restrict the child to proper measurements. The young child has no idea of scale; besides, we might prevent him from attempting to do anything if we impose upon him adult standards of accuracy. This is play to him, not engineering or surveying. Again, his meagre space allowance might not give him a chance of crowding as many objects in well-balanced scale arrangement as he is interested in.

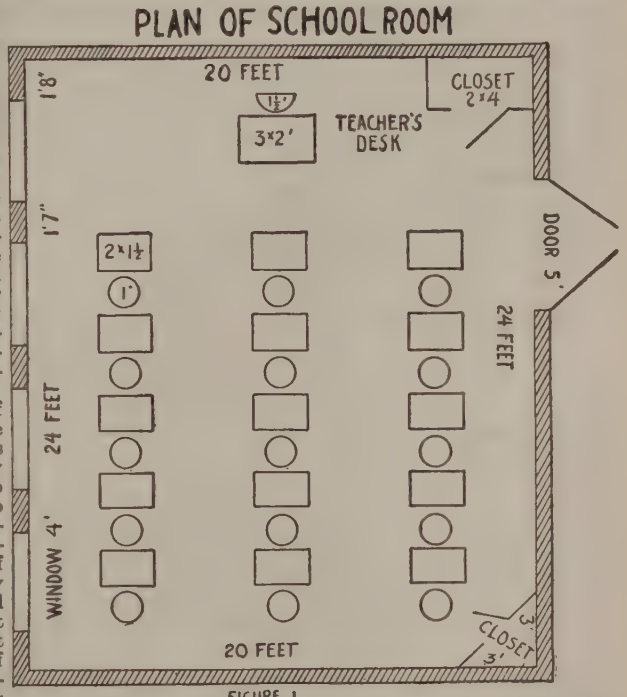


FIGURE 1

What we must try to insist on, however, is that the *directions* represented are fairly accurate. That is to say, that the directions of the roads leading away from his house, the cross streets, the store, the butcher shop, the river, the bridge, etc., are so located that they reconstruct his experience in traveling over and to these geographical units.

Map construction, proper, be it by way of the sand pile, or relief maps, or drawing (on blackboard, with crayon, on paper, etc.) should begin with a representation of the immediate surroundings. The suggestion has been made, and is carried out in many schools, that the first map should be that of a room, the nursery, or living room, or school room. There is no grave objection

to that, though it may be less interesting to a child than to represent a larger outlook. When, however, actual measurements are introduced, such a method may be well employed. The map of a school room will then look something like that shown in fig. 3.

On the other hand, a map of a farm home, at first attempt at map drawing, may present an appearance such as is shown in fig. 2.

And the immediate surroundings of a city home may look like that shown in fig. 3.

Naturally, the sand pile construction is not confined to immediate surroundings. Neither is map drawing. But it is the sand pile which lends itself more readily to the representation of distant scenes. Here, it is entirely unnecessary to restrict the child to actual measurements or geographical relationship. His constructions must give rein to his imagination. It is enough if he constructs scenes which picture the characteristic essentials of distant and foreign conditions.

motion—there is no end to the fanciful development of such a landscape. In his destructive mood, the child may take the whole thing to pieces, only to build up a scene of Indian life, or of Oriental splendor, of ancient Egypt with its pyramids, or any other scenery which his imagination will suggest.

Map drawing proper is taught in schools so perhaps the home need not consider it. Yet the school has little opportunity of giving the preparatory steps for which the home can so amply provide.

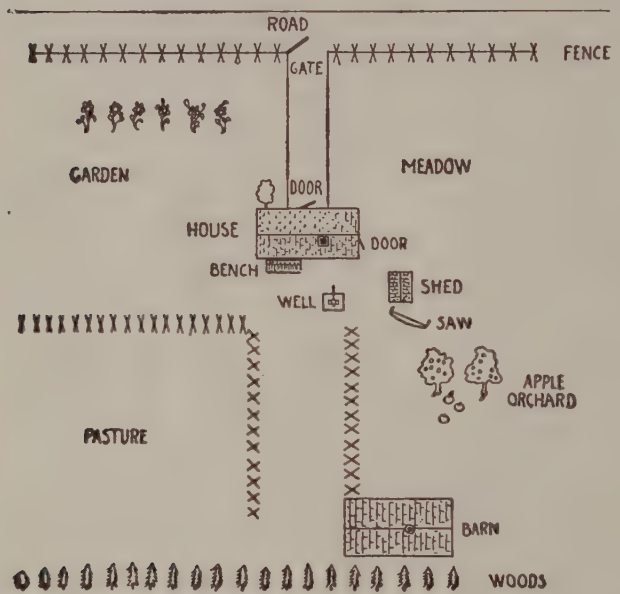
The first maps which were drawn by man were those which travelers made when they explored strange lands. Rough enough they were, and nobody cared as long as they gave the needed information. In this manner even modern African explorers first gave the knowledge they had obtained to the world; the surveyor with his actual measurements came later. But it is not at all out of the way to teach even a young child the rudiments of surveying, with simple, home-made instruments; it will be found quite an attractive game to the child—boy or girl.

The rude sketch maps drawn by legendary pirates to remind them where they had buried their blood-bought treasures (compare the map in "Treasure Island") are examples of the kind of graphic records which represent this stage in the development of map construction. The child's ability to sketch locations is about on the same level, and we should be satisfied with production of this kind.

But all these productions must first be based upon actual experiences. The child must have voyaged through sufficient stretches of land and have charted them, at least crudely, to appreciate geographical symbols in maps and to be able to read, and reproduce maps of distant places. Parents can essentially help their children in acquiring correct concepts by taking them around systematically, giving them opportunities for trips of all kinds, and were it merely a trip on a trolley car, making the children conscious of the directions and distances traveled, using eventually maps of their home city or district for comparison, explaining every twist and turn in the road.

The Apperceptive Basis.—As said in a previous paragraph, the child cannot understand a new impression without linking it up with a previous one. This linking up process, which leads to real concepts, or ideas, is called "apperception." To apply this principle to geography teaching, I will quote from a previous treatise of mine:*)

"From the concrete material in the immediate environment of the child, from the images of his own house and lawn, the trees, hills, rocks, valleys, creeks, rivers, ponds, etc.; of people he knows and occupations he sees carried on; of natural processes like water running down his own hill, of dirt washed down the watersheds of his own road, of toy boats floating in his gutter, etc., etc.,—from all this he must learn to construct in his mind concepts of things remote, of the Himalayas, the oceans, foreign people, and all the wonderful things that make up the life of nature and man. Words, names, pictures, samples of materials even, maps, and the like, are nothing but symbols, meaningless to him unless he can connect them with real experiences of his own."



Map of Farm Home

Figure 2

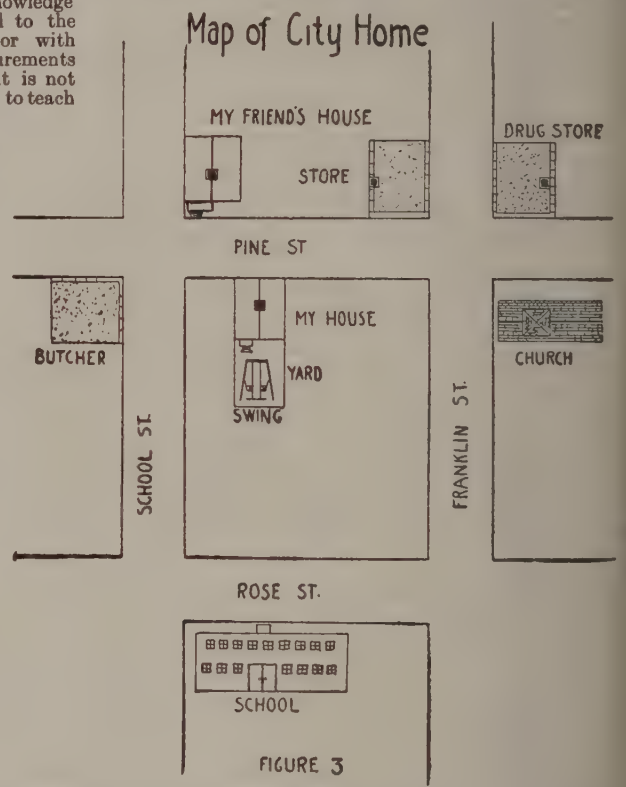


FIGURE 3

During many years of childhood, there is another form of construction which will strongly appeal to the growing imagination of the child. It is a modification of the sand table, where sand may be used to some extent, but where rocks, paper constructions in imitation of rocks, building blocks and "modeling sheets" (for the construction of houses, castles, bridges, windmills, etc.), will predominate. A large, ordinary kitchen table, or boards placed on solid "horses," may be the foundation. On this, landscapes of various kinds may be constructed in the way described. On towering mountain tops may be placed threatening castles; cardboard cities and villages may dot the plains below; a wooden bridge may be swung across an abyss of paper or real rocks, covered with moss; underneath, there may roar a torrent of sand, or of real water, with a fountain in the garden of a villa in the valley; across the bridge, may march a regiment of paper soldiers, carried along by a simple mechanism; water wheels, driven by sand, set mills in

*) "The Career of the Child," The Gorham Press, p. 84.

And he must have these experiences of his own translated into the symbolism of map representations, by charting them, constructing maps of his own, before he will gain the real value of map reading and map drawing as he needs it, in his later, more serious scientific study of geography.

Space and Time.—Geographical relations are, in their essence, space relations, that is to say, geographical units are at different distances from one another, and locating one's self in his geographical setting means to locate one's self in space. Geography implies, therefore, space measurements, such as appear in map drawing, to a scale. But to a child, and for that matter, to the average adult, miles and leagues have very little real meaning. The wild guesses of those who are not used to making such measurements, as to familiar distances, are proof of this. To the child even a yard or a rod,—in his youngest years even a foot or an inch—means as little as a mile does to his elders.

Those who can estimate distances, without actual measurements, have learned to do so by comparing their visual impressions with memories of previous measurements of frequent occurrence. The ability to estimate geographical spaces, not only distances but areas as well, is almost in the nature of a special trade, if it is not a gift of nature. In most instances, space is measured by the experience connected with *traveling* in space—by trying it out through the element of locomotion *through* space: walking, horseback-riding, driving. The effort required and the time consumed in covering distances give the basis for appreciating space. Mere mechanical measurement helps as little as it helps a child to appreciate quantity by merely counting, although the *time* it takes him to count up to a certain number may give him an inkling of the complete quantity.

Thus the child will learn to understand space, distances, and their measurements by actually walking, or traveling in some way. It is therefore quite important to make him conscious of the time and effort he needs to go to a certain place, in comparison with the time and effort it requires to go farther, or less far, to enable him to realize the difference in length of line. It is not so long ago we counted distances, in popular parlance, by "hours" rather than "miles." The very word "mile" is derived from the Latin "mille" (passuum) meaning a thousand steps—plainly a walking method of determining distance.

Young children have very hazy conceptions of space and time. The vast extent of a country like the United States is difficult for them to grasp. What to us are small sizes and spaces, to them appear big. It is a well known fact that the rooms and houses in which we lived in our childhood, if we visit them after a lapse of time, impress us disappointingly, appearing so much smaller and insignificant than when we lived there. The stories of "Alice in Wonderland" and "Through the Looking Glass," among many others, fairy tales with the rest, illustrate the inability of the child to appreciate the true relation of space and time very clearly.

Plays and Games.—There are many so-called geographical games in the market. Some are interesting, others are valueless

One type represents *cut-up geographical maps*. If these are in the nature of the usual cut-up pictures, they convey little information and inspiration. If they are so cut that the different states of the Union, for instance, appear in their individual shapes, or if the pieces represent mountain ranges, river systems, and the like, they can be put to good use under the suggestions of skillful teachers and parents. The individual shapes of states, or countries, lend themselves to interesting games of imagination. Many of these shapes suggest the shapes of geometric figures (Wyoming, Colorado, Nevada, etc.), others like the Appenine peninsula, which has the form of a boot with spur; suggest the shapes of objects, or animals, or plants. Florida looks somewhat like a thumb pointing downward, on the ordinary map. Mountain ranges call up the serpentine outlines of crawling things; river systems give the impression of branching trees. Innumerable fanciful games can be thus introduced.

There are games which re-enforce the remembering of geographical facts, similar to the game of authors. We must not neglect the memory element in geographical teaching. It is often quite necessary that we should have geographical facts at our fingers ends. While it is well enough to learn how to look up on our atlas the things we have forgotten, we may not always have a map conveniently near, and must rely upon our memory for locating ourselves.

Of course, the sand table, sand pile and landscape table games, described before belong in this class. But they can be much enlarged. The *bathtub* is a not-to-be underestimated place for geographical play. Children will play for hours in the water, swimming their boats, building docks with their wooden blocks, etc. They may imagine at one time that the water in the tub is the Atlantic Ocean, or the Mississippi River, or what not, and organize imaginary journeys from continent to continent, or from city to city. Such *imaginary journeys* may be organized on the *playground*, or in the *woods*, or by the *brook* and *lake*, calling the various units of observation by different names. Even the house itself will give sufficient opportunity, using different rooms for different geographical localities. Many a child has constructed a very satisfactory railroad out of chairs and a stove-pipe. We must not mind it if the children "muss" up things a little once in a while—their happiness is great, and their enjoyment is no less valuable than the lessons they learn in this manner.

Young children may, in the very act of taking a bath, find a stimulation for imaginative play. Dropping their beads in the water they will play they are pearl fishers, or, with their sponges, re-enact an exciting expedition to the strange land where sponges grow in the depths of the sea.

Girls will gladly enter their *dolls* into this sport practice. They are always anxious to make new clothes for them, and to dress and undress them without ever getting tired. They may dress them up in the fashion of a distant peoples, as Indians, Arabs, Hollanders, etc., and make an imaginary setting for them on their *playhouses*. They may construct, with their brothers and boy friends, wigwams, lake dwellings, Bedouin tents, and grass huts, birch-bark boats, and the like. Boys will never tire making ships of all kinds, docks, bridges, windmills and an endless number of similar things, to illustrate foreign lands, or even the near-at-hand geographical facts—the life of the people under various conditions of environment.

Their *dramatic instinct* will furnish another valuable element of constructive imagination. They will play they are Indians and build their wigwams more or less realistically in the woods nearby; or they will be railroad conductors, bakers, firemen, knights rescuing ladies from danger, etc. The *kindergarten games* give a variety of such pastimes for the youngest ones. *Folk dances* will have their part. Gymnastic games, including *archery*, *stone throwing*, *disc throwing*, exercises with the *boomerang*, will bring home to them conditions of the life of people in other lands. There are numerous *songs* which will inspire them with the emotional elements contained in the material which composes their immediate and more distant environment. The Neidlinger songs alone (cf. Collection of Poems and Songs in another part of their book) will furnish abundant selections.

Collections.—Each child is a born collector. At first he will gather things up indiscriminately, and a young boy's pockets will treasure a number of odds and ends, things cast off by original owners, yet having significance of their own to the youthful collector.

This instinct (which almost reminds one of the fetish worship of antiquity) can be put to good account in education. For geographical purposes, there are innumerable ways of utilizing it.

A common desire of children, especially boys, is to collect postage stamps from various countries. If properly organized, this type of collection can be made very helpful in stimulating interest in geography. Of course, here as in all other collections one must guard the child against overstressing—against becoming a collection fiend, as this would defeat the educational purpose of the pursuit. A collection fiend places higher value on the *possession* of a coveted stamp, or whatever the collection may consist of, than on its meaning as a help to broaden his mind. Yet, a mild craze on the part of a child should not disconcert us: no harm need be done by an enthusiasm which steps over bounds occasionally.

It is curious to note how many different things a child *will* discover in all sorts of unthought-of places when once his desire is awakened to make geographical (or any other kind of) collections. He will find samples of raw materials produced by different countries and manufactured goods; curious pipes, knives, and other implements made in foriegn lands; pictures and photographs of scenery, strangely attired people, houses and tree dwellings, boats, etc. Catalogs of dealers, advertisements in magazines, illustrated articles, knick-knacks and curios picked up here and there, will furnish ample opportunities.

He may build little cabinets of his own to store his treasures; and he will start *scrapbooks*, more or less systematically arranged, for his pictures and bits of foreign lore For he may also pick up pieces of *poetry* and description, to paste in his scrapbooks—girls may indulge in this kind of thing more readily than boys, perhaps. They will collect songs and games, quaint sayings and proverbs, and the like. *Folk songs* of all nations will have at times a singular attraction to growing children, and so have games representing the national spirit of foreign people. Our own country is placed in the position—its population being composed of representatives of all nations on the globe—of offering material of this kind right at hand. The very schoolmates and playfellows of our children are a collection of many nationalities. There are about fifty different languages spoken in this country, each representing a different national spirit, all of them to be blended together in a new national unity.

It is quite well that our children

should make a collection of *languages*, so to speak, in addition to the rest. By that is meant that it would be instructive as well as entertaining—it has been proved to be both—for a child to study and memorize samples of those languages which are the native tongues of his immediate neighbors, and certainly of the languages of the leading nations like French, German, Italian, Spanish, Portuguese. Bits of poetry and child rhymes, simple conversation, etc., will usually suffice, although there is virtue in extended language study where that can be had. This will not only convey to the child a flavor of geographically *distant* people, make him conscious of the human element in this study, mediate to him concepts of the conditions of human intercourse and commerce, but will give him an early training of his speech organs which will stand him in good stead for future possibilities and chances. During the early period of childhood, the "language making" period, when his speech organs are pliable, a child learns half a dozen or more different languages with ease.

Museums.—The collective instinct of the child will make him appreciate the wonderful opportunities which the collections in museums of different kinds offer. Although only the larger cities may afford these opportunities, *in the fullest measure*, organized efforts are being made to establish traveling collections for the smaller towns and rural districts to bring the treasures of the larger museums into distant places, just as traveling libraries have been provided.

But few things will so thoroughly fascinate the normally wide-awake child, or will even stimulate the slower faculties of the sluggard, as a visit to places like the National Museum and the Smithsonian Institution in Washington. The Corcoran Art Gallery there; the Boston Art Galleries; the Metropolitan Museum of Art and the American Museum of Natural History in New York, and similar places.

In the *art museums* the child will not only be impressed by the art spirit manifested through the ages as a civilizing and elevating factor, but he will see human life and its natural setting in foreign lands through the exhibited masterpieces of painting and sculpture. Even the *architecture* of modern and ancient peoples in different parts of the world is represented, often by bits of the originals, or by artificial reconstructions of characteristic types.

The museums of natural history add to this information vast stores of facts about the actual life everywhere on this globe. The flora and fauna of different countries, in different climes and latitudes; the flight of fowl and the singular life in the depths of fathomless oceans, and numerous other things are depicted and exhibited in life-like models. We can study the products of forest and lake, of mountain and valley, the treasures dug from the very bowels of the earth, and the harvests which the waters of the seven seas yield to man's ingenuity, portrayed in convincing representation. More than that: we see man, the man of different color and different race, of different ages and different homelands, at work in his effort to wring the means of existence from the conquered earth. We study his inventions, his implements, his dwellings, his war and peace maneuvers, his domestic life, his hunt, his tilling of the soil, and what not. We circle the globe in a few hours, wandering from exhibit to exhibit, and carry home with us a better knowledge of geographical elements than many a wearisome lesson could have conveyed.

Botanical and zoological gardens are but another form of this museum opportunity. There we see the plants and animals which populate the various places on this earth, in their natural setting, as *living things*. We meet the bison of the western American plains; the elephant of the African jungle; the tiger of India; the deer of the mountain ranges. We see the rice plant growing in submerged fields; we observe the the cocoanut palm bearing its rich fruit. We laugh at the antics of funny monkeys who so look like human caricatures; and we watch the tailor-bird of Java sew together his nest made of the leaves of a strange tree. We get a breath of the icy North when we watch the polar bear, and the heavy fragrance of the sunny lands of the South is wafted to our gratified nostrils when we pass through the vistas of open air gardens or through the sheltered aisles of hot houses.

Another place where children like to visit, for amusement and instruction, is the *Aquarium*, such as the one in Battery Park in New York, where they can see the fish and other animals living in or near the water—like seals, tortoises, alligators—sporting in their native element.

None of these opportunities to make geography a live thing to the growing child shoud be neglected by the parents. They will only add to their own happiness if they lead their children through the treasures thus offered for observation and study, watching their growing interest and delight, and their keen and often unexpected discoveries and remarks.

In a small way, the child can have his own museums and gardens. The collections mentioned before point the way. He may have his own cherished plants *in the home* and takes personal care of them; among them may be exotic ones, like the dwarf plants of China, a lemon tree, orchids. He may have his own little greenhouse; his own botanical garden in the back yard. He may have his pet animals including perhaps a parrot, he may build his own terrarium and aquarium. All this will stimulate his interest in the various aspects of the world on which he has to locate himself.

Even the most ordinary plants, spices etc., of which he knows, may be made in

The Sphinx of Memphis, carved from alabaster and weighing over one hundred tons.

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teresting to him by tracing their original homes, in the present and past: the history of wheat, of tea, of cocoa, of coffee, and what not.

Stories and Literature.—Even the young child delights in stories which describe strange and foreign lands and things. Of course, all this appeals to him at first in a fairy-tale manner. He does not particularly care whether the story is true or not. But he delights in the strange coloring, the foreign flavor, which introduces him into a mysterious world different from the one he lives in. This is why stories about Indians, adventure, discovery, the Arabian Fables of Sindbad the Sailor and Aladdin, delight him. The child's ability to appreciate and love these stories antedates by far his ability to read them. Thus *story telling* is an important element in teaching geography at home.

Later on, when he can read, *books of travel and adventure*, the *stories of exploration* and *discovery*, will fascinate him. The literature of all nations is full of these, and it is well for the child to have access not only to books of his own literature, but to classic works of other peoples. Some he may learn to read in the original, others he should have in good translations.

Juvenile books there are in abundance which will satisfy this craving. It is merely a matter of wise selection. And he loves foreign adventures, and the facts of geography when presented to him in story form, linked up with human interests and human lives, will be much more palatable to the child mind than when presented in dry scholastic manner. The historical novel plays its part in geography as it does in history teaching, as it depends invariably upon the geographical setting for its progress.

Reference has already been made to *poetry*. It affords much suggestion and help. Rhymes, usually in jingle form, will assist in impressing geographical facts upon the memory. Winifred Sackville Stoner Jr.'s jingle of "India" ("To India we now will go. To see a monkey show", to the air of "We Won't Go Home Till Morning") is an example. Byron's famous lines:

"Mont Blanc is the monarch of mountains,
They crowned him long ago
On a throne of ice, in a robe of clouds,
And a diadem of snow," etc.,

is an illustration of the serious type of geographical poetry.

Motion Pictures.—It is almost unnecessary to refer parents to the great value of motion pictures in the home-teaching of geography. "Still pictures" have long been used in connection with "travelogues" and home and school lessons of all kinds. Especially when these are colored their value is high, and they will never be altogether replaced by the motion picture. The grandeur of the majestic mountain for instance, in its grand perspective and august repose, will gain little, and may lose much, when presented to the eye as seen from a flying aeroplane.

Nevertheless, it is the moving picture alone which can represent to the student of geography the **LIFE** of nature in different lands, and the life and life conditions of the people who have their being in them. Details as well as the large perspectives can be shown to advantage, and the human appeal can be made irresistible. If we only consider a feat like mountain climbing, if caught by the movie camera and thrown on the screen, we shall realize the untold possibilities of the motion picture show.

Parents will do wisely by following up the program of their nearby theatres to let no opportunity slip for giving their children the benefit of these pictures. These and the still pictures, together with the material gathered together in collections, and visits to museums and botanical and zoological gardens, including attendance at the much beloved circus and its menagerie, are all comprised in the one collective term of *"visual instruction"* which plays a great role in geography teaching.

Earth and Heavens.—The earth is only a part, even though it be the human part, of the child's environment. Whether there is human life elsewhere in the universe we can not even guess. And yet, our lives are intimately interwoven with the life of the cosmos. The child must learn to locate himself in celestial space.

Naturally, this can be done only in an elementary manner, and the child will pass, in a certain measure, through the same stages of mental grasp of the universe as did his forebears through the centuries from dim antiquity.

The first cosmic phenomenon which he will observe, even in his crib, is the change of *day* and *night*. When he grows older, the child will recognize the sun as the spender of light in the day, and the darkness will come to him when the sun hides his face behind the western horizon.

When his age will permit him to think beyond "dividing the light from darkness," when he can be out to watch the firmament and to discover "the lesser light" that "rules the night," his mental horizon will at once be widened. He has no idea of the distance and size of the newly perceived heavenly body, he may stretch out his tiny arms to grasp the moon with his groping fingers. But a new experience is born. And when he discovers his first *star*, and can locate it, perhaps, the following night in the same place, at the same approximate time, there will come to him a new mental light, a new pleasure, which will liberate within his soul strange and but dimly conscious longings. If we only knew it, we might find that the germ of *religious concepts and emotions* was born at that time.

Of course, he has no way of knowing that these heavenly bodies are large; that the sun is many, many times as large as the earth on which he stands. His notions are like the ancients', "geocentric:" his own earth is the center of the universe, and he the center of the earth.

That the earth revolves around the sun, and the moon around the earth; that the stars are either planets somewhat like his own earth, or suns of enormous magnitudes, would of course be entirely unintelligible to him at this stage.

To him the earth will appear as a flat body, as it appeared to the ancients, and it will require quite advanced maturity on his part to wean himself from this notion. It is the experience of those who have carefully tested children's minds that even after a teacher had thought the child had been properly instructed in the nature of the earth as a globe, and of the relation of sun, moon and stars to it, a child would have a mental reservation retaining the old conceptions.

It is very necessary that the child be given ample and early opportunity to observe the *heavenly bodies* in their course. This will be the foundation of his further understanding. There are too many children who have never seen the sun rise. The child should also become familiar with the most prominent *constellations* and watch their revolution in the course of a night and through the months. All this will be basic.

By learning the place where the sun rises, and where it sets, seeing that the moon follows this example, he will become acquainted with the *points of the compass*, and also learn to use the compass itself. This knowledge must be impressed fully, so that the child can locate himself in space, when lost. He may learn, Boy-Scout-wise, to use a pocket watch for determining direction, or, in the woods, the guidance of the moss and lichens which usually grow on the cool or northern side of a tree.

He will now be able to make his map drawing more reliable by doing it in true fashion, placing particulars in the right direction. It is, however, by no means necessary to force him to place "north" invariably at the top of the page. Indeed, he should make the main direction of his plotting, be that north, or south, or west, or east, the basis of his arrangement. This will free him from the bondage of geographic convention without depriving him of the knowledge of how to read the conventional maps.

To make the child conscious of the roundness, or ball-like shape of the earth, is not easy. Not everyone can undertake a trip around the earth to come back to his starting point. One of the best ways is to take him to the seashore where he can observe ships coming "up" from beyond the horizon, and passing "down" it when they recede. Or taking him to wide open prairies where he may observe wagons or horses or trains appear and disappear in the same way, you can give him the same realization of fact which he may compare with the "rising" and "setting" of the sun and moon. He will discover that the top part of a vessel, or wagon, or whatever he observes, always appears first and disappears last.

He may now be led to discover the "North Star" as his guide in the night. It may be easily located as half way between the great constellations of the "Big Dipper" and "Cassiopeia" (the big W). He will observe that these two revolve around the North Star in the course of a day, and rise in different places on consecutive days. This will introduce him to a study of astronomical phenomena.

It requires no emphasis that these observations will open up to him the glory of the universe with all its infinite and divine mysteries. It is not a mere mechanical mastery of "facts" which we must strive to produce in him, but longing for the discovery of the eternal truth behind these facts.

This naturally cannot be accomplished without the parents themselves being fully familiar with the facts of geographical knowledge, so that they may be competent guides to their children; and without their being aware of the spiritual truths behind them. They themselves must have the consciousness of the divine.

NATURE STUDY

Maximilian P. E. Groszmann, Ph. D.

Nature Study and Geography.—Nature study is really only an element of the larger interest in the study of geography. In one sense, it is but another name for geography. For it deals with the things which make our earth a living organism, fit to be the abiding place of living beings. More than that, it deals with the very life

conditions of the human race, with our own human organism. It treats of our own human anatomy and physiology no less than of that of animals and plants; botany and zoology are nothing but studies of the structure and biology of living beings closely related to our own structure and biology. It deals with the composition of the soil in which and on which living organisms live—this soil and its mineral constituents, however, are but mutations of living things, life in a state of transformation. Life itself is greatly dependent upon the actions and reactions of elements which we study in chemistry, and upon the force revealed by the science of physics. Human society and intercourse would be impossible without the tremendous development of these sciences: the steam-engine, the railroads and ocean-crossing greyhounds, the telegraph and telephone, aircraft and submarine—all these modern fundamentals of civilization are gifts of nature study.

Nature study, consequently, is a part, and an important part, of the study of our environment. It simply concentrates our attention upon the various single elements of this study, now on our physical environment, then on the flora, and again on fauna of this environment. By thus singling out part after part, it allows greater intensity and singlemindedness—it leads, in the larger sense of scientific pursuit, to a division of labor among scientific men. But we must recognize the essential coherence of the subject matter, and must insist upon the interdependence of even one factor upon the other. There is no plant life possible without chemical and physical interaction; animals need plants for sustenance; and human existence is closely linked up with all manifestations of natural forces.

Nature and the Young Child.—It may seem preposterous to give this all-embracing outlook upon nature study when we are dealing with the young child. As a rule, nature study for the child is a very circumscribed thing. It deals with a few plants and animals, perhaps some special minerals; in later school grades there is added a smattering of physiology and hygiene and some chemical and physical experiments. It is only in the high school, so-called, that some real science is introduced, that biological experiments are being conducted, and that a larger view is obtained.

Nature study is still considered by many old-fashioned teachers and by many "practical-minded" parents as one of the unnecessary frills of school education. Thus is unfortunate.

For nature study furnishes the basis for a real understanding of human life and its problems. It appeals to fundamental instincts in the child. He is much more interested in bugs and flowers, in the moon and stars, in dogs and cats, in horses and cows, in pumps and waterworks, in rain and snow, in brooks and ponds, in frogs and fishes, in lightning and thunder, and in the thousand and one phenomena of nature about him than he is in reading that "a cat sits on the mat" or in writing laboriously a letter to a spurious "friend" or making out a "bill" for groceries.

The arts of the "three R's" have their place, as valuable tools for the management of knowledge and human intercourse. But they are not the fundamental things. The child is first interested in, and needs to know about, the world of facts and truths around him, the things he may later read and write about, and the numerical qualities of which he may later determine for the purpose of "precise" cognition.

As long as the schools employ the child's time in the lower grades for the teaching of formal arts to the practical exclusion of real life experiences in field and forest, in street and factory, in the star-lit night and the natural laboratory of day light life—or wherever and however Nature can speak to the child her own language—parents should utilize their various opportunities to give their children this knowledge and inspiration.

That means that they must themselves be students and lovers of nature. In hardly any other branch of human knowledge will the child ask so many questions as in this. Nature is full of riddles and mysteries to the child before he finds his place in life, and the thoughtful child will never outgrow this thirst for knowledge about the vast expanse of the unknown. For Nature does not give only knowledge, it gives a longing for knowledge. It gives the inspiration to fathom the depths of the mysteries of the universe, to explore infinity, to find the mainsprings of life and existence—to go even beyond the limits of the knowledge and to speculate about the unknowable, the divine.

True, to the young child this great mystery will not come as a complete revelation. He will see only bits and fragments of the universe, and it will require many experiences and many years before he can piece them together into something like a harmonious whole. But, nevertheless, it is in childhood that the right attitude towards these riddles is built in the child's soul. It is the parent's privilege to cherish this attitude, to express it in his or her own reverential conduct towards human life and the hidden forces of the universe.

Even the young child will understand that there are forces beyond human conception, and he will personify them under the name of God. He will gladly accept the statement by those who teach him that the unexplainable—at least to him unexplainable—phenomena are the work of God, the supreme, mysterious force, more than human. Life in all its forms will hardly ever be understood, or conceived, in any other manner. Even when the child learns, in subsequent studies, to appreciate the mechanism of natural phenomena, and to reduce it to "laws," so that he will rationalize and follow up its complex manifestations in a truly scientific sense, he will approach the problem of life itself with reverence.

A little boy of three who had lived much in the open and had, in his own way, looked upon the flowers and rocks and sunsets and stars as so wonderful things which appealed to his heart, was once confined to his room in a sea-side hotel for several days on account of continuous rain. When the sun shone again one morning, he rushed to the porch, opened his little arms wide, and, lifting his eyes and face to the glorious light, called out: "I thank you, dear God, for the sunshine!" He had not been taught religion in any set form—with the worshipful attitude his parents had towards the forces of the universe, religion had come to him in a natural way.

Nature, Symbolism and Religion.—As the child repeats, in his individual experience and consciousness, the mental stages through which the human race has passed, it is natural that his first conception of nature should be unscientific if we may call it so, and more or less poetic, or mythopoetic, as the term is applied. That is to say, strict facts, in close organization of cause and effect, do not appeal to him: he can hardly differentiate between possibilities and impossibilities. This is the reason why our forefathers have indulged in so many myths and legends, so many superstitions in connection with the phenomena of nature. Many do still, and we have almost a revival of the ancient belief in the influence of the stars upon human destiny—just look at the books which are sold over the counter of numerous stores: birthday books, individual horoscopes, etc. Should we wonder that children have similar inclinations?

To tell them fairy tales, which are nothing but the last chords of ancient myths—the final form in which the folk mind has preserved the legends of the gods of nature—is perfectly legitimate. They represent the symbolism of the race; the abstract truths had to be personified; the events in the life of the earth and the heavens were to the ancients but events in the life history of their gods.

It is the Sungod who, when the mild spring zephyrs drive away the cold blasts of winter, fights the giants of Niflheim, girt in their armour of ice, and slays them with his invincible sword, the ray of sunlight, awakening the earth with his kiss and freeing her from bondage. As the spring showers descend, so he gives to his bride the new motherhood of flowers and fruit. The stories of Wodan, and of Siegfried, Brunhild and the Walkyries, reappear in the tales of Thorarose, the Sleeping Beauty and many others. There is a wealth of poetic charm in these tales, and they are deeply significant. The skilful parent will turn them to good account in the teaching of nature to his children.

All folk literature is replete with stories of this kind. Greek and Roman literature, and the Norse legends, are hardly superior to the tales of ancient India or of the North American Indians. The likeness of so many of them has been proof to the research worker that the human race, in its earliest beginnings, has sprung from a common stock; or, if there were different human families, rising from the darkness of prehistoric times, that the human mind conceived nature in the same manner everywhere and at all times.

Even in minor matters, the personifying spirit of childhood may be satisfied. There is an Indian legend of the Hobyas, a strange little people, living in caves and dark places, and trying to capture children and grown-ups for evil purpose. They represent the powers of illness, spread by darkness and dirt. Children will be quite ready to keep themselves clean, brush their teeth, wash their faces, if they feel then that the Hobyas, lovers of dirt, will not come near them. Crude fancy, perhaps, but childhood's fancies cannot represent the highest form of poetic imagination. Just the same our disease germs are rather well symbolized by these Hobyas, and the latter are more intelligible to the young mind than microscopic cells.

In the same way, the seasonal changes are well illustrated by the tales of Proserpina, Osiris, Old Mother Frost, the Christ Child and Santa Claus; these will have their share in the emotional education of our children. Nature interest in its primitive stages is nature worship, and out of a true nature concept will later arise a new form of worship, that of the divine in nature.

Not that the young child objects to experiments and concrete experiences. His powers of observation need training from his first years of life, and he will delight in the discoveries he makes. Gradually he will build up a concrete apperceptive basis, a knowledge of actualities which will lead him to later rational understanding. But the symbolic mythical elements precede the strictly rational. We must not impose adult standards upon the immature child. What appears a superstition to us is a mythopoetic conception from the standpoint of the undeveloped, primitive mind—in the race and in the child. Such a view degenerates into a superstition only when it persists in defiance of maturer knowledge. It is doubtful whether a child whose attitude is rationalizing from the start can be considered a pleasing and wholesome creature. There is danger that such a child will never grow to have idealism, or, for that matter, genuine science and philosophy. Without imagination, there can be no science or philosophy. As a matter of fact, it can be shown that those people who had least of this mythopoetic conception of nature in their early history, have never developed higher standards in science and thought, have never become leaders in mental progress.

Sentimentalism in Nature Study.—We should not confuse a wholesome symbolism with the spurious kind so often met with in some primary work. In the older practice of the kindergarten, not altogether outgrown, there is a symbolism rampant which must be considered objectionable. I refer mainly to the geometric symbolism based upon the three fundamental forms of the sphere, cube and cylinder which to Froebel and his followers meant to represent the principal forms of life: the sphere as the prototype of all bodies and all forms, from the cell to the universe; the cube an embodiment of all resting, immovable things, like the minerals; and the cylinder as a mediate form, in which all growing things, like plants are symbolized. The abstruse philosophy which, through these three forms, is taught the pre-school child, is so foreign to the child mind that it can only injure, not favor, the natural, mythopoetic symbolism which is characteristic of this period.

Again, the songs and poems presented in the kindergarten and primary school often breathe such a sentimental spirit that they have a weakening effect upon sturdy childhood. Fortunately not all of them can be so characterized. These games and songs that dramatize as well as symbolize Nature and personify her forces, will establish a personal, sympathetic relation between the child and the so-called dumb creation. This corresponds with a natural instinct. Thus, the rain comes down to the great brown house where the flowers dwell; or the alder by the river shakes out her powdery curls; the pretty little violets are waking from their sleep; the child asks of pussy-willow, the pretty little thing, where it comes from, how it grows; he sympathizes with the chilly little chickadees buried in the snow; and after an imaginary walk through field and lane, the little boy runs home to mamma to tell her: I saw so many things!'

Likewise, the children will play that they are animals, and by personifying them, will learn much more about them than by merely "studying" about them. Profs. Hall and Allin wrote this in the "American Journal of Psychology," IX, 1: "The antics of animals are a source of great amusement to children . . . . They pull down the corners of the eyes and pull the mouth open, put their hands to their ears, crawl like snakes, root like pigs, fly like birds, swim like fish, catch and devour prey, make faces, wear animal masks, form shadow pictures, watch animals and laugh at and perhaps imitate their every movement, personate trick animals . . . Some children desired to be, and others thought they were becoming some favorite animal. They play that they have claws, trunks, tails, tusks, big teeth and eyes, drink or sleep, walk, play like animals. Games that involve catching or grabbing are often very mimetic of animals, and are always hilarious . . . The wearing of animal masks of great variety has always been a source of great pleasure for children, and even plays a very important part in the games and ceremonials of the Chinese, in most European folk-lore and amusements, in medieval revels, and in savage dances. Pinning on tails, ears, horns, feathers, manes, wings, going on all fours, enacting the animal poses that have come down to us . . . from remote antiquity, with the aid of these accoutrements suggest . . . . that children must approximate the animal consciousness by these devices. On the other hand, the long struggle of man with the other animals for survival and supremacy, the history of domestication, the folk-lore and religion of totemism show us what a rôle animals have played in human fear, reverence, and even love in the past."

This reflection shows that the child at this stage represents a particular stage in mental development which corresponds to an epoch in the history of civilization when our race was just emerging into the light of civilization.

But there is an over-sentimentalism and a sickening mushiness in some forms of symbolistic nature study. From this we must save our children. Personification can be carried too far, and to ascribe without qualification human feelings and emotions to plants and animals leads to a misconception of man's place in the world.

The objectionable process can be best illustrated by a story which Horace H. Cummings tells in the Preface to his valuable books, "Nature Study by Grades." He says:

"While trimming a young orchard at his home, the author was once accompanied by his six-year-old daughter. With evident uneasiness she watched the clipping off of the small branches for a time and finally asked, 'Papa, why do you cut off those limbs?' 'So the tree will have a proper shape and grow to give us fine fruit,' was the answer. 'Well, you ought not to do that, for it hurts the tree. How would you like your arm cut off?' Suspecting the source of this error, the father asked, 'Who told you that it hurts a tree to cut off one of its branches?' 'My teacher said so,' she replied confidently. 'I think you must have misunderstood your teacher. It hurts the tree no more than it hurts you to have your hair or nails trimmed.'

"Two years later the father was trimming the same orchard, and again the little girl was with him.

"Recalling the former incident, and to test the effect of the child's wrong teaching and his effort to set it right, he asked: 'Norma, do you think it hurts the trees to cut off these limbs?' 'Yes, papa,' she replied promptly. 'Who told you so?' asked the father. 'I don't know, but it hurts them,' she emphasized with unshakable credulity. 'Did your teacher tell you so?' 'No,' she answered.

"It was evident that the source of this error had been forgotten, but the effect remained undimmed by the lapse of time or by the father's original effort to explain it away. Who can say how long this error will cling to that child and unnecessarily disturb her sensibilities? This pernicious result no doubt came from a constant use of personification and allegory, without leading the child to differentiate in thought or feeling between figures and the reality."

This story is very significant—that is the reason why I quoted it extensively. It is particularly significant as it is told by a father who is himself a teacher of nature. If he had such an experience, what can we expect of those among us who have not his equipment?

Everything at the right time, and in the right manner. As the race, with its horizon growing in extent, and its mind clearing away the cobwebs of error, mastered the riddles of the universe one by one, rising in its consciousness far above the aboriginal superstitions, without losing in this process altogether a sincere reverence for the inscrutable mysteries of creation—so we must (in due time) lead the child out of the far light of a mythopoetic fairyland into the sunshine of truth. Just the same, the child may remember the beauties of his early dreams, and he may, and must, recognize the truth behind the facts—such a truth as is expressed in the immortal lines of Tennyson:

"Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

The Wonders of Nature.—Among the less known stories from the pen of Edgar Allen Poe there are two which may not only be read to, or by young children, to stimulate their interest in nature, and give them valuable knowledge, but which prettily illustrate a manner of presentation quite fascinating, and rather fit for the home fireside. One is entitled, "The Thousand-and-Second Tale of Scheherazade," the other, "The Sphinx." Under the title of the first the whimsical author has quoted the old saying, "Truth is stranger than fiction." He tells in his inimitable, humorous way how the Sultan's Queen tells him another story of Sinbad the Sailor, introducing the most astounding adventures and observations. As a matter of fact the wonders which she describes are actualities in nature, only so disguised that they seem like fiction; what she tells as pure inventions, absurd as these incidents are on their face, is readily believed by the Sultan, who scorns the tales of fact. Sinbad tells of an island in the middle of the sea, many hundreds of miles in circumference, but which had been built by a colony of little things like caterpillars. Also of another island where the forests were of solid stone, so hard that they shivered to pieces the finest tempered axes with which the voyagers endeavored to cut them down. Then he describes a cave that ran to the distance of thirty or forty miles within the bowels of the earth, and that contained a greater number of far more spacious and more magnificent palaces than were to be found in all Damascus and Bagdad. From the roofs of these palaces, there hung myriads of gems, like diamonds, but larger than men; and in among the

streets of towers and pyramids and temples, there flowed immense rivers as black as ebony, and swarming with fish that were blind. "We then swam into a region of the sea where we found a lofty mountain, down whose sides there streamed torrents of melted metal, some of which were twelve miles wide and sixty miles long, while from an abyss on the summit issued so vast a quantity of ashes that the sun was entirely blotted out from the heavens, and it became darker than the darkest midnight." He also tells of a terrible bird, bigger than the caliph's biggest domes. This bird had no head that the voyagers could perceive, but was fashioned entirely of belly, which was of prodigious fatness and roundness, of a soft-looking substance, smooth, shining, and striped with various colors. In its talons, the monster was bearing away to his eyrie in the heavens a house from which it had knocked off the roof, and in the interior of which they saw distinctly human beings, who, beyond doubt, were in a state of frightful despair . . . . . Of course, Poe describes some of the wonders of the world as he knew it: a coral island, the petrified forests in the south of the United States, the Mammoth Cave in Kentucky, the eruption of the volcano, Hecla, in 1766, and of the other volcanoes, and finally the latest wonder of the time, a flying balloon with its gondola.

In "The Sphinx", Poe tells of himself as visiting a friend who has a summer house on the east side of the Hudson, near the mountains. He sits by the window, looking idly across the river at a mountain on the opposite bank, when all of a sudden he is startled by seeing a prodigious monster crawling up the mountainside. Frightened, he tells his friend, who can see nothing. The next time the apparition is repeated, he calls his friend, who discovers that right before his visitor's eyes, on the window itself, there was a harmless moth capering about, a "sphinx", "of the family Crepuscularia, of the order Lepidoptera, of the class of Insecta"—a schoolboy's account of which he reads. The nearness of the little object had made it appear to be of gigantic proportions, as projected by the unsuspecting eyes of the visitor upon the distant mountain.

This is a lesson in proportion. What is small and what is big? A child will be fascinated by imagining the insect world enlarged a thousand times, and himself reduced in size correspondingly. What a new world he would discover! The life about him, in all its forms, will take on a new significance to the searching mind. In the stories of "Alice in Wonderland" and "Through the Looking Glass," this play of fancy is employed to produce a charming tale, one which is suited most admirably to the mind of the young child.

If parents would see the wonderful perspective of nature's creations in the manner of Poe, if they would introduce them to the eager child in a similar fashion, would not the interest of the child be aroused to fever heat? This way of teaching nature is different from the type of routine instruction, when the child is asked: What is the size of an apple? What is its form? Its color? With what is it covered? etc., etc., ad nauseam.

The Seven Wonders of the World.—The seven wonders of the world, which were praised in classical antiquity as the most astounding and magnificent of man's power, skill and perseverance, were the Pyramids of Egypt, the Hanging Gardens of Babylon, the Temple of Diana at Ephesus, the Statue of Zeus (Jupiter) at Olympia, the Mausoleum at Halikarnassus, the Colossus at Rhodes, and the Lighthouse on the island of Pharus, near Alexandria. For their time they showed indeed man's progress in science and art. It is interesting to note, however, that they were all products of constructive art.

If we would wish to compare modern wonders of this kind with the creations of the ancients, we could point not only to a much larger number but to much more gigantic proportions. Modern man has mastered nature and her forces to such an extent that the wonders of the old world are like a child's dreams. It is well to introduce children to such contemplations. Every handbook or encyclopedia, even ordinary yearbooks and almanacs, give lists and descriptions of our great creations, like the Brooklyn Bridge, the skyscrapers, the mountain tunnels,—really so countless that there is no place here for even a scanty record.

What must be pointed out is that this progress, this perfection has been made possible only by the astounding steps the race has taken in studying nature and in applying scientific facts to the development of technical sciences. A number of discoveries and inventions, which sharpened the service of the human senses to an extraordinary degree, led the way. It is these inventions and discoveries the value of which the child ought to learn about, quite apart from any logically organized course in nature study. It is well to remember that children do not learn in a logical way, as we understand it, but along the road of interest which twists and bends unexpectedly in all directions.

The first of these important inventions is the watch or *clock*. Its perfection has enabled scientists to measure the most minute fractions of time, and consequently the most infinitesimal fractions of space in astronomical calculations. Incidentally, the watch can be used for determining the points of the compass. The invention of the *compass* itself was the next step in using science to benefit man in his conquest of the earth. Almost at the same time as the compass (1300), the *glass lens* was invented, first merely for use in spectacles. Two hundred years later, this invention led to the construction of the first *telescope* and of the *miscroscope*. It is unnecessary to dwell upon the vast significance of these two inventions in the furtherance of science; indeed, our knowledge in astronomy, biology, and kindred sciences would have remained very fragmentary without them. More than that, they gave so tremendous an impetus to nature study that we may date from them the beginnings of modern science.

Other inventions of a scientific character which made human civilization something essentially different from that of antiquity, were the *barometer* and the *airpump*; the *thermometer;* the discovery of *chemical elements*, of the laws of *magnetism* and *electricity*, of the power of *steam*, and other physical forces. What a great change in the daily life of all of us has been wrought by the invention of so small a thing as the *match* for starting fire and light, and by the introduction of modern methods of *illumination* and *heating*! When we compare the enormous aqueducts of ancient Rome with our modern pipe lines and reservoirs, we shall also see at once what transformation has taken place in the supply of drinking *water* to the huge populations of our big cities.

An ancient visiting a city of sky scrapers like New York, with its subways and elevated railroads, its bridges and tunnels, its telephone systems and wireless connections, its electric signs and its home comforts, would find in it all his own "seven wonders", surpassed to an incredible degree. It is well to make our children conscious of this fact. They have been born and are growing up in a world of wonders which they take as matters of fact, without much wonderment. It is one of the purposes and objects of nature study to arouse in them a proper estimate of the civilization they live in, which has been created out of a better knowledge and mastery of nature and her forces.

Nature Games and Occupations.—A systematic study of nature in its various aspects may be left to the school. That does not mean that parents should be indifferent to the method of school teaching and the subject matter offered in the school. Much of what is being done there is fragmentary and psychologically questionable. But that is another matter.

With even the youngest child *games* will introduce nature study proper. The kindergarten games offer some material, as has been pointed out before. But many of the ordinary games of childhood can be utilized for a better appreciation of nature facts. These may be mentioned, among many others: "Fox and Geese", "Bull in the Ring", "Cat and Mice", "Moon and Morning Stars", "Beast, Bird or Fish", "Flower Match", "Leaf by Leaf", "Planting a Garden", "Farmer in the Dell." Various song books for children contain such an abundance of material that parents will never be embarrassed by lack of it. While we must not spoil the children's interest in these games by trying to make them too conscious of the didactic element therein contained, parents would lose valuable opportunities if they would not introduce the real things of nature—flowers, animals, etc., as far as that is feasible, as factual counterparts of the symbolic elements of the games.

As Jessie H. Bancroft, in her book, "Games for the Playground, Home, School, and Gymnasium" (The Macmillan Co.) puts it:

"Games have a positive educational influence that no one can appreciate who has not observed their effects. Children who are slow, dull and lethargic; who observe but little of what goes on around them; who react slowly to external stimuli; who are, in short, slow to see, to hear, to observe, to think, and to do, may be completely transformed in these ways by the playing of games. The sense perceptions are quickened; a player comes to see more quickly that the ball is coming towards him; that he is in danger of being tagged; that it is his turn; he hears the footsteps behind him, or his name or number called; he feels the touch on his shoulder; or in innumberable other ways is aroused to quick and direct recognition of, and response to, things that go on around him."

This is true of all games; it is particularly true of nature games. *Training in sense perception* is indeed one of the objects of nature study—without the stimulating power of quick and correct observation nature study would be defeated of its purpose.

We may therefore include in this part of our study all those *games and occupations* which train the child's senses. Here again, the kindergarten games and occupations, and some of the Montessori materials have

their value. In the "Timely Games and Songs for the Kindergarten", by Reed-Brockunier, there are some good song-plays, like "The Bell-Ringer" (sense of hearing); "Two Little Windows" (vision); "The Mystery Man" (touch); "The Wonderful Bag" (taste); and "The Surprise" (smell).

In connection with this work, there must be a careful training in the perception of *color* and *form*, with parquetry, colored papers, paper-cutting and pasting, painting, etc. This will lead to an early discovery of eventual color-blindness which is capable of partial correction, to avoid observational mistakes. Recognition of different *temperatures* and of *weights* is an important part of sense training. Objects and materials must be recongized by direct, or by indirect touch; the differences between rough, smooth, silky, woolen, velvety, etc., should be marked. Special training is needed in developing the sense of *location* and *self-direction*. Motor impulses must be controlled; manual exercises of all kinds will be in the nature of experiments with natural material and its yielding to manipulation with hands and tools, preparing the child for an understanding of the development of the technical sciences out of nature knowledge.

Even primitive folks had a sort of geometric symbolism in nature representation. They "conventionalized" leaves, flowers, even animal forms, like snakes. Such designs are common among the ancient Greeks and Romans as well as they are among the relics that have come down to us from Babylonian and Egyptian antiquity, and from our North American Indians. So *art work*, connected with nature work, can well introduce such geometrically conventionalized nature forms. But a great deal should be done in free color representation, with washes and paints. Also free hand cutting of leaves, grasses and flowers. Modeling offers many varieties of representation, naturalistic and conventional, in designs, borders, etc. Leaves can be traced on paper, and colored. Artificial flowers can be made from tissue paper. Animal forms may be cut, painted, modeled.

Grasses and leaves may be arranged in pretty designs and used in blue printing. Or leaves may be lightly fastened to some background, paper or other material, as a pattern, to be painted around, so that the leaf design remains when the leaf itself is removed. This may then be filled in with other colors, or by drawing in the veins, etc. If this work is done on wood, very pretty effects can be produced by using a toothbrush instead of a paintbrush, squirting the water color on the wooden background by holding the toothbrush in the left hand, and scratching the bristles with a small stick of wood held in the other. Groups of leaves and grasses can be used in this way, first removing one layer, and then another; thus various grades of shading can be effected, making the design stand out in relief.

All this work will strengthen the child's interest in nature forms.

Riddles and Puzzles.—A child's interest can always be aroused by puzzles and riddles. They can therefore be pressed into service for the fixing of nature knowledge. Of the ordinary riddles which ask for nature objects by description, syllabication or letter combination, every magazine is so full that it is unnecessary to give examples.

To illustrate some forms of these puzzles, the follwing may be introduced:

Chaotic Words

These puzzles are in groups. Each has 5 horizontal lines of letters, and contains 5 words. The letters are also arranged in vertical rows. Group A has the word "antelope" in marked letters to show how to do them.

A. The Happy Family; Animals.—

J A O P A R
A E C **E** H **O** **P** T
K L E K **L** R O O
E A **T** P A A N
L **N** N G A L D **E**

Other words: Jackal, Kangaroo, Elephant, Leopard.

B. A Bouquet of Flowers.—

S Y R I T H T M
H O E L I O O A K
G A A A N P U D
M E L C Y I L C S
H W R E G N E H

Words: Sweet peas, Hollyhock, Geranium, Marigold, Hyacinth.

C. A Cage of Birds.—

S I T T C R
W I O E O O D
B O G L A R C
P U Y D E N N
B K S T A R R K

Words: Skylark, Woodcock, Bittern Pigeon, Bustard.

For somewhat more advanced children, the puzzles of hidden words may be suggested.

Hidden words in words.—Find a mineral in a small country of eastern Asia. C (ore) a.

Hidden Trees.—Example: "That *opal* must have been stolen." (Palm.)

Since Darius returned he has grown.
Mamma, please, may I go?
Ethel may go to school.
The fashions often change.

Hidden Insects.—

The rifle and dog are mine.
He briefly replied.
State your wants.
It was papa.

It goes without saying that one of the greatest delights of children will be to invent their own puzzles of this nature which will stimulate their interest in study most decidedly.

Dropped-letter sentences, dropped-words sentences and paragraphs, and similar puzzles will have their share in these games.

The toy stores also offer a great number of dissected pictures and other nature toys and games which can be used to advantage in the nursery and around the family table.

Scientific Tricks.—In line with the puzzle interest of children is their great pleasure in magic tricks. This is perhaps a reverberation of the emotional state of man in witnessing the performances of the ancient conjurer, magician and necromancer. The fear of these, the great awe inspired by them, was at one time in the dim past among the most influential elements of religious worship and mythical lore. The child shares with primitive man this state of mind. But what was once a fearfully solemn ritual, has become a pleasant entertainment.

Magi were the priests of the Babylonians; the priests of all ancient religions practiced "sorcery" of some kind at all times; they were skilled in secret knowledge, as it was called—and quite able to perform what seemed to be miracles to the awe-stricken populace. They made speech come from the mouth of their monstrous deities as represented in stone or bronze images of huge size; they made them appear as bleeding from imaginary wounds, etc. The Hindoo fakirs and the medicine men of the North American Indians belonged to the same class. During the middle ages, witchcraft and sorcery were firmly believed in; the faith in magic, conjuring, enchantments, the black arts, exorcisms and soothsaying was common, even among the so-called educated. These old notions and superstitions have not died out altogether in the modern world.

No wonder that our young have a deep interest in all conjuring and that, while it inspires them at times with a strange feeling of fear and misgivings, especially when they see the performances of our modern "magicians," they take an almost inordinate delight in all matters of magic.

Many of the medieval magicians, like their ancient predecessors, were not merely jugglers and deceivers. They were advanced scientists. Indeed it was their premature knowledge of scientific facts—far in advance of their times—and their serious scientific researches which gave them the power to impress the multitude in which the scientific sense was wanting. Both the great Nostradamus and Paracelsus were physicians and alchemists, as well as necromancers; the latter is important in the history of medicine on account of the impetus he gave to pharmaceutical chemistry.

Likewise, in the harmless tricks which our children may learn to play there is often hidden a great deal of real science—in chemistry and physics. A few of these may be here described to make our meaning clearer.

Put some snow, mixed with salt, on a plate; on top of this set another plate in which there is a mixture of cold water and snow. When both are set upon the warm stove, the salted snow in the lower plate will melt, causing so much abstraction of heat from the upper plate that the water in it will form ice.

A magic lantern will give not only a great deal of amusement to children, but will illustrate to them the principle of the refraction of light. A much simpler form can be made at home without a lens, using a mirror, so that inverted pictures of the bright scenes outside can be observed in daylight (Camera obscura).

Refraction of light is also demonstrated by the simple trick of holding a stick slantwise in a bowl of water.

Another trick with heated and consequently rarified air is performed with a soup plate and an empty glass. Pour some water into the soup plate. Then heat the air in the tumbler by holding a candle under it, the tumbler being held in an inverted position. As soon as the air in the glass is sufficiently heated (and thinned out), set it quickly into the water in the plate—the water will rise immediately in the glass occupying the space left empty by the cooling and therefore contracting air. The opposite phenomenon can be illustrated by the following experiment: When you place an empty glass into water, face down, it will be noticed that the level of the water within the tumbler is lower than that of the water surrounding it, owing to the presence of air in the glass. This fact can be utilized to demonstrate the principle of the diver's bell. Place a cube of sugar in the centre of a large enough

and flat disk of cork, floating in the water contained in a deep soup plate. If now you place an empty glass, bottom side up, quickly over the float until it touches the bottom of the plate, the float will be seen swimming on the lower level of the water inside the glass, the lump of sugar being untouched. If you remove the glass carefully you will find the sugar absolutely dry.

Tricks with magnets are numberless. The blowing of soap bubbles is really a scientific experiment. There are numerous balancing tricks, exhibiting principles of statics.

There are hundreds of other tricks affording entertainment and instruction to the children. Care must be taken, on the one hand, not to introduce them in too dry and didactic a manner; on the other, to impress upon the children the wonderful laws of nature which are demonstrated by these tricks—which are not tricks at all, but real experiments, leading over to more serious and orderly work with the forces of nature.

Many children will delight in organizing these tricks into the form of "public performances" given for the benefit of their friends; this also satisfies their dramatic instinct and should be encouraged. Parents ought to take themselves a lively interest in these activities, and be helpers and advisors, without attempts at dictation.

Outfits for young magicians can now be bought for small sums in the toy stores.

Cooking and Domestic Work.—Still on the order of more or less unsystematic work—and of a kind which can most easily and attractively be done at home—are cooking and other domestic work. Lessons in this field, when given in school, partake of the nature of school routine and often lose much of their spontaneity and interest.

Not only the little girl but even the young male scion of the house will be greatly attracted by mother's preparation of meals. There is first the multiplicity of supplies—the meats, the vegetables, the spices, the fruits, the nuts, the milk, cream, and butter, tea, coffee, etc. To the mother who understands her educational functions these supplies alone will afford an endless opportunity for imparting nature knowledge to her children in an entertaining as well as instructive manner. Where does the meat come from? What kind of meat is it? What cuts? Meat, fish, or fowl? The entrails and general anatomy; kinds of fruits and where they grow—is it necessary to enlarge upon this vast field of information of the most fascinating kind?

There was a little book published years ago which illustrates precisely the kind of information which can thus be imparted: "Aunt Martha's Corner Cupboard," by Mary and Elizabeth Kirby. It introduces two lively, mischievous boys who spent their vacation with an elderly aunt in whose old-fashioned house there was a corner cupboard of the old English type. "It seemed to Aunt Martha" (for she was a lady of a lively imagination) "as if everything in that cupboard—her china, her tea, her coffee, her sugar, even her needle,—had a story to tell, and a most entertaining one, too. Had not many of the things been in foreign parts where are great palm-trees, and monkeys, and black men, and lions, and tigers?" And so she tells about tea-cups and pottery, tea and botany, as well as gardening and agriculture, sugar and sugar-mills, coffee, salt, caravans, birds, and what not.

Modern parents might well make their *kitchen cabinets* and *pantries* inexhaustible mines of material for nature study to their children.

Then there is the *cooking* itself. The boiling of water in the tea-kettle alone will furnish inspiration for many a home lesson in science. Did it not give James Watt his first idea of the steam engine? And has not steam changed the face of the earth and made modern civilization possible?

In the boiling of milk or eggs other natural laws are impressed. Really, every dish made in the home kitchen by baking, boiling, broiling, roasting—whatever it be—is full of suggestions. Chemical and physical facts, even anatomy, physiology, and biological conditions, can be brought forth. Chickens and their eggs may be made to serve the need of a practical knowledge of embryonic life. *Carving* is dissection.

In the caring for the home there are many other occasions for nature study. *Cleaning* and *dusting* suggest proper methods of cleanliness and the learning about the meaning of sanitation, personal and household habits, health and disease.

The study of the composition of dust brings to the child's consciousness many microsocopical facts of organic and inorganic matter. There is the problem and meaning of *fresh air* and *sunshine*, of proper methods of *ventilation*—much of chemistry and physics can be introduced in this manner, quite informally. The chemistry of *soap* and *hot water*, of dirt and washing, of drying and bleaching, is another interesting topic. The hygiene of *dress*, and the various *dress fabrics* form other themes of discussion.

Further comes the *supply of water;* the hydraulic principles of supplying each household with running water, and the hygienic principles of purity of the supply. Even very young children will be fascinated to follow up the water-pipes in the plumbing arrangements and in the disposition of sewerage. Likewise, they will wish to know about the method of *lighting* and *heating*. There is the gas supply, and the chemistry of gas manufacture and gas light and heat. A study of the composition of the flames will absorb a child's attention. Then we have the modern installation of electric light, with all its ramifications. The electric current is a most important subject of study. A child will be interested in father's attempts to detect the cause of the electric doorbell not ringing, or of its persistence in ringing without stop. The distribution of light in the room, the proper position of the light for reading, writing, and working, matters of kerosene lamps and candles will suggest further lessons in principles of vision, the care of the eyes, the manufacture of candles, the science of petroleum.

The *kitchen stove* and the *furnace* open up another chapter. The lighting of fire, the history of the hearth, the invention of matches, the proper use of coal and wood, the origin of fuel, the trick of draughts, etc., give occasion for another long series of observations and practical experiments.

One point in the preparation of foods may be added: the matter of *diet*. It is quite feasible to give even a young child some ideas of the relative values of different foods, of their digestion, and of their effects on health and disease.

It is not intended to make any of these lessons, if we may be justified in calling them so, cumbersome and technical, or to shoot beyond the mark. While all of these opportunities make for nature study they need not be given in the pedantic way of science teaching. They will be incidental and informal, amusements rather than lessons, tricks rather than experiments, spontaneous rather than set. But we must give the mind of even a young normal child credit for being able to absorb and understand many more things than are usually placed within his reach. Most child minds are actually starved from lack of opportunity.

Gardening Outdoors and Indoors.—One of the primitive occupations is digging, planting, harvesting. A child revels in such work. Only one caution is needed: it is natural to the child to be easily tired, not so much physically as mentally. To force him to sustain attention and effort beyond his fatigue point is a great error. Such forcing will inevitably make him unwilling for, and incapable of further effort.

But within his limits the child is very happy when he can dig and plant. His garden beds may not look very orderly, and we may have to refrain from forcing him to comply with adult standards; his results may be questionable as far as crops are concerned—yet the mental crop may be abundant. When the play spirit enters into his gardening, the child may be found to be absorbed in his horticultural and agricultural pursuits. School gardens are now a recognized part of the curriculum in many places; there are also community gardens. Every backyard can be utilized for some work of this kind.

The child will learn much of the nature of the soil when he works it and when he discovers its yield. He will learn about the weather, about sunshine and rain, and wind and seasons. He will understand better what growth means and the difference between living and inorganic things. He will learn more about seeds, fertilization, germination, and flowers—wild and garden varieties—about vegetables and grains. He will appreciate the work of the farmer and truck gardener, and the influence of climate and temperature, drainage and irrigation. All these things will in the early stages be somewhat hazy and indefinite, perhaps, but his practical experience will give him a basis upon which he can build his later, better organized and more clear-cut knowledge. What he needs to develop now is his faculty of observation, the ability to see with his own eyes, to draw conclusions, to store up facts, such as later will be woven into the fabric of his world conception.

In the house, there can be much work of a similar nature. He may learn to rejoice in the gift of a flowering plant, or a dwarf shrub, to be taken care of in his room; or he may be appointed guardian of the home conservatory. There is the watering, and the removal of dry twigs and leaves; the care of the soil in which the plants grow, the temperature which must be maintained to preserve them, their place in the sun. He can build his own miniature greenhouse, to grow mosses and ferns, and populate the little world with insects, frogs, and lizards, studying their habits and life conditions.

Outdoor Studies.—Professor Preyer, in his studies of the development of the child mind, said that "a child in the first three or four years of his life learns as much as the student in his entire university career." If this is true we need not fear that the suggestions made in these lines are exaggerated demands. What is pleaded for is merely opportunity for the child from in-

fancy up. That is why he should not be imprisoned between home and school walls, but needs the freedom of field and forest to develop the health of his body and the sanity of his mind. The fettered child is the one who is more apt to play truant, to become disgusted with "learning" and "book study", than the one who roams in the open as his birthright. The "wanderlust" of the race is inborn in the normal child, and unless it is satisfied in a normal manner, will tempt the active child to find an outlet for his cravings in an "illegitimate" way by playing truant. Well may Whittier's "Barefoot Boy" be quoted who gains—

"Knowledge never learnt of schools,
Of the wild bee's morning chase,
Of the wild flower's time and place,
Flight of fowl and habitude
Of the tenants of the wood;
How the tortoise bears his shell,
How the woodchuck digs his well;
How the robin feeds her young,
How the oriole's nest is hung;
Where the whitest lilies blow,
Where the freshest berries grow,
Where the groundnut trails its vine,
Where the woodgrape's clusters shine;
Of the black wasp's cunning way,—
Mason of his walls of clay,—
And the architectural plans
Of gray hornet artisans!
For, eschewing books and tasks,
Nature answers all he asks;
Hand in hand with her he walks,
Face to face with her he talks,
Part and parcel of her joy,—
Blessings on the barefoot boy!"

It is obvious that this craving of the boy—and the girl—must be gratified if we wish to avoid mischief. And it is good nature work if we yield to these natural promptings. The old-fashioned walks of parents and children, their hikes through country and woods, have fallen into disuse in the large cities with their magnificent distances. Yet, it is being demonstrated by the Boy Scouts and the Camp Fire Girls movements that it is perfectly feasible to adapt the needs of children to modern life conditions. It should not be necessary for parents to leave all this rich life of childhood to strangers; they should take some of their own deepest joy in sharing it, in organizing those expeditions which will acquaint their sons and daughters with life in the open—with woodcraft, wild life and tentcraft.

If parents are at a loss as to where to find instruction for themselves, let them study the handbook of the Boy Scouts of America. There they will find most of what they need.

The essential point is to make the children conscious of the natural conditions of life; to have them learn to adjust themselves to nature in the rough, to re-experience the experience of the race in developing civilization from the first primitive attempts to differentiate the human from the lower creation to modern time. In other words, to reconstruct the world in which they live from its rudiments and fundamentals. They must learn to understand the world they live in, to locate themselves in their natural setting.

Just to give a brief survey of what children may learn in this manner, I will suggest some of the things which may be imparted to them:

How to use the compass, or how to find the directions with the use of an ordinary pocket watch.

How to measure heights and distances.

How to find your latitude by the stars.

How to make fire.

How to know the stars.

How to know the birds.

How to know shells, reptiles, insects, butterflies, beetles, fishes.

How to know rocks and minerals.

How to know mushrooms from toadstools.

How to know trees, shrubs, wild flowers.

How to know about the wild animals in the woods and fields.

These are only a few of the many valuable lessons the children will learn on their hikes and camping expeditions.

To send children to camps in the summer has become a habit with many of the well-to-do parents, and for the less favored there are community camps and other provisions. At least a beginning of this practice has been made. But the question arises whether it would not commend itself to have the parents themselves get into the habit of camping out with their children at different times of the year, not merely in summer, but also during the winter months, whenever occasion arises. Fathers will go on hunting or fishing trips; mothers will spend their time at fashionable hotels in so-called resorts, either sending their children away among strangers or taking them with them into the strenuous life at such resorts. The natural and most helpful arrangement would be to organize opportunities for a healthy outdoor life in which the entire family can partake.

Collections.—From these hikes, walks and camping expeditions, children may bring a number of things back home with them which will not only be souvenirs of pleasant times spent in communion with nature, but which may be further objects of study.

They may make for themselves *herbaria*, that is to say, collections of dried and well-preserved leaves, seeds, samples of bark and wood, and other botanical material. These specimens they will learn to identify and classify, adding notes as to where they found them and what their life conditions are.

In connection with these actual specimens they may collect *pictures* of trees, shrubs, weeds, wild flowers, for comparison. A knowledge of the most common trees is unfortunately so rare at the present time that such studies should be distinctly encouraged.

To this kind of collection should be added specimens of the life among the plants that grow on the ground and among the branches of the trees that reach up into the air. Collections of *beetles*, *butterflies*, and other *insects* should be made. Here is also an excellent opportunity for teaching the young proper consideration for life. No wanton distruction, without a real object of study, should be allowed, and in preparing beetles, bugs and butterflies for the preserving box, cruel killing should be avoided, chloroform or other painless methods being employed. Respect for LIFE and its sacredness must be inculcated in the young; their natural recklessness and their desire for mastership over the dumb creation—quite a primitive trait—can thus be turned into constructive channels. For when they learn to connect their collecting instinct with the study of life, and with scientific knowledge, they will assume a different attitude towards the helpless creatures they catch with net and cunning.

Some living things—like turtles, lizards, small snakes, frogs and fishes,—may be among the results of their hunting. These they may place in *terrariums* and *aquariums*, with sand and soil, rocks and plants so arranged that they will represent an imitation of the natural environment.

To catch wild birds for the purpose of keeping them in cages should be discouraged. There are many birds to be bought in the bird stores, like canaries, parrots and the like, that were born in captivity and may serve to teach children the care of our feathered friends, as far as that is necessary. Our zoological gardens exhibit a sufficient number of birds, placed in an environment which most nearly resembles the natural conditions, so that it would seem superfluous to subject birds to the tender mercies of our immature children. But it is well for children to know birds and to distinguish their various songs, also to study their habitations. It is equally well to inform them of the vast service they render man by the destruction of harmful insects. Collections of *bird pictures* will be welcome.

Of living animals, again we must discourage the catching of jolly wild fellows like squirrels. Dogs and cats offer much opportunity for the study of animal life. To those children who have occasion to raise guinea pigs and rabbits, these animals may soon become great pets Then we have in many instances horses and cows, eventually goats and kids for the home menagerie.

Collections of *grains*, of *seeds*, of *mineral*, of *shells*, and what not, may complete the home museum.

Museums and Public Collections.—It needs to be said only in passing that children take great delight in visits to museums of natural history, to botanical gardens and zoological collections in aquaria and menageries. While these may be found only in the larger cities, the circus brings at least some of the strange animals in which children are interested, like elephants, lions, tigers, foxes, giraffes, to the smallest village.

For the little ones, *picture books* representing the treasures of nature will be most valuable.

Advanced Work.—All these things can be made of interest even to little tots and can be adjusted to the needs of the growing mind.

But there is a great deal that children will like to do at home even after they have begun to study science in earnest in school.

Attention may be called to the sets of *chemical* and *physical* apparatus which can be had for little money in the toy stores. Children may learn to build aeroplanes, submarines, to arrange electric bells through all the rooms in their homes, to construct telephones and telegraphs, wireless apparatus and other electric appliances. All these efforts afford outlets for their natural activity and inventiveness and will lead their restless minds into constructive channels.

Graphophones, with the wonderful reproduction of tones and voices, are another attraction to the child. While even the youngest child may learn to manipulate them, the older boys and girls may be induced to study the laws of nature which made this great invention possible. They will, of course, connect it with the principle of the telephone.

Then there is *photography*. Cameras are now so cheap that every child may have one. But the children ought to be taught

to take and develop their own pictures. In this wise they will learn much about the chemical action of light.

If you can give your older children a *microscope*, it will arouse their interest in the vast realm of minute life—a new world to them, which, however, will introduce them into the science of the invisible forces, so dominant over the visible world. Such an instrument affords them a great deal of highly instructive entertainment.

What Parents Should Know.—As said in an early paragraph, parents who realize the wonderful opportunities which they have for their children's nature study in the home will feel that they must themselves be properly informed. Or else they should at least study *with* their children—thus inspiring them with the sense of comradeship. The parents' interest will be the greatest incentive to the child's attitude.

There are many publications which will give those parents who had no previous advantages the desired information and suggestions. They will find them if they look for them. It may not be amiss to refer once more to the very helpful three-volume work by Horace H. Cummings, NATURE STUDY BY GRADES, published by the American Book Company, New York.

ECONOMIC GEOGRAPHY

The study of geography was formerly regarded as a description of the earth with special emphasis on the physical features and political divisions of the various countries of the world. To-day geography is more concerned with the effects of physical features of land upon the activities of mankind. In this section we study geography from an economic viewpoint; we study the world as a place for trading, and also the adaptation of man to his environment in using the land for trade and commerce. As in general geography, we study land forms, soils, climate, raw materials, distribution of animals and plants as well as trade routes, countries and cities. Our study, therefore, will consist first of a study of a few of the more important raw materials of commerce, and second of a study of the economic geography of each country will be made.

American Museum of Natural History, New York

PART I.

Wheat.—Undoubtedly the greatest need of man is food, and since the very earliest times cereals have been important foodstuffs. Of all the cereals, wheat is by far the most important both as a food and as a commodity for international trade.

Wheat grows in many and widely scattered lands, but does not thrive well in very hot or very cold regions. A double climatic requirement is essential to its best development. It needs a cool moist period for germination and a sunny and preferably dry weather for its maturity. Warm regions of heavy rainfall in summer are not productive of the greatest yield or the best quality.

This double requirement of a moist formative period and a sunny ripening period helps us to understand why wheat from Texas, Kansas, Nebraska, the Dakotas, Minnesota and Canada is bright, plump, and valuable.

The soil should neither be too sandy nor too clayey, but loamy and well drained with a surface suited to modern plowing and reaping machines. Most of the best wheat lands of the world are found near the edge of very dry or desert regions. The best wheat lands in the United States, Canada and Argentine are very close to the section of little rainfall. Wheat lands also border on the cooler edges of the deserts in Australia, South Africa, the Nile River, Mediterranean countries, China and India.

Differences in soil and climate tend to produce different kinds of wheat, and are usually classified as spring and winter, hard and soft, red and white. In general the soft kinds contain a large proportion

Steam Barge with a Dock Load of Wheat.

Best Traction Engine Pulling Sixteen 10-inch Plows, Four 6-foot Harrows, and a Havana Press Drill.

Piling Wheat in a Stockton Warehouse.

The wheat is headed, thrashed, cleaned and sacked by this machine in one continuous operation.

Mammoth Harvester—Cutter, 26 Feet wide; Capacity, 75 Acres per Day.

Flour Mills and Docks at Stockton, the Head of Navigation of the San Joaquin River.

Nevada Docks and Warehouse, a Typical Shipping Point for Deep Sea Sailing Ship

of starch and are used for the manufacture of flour. The hard varieties are used more for the manufacture of macaroni. There is no real seasonal classification in the various types of wheat, for a winter wheat may be sown in the spring, and a spring wheat may be sown in the fall, with good results.

Europe as a whole produces more than half the wheat crop of the world, but with the exception of Hungary, Roumania and the black belt of Russia, there is no surplus to export. The density of the population of Europe makes it imperative to keep the grain home for the purpose of food. This density of population causes the European farmer to rotate his crop in order to yield the maximum number of bushels per acre. The average yield of wheat per acre in some of the most densely populated countries of Europe where land rents are high is much greater than that of the less thickly populated cheap lands of newer countries.

AVERAGE YIELD OF WHEAT PER ACRE
1910-1914

Great Britain	33 bushels per acre.
Germany	40 " " "
Belgium	34 " " "
France	21 " " "
Hungary	19 " " "
Russia	10 " " "
Roumania	13 " " "
United States	14 " " "
Argentine	11 " " "
Australia	12 " " "

Density of population also affects the yield of wheat per acre in the various states in the United States. Some of the older states, like New York with an average yield of about 22 bushels per acre have, through care, a higher wheat yield than the plain states where the yield averages from eight to ten bushels per acre.

The states in the United States which produce the greatest number of bushels are Kansas, Minnesota, North and South Dakota. The total yield in the United States for the year 1920 was nearly a billion bushels. The countries of Europe which, during normal times produce the greatest number of bushels are Russia, France, Germany, Hungary and Roumania. In 1913 the figures for Europe were over 1900 million bushels. Canada produced about 193 million bushels in 1920, Argentine 160 million bushels, India 369 million bushels and Australia 100 million bushels.

GEOGRAPHIC DISTRIBUTION OF WHEAT

Wheat is grown principally for flour, and hence the international trade in this commodity is large. The great milling centers of the world have grown up near the sources of raw materials and power. In Europe the highest fame and skill in the making of flour have been reached by Hungarian millers at Budapest. In this country the greatest flour manufacturing city is Minneapolis. Here the Falls of St. Anthony in the Mississippi River and a location near the great wheat fields afford the double advantage of cheap power and economy of time and expense in the assembling of the wheat from the fields of the United States and Canada.

The world's greatest exporting countries of wheat and flour are the United States, Canada, Argentine, Australia, British India, Roumania and Russia. Most of these nations are new or else agricultural. As the United States fills up with people it will undoubtedly enter into the export trade of these commodities less and less. The center of wheat production has steadily moved westward with the taking up of the cheaper lands by people from the east. As time goes on and population grows most of the wheat grown here will be needed for home consumption. The probable granaries of the future are Argentine, Australia and Siberia, especially the plains to the southeast near the Manchurian border.

The development of long-distance carriage will affect the area of production. The railways of the Northwest and the steamships of the Great Lakes make possible the wheat harvests of that region. The profits give a wide range of desirable things to the grower, and the cheap transportation gives white bread to many among the poor of Europe to whom it was once a luxury. New facilities in transportation will increase the importance of wheat in Canada, Russia and Australia. The wheat lands of Argentine and Russia are nearer the sea than those of the United States, and this will favor them as competing grain producers.

Corn.—Corn is one of America's contributions to the grains of the world. When the first settlers came to this country the Indians presented them with this grain. Owing to the fact that corn will grow on very rough land where other grains will not do as well has caused this grain to be

GEOGRAPHIC DISTRIBUTION OF INDIAN CORN OR MAIZE

cultivated in the back or isolated sections of the country. Hence in that rough section of the Appalachian Plateau, including many thousand square miles of Kentucky, Tennessee and West Virginia, corn as a food and staple of trade is of great importance.

Corn will grow and mature in any section that has a five month growing period. The prime grades of corn thrive best where there are sufficient rains with warm sunny weather during the growing season, and in rich, well drained soils. Hence it does not thrive as well in those countries that have cool summers like England, Scotland and Canada, nor does it thrive to good advantage in sections of intense heat as in our southern states. Corn requires warm nights as well as warm days, and this fact accounts for the reason that corn does not grow to advantage in some of our southern states like Arizona, New Mexico and Nevada. These sections with their very cool nights hinder the full development of the grain.

The chief regions of production of corn are the central Mississippi Valley, the plateau sections of Tropical America, the Black Sea region, the Mediterranean countries, southeastern Asia, and Argentine. Of all these regions the richest and most productive is the central Mississippi Valley. The corn belt here is just south of the wheat belt and includes the states of Iowa, Illinois, Missouri, Indiana, Kansas and Nebraska. Here we have one of the finest farming sections in the world. Indeed, this is often called "the heart of America." The average yield of corn per acre in this section is about 25 bushels, and with careful selection of seed and tillage this can be increased to 50 bushels per acre. The five year average, previous to 1914 was about 2,700 million bushels. The European War making it necessary to increase the food supply in all lines of agriculture, encouraged the farmers of the west to greater tillage and more careful cultivation. As a result the crop of 1920 was nearly 3,200 million bushels.

Corn is used largely as a supply crop and hence is not used as an article for export. The relatively low price of the commodity compared to its bulk weight does not make it a profitable article for export. Most of it is used near the place where it is grown, so that most of the American corn is consumed at home in the cattle belt which is very close to the corn growing section. Corn is used also as a breadstuff, in the manufacture of syrup, starch, glucose and other products such as corn flakes, corn oil, soap, alcohol, oil cake and meal.

Cotton.—The most imperative need of civilized man, next to food, is clothing. For many hundreds and thousands of years his clothing consisted largely of the skins of animals. Later as the art of making cloth developed in the silk and flax fibers the wealthy and aristocratic classes could wear garments of cloth. Cotton has of course been used for clothing for many hundreds of years, but until the invention of the cotton gin in 1793 the poor man had to depend on wool, linen and leather for his clothing. The invention of the cotton gin made cotton the leading vegetable fiber, and the trade in cotton and cotton manufactures is perhaps the most important branch of international commerce.

GEOGRAPHIC DISTRIBUTION OF COTTON

The cotton of commerce is the fiber which surrounds the seeds of the cotton plant. The usual height of the cotton plant is from three to five feet and is perennial in regions which are free from frost. The plant is often regarded as a tropical plant but the most important

regions of its growth are in the subtropical regions of both the northern and southern nemispheres. Nearly all the cotton is raised between 40 degrees north latitude and 20 degrees south latitude. The principal cotton growing countries are the United States, India and Egypt, although it is found in considerable quantities in central Asia, Peru, Brazil and many of the South Sea Islands.

Cotton was first grown for the market in this country in Virginia. The leading states today in the production of cotton are Texas, Alabama, Mississippi, Georgia, South Carolina and Arkansas. During the last five years this country has produced on the average more than 20 million bales.

The chief varieties of cotton are the ordinary American upland cotton, the Sea Island, the Egyptian and the Peruvian. The value of the fiber and the uses to which it is put depend on its length, strength and fineness. For this reason, Sea Island cotton is by far the most valueble, for it is characterized by a long, fine, silky fiber. This type of cotton thrives best near the ocean, partly because of the high humidity. Sea Island cotton is also grown some distance inland in southern Georgia and northern Florida.

The cotton plant is not cultivated alone for its fiber, but as in other fields of economic activity, the utilization of the by-products obtained from the parent plant has become very important. The cotton seed is used for fertilizer and oil, stock food, paper, soap and cellulose. The stalk is also important commercially in the manufacture of paper and in some sections it is used as a fuel.

As an article for export trade, cotton holds a high rank. Approximately two-thirds of the home crop in the United States is sent abroad. The great industrial countries of England, Belgium and Germany have for the last hundred years been largely dependent on the crop in the United States. How dependent Europe is on American cotton was illustrated during our Civil War in 1861-1865 when many of the mills were closed down and thousands were thrown out of employment because of the blockade of the southern states. Also during the late European war, Germany felt the need of cotton from America. The bulk of our crop goes to England. The three chief cotton ports in the United States are Galveston, New Orleans and Savannah. New Orleans and Galveston are strategically located, the one being the natural outlet of the Mississippi Valley and the other as the end of railway trunk lines connecting with the various plantations in Texas and Oklahoma.

The economic value of cotton is felt everywhere. As an article of international trade it holds a high place. Certain it is that the opening and extension of cotton growing in America and in other sections of the world, together with the invention of the cotton gin and spinning machinery, have been important factors in cheapening clothing for the world. The market for cotton goods is worldwide. The great potential market for the American cotton manufacturer is the great oriental section of Asia bordering on the Pacific Ocean, where more than one-third of the human race resides.

Lumber.—The forests of the United States have, throughout the entire history of the country, been one of its chief sources of wealth and one of the principal assets of the people in their struggle for existence. From the early days of settlement when the raw material of the forest was used for building the homes of the pioneers to the present moment, when forest products are the sources of extensive manufactures, nation-wide industry and domestic and international commerce, the timber lands of the country have contributed largely to both the happiness and financial well-being of the people. The continents of North and South America are the richest of all continents in the extended value of wood and wood products,

The centers of timber production have followed the lines of settlement. The sections of the country that have successively predominated in the lumber business, in the matter of industry and commerce, are the northeast, the south, the Great Lakes section, the Rocky Mountains, and the Pacific coast. The largest single production was in the state of Washington in 1918, when that state produced 7,594,053,000 board feet.

The timber supply of the country is partly under private and partly under public ownership, and the distribution is approximately as follows:

	Billion Feet Board Measure
I. Privately Owned	
a. Pacific northwest	1013
b. Southern pine region	634
c. Lake states	100
d. Other areas	250
II. Owned by Federal Government	
a. National forest	600
III. Owned by the Federal Government, States and Reservations	90

The total area of the forest land in the United States is estimated at about 545,000,000 acres. The northeast section of the United States contains both soft and hard woods, though the former have been the more important. The leading kinds of trees include white pine, red pine, hemlock, fir, cedar, birch, ash, spruce, cherry and sugar maple. The section south of the Great Lakes and extending down through Texas, Tennessee, Kentucky, and West Virginia is usually called the hard wood forest. This section contains oak, elm, maple, basswood, chestnut, ash and hickory. In the southern section the yellow pine predominates and in some sections are found the cypress, oak and magnolia. The Rocky Mountain section is almost entirely coniferous; the leading trees are the western yellow pine, Douglas fir, larch, spruce and western red cedar. The Pacific forest is also coniferous, consisting chiefly of Douglas fir, western yellow pine, redwood, western red cedar and sugar pine.

The forests of Canada are among the dominion's greatest assets. The total area covered by standing timber is estimated to be between 500 million and 600 million acres. Of this acreage it is estimated that about one half is covered with timber suitable for sawing into lumber. A large part of the remaining acreage is covered with trees suitable for the manufacture of paper pulp. The principal varieties of trees are spruce, Douglas Fir, white pine, cedar; also hardwoods, such as oak, ash, hickory and the several varieties of the maple.

It is significant in its bearing upon a continued supply of raw material in the lumber industry that our forest growth is estimated at about seven billion cubic feet per year, while twenty-three billion cubic feet is cut annually, not including loss from fire. This enormous waste has been due to several causes, among which may be mentioned the great abundance of virgin forests, which until recent years seemed inexhaustible; the desire to clear the land for agricultural purposes; the low prices of the best grades of lumber, which led to excessive use and over-production; the tannery industry, which led to cutting the trees only for the bark, leaving the timber to rot on the ground and wasting millions of feet of the choicest hemlock lumber. Forest fires have destroyed as much timber as has been cut and used. An indirect result of this waste is its unfavorable effect upon the water supply of the nation and the navigation of rivers.

This continued depletion has led to the obvious necessity for conservation of our timber supply; and the Federal and State governments have taken definite steps in this direction. National legislation has extended over a long period and has resulted in various acts of Congress creating large areas of national forests. The Act of 1913 created 163 national forests with a total area of 187,008,796 acres. This legislation has resulted in the establishment of an efficient fire-protection service; the cutting of several million feet of timber annually under methods of scientific forestry to insure the perpetuation of the forests; the use of forage resources under proper regulations; the utilization of water; and reforestation at the rate of about 30,000 acres per year. In 1914 the revenue from this service was approximately one-half the cost of administration.

State forestry service for the purpose of conservation is a twentieth century development. In 1914 twenty-five states had forest departments, twenty states had efficient fire protection systems, and there were 3,400,000 acres in state forests. New York had the largest area with 1,644,088 acres. Thirty states had a forest policy in 1914 and were expending a total of $1,340,000 for state forests, not including the amount expended for educational institutions. In the same year sixteen American universities had faculties of forestry.

The United States is consuming wood about three times as fast as it is grown in our forests. This consumption has been aided by the desire of the United States to build up a large export trade, and the United States is about the only nation that fails to give proper consideration to the important matter of conservation. Sweden, Norway, England and France have taken measures to restrict export trade in lumber and wood products. The basic principle to be followed in this matter is that exports should be based upon a permanent resource. Only when this principle is taken into consideration can any export trade keep the gains which it makes. Gains in export trade based upon a supply that is inadequate for domestic use for more than ten or fifteen years cannot last. Our problem is to increase our timber exports without lessening our forest capital. With only Russia, Finland, Sweden and the states carved out of what was formerly Austria-Hungary as our chief international competitors, we can insure an adequate supply for domestic industry and a surplus large enough to keep us the leading export nation, if we use the methods of forestry that will renew our forests as fast they are used.

The most recent demands for legislation

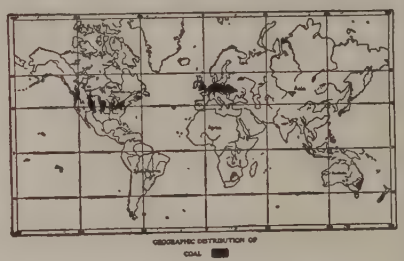
for the perpetuation of our forests, made by the manufacturers provide for: (1) co-operation with the states for forest protection, care and management and distribution of forest planting materials; (2) classification of private forest lands; (3) the continued acquisition of forest lands on the watersheds of navigable streams; (4) enlarging the National forests by exchange of time for land; (5) replanting devastated areas in the National forests; (6) continuous research and investigation in the utilization of forest resources and products; (7) the extension of the Federal Farm Loan Act to include loans for the purchase or improvement of cut-over or immature forest lands, or for holding, protecting and reforestation of such lands.

The value of forest exports has been on an average of over $100,000,000 annually. A notable feature is the export of Douglas fir from Washington to Europe, Mexico and South America. As a matter of course lumbering is carried on in every state in the union. For many years the northeastern states and the Great Lake region led in the production of lumber. At present the southern states and some of the states on the Pacific coast are the largest producers. In fact Washington is the leading state in the Union in point of production.

Despite the increased use of stone, iron, brick and cement in building, the demand for wood is constantly increasing. The demand for lumber for building purposes, the making of furniture, agricultural machinery, railroad ties, vehicles and a vast number of tools used in shops and on the farms, is enormous. One of the largest demands for wood is the making of paper pulp. The northern regions furnish most of the wood pulp, namely, Canada, New England, New York, Pennsylvania, Michigan, Wisconsin and Minnesota. The principal by-products of lumber from a commercial point of view are turpentine, tar and rosin. These products are derived from a certain species of pine, and the principal seat of these industries is found in the southern states, especially in South Carolina, Georgia, Alabama and Louisiana.

Coal.—Coal is the modern genie which man has summoned from the interior of the earth to perform the most superhuman labors of industry and trade. It has become absolutely essential not only for the production of heat, energy and light, but also for our very existence under present conditions. Hardly any modern civilized nation would be able to support its present population without coal. Many of the wonders and even the very existence of our civilization are due to the finding of large stores of potential energy which have been handed down to us from the ages before history began.

The principal coal fields in the United States are located along the great Appalachian Mountain system. In the eastern section, which comprises the eastern state of Pennsylvania, is contained practically all the anthracite coal in the United States. This territory of a little over 500 square miles supplies the demand for that article in the United States, Canada and Europe. The major portion of the western slope of the Appalachian ranges contain the great fields of bituminous, or soft coal. The presence of this great coal field in a measure accounts for the fact that the bulk of manufacture, trade and commerce is north of the Potomac and Ohio Rivers and



east of the Mississippi. Other soft coal fields of various grades exist in Illinois, Indiana, Michigan, Missouri, Oklahoma, Texas and in states of the Rocky Mountain region. In fact the Pacific slope is the only part of the United States that suffers for lack of coal. This reason partially accounts for the lack of manufactures and railroad development on the coast. The importance of coal is shown by the fact that the production in the United States has increased from 269,684,027 tons in 1900 to 678,211,904 tons in 1918. The state of Pennsylvania has held the primacy in this commodity since the beginning, and in the year 1918 produced over 98,000,000 tons.

A great deal has been written about the great Alaskan coal fields, but owing to lack of transportation facilities, and inaccessibility of the mines no extended development has been made. Valuable coal veins do exist in this territory, and the small sections that have been worked are estimated to be worth millions of dollars.

Coal underlies three different sections of Canada; the eastern in Nova Scotia, the central on the eastern slopes of the Rocky mountains, and the Pacific coast and islands. Canada is richer in coal than Europe, but her production is very small The Canadian coal fields cover an area of over 97,000 square miles, but the St. Lawrence Valley, which is in other respects best adapted for manufactures is entirely lacking in coal.

In the old world England is the leading nation in the production of this most valuable mineral. It was English coal, coupled with English inventive genius, that enabled this nation to lead the world in manufactures and commerce after the beginning of the nineteenth century. The principal coal field is that of Newcastle in the northeastern section, while in the middle section and the territory around Manchester another extensive field is found. There are also large fields in southern Wales and Scotland.

Of the other countries in Europe, Germany ranks next to England, although by the terms of the Versailles Treaty much of her valuable coal fields have passed to France, especially along the Saar. France also has extensive coal fields, located in the northern part of the country near the great industrial section of southern Belgium. For the rest of Europe coal deposits are very insignificant. In Asia some coal beds are worked in the Empire of Japan, and it is known that vast coal fields also exist in China. It is, therefore, quite easy to see how the world may be affected when once the Chinese shake off their ancient customs and prejudices and take part in the activities of modern commerce and trade.

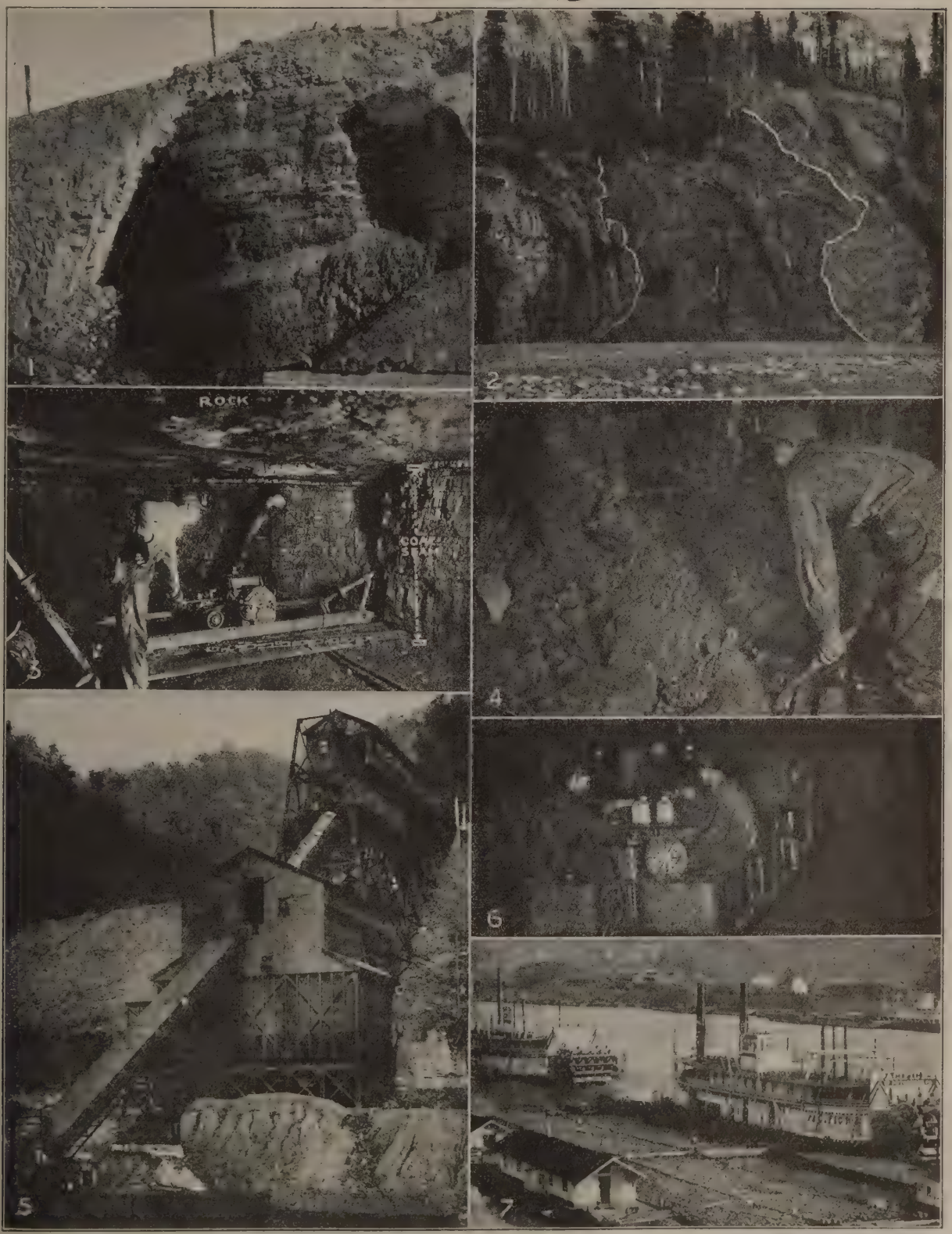
The by-products of coal are but of little less value than the mineral itself, and so far as their place in modern economic development is concerned they are of equal importance. The principal products of coal distillation are gas, ammoniacal liquor, coal tar and coke. Coal tar products have become a most important part of the by-products. Coal tar produces naphtha, benzene, aniline dyes, creosote, phenols and pitch, for roofing, as well as many acids.

Coal Mining Methods.—The term "mining method" as used here refers to the manner in which coal is broken down in the mine and not to the system of mining as by room and pillar or long wall. In the mine the coal is either blasted from a solid face—shot from the solid—as in hard-rock mining, or is shot loose or otherwise broken down after a preliminary cut into the coal has been made. This cut may be made by hand or by machine. Underground methods are therefore classified as shooting from the solid, mining by hand, and mining by machine. An increasing quantity of coal is being recovered each year by stripping the

© Publishers Photo Service

1—Union South Africa—Wire entanglements around the Kimberley Diamond Mines. 2—Cooking in the compound of the Kimberley diamond mines. 3—Diamondifferous blue earth from the diamond mines. This earth is exposed for a year for disintegration. It is then washed for diamonds.

COAL MINING



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1—A 30-Foot Coal Seam at Hanna, Wyoming—A new coal field has recently been discovered in Arizona which probably contains more coal than has been mined to date from all the coal mines in the United States. **2**—A Coal Vein in the Matanuska Field—Steaming coal of better grade than any in Western United States is found within forty miles of Tidewater in Alaska. The white lines show the boundaries of the coal. **3**—Hand labor, wherever possible, is being dispensed with in the working of coal mines. In this picture a drill is seen eating its way into the coal to prepare it for disintegration. **4**—Miners drilling before blasting out coal. **5**—Tipple at Bituminous Coal Mine, Gary, West Virginia. **6**—The electric motor has succeeded the mule in taking coal out of the mine. **7**—The coal barges and stern wheelers on the Monongahela. Whole fleets of coal barges, with acres of coal sometimes visible at one time, move down the river to Pittsburg.

cover from the bed in open pits by steam shovels. The bed thus exposed is for the most part shattered by powder and the coal is shoveled into cars by hand, although in places it is picked up directly by small steam shovels.

Opposition to shooting from the solid has arisen because it is injurious to the mining property in that the heavy charges of powder weaken the roof and pillars, thus increasing the danger of falls of roof and coal—the most prolific cause of fatal accidents to coal miners. Another objection to this method is that the heavy charges of powder required to blow down the coal where it has not been previously undercut result in the production of a much higher proportion of fine coal and render the lump so friable that it disintegrates in handling and transportation. With the growing use of mechanical stokers and of powdered coal the latter objection is losing much of its force, but the danger has been in no wise diminished, and the method is forbidden by law in some of the coal-mining states.

It is interesting to note that in 1918 the percentage of product obtained by the use of machines was maintained and even slightly exceeded that in 1917. In 1918 the percentage of machine-mined product was 55.9, compared with 55.5 in 1917. Several of the banner states in the use of machines, however, recorded decreases, particularly Kentucky, Michigan and Ohio.

The unusually large portion of the total production—more than 8,000,000 tons, or 1.4 per cent—for which the method of mining was not reported in 1918, came largely from small operations, mainly wagon mines, and was probably for the most part shot from the solid. The quantity of bituminous coal mined from steam-shovel pits in 1918 was 8,288,245 tons, or 1.1 per cent of the total output.

Iron.—Iron is distributed widely over the surface of the earth. About one-twentieth of the earth's crust is iron. Most of it is scattered among the rocks and soils, giving them a reddish color. Iron seldom occurs in a metallic state, but usually in combination with some other element or elements. The important ores in use at the present time are: hematite, magnetite, siderite and limonite.

Next to coal, no other mineral is so important to our modern civilization. In fact it is an essential part of the nation's wealth. It has been said that the standing of an industrial people is exactly registered by the amount of iron it uses. The making of and consumption of iron for each individual in the United States amounted in 1820 to about 40 pounds. This rose to 175 pounds in 1870, 400 pounds in 1900, and to a little over 1,400 pounds per capita in 1918. The graph on the opposite page shows the annual production of iron ore, pig iron and steel in the United States since 1870.

With the exception of Australia, every continent has a good supply. The Ural and Caucasus Mountains of Russia have the best quality of European ores. China is said to have extensive deposits, while smaller quantities are to be found in India and Japan. Africa has large beds of valuable ore, but the greatest amount of iron is produced in the three great industrial countries of the world, the United States, Great Britain and Germany.

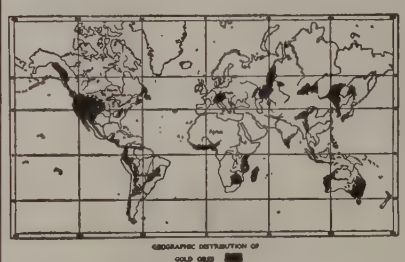
In the United States iron ore was mined in 26 states in 1920. Most of these states produced ore for flux only or for blast furnaces. The rank of the three states producing the largest quantity of iron ore is: Minnesota, Michigan and Alabama. The Minnesota ranges are producing more iron than all the rest of the states together, having furnished about 60 per cent of the total for the United States in recent years. The ranges in Minnesota and around Lake Superior are the Marquette, Menominee, Gogebic, Vermillion, Mesabi and Cuyuna ranges. The total quantity of iron ore mined from this Lake Superior district in 1919 was 59,779,794 gross tons. The Mesabi range alone produced 65.3 per cent of the entire production of the United States.

GEOGRAPHIC DISTRIBUTION OF IRON ORES

Forty years ago Pennsylvania produced more than any other state, but dropped to sixth place in 1919. It must not be forgotten, however, that while losing rank as a mining state it still holds first place in iron making.

New York State produced over 900,000 tons of ore in 1919. Wisconsin, Virginia and Tennessee also produced over 1,000,000 tons in the same year. Alabama is the chief iron producer in the Appalachian district for both mining and manufacturing. In 1919 Alabama produced 5,754,624 gross tons of iron ore.

Iron making does not center always in the region of ore production. Fuel has been the great factor that has determined the location of the iron and steel industry. The transportation of ore is much cheaper than the transportation of fuel, hence the lake and river ports located near the great bituminous coal fields have been the scenes of iron industry. Pittsburg is the chief of these as it is near the Lake ports and



GEOGRAPHIC DISTRIBUTION OF GOLD ORES

in the center of great deposits of coal. Allegheny County, in which Pittsburg is located, produces the larger part of iron and steel used in this country. Many ports on Lake Erie and Michigan have developed this industry of late years, particularly Buffalo, Cleveland, Gary, Joliet, South Chicago and Toledo. These cities have the advantage of being at the end of transportation of ore, thus saving the expense of reshipment, and are also but a short distance from coal fields. In the south, Birmingham in Alabama has a most strategic position, being near to both fuel and ore. Other centers in the south are Chattanooga and Knoxville.

The process of making iron as practiced by the ancients was slow and costly, but the principle was essentially the same as that of modern methods. They used a small forge through which air from a bellows was forced. Thus by heating the coal in these primitive forges to a temperature not reached by the ordinary burning of coal they succeeded in reducing the ore so as to obtain metallic iron. The blast furnace, however, worked a revolution in the iron industry; the once precious metal losing its value as its production was increased. The blast furnace is made up of a huge tower with a bulge at the bottom to permit expansion of the molten metal, a hopper at the top through which ore, coal and limestone are admitted, and an outlet at the bottom through which the air or blast enters and and another through which the spongy iron is drawn off. Iron prepared in the blast furnace contains small amounts of carbon, sulphur, silicon and manganese. This type of iron is known as cast iron and has the characteristic of great brittleness.

Another variety of iron is known as wrought iron. It is the purest variety of commercial iron, and is made from cast iron by burning out the impurities which the latter contains. This burning out of impurities is called puddling. Puddling is carried out in a puddling furnace which is lined with an oxide of iron; a flux is added and heat applied. The cast iron is soon melted and the impurities pass off in a gaseous form or in slag. Owing to its higher melting point, the remaining mass becomes pasty and in this state forms small lumps which are raked together into one larger one. The lump is then removed from the furnace and rolled or hammered into bars, the remaining slag being squeezed out in this process.

Closely allied to iron is steel, a product of far greater importance than iron itself. It is prepared chiefly by the Bessemer and open hearth processes, although recently the electric crucible gives a very high yield of the tool steel.

The Bessemer process is usually carried out in connection with the blast furnace since this saves many dollars in labor and fuel. The molten cast iron is run into a huge crucible, which can be tilted to receive the iron. The crucible is lined with silica and at the bottom it is perforated so that an air blast when turned on furnishes the necessary oxygen to combine with the impurities and pass off in a gaseous state. When the impurities have been burned out (and this can be determined by noticing the character of the flame issuing from the mouth of the converter) the desired amount of carbon in the form of high carbon steels or spiegel is added and given a sufficient length of time to dissolve in the molten metal. The steel is then drawn off into molds and the ingots so formed are hammered or rolled into rails and other objects.

But by far the most important process in the United States is the open hearth. It is by this method that the largest amount of steel is produced in this country. This kind of steel is made by putting molten iron in a basin and letting the gas flames beat over it for about ten hours. The flux and lining of the furnace play the same parts as they do in the Bessemer process.

For high grade tools a better quality is needed and this is met by the electric crucible process. Scrap steel usually serves as the raw material, being placed in a large egg shaped vessel. An electric

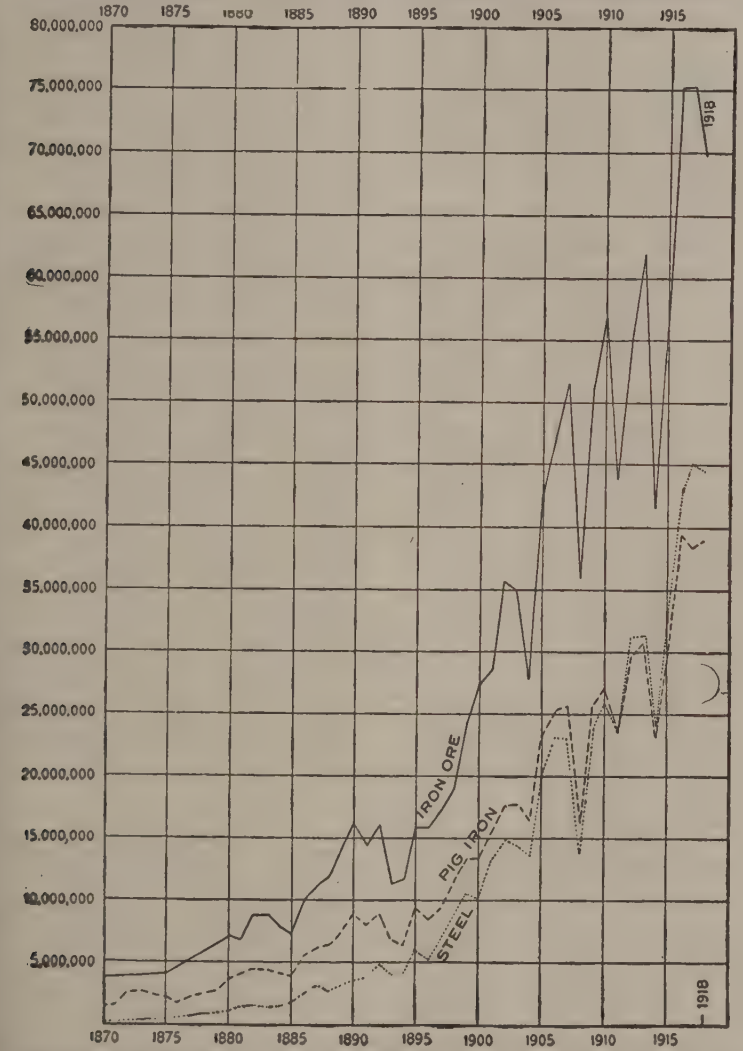
current is turned on and heat is generated sufficient to melt the scrap. A flux serves to get rid of the dirt. The desired alloy is then added and the steel is run into molds.

The properties of iron or steel determine its uses. Cast iron is hard and brittle and melts at about 1100 degrees Centigrade. It is rigid but not elastic and its tensile strength is small. It is used in making castings and cheaper grades of tools. Wrought iron has a fibrous structure, being composed of fibers of pure iron separated by slag. It is soft, malleable, and ductile. While its tensile strength is greater than cast iron, it is less than most steel. Its melting point is much higher than cast iron. This variety is used considerably in the manufacture of horse shoes. It has a wider range of uses than cast iron, but is largely replaced by the cheaper grades of steel.

The properties of steel vary in its composition. A soft steel containing very little carbon and a hard one containing a great deal of that substance. Of course there are intermediate varieties accompanied by the alloyed steels which are almost infinite in number. It seems that whenever there is a need, the ever watchful chemist brings forth a new kind that will fit the particular need.

Steel has a very wide range of uses, but the principal ones are in ship building, bridge making, locomotive construction, and for frame work of large buildings.

What the future has in store for the iron industry is uncertain. It is known that iron ore is everywhere present. Probably the era of cheap iron is past and that only the fullest utilization of resources will keep it within the means of the rich and poor alike. The United States has much larger reserves of both iron and coal than any other country in the world, but the distances of transportation both for raw materials and finished products are usually greater. For example, ore, coal and flux are close at hand in the southern Appalachian district but the greater markets are far distant from this region. Only through the development of the southern states can the fullest utilization of this district be realized.



Annual Production in Gross Tons, of Iron Ore, Pig Iron and Steel in the United States since 1870

Iron ore is both exported and imported from and to the United States. The quantity of ore imported into the United States in 1918 was 787,468 gross tons, valued at $3,464,304. As to the source of the imports, Cuba produced about 80 per cent of the ore, Canada nearly 15 per cent and small quantities came from France and The United Kingdom. Exports for 1918 amounted to 269,575 gross tons. The largest quantity was shipped to Canada, and considerable quantities were shipped to England and Italy. The following table shows the amount of steel produced by several of the leading countries in the world in 1918.

	Metric tons
United States	45,173,831
Germany	14,875,753
United Kingdom	9,744,891
France	1,809,771
Austria	1,763,745
Canada	1,717,318
Sweden	524,800

Petroleum.—Of the mineral fuels there is none more important than petroleum. Next to coal and iron it has probably contributed more than any other commercial commodity to the spread of civilization. In the early days it revolutionized the method of making light for the household. To-day the heavier part of this fuel is used for moving the machinery of the world and the lighter part for moving the gasoline automobile.

This important foundation to modern industry and commerce was first discovered in this country in southwestern New York and northwestern Pennsylvania in 1859, but is now found over a wide area throughout the world. For a long time the Pennsylvania fields were the most productive in this country, but oil is now found extensively in Oklahoma, California, Kansas, Texas, Illinois, Ohio, Louisiana, Wyoming and Kentucky. The rank of the various states in production in 1926 is shown by the following table:

	Barrels
California	224,673,000
Oklahoma	179,195,000
Texas	166,916,000
Arkansas	58,332,000
Kansas	41,498,000
Wyoming	25,776,000
Louisiana	23,201,000
Pennsylvania	8,961,000
Illinois	7,760,000
Montana	7,727,000
Ohio	7,272,000
Kentucky	6,274,000

Crude oil is used for fuel and for the prevention of dust on roads. From crude oil various oils are manufactured for lighting and other purposes. The principal products from the distillation of crude oil are naphtha, gasoline, kerosene, paraffin, white oils, gas oil, fuel oil, grease stock, pitch, asphalt and wax.

The United States leads the world in the production of crude petroleum. The countries of the world in order of their

production, according to statistics available for 1925 are: The United States, Mexico, Russia, Persia, Dutch East Indies, Venezuela, Roumania, Peru, Galicia, India, Japan, Trinidad, Egypt, Argentine, and Germany.

Natural Gas.—Natural gas is perhaps the most perfect fuel that can be obtained. The country having the greatest known supply is the United States, and it is found in more than half the states in the Union. This commodity, like petroleum, is rapidly becoming exhausted and by some authorities it is believed that the present supply cannot last more than twenty or thirty years. In spite of this fact many hundreds of thousands dollars worth of gas goes to waste every year. The principal states in the production of natural gas are West Virginia, Oklahoma, Pennsylvania, Ohio, California, Louisiana, Kansas, Texas, New York, Arkansas, Illinois, Kentucky and Colorado. Gas is piped from many of the wells in the interior to many of the great industrial cities like Pittsburg, Toledo, Cleveland, Indianapolis, Detroit, and even to Baltimore.

Copper.—Another mineral which has a large place in commerce and trade is copper. Until the development of electrical work this mineral played a small part in the industrial and commercial world. Copper has been known for many centuries and was used principally for making of coins, but the universal demand for copper in electrical work has caused a greatly increased use of this metal in the past forty years. This great demand has caused the production of copper to be increased about threefold each decade since 1880.

Nearly sixty per cent of the world's supply of copper comes from the United States and is found in considerable quantities in Alaska. The states producing the most copper are Arizona, Montana, Michigan and Utah. Copper is also found in large quantities in California, Colorado, Idaho, Nevada, New Mexico, Oregon and Washington. The total amount produced in the United States in 1819 was somewhat over 1,900,000,000 pounds.

In South America the desert region north of Chile has a number of copper mines, making that country the largest producer on that continent. Peru is also an important copper producer as are Bolivia and Venezuela. These latter countries have not developed along this line to any great extent largely because they have depended so long upon pack trains to carry the raw material to the coast. The building of a railroad into the Andean Plateau will do much for this section.

In the old world Spain led in production of this metal in 1918, producing over 99,000,000 pounds, while that of Germany was estimated to be about 88,000,000 pounds. Other countries that have considerable production in copper are Italy, Norway, Sweden and Russia.

PART II.

In this section discussion will be on the geographical influences of the various nations of the world. An attempt will be made to show that the economic development of nations has been largely affected by their geographical environment. Nations are great from the standpoint of commerce according to their facilities for the production and distribution of commodities. Nations that have productive soil, wealth of territory, favorable climate, raw materials and transportation facilities are most favored when they are populated by an energetic people. In fact, man is a most important factor in the study of economic geography for it is he who must take advantage of the gifts of nature in order to allow for the production and distribution of commodities.

The United States.—Perhaps the most important geographical fact relating to the new world is that it was discovered from the east rather than from the west. The Appalachian Ridge is a relatively low barrier and hence has been much less a hindrance in crossing than the Rocky Mountains would have been if the early settlers had landed on the Pacific coast.

In order to understand properly the geographic causes that have affected the full development of this country a brief study of the dominant surface features of the United States will be made at this time. The settlement and development of these sections have been greatly influenced by the topography of the land as well as this character of the soil.

(1) *The Atlantic Coastal Plain.*—This feature of the United States extends from southern Texas northeastward to Kentucky and then southeastward through Alabama, Georgia, and along the Atlantic coast to New York City and Cape Cod. In the southern portion of this section most of the cotton in the United States is grown, and here also is the densest negro population. The rich soils of this southern section had much to do with the aristocratic type of farming, in that it led to the plantation type of agriculture rather than the small farm type of the more rugged New England. It is not inconceivable that the roots of the Civil War were imbedded in the soil. The genial climate and rich soils of this region allowed slavery to exist here long after it was found to be unprofitable in the hilly and less fertile regions.

Further north along the Atlantic coast this region becomes a sandy plain, where there are extensive marshes and the soil is almost too wet to cultivate. Where the soils are better drained as in Maryland and Delaware we find this section given over to gardening and fruit growing, especially where there is plenty of marl and limestone.

(2) *The New England Hills.*—Here we find a hilly, rugged region sloping gradually from the Canadian border to the sea. The only lowland in this section is the Connecticut Valley where are to be found the richest soils. Most of this region has a thin and poor soil due largely to glacial action. No single staple crop was discovered for export from these parts, and hence the people turned at a very early date to manufactures and fishing in order to make a livelihood.

(3) *The Piedmont Plateau.* — The word "Piedmont" means foothills. This section comprises the hilly section immediately in front of the Appalachian Mountains. The higher lands have a relatively poor soil, and to-day this region is the center of fruit growing and mixed farming. Along its eastern edge many cities have grown up because of the power furnished by water. Cities like Atlanta, Columbia, Raleigh, Richmond, Washington and Trenton mark the passage from the smooth coastal plain to the foothills of the Appalachians. This line is often called the Fall Line and extends in a more or less distinct manner from Atlanta to Haverhill, Mass.

(4) *The Appalachian Mountains.*—This range of mountains extends from the borders of the Hudson Valley, in southern New York, to Georgia and Alabama. It contains many very fertile valleys because of the presence of a large amount of limestone in the soil. During the time of the Civil War, the confederacy depended upon some of these rich valleys for its supply of grain. A peculiar feature of this region is an almost continuous valley from New York State to Alabama. This is called by many geographers the Great Valley. This section was one of the first areas west of the Piedmont region to be settled. Here also are vast forests and much of the future supply of hardwoods come from this region.

(5) *The Cumberland or Alleghany Plateau.*—Just west of the Appalachian Mountains is a hilly and much dissected plateau. It extends from the Helderberg mountains of New York State in a southwesterly direction through southern New York, western Pennsylvania, West Virginia and southern Ohio and the larger part of Kentucky and Tennessee. The eastern section of this plateau is sparsely settled, except where minerals have attracted settlement.

(6) *The Lake and Prairie Plains.*—This region includes most of the area north of the Ohio River and east of the Mississippi River. Here is the most important agricultural territory in the United States. No other region is so rich in soils, or is so splendidly adapted to the needs of commerce. The navigable rivers and generally level country afford excellent facilities for transportation by water and rail, thus making this section one of the most accessible regions in the United States.

(7) *The Great Plains.*—Beginning at a point where the Missouri River turns east towards the Mississippi River there is a gradual rise in the elevation of the country until the Rocky Mountains are reached. This is the area of little rainfall and agriculture in many places has to depend on irrigation or on the cultivation of drought resisting plants like durum wheat or kaffir corn. This section is important as a grazing center.

(8) *The Rocky Mountains.*—This region covers for the most part the states of Idaho, Montana, Wyoming, Utah, Nevada, Colorado and parts of Arizona and New Mexico. Here agriculture does not flourish to any great extent due to the great height and steepness of the slopes. Perhaps it will best be noted for its fruit-bearing possibilities.

(9) *The Pacific Ranges.*—This region like that of the Rocky Mountains contains many rich valleys suitable for fruit growing. All parts, except Oregon and Washington, depend largely on irrigation.

The above divisions of the United States from the standpoint of the distribution of soils, will help us in the study of the various political divisions, for it is these political divisions that enable the student to understand the economic development of the people. The ordinary political divisions are usually classified as (1) North Atlantic States; (2) Southern States; (3) Northern Central States; (4) Western States.

THE NORTH ATLANTIC STATES

This region includes the New England and the Middle Atlantic States of New York, Pennsylvania, New Jersey, Delaware and Maryland. In this region flourish most of the manufacturing, trading and commerce of the United States. They contain about 28 per cent of the population of the entire country and produce about 50 per cent of the manufacturing, while their area is only about 5 per cent of the whole country.

Let us inquire into the reasons why this region is so largely devoted to manufacturing. Before the Revolution all of the thirteen colonies were agricultural, but as the population grew the soil of New England was not sufficient to support its increasing numbers. The fact that not more than one-third of New England is fit for the plow made it imperative that people turn to some other activity than agriculture for a livelihood. The broad continental shelf which reaches out into the Atlantic Ocean from the North Atlantic coast afforded an excellent fishing ground. Here the herring, halibut, lobster and cod thrive in abundance. The necessity for food and the presence of so rich a fishing ground naturally turned the attention of the people to this business. The most important oyster beds are in Long Island Sound and the Chesapeake Bay. The cod and the oyster are the most important fishery products in this section. The cities leading in the commerce and trade of fish are Baltimore, Boston and Gloucester.

Manufactures took root in this section for an economic and a geographic reason. In the first place there are too many people to feed from the products that the soil of this section can produce. The geographic reason for the concentration of manufacturing in this region is the presence of abundant mechanical power. Most of New England slopes from the Canadian border toward the Atlantic, causing its rivers to be swift, forming rapids and waterfalls in many places. The same is true of the streams in the states between the Hudson and Potomac rivers. The most important of these waterfalls is the great falls of Niagara. This great fall will be a potent factor in making Buffalo a great commercial center in the future. The great amount of water power in New York State is one of its most valuable assets. The Hudson, Mohawk, Genesee, Black, Seneca, Chemung, and Alleghany rivers afford a constant supply of water that can be harnessed for industry when coal has become exhausted or becomes too expensive for economic use in industry.

Perhaps the chief reason for manufacturing in this section is the great supply of coal, especially in Pennsylvania.

Types of Manufactures

Textiles.—It was but natural that the cotton and woolen mills should seek out this section because in the early days water power was the most important factor in determining their location. Of special importance in this industry are the cities of Fall River, Manchester, Fitchburg, Lawrence, Lowell, Pawtucket, Woonsocket, Providence and Philadelphia. Also such cities as Cohoes, Amsterdam, Little Falls and Utica in New York State. Fall River has the most advantageous position of any city in the country because it has both water power and ocean transportation which probably goes a great way toward making it the greatest cotton manufacturing city in the country, if not in the world. The center for woolen industries is Lawrence, Mass., but carpets are largely made in Philadelphia, Yonkers, Morristown and Camden, New Jersey.

Silk.—The center for silk manufacturing in the United States is Paterson, New Jersey. This industry centers here because power is derived from the falls of the Passaic and also because it is near to the greatest silk market in America, namely New York City. Another potent reason for this industry locating here is because in the early days some Italian silk workers settled in this district and followed the trade they had learned in the old country. This industry is, however, quite widespread throughout the entire north Atlantic region, and especially near the city of New York. Other cities that manufacture considerable quantities of silk are Hoboken, Jersey City and Philadelphia.

Boots and Shoes.—The presence of so great a forest in the early colonial days furnished bark for tanning leather. The state of Massachusetts leads all other states in the manufacture of boots and shoes. The two cities of Brockton and Lynn together produce as many shoes as any two states outside of Massachusetts. Haverhill and Boston are also important cities in this field. There is a gradual western tendency in this trade and some cities in New York, like Rochester and Binghamton, hold an important place in the manufacture of shoes. The tanning of leather is largely carried out in such cities as Philadelphia, Salem, Peabody, Woburn and Boston. Boston is the greatest leather market in America.

Gloves.—Another important leather industry in this section is that of making gloves. For no other reason than that the industry had an early start in this section, Gloversville and Johnstown in Fulton County, New York hold first place in the United States. From these two cities, lying so close together as to form a unit, is furnished more than fifty percent of the gloves manufactured in the United States. The impetus of an early start due to the fact that some Scotch glovemakers first settled here was the chief factor causing this industry to locate in this section. The fact that skilled labor and capital interested in this industry are settled here, is the main cause for keeping the industry in these cities. In no other manufacturing city is the whole life given over to a single industry as much as in Johnstown and Gloversville. On almost every street in these cities are factories, some large and many small. Every householder who has a barn or outbuilding utilizes it for the manufacture of gloves.

Collars and Cuffs.—In the city of Troy in New York State is another illustration of an extreme concentration of one industry in a city. According to government reports about 75 per cent of the collars, shirts and cuffs manufactured in the United States are made in Troy. There is no geographic reason why this industry should locate here, but the fact that the labor and capital necessary for this industry are here in abundance is the chief factor in keeping Troy supreme in collar making. It is said that detached collars and cuffs were first invented in Troy, and on a house in third street, Troy, is a tablet bearing this legend. "In this house probably before 1827, detachable shirt collars were first made, and the collar industry originated, by Hannah Lord Mantague 1794-1878. (Mrs. Orlando Montague-inventor-manufacturer.!" So prominent is Troy in this line of work that even the names of laundries in other towns are called Troy Laundries. Glens Falls, a little farther north on the Hudson, also manufactures collars and cuffs to some extent.

Clothing.—This industry has centered in the north Atlantic region largely because of the fact that most of the largest cities in the United States are in this section. To be sure, there is a tendency westward in this industry, but New York City will long hold predominance in this article. The presence of a large supply of cheap labor, recently immigrated from Europe and used to a lower standard of living, makes New York a most favored place from the standpoint of the manufacturer. There is also another advantage in locating the clothing industry here, namely, nearness to a market. In the country as a whole New York stands first; Chicago, second; Philadelphia, third and Baltimore, fourth. Another city in the east that holds an important place in this industry is Rochester, N. Y.

Mineral Industries.—New England is the center for much of the building stone used in this section. Granite is quarried to a considerable extent around Quincy, Mass., and marble is found in abundance at Proctor, in Vermont.

Special Manufactures.—New England is sadly lacking in coal, but in many lines of manufacture, she owes her predominance to experience, skill, and the presence of capital. In many of the industries in this section the labor enters into manufacturing more than nearness to raw materials. Hence we find such special machinery as bicycles centering in Hartford, Conn., firearms in New Haven and Springfield, machine tools in Worcester, ammunition in Bridgeport, brassware in Waterbury and Ansonia, plated silverware in Meriden, watches in Waltham and cutlery in Walden, N. Y. These lighter wares are more dependent on skilled labor, needing very little raw material; hence nearness to coal and iron is not so importnat a factor as in the making of steel.

Gas, Oil and Coal.—The supremacy of this region in population, manufacturing and commerce is due for the most part to the fact that they are near to the great natural fields of mineral fuels. A glance at the map of eastern United States will show that the leading cities of this country owe most of their growth to their accessibility to the coal and oil fields of Pennsylvania. The great city of Pittsburg, no doubt, owes its position to the fact of the junction of two rivers, the Alleghany and Monongohela, but its growth is due to the presence of the great field of bituminous coal. As stated elsewhere, this mineral is a potent cause in the making of Pittsburg a great iron and steel manufacturing city. The district including the cities of Alleghany, Newcastle, Youngstown, Buffalo, McKeesport and Wheeling leads in the production of iron and steel in the country. Iron is also an important item of manufacturing in the cities of Trenton, Allentown, South Bethlehem, Harrisburg, Steelton and Reading.

The oil and gas fields of this section have for some time given first place to the wells of the west, but in the early days these important mineral fuels played an important part in the development of the states of New York, Pennsylvania, Ohio and West Virginia.

Seaports.—One of the most important physical features that a country can have is a wealth of coastline. The Atlantic seaboard, expecially that of the northeastern section of the United States is well favored. Here is a broken coastline affording not only excellent harbors, but also opening into the interior through the medium of navigable rivers. The Middle Atlantic states are better favored by nature than New England, in fact this region is more favored than any other in the United States in this respect. Along the New England coast we find innumerable

harbors affording good sites for cities. However, the cities of New England, like Portland, Boston and Providence, do not have the commercial importance of New York, Philadelphia and Baltimore. This is due in no small measure to the fact that the direction of the valleys in New England is north and south rather than east and west. This territory is a natural outlet for much of the region in the St. Lawrence Valley. Portland, Maine, and Providence, Rhode Island, are the natural seaports of Montreal and Quebec, but an artificial international boundary line prevents these cities profiting from a natural geographic location.

Of the cities in New England, Boston is the most important. It is the principal seaport of New England. In the early days there were other cities of more importance in New England than Boston. Salem for some time was considered the more important city, but due to the deep harbor at Boston and the fact that later Boston became the terminus of the railroads running to the west, thus giving this city a share of the western trade, enabled her to surpass other New England cities. This city has now become the financial center for most of the New England mills. It is also a great leather and wool market, and despite the fact that it is located far from the stock raising regions there is considerable slaughtering of meat animals. In the matter of foreign commerce Boston ranks fourth, handling little over five per cent of the foreign commerce of the United States. The barrier of the Berkshire has turned much of the east and west trade from Boston thus limiting the hinterland of this city almost wholly to New England. Fine metallic goods, such as tools, watches and jewelry, are the manufactures appropriate to this old and conservative city. As a business center Boston includes many cities lying close by, such as Somerville, Cambridge, Quincy, Charlestown and Everett. Were these cities to combine into one great city as have the municipalities near New York and Chicago, Boston would without doubt rank as the second city in population in the United States.

The other seaports of this region are not important commercially but are rather given over to industry. The principal ones are Providence, Fall River and New Haven. Portland should also be mentioned in this connection. These cities have excellent harbors and are located at the mouth of large streams, but due to the size of their tributary areas and the northern direction of the valleys their growth and economic importance has been much slower than the more favored cities to the west of the Berkshire Hills.

Crossing the Berkshires we come into the Hudson Valley through which one of the most magnificent rivers in America flows. At the mouth of this river is a site unequalled for the location of a large city by reason of a large, deep harbor offering hundreds of miles of wharfage. It is of easy access to the interior of the continent. Here is the natural focusing point of the commerce of both land and sea. It is but natural then that a great commercial metropolis should grow up in this region and that New York City is the largest city on this continent. The Hudson-Mohawk depression leading north and west into the heart of the continent gave New York the best natural connections with the interior, and after the opening of the Erie Canal in 1825 added the Great Lakes region to its local hinterland, enabling it thereby to surpass the cities of Philadelphia and Boston, which up to the beginning of the nineteenth century were considered the most important, in size and commercial activities. It is now the greatest commercial port in the western hemisphere if not in the entire world. According to reports in 1920 over fifty per cent of the commerce of the United States passed through New York. The lowest pass in the Appalachian barrier is located on the Hudson-Mohawk route at Rome, New York, which has an elevation of only 445 feet above sea level, thus affording a cheaper route for the construction of railroads and canals to the interior. The supremacy of New York in trade and commerce is due not only to the fact that it has an excellent harbor but also to the economic fact that it is the point located where the cost of shipping from the interior is lower. Comparing the summit elevation of the New York Central route of 445 feet with that of the Pennsylvania and Baltimore & Ohio railroad elevations of over 2,000 feet, the reader can easily visualize the fact that the Hudson-Mohawk route is called the eastern gateway of the continent, affording a line of cheaper cost of transportation.

New York City is a center of general industry. However, because of its varied interest New York is also the leading financial and banking center of the entire country. Its manufactures are many and varied, although clothing manufacture is perhaps the leading one. The output of clothing in New York City amounts to over half a billion dollars yearly. Printing and publishing hold an important place in this city. In fact no other city approaches New York in this respect. New York is also a great retail and wholesale trade center. Geographically New York includes all of the urban population of northeastern New Jersey, Long Island and Westchester County. Tunnels connect the island of Manhattan with New Jersey and Long Island so that now the Pennsylvania Railroad runs its trains into and through New York proper to Long Island. This has enabled the railroad to compete with the New York Central which for many years was the only western trunk line entering into the heart of the great city.

The second seaport of importance in this region is Philadelphia. This city, although located on the Delaware River, is virtually a seaport, and in colonial times was the metropolis of the country. With the coming of the era of railroads, the mountain barriers to the west, cost it its preeminence as a metropolis as well as a leading commercial city. Another factor that has caused this city to be second to New York as a foreign trade center is that the harbor is not always ice free as is the case with New York harbor. The interests of Philadelphia are, therefore, industrial rather than commercial. Here we find large textile industries. This city is now the greatest textile manufacturing city in the country. The refining of sugar and petroleum and the manufacturing of locomotives and shipbuilding also hold a large place, and are characteristic of this city. It has also an advantage in being connected by a great railroad with Pittsburgh and the west thus attracting to it some of the trade of that region. According to the last census reports only a little over four per cent of the commerce of the country passed through Philadelphia.

Baltimore also has the advantage of deep tidal waters and is a seaport of considerable importance. It has the advantage of being the port nearest to the upper Ohio Valley, but mountain barriers lower the value of this proximity. As in the case of Philadelphia, the hinterland of this city is limited to portions of southern Pennsylvania and Maryland. It is a manufacturing city of considerable volume. Typical industries are tobacco, the canning of fruit fruit and vegetables, and oysters.

Transportation Routes.—People, like rivers, seem to search for a way to the sea. Since the very early colonial days the settlers have gradually sought out the best routes for reaching the interior and finally of reaching the western seacoast. The earliest routes were of course the Indian trails which in the main followed the valleys and streams. The building of roads followed somewhat these old trails, although some of the great east and west turnpikes ignored the valleys and easier routes and were built in an almost direct east and west direction over hills and down valleys, with no thought of seeking out a level route. The Mohawk route, though the more level route, was not the one followered by many settlers from New England in the early days. The more popular routes of those days were Cherry Valley and Skaneateles Turnpikes through south central New York. Another route was from the Susquehanna west to Pittsburg at the junction of the Alleghany and Monongahela Rivers. Later came the era of building canals which became important factors in the development of the regions affected. The principal canal today, however, is the Erie Canal through New York State. This has lately been enlarged and though still unused to any extent could play an important part toward the lessening of freight rates in the carrying of such commodities as coal, lumber, wheat and salt. This canal was a potent cause in the growth of many of the now large cities in New York State, especially Schenectady, Utica, Rome, Syracuse, Rochester and Buffalo, although their rapid development and growth is due more to the building of the railroads.

The railway routes of this region present an interesting study of attempts to search out the lowest passes to the west. The New York Central route has the advantage over all the other eastern railways in this respect. This low pass through the Appalachian Mountains enables this road to lead in the carrying of passengers and freight. Also it is freer from curves and grades, which gives it better profits from its carrying trade. A close competitor of the New York Central is the Pennsylvania Railroad system. This great system has branches in nearly all parts of Pennsylvania and western New York. Its main line, however, running from New York, Philadelphia and Pittsburgh to Chicago, enables it to tap the very region sought by the New York Central. Perhaps the third important line of this region is the Baltimore & Ohio which finds its way through the passes near the Potomac River. Other important railroads of this region are: The Delaware & Lackawanna connecting New York and Buffalo, running through New Jersey and northeastern Pennsylvania to Binghamton and the west; the Lehigh Valley, connecting New York and Buffalo in almost a parallel route with the Lackawanna; the Ontario & Western,

running from Weehawken north to Cornwall and then in a northwesterly direction to Oswego on Lake Ontario; while the Erie connecting New York with Chicago, finds its way through the valleys of the Delaware and Susquehanna rivers and then through the Chemung Valley of southern New York. Most of these last named roads are not important as passenger carriers but do play an important part in the carrying of freight. All of them pass through either rich farming sections or through mining sections.

rie Canal.—The Erie Canal (commonly known as the Barge Canal), extends across the state from Troy to Buffalo. Officially the route commences at Congress Street, Troy, and follows the Hudson River through the United States Government lock to Waterford,where the westward turn is made. A land cut of two miles in length is utilized to the Mohawk River, into a pool created by the construction of a fixed concrete dam. The Mohawk River at the canal channel entrance is at an elevation of 169.5 feet above the surface of the Hudson River at Waterford and is 184 feet higher than sea level at Albany. From this point navigation is carried through the canalized Mohawk River, with short land cuts at intervals, to Frankfort; thence through an artificial channel paralleling the Mohawk River to Rome and, crossing the divide, enters the Oswego watershed, ten miles west of Rome, and following Wood Creek for five miles, reaches the eastern end of Oneida Lake. This lake is the largest natural body of water in the canal system, the channel stretching across it a distance of twenty-one miles to Brewerton at its western end. From Brewerton, the Oneida River is followed to its junction with the Seneca River at Three River Point; thence through the Seneca River to the Clyde River, through the Clyde River to the foot of Lock No. 27 at Lyons. Here the bed of the Ganargua Creek is utilized with frequent land cuts, to Palmyra, from which place the channel lies in the former Erie Canal, widened and deepened, to a point just west of Pittsford.

An artificial channel extends to the Genesee River, which is crossed about two miles south of the Rochester terminal on a pool created by a movable dam, and traffic enters what is locally known as the 60 mile level, consisting of an enlargement of the former Erie Canal to Lockport.

At Lockport, by means of two combined locks, navigation is raised 50 feet to the elevation of the Niagara River, and thence an artificial channel is utilized to Tonawanda Creek. The canalized creek is followed to its junction with the Niagara River at Tonawanda. Through the Niagara River traffic passes to Lake Erie at Buffalo, the vessels being raised to the level of the lake by the United States Government lock at Squaw Island.

The distance from Congress Street, Troy, to Lake Erie at Buffalo is 355 miles, of which 215 miles lie in natural waterways and 140 miles through artificial channels. Sixty municipalities are touched on the line of this improved canal, while forty-four others located on the Hudson below Troy have the benefit of its service.

The canal has been deepened to a depth of twelve feet. The width of the new canal varies according to the section traversed. Through the canalized rivers and lakes the channel is at least 200 feet wide. Through rock cuts in land lines a minimum bottom width of 94 feet has been provided, and through earth sections 75 feet.

No fixed bridges have been constructed over the new canal channel at less than 15 1-2 feet above the level of the water when at its highest ordinary navigable stage.

The dimensions of the new locks on all improved canals have been made identical so far as practicable. The length of the lock chamber from the lower gate to the breast wall is 310 feet, which, considering the operation of the gates, will permit the locking of a barge 300 feet long. The width of the lock chambers has been planned at 45 feet, and this has practically been accomplished. The width of the United States Government lock at the eastern terminus of the canal system at Troy is 44.44 feet, and this must govern.

To maintain an adequate supply of water to support canal navigation many sources are utilized. From Lake Erie and the Niagara River the water finds its way through Tonawanda Creek (whose natural flow has been reversed) into the canal channel, and as far east as Lock No. 29, at Palmyra. Thus, navigation is dependent solely on the Lake Erie supply.

At Palmyra the channel lies in the bed of the Ganargus Creek, whose line is approximately followed to Lyons,where the western feed is supplemented by the discharge from the outlet of Canadaigua Lake.

At Lyons, the Ganargua Creek and the Canandaigua Lake outlet unite to form the Clyde River, which is canalized to its junction with the Seneca River just east of Lock No. 25 at May's Point. Through the Seneca River come the waters from the great natural reservioirs, Cayuga and Seneca Lakes.

The line of the Seneca River is then followed easterly, utilizing Cross Lake, to Three River Point, where it meets the Oneida River to form the Oswego River flowing northly to Lake Ontario at Oswego. Broadly speaking, it may be said that at Three River Point the flow of water used for canal purposes changes from an easterly to a westerly direction, and navigation passes thence through the Oneida River upstream to Oneida Lake, which in itself affords a splendid highway for traffic.

East of Oneida Lake is reached what is known as the summit level, extending from Lock No. 21 to Lock No. 20 at Whitesboro. The channel between the locks named is at an elevation of 420 feet above sea level, as compared with the Niagara River which is at an elevation of 560 feet.

In this section exists the most difficult problem from the standpoint of water supply, and to insure an adequate boating depth in the areas to be served four systems of reservoirs have been created. These are located in Madison, Onondaga and Oneida counties, as well as in the Adirondack Mountains. The enlargment of the canal channels made necessary the construction of two new reservoirs, namely, those at Delta and at Hinckley. The Delta Reservoir, located about four miles north of Rome, covers an area of 4 1-3 square miles and has a storage capacity of over two billion cubic feet of water. The Hinckley Reservoir is situated near the village of Hinckley, in Herkimer County. When the water is at the crest of the dam an area of about 4 1-2 square miles is covered, providing a storage capacity of approximately 3,445,000,000 cubic feet.

From the standpoint of water supply and probable number of lockages which would be required with maximum use, the capacity of the improved canal system is estimated to be sufficient for the transportation of 20,000,000 tons per season. The movement of freight by water is the cheapest method of transportation and it is of the highest interest to trade and commerce that so great a competitive influence as the New York State Canal system should be maintained. Water transportation furnishes trade to the surest regulatory influence on freight rates.

THE SOUTHERN STATES.

South of the Potomac River, extending westward, including the States of Oklahoma and Texas, is the region usually called the the southern states. No other region of the United States has been so little affected by immigration from Europe. Here we find a larger percentage of people who are directly descended from the first settlers than in any other section. This region includes the broad coastal plain stretching from North Carolina around through Texas and even north to the junction of the Ohio and Mississippi Rivers. The early settlers of this region were mainly of the English gentry stock, with sprinklings of Scotch-Irish as well as some Spanish and French. No doubt the racial characteristics of these early settlers have had much to do with the economic development of the southern states. Some other factors that have played an important part in this development are as follows: soil, surface, forests and climate.

Soil and Surface.—The soil of the southern lowlands near the sea is of a sandy variety and is the region of much of the lumber industry of this section. Tobacco has also been an important product. The soil of the Mississippi is very low and has a very high fertility. This great plain is over six hundred miles long and thirty to sixty miles wide. In the uplands we find a soil much less fertile, with the exception of portions of Kentucky and Tennessee. As a consequence, slavery never had the strong hold upon this section that it had in the less fertile regions of the southern states. Hence this lower region became the section of large plantations where the soil's fertility made slavery a possibility, whereas in the higher and less fertile regions it proved to be uneconomic long before the civil war.

Climate.—It is commonly supposed that the southern states have a very warm climate, and in the early days it was thought that no white man could endure toil in such climate. As a matter of fact the south has nearly every variety of climate from the subtropical variety of Flordia and the Gulf Coast to a temperate climate in the uplands. The climate of New York state reaches down into the high lands of Georgia and the grains and fruits of the more northerly states flourish in abundance in this southern upland. This upland south is fast becoming an industrial section, rather than purely agricultural, and it has long been demonstrated that even in the lower south the climate is not as enervating to the white man as was orginally supposed. To-day much of the rice and sugar of Louisiana and Texas is raised by white men. Most of these men, however, are Italians, former residents of a warm, sunny region in Europe.

Forests of the South.—The timber belt of this region shows two distinct divisions. In the first place the yellow pine and cypress trees are found on the sandy plains and the swampy lands along the rivers. On the slopes of the Appalachian ranges is to be found the largest body of merchantable hard wood in the United States. The chief varieties growing here are oak and poplar, chestnut, sycamore, hickory and

black walnut. One would look for some city in the near vicinity to be the chief port for lumber and to a certain extent this is true, for Memphis is now one of the principal centers for hard wood lumber as well as Newport News and New Orleans.

From the distillation of sap of the long leaf pine trees of this region are obtained two valuable by-products, namely turpentine and rosin. These products are very important in the manufacture of paints and varnishes. By a further distillation of the wood there is produced a kind of tar, which when further boiled down produces pitch. Over 63 per cent of the world's supply of turpentine is produced in this country.

Cattle and Swine.—The upland region where corn is raised in large quantities is also the region of swine raising. From this section the variety known as the "razor back" has developed on account of the fact that it has wandered in a semi-wild state, getting its food in the woods and fields.

Two sections of live stock raising are to be noted The upland valleys of Tennessee and Kentucky raise many cattle, but have long been noted as the favorite breeding place of race horses. The second region is on the plains of Texas where the former long-horned steer has been largely replaced by the better varieties of the short-horned species. The vast grassy plains of this semi-arid region afford an excellent pasturage for cattle. This is another example of how climatic and topographic features affect the activity of a given region.

Tobacco.—The early colonists of the southern states had no staple product which they could export to England in return for other goods. Nor was power to be had in their streams for the development of manufactures which they might export. The mother country wanted nothing that could be raised at home, and as a consequence the Jamestown colony was about to fail because of its inability to secure a money crop. The crop that saved New England was corn which could be grown even on the thin, poor soil of that region. The southern settlers like the New Englanders had to learn from nature how to thrive in the climate and surroundings of the new world. It was early discovered that this region would grow tobacco, which crop was beginning to be in great demand among Europeans. This crop, which is indigenous to America, is one of the three contributions in the agricultural field that America has given to the world. It soon became evident that the growing of tobacco would furnish a valuable money crop, and for almost two hundred years after 1620 tobacco was almost the sole commercial crop of this region. It is still the chief crop of the upper south and the lower boundaries of the south. Tobacco growing is by no means confined to the south, for there are many profitable regions to be found, especially in the Connecticut Valley, southern New York, Pennsylvania, Ohio and Wisconsin. No plant is more affected by the soil and climate than this one. Each district seems to produce a distinct quality and hence we come to know of the various tobaccos as Virginia leaf, Connecticut leaf or Kentucky leaf. The United States is the greatest grower of tobacco in the world. Over one billion pounds were grown in this country in 1920. The increase in the use of tobacco has been most surprising At the present time, next to the Belgians and Dutch, Americans are the greatest consumers of tobacco. As Professor Smith says in his Industrial and Commercial Geography: "Its use has spread faster than any language or religion, and is found throughout the realms of civilization and barbarism."

Despite the fact that this crop has been an important money crop, it has been most injurious to the soil. Because of the large and profitable returns to be obtained, farmers have continuously planted the same field year after year to this crop until the soil has been exhausted. This fact accounts for the poor condition of much of the soil in Virginia and North Carolina. The practice of crop rotation, as is done in regions of mixed farming, would do much to restore the fertility of these worn out tobacco farms. This has been done in some of the northern states, notably in southern Pennsylvania, where splendid crops are grown on small farms. The principal states in the production of tobacco in the southern states are in the order named, Kentucky, Virginia and North Carolina. Louisville in Kentucky, located near the tobacco fields, is the greatest tobacco market in the world. In the eastern section of the southern states markets of considerable note are Richmond in Virginia and Winston-Salem in North Carolina.

Cotton.—The cultivation of cotton was begun in the United States during colonial times, but owing to the slow method of separating the seeds from the fiber the commodity was too high to be used for the manufacturing of cloth for the millions. However, after the invention of the cotton gin by Eli Whitney in this country, and of spinning machinery in the old country this crop began to increase. The work of the cotton fields was simple and required no skilled labor of any kind and almost no tools. This made it adaptable to slave labor and completed what tobacco had started by firmly establishing in the south the plantation system of agriculture and the employment of slave labor. These two factors tended to create an aristocratic type of society based on the land, and also became dominant factors in the economic and political life of the south. It has been said that the causes of the civil war were rooted in the soil and climate which separated the interests of the southern people in many ways from those of the northern people. In an economic way we can note that their ideas are vastly different, for the New England cotton manufacturer demands a tariff on imported goods to protect himself against the European manufacturer, while the southern planter, who buys his manufactured goods, is injured by such tariff and naturally opposes it. The soil, climate and social conditions also have had much to do with the maintenance of the so-called "solid south" in the political field.

The United States is to-day by far the largest producer and exporter of cotton and cotton products of any country in the world. Over 65 per cent of the world's supply of cotton is produced in the United States. Cotton grows in all of the southern states from Texas to Virginia. The leading states in point of production are Texas, Mississippi, Alabama and Georgia. The principal ports for the shipping of cotton are Galveston in Texas and New Orleans in Louisiana.

Cotton is the one crop that is still largely cultivated by hand. Great improvement has been made in the growing and harvesting of such crops as hay, oats, wheat and corn by the aid of mechanical improvements. At the present time man can grow more cotton than he can pick. There have been attempts to invent a cotton picking machine but up to the present it has not proved to be a practical device. If this machine should be perfected its economic effect could be but little less revolutionary than that of the invention of the cotton gin in 1795. In addition to increasing the area of cotton production and the consequent cheapening of clothing, it would drive to the city the negro, who would then be of less use and demand on the cotton plantation. It might perhaps change the complexion of the famous "black belt."

Other Agricultural Products. — Everywhere in the south corn is grown largely as a supply crop. In the uplands this has long been used as a staple food crop, and the term corn-fed has long been applied to the sturdy mountaineers of these sections. Near the coastal plain sweet potatoes grow in abundance especially in those regions in the eastern section that are frost free. Peaches are to be found in abundance in the Piedmont Plateau in Georgia and the Ozark mountain region of Arkansas. Sugar cane is a tropical and subtropical plant. Its cultivation is confined largely to the gulf states, and Georgia and South Carolina. It has been the leading crop in Louisiana for over a hundred years. Louisiana grows almost 90 per cent of the total crop of sugar cane in this country, producing in 1920 over 700,000,000 pounds.

Peanuts grow over a wide range of country in the southern states. They are found as far west as Texas, but Virginia leads in the amount produced. Norfolk, Virginia, is the leading market for peanuts. Orange growing has been carried on with some success in Florida, though the cultivation of this crop is much more precarious in this state than it is in southern California, where there have been but two frosts in the last twenty years. Florida also produces other sub-tropical fruits in the shape of pineapples and even the cocoanut and banana will mature in the southern section of this peninsula. Perhaps one of the most important commercial products grown in this state is the grapefruit. This has become a most important part of the breakfast menu.

Minerals.—Aside from the coal deposits in the Appalachian Ranges the supply of minerals in the southern states is not very large. Iron is mined and smelted at Birmingham in Alabama. This city has a double advantage over other smelting centers in that it is located in the fields of ore as well as fuel.

There is, however, one important mineral product in the south which is of considerable economic value, namely phosphate. This mineral is one of the three most sought after minerals. Without phosphate, potash and nitrate it would not be long before the soils of the agricultural sections of the world would become exhausted. In the southeastern section of this country is the greatest known deposit of phosphate rock, and because of its vital importance in the fertility of the soil these deposits are one of the most important mineral resources of the country. The states of the south having the greatest deposits of this mineral are South Carolina and Florida. It is also found in considerable quantities in Tennesee and Arkansas. According to data and figures obtained from the Bureau of Mineral Resources this section of the United States produced nearly three million tons of phosphate in the year 1920, which is considerably over

50 per cent of the production of the entire world.

Louisiana contains deposits of rock salt and sulphur. These deposits of sulphur have enabled this country to exceed Italy in the production of that metal, producing over 63 per cent of the world's supply.

In the matter of mineral fuels the states of Texas and Oklahoma hold an important place Next to the state of California the state of Oklahoma produces more petroleum than any other state in the nation. There are also large areas of oil fields in Texas which have brought considerable prosperity to that great state.

Manufactures.—While the south has been backward in the matter of manufacturing, it is slowly beginning to develop along that line. The south has been distinctly agricultural and is so to a large extent to-day. However, there are in the south to-day two very important factors in the development of manufacturing, namely plenty of raw materials and power in the shape of fuel and water The great cotton fields of the south can furnish abundant material for the factories right at home, and thus save considerable in the matter of transportation; lumber is also to be found in abundance. The coal of the mountain ranges and the water falls of the uplands and Piedmont sections will be a source of power for years and years to come.

The manufactures of the south, therefore, are for the most part concerned with raw materials of local origin on which freight charges would be high if shipped to any great distance. Thus we find the lumbering industry located near the forested regions centering in Little Rock, Arkansas and Montgomery in Alabama as well as Memphis in Tennessee; leather goods at Waco in Texas and packing-house products at San Antonio and Fort Worth, all of which cities are located near the great pasture lands of Texas; sugar refining is carried on in New Orleans; the iron industry at Wheeling in West Virginia and Birmingham in Alabama; tobacco at Key West in Florida, Richmond and Petersburg in Virginia and Winston-Salem and Durham in North Carolina.

It is in the cotton industry that the south should have its greatest opportunity. Here we have the center of location of raw materials, plenty of power and a supply of cheap labor. With the building of railroads north and west and the increase of her own population, the south is no longer isolated, but is also near to the great markets of the east and middle west. These advantages should go a long way toward shifting the center of cotton spinning and manufacturing from the northeastern section of the United States to the southern section Many cotton mills are already established on the Fall line, where the water falling from the Piedmont Plateau to the low coastal plain furnishes abundance of power. Thus we find the industry developed in such cities as Columbia, South Carolina; Raleigh, North Carolina and Augusta and Atlanta, Georgia. These mills have a further advantage in being able to draw on a cheap supply of labor from the poorer uplands of these states. According to the census of 1910 the Carolinas ranked next to Massachusetts in cotton manufactures.

Cities.—Because of the agricultural tendencies of the south, the population remained almost stationary during the nineteenth century. The cities of the south have been slow to feel the impulse of the new development which took hold of the rest of the country during the middle decades of that century. Affected so little by immigration the cities of this section were of slow growth and of a very conservative type. Another factor that has left the south behind is that the movement of peoples has been east and west, and with the large numbers of Europeans coming to this country very few found their way into this section Then, too, the Appalachian Mountains in this region are a more formidable barrier, affording fewer passes that can easily reach into the interior. This fact is a vital one, and accounts for the reason that Savannah, Atlanta and Richmond are not the important commercial centers that New York, Philadelphia and Baltimore have become.

Then, too, the coast of this section is not so advantageous to commerce as that of the more northern section. Most of the coast line is straight and is fringed in many places with sand bars and reefs which make it impossible or difficult to find a landing place. Hence no harbor such as the northeastern section shows has developed.

The rural character is further shown when it is pointed out that there are only seven cities in this entire region having a population of over 100,000. Compare this with the fact that in New York State alone there are six cities of over that number. Furthermore, of the cities having a population of 25,000 or over Texas has eight; Tennessee and Georgia, four each; Virginia, two, and the others, with the exception of Mississippi, only one.

The metropolis of the South is New Orleans. This city holds a unique place among the American cities in that it is a river port and a seaport at the same time. Its elevation is only about ten feet above sea level, and is below the top of the levee. Here is an example of how man has mastered an unfavorable natural location and made it a fit place for a dwelling. The river at this point is about one mile wide, affording an excellent harbor with plenty of wharfage The city owns and controls the docks and terminals.

New Orleans holds one of the most strategic positions of any of the cities in the United States. It is the natural outlet of the entire Mississippi Valley, and in all probability had it not been for the fact that the western section of this valley was in the possession of a foreign nation at the time of this nation's birth, New Orleans would have become the most important shipping center in the country. Even in the early days statesmen and politicians, especially of New York city, saw that New Orleans was its natural competitor for the trade of the then great unsettled middle west. This fact was a potent reason for the building of the Erie Canal, which tended to turn the trade away from the river to the lakes and canal to New York.

The port of New Orleans is accessible to the largest steamships. The fact that it is farther from Europe than New York mitigates somewhat against its taking any great share of that trade. However, its position with reference to the West Indies and South America is most favorable and with the further development of trade with those countries, this city will hold a most important place. According to statistics from the Bureau of Census, New Orleans carries about 6 per cent of the foreign commerce of this nation and ranks third in that respect. It is the largest exporter of cotton. Sugar, wheat, corn and tobacco are also important items of export every year. The chief imports are coffee and bananas.

The second city in size in the south is Galveston. This city, though an important port, is almost without a harbor. It was only by building jetties far out into the gulf that anything like a harbor could be made. At present the harbor is a very excellent one, having a channel of about 28 feet in depth. Galveston is an outlet for Texas and the southwest as far north as Denver. Because of the rail lines connecting this port with the interior and also the wealth of resources in the shape of raw materials of the great state of Texas, Galveston is a close rival of New Orleans for the carrying of commerce and shipping. At the present time she has a very slight lead over New Orleans in the actual amount of foreign commerce carried. According to the report of percentages of foreign commerce handled, Galveston handled about 6.3 per cent, while the figure for New Orleans was 6.1 per cent. This city also has the same advantage in respect to trade with South America as has New Orleans.

Going farther east, the next most important city is Atlanta, in the state of Georgia. This city, located near the end of the Great Valley of the Appalachian Ranges and near the easy east and west passes, is called the "Gateway of the South" Norfolk, in Virginia, is the Atlantic port of Louisville and Cincinnati. In Florida the city of Tampa on the west coast is located near the large deposits of phosphates, and is the only deep water harbor for hundreds of miles along the gulf coast. Jacksonville is probably better known than any other city of the same size in the country. It has become a famous winter resort for northern tourists, and is the terminus of important coastline railways. Key West should also be mentioned. It is the most southerly city in the United States. It is the city nearest to Cuba, the Panama Canal and South America.

Railroads.—The South has been slow in the matter of railway development. Most of the lines have been short and many have been put through poor sections which give very little revenue. The greatest single system in the south to-day is the Southern Railway. This system reaches nearly every important town from the Chesapeake Bay to Florida and from the Atlantic Ocean to the Mississippi River.

A second very important line is the Illinois Central, running from Chicago and paralleling the Mississippi River to New Orleans. This river taps the great central west and does much to bring a considerable portion of the nation's trade to New Orleans. This railway is also a potent factor in destroying the old-time through river traffic.

The Louisville & Nashville road connects St. Louis and Cincinnati with Memphis, Atlanta and Mobile. Two very picturesque roads are the Atlantic Coast Line, skirting the Piedmont Plateau from Chesapeake Bay to Jacksonville, and the Florida East Coast Line. The latter road connects the city of Key West with the mainland, being built one hundred miles out into the sea by means of the various small islands off the Florida coast.

THE CENTRAL STATES.

This section is often called the middle west, especially by those dwelling east of the Appalachian Mountains. Here is truly the very "Heart of the Republic." This section comprises about 25 per cent of the

area, 33 per cent of the population and 58 per cent of the agricultural area of the nation. The percentage of improved land in this section is higher than that of any other section in the country. The states of Kansas, Iowa, Illinois and Missouri contain more acres of improved land than any other states in the nation. The physical nature of this section naturally turned the attention of its settlers to farming. The level and rolling prairies with a deep rich soil have been an attractive magnet to the farmers of the stony and hilly farms of New England and the Atlantic States. Most of the population of this section came from the older states, especially Massachusetts, Connecticut, New York and Virginia, and nowhere will the traveler find the democratic traditions of American life more carefully preserved than in this section. This section is also fast becoming a leading manufacturing section. With the development of the automobile and new machines for agriculture, most of this work is done in the central west.

Forests.—A portion of this section of the United States was almost treeless, but there were sections where lumber was in abundance. Today in the eastern and southern sections some hardwood trees remain; principally of oak, ash, basswood, birch and maple. From the central part of Michigan north through Minnesota and Wisconsin there was orginally a great forest of white pine, hemlock and spruce. This region has become almost exhausted and no longer holds the supremacy in production.

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JAMAICA—Cutting the bananas. A plant will produce but one bunch of fruit requiring about nine months after which the old plant is cut down and a new one started from the small offshoots at the base of the old one.

Agricultural Products.—It is in farming products that this section has acquired and held first place in the nation. The level prairies have offered a fine field for the use of the most improved types of farm machinery, and because of the climate and soil, grain is the principal staple crop of this section like cotton and tobacco of the south. The nature of the soil in this section caused wheat and corn to grow as it never had grown either in the south or in the northeast section. Wheat grows mostly in the northern sections, especially Minnesota and the Dakotas, while corn is the staple product in the south. Here corn is used largely as a supply. The principal region for corn growing is in the belt from central Ohio to central Kansas and from the Ohio River to Wisconsin. Corn from this section goes to the market in a more condensed form of beef, pork, mutton and horses and mules.

Another commodity of this region is the sugar beet. This is one of the few commodities in which there is competition in production between temperate and tropical regions. The sugar beet belt is just north of the corn belt and runs somewhat into the wheat belt. Thus we find that it rarely competes with corn for it requires a great deal of hand labor; hence in those regions where corn will mature the farmer gets the greater return per acre from corn rather than from the sugar beet. Sugar beets, therefore, are usually cultivated in those regions where it is too cool for corn to mature. As a result of the labor and climatic requirements this industry was late in development in this country. Here in 1890 was produced only about 3,000 tons, but due to tariffs this crop has increased until in the year 1919 it amounted to nearly 1,000,000 tons.

Cattle and Meat Products.—It is difficult to refrain from speaking in superlatives when one is talking of the various products that come from the middle west. The cattle industry and meat packing play an enormous part in the economic life of the people of this section. Cattle raising is a frontier industry and before the days of the railroad and refrigerator car its volume was limited and the markets had to be near at hand. Today with the development of transportation and refrigeration the pastures situated a long distance from the markets are under no handicap. As settlements advance the land rises in value and cattle must seek new pastures farther on. So that while cattle raising is more largely carried on in the states farther west, the center of the meat packing industry is in Chicago. Because of the corn and grain lands, cattle raising has centered near the central states, and because of transportation facilities the meat-packing industry has centered in Chicago. More than one-half of our meat comes from the central states. In point of production Illinois is first and Kansas second. This industry has also extended to South Omaha, St. Joseph, Sioux City, St. Paul, Indianapolis, St. Louis and Cincinnati.

Meat packing is a splendid example of how modern methods and inventions have envolved a large number of by-products. These by-products, as in many other lines of industry, afford the major portion of the profits. What was formerly thrown away and wasted is now utilized for the benefit of both manufacturer and consumer. In the early days the chief products of meat were beef, hide and tallow. Today, in addition to the three products mentioned above, we have combs, hairpins, brush backs and scoops from the horns, the handles of toothbrushes, razors and knives from the shin bones, in addition to such articles as buttons, felt, soap, glue, pipe stems, chessmen and fertilizer from other portions of the animal. Even glands are used for medical preparations.

Manufactures.—The center of general manufactures in the United States is a little west of central Ohio, and about one-third the value of manufactured products comes from the central states. As in the east there is abundant fuel and also plenty of water for power, while from the standpoint of transportation facilities the middle west is unexcelled. Here we have the great inland seas which reach far into the interior with an outlet into the ocean either through the St. Lawrence Valley or the Erie Canal, while in no other section of the country is there such a dense network of railways. These factors, coupled with the increase of the population, promise to make this section one of the greatest manufacturing districts on this continent.

The lumber industry has of course centered around the Great Lakes and Duluth, Saginaw and Bay City are noted for the production of lumber. Because of the power of the rivers and the presence of wood pulp the paper mill district is around Green Bay in Wisconsin, Duluth and Sault Ste. Marie. Furniture making which formerly centered in Grand Rapids because of nearness to the raw material is still a prominent industry in that city. This industry is held there largely on account of the capital and skilled labor that are already there. Other centers of furniture making are found in Sheboygan, Wisconsin and Rockford, Illinois.

The largest single industry with the exception of the manufacture of automobiles is the making of agricultural implements. That this industry should center here near the great farm lands of the nation is not surprising. While this industry is dependent on a supply of hard woods, in the main it has followed the western movement of agriculture. In the early days this center was in New England; later it was in New York state and Auburn of that state was long a prominent center for the manufacture of agricultural implements. The center for this industry is now in Chicago, while Moline, Illinois; Springfield, Ohio; St. Louis, Missouri; Racine, Wisconsin, and Peoria, Illinois, are large manufacturers of these commodities.

Since the beginning of the twentieth century the automobile industry has grown more rapidly than any other industry with the possible exception of the moving picture. Automobile manufacturing has centered largely around the Great Lakes, especially such cities as Detroit, Cleveland and Toledo. The growth of these cities has furnished an ample supply of labor, while the wealth of the population has furnished an ample market for this mode of transportation. The middle west with its rolling level country has developed the building of roads, so that almost all towns of any size are reached, and in many cases the only mode of reaching them is by the use of the automobile.

Other large industries in this section are the manufacture of rubber goods in Akron, Ohio; cash registers in Dayton, Ohio; leather goods in St. Louis; tanning in Milwaukee and ready made clothing in Chicago.

Minerals.—The principal minerals of this section are gold, iron ore, copper and coal. The gold of this region is found largely in the Black Hill district in South Dakota. The iron ore of this region is a most important mineral for it contains a small amount of impurities. The ore in this section contains as high as 80 per cent pure metal in many cases. The principal fields are in northern Michigan, along the shores of Lake Superior, northern Wisconsin and Minnesota. Here are found the largest beds in the world. The beds furnish more than four-fifths of the ore used in this country, and in bulk it exceeds that produced by England and Germany. In fact Minnesota alone furnishes more ore in a year than any foreign country. Most of

this ore, as we have seen, is smelted in Pennsylvania but a large number of blast furnaces are to be found along the great lakes, where the ore can be dumped from the barges direct to the plants.

The iron industry naturally gives rise to much of the iron and steel manufacturing of this section. In such cities as Chicago, Toledo, Detroit, Cleveland, Dayton, Canton and Elgin iron and steel are important products.

There are also beds of gypsum to be found from Kansas to Iowa, while the abundance of salt in the region about Detroit is one of the causes that have favored the growth of a large chemical industry in that city. In East Liverpool and Cincinnati, near the large clay deposits of southern Ohio, are found extensive pottery works.

Water Routes.—It is in the wealth of her natural water routes that the west has an advantage in the carrying on of commerce. In fact its rapid development during the nineteenth century was aided largely because of these waterways. The great Mississippi River system, reaching from the far-away Rocky Mountains across the continent into New York via the Alleghany River, encouraged the pioneers to push farther and farther into this section to find homes. In the memory of men now living large portions of this country were a wilderness. The level nature of the country and the wealth of its waterways made possible its settlement at a very early date. During the early part of the nineteenth century steamboat traffic started upon the Ohio and Mississippi Rivers and continued to develop in a remarkable degree, until the era of railroads cut into their revenue. The Missouri has never been used to the same extent as have the other streams on account of the fact that this region furnished no staple commodity that needed to be carried into the interior, and by the time settlers were ready to settle this section the building of railroads had begun so that water transportation was not so necessary.

The Mississippi River system which embraces the great central part of the United States is connected by canal with the Great Lakes along four routes. A canal connects the Wisconsin with the Fox River, another canal connects the Illinois with the Chicago River, the Ohio River is connected with Lake Erie and the Illinois River with the Mississippi at Rock Island. These connections furnish a through water route from the far interior to the great seaport of the east. The recent agitation for the St. Lawrence Canal on the part of the western farmers, is actuated by a desire to find a more direct and cheaper route to the sea. The minds of many western farmers and financiers are fired with the thought of making many of the inland cities virtually seaports and thus causing a great reduction in freight rates. Most of these canals are too shallow to compete successfully with the railroads. There is really only one deep water canal—the great Chicago Drainage Canal. This canal is 24 feet deep and over 300 feet wide. The most important factor in the matter of water routes in this section is the Great Lakes. These great inland seas, the like of which is found in no other country, are able to carry ships of ocean types and can carry freight at about one tenth the cost of carrying it by rail. By means of the use of the Welland Canal in Canada cargoes can go without change of load from Duluth in Minnesota, nearly two thousand miles inland to the open sea. The full utilization of the water ways in this section, as in any other section, will go a great way in the cheapening of rates and making possible the development of the industries of the country.

Cities.—The most striking change in the last thirty years has been the great growth of cities, and nowhere has it been more striking than in this middle western region. According to the census of 1920 over 52,000,000 people lived in towns and villages with a population of 2,500 or over and 51,000,000 live in villages with less than 250,000. In this country there are 68 cities of over 100,000 population and there are six metropolitan districts with a population of over 450,000. Since 1880 the rural population of this section has increased 78 per cent and the urban population has increased 216 per cent.

In the central states there are seventy-four cities having a population of more than 25,000. Ohio has fourteen of these cities and Illinois, twelve. There are four cities in this section with a population of more than 500,000; namely, Chicago, Detroit, Cleveland and St. Louis; two between 400,000 and 500,000, namely Cincinnati and Milwaukee. In all there are seventeen cities in this middle west area with a population of over 100,000.

In studying the cities of this region it is better to take into account the metropolitan districts or economic centers. This would include all of the organized towns which lie near the main city. There are eight districts of high rank, especially from the standpoint of the value of manufactures. These cities are Chicago, Detroit, Cleveland, St. Louis, Minneapolis, Kansas City, Indianapolis and Cincinnati. These cities may be geographically grouped as lake ports, river ports and inland cities. In all of them the factor of accessibility is a potent one favoring their growth.

Chicago.—No other city in the world located a thousand miles from the sea has so favorable a situation for commerce. This city is virtually a seaport situated as it is on one of the great inland lakes of the middle west. That a town should grow up here was seen by many in the early days of the last century. It is a well known fact that wherever people are compelled to pass, or there is a break in the transportation facilities, at that spot a town or city is likely to develop. The southward extension of Lake Michigan right into the center of the middle west compels the east and west traffic to go around it, and this simple geographic fact makes a great lake port near its head a necessity. Other facts that have helped in the growth of the city are its location in the midst of a rich grain center, near the stock belt of the United States, and also the fact that it is about midway between the Atlantic and Pacific oceans. Such a spot, marking the place where all lines of trade and commerce naturally converge, gives Chicago an unrivaled opportunity for trade and commerce. Also the supplies of timber, coal, iron and copper within easy reach of the city of Chicago, make it a seat of manufacturing as well as trade. This city is a typical example of a city created by economic forces.

The real site of Chicago was determined largely by the mouth of the Chicago River, which offers an easy portage to the Mississippi. It has spread out now so that it borders the lake shore for about forty miles. Although it has an artificial harbor, it is one of the largest shipping ports in the world. Some one has said that Chicago is the western terminus of the Erie Canal. Thirty nine railway lines enter Chicago, making this city the greatest railway center in the world. A glance at a railway map shows a great convergence of lines into this city. This fact, together with the lake port facilities, makes Chicago a great distributor of commodities and in part accounts for the fact that it is the greatest grain and meat market in the world. The leading industry of slaughtering and meat packing yields nearly one-fourth of the total value of the manufactured products in this district. Of the industrial manufacturing some of the larger are clothing, foundry, machine shop products, printing, iron and steel cars and agricultural implements. The great rolling mills at South Chicago and the blast furnaces and steel mills at Gary, only fifteen miles away, are among the largest in the whole country.

Detroit.—The second city of rank in this district is the city of Detroit. Its growth has been the most remarkable during the last decade, and to-day it ranks as the fourth city in size in the whole country. This city was originally established by the French as a military post and also for trading purposes. Although located on a river, it is virtually a lake port, and has exceeded in growth the other cities in this region with the exception of Chicago. Located in the eighty-mile gap between Lakes Huron and Erie, permitting the passage of railroads which connect the middle west with Canada, Detroit is primarily a crossroads city where the lake route is crossed by the east-west trunk lines of railways. This city is a typical example of a city growing up where there is a break in the mode of transportation.

The largest city of Michigan and the fourth city of the United States, population (1920) 993,678, was founded by Cadillac in 1701. The harbor is the finest on the great lakes, the Detroit river offering anchorages comparable to those of the Golden Horn at Constantinople. The city and its residence suburbs of great beauty extend for 30 miles along the river down to lake Erie. Opposite the city lies Windsor, Canada. The streets and avenues are generally of notable width and it is a common sight to see a double row of automobiles parked in the center of a great business street.

Many splendid buildings and parks adorn the city, the greatest of the latter being Belle Isle, an island of over 700 acres in the river. The water works, valued at over $5,000,000.00 are owned by the city and have a daily capacity of 250,000,000 gallons. The electric light plant is also municipally owned. The system of public schools has few rivals in America.

In recent years Detroit has become one of the manufacturing wonders of the world. Its automobile industry, embracing every grade of cars, employs scores of thousands and sends the name of Detroit to every corner of the earth. Adding machines, stoves, furnaces, ships, and many other products make Detroit notable.

The leading manufactured output of Detroit is the automobile. In fact, Detroit surpasses all the other cities in the country in the manufacture of this commodity. This city, with the city of Cleveland, together produce over one-third of the entire output of the United States. The value of the output in Detroit alone for the year 1921 was over $200,000,000. It is but natural that this industry should

concentrate in the cities of the middle west, for this section in the earlier days was the center of carriage making, and when this new mode of transportation developed it was easy to change to this type of vehicle.

The other manufactures of Detroit are of a wide variety, but the following should be noted: cars, ships, stoves, drugs, alkalies, tobacco and matches.

In shipping Detroit rivals the greatest Atlantic ports. In 1916 the tonnage passing Detroit was nearly 101,000,000 tons, a tonnage greater than that of New York. The annual tonnage of the Detroit River is more than double that of the Suez Canal. In addition to its great water system of transportation, Detroit is one of the great railroad centers of America.

Cleveland.—This city is not favored with a good harbor, nor is it located on a large stream. The Cuyahoga River is but a small stream and does not do for Cleveland what the Chicago River does for Chicago. However, its position with respect to other cities and localities has had much to do with its growth and development. A glance at a map will show that Cleveland is located on a direct line between the great ore mines of Lake Superior and Pittsburg. In other words, it is the point on the Lakes nearest to Pittsburg which makes this a natural transfer point. Also its relation to Atlantic ports in distance, as well as its railway connections, are so advantageous that a large portion of freight is unloaded here and transferred from lake vessels to cars. Five great east-west railroads run through this city, making it a prominent railway center. Also there are numerous electric lines connecting this city with the suburban sections in northern and central Ohio. Its prominence as a shipping port is shown by the fact that its lake trade amounts to over 1,300,000 tons annually. Cleveland, however, is the chief manufacturing city in Ohio, and its manufactures show the effect of the transportation which bring to it coal and iron. Thus the more important manufactures include, iron and steel, automobiles, steel bridges, metal-working tools and machines, carriage and vehicle hardware and gas stoves and ranges. The refining of petroleum is another large industry made possible by being in the neighborhood of a great oil-producing region and favored by pipe-line transportation of the crude oil and water carriage of the refined products.

Cincinnati.—County seat of Hamilton County, long the largest city of Ohio, now the second city with a population (1920) of 401,158. Beautifully situated on hills rising in three terraces to a height of nearly five hundred feet above the Ohio river, Cincinnati occupies a commanding commercial position half way between Pittsburg and Cairo. Her public educational system embraces every development from the kindergarten to the specialized departments of the municipal university. Three inclined plane cable lines elevate cars and passengers from the lower business levels to the beautiful residence districts on the hill tops. Cincinnati owns its water works and the Cincinnati Southern Railway, which extends to Chattanooga. The value of the municipal property approaches $130,000,000. Five bridges spanning the Ohio bring a number of Kentucky cities, including Covington and Newport, within Cincinnati's immediate district. Machinery and machine tools, iron products, meat packing and the manufacture of shoes, clothing, and pottery are a few of the more than 4,000 industries that make Cincinnati one of America's greatest cities. The city was named in honor of the Society of American Revolutionary officers—The Cincinnati.

Other Lake Ports.—In this connection two other cities of some prominence should be noted. Toledo, Ohio, although located on the Maumee River is virtually a lake port. It has an excellent harbor, the river gradually widening out into the Maumee Bay gives abundance of room for shipping and wharfage. Toledo has the disadvantage of being located off the main direct route between the east and west. It is not on a direct line between Chicago and the east, and also, ships from Chicago or Duluth and Detroit do not stop here on their way to Cleveland or Buffalo. However, it may be reached by large vessels and is a favorable point for future connection of Lake Erie with the Ohio River. Thirteen steam roads and ten electric lines give this city unusual advantages for trade and commerce. The principal manufactures are the refining of petroleum, flour, automobiles, plate and cut glass besides many machine shops and foundries. Perhaps this city is more distinguished on account of its glass works. Here some of the finest material of its kind in this country is made.

The other lake port of importance in this section is Duluth. From the standpoint of natural location, few cities have a better site. Located at the end of a great lake and in the midst of a great grain, ore and lumber country, this city should be one of the most prominent and populous cities in the nation. However, the proximity to the Canadian boundary causes Duluth to lose much of the advantage gained by its location, for this turns much of the Canadian commerce from the natural line of least resistance. Were it not for this fact, Duluth would be a second Chicago. As it is, Duluth is a shipping port for iron ore, grain and coal, while lumber, flour and steel mills are typical industries.

Another lake port that should be mentioned is Milwaukee. This has grown up to be a large center of general industry, although as a shipping point it has never gained prominence. It is an outlet for the great state of Wisconsin. Its chief industries are leather and iron.

River Ports: St. Louis.—A city near the confluence of three great rivers, the Mississippi, the Missouri and the Ohio, is a result of natural causes. Here must be a meeting place of traffic from the east and west and north. This point became a focus for exploration and trade where water routes from the Appalachians, the Great Lakes, gulf and Rocky Mountains meet. As a result St. Louis has been the metropolis of the Mississippi Basin since the very early days. From the advent of the steamboat in the early decades of the nineteenth century until the Civil War this city enjoyed great prosperity and rivaled Chicago. The closing of communication with the southern seaboard, the extension of railways reducing the traffic by water to small importance caused this city to lose much of its importance of early days. However, the extension of the railways to the Pacific Coast has made St. Louis a railroad center second only to Chicago. The terminals of over twenty lines are in this city. It has, therefore, become a great distributing point for the west and southwest not only for its own products but grain, livestock, cotton, hardware and agricultural implements. Its manufactures include slaughtering, meat-packing, boots and shoes, tobacco, clothing, iron and steel, chemicals, furniture and paints.

Minneapolis and St. Paul.—This city with its twin—St. Paul—located across the river was located at this point on account of the falls and rapids in the Mississippi River. Later the railroad connections and settlement of the wheat lands to the north and west led to the commercial and industrial growth of these two cities. Nine railroads connect these two cities with Chicago, St. Louis, Lake Superior, the Pacific Coast and Canada, giving these cities access to the great markets of the east. Minneapolis is the greatest flour manufacturing city in the world. The tremendous horse power of the St. Anthony Falls and Taylor Falls in the St. Croix afford abundant power for these mills, which have a capacity of from 80,000 to 90,000 barrels daily. The natural resources of this section for production and the power from the rivers for preparation of the products of flour and other commodities in close proximity is another example of how the geographic environment of a locality affects its economic development.

Kansas City.—At the eastern bend of the Missouri, where it comes down from the north, is another break in the mode of transportation. In the early pioneer days this was the river terminus for the overland stages. Its growth, however, is due largely to the development of the railroads. This district is second only to Chicago in the matter of livestock and in the value of its meat products.

Other cities located on rivers are *Omaha* and *Cincinnati*. The former is noted particularly as a meat-packing center, while the latter has a wide variety of manufactures like clothing, boots and shoes, wagons, soap and artistic pottery.

Of the cities that are strictly inland, the most important is Indianapolis, the capital of Indiana. This city was located largely by act of the legislature, being about the center of population for the state. This city has neither waterways nor power, but has the advantage of being located near the coal region and in the midst of a very rich agricultural region. Perhaps the factor that has developed Indianapolis more than any other is the railroads. About fifteen steam and twelve electric lines radiate from it. In no other state does its capital have so great an economic influence as does Indianapolis in the state of Indiana.

THE WESTERN STATES

In discussing the economic geography of the western states it is perhaps best to consider all the territory lying west of the 100th meridian of longitude. This is a gradually rising plain which extends some twelve hundred miles to the Rockies, and after that range comes a series of ranges and narrow valleys until the coast is reached. All of this section, with the possible exception of the strip along the northwest coast of the United States might be called the land of little rain, for the most of this section has less than 20 inches of rainfall per year, and in some areas it is under 10 inches per year. The high altitude and lack of rainfall, coupled with high winds, make a large portion of this region a virtual desert. The climate of the eastern section of this area is of an extreme continental type, very hot in summer and cold in winter. In the extreme northwest one finds a comparatively warm climate both winter and summer. The climate of this region more nearly duplicates that of the British Isles than

any other section of continental United States. Southern California, however, has a sub-tropical climate with almost rainless summers. In fact irrigation is needed for most of the farming done south of San Francisco.

In the eastern section and on the high plateau of this region are the great sheep and cattle ranges of the country. Cattle raising has been somewhat curtailed by the westward movement of sheep raising. The close cropping of the grass by sheep does not leave enough for cattle to subsist upon, and in many instances has changed a grass growing region into a sand blown region. This is at least one reason for a decline in the matter of cattle raising, and perhaps in the rise of the price of meat.

In the northwest region dairying is carried on to a considerable extent, especially in sections of the country near the large cities where land is not fertile enough to make the growing of staple crops more profitable than this type of farming. Farther south, along the Pacific Coast, near San Francisco, is the greatest poultry district in the world, while still farther south, ostrich farming is carried on to great advantage.

Irrigation.—The climatic conditions in this section of the country have been serious drawbacks in the development of agriculture. Most of this region has been considered too dry to attempt to raise crops of any kind. In fact the thing that attracted the early settlers to this region was its mining resources. As the country began to grow more populous, the necessity of growing more food in this section became more and more apparent. The thing most needed to make gardening and agriculture possible was water, hence the process of irrigating the land has developed in this region to quite a wide extent. Here is a great opportunity for it, as it is estimated that at least fifty millions of acres, situated in valleys and along the foot of mountains, can be irrigated. When one stops to calculate that fifty million acres of land would be a region about the size of the state of Missouri it is not easy to exaggerate the wealth it will add to the country.

Irrigation, or the application of water to land, has been practiced since very ancient times by peoples dwelling in dry lands. The Indians of Arizona and New Mexico practiced it in this country before the advent of the white man. The first white people to practice irrigation in this country were the Mormons in Utah. Here conditions were very ideal for this method of watering the land as there is an inexhaustible supply of water furnished by the melting snows from the mountains, while the topography of that region afforded a level area suitable for bringing water to it.

While wind movement and relative humidity are a factor, the largest influence in determining the necessity for irrigation is the amount and seasonable distribution of precipitation, particularly rainfall. The arid and semi-arid territory of the United States is included in the states of Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming. Irrigation is practiced to a greater or less extent in all of these states and also in Arkansas and Louisiana, in which, together with eastern Texas, it is confined mainly to rice growing. In the eastern states it is practiced over small areas for the growing of fruit and truck crops.

In that part of the United States lying east of the arid and semi-arid states named above, the normal annual precipitation exceeds twenty-five inches and is so distributed throughout the year as to provide sufficient moisture for the growing of general crops. While droughts of short duration occur in this section sufficiently often to make desirable the irrigation of such crops as truck and small fruits, which may be seriously damaged by lack of precipitation at certain periods, it is not a general practice. General crops sometimes suffer from insufficient moisture but these conditions do not occur often enough to warrant the expense of irrigation.

The forty to fifty inches annual rainfall in Arkansas, Louisiana and eastern Texas is sufficient for all crops except rice, for which the ground must be kept under water during the growing period. Irrigation is practiced in this region to supply the rice fields.

The states of North and South Dakota, Nebraska, Kansas, Oklahoma, western Texas, Montana, Wyoming, Colorado and New Mexico lie in the so-called semi-arid region. They have a normal annual precipitation which varies from about fifteen inches on the west to about twenty-five inches or more at the eastern boundaries. In the eastern part of this section, the precipitation varies from year to year and irrigation advances eastward in dry years and recedes to the west in years of plentiful and well distributed rainfall. On the high plain of the western part of this section, crops are grown without irrigation but it is generally practiced in the valleys. On the high mountains of the main ranges of the Rocky Mountains which extend thru this section, precipitation in the form of snowfall is heavy.

Just west of this section lies the real arid region of the United States. It extends between the Rocky Mountains and the Sierra Nevada and Cascade Mountains from central Idaho to the Mexican boundary line. The normal annual precipitation in the region varies from about two inches in southwestern Arizona and southwestern California to about eight inches in southern Idaho. In the larger parts of Arizona, Nevada, and Utah, and considerable parts in California, Oregon, Washington and Idaho, practically no crops can be grown in the valleys without irrigation. On the higher lands in all of these states except Nevada and California, the precipitation is greater and some grain and forage crops are grown without irrigation.

West of the Sierra Nevada and Cascade Mountains the precipitation varies. It is less than the amount considered necessary to mature crops in the southern part of California; it is equal to the greatest precipitation of any place in the United States in Washington and Oregon. But even in Washington and Oregon there is a dry period in the late summer when irrigation is desirable for growing crops and it is used somewhat for pastures, vegetables, and fruits. This same condition obtains in northern California. However, although the annual rainfall in the southern part of the state is less than is normally required to mature crops (since most of the precipitation occurs in the winter and spring) it is possible to grow crops without irrigation.

Climatic conditions vary from year to year. For example, the year 1919 was abnormal in this respect in many places. In some sections it was the third year in succession in which the precipitation was below normal. This condition not only damaged the crops grown without irrigation but greatly diminished the water supply available for irrigation and restricted the irrigated area. In other sections the precipitation for the same year was far above normal and much land that is ordinarily irrigated was not in need of irrigation.

Streams are the chief source of the water used in irrigation in the United States—83 per cent of irrigated areas received the entire supply from this source in 1919 and 2 per cent additional received part of the supply from streams. The streams in the western states have one common character-

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Painted Desert—Twilight in Canyon de Schelly. Three hundred feet above the canyon floor, the Indians look down upon the white man's encampment.

istic—they are mountain streams or have their origin in the mountains and are subject to heavy floods in the spring and early summer, and become very low in the late summer. This condition makes it necessary to store a part of the flood flow for use in the late summer if the entire water supply is to be used. In 1920 there were 23,894 diverting dams and 3,931 storage dams erected on the streams.

Wells—both flowing and pumped—supply water to considerable areas. The use of water from these sources in most sections comes only after the supply from streams is exhausted, or nearly so, and represents a later and usually more expensive stage of development than the use of stream water. Wells furnished the entire water supply for 7 per cent of the acreage irrigated in 1919, and a part of the supply to 2 per cent of this acreage. In 1919 there were in operation 4,606 flowing wells with a capacity of 935,057 gallons per minute, and 32,094 pumped wells with a capacity of 16,396,549 gallons per minute.

Land that is under irrigation increases its value a hundred fold and even a thousand fold. Much of the land now under irrigation in the west was considered worthless some few years ago and is now selling for from $100 to $150 per acre, while in some sections where the climate is favorable to the growing of choice fruit, the land has sold for as high as $1,000 per acre.

Irrigated land in many ways is much more valuable than other kinds of agricultural land largely for the reason that it contains so much of mineral plant foods and fertilizer in solution. These important ingredients have not been washed out by rains as in other land and hence retain a large amount of natural food. Best of all is the fact that the farmer can always have just the right amount of water for his crops and does not run the risk of drought or too much rain; either of which may be cause of heavy losses by the average farmer in the Middle West.

The principal crops raised upon irrigated lands, their acreage, yield, and value in 1919 as compared 1909 is as follows: Corn planted upon 263,312 acres in 1919 yielded 7,525,354 bushels with a value of $11,692,813. This was 1.8% of the total for the states included. In 1909 the acreage in corn was 133,560, the yield, 3,168,973 bushels, and the value, $2,421,420. This was .8% of the total for the states included. In 1919 the average yield per acre on irrigated land was 28.16 bushels, as compared with 21.8 bushels on the non-irrigated land.

In 1919, 1,258,538 acres of wheat (winter and spring) yielded 24,794,631 bushels, valued at $52,826,693. This was 13.2% of the total for the states included. The average yield per acre on the irrigated land was 19.5 bushels, as compared with 10.9 bushels for the non-irrigated lands. In 1909 the acreage in wheat on irrigated lands was 548,173, the yield, 14,045,117 bushels, and the value, $12,839,582.

The acreage in hay (including timothy, clover, alfalfa, prairie grasses and miscellaneous grasses and grains cut for hay) in 1919 was 5,325,789 acres; the yield was 10,911,155 tons, and the value was $239,462,309. This was about 10% of the total yield for the states included. The yield on irrigated lands was 1.48 tons, as compared with an average yield on non-irrigated lands of 1.28 tons. The acreage of hay in 1919 was about 1,000,000 acres greater than in 1909.

In 1919, 73,675,084 grape vines of bearing age yielded 1,131,279,429 pounds of fruit valued, at $36,304,252. Vines grown on irrigated land produced 15.4 pounds of grapes per vine, as compared with 11.3 pounds secured from vines grown upon non-irrigated land.

The 16,148,018 apple and peach trees of bearing age on irrigated land yielded 35,630,806 bushels of fruit in 1919. The value of this fruit was $49,236,848. The average yield per tree on irrigated land for apples was 2.5 bushels and for peaches, 1.9 bushels, about 130 per cent of the yield on non-irrigated land.

About 6,500,000 trees of other orchard fruits yielded 11,125,000 bushels of fruits in 1919. Sub-tropical fruits (oranges and lemons) in 1919 had an acreage of 11,000,000 acres on irrigated land. The yield was 24,500,000 boxes, valued at $75,000,000. This was 87 per cent of the total yield for the states included. The yield of irrigated land for these fruits is almost twice as great as the yield of non-irrigated land.

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AN EGYPTIAN SAKYEH OR WATER WHEEL USED FOR IRRIGATION

The endless chain of buckets bring up water from wells thirty or even forty feet deep. As the buckets are tied at a slight angle to the axis of the wheel, the water falls into a leader and is carried off to the fields.

In 1902 the Government of the United States took cognizance of the fact that it must cooperate with the individual if irrigation was to be carried on in a profitable manner. Up to this time most irrigation had been carried on by individuals, but the limited area that could be watered made this an expensive operation for those concerned. Congress passed the National Reclamation Act in 1902 which provided that the money derived from the sale of public lands in the arid states should constitute a fund for the reclamation of dry land through the process of irrigation. The government undertook to furnish the water supply and the cost of the project was assessed against the land and paid by the settlers in equal annual installments. As a result a large number of projects were put under way, many of which have now been completed and taken up. The census of 1920 showed that over nineteen million acres were actually under irrigation out of the total of nearly thirty-six million acres included in irrigation enterprises. The land under irrigation in 1920 showed an increase of about 33 per cent over the acreage in 1910. The total capital invested in irrigation enterprises in 1920 was $697,657,328. Of this amount 22 per cent was invested by individual and partnership enterprises, 26 per cent by cooperative enterprises, 12½ per cent by irrigation districts, 4½ per cent under the Carey Act, 12½ per cent by commercial enterprise, 18½ per cent by the U. S. Reclamation Service, and the remainder, 4 per cent, by miscellaneous agencies.

Of the 35,890,821 acres included in the irrigation enterprises in 1920, the various agencies were capable of irrigating 26,020,477 acres. The situation of this territory, according to the various drainage basins, is as follows:

1. The drainage basin of the Missouri and its tributaries. The northern half of the Great Plains, extending from the Rocky Mountains toward the Mississippi River, is drained by the Missouri River and its tributaries. In most of this area some crops can be grown without irrigation, and the irrigated land is confined almost exclusively to the stream valleys. The Missouri itself is not very largely utilized, and many of its tributaries are in the same condition. Storage has been provided for only a small part of the flood flow of the main stream and its tributaries north of the Platte, and there is in these streams a large supply of water available for future development in Wyoming, Montana, and the Dakotas. In 1920 there were 8,483,171 acres included in enterprises. Of this acreage, the enterprises were capable of irrigating 5,805,630 acres, of which 4,147,278 acres were irrigated in 1919. Included in this basin is the Shoshone project in northwest Wyoming. The water supplying this project is furnished by the Shoshone River which runs through a deep and narrow canyon into the Big Horn River, a tributary of the Yellowstone River. On this river is constructed a hugh masonry dam over 328 feet high. This project serves about 100,000 acres of land. Another notable development is located on the Cheyenne River and its tributaries (including the Belle Fourche). This project irrigates over one hundred thousand acres of land in western South Dakota. The location is splendid in regard to markets, located as it is near the mining towns of the Black Hills as well as within striking distance of the great cities of Omaha, Minneapolis, St. Paul and Chicago.

2. The North Platte supplies large areas of Colorado, Wyoming and Nebraska. In 1920, 1,603,305 acres were included in the irrigation enterprises on this river and its tributaries. Of the 1,172,858 acres in this section which the enterprises were capable of irrigating in 1920, 872,140 acres were irrigated in 1919. Its low-water flow is largely utilized and storage has been provided in the Pathfinder Reservoir in central Wyoming for a large part of the flood water of this stream. But there is a considerable supply of additional storage, which would make it possible to extend the area irrigated. Because of the level nature of the land, the farms are divided into holdings of about eighty acres. This is larger than the average irrigated farm, which seldom runs over ten or twenty acres on account of the rugged nature of the surrounding country which limits the amount of available land.

3. The South Platte waters a large area of land in Colorado and a small area in Nebraska.The census of 1920 shows that 1,671,199 acres were included under irrigation enterprises on this river and its tributaries. Of the 1,335,109 acres which the enterprises were capable of irrigating, 1,224,974 acres were irrigated in 1919.

The low-water flow of these streams is fully utilized. Most of the flood water and winter flow on these streams is stored in many small reservoirs rather than in one large reservoir. Yet there is some water available for further development of the same kind on the lower part of the stream. Water stored on the North Platte can be used on the main Platte in Nebraska and there is water from floods, winter flow, and return seepage that could be stored on the main stream if the demand for water justified the expense. Uncertainty as to the need for irrigation and as to the water supply have retarded development in this section.

4. The central part of the Great Plains is drained by the Arkansas River and its tributaries. The Arkansas waters a large area in Colorado and a small area in Kansas In 1920 a total of 1,009,921 acres was included in the territory which the enterprises in this section were capable of irrigating. Of the total possible irrigated acreage, 851,150 acres were irrigated in 1919. The area included in the enterprises in this section in 1920 was 1,344,646 acres. The low-water flow of the Arkansas is all used, and a large part of the flood water is stored in small reservoirs, but there is still some water available for storage on the main stream and its tributaries.

5. Practically all of the land used for rice growing in Arkansas and a considerable part of that in Louisiana and Texas is watered from wells. There is nothing to indicate that the water supply is not sufficient for a large expansion of the rice-growing area, if other conditions justify it. The rice grown along the Gulf coast in Louisiana and Texas is supplied principally by pumping from streams entering the Gulf. These streams are so nearly at the Gulf level that heavy pumping at times causes the salt water of the Gulf to enter the streams. The supply of fresh water is limited unless storage is provided. This has not been done. In Texas water for rice is taken from streams at higher levels, and here the supply is insufficient in some seasons, but there is plenty of water for storage purposes. Streams flowing to the Gulf of Mexico supply scattered areas throughout central Texas, and in the northern section the water is supplied from wells to a considerable area. In 1920 there were 1,602,169 acres included in the enterprises which were capable of irrigating 1,157,529 acres in the section covered by streams (other than the Mississippi and the Rio Grande) entering the Gulf. In 1919, 698,077 acres in this section were under irrigation. In 1920, the 1742 wells (flowing and pumped) had a capacity of 2,072,580 gallons per minute and the 2,335 pumping plants had a capacity of 9,202,748 gallons per minute. The water supply is sufficient for a large extension of irrigation from both sources, if other conditions justify it.

6 The Rio Grande and its tributaries drain south central Colorado, most of central and eastern New Mexico, and the southwestern part of Texas. In 1919 the area irrigated in this basin was 1,293,863 acres. In 1920 the enterprises were reported as capable of irrigating 1,887,433 acres of the total acreage of 2,594,127 acres included in enterprises. This large area lies largely in Colorado and Texas with a considerable portion in New Mexico. The Rio Grande is subject to heavy floods and at times is dry or nearly so, and storage is necessary for permanently successful irrigation · The River is dammed near Eagle. New Mexico, forming the Elephant Butte Reservoir, which has sufficient capacity to store the flood water and to regulate the flow of the stream below. Water from this reservoir supplies about 180,000 acres of land in a strip forty miles wide on both sides of the stream in New Mexico, in Texas, and in Mexico. There is little opportunity to use water from the Rio Grande below the El Paso Valley in Texas, except near the mouth of the river, where a large area is irrigated. The lower part of the river receives much of its water from tributaries in Mexico below El Paso and is not dependent on storage in Elephant Butte Reservoir. Most of the water used for irrigation in this section is pumped from the river. In 1920 there were in the Rio Grande Basin 522 pumping plants with a capacity of 2,670,157 gallons per minute. At times the supply is low, but there is a good supply for storage, although reservoirs have not been built. The question of providing storage on this part of the Rio Grande is complicated by the fact that the river forms the boundary between the United States and Mexico, and until some agreement is reached between the two republics for the equitable division of the water supply, the extent of safe irrigation development on either side of the river can not be determined. The Pecos, a tributary of the Rio Grande, drains a large part of south eastern New Mexico. It is subject to heavy flood periods and periods of very low discharge. Storage has been provided for part of the flood flow but there is opportunity for further development and larger storage. There are many flowing wells in this valley.

7. The Colorado River system drains all the land west of the Rio Grande drainage area to the California boundary and extends northward to northern Wyoming. It supplies water to land in Wyoming, Colorado, Utah, New Mexico, Nevada, Arizona, and California. The total area included in irrigation enterprises in 1920 was 4,064,492, of which 2,986,937 could be irrigated. In 1919 the total area irrigated was 2,312,047. In the upper states the areas of tillable land in the valleys of the tributaries of the Colorado are limited and much of the low-water flow of these streams is not yet utilized, while there is very little storage. The Gunnison project is in Western Colorado and a large supply was obtained by tunneling under a mountain range 2,000 feet high to feed the Uncampahgre valley. This region opens for productive agriculture over 140,000 acres.

Near the mouth of the stream very large areas are irrigated in Arizona, California, and New Mexico. The Numa project has a most favorable situation. It is situated on the delta of the Colorado River in the states of Arizona and California. The soil of this region is very rich in plant food and will prove one of the richest projects. It is estimated that a farm of ten acres will be sufficient to support a family. On account of the warm climate of a sub-tropical nature, and the fact that this section is practically frost free, more than one crop can be raised, thus doubling the income per acre. Over one hundred thousand acres of land are under irrigation. The low-water flow reaching this portion of the river is just about sufficient for the land irrigated. Any considerable extension of the area watered will necessitate storage. A very large volume of flood water is available for storage, and Federal and local agencies are studying the possibilities of storing these flood waters A compact between the states interested for the control of the river has been provided for by state and Federal legislation.

Gila River (which is a tributary of Colorado River) and its tributaries drain a considerable part of western New Mexico and most of southern Arizona. All of these streams are subject to heavy floods and to periods with practically no discharge. Consequently, storage is necessary to make them reliable sources of water for irrigation. Little storage has been provided except on Salt River, where the Roosevelt Reservoir has sufficient capacity to store the entire flow of the stream above the reservoir. The Roosevelt dam is located just a little south of the central part of Arizona. It is 284 feet high, 1,080 feet long, and 170 feet thick at the base. The water is easily distributed over the entire section, which comprises between 250,000 and 300,000 acres. The climate of this section is very favorable to the growing of grapes, almonds, dates and other warm country products. Tributaries reaching the stream below the reservoir are subject to violent flood conditions but storage for this surplus water has not been provided. In the irrigated section of the Salt River Valley, ground water has come near the surface making drainage necessary. Both wells and open ditches have been installed for the purpose of lowering the ground water and supplying additional water for irrigation. There is opportunity for more work of this kind.

8. North and west of the Colorado River basin lies the Great Basin, which has no outlet to the sea This basin includes small parts of Wyoming, Idaho, Oregon, and California, and most of Utah and Nevada. It really consists of several independent drainage basins, one with the Great Salt Lake as its low point, another entering in the "sinks" in western Nevada and a third, consisting of the Sevier River drainage, in southwestern Utah. There are also small basins in northern California and southern Oregon. In this whole basin in 1920 there were 4,238,028 acres included in irrigation enterprises of which the enterprises were capable of irrigating 2,869,858 acres. The area actually irrigated in 1919 was 2,313,163 acres.

The Great Salt Lake receives almost its entire inflow from the mountains lying to the east of its basin. Jordan River, carrying the discharge of Utah Lake, enters at the south end, Bear River enters at the north end, and between these there are also several short streams entering. These are typical mountain streams with flood conditions in the spring of the year when the snows on the mountains are melting and diminishing and almost disappearing in the late summer or early fall. Water is stored in Utah Lake for use in the Jordan Valley and in Bear Lake for use in the Bear River Valley. Water stored in Strawberry Reservoir, in the Colorado River basin, is brought into this basin through a tunnel discharging into Spanish Fork River, a tributary of Utah Lake. The low-water flow of all the streams in this drainage basin is used, but there is opportunity for much additional storage.

The "sinks" in western Nevada receive water from both east and west Humboldt River and its tributaries drain most of the eastern slope of this basin. The Humboldt has a flood period in spring and most of the irrigation along this stream consists in damming the stream so that it will overflow natural meadows on its bottom lands during its flood A much larger use of

the stream could be made if a part of the flood water were stored for use in the late summer.

Walker, Carson, and Truckee Rivers flow into the "sinks" from the west. These streams rise in California in the Sierra Nevada Mountains. Carson and Walker Rivers water considerable areas in both states. Truckee River is the outlet of Lake Tahoe, which lies on the border between California and Nevada. Plans for using Lake Tahoe for a storage reservoir have been made, but litigation has prevented its use to any large extent. Water from both Truckee and Carson rivers is stored in Lahontan Reservoir in Nevada. There is opportunity for additional storage on all of these streams.

Throughout the Great Basin there are large valleys which have no surface water supply. In some of these a good supply of ground water has been found. It is probable that large areas can be supplied from wells, when this becomes economically feasible.

9. North of the Great Basin and extending from western Montana and Wyoming to the Pacific Ocean is the Columbia River Drainage basin in which there were 6,336,801 acres included in irrigation enterprises in 1920. These enterprises were capable of watering 4,968,518 acres in Montana, Idaho, Oregon and Washington and the total area irrigated in 1919 amounted to 3,873,245 acres. Clark Fork of the Columbia and its tributaries, the Bitterroot and Flathead, water lands in western Montana. Water is stored in Flathead Lake for lands near the lake. There is opportunity for storage on the other tributaries.

Snake River rises near the headwaters of the Missouri and Colorado in northwestern Wyoming and waters land in Idaho, Oregon, and Washington. Its low-water flow is all used, and storage has been provided for much of the flood water in Jackson Lake in Wyoming and in reservoirs in Idaho. There is still a large volume of flood water available for storage and plans are being made to provide reservoirs to store it.

The Columbia River itself is not extensively used for irrigation. Throughout its course it is so far below the level of the surrounding land that extensive and expensive pumping operations would be necessary, but some water is pumped from the river. It carries a large volume of water that could be used if it were economically feasible.

In Washington the tributaries of the Columbia coming from the Cascade Mountains supply the water for the irrigation in that state. The low-water flow of these streams is utilized and storage has been provided for part of the flood water, but there is opportunity for further development of the storage projects.

The tributaries of the Columbia supply a large part of the water for irrigation in Oregon. Irrigation has not been developed to the stage of storing water and there is opportunity for a much wider use of irrigation.

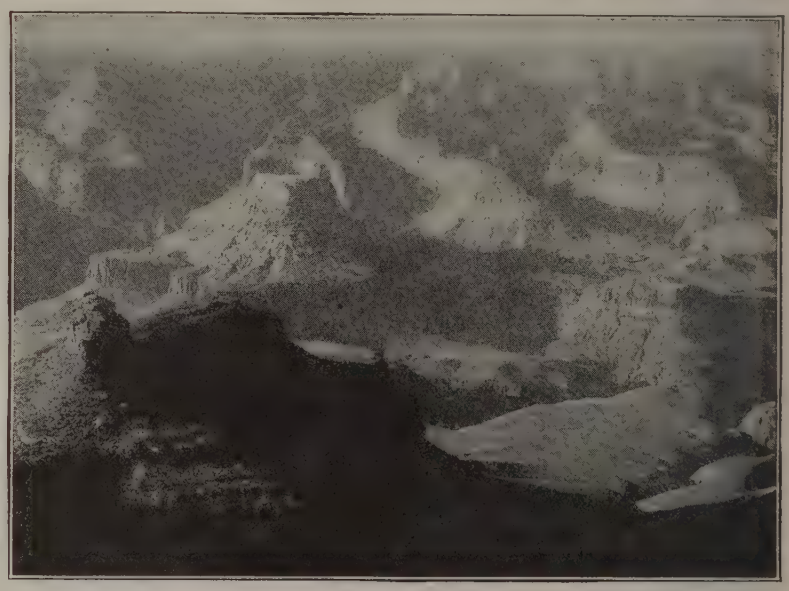
West of the Cascade Mountains the rainfall is heavy and there is no need for irrigation except during the dry period in the late summer. Some irrigation is practiced during this time and there is abundant supply of water for a very large extension of the irrigated territory.

10. The total area included in irrigation enterprises on Pacific Ocean streams other than the Columbia and Colorado Rivers was 6,978,320 acres, in 1920. Of this acreage the enterprises were capable of irrigating 5,155,509 acres in 1920. There were 3,570,678 acres actually under irrigation in 1919.

In northern California the dry season in summer is more pronounced than it is in Oregon and Washington, and at that time there is little water in the streams. There is a large supply available for storage but little storage has been provided. Sacramento River waters a large area, and the summer flow is fully used. The stream is subject to very heavy floods, and almost no storage has been provided. Both Federal and state agencies are working on plans for storing the flood water of the Sacramento and its tributaries.

for a large additional area. In the San Joaquin Valley irrigation has brought the ground water near the surface and a great many wells and pumps have been put in, in some instances to furnish a supplemental supply of water when streams are low, and in others to provide the entire water supply. In 1920 there were 11,294 wells with a capacity of 4,960,000 gallons per minute and 9,973 pumping plants with a capacity of 7,400,131 gallons per minute.

The coast streams south of San Francisco Bay are torrential in character. On some of these streams reservoirs have been built to store flood waters, but on many reservoir sites do not exist and large quantities of flood water are lost to the ocean. In the valleys of these streams



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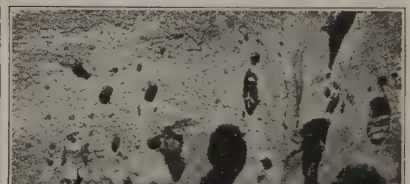
The Grand Canyon of Arizona. A patchwork of color embracing all the colors of the spectrum. A telephoto view from the El Tovar hotel grounds. The Grand Canyon is without question the hardest task for a photographer. The purple and blue haze that fills every shadow, mingles with the red of the rocks, and the immense distance across makes it a real task. Then even if one gets perfect results the diminutive reproduction makes one sick at heart.

The San Joaquin and its tributaries supply water to the larger part of the irrigated land in California. The low-water discharge of these streams is all used, but very little provision for storing flood water has been made. State and private agencies are working on plans for large storage projects, which will provide



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New Mexico. The Cliff Dwellings. Many of these rooms have communicating passages. Some of the smaller openings served as chimneys to the fireplaces, the remains of which are still quite traceable and in a few instances in fair condition.

there are many wells, both flowing and pumped, and the heavy draft on the ground water has lowered its level. In the absence of reservoir sites, the flood water is spread over the gravelly soil where the streams emerge from the mountains in order that it may enter the soil and replenish the ground-water supply. There is a large supply of flood water in southern California for which there is a large demand. If some practical way of conserving these waters can be found, the irrigated area can be greatly extended.

The number of acres irrigated in the different states in 1919 is as follows: Arizona, 467,565; Arkansas, 143,946; California, 4,219,040; Colorado, 3,348,385; Idaho, 2,488,806; Kansas, 47,312; Louisiana, 454,882; Montana, 1,681,729; Nebraska, 442,690; Nevada, 561,447; New Mexico, 538,377; North Dakota, 12,072; Oklahoma, 2,969; Oregon, 986,162; South Dakota, 100,682; Texas, 586,120; Utah, 1,371,651; Washington, 529,899, Wyoming, 1,207,982; total, 19,191,716.

Taking the western part of the United States as a whole, with few exceptions, the low-water flow of the streams is exhausted, but there is a very large supply of flood

water available for storage. There is no lack of tillable land on which this water can be used. Future extension of irrigation depends on whether economic conditions are such that the value of the crops which can be produced will justify the expense of storing the flood waters. The same may be said of the use of ground water. The extent of the supply of ground water is not so well known as the amount of flood water, but there are many places where water can be obtained from wells when the expense of pumping is justified.

Many different crops will grow on these irrigated lands illustrating the varied climate of the United States. For example, hay, grain and vegetables will be the staple crops of the northern enterprises, especially in Montana, Wyoming, the Dakotas and Nebraska. In Idaho, Washington, Oregon and California the principal crops are apples, peaches, pears and plums, while in the warmer southwest the sub-tropical fruits can be grown to profitable advantage. The high value of the land will encourage intensive tillage, and the ever present problem of labor supply will tend to make most of these farms small enough for one man to work. In the orchard-growing sections the holdings of each individual does not run over five or ten acres per man. This will mean a more dense rural population, especially for the irrigated lands, and will perhaps overcome the distaste of many to take up agriculture on account of the isolation which it has always meant. It is thought by many that irrigation of lands may have the effect of building up farm villages patterned somewhat after the old manorial villages of England and the Continent minus the allegiance to some overlord. Thus farmers can congregate in one place where schools, stores, medical attendance and churches can be maintained on a high level, while the outlying land could be worked during the day by the individual owners.

Dry Farming.—In places where irrigation by water stored up in reservoirs cannot be used, either because of distance from the supply or cost of such a project, and where there is at least ten inches of rain fall per year a different type of farming has developed. This is known as dry farming and the crops of this type of agriculture are naturally of a drought resisting species, especially Kaffir corn, sorghum, alfalfa and durum wheat. This latter crop is of special importance and forms a considerable part of our wheat crop.

This type of farming is carried on by storing the rains of two winters in the soil. In the region west of the Rockies the rain falls chiefly during the winter season. The soil of this region is underlaid by clay which is almost impervious to water. The rain of a winter is allowed to fall on the land and then to prevent evaporation during the following summer the entire plot is covered with any kind of material which will keep the wind and sun from reaching the soil. At the beginning of the second winter this covering is removed and another season's rain falls, thus the land has the larger part of two season's rain stored and is ready for cultivation the following summer. Under such conditions it is possible to grow the durum wheat, and some other staples like alfalfa, which has a long root running far down in the soil, in a section of the country that has only about ten or twelve inches of rain per year. Dry farming is another excellent example of the effect of land and climate on the nature of products grown.

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The Grand Canyon of Arizona. Fantastic cliffs of yellow and white rising out of abyssmal depths, a striking contrast to the purplish lines of the distance.

Agricultural Products of the West.—This region cannot be called very important economically as a farming section. The ruggedness of the soil and the climate have been barriers that have been difficult to overcome. The fact that mining has paid larger returns also helps to account for the unwillingness of individuals to take up agriculture. Hence we find that very little is exported from this region except fruits and hops. The farmers on all parts of the Pacific slope have turned their attention largely to fruit-farming, so much so that the apples and other fruits of Washington and Oregon are considered to be unequalled in the markets of the east. The different climates of this region enable the farmers to grow both temperate and sub-tropical fruits. Peaches, pears and plums from the temperate regions and oranges, olives, lemons and figs from the southern sections.

Considerable grain is grown on the Pacific slope, especially in the states of Washington and Oregon. The dryness of the summers in this region enable the farmers to cut, thresh and sack their grain on the same day. However, very little of the grain in this region is exported, largely because of the high freight rates on such heavy commodities as wheat.

Mineral Products. — It is in mineral products that this western section abounds. In fact it was the cause of its first settlements. Man will go anywhere for gold, from the cold bleak mountain passes of the Arctic Klondike region to the hot burning plains of Australia. It is the one magnet that will attract him to the most uninhabitable regions of the earth. This Rocky Mountain region never could compare as a dwelling place with the rich farm lands of the middle west or even the farms of the east. The only reason that settlers first came to this region was the search for gold. Gold is still the principal mineral of the Pacific Slope and is to be found principally along the foothills of the Sierras.

Coal is scattered throughout this region, principally in Washington and Colorado. There are also beds of anthracite coal in Colorado and New Mexico. Lead and zinc are mined to considerable extent in Idaho. Copper is also found in abundance in the states of Arizona, Montana and Utah. Butte, a city in Montana, is the greatest copper center in the world. Iron ore is widely distributed in Colorado. In the matter of smelting iron ore, Colorado is the leading state west of the Mississippi.

Important fields of petroleum have been discovered in the extreme southwest. The fields of southern California are among the most productive in the world. The principal center is around Bakersfield, in that state. The importance of this fuel is shown in that it affords a fuel for the railroads which are located so far from the coal mines. The output of this mineral fuel in California is now of greater value than the output of gold.

Of other important minerals mention should be made of the asphalt beds in California and Utah; salt from the dried sea regions of California in the Salton Sink; borax from the Death Valley in the Mohave Desert. Even precious stones like turquoise, sapphire and topaz are found in New Mexico, Arizona and Montana.

Forests.—A great part of the wealth of this region is in its forests. This section has in the main supplanted the Michigan field as the source of supply of much of our timber. The yellow pine of the country furnishes for the most part the timber for use in the various mines. In the Puget Sound region is the center of the Douglas fir and cedar. The northern Pacific slope contains the largest body of standing coniferous woods in the United States.

Manufactures.—One does not find in this region manufacturing of a national type. Most of the products manufactured here are for home consumption. There is plenty of power and raw material, but the supply of labor is lacking and the markets are too remote for industry to develop on the same large scale as in the middle west, south or east. Such manufacturing as one finds here is largely of articles for the smelting of ores which is prominent in Butte and Seattle, steel and iron in Colorado, shipbuilding in San Francisco and mining machinery in Los Angeles and Denver. Lumbering is of course the chief industry in Tacoma, Portland and Spokane, flour milling in Stockton and Sacramento, and the refining of Hawaiian and California beet sugar is carried on in San Francisco. The fact that this region is somewhat isolated, due to the high cost of shipping, enables the industries here to compete, with the industries of the east.

Railroads.—The commercial development of the west is due in a great measure to the railroads that have found their way through the passes and over the mountains to the coast. These roads in fact have been the very life of this section in connecting it with the eastern sections. Were it not for the railroads this region would not have been settled until a much later date. Its very topography is such that railroad building is an expensive operation, a fact which accounts for the small number of roads as compared with the more level sections.

Six transcontinental railroads now connect the Mississippi Valley with the coast. These lines are the very life of the commercial development of the west. The first line to be built was the Union Pacific, built in the sixties, from Omaha in Nebraska to Sacramento. The Missouri Pacific joining with the Denver & Rio Grande and Western Pacific offers a connected route from St. Louis to San Francisco. The longest line to the west is the Santa Fe, which follows the old Santa Fe trail through the southwest to San Francisco. The shortest of the Pacific lines is the Southern Pacific, running from New Orleans to Los Angeles and San Francisco. This is the one line that enters the city of San Francisco proper. All other lines have their terminals in the cities across the bay from Frisco. Two great railroads parallel each other in the north. One of these is the Northern Pacific, which connects Minneapolis and Duluth with the west, and the other is the Great Northern.

Cities.—The natural economic condition in the interior of this western region is unfavorable to the existence of very large cities. With the exception of Denver and Salt Lake City, most of the large centers of population are on the Pacific slope. In this entire section there are only eight cities which have a population of more than one hundred thousand, namely Los Angeles, San Francisco, Seattle, Portland, Denver, Oakland, Salt Lake City and Spokane. In four of the states there is no city of over 25,000 population, namely Nevada, Wyoming, Arizona and New Mexico. This small population is due in part to the inaccessibility of the region and to climate, especially in the dry regions. Without doubt lack of water will be a barrier to this section in becoming as populous as those regions to the east and south. The density of the population varies from less than two per square mile in a state like Nevada to from 45 to 90 per square mile on the Pacific slope.

In the interior the city of Denver is the most prominent commercially. This city originated as a placer mining camp and is now the chief commercial center for the entire Rocky Mountain region. It has a population of over 200,000; nine railways enter it, three of which are transcontinental. It is a market for grain, slaughtering, meat packing and the smelting and refining of lead.

Publishers Photo Service
Yosemite Valley. General View showing El Capitan

Another city of the interior is Salt Lake City. This is one of the few artifically founded cities in the United States. Its origin was due to a religious movement. It had the good fortune, however, to be located on the direct line followed by the gold seekers in the middle of the last century, and hence it became a center for outfitting these adventurers. Its population to-day is about 118,000 and it is the business center for the irrigated region of this section. It is also the market for the sheep husbandry of the Great Basin.

Another city of some industrial importance is Butte, in Montana. This city owes its prominence to its copper mines and smelters. It is said to be one of the richest cities, per capita, in the United States.

It is on the Pacific slope where we must look for the largest cities. This region, with greater accessibility from the west and a better rainfall, is a more popular habitation for man. The metropolis of the coast is the city of Los Angeles. This city has grown remarkably in the last twenty years. Its splendid climate and clear skies have made it an attractive place to man. It is the fruit center of southern California, the country around being irrigated by means of artesian wells. Another industry that has centered in and around this city on account of its climate is the moving picture industry.

San Francisco, the second city in size in this region, is located on an excellent harbor, but unlike New York its hinterland is limited by the mountain barriers only a few miles to the east. However, ten railway lines reach the bay, and here as in New York we find regular steamship lines to foreign ports. The principal lines on the ocean run to Mexico, South America, Hawaii, the Philippines, Japan, China, Australia and New Zealand. The commercial possibilities of this city should become greater if the far eastern people should ever develop to the extent of the Europeans who are opposite our Atlantic shore.

Going farther north we come to a rapidly developing section around the Puget Sound. The metropolis of this section is Seattle which bids fair to become a vigorous rival of San Francisco in the struggle for supremacy in the trade with the Orient. Seattle is forty-eight hours closer to the Orient than any other port in the United States, thereby having a large exporting and importing business. It is well called "The Gateway to the Orient." Located near the great lumber camps, the manufacturing of lumber and timber products exceeds all other industries. Feed and cereal mills, machine shops and fishing industries have attained great proportions. Eighty per cent of all manufacturing in the state is in Seattle.

Tacoma, also located on Puget Sound, shares with Seattle some of the advantages above mentioned. Located near the coal fields which furnish the necessary fuel, its principal industry is the smelting of ores.

Portland, on the Willamette River, is the largest city in Oregon and has transcontinental connections with the east. It is the commercial center for the Oregon forests and the Columbia River fisheries.

Spokane, an inland city, is in a center of grain growing. Two great continental lines converge in this city, giving it excellent transportation facilities.

Only a small portion of the foreign commerce of the United States goes through the Pacific coast. According to statistics recently available only about 6 per cent of the nation's commerce reaches this side of the country, and of that about one-half goes through the city of San Francisco. The tonnage of the Puget Sound ports is greater, but it is less in value than that of the more southern port. However, trade is certain to increase on this coast as it faces an ocean around which half of the people of the world live. As western ideas of trade are more fully adopted and the wants of the people of the Pacific increase, the commerce of this section of the nation may not be inferior to that of the eastern seaboard.

Below is given a table of the sixty-eight cities in the United States which according to the census of 1920 had a population of over 100,000. The grand total of these cities represents at least a quarter of our population.

New York	5,621,151
Chicago	2,701,705
Philadelphia	1,822,158
Detroit	933,739
Cleveland	796,836
St. Louis	772,897
Boston	748,060
Baltimore	733,836
Pittsburgh	588,193
Los Angeles	576,073
San Francisco	508,410
Buffalo	506,775
Milwaukee	457,147
Washington	437,571
Newark	414,216
Cincinnati	401,247
New Orleans	387,219
Minneapolis	380,582
Kansas City, Mo.	324,410
Seattle	315,652
Indianapolis	314,194
Jersey City	297,864
Rochester	295,850
Portland, Ore.	258,288
Denver	256,491
Toledo	243,109
Providence	237,595
Columbus	237,031
Louisville	234,891
St. Paul	234,595

Oakland	216,361
Akron, Ohio	208,435
Atlanta	200,616
Omaha	191,601
Worcester, Mass.	179,754
Birmingham, Ala.	178,270
Syracuse, N. Y.	171,717
Richmond, Va.	171,667
New Haven, Conn.	162,390
Memphis, Tenn.	162,351
San Antonio, Texas	161,308
Dallas, Texas	158,976
Dayton, Ohio	152,559
Bridgeport, Conn.	143,152
Houston, Texas	138,076
Hartford, Conn.	138,036
Scranton, Pa.	137,783
Grand Rapids, Mich.	137,634
Paterson, N. J.	135,855
Youngstown, Ohio	132,358
Springfield, Mass.	129,563
Des Moines, Iowa	126,468
New Bedford, Mass.	121,217
Fall River, Mass.	120,485
Trenton, N. J.	119,289
Nashville, Tenn.	118,342
Salt Lake City	118,110
Camden, N. J.	116,309
Norfolk, Va.	115,777
Albany, N. Y.	113,334
Lowell, Mass.	112,759
Wilmington, Del.	110,168
Cambridge, Mass.	109,694
Reading, Pa.	107,784
Ft. Worth, Tex.	106,482
Spokane, Wash.	104,437
Kansas City, Kan.	101,177
Yonkers, N. Y.	100,226

POSSESSIONS OF THE UNITED STATES

Alaska.—This great territory in the far northwest portion of the North American continent has been little understood, and too frequently slandered as a place of barren Arctic sterlity. This territory is in about the same latitude as that of Scandinavia and in places has about the same temperature. According to records kept by the weather bureau, the thermometer of Sitka has a winter average of only 32.5 degrees Fahrenheit, which is practically the same as that of Richmond, Virginia. This mild, equable climate is peculiar to all the country along the coast line west of the mountain ranges. This region is tempered largely by the warm currents flowing off the ocean. In the high interior the climate is drier and of a most intense temperature both winter and summer.

It is the size of Alaska that astonishes the average person for looking at the map its shape is such as to conceal its true extent. In actual square miles it is nearly the size of the eastern section of the United States from the Mississippi River to the Atlantic Ocean, and in length of coast line it exceeds in mileage that of continental United States. The northerly latitude of this territory with its long hours of sunshine is most conducive to the growing of agricultural products. The sun shines from 18 to 24 hours per day in many places, thus enabling crops to mature in a shorter time than in the more southerly latitude. For this reason barley, potatoes, cabbages and turnips have ripened here as far north as Fort Yukon in latitude 66 degrees north. Alaska was noted first of all for its supply of furs. Here was a natural ground for fur-bearing animals and considerable wealth has been derived for this colony from this commodity. It is still of some importance. However, the fur industry is being carried on along more scientific plans at present, for it was seen that the supply of fur-bearing animals would soon be extinct if the wasteful methods of hunting and trapping of the nineteenth century should be followed. As a result many fur farms have been established, especially farms breeding different varieties of foxes. Excellent facilities for this type of farming are to be found on many of the islands off the coast, especially on the Pribilof Islands.

No waters are more abundantly supplied with fish than the waters of the Alaskan rivers and coasts. From the standpoint of value these fishing grounds are among the most valuable in the world. Here is a section from which we receive over fifty per cent of the salmon used in the United States. Huge canning factories of salmon form an important industry along the sea coast. Other fish caught in large quantities are the halibut, the cods and the herring. Fishing is Alaska's most important industry, with 800 vessels and 25,194 men engaged in it in 1925. The value of the salmon pack for 1925 was $31,989,531.

Another of the rich resources of this region is its supply of timber. Most of the heavy forests stretch along the moist coast line of the southeast. This region is really an extension of the forests in British Columbia and is well supplied with coniferous trees. Some timber is found in the interior, especially along the water courses. The lower courses of the Yukon River are almost all wooded. This timber, however, is too small for lumber and has no great value except as it is available for use as paper pulp. The forests of this region are not as fully developed as they could be largely on account of their inaccessibility, many of the best sources of supply being located too far away from water transportation. Only those that are located near ports that can be reached by boats have real commercial value.

As in the case of California and other western states, the supply of gold in Alaska was the cause of attracting most of the early settlers. The rush to the Klondike and Alaskan fields in the years from 1897 to 1899 was equalled only by the rush of gold seekers to California in 1849. The precious metal is scattered over a wide area. Placer mines are located in western Alaska along the Yukon, the Tanana and the Kuskokwim and their tributaries and in the Seward Peninsula near Nome. The principal gold-quartz mines are located in southeastern Alaska.

Copper is found in the watersheds of the Copper River and along Prince William Sound. The value of the copper output has in recent years exceeded that of gold, the figures for 1925 being, copper, $10,350,000 and gold, $6,226,600.

Large amounts of silver are secured from the copper ore; some silver comes from silver lodes. Large coal fields are still almost untouched. Some petroleum is taken and explorations for new deposits are being carried on. Among the other minerals are lead, tin, garnet, gypsum, platinum and quicksilver.

The commercial value of Alaska is many times the price paid Russia for this territory. Her wealth will be in her raw materials for many years to come. Her exports of salmon, minerals and furs will constitute her chief source of wealth for some time to come. Agriculture will probably never develop beyond the home consumption stage. An important industry has arisen there that may prove to be a most important factor in increasing the supply of food for this region as well as furnishing an excellent article of export. On the barren moss grown tundra or plains the government placed a number of reindeer some few years ago. The reindeer can thrive in this locality and is not only important as a food supply but can be used as a beast of burden. In 1925 there were 110 herds containing about 350,000 deer, valued at $9,850,000. About two-thirds of the reindeer are owned by the Eskimos.

By Army and Navy installations of cable and radio, supplemented by private installations, almost all of Alaska, with the exception of a few of the Aleutian Islands, is in touch with the outside world.

Lack of transportation facilities has held back the development of Alaska. Coastwise steamers provide uninterrupted service between the ports of southern Alaska and Puget Sound, but such northern points as Nome are reached only from July to September. In the summer river boats ply on the Yukon River for more than 2,000 miles.

The Alaskan Railroad, a government undertaking, is 509 miles in length, counting its branches. It runs from Seward on Prince William Sound to Fairbanks in the interior. A privately owned line, 190 miles in length, runs from Cordova to Kennicott. It is used especially to bring out the copper ore. A railroad extends from Skagway to the Canadian border and thence to White Horse in the Yukon region.

The cities of Alaska are small in number as well as in population. The 1920 census showed a decrease from the figures of 1910, due largely to the World War. The war took away many men, not only those who enlisted but also many who were attracted by the high wages of the shipyards.

The principal towns are those along the coast. Starting at the southeastern part and going up the coast there are the following: Ketchikan, Wrangell, Petersburg, Sitka, Juneau, Cordova, Valdez, Seward, Kodiak (on Kodiak Island) and, far to the north, Nome. Juneau the capital and largest town, has a population of 3,058. Fairbanks, the largest town in the interior, has 1,155 inhabitants.

In proportion to the number of people Alaska is said to have more nationalities than any other section of the world. Among the whites the Scandinavians are most numerous. There are about 13,600 Eskimos, who live along the northern coast.

Porto Rico.—Porto Rico is an island about ninety-five miles long and about thirty-five miles wide. It is somewhat smaller than our state of Connecticut, and because of its rich fertile soil is one of the most densely populated islands in the West Indies. The climate is tropical, though the elevation in certain portions furnishes a climate that makes an excellent dwelling place for the white man. The chief commercial products of this island are coffee and sugar cane. For a long time coffee was the principal crop, but of late years there has been a tendency to grow more and more sugar cane by planters who buy up vast tracts of land and allow it to be worked by a plantation system with negro labor. The growth of sugar cane farming has had a tendency to squeeze out the small white farmers and increase the negro, or black population. The chief exports of this island are sugar

and coffee. Its chief manufactures are limited to the refining of sugar cane, the manufacture of cigars and cigarettes and Panama hats.

The Philippines.—This large archipelago of over three thousand islands near the coast of Asia forces the United States to take a keen interest in the affairs of the far east. About 100,000 square miles of land was added to the soverignity of the United States when these islands were purchased from Spain, and while most of the islands have a tropical climate unfit for the white man, yet in the northern section, especially on the island of Luzon, the climate is temperate and here we find most of the tilled land and large cities. The principal commercial products are its raw materials, the chief of which are sugar cane, tobacco, cocoanut and the famous Manila hemp. This latter product is used in the making of ropes. Over half of the land in these islands is covered with forests of many valuable tropical woods. Of chief commercial importance are rubber and gutta percha, dye woods and bamboo.

This latter tree is used largely for building purposes.

These islands are also rich in mineral resources. In the northern islands we find gold and copper in considerable quantity. Here also are rich iron deposits located near coal that has attracted a considerable number of people to this region.

Like Alaska, this region lacks transportation facilities. As a consequence most of the people are near the coast. Some building of railways has been carried on since American occupation which already has brought considerable wealth to the people in the interior. As transportation facilities are provided more sugar and coffee can be raised; the rubber districts can also be tapped; and these commodities which are

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Bringing the cocoanuts from the interior of the Philippine Islands to the market. As there is no train service to most of the interior of the country the nuts are stacked on large rafts and brought down the river the same as lumber is shipped down the rivers of our country.

in so great a demand in this country wil bring a vast amount of wealth to these islands. The bulk of trade is carried on with this country. Last year, 1921, 46 per cent of her imports came from the Philippines. Manila, situated on the northern island of Luzon, is the principal port for foreign trade. It has an excellent harbor and is in the path of many commercial routes from North and South America to the Orient.

Hawaiian Islands.—Located far out in the Pacific Ocean at the crossroads of ocean traffic this little group of Hawaiian islands forms a most important possession for the United States. It not only furnishes an important mid-ocean supply station but in a sense is the western gateway to the Panama Canal. The population of these islands is largely Asiatic, due largely to the demand for cheap labor in the sugar plantations. The great commercial crop of these islands is sugar, which is grown everywhere on the lower elevations. Sugar forms about 87 per cent of the entire exports of the islands, and represents a value of over $39,000,000 annually. Other prominent

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HAWAII—An unusual photograph of the pineapple industry.

commercial crops are pineapples, cocoa, bananas, vanilla and rubber, which are found in the moist regions, while coffee and tobacco grow in abundance in the higher and drier regions. Pineapples are a most important crop for export. Over 1,500,000 cases of this fruit were exported to the United States in 1920. Some of the largest canneries in the world are located on these islands, consuming many hundreds of tons of fruit per day.

Other Possessions of the United States.—In the far away Pacific Ocean there are two groups of islands belonging to this country. They are not important commercially except that they lie in the way of many of the commercial routes in the southern Pacific. The islands are Tuituila, in the Samoan group, and Guam. They are important as coaling stations for the navy.

In the Carribean region a recent possession of the United States, are the Virgin Isles just to the east of Porto Rico. These are important mainly as coaling stations and as the eastern gateway to the Panama Canal.

Another possession of no small importance is the Canal Zone on the Isthmus of Panama. Here the United States has control over a strip of land ten miles wide on each side of the Panama Canal. It would be hard to overestimate the commercial value of this strip of land to the United States. In the first place it has shortened the distance between New York and the Orient. New Orleans and other ports also receive the same benefit. It also means that the western coast of South America is brought many thousand miles nearer the Atlantic ports of the United States. This means that freight costs are appreciably lessened. The bringing of New York and the Atlantic seaboard nearer to the Orient means also that these cities are in a better position to compete with London and the other cities of Europe for the trade of the Far East.

THE CENTRAL AMERICAN STATES

In this division should be included Mexico as well as the small states comprising the regular section called Central America on all political maps, for geographically and climatically they are about the same. In both sections the coast is low and unhealthful, while towards the interior the land rises to a high plateau, making it more habitable for men. These countries are rich in natural resources. One of the greatest oil tracts in the world is in the district around Tampico, in Mexico, on the gulf, while this country has some of the richest silver mines in the world. Other minerals occurring in large quantities are zinc and lead and copper. Mexico ranks next to the United States in the production of copper. Gold and silver are found in paying quantities in several of the small states in Central America, particularly Nicaragua and Honduras. There is also iron in abundance in Mexico. Most of the natural resources of this region are poorly developed on account of poor transportation facilities as well as on account of the backwardness of the people. Here we find a strange mixture of white, Indian and Negro with the Indian predominant. In the state of Mexico the Indian represents about 40 per cent of the entire population, which goes far towards explaining the unstable political conditions in that country.

One of the vast untouched resources of this region is its wealth of forest materials. Here along the Caribbean Sea are dense forests producing mahogany, rosewood, cedar, logwood and rubber. The cultivated products of this region are of every variety from tropical to temperate according to the elevation cultivated. The most distinctive crop is coffee, which is grown from southern Mexico into Central America on the Pacific slope. Tobacco and cotton are of some importance especially in Mexico.

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PHILIPPINES—Opening Cocoanuts. The natives use a large and heavy steel knife for splitting the nuts. The external husk of the cocoanut yields the coir fibre with which are made fabricated ropes cordage, brushes, etc. The nut is then broken up into small pieces and dried for making cocoanut oil.

The manufacturing of this entire region is largely of the handwork type. The economic development of the race shows its influence to a marked degree. As in the Orient, so we find here the making of hand carved and inlaid woods, pottery, jewelry and leather working. Another factor that has hindered the factory type of manufacturing is the lack of fuel. While this region is rich in precious metals, iron and oil, it is lacking in coal. However, there are a few blast furnaces in the vicinity of Monterey which is located near coal fields of some value.

The principal commercial centers of this region are located along the eastern coast. Vera Cruz is the principal commercial

port, being the natural outlet for most of the plateau region of Mexico. The fact that it is connected with the interior by rail has helped this city to keep a primary place as a commercial center. However, Tampico, a little farther north, has a better harbor and an easier entrance to the plateau. On the western shore of Mexico is the harbor of Acapulco the first harbor on the Pacific coast of any importance south of San Francisco. Here are good shipping facilities. The only thing lacking is better transportation facilities to the interior. The mountain ranges come close to the coast, forming a difficult barrier to overcome. This harbor has an important location in that it is in direct line with the shortest route from the Panama Canal to the Hawaiian Islands and the Orient.

This entire region, which is so rich in precious metals, tropical fruits, forest products and cattle, is nevertheless comparatively poor. One of the reasons for this poverty we have mentioned, namely the predominance of an inferior race, the Indian. Other reasons that are equally potent are that owing to the scarcity of water much of the interior is given over to stock raising, an occupation affording few comforts; also the fact that much of the land is held in the hands of a few wealthy men, forming an aristocratic class, while the common people who are compelled to work on these lands are little more than slaves; and last of all, the lack of railroads and navigable rivers from the interior have done much to retard the development of these countries.

CANADA.

Area and Population.—The great Dominion of Canada extends from about the latitude of the North Cape to Rome. It is about thirty times the area of the British Isles and even exceeds that of the United States, Alaska, Hawaii, Porto Rico and the Virgin Isles combined. Its total area is 3,603,900 square miles.

The population of Canada was officially estimated in 1919 to be nearly nine million. The population, omitting the little explored northwest territory, is only a little over 3 per square mile; in other words, just about one-tenth of the population per square mile of continental United States. This country consists of nine provinces and two territories with populations as follows:

	Population 1919
Alberta	587,700
British Columbia	718,660
Manitoba	618,903
New Brunswick	368,760
Nova Scotia	518,761
Ontario	2,820,909
Prince Edward Island	93,728
Quebec	2,326,528
Saskatchewan	754,090
Northwest Territory	18,481
Yukon	8,512
Total population	8,835,102

Here then is a vast unsettled country with resources enough to support at least fifty million or more people. The character of the people and the climate of the country are such as to make Canada the one serious rival of the United States in this hemisphere. At the last census the percentage of Canadian born population was 64.49, British born 17.82 and foreign born 17.69. The foreign population is largely in the prairie provinces and to a considerable extent is composed of immigrants from the United States who have been attracted to these provinces on account of their cheap and highly productive lands.

Canada is rich in natural resources, the chief of which are agriculture, forests, mining and fisheries. The long hours of sunshine, which lasts from sixteen to nineteen hours daily, and the warm winds coming in from the Pacific push the limits of grain growing and forests over a thousand miles north into Canada. The broad plains in western Canada are more favorable to agriculture than the plains just to the south in the United States. This is due primarily to the fact that rains reach the Canadian plains in greater amount than in this country, and also to the fact that evaporation is much less.

Agriculture is now the leading industry in this country, and wheat is the chief money crop of Canadian farms. Agricultural products represent the largest share of Canadian exports. Oats, hay, potatoes, apples and barley are also important crops in this section. The greatest wealth, however, comes from its wheat crop, which in 1919 amounted to over 196,000,000 bushels. Canada ranks fifth in the list of wheat-producing countries of the world. Most of this crop is grown on the great plains in the west where climate and soil are so splendidly adapted to this crop. In the St. Lawrence valley, which has a shorter growing season owing to the colder winters, the principal crops are hay, oats and potatoes. In southern Ontario we find much of the climate and soil of western New York and Michigan duplicated. Here is the principal apple and small fruit growing region. From southern Ontario also come most of the dairy products of Canada, which is the greatest cheese making and cheese exporting country in the world. The output of cheese in 1919 amounted to 174,878,000 pounds, valued at $39,456,000. Butter making also ranks high as a dairy industry. In 1919 the provinces of Ontario and Quebec manufactured over 93,000,000 pounds of butter, valued at over $41,000,000.

Mineral Resources.—Like the United States, Canada has a large variety as well as a large extent of minerals. Throughout the length and breadth of the country minerals in paying quantities exist. Very little is known of the possibilities from a mineral standpoint of the practically unexplored northwest territory. It is calculated that deposits of gold, copper and nickel exist here in considerable quantities. Here is one of the largest areas of oil-bearing countries yet unexplored. Already oil fields have been found and the country gives every promise of having a much larger supply.

Gold, copper and iron are known to exist in paying quantities in four different sections. Gold is found in the Yukon territory, copper in the mountain region of British Columbia, and iron in the region about Lake Superior and also in Nova Scotia. Canada has virtually a monopoly in the production of nickel, the mines around Sudbury being the most productive in the world. Canada also has large deposits of mica and furnishes the market of the United States with practically the entire amount that is consumed here. Canada also produces between 80 and 85 per cent of the world's entire supply of asbestos. The principal mines of this mineral are located in the province of Quebec.

Canada has also large fields of coal but their location is such that the best advantage and use cannot be made of them. The great populous St. Lawrence Valley is almost devoid of coal, and has to import much of this mineral from the United States. The coal mines of Canada are known to extend over an area of more than 111,000 square miles, and may be conveniently divided into the bituminous coal fields of Nova Scotia and New Brunswick, the lignite fields around Manitoba and Saskatchewan, and the anthracite and bituminous fields in British Columbia, Vancouver Island and Queen Charlotte Island. It will be a great many years before this great western field will be fully developed. The lack of natural waterways and railroads will hinder the full development for some time to come. The cost of transportation of coal by rail for the eastern provinces is prohibitive and accounts for the fact that Canada has been importing from the United States over 20,000,000 tons of coal yearly for the last three years. The greatest asset of Canada is perhaps its forests. The total area covered by forests is estimated to be between 500 million and 600 million acres. Over 50 per cent of this area is covered with timber suitable for sawing into lumber. A large part of the remaining acreage is covered with timber suitable for use as paper pulp. From the standpoint of lumber resources Canada ranks third in the world. The principal varieties are spruce, Douglas fir, white pine, cedar; also hardwoods such as oak, ash, hickory and several varieties of the maple. There is also an abundance of hemlock, the bark of which gives rise to the tanning industry, which is especially prominent at Quebec. In 1918 the output of sawed lumber amounted to over 3,900,000 board feet.

Fisheries.—Canada also possesses some of the most extensive fishing waters in the world. Nearly four-fifths of the fishing waters of the north Atlantic region belong to Canada. Then there is the great Hudson Bay and the Pacific Coast. As in the case of the fishing waters in the United States, the principal variety of fishes are cod, haddock and halibut on the Atlantic coast, and salmon on the Pacific coast. The total value of all fish products marketed in 1918 amounted to over $60,000,000.

Fur.—Fur-bearing animals abound in considerable number in the vast sub-arctic forests of Canada, and fur trading has been an important part of Canada's activities since the earliest days of the French regime when that trade was monopolized by large proprietary companies. In this section are found furs of great value, including the beaver, sable, marten and black and silver foxes. An important fact to note in connection with the fur trade is that Canada no longer depends for its supply of skins on the trapping of wild animals, but is now breeding various fur-bearing animals on farms. Large farms are now given over in Canada to the breeding of foxes, Persian lamb, raccoon, mink, marten and skunk. The leading section in the matter of fur farming is found in the province of Prince Edward Isle. The export value of furs from Canada in 1919 amounted to over $13,000,000.

Manufactures.—The industrial development of this country is very small when compared with the resources that are capable of development. This is undoubtedly due to the fact that Canada is relatively a new country. Immigration from Europe has gone through the ports of the

southern Atlantic seaboard, while Canada has been out of the line of march. Three important factors have hindered manufacturing in this region, namely, the lack of a supply of labor, lack of adequate transportation facilities, and a small market for its product. In the matter of wealth of raw material and power, Canada is only equalled by the United States. However, Canada has made great strides in manufacturing development in the last thirty years. In 1892, according to statistics for that year, the value of the manufactured products amounted to something over $300,000,000. In 1917, the last year for which statistics are available, the output of manufactured products amounted to $3,015,577,000. There is a distinct movement among the people of Canada to build up the industries of that country in such a manner that all wants along the lines of manufactured products can be supplied at home. The "Made in Canada" movement is daily gaining strength. Some of the industries have a distinct advantage due to the cheapness of the raw materials, and hence we find that lumbering, grain and dairy industries are developed to a high degree. Also the pulp mills in the east have the advantage of location near the supply of spruce. The iron and steel industry is carried on in Nova Scotia in a small degree. The city of Sydney is the principal center, being located near supplies of coal, iron and limestone. There are also important steel works along the shore of the great lakes, especially at Toronto, Hamilton and Sault St. Marie.

Transportation Routes.—No country has more magnificent waterways than Canada. Here we find four great rivers; the Yukon, Mackenzie, Saskatchewan and St. Lawrence. All of these reach far into the interior and should be natural routes of trade. With the exception of the St. Lawerence none of these is of much commercial importance. All of the rivers are ice bound a considerable portion of the year, which prevents the full utilization of these streams. The fact that the St. Lawrence is icebound a portion of the year causes much of the trade to turn from its natural channel and seek an ocean port that is ice free, like New York City.

In the matter of railways Canada has a greater mileage in proportion to the population than any other country. According to figures of December, 1919, the total mileage of Canadian railways was 39,899 miles, or a little over forty miles of railroad to every ten thousand inhabitants. Three transcontinental roads connect the Atlantic and Pacific, namely the Canadian Pacific, Grand Trunk and the Canadian Northern.

Cities.—The commercial capital of Canada is Montreal. Although this city is a thousand miles inland it is a seaport. Geographically it has a better location than New York for it is nearly three hundred miles nearer Liverpool than New York and is also on the natural outlet for the Great Lake Basin of the United States and Canada. Ice is the factor that prevents it from seriously competing with New York and becoming the metropolis of the new world.

Quebec was formerly the most important city. It is the oldest city in Canada and has become prominent as a manufacturing rather than a commercial center. The building of a railroad bridge at Quebec has helped this city considerably in connecting it with the Atlantic ports of the maritime provinces.

Two other cities of importance should be mentioned, namely Halifax and St. Johns. Both of these cities are located on ice free harbors and are railroad terminals for trunk lines to the west.

The second city in size in Canada is the city of Toronto, located in the midst of a rich hinterland in the Ontario peninsula.

Going farther west we come to the city of Winnipeg on the prairies north of the Great Lake region. This city has become a railway center for the transcontinental roads of Canada and is located in the midst of the world's richest grain fields. No other city in the world has so large and undisputed a hinterland as Winnepeg. Were it not for the international boundary line this city would be a serious rival of Chicago.

Edmonton, a town a thousand miles north of the southern boundary of Canada is important principally as a fur depot and as the center for outfitting hunters and trappers and miners.

In General.—Commercially the Dominion of Canada is the best customer of the United States. Over 62 per cent of its imports come from the United States. We need her goods and she needs ours. When the time comes that this nation must become an importer of wheat and other raw materials, which may not be far off, it is then that we shall have to look to Canada as the great supplier of wheat. We need her wood pulp and lumber, and she needs the products of our sub-tropical regions as well as our machinery. Geographically the country is an extension of the United States, and the fact that people of the same language and race are on both sides of the boundary line does much to make each country the complement of the other.

SOUTH AMERICA

North America and South America are similar in shape, each having the form of a triangle. Each continent is widest in the northern section and narrows down towards the southern end. Each has a lofty mountain range on its western border; the Andes correspond to our

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ARGENTINE—Sheep dipping.

Rocky Mountain system, while the eastern range of mountains of the coast of Brazil corresponds to the Appalachian Ranges and the highlands of Guiana resemble somewhat the Laurentian highlands in northern Canada and Labrador. Furthermore the desert plateaus of the Salt Lake region correspond to those of Bolivia in the region of Lake Titicaca. The resemblance between the two continents is still further exemplified by its river systems. Each continent contains two great river systems. In South America the great Amazon system compares in position with the St. Lawrence system of North America, draining the northern part of the continent, while the great Parana and its tributary, the Paraguay, conform to the Mississippi and Missouri rivers of North America, and like the latter, run from north to south-draining the great interior of the continent. Again, the warm coast of Peru and Ecuador is a reproduction of that of western Mexico, and the heavy rainfall on the coast of North America is represented in South America by the region in southern Chile with its archipelagos covered with a large virgin forest. South America, then is a continent with large river systems, an abundance of fertile land and mountains, containing a vast wealth in minerals, that still remains in an almost natural condition, despite the fact that the white man discovered and settled in this region long before he settled in North America.

From the economic point of view the development of South America is very backward. With the exception of the coast regions it is almost uninhabited. This is especially true of the great interior. This is due largely to climatic conditions for about three-fourths of the continent lies in the tropical zone and is therefore not well suited to emigrants from temperate lands. Another factor that hinders development is that of race. Here is a continent, which with the exception of the basin of the Parana and Plata rivers and the valleys of Chile, is dominated by an inferior race. Probably more than 75 per cent of the population of northern South America is pure Indian, mixed Indian or Negro. Even the descendants of the early Spanish and Portuguese settlers in the tropical region lack the energy of their forefathers due to the enervating effect of climate.

Other geographic factors that have hindered the economic development of South America may be briefly mentioned as follows: This continent is far removed from other developed parts of the world. Like Australia it is off the main lines of travel. For ages the movement of temperate zone peoples has been east and west, and South America, facing Africa the most backward continent of the old world, has not had the benefit of being on the line of travel as in the case of North America. Another geographical factor that hinders development is that there are no deep indentations on the coasts such as are found in all other continents except Africa and Australia. This fact alone makes travel into the interior very difficult. The economic wealth and development of North America and Europe is in part due to their extent of coast line. No continent has more magnificient rivers than South America and for the most part they are navigable for great distances. However it is not always easy for boats to use them because of rapids and falls, while in the vast forest regions railroad building is difficult owing to the luxuriant growth of tropical vegetation.

Natural Regions.—Most of the wealth of South America is derived from its mountains and plains. This country, like all new countries, is still in the extractive stage of commerce in that most of its trade and commerce has to do with agriculture, mining and the products of the forests.

From a commercial standpoint the plains of South America are among the richest in the world. The great plains in this continent extend north and south over a distance of four thousand miles through

the interior. These plains are divided into three sections, called the Plains of the Orinoco, Plains of the Amazon and Plains of the La Plata. The plains of the Orinoco are for the most part in Venezuela. The climate here is very warm, but despite the heat and long periods of drought the grasslands of this plain are admirably suited to cattle raising. A little farther to the south the plains of the Amazon are found. These plains are covered with an abundance of vegetation and occupy about half the area of Brazil, as well as portions of Colombia, Ecuador, Peru and Bolivia. The great wealth of this plain is in its forest products, and is only very slightly developed for want of transportation facilities. No other part of the world offers so large a variety of valuable woods. Here is found the famous Para rubber tree which gives a great deal of wealth to the country of Brazil. The high temperature and heavy rainfalls of the region along the Amazon River are specially adapted to the growth of this tree. According to the variety of vegetation the plains of the Amazon may be divided into belts, each belt showing a different variety of products. The Palm Tree Belt occupies a region lying along both sides of the Amazon for almost its entire distance. Here we find the rubber and ebony trees as well as a variety of tropical fruits such as bananas, dates and cocoanuts from the higher slopes to the west. Another belt is known as the region of virgin forests and has an immense wealth of gums, rosins and medicinal plants, as well as cabinet and dyewoods. This region extends south from the mouth of the Amazon to Bahia, in Brazil. Farther south in the uplands of this valley is the coffee, tobacco and sugar region. Here is grown about four-fifths of the coffee that is consumed in the world. Coffee is Brazil's most important and valuable export. In this same region cotton is also grown to some extent.

The plains of the Parana, or the Plata, as the estuary is called into which the Parana system flows, are noted for the hardwoods of the northern section and the great wheat and pasture lands in the southern section. Along this river in Paraguay grow the hardest woods known, namely the lapacho, nandubay and quebracho. These hard woods rival teakwood in durability. However, it is in the southern section of these plains that there has been the greatest development. Live-stock raising and agriculture have been developed to such an extent that Argentina is to-day one of the great grain growing and meat producing countries in the world. East of the 64th meridian of longitude we find a climate somewhat like that in our states west of the 100th meridian. This section is of great importance as a future supplier of wheat. Only a small portion of the land is under direct cultivation but despite this fact over 5 per cent of the world's supply of wheat and corn come from this region.

Live-stock raising is also an important activity in this region. The great fertile pasture lands furnish an abundant supply of food. According to the latest figures Argentina has thirty million head of cattle and sixty-seven million head of sheep.

Along the entire western section of the continent the Andes Mountains extend their lofty peaks and high plateaus. Here is a region which in the torrid zone has every phase of climate from frigid through temperate to tropical. On the warm and calm coasts of Ecuador grows the famous cacao tree which produces the cocoa of commerce. Another important product from the Andean valleys of this region is quinine. This is the region of minerals, rubies and emeralds from the northern section. The silver mines in Peru and Bolivia have been worked for centuries and still have vast supplies of materials. Further south in Chile we come to the famous nitrate producing section which is so important an item in the commerce and trade of Chile. Over 85 per cent of the exports of Chile consist of nitrate products. Here also is the principal copper producing section of South America, while coal mines and fields are to be found in the section of Coronel, which is the chief coal port on this continent.

Manufacturing.—In the torrid zone the principal type of manufactures is that of articles made by hand. Thus we find in this region considerable work in pottery and leather. In Ecuador is the chief center for the making of the famous Panama hats, so called largely because of the fact that these hats are shipped into this country through the Panama Canal region. There are also some cotton mills in Brazil and Peru, especially wherever there is an abundance of water power to be had. In the temperate region manufacturing has made more progress. For example, the country of Uruguay has large trade in beef extract, while the making of flour, the refining of sugar and tanning of leather are activities largely carried on in Brazil and Argentina. Chile ranks high as an industrial country, having large steel works and smelteries of copper. Another very important industry of high rank in this country is the production of iodine. Next to nitrate and copper production this is a close competitor.

Cities.—The most important city in South America is Buenos Aires, in the Argentine Republic. This city has a population of over 1,600,000 and next to Paris is the largest Latin city in the world. It is the natural outlet of almost the entire continent, and with the completion of railways connecting this city with Santiago, in Chile, and the Bolivian plateau it will no doubt be the leading commercial city of this continent, as New York City is of the northern continent. Buenos Aires has the advantage of being located in the temperate zone and in the midst of a fertile land. The temperature is such that the people from Europe and other temperate regions seeking a home quickly adapt themselves to this locality.

Rosario, a city of two hundred thousand people, located on the Parana river, is in the center of the wheat growing section and because of its accessibility to ocean vessels it has become the port for the exportation of wheat in this region.

Tucuman, in the center of Argentina, is in the sugar producing region and its industries consist largely of sugar refining.

Mendoze, located in the western part of Argentina, is in the center of fruit growing and wine making. Because of its climate and products this region is often called the California of Argentina. On the Pacific coast most of the commerce of Chile passes through the Ports of Iquique, Antofagasta and Valparaiso. Neither of these cities has a good harbor. Iquique is the chief nitrate port. Here is a city that has grown up in a most forbidding place. Water has to be brought to it from the mountains over seventy miles away. The city is the result of the great deposits of nitrate in the Atacama Desert. Antofagasta is the chief port of the Bolivian plateau for goods sent towards the Pacific. Valparaiso is important as the port of Santiago and the terminus of an east and west railroad connecting the Atlantic and Pacific oceans.

In the tropical zone a few cities may be mentioned as being of commercial importance. Rio de Janeiro, a city of a million inhabitants, is the chief port of tropical South America. It has an excellent harbor and is an important coffee exporting port. Other cities that are important are as follows: Santos, in Brazil, is in the center of the coffee growing section; Para and Manaos, on the Amazon, are chiefly important as rubber ports; Potosi, in Bolivia, is remarkable for its silver mines; Guayaquil is important only as being the port for Quito. The chief cities in the north are Bogota, the capital of Columbia, Barranquilla, the outlet for the Magdelena River valley, and Caracas, the capital of Venezuela.

Foreign Commerce.—The bulk of imports to these countries in South America consists of manufactured products. As a result these nations buy largely from Europe. This is due in part to the fact that South America is near the ports of Europe and also that the people of this country favor Europe as a place to buy their products. From the standpoint of exports the bulk of her raw materials goes to the United States. The three great commercial nations of this continent are Argentina, Chile and Brazil. According to figures last obtainable the average annual exports of Argentina in animal and meat products amounted to over $161,000,000; the exports of Brazil show an annual shipment of coffee amounting to over $180,000,000, while rubber amounts to about $83,000,000 annually. The chief export of Chile is that of mineral products, sending out on an average of over $109,000,000 worth of these products.

From the standpoint of balance of trade the United States has suffered a great deal in its dealings with South American countries. This country has failed to make the headway that the merchants and traders of England, France, Germany and Italy have. This has in a large measure been due to the faults of American business methods. The following list of some of the measures that would aid in extending trade in the United States was printed in a pamphlet issued some years ago by the Pan-American Union.

1. The appointment of men of culture, tact and energy as ministers and consuls.
2. The sending of business representatives who are gentlemen and who speak Spanish, Portuguese or French.
3. The manufacture of articles to suit the local Latin American trade.
4. The giving of credit to reliable purchasers as is done by European shippers.
5. The use of greater care in packing goods for the long distance to be traveled and for the severe changes in climate.
6. The opening of North American banks in the principal cities of South America.
7. The investment of North American capital in South America.
8. The popularizing in our schools and colleges of the study of the Romance languages, history and institutions.

Trade Routes and Transportation.—As stated elsewhere, a serious drawback in the commercial and economic development of

South America has been its lack of transportation facilities. The continent has many large rivers but the lands about most of them are so impenetrable that no habitation is found any distance from the river banks. As a result, the ports along these rivers are usually small and concerned solely with the raw materials to be found close at hand. While the Amazon and the Parana systems can be likened to the St. Lawrence and Mississippi systems of North America, yet the former valleys are in no sense settled, unless we except the region near the mouth of the La Plata. Vast territories in central and western Brazil are without human habitation of any sort, either savage or civilized. The water sheds between the Orinoco, Amazon and Parana systems are very low and during the period of heavy rains the waters of the three systems mingle together. A dream of many South American engineers is a continuous waterway from north to south, by means of canals, to join the rivers together. This would make a short route from Panama and the ports of North America to Buenos Aires. However, due to the vast wilderness and lack of cities along the route such a waterway would probably be too expensive to build and maintain.

In the matter of railroad building there has been considerable development in the republics of Argentina, Chile, Uruguay and Brazil. There are two interoceanic railroads; one from Buenos Aires to Valparaiso and another from Bahia Blanca to Zapala, at the foot of the Andes, to be extended to the Pacific, at Valdivia. A line connects Montevideo and Rio de Janeiro which will be extended up the coast to Bahia and Pernambuco, where it will connect with Atlantic steamers from Europe and the United States, thus shortening the time from these ports to the ports on the La Plata river. A new line has been completed across Brazil from Corumba, a port on the Paraguay, eastward to Rio de Janerio. Chile has a railroad running from Tacna and Iquique south to Port Mont. This road is intersected by a number of short lines running east and west, touching the coast at various points. The topography of the country in northern Argentina lends itself readily to the building of roads, and hence we find a net work of roads in this section more dense than in any other country in South America. In addition to the two continental roads mentioned above there are routes tapping the Bolivian plateau, besides a number of short lines running between Bahia Blanca and Buenos Aires. Railroad building in Peru, Ecuador and Columbia is an expensive operation. Hence we find here only a few short routes. The same is true of the northern republics, as the topography and climate of these regions make the building of long railways unprofitable. Most of these lines run for only a short distance, affording an outlet to some port nearby. The highest railroad in the world is in Peru. It is at an approximate elevation of 16,000 feet above sea level.This road is only profitable because it can handle the ores from the Cerro de Pasco mines. Another interesting road is the line from Quito to Guayaquil. This road opens up no new trade routes but is located in the region which is rich in tropical fruits and cocoa. It will probably do a great deal toward stimulating the commerce of the city of Quito which, though located on the equator, is a thriving city with a temperate climate.

Another dream of railroad builders is a road connecting the two continents running from New York and Chicago to Santiago and Buenos Aires. This road would undoubtedly do a great deal toward opening up and developing the interior along the route but the jungle nature of much of the country through which it would have to pass lessens somewhat its practical value.

EUROPE

In General.—No other continent in the world has had more influence on the development of art, trade and science than the continent of Europe. The word "European" is synonymous with civilization. In fact civilization as we know it came from this continent. It was from this continent that sailors and merchants eager to find new markets finally circumnavigated the globe. Why has Europe played so important a part in the world? There are of course many answers to this question, but geography has played an important part in causing this continent to be a leader.

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The fallen statue of Rameses II at Memphis. The Tomb of Rameses was just above the new tombs recently found.

No other continent in the world has so many miles of sea coast. In no other continent are there so many deep indentations which bring all the different parts of the country within easy communication. In fact no part of Europe,with the exception of the eastern section, is more than a thousand miles from the sea, and much of the more important part of the continent is within five hundred miles of salt water. This factor alone had the tendency of encouraging trade and travel in the middle ages, and did much to bring the people of the various parts of the continent into touch with each other. This fact is an important one in that when people travel they discover new needs for themselves and this is the foundation of trade and commerce.

Another factor that has helped Europe maintain its leadership is the climate. According to its latitude, Europe should be frigid to a large extent; as a matter of fact it is temperate. For example, the British Isles are in about the same latitude as Labrador, while most of Europe is north of the latitude of New York City. Because of the east-west trend of the mountains the prevailing westerly winds can carry moisture and warmth far inland over the great European plain. This makes a most agreeable climate which is highly favorable to agriculture and other human activities.

THE BRITISH ISLES.

No other nation in the world has profited more from her geographical position than England. During ancient times and even down to the discovery of America, these islands were on the fringe of the world. But after the discovery of America these islands found themselves in the middle of the world with lines of trade coming to them from the western hemisphere, and at the same time facing the broad open European plain on the east. This position therefore, has made the British Isles the great distributors of commodities and England the greatest commercial nation in the world. Her insular position has also had much to do with her development, for being entirely surrounded by water, England has been less subject to invasion by foreign armies, and hence her resources have been preserved from the wastes that invading armies cause in an enemy country.

The supremacy of the British people in manufacturing trade and commerce is due in the main to the following factors:

1. Their insular position.
2. Their central location in relation to Europe and the Americas.
3. The deep harbors making nearly every section accessible to the sea.
4. Abundant supplies of coal and iron.
5. A favorable climate.
6. A heterogeneous race; Celt, Saxon, Dane and Norman.
7. Inventive genius.
8. Freedom from foreign wars.

Agriculture.—In the middle ages the population supported itself by growing its own products. To-day the entire group of islands is largely dependent on other nations for its supply of food. The limited area of land surface, and the owning of large estates by aristocratic families has forced the agricultural industry to be largely of the small farm type. The climate of this region is more favorable to cattle and sheep raising than to agriculture, and for centuries, England and the other countries comprising the British Isles, have been famous as growers of cattle and sheep. Cattle and sheep are even now fairly numerous. The principal crops are barley, oats, potatoes and flax, the latter being a product of Ireland.

Minerals.—It is from their mineral resources that the British people have gained their greatest advantage. England is the largest producer of coal in the world, and the British coal fields exceed in area those of the rest of Europe. The principal fields are located in northeastern England, southern Scotland and southern Wales. In normal times the British Isles produce over 300,000,000 tons annually. Much of this is exported to other countries, colonies and naval stations, but a large part is used to run the huge factories that turn out the world's greatest supply of manufactured products.

Manufactures.—Because of the presence of coal and also because of improvements and inventions, especially in the spinning and weaving of cloth, England was able at the beginning of the nineteenth cen-

tury to outstrip all rivals. With plenty of fuel and machinery that could be operated by cheap labor she was able to strengthen her place in the industrial world. As a result we find industrial England located in the north near the coal fields and also near the former pasture lands of sheep. Wool was the first industry of prominence in this locality. Here we find the woolen industry in such cities as Leeds, Bradford, Halifax, Huddersfield and Leicester. Leeds is one of the greatest industrial cities in England and is first in the manufacture of wholesale clothing and is also a large manufacturer of iron and steel.

The Parthenon, the Crowning Glory of the Acropolis
Publishers Photo Service

The cotton industry is located on the western slope of the Penine Range, where the moisture from the ocean winds is very favorable for the spinning of cotton. This industry centers largely in Manchester and the surrounding cities of Oldham, Bolton, Blackburn, Burnley and Preston. The raw material has to come from across the seas to these huge factories, most of the cotton coming from the United States.

Other types of manufacturing are to be found in large quantities, such as shipbuilding in Glasgow, Newcastle and Belfast. Tin is still obtained from the mines of Cornwall after centuries of production. Lead, zinc and copper are smelted at Swansea near the Welsh coal fields. Blast furnaces for smelting iron ore are found chiefly in Middlesborough, while special types of hardware and cutlery are made in Birmingham and Sheffield.

Cities.—The largest city of the British Empire is the city of London. That a large city should grow up at this point on the Thames was determined by its geographical location. The Thames River is an estuary for a considerable distance and faces two great rivers, the Rhine and the Scheldt, which invites commerce to, and from across the channel. Its position as the gateway of southern England and opposite the mouths of continental rivers has made this city one of the principal distributing centers in the world. English vessels bring the wares of the various countries of the world to London and then again reship them to other ports. It is today the world's greatest market for tea.

The principal city and port on the western coast of England is Liverpool. This city situated on the estuary of the Mersey river has become the great port for ship lines from America. Through this port most of the cotton, wheat, meat and tobacco is received.

Other ports of importance are Cardiff, the chief port for exporting anthracite coal; Manchester, which is reached by canal with the Mersey River; Hull, located opposite the Weser, Elbe and Kiel Canal; Glasgow, in Scotland, and Belfast, in Ireland. This city is the center of the flax growing region, the manufacture of linen as well as large shipbuilding works. Another city in Ireland which is of some commercial importance is the city of Londonderry. This city has been called the "Troy of the old World" in that it is a great center for the manufacture of shirts, collars and cuffs.

FRANCE

France has the advantage of fronting on two large seas. These two fronts, the Atlantic Ocean and the Mediterranean Sea, are factors that have done much to determine the political, religious and commercial life of this country. The broad level plain to the north, with the ports of Havre and Bordeaux opening toward England and America, have given France a share in the world's international trade, while the Mediterranean front has made her a potent factor in the trade with Africa and the Orient.

Agriculture.—On account of the excellent climate and splendid soil France is able to grow a large amount of agricultural products. The crowded condition of the country has made intensive farming a necessity. The small farms of France yield more wheat per acre than any other country, except Belgium, where like crowded conditions prevail. About one-half of the country of France is under cultivation, the principal crop being wheat. The general average yield of wheat is from 21 to 25 bushels per acre. This yield compared with the yield of 12 to 15 bushels in the United States and 10 bushels per acre in Argentina is an example of what intensive tillage would do towards increasing the supply of food in the newer countries.

Next to cereals, the most characteristic French crop is fruit. Because of the mild climate the grape can grow in all sections of the country. The principal region, however, is in the north of France in the Champagne district. Other sections where grapes are grown in considerable quantities are in the Rhone district and around Bordeaux, along the Garonne River.

Minerals.—France is relatively poor in minerals as compared with the other great nations of the world. Her largest deposits are in the northen provinces. The recent acquisition of Alsace-Lorraine and the Saar Basin have increased the area of coal fields to a considerable extent. Here also are large deposits of iron ore. The mineral resources of the country west of the Rhine have been one of the causes of much of the strife between the German and French nations for many centuries.

Manufactures. — French manufactures reflect in a great measure the temperament of the Latin races. Here manufacturing does not concern itself so much with quantity and bulk but more with artistic designs and value. Hence we find that the characteristic French manufacturers are for the most part concerned with the making of silk faorics, china and glassware, scientific instruments, jewelry, embroideries, wines and the canning of sardines and the small patotoes that are used in the high class restaurants of the large cities of the world. Another industry which is typical fo the French nation is the manufacture of the fine kid glove. The glove industry at Grenoble, in southeastern France, has for many centuries been most prominent. Nature placed the raw materials close at hand where hundreds of thousands of wild goats used to pasture on the mountain side. Nowhere in the world are kid gloves made that are of finer quality than the gloves of Grenoble, in France.

Transportation Routes.—France was one of the first nations to become a united country during the middle ages, and later became one of the leading commercial nations. A geographic factor that has favored the political and commercial unity of this country is its splendid system of rivers which radiate from the central portion of the country, thus making all parts of the country accessible. Almost all of these rivers are navigable and the various systems are connected by a system of canals which makes it possible to reach all points on the various river systems by boat. In the early days this was an important factor toward uniting the people. The chief rivers are the Seine and Moselle, in the north; the Loire and Garonne, in the west, and the Rhone in the east and south.

The Rhone is of the least value of all these routes largely because of its swift current and poor outlet to the sea.

France has a number of important railways leading into the surrounding countries. The most prominent are the routes from Paris to Berlin, Paris to Vienna and Paris to Turin, in Italy. The first two follow either the plain or pass through the low mountains to the east. The road to Italy reaches that country through the famous Mt. Cenis tunnel. A line also reaches around the end of the Pyrenees to Barcelona, in Spain, making that port virtually a French port.

Although France has a favorable position for commerce with excellent river and railroad systems and a coast facing on two seas, yet it is almost stationary in population and trade. The coast has no natural harbors. The principal harbors are Havre, Bordeaux, Dunkirk and Marseilles. Out from these ports goes a large amount of exports of small value, but because of the importation of very few raw materials the ships returning to France are not usually loaded, as is the case with ships returning to Great Britain. This in a measure accounts for the fact that France is not able to compete with England as a commercial nation.

GERMANY

In General.—Since 1871 Germany has made remarkable developments in commerce and industry, and previous to the Great War in 1914 was easily the greatest competitor of Great Britain in the matter of trade. Even to-day Germany possesses much of the natural resources that she had before the war, and the nature of the climate, soil and people is such as to warrant their playing an important part in the commerce and industry of the future.

Agriculture.—Because of the limited area of German territory and the sandy structure of the soil, which requires constant attention and the application of fertilizers, it is but natural that scientific farming should develop to a high degree in this nation. Here the worn out and old lands needed to be made sufficient to feed a fast increasing population. The prosperity of German agriculture rests upon the science of chemistry. While wheat is grown to some extent, the limited size of farms

and the cool and moist summers make the growing of root crops, such as sugar beets and potatoes, more profitable. Rye and oats are other staple crops of importance. However, sugar beet growing is the chief agricultural crop. This crop can be grown with profit on account of the supply of cheap labor, which is most essential to enable this crop to yield the greatest returns. In the year 1913 Germany was one of the largest exporters of beet sugar in the world.

Minerals.—In proportion as nations have been able to utilize their mineral wealth, especially coal and iron, have they secured a leading place in the commerce of the world. For this reason England, the United States and to some degree France were early in entering into competition for world commerce. Up to 1871 Germany was a rural nation of small farmers. It was only after she utilized the mineral resources at her command that this nation became a rival for world trade, and became one of the great industrial nations of the world. Great deposits of iron, silver and lead are found in the Harz and Erzgebirge mountains. Coal is scattered over a wide field, though some of the best fields are in the Saar Basin which is now under the control of the French. The need for new fertilization of the soil was instrumental in the development of the great potash fields.

Industries and Manufactures.—Iron and steel industries form the major portion of German manufacturing, especially the manufacture of machinery and scientific instruments of great value. Textiles also hold a prominent place in manufactures, especially cotton, woolen and silk. Beet sugar refining, and the making of chemicals play a large part in the commercial and industrial development of the land. It is interesting to note that there was an apparent relation between the chemical and munition plants. The fact that dye factories could be changed into munition plants accounts in a measure for the keen interest the German government and people took in the dye industry. The chief centers for the manufacture of iron and steel are Dusseldorf, Essen, Stettin and Kiel; silk goods at Kiefeld; cotton goods at Munchen; dyes at Elberfeld; chinaware at Meissen and the manufacture of toys and electrical machinery at Nuremburg.

Transportation Routes.—In the matter of railway communication Germany was in the lead of other European countries in mileage. Like the railways of England and France, which center in London and Paris, the railways of Germany center in its capital at Berlin. A net work of lines run out from this city to all the chief ports and other points in the interior. Lines run to Rotterdam, to Switzerland, Italy and Constantinople. Five great rivers enter the sea from the interior, which with the canals joining them give over seven thousand miles of water navigation. The rivers are the Rhine, the Ems, the Elbe, the Weser, and the Oder. Three of these rivers—the Rhine, the Ems and the Weser—flow into the North Sea; the others flow into the Baltic. The great German port before the war was Hamburg. This port, located on the Elbe River, is one of the natural gateways from England and America for goods entering Europe. It is the only natural Atlantic port that Germany possesses. Next in importance to Hamburg as a seaport is the city of Bremen, on the estuary of the Weser.

Although Germany is surrounded by other nations, still her position for commerce is far from unfavorable. Occupying a large portion of the northern plain in Europe it is in the pathway for routes following the lines of least resistance. In one sense, Germany is at the crossroads of commerce. By her system of canals and railways she is able to attract commerce from the Mediterranean countries as well as a share in the commerce moving east and west. With settled political conditions and a resumption of her former scientific practices in agriculture and industry, Germany will soon be on its feet again as a commercial nation.

BELGIUM

Belgium has a better geographic location for commerce and trade than any other continental country in Europe. It has the advantage of being directly opposite the great ports of the greatest commercial and industrial country in the world. This position, therefore, makes this country commercial rather than agricultural. The presence of iron and coal near by, together with markets in abundance, are further reasons why this country turns to manufacturing rather than to agriculture. This country is the most densely populated country in Europe, having about 659 persons to the square mile. This dense population could not possibly get its food from the soil and hence has to turn to some other activity to gain a livelihood.

Belgium is a great hive of industry, the chief, of which are linen, carpets, lace and diamond cutting. Belgium is the greatest lace manufacturing country in the world. Steel works abound in this country, especially near the iron and coal fields of southern Belgium. Glass working is another special type of manufacture based on the mineral close at hand.

The industrial centers are as follows: lace and carpet manufacturing center in Brussels; the woolen industry in Verviers; linen centers in Ghent; the making of steel and smelting of zinc in the Liege district; glass manufacturing in Charleroi.

The great commercial city of Belgium is Antwerp, the city of which Napoleon said "it held a dagger pointing toward the heart of England". This city lies some miles up the Scheldt River, and boats to reach it must first pass through Dutch territory. However, Antwerp is one of the great ports of the world, being a close rival of New York, London and Liverpool in the matter of tonnage clearances. In this city the diamond industry of Belgium has centered.

HOLLAND

Another small country which is very important commercially is the little kingdom of Holland. This country, with rich colonies in the East Indies, has become commercial rather than industrial. Since the sixteenth century Dutch traders have brought to Europe the spices and fruits of the Far East. Because of this fact Holland imports and exports the same commodity. A glance at her imports show that spices, coffee, sugar, tobacco and indigo hold a prominent share of that trade, while at the same time these same goods enter into her export trade in nearly the same quantities Holland, therefore, is a great distributor of goods and from her position on the North Sea and at the mouth of the Rhine and Scheldt she becomes a natural gateway to the plains of Europe.

The people of Holland have long been noted as breeders of dairy cattle. This is the home of the famous Holstein-Friesian cow which to-day holds a leading place as a milk producer. The abundance of rainfall makes this country an excellent pasture for dairy stock. The Dutch have also become famous as horticulturists and growers of vegetables. The tulip and hyacinth have been among the chief flowers for the markets of England and France. England is the great market for most of the vegetables of this country.

OTHER COUNTRIES IN EUROPE

Mediterranean Countries.—South of the Pyrenees and Alps are the two countries of Spain and Italy. The climate of these countries is largely sub-tropical. Each has in the past played a large part in the affairs of the world, but to-day neither ranks with their more northerly neighbors.

Spain, like France, faces two oceans or seas, but unlike France it is not able to take advantage of this position. This is largely due to the uniform coastline, backed up by a high plateau region, through which

Publishers Photo Service
The Porch of the Maidens of the Temple of Athena

no large navigable river opens the interior. In natural resources no country is better endowed as there is an abundance of coal, iron, copper, zinc, lead, sulphur, gold and silver. Bilboa, on the northern coast, is the principal industrial center, being located near large iron deposits. The great plateau region, however, affording no natural routes to the Mediterranean or the Atlantic, together with the character of the race, account in a large measure for much of the lack of industrial and commercial development of this nation. On the western coast the city of Barcelona is the chief seaport, being the terminus of a railroad leading north into France.

Most of the productive soil of Spain is unsuitable for agriculture. There are considerable natural grasslands, which have made the average Spaniard turn to herding rather than to agriculture. This country is a land of sheep raising which migrate from highlands to lowlands with winter and summer. This country is the home of the famous Merino sheep, noted particularly for its fine wool. Other animals characteristic of this region are horses, mules and goats. Because of the

dryness of the climate there are no forests in Spain, although the oak and the chestnut are found in the moist regions in the north. The chief forest product of Spain is cork; from Spain comes the world's chief supply of that wood. It grows mostly in the northeastern section of Spain over a very mountainous country.

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A Bird's-Eye View of Athens as Seen from the Acropolis

During the thirteenth and fourteenth centuries Italy was the chief commercial nation of Europe. At that time it was located in the center of the civilized world and was the point of convenience of all trade routes from the Orient, Africa and northern Europe. Since the discovery of America and the rounding of the Cape of Good Hope this country has lost much of its ancient importance as a commercial center.

The northern part of Italy is rich and prosperous both from the standpoint of agriculture and manufacturing. The rich soils of the valley of the Po afford an excellent, though limited, field for growing wheat, barley and rice. Here also are the larger cities, especially Milan, noted for its silk manufacturing, cotton at Genoa and woolens at Turin. In the southern section farming is much porer and there is practically no manufacturing of any kind. Naples, the largest city in Italy, is noted chiefly as a port of call for passenger traffic.

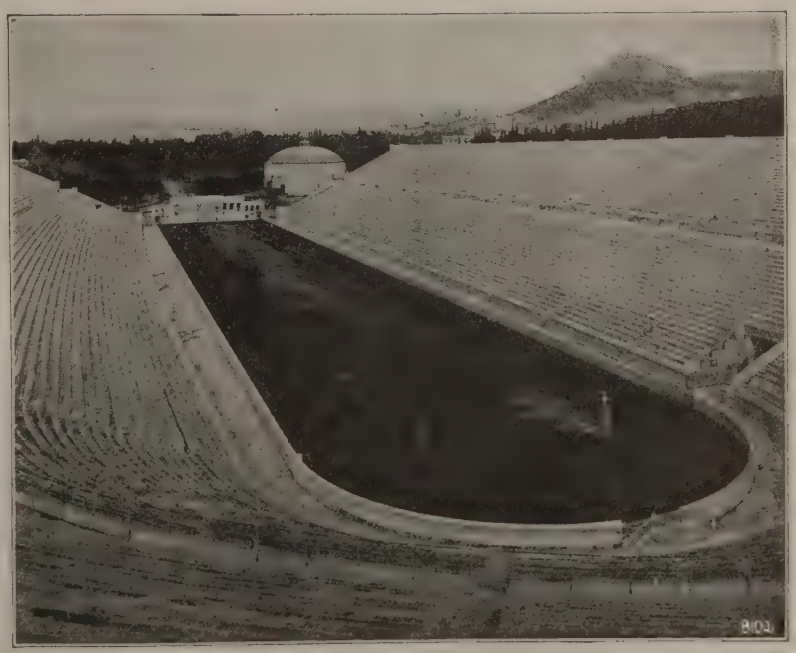
Italy is also poor in mineral products as well as in forest products. There is very little coal, a little iron and no petroleum. There is some zinc, lead and quicksilver. The most important mineral of Italy, is sulphur. The annual output of this mineral is over 300,000 tons.

The commerce of Italy is largely concerned with the exportation of raw silk, fruits and textiles. The climate is especially adapted to the growth of the mulberry tree, on which the silk worm thrives; while in fruits the climate and soil make grapes and wine, olives and olive oil, lemons, oranges, figs and nuts characteristic products for export. An important factor in the wealth of Italy is the large number of emigrants to other nations. These people through dint of work and saving send annually to the relatives and friends in the mother country hundreds of thousands of dollars.

One would not look for commerce or industry to be of much importance in the land-locked republic of Switzerland. Here is a country with no seaport or river reaching the sea and with a rugged mountainous topography making the soil unfit for agriculture. One writer calls Switzerland an economic paradox, because it is so poor by nature and yet, in normal times, stood in the front rank of European commerce in proportion to its population. Some of the reasons for this are to be found, first, in the fact that Switzerland has an abundance of water power. This resource makes up for a lack of coal. Nearly 300,000 horse power is used, while many times that amount is in reserve. No country in the world is richer in its water power. It is estimated that there is power enough in the waters of Switzerland to operate the entire Swiss railroad system and still have a considerable surplus for industry. Another factor aiding the commercial development of Switzerland is the proximity of three great commercial nations, France, Germany and Italy, which afford an excellent market for the products of Swiss manufacture. These manufactures are usually products that are of small bulk and great value, which makes it possible to send them to all parts of the world. Characteristic Swiss products are watches and clocks, leather goods, embroideries and silks, chemical products and fine machinery. Wherever handwork enters into the value of a product these people excel other Europeans. The centers of industries are Zurich, Basel and Geneva.

Switzerland also adds a great deal to its wealth on account of its wonderful natural scenery. Here we find the "playground of Europe" affording rest and sport to millions of tourists from all over the world.

Scandinavian Countries.—A study of these countries includes the nations of Denmark, Norway and Sweden. None of these nations enters into the commerce of the world to a large extent principally on account of their small size and also because of lack of coal, which is a most serious handicap. Denmark is to a large extent a sandy level plain, almost entirely surrounded by water, from which comes



The Stadium, Athens, Greece Publishers Photo Service

much raw and rainy weather. Farming is therefore one of the principal occupations of the country. Hence we find hay, oats, beet sugar, butter, cheese and eggs large items in the matter of export. Dairying is without doubt the chief specialty of the farmers of this country.

Denmark has one large city—Copenhagen—which is excellently located as a distributor of goods. It is situated on a water pathway leading into the central-eastern part of Europe.

Neither Norway nor Sweden is very rich in minerals, though we do find some iron, copper and a little silver. As in the case of Denmark, the great handicap is a lack of coal. Norway is more of a commercial nation than Sweden due to its geographical position on the ocean and its many good harbors. This fact has enabled Norway to have a relatively large share in the carrying trade of the world. Fishing is an important industry in both countries; the Norwegians are sailors by tradition and the fishing industry has had a tremendous influence in the life of the people.

Both Norway and Sweden have considerable forest lands; those of Sweden being larger and of greater value. Considerably more than one-third of Swedish exports consists of forest products. In Norway the principal forest products consist of pulp and matches.

Both of these countries have the advantage of having ice free harbors. Bergen and Christiania are the chief commercial and industrial centers of Norway, and Stockholm and Gothenburg are the chief trade centers of Sweden.

Russia.—European Russia may be compared geographically with Canada. In both countries we find vast rich plains suitable for the growing of wheat and other grains; both have a forest belt of great size and value, while in the northernmost sections are barren moss grown tundras, or frozen plains.

Nearly 40 per cent of Russia is heavily forested and therefore ranks as one of the foremost countries in the world in forest resources. Most of the forest land was owned by the state under the old regime and development was necessarily slow.

Though Russia is a land of peasants and agriculturists, yet in the main the land fit for cultivation is relatively limited. This is due to the large areas of tundras, forests and salt marshes in the southeast and the swamps in the west. In the Ukraine districts and extending eastward, is the famous black earth belt and the chief section for the growing of wheat. Wheat is exported while rye is largely used in bread for home consumption. The soil of Russia is especially suited to the growing of sugar beets. In 1913 over one million acres of land were devoted to the cultivation of this crop.

Next to the United States, Russia is the greatest producer of petroleum. Most of the supply is found in the region of Baku, on the Caspian Sea. Outside of this region petroleum has been found in small quantities in the Urals and in Turkestan. Russia is also rich in many minerals, especially platinum, gold, coal and salt. Before the Great War about nine-tenths of the world's supply of platinum came from this region. As a producer of gold Russia formerly ranked high. Most of the gold in Russia is found in the Ural Mountains.

Russia has developed very slowly, and because of political conditions, is still in a chaotic condition as far as trade and commerce are concerned. Much of this lack of development may be ascribed to its geography. Here is a vast level country with extremes in climate tending to hold back full development in any land. Then, too, Russia has no deep seaport that is ice free. The search for warm waters actuated the Russian political policy for the greater part of the nineteenth century. From the interior of this broad and level plain arise the great rivers, the Don, Dwina, and Volga. The really great river—the Volga—loses its commercial importance due to the fact that it flows into the Caspian Sea. Most of the other rivers are ice bound for many months of the year. Its principal seaports are Archangel, on the arctic White Sea, and Odessa, on the Black Sea.

From the commercial viewpoint Russia was chiefly important as a producer of foodstuffs and raw materials. This makes her a desirable neighbor of Germany, who has an abundance of manufactured products to sell in return for the wheat and lumber of this region. Fully 50 per cent of her imports came from Germany before 1914. In fact most of her manufactured imports came from Germany. It was only in the field of special machinery that the United States found a market in this country.

ASIA

Asia is not only the largest continent in the world, but in many repects it is the grandest and most interesting of the main divisions of the globe. Here we find the oldest nations in the world, the highest tableland and mountains on the globe and the most sparsely and densely populated sections in the world. Its commercial backwardness is in a large measure due to its geography. Here we find a huge continent, the large part of which is inaccessible. The east-west trend of the mountains causes great difference in climate between the middle northern section and the south. The change in climate between lower and western China and India is most marked. The great open, high plains, which are an extension of the fertile European plain, is largely a desert owing to the fact that the rains have become exhausted in their long march from the Atlantic. Civilization never went forward here in the same way it did in Europe except in sections where navigable rivers made trade possible, hence we find the Tigris and Euphrates valleys and the river valleys of China and India as the only seats of a form of civilization which existed in ancient times.

China.—The country of China includes the province of Mongolia, Manchuria, Kashgaria and Tibet. Here is a nation a third larger than continental United States, with a population of over 400,000,000, living under conditions which would be impossible for any other race. This country extends from the latitude of Jamaica to that of Labrador and has a corresponding variety of climate.

The most prosperous part of China is the eastern section where the valleys open toward the ocean, allowing the rain-bearing winds to go into the interior. This section is made up largely of three great river valleys, the Hwang-ho, the Yangtze-Kiang and the Si-Kiang. These river valleys contain very fertile soil, though in the Hwang-ho valley there is much loose soil which is destroyed by floods and earthquakes, thus making agriculture a hazardous undertaking. This is particularly true of the upper regions of this river.

The principal food of the Chinese is fish and rice. Every inch of available land is stripped of forests in order to prepare it for cultivation. The great demand for food and the fear of wild beasts have been the potent causes for the stripping of the forest lands in China. The principal agricultural region is in southern China. Here rice is the most important food crop. The Si-Kiang valley is the home of sugar and cotton, for the ancient traders had heard that in this far away land of "a reed that bore wool without sheep, and honey without bees". The principal hill products are silk and tea, the two commodities which originally opened China to foreign commerce.

In northern China and Manchuria the principal crops are beans and wheat. The city of NeuChang, on the Gulf of Liaoting, is the greatest bean market in the world. Manchuria, together with the province of Mongolia, rivals the United States and Canada in the amount of land adapted to the growing of spring wheat. Much of this region is pasture land where herds of cattle are kept. Here, as in Canada and the Argentine, is a future granary for the world. Aside from poultry and swine there are few domestic animals in China. This is largely due to an over-crowded condition and lack of food. However, farther west in central Asia one finds sheep, goats, horses and camels.

It is believed that some of the greatest fields of coal in the world may be found in China. Already vast deposits have been discovered in the province of Shansi. It is claimed that this region contains twenty times as much anthracite coal land as the United States. Other valuable anthracite deposits are known to exist in the province of Hunan. Bituminous coal is found in many of the other provinces, and in Manchuria. These coal fields lie mostly in horizontal seams, making it possible to mine the coal under more favorable circumstances than in the United States. Then, too, these fields are conveniently located near iron. These two minerals are near each other in the Shantung Peninsula.

Other minerals of considerable quantity and value are to be found in the southwestern province of China on the plateau of Yunnan. Here silver, lead, tin, gold and sulphur are mined. These same minerals are also found in the Shantung Peninsula, and in the Shansi Mountains.

The characteristic type of Chinese manufactures is of the handwork variety The Chinese have been very slow to take on new ideas. Religion has had a most marked effect on the commercial and industrial development. The old Confucian motto, "Walk in trodden paths" has kept this race from trying new ideas in all phases of life. However, modern machinery has been introduced, especially in the cotton mills. The making of India ink, the carving of wood and ivory, the manufacture of paper, matting, bamboo, fans and fireworks are the chief products of Chinese industry.

Another great handicap to the development of China is the lack of transportation and communication facilities. Most of the transportation is carried on by river boats. The great rivers afford excellent facilities, but can only reach the sections contiguous to them. On land most freight is carried by wheelbarrow. This mode of trans-

portation is due mainly to the lack of good roads. For some reason, it never seems to have occurred to the Chinese to build or repair their roadways, and hence most of the so-called roads are nothing more than paths. A great deal of carrying is done by means of porters. In Manchuria some animal power is used, especially the horse and camel. The caravan trade across Mongolia to the west is carried by camels. Most of the tea for Europe goes this way as it is said that ocean travelling injures its flavor to some extent.

There are, however, a few railroads in China, built by foreign capital and builders. A branch of the Siberian railway crosses Manchuria to Vladivostok and Port Arthur. Another very important line commercially is the Pekin-Hankow line which is now over 775 miles long and will be extended to Canton, forming a great trunk line running north and south through a very rich and populous country. Still another trunk line joins Tientsin and Nanking with Shanghai. There is also a line built by the French connecting the copper and iron fields of Yunnan with the sea, the French-Indo-China.

The cities of first class importance are either river ports or sea ports. Some of the most important are Canton, Shanghai, Hankow, Tientsin and Pekin. Canton is a city of some 900,000 inhabitants. It is the chief silk market of China. Shanghai, at the mouth of the Yangtze Kiang River, is called the New York of China because of its great hinterland. This city is becoming a great distributor of American goods as it is here that most American imports and exports are handled. The largest city in China is the city of Hankow on the Yangtze Kiang river, located some 680 miles from the sea. It is a great tea market and is the meeting point of many trade routes radiating throughout central China. In the north, commerce centers around the gulf of Chihili. Tientsin, the river port of Pekin, is second only to Shanghai as a center of commerce. Pekin commands the rail and caravan routes through Mongolia to Siberia and Europe.

The principal exports of China are silk, tea, cotton, beans and hides. The bulk of trade is with Great Britain and the British possessions. American development has been hindered here for about the same reasons that hinder American development in South America. However, there is a noticeable improvement and there is every evidence that trade between the United States and China is bound to increase very materially within the next decade. China is the greatest potential market in the world to-day. Some day it will become a great consumer of manufactured goods, and the United States, nearer to it than Europe by ocean transportation, has a vital interest there.

Japan.—This country has been likened to Great Britain. Here is an island kingdom off a great continent, and, like Great Britain, a great commercial nation. The Japanese Empire consists of a string of islands extending along the coast of Asia from the Peninsula of Kamchatka to the Philippine Islands. These islands are for the most part mountainous and only a small part are fit for cultivation. Of the four main islands of the empire not more than 16 per cent is fit for the plow; hence the geography of the nation is such as to compel the inhabitants to turn to trade and commerce. A large part of the islands is under forest, covering a wide range of species. The most prevalent are the cypress, fir and cedar. In the island of Formosa grows the famous camphor tree which is of great commercial value. Great oak forests are found on the northern island of Yezo. Another tree of commercial importance is the lacquer tree, utilized largely for the preparation of varnish. A characteristic tree of Japan is the bamboo, which has innumerable uses.

Because of the crowded condition of the island and the small amount of arable land the farms of Japan are very small. Very few are over two acres, which means that every inch of soil must be cultivated very intensively. This also has the effect of lessening the number of cattle and livestock, for there is not pasturage sufficient to support them, hence meat and dairy products enter very little into the lives of the Japanese people. The principal agricultural crops are rice, silk and tea. On the tropical island of Formosa tobacco, sugar cane and hemp are important crops.

Coal deposits of considerable extent abound throughout the empire. The island of Yezo is said to contain two-thirds as much coal land as Great Britain. Immense coal fields are to be found in the island of Formosa. Other minerals are silver, lead, petroleum and sulphur.

Like the Chinese, the Japanese turn largely to handcrafts, and the principal products are fine paper, glass, oil cloth, matting, porcelain and metal work. Other notable industries are matches, cotton, silks and lacquer ware. Textiles are perhaps the most important of the modern industries and form about 20 per cent of Japan's exports. The modern industrial center is now at Ozaka, on the island of Hondo. This city has the advantage of being located near coal and water transportation. In this section is found the bulk of the population of the empire.

The railways of Japan are relatively numerous, though they are necessarily short. Lines traverse the island of Hondo as well as the islands of Kiu Shiu and Formosa. These roads have done much to develop commerce and trade, enabling inland cities and towns to turn to manufacturing by making them accessible to seaports.

Some of the important cities of Japan are Yokohoma, the commercial port facing the west; Nagasaki, where shipbuilding and iron works abound; Ozaki, the center for textiles; and Tokio the capital.

The crowded condition of the Japanese Empire, the small amount of land fit for the production of food, the growth of manufactures in that country are factors which are causing the Japanese to look elsewhere for lands to cultivate and for markets to distribute their commodities. These factors go far toward explaining the desire of the Japanese to control Korea, eastern Siberia and Mongolia. These provinces will go far towards increasing the food supply for the island kingdom. Also Japan is fast becoming a competitor of the great nations for the markets of China.

AUSTRALIA

Far from the common trade routes is the great island continent of Australia. This continent is nearly as large as the United States, being nearly 2,100 miles long and 1,000 miles wide. It has a very uniform sea coast, which is fringed for the most part by high mountains or hills which prevent easy access to the interior. The chief mountains border the coast on the east and southeast, condensing the moisture on the eastern slope and making three-fourths of the island dry for agriculture.

Australia is pastoral rather than agricultural. It has long been known as a great sheep raising country, and is now first among the nations of the world as a producer of wool. Sheep raising is most common in the state of New South Wales, while horses, beef and dairy cattle are raised considerably in Queensland and Victoria. The sparse population of the country and a good supply of pasturage

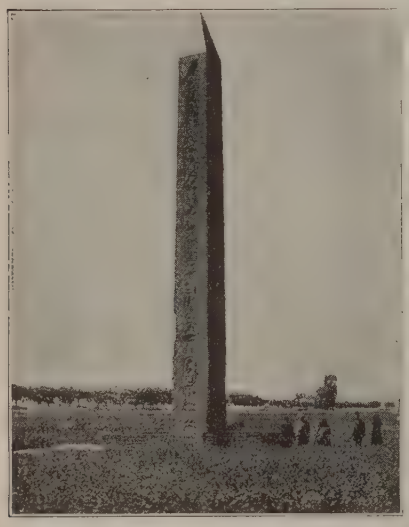
AN AUSTRALIAN WHEATFIELD

More than twelve million acres of wheat are grown annually in Australia. This scene shows a type of combined harvester.

are factors which are prominent in making pastoral pursuits among the chief activities of the people of Australia.

Australia as an agricultural country is seriously handicapped on account of its periodic droughts. Only in the eastern and southern sections do we find agriculture carried on to any extent. Even here it is sometimes too dry for profitable farming. For this reason Australia is not a reliable exporter of grain. Wheat is the leading agricultural crop, and though not as much may be harvested in the whole country as in one of the states in the United States, yet Australia is a large exporter largely on account of the small population at home.

In mineral supplies Australia ranks high. Her gold output for the year 1919 was over $70,000,000. Next to Africa and the United States, Australia ranks third as a producer of this metal. The mines in Victoria have shown a decline in production in the last decade, but the mines of the extreme western area have more than held their own. Tin is found in the north



Publishers Photo Service
The Obelisk of Heliopolis, the finest one left in Egypt

and east sections, and copper is found here in abundance. Australia also produces coal for export trade, the mines in New South Wales exporting coal across the pacific to Chile.

From the standpoint of manufactures Australia is interested mostly in those commodities connected with the raw materials that are close at hand. Hence most of the industries are those connected with meat packing, wool and leather. The small population of this country does not furnish a supply of labor that is adequate for any large amount of manufacturing.

Commercially Australia is very backward. One of the factors we have already named —the small population—has had much to do with retarding commercial progress. Another factor is the lack of adequate transportation facilities. Such railroads as there are, are made up of several different gauges, hence continuous transportation is very difficult. The south and east are the only sections connected by rail. Nor is there good water transportation. No large rivers enter the sea, and even the Murray River, which is navigable for a short distance, is almost too dry at times.

The principal cities of Australia are Melbourne and Sydney. These two cities contain nearly a quarter of the population and are the chief commercial centers of the country. Melbourne is located in the most

Publishers Photo Service
A pylon, or gateway, marking the entrance to the temple enclosure at Karnak, Egypt.

fertile part of Australia in the midst of grain, cattle and fruit farms. Sydney, the metropolis of the country, has the advantage of being located near coal fields and on a most excellent natural harbor. Other cities of importance are Newcastle, a coal port; Brisbane, Adelaide and Port Darwin.

NEW ZEALAND

Geographically New Zealand has a better location than Australia because it is in the belt of heavier rainfalls. The climate is temperate, being neither too hot in summer not too cold in winter. The rainy climate makes this island an excellent pasturage ground which will support many sheep and cattle to the acre. Like Australia, the people of New Zealand are mostly concerned with sheep raising. Meat packing, tanning of leather, butter and cheese are the principal processes of manufacture. Its exports consist chiefly of frozen meat, wool, butter and cheese.

AFRICA

This great continent, like South America, has never developed commercially as have the other continents to the east and north. In many ways the reasons that have kept South America backward are the same that apply to the backwardness of Africa. In

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EGYPT. Thebes. The Great Colossi that were once the main gate to the Hundred Gated City of Thebes.

the first place the large portion of the continent is in the Torrid Zone and hence has a climate not adapted to energetic people. The climate is much too dry in the northern section. The great Sahara Desert is a geographical barrier that prevented the commerce and trade of the Mediterranean countries from reaching into the heart of the continent. Again, like South America, Africa has an almost unbroken shore line and almost no harbors. Nor are the rivers of Africa of much advantage. The Nile, the Zambesi, the Congo and the Niger are among the greatest rivers in the world, but because of the numerous falls and rapids none of these rivers affords navigation to any extent from the sea to the interior.

For the most part the commercial importance of tropical Africa consists in its supply of tropical fruits, especially palm nuts, cocoanuts, cacao and rubber. The climate of this region is too enervating for agriculture to prosper, and the getting of a living is too easy to inspire much effort on the part of the inhabitants. The product of greatest value from this region is rubber, obtained along the Congo River. Copper has been found in Congo, but little has been developed.

In the southern end of the continent in the temperate regions the white man can thrive. Here the capacity for agricultural crops is great. Wheat and other temperate

© Publishers Photo Service
BRITISH EAST AFRICA—This is a lake of crystalized soda, twenty-five miles long and four miles wide. It is in British East Africa near the border of German East Africa. It contains sufficient carbonate of soda to supply the world for several years. The picture shows a huge block which has just been pried up off the bottom.

latitude crops are grown in abundance, and some are exported. South Africa has made one contribution to agriculture, namely ostrich farming. The raising of these birds gives South Africa a monopoly on the exportation of ostrich plumes, and the feather export amounting to $9,000,000, rivals that of wool as a money producer.

The great magnet that has attracted thousands of settlers to South Africa is gold and diamonds. This is the chief gold producing region in the world, exporting annually $175,000,000 worth of that metal. The diamonds of this same region form the most profitable of all the mineral industries. The principal diamond mines are to be found along the Vaal and Orange rivers. This region furnishes nearly the entire supply of these precious stones for the markets of the world.

That this country will play a greater part in the trade and commerce of the nations is a positive deduction. There are untold riches in minerals, forest supplies, water power and tropical fruits. Inland transportation has greatly increased in the last decade so that railroads penetrate from the Mediterranean almost to the Cape of Good Hope. On the west coast a number of short lines follow the coast or the river valleys.

The chief commercial centers are Alexandria, Cairo and Port Said in the north, and Kimberley, Johannesburg and Capetown in the south.

BOOKS FOR THE STUDY OF GEOGRAPHY ARRANGED BY GRADES

Reference Books for Teachers, Third Grade.—Long, *Home Geography*, very elementary (American Book Co.); Tarr and McMurry, *Home Geography*, first book, for grades three and four (Macmillan); McMurry, *Lessons in Home Geography*, illustrated lessons and excursions fully described (Macmillan).

Books for the Children's Shelf, Third Grade.—

Docas, the Indian Boy, Snedden (Heath).
Our Own Country, Dunton (Silver-Burdett).
Seven Little Sisters; Each and All (Ginn & Co.).
Around the World, first book, Carroll (Silver).
Geographical Nature Studies, Payne (American Book Co.).
The Snow Baby; Snow Land Folk, Peary (———).
Big People and Little People of Other Lands, Shaw (American Book Co.).
Children of the Palm Land, Allen (Educational Publishing Co.).

References for Teachers, Fourth Grade.—McMurry, *Special Methods in Geography* (Macmillan); McMurry, *Type-Lessons in Geography* (Macmillan); Trotter, *Lessons in the New Geography* (Heath); Frye, *Brooks and Brook Basins* (Ginn); McCormick, *Suggestions on Teaching Geography* (Public School Publishing Co.); King, *Methods and Aids in Geography* (Lothrop).

Books for the Children's Shelf, Fourth Grade.—

Around the World, second book, Carroll (Silver).
The Stories of My Four Friends, Andrews (Ginn & Co.).
Lodrix the Little Lake Dweller, Wiley and Edick (Appleton).
Hans Brinker; Life in Holland, Dodge (Scribner).
Heidi, Story of a Little Girl's Life in Switzerland, Spyri (Ginn).
Moni, the Goat-Boy; Boy's Life in Switzerland, Spyri (Ginn).
Four American Explorers, Kingsley (American Book Co.).
Great Navigators, Verne (Scribner).
Explorers of the Nineteenth Century, Verne (Scribner).
Wandering Heroes, Abraham, Isaac, Joseph, Price (Silver).
Little Cousin Series, several volumes, Wade (Page).
Family Flights, several volumes, Gale (Lothrop).
The World and Its People, three volumes, Dunton (Silver).
Story of Little Jan, the Dutch Boy; Konrad, the Swiss Boy; Mitzu, the Japanese Boy, Camphill (Educational Publishing Co.).
Ten Boys on the Road From Long Ago to Now, Andrews (Ginn).
Indians and Pioneers, Hazard and Dutton (Silver).

Reference Books for Teachers, Fifth Grade.—Tarr and McMurry, *North America*, second book (Macmillan); Redway, *The New Basis of Geography* (Macmillan); McMurry, *Type-Studies of North America*, part I. (Macmillan); Russell, *Lakes of North America* (Ginn); Shaler, *Nature and Man in America* (Scribner); Patton, *Natural Resources of the United States*, Science Primer series (American Book Co.).

Books for the Children's Shelf, Fifth Grade.—

Geographical Readers, separate books for each country, Carpenter (American Book Co.).
Picturesque Geographical Readers, six volumes, King (Lothrop). Each grade should be supplied with good wall maps and a globe, on geography; also separate state geographies.
Stories from Life; Stanley and Livingston, Marden (American Book Co.).
Around the World, third book, Carroll (Silver).
Little Journey Series—Switzerland, France, Holland, Italy, Germany, Australia, Japan, China, by different authors (Flanagan).
Around the World in the Sloop Pratt; Far West and Far East, Slocum (Scribner).
Pioneer History Stories; Pioneers of the Mississippi Valley, McMurry (Macmillan).
Pioneers on Land and Sea; Pioneers of the Rocky Mountains and the West, three volumes (Macmillan).
Heroes of the Middle West; The Story of Tonty, two volumes, Catherwood (Ginn).
The Boy Traveler; Travels in Many Lands, given in several volumes, Knox (Harper).
Zigzag Journeys, also an interesting series of journeys in separate volumes. Butterworth (Estes).
Boyhood in Norway, Boyesen (Scribner).
When I Was a Girl in Italy, Ambrosi (Lothrop).
In Eastern Wonderland, Gibson (Little).
Voyage of the Paper Canoe (Quebec to Florida), Bishop (Lothrop).

Reference Books for Teachers and Pupils, Sixth Grade.—Brigham, *Geographic Influences in American History* (Ginn); McMurry, *Type-Studies of the United States and North America*, part II. (Macmillan); McMurry, *Teachers' Manual of Geography* (Macmillan); *General Guide to the United States and Canada*; Tarr, *Economic Geology of the United States* (Macmillan); Houston, *Physical Geography* (Hinds).

Books for the Children's Library, Sixth Grade.—

First Crossing of Greenland, Nansen (Longmans).
The Yellowstone National Park, Chittenden (R. Clarke).
Arctic Alaska and Siberia, or Eight Months With the Arctic Whalemen, Aldrich (Rand).
From Trail to Railway Through the Appalachians, Brigham (Ginn).
The Story of Lewis and Clark, Kingsley (American Book Co.).
A Tramp Across the Continent, Lummis (Scribner).
Captains Courageous, Kipling (Century).
Roundabout Journeys, Warner (Houghton)
Oregon Trail, Parkman [read in part with class (Little).]
Viking Tales, Hall (Rand).
Geographical Readers; How the World Is Fed; How the World Is Clothed, Carpenter (American Book Co.).
Some Strange Corners of Our Country, Lummis (Century).

Reference Books for Teachers and Pupils, Upper Grades.—Tarr, *Economic Geology of the United States* (Macmillan); Redway, *Commercial Geography* (Scribner); Rocheleau, *Geography of Commerce and Industry* (Educational Publishing Co.); Rocheleau, *Great American Industries* (Flanagan); *Government Reports of Great Value;* Wright, *Industrial Evolution of the United States* (Scribner); George, *The Relation of Geography and History* (Oxford University Press); Ritter, *Comparative Geography;* Tarr and McMurry, *Geography*, third book (Macmillan).

Geographic Journals and Atlases, for Use in All the Grades.—

Atlas of Commercial Geography (Cambridge University Press).
New Gazetteer of the World (Lippincott).
New School Atlas (Longmans).
The Use of Government Maps, Davis and Others (Holt).
The Journal of Geography (Teachers' College, N. Y.)
Bulletin of American Bureau of Geography (Winona, Minn.).
The National Geographic Magazine (Washington).
The World's Work (New York).

Supplementary Reading for the Upper Grades.—

Travels and Essays of Robert Louis Stevenson (Scribner).
Dr. Luke of the Labrador, Duncan (Revell).
West From a Car Window, Davis (Harper).
Great World's Farm, Gaye (Macmillan).
Romance of Industry and Invention, Cochrane (Lippincott).
Java, the Pearl of the East, Higginson (Houghton).
My Arctic Journal, Peary (Contemporary Publishing Co., N. Y.)
In Wildest Africa, MacQueen (Page).
Story of the Philippines, Knapp (Silver).
Two Girls in China, Krout (American Book Co.).
Four Months in a Sneak Box, Ohio and Mississippi Rivers, Bishop (Lothrop).
Man of War Life, Nordhoff (Dodd, Mead & Co.).
Personally Conducted, Stockton (Scribner).
Holland and the Hollanders, Meldrum (Dodd).
The Spanish in the Southwest, Winterburne (American Book Co.).
The Land of the Long Night, Du Chaillu.
Glimpses of Three Coasts, Jackson (Little).

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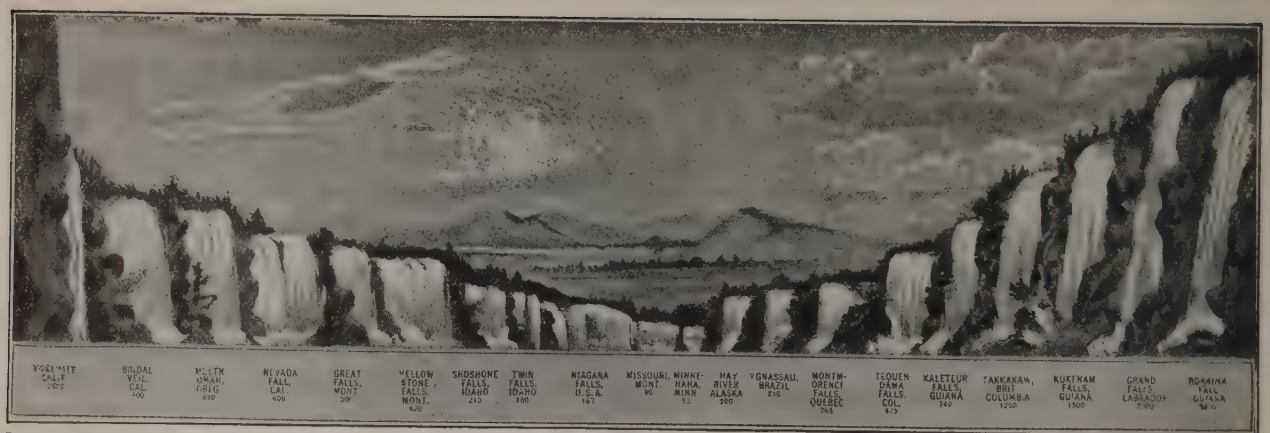
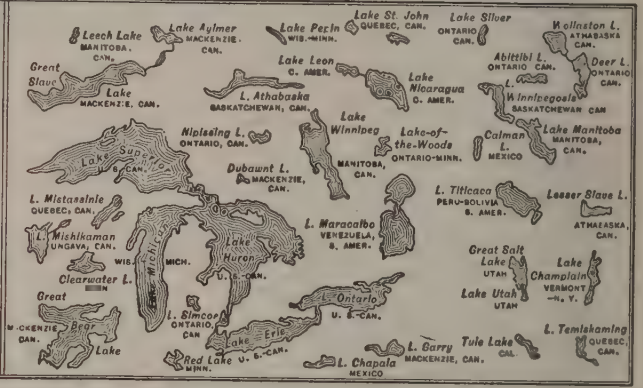
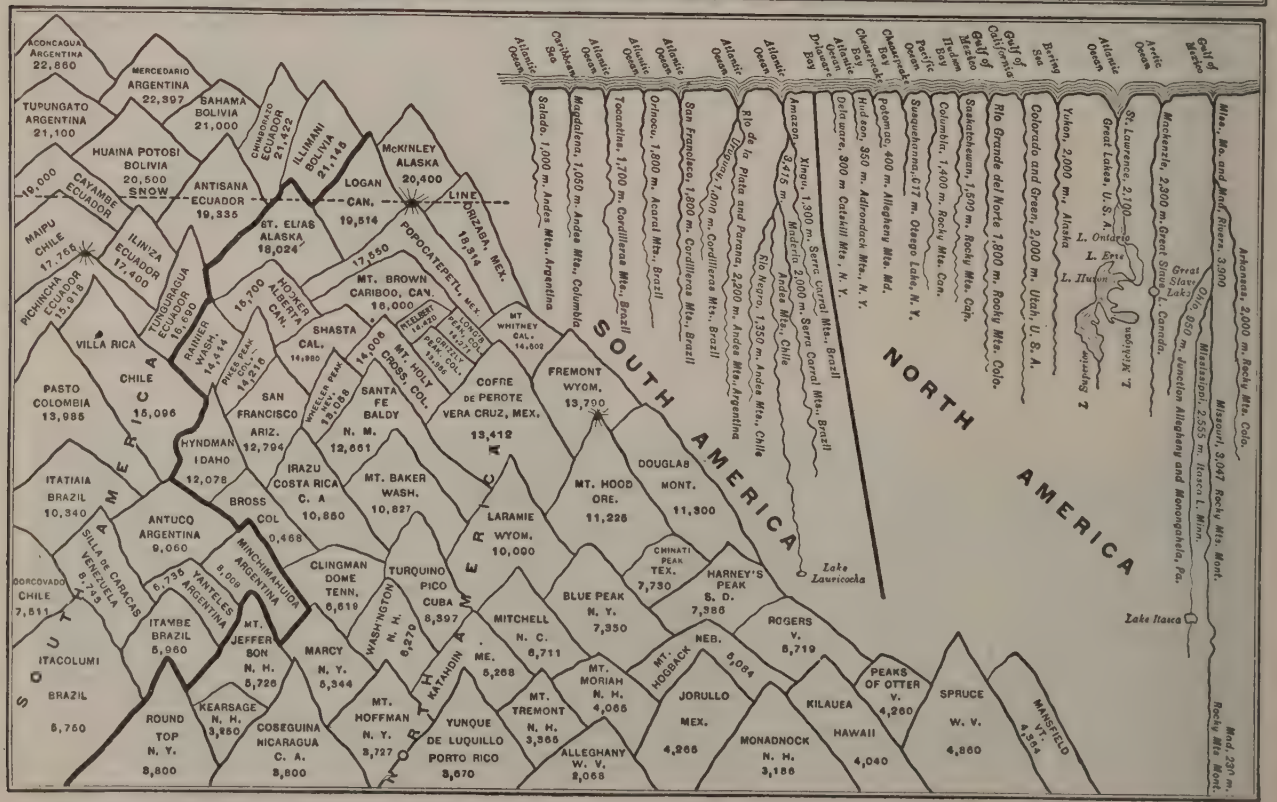
1—Testing placer ground. Gold has been discovered. In order to approximate its richness the prospectors drill the ground in places. From samples a value of the ground can be secured. 2—An exploring expedition starting towards the base of Mt. McKinley from the lowlands of the Susitna Valley.


YOSEMITE CALIF. 2600
BRIDAL VEIL CAL. 700
MULTN OMAH, OREG. 850
NEVADA FALL, CAL. 600
GREAT FALLS, MONT. 500
YELLOW STONE FALLS, MONT. 420
SHOSHONE FALLS, IDAHO 210
TWIN FALLS, IDAHO 180
NIAGARA FALLS, U.S.A. 167
MISSOURI, MONT. 90
MINNE-HAHA, MINN. 53
HAY RIVER ALASKA 300
YGNASSAU, BRAZIL 210
MONTM-ORENCY FALLS, QUEBEC 265
TEQUEN DAMA FALLS, COL. 415
KALETEUR FALLS, GUIANA 740
TAKKAKAW, BRIT COLUMBIA 1250
KUKENAM FALLS, GUIANA 1500
GRAND FALLS, LABRADOR 5400
RORAIMA FALL, GUIANA

Mouth of St. L.
NEWFOUNDLAND
NORTH
QUEEN CHARLOTTE
N. Pacif.
MIDDLE
S. Pacif.
SOUTH I.
S. New Zealand
KODIAK
S. E. of Alaska
DISCO I.
W. of Greenland
SAN YSABEL
Solomon Is.
JAMAICA
W. Indies
VANCOUVER I.
N. Pacif.
ANDROS IS.
Caribbean S.
ALBEMARLE
Pacif. O.
Galapagos Group
ST LAWRENCE
W. of Alaska
ICELAND
N. Atlan.
CUMBERLAND I.
Atlan. O.
ANTICOSTI
Gulf of St. L.
ELEUTHERA
Bahamas
SAN SALVADOR
Bahamas
CUBA
Caribbean S.
SANTO DOMINGO
Is. Haiti
CAPE BRETON I.
N. Atlan.
PORTO RICO
W. Indies
MANSFIELD I.
Hudson Bay
CURACOA
Caribbean S.
SOUTHAMPTON I.
Hudson Bay
CAPE VERDE I.
N. W. of Africa
SANTIAGO
Cape Verde Group
CHARLES
Galapagos Group
GEORGIA
S. E. of Patagonia
BAHAMAS I.
Caribbean S.
MARIGUANA
Bahamas
ABACO
Bahamas
PROVIDENCE
Bahamas
CRAB
off Port. Rico
GUADALOUPE
W. Indies
INAGUA
Bahamas
OWYE
W. of Japan
MARTINIQUE
W. Indies
CHLOE
W. of Chile
CAVIANA
ST. LUCIE
W. Indies
ST. VINCENT
W. Indies
GRENADA
W. Indies
TOBAGO
W. Indies
TRINIDAD
W. Indies
ANGUILLA
W. Indies
DOMINICA
Caribbean S.
BAO NICOLAO
Cape Verde Mouth of Amazon
BAO VICENTE
Cape Verde
SANTA MARIA
Azores
TERCEIRA
Azores
SAN JORGE
Azores
PICO
Azores
SAN MIGUEL
W. of Spain
FLORES
Azores
FALKLAND IS.
S. E. of Patagonia
AZORES
N. Atlan.
BAO ANTONIO
Caribbean S.
GRACIOSA
Azores


Leech Lake
MANITOBA, CAN.
Lake Aylmer
MACKENZIE. CAN.
Lake Perin
WIS.-MINN.
Lake St. John
QUEBEC, CAN.
Lake Silver
ONTARIO CAN.
Hollinston L.
ATHABASKA CAM.
Great Slave Lake
MACKENZIE, CAN.
Lake Leon
C. AMER.
Lake Nicaragua
C. AMER.
Abittibi L.
ONTARIO CAN.
Deer L.
ONTARIO CAN.
L. Athabaska
SASKATCHEWAN, CAN.
L. Winnipegosis
SASKATCHEWAN CAN
Nipissing L.
ONTARIO, CAN.
Lake Winnipeg
MANITOBA, CAN.
Lake-of-the-Woods
ONTARIO-MINN.
Calman L.
MEXICO
Lake Manitoba
MANITOBA, CAN.
Lake Superior
U. S. & CAN.
Dubawnt L.
MACKENZIE, CAN.
L. Mistassinie
QUEBEC, CAN.
L. Titicaca
PERU-BOLIVIA
S. AMER.
Lesser Slave L.
ATHABASKA. CAN.
L. Michikamau
LABRADOR, CAN.
Lake Huron
U. S. & CAN.
L. Maracaibo
VENEZUELA, S. AMER.
Great Salt Lake
UTAH
Lake Champlain
VERMONT
N. Y.
Clearwater L.
MANITOBA CAN.
Lake Utah
UTAH
Great Bear Lake
MACKENZIE CAN.
L. Simcoe
ONTARIO CAN
Ontario
U. S. & CAN.
Lake Erie
U. S. & CAN.
L. Temiskaming
QUEBEC, CAN.
Red Lake
MINN.
L. Garry
MACKENZIE, CAN.
Tule Lake
CAL.
L. Chapala
MEXICO


ACONCAGUA ARGENTINA 22,860
MERCEDARIO ARGENTINA 22,397
BAHAMA BOLIVIA 21,000
TUPUNGATO ARGENTINA 21,100
HUAINA POTOSI BOLIVIA 20,500
SNOW
CHIMBORAZO ECUADOR 21,422
ILLIMANI BOLIVIA 21,145
McKINLEY ALASKA 20,400
LOGAN CAN. 19,514
LINE
ANTISANA ECUADOR 19,335
CAYAMBE ECUADOR 19,000
ST. ELIAS ALASKA 18,024
ORIZABA MEX. 18,314
POPOCATEPETL MEX. 17,550
MAIPU CHILE 17,765
ILIMIZA ECUADOR 17,400
PICHINCHA ECUADOR 15,918
TUNGURAGUA ECUADOR 16,690
RAINIER WASH. 14,444
HOOKER ALBERTA CAN. 15,700
MT. BROWN CARIBOO, CAN. 16,000
ST. ELIAS 18,024
VILLA RICA
CHILE 15,096
PASTO COLOMBIA 13,985
SHASTA CAL. 14,380
MT. WHITNEY CAL. 14,502
MT. HOLY CROSS, COL. 14,006
COFRE DE PEROTE VERA CRUZ, MEX. 13,412
FREMONT WYOM. 13,790
SAN FRANCISCO ARIZ. 12,794
SANTA FE BALDY N. M. 12,661
HYNDMAN IDAHO 12,078
ITATIAIA BRAZIL 10,340
IRAZU COSTA RICA C. A 10,650
MT. BAKER WASH. 10,827
DOUGLAS MONT. 11,300
MT. HOOD ORE. 11,225
BROSS COL 0,468
ANTUCO ARGENTINA 9,060
LARAMIE WYOM. 10,000
CHINATI PEAK TEX. 7,730
HARNEY'S PEAK S. D. 7,386
SILLA DE CARACAS VENEZUELA 8,745
ACONCAGUA 6,738
YANTELES ARGENTINA 8,068
MINCHINMAVIDA ARGENTINA
CLINGMAN DOME TENN. 6,619
TURQUINO PICO CUBA 8,397
BLUE PEAK N. Y. 7,350
MITCHELL N. C. 6,711
ROGERS V. 8,719
NEB. 5,094
ITACOLUMI BRAZIL 8,760
ITAMBE BRAZIL 5,960
JEFFER SON N. H. 5,726
WASHINGTON N. H. 6,270
MARCY N. Y. 5,344
ME. 5,268
MT. MORIAH N. H. 4,066
MT. TREMONT N. H. 3,565
JORULLO MEX. 4,266
KILAUEA HAWAII 4,040
PEAKS OF OTTER V. 4,260
SPRUCE W. V. 4,860
MANSFIELD VT. 4,364
KEARSAGE N. H. 3,260
ROUND TOP N. Y. 3,800
COSEGUINA NICARAGUA C. A. 3,800
MT. HOFFMAN N. Y. 3,727
YUNQUE DE LUQUILLO PORTO RICO 3,670
ALLEGHANY W. VA. 2,068
SOUTH AMERICA
NORTH AMERICA
Salado, 1,000 m. Andes Mts., Argentina
Magdalena, 1,060 m. Andes Mts., Columbia
Tocantins, 1,700 m. Cordilleras Mts., Brazil
Orinoco, 1,800 m. Acaral Mts., Brazil
San Francisco, 1,800 m. Cordilleras Mts., Brazil
Rio de la Plata and Parana, 4,200 m. Andes Mts., Argentina
Rio Negro, 1,350 m. Andes Mts., Chile
Amazon, 3,615 m.
Xingu, 1,300 m. Serro Corral Mts., Brazil
Madeirin, 2,000 m. Serro Corral Mts., Brazil
Andes Mts., Chile
Lake Lauricocha
Delaware, 300 m. Catskill Mts., N. Y.
Hudson, 350 m. Adirondack Mts., N. Y.
Potomac, 400 m. Allegheny Mts. Md.
Susquehanna, 617 m. Otsego Lake, N. Y.
Columbia, 1,400 m. Rocky Mts. Can.
Saskatchewan, 1,500 m. Rocky Mts. Can.
Rio Grande del Norte, 1,800 m. Rocky Mts. Colo.
Colorado and Green, 2,000 m. Utah, U. S. A.
Yukon, 2,000 m. Alaska
St. Lawrence, 2,100 m. Great Lakes, U. S. A.
L. Ontario
L. Erie
L. Huron
Michigan
Lake Winnipeg
Great Slave Lake
Mackenzie, 2,300 m. Great Slave L. Canada
Ohio, 950 m. Junction Allegheny and Monongahela, Pa.
Mins., Mo. and Miss. Rivers, 3,900
Arkansas, 2,000 m. Rocky Mts. Colo.
Missouri, 3,047 Rocky Mts. Mont.
Mississippi, 2,553 m. Itasca L. Minn.
Lake Itasca
Miss. 29th m. Rocky Mts. Mont.

THE EARTH.—Shape and Size of the Earth.—The Earth is very nearly an oblate spheroid, whose shorter axis coincides with its axis of rotation passing through the two poles. It rotates at a velocity of 15 degrees an hour (about 17.366 miles a minute at the equator); 1 degree is therefore equal to 4 minutes.

The circumference of the globe is about 24,855 miles, and the diameter about 7,900 miles. More exactly—

Earth's equatorial semidiameter equals 3963.296 miles.

Earth's polar semidiameter equals 3949.790 miles.

Earth's mean semidiameter equals 3958.794 miles.

Earth's oblateness equals one-three-hundredth.

One degree of latitude at pole equals 69.407 miles.

One degree of latitude at equator equals 68.704 miles.

The temperature increases on an average about 1 degree F. for every 64 feet descent. But this amount is variable according to the locality, geological formation and dip of strata.

Chemical Composition.—By combining a large number of analyses of rocks of all sorts, F. W. Clarke has estimated the relative amounts of elements in the crust of the earth:

	Per Cent		Per Cent
Oxygen	47.02	Phosphorus	0.09
Silicon	28.06	Manganese	0.07
Aluminum	8.16	Sulphur	0.07
Iron	4.64	Barium	0 05
Calcium	3.50	Strontium	0.02
Magnesium	2.62	Chromium	0.01
Sodium	2.63	Nickel	0.01
Potassium	2.32	Lithium	0.01
Titanium	0.41	Chlorine	0.01
Hydrogen	0.17	Fluorine	0.01
Carbon	0.12		
			100

The Magnetic Poles.—The geographical poles of the earth are the extremities of the imaginary line passing through its center of gravity and about which it revolves, and are therefore symmetrically located with regard to the equator.

It is common to speak of the magnetic pole in the northern hemisphere as the "north" magnetic pole and the one in the southern hemisphere as the "south" magnetic pole, but the scientist who speaks with greater accuracy will tell you that the north pole of your compass needle will be attracted only to a south magnetic pole and his explanation is this:

If a dipping needle is moved along a long bar magnet, the north end of the needle will dip down vertically when it is directly over the south pole of the magnet. North and south poles attract each other. Two north poles repel each other. The law of magnetic poles is the same when the earth is one of the magnets and a compass or dipping needle is the other. It follows then that near the north geographic pole of the earth there is a south magnetic pole. This is beneath a point where the needle dips 90°. Tests have located this point approximately in King William's Land, Canada, in about 95°30′ west, 70°30′ north and covers considerable area. Over the south magnetic pole the north end of a dipping needle points downward.

The position of the north magnetic pole in the southern hemisphere has been located approximately in latitude 71° south and longitude 150° east by Mr. E. N. Webb who went on an expedition led by Sir Douglas Mawson in 1912. Here the south end of a dipping needle points vertically downward.

The earth is a huge magnet surrounded by lines of magnetic force which enter the south magnetic pole in the northern hemisphere, and come out of the north magnetic pole in the southern hemisphere. It is these lines of force which direct a compass needle.

By reason of the annual variation of the magnetic needle, it is believed that the magnetic poles are not stationary, but have a slow motion around the geographical poles.

The Land.—The land covers 55,063,000 square miles on the assumption that 250,000 square miles of land remain to be discovered within the arctic regions, and that the supposed antarctic continent has an extent of 2,500,000 square miles within the antarctic circle.

Heights and Depths.—The mean height of the land has been estimated at 2,440 feet; the mean depth of the sea, 11,470 feet (Karstans); the greatest depth of the ocean as yet discovered (in the Pacific, between Guam and Midway) is 31,614 feet. If the whole of the solid crust of the earth were to be leveled, so as to form a spheroid, it would still be covered by an ocean of a uniform depth of 8,000 feet (Prof. Penck).

THE OCEANS.—The oceans, including the inland seas connected with them, cover 141,877,000 square miles, or 72 per cent of the total surface of the earth. There are 2.59 square miles of ocean to every square mile of land. Murray states the greatest depth of the Atlantic Ocean at 27,366 feet; Pacific Ocean, 30,000 feet; Indian Ocean, 18,582 feet; Southern Ocean, 25,200 feet; Arctic Ocean, 9,000 feet. The Atlantic Ocean has an area, in square miles, of 24,536,000; Pacific Ocean, 70,000,000; Indian Ocean, 17,084,000; Arctic Ocean, 5,500,000; Southern Ocean, 30,592,000.

Antarctic Ocean.—Is situated about, or within, the antarctic circle. The great Southern Ocean is that part of the ocean which surrounds the world between the latitude of 40 degrees south and the antarctic circle. The northern portions of this band are often called the South Atlantic, South Indian and South Pacific, while the southern portions are usually called the Antarctic Ocean. The average depth of the continuous ocean which surrounds south polar land is about two miles; it gradually shoals toward antarctic land, which in some places is met with a short distance within the antarctic circle. Life is abundant in the surface waters, and at the bottom of the ocean. Only five navigators, Cook, Weddell, Ross, Scott, and Shackleton have crossed the 70th parallel south.

(See further, Polar Regions).

Arctic Ocean.—Lies to the north of Europe, Asia, and North America, and surrounds the north pole; it is usually defined as the water area within the arctic circle. Physiographically, the Norwegian Sea and Greenland Sea, situated between Norway and Greenland, belong to the same basin as the Arctic Ocean. If the Arctic Ocean be regarded as lying wholly within the arctic circle, then it is almost land-locked, between that circle and the parallel of 70 degrees north. It communicates with the Pacific by Behring strait, and with the Atlantic through Davis strait and the wide sea between Norway and Greenland. The area of the ocean is about 5,500,000 square miles, and into it there drain about 8,600,000 square miles of land.

The coasts of Europe and Asia are low, and have several deep indentations, the principal being the White Sea and Gulf of Obi. The shores of North America are skirted by a most irregular assemblage of islands, forming numerous gulfs, bays, and channels.

(See further, Polar Regions.)

The Atlantic Ocean.—The Atlantic Ocean separates the old world from the new, and has been likened to a longitudinal valley divided by a series of submarine plateaus into an eastern and western half. Upon these plateaus there rise the volcanic islands of the Azores, St. Paul, Ascension, and Tristan da Cunha. The ocean, including the Mediterranean and other inclosed seas, covers an area of 34,301,400 square miles. Its greatest depth (4,561 fathoms) has been sounded to the north of the Virgin islands, and has been named the "international deep."

The currents are primarily originated by the wind. The trade winds, which blow from the northeast and southeast toward the equator, give rise to the northern and southern equatorial currents, which are deflected on reaching the coast of the new world, a portion of the water returning toward the Gulf of Guinea (equatorial current or Guinea current), a portion following the coast of Brazil, and another portion entering the Caribbean Sea and the Gulf of Mexico, whence it issues as the gulf stream. It is to the warm waters of this stream that western Europe owes its mild climate and freedom from icebergs. The cold currents flowing out of Baffin bay, southward along the coast of North America, and from the cold Southern Ocean along the east coast of South America and the west coast of Africa, produce a corresponding lowering of the temperature.

Islands in the Atlantic.—*Iceland* (Danish).—39,756 square miles, population (1901) 78,470. The island consists in the main of a plateau, from which rise glacier-girt mountains (Jukōd) including twenty-nine volcanoes. The highest summit is Vatna Jökull, 6,955 feet. There are few trees, and the habitable part of the island does not exceed 16,200 square miles. Climate comparatively mild and equable. The fisheries and sheep-breeding are of importance. The exports include dried fish, wool, blubber, tallow, eiderdown, ponies, etc. Capital is Reykiavik, population 2,500.

Bermudas (British).—A group of coral islands in the northern Atlantic. Area 19 square miles, population (1901) 21,258, including 10,000 whites. Staple exports onions, potatoes, bulbs, nearly all being exported to the United States. Of the tonnage entered 88 per cent is British.

Azores.—A group of volcanic islands in the North Atlantic, mountainous (Pico, 7,710 feet), but fertile. Area 922 square miles, population 257,000, mostly Portuguese and Roman Catholics. The exports include oranges, wine, cereals, etc. The islands form an integral portion of Portugal. Capital is Ponta Delgado, population 17,000, on St. Michael's.

Madeira (Portuguese).—An island of volcanic origin, belonging to Portugal. Hilly (6,100 feet). Climate most equable, and hence sanatorium. Area 314 square miles, population (1900) 150,528, mostly Portuguese. Exports wine, sugar.

Canaries.—A group of islands of volcanic origin near the African coast, mountainous (Pico de Teide, on Tenerife, 12,190 feet). Area 2,820 square miles, population 358,564. Staple exports vegetables, bananas, cochineal. The islands form an integral portion of the kingdom of Spain.

St. Paul.—A rocky volcanic islet, nearly under the equator. Uninhabited.

Fernando de Noronha.—A hilly island with a Brazilian penal settlement.

Trinidad.—(British) 1862 square miles; population, 381,753; exports asphalt and crude petroleum.

Ascension.—A British island of volcanic origin, rising 2,740 feet. Area 38 square miles, population 430. Sanatorium and coaling station. Celebrated for its turtles.

St. Helena.—A British island of volcanic origin, rising 2,700 feet. Area 47 square miles, population 5,200.

Tristan da Cunha (British).—A group of islands in the southern Atlantic; 45 square miles, population 70.

Indian Ocean.—That great body of water which has Asia on the north, the Sunda Isles and Australia on the east, Africa on the west, and the Antarctic Ocean on the south. The Cape of Good Hope and the southern extremity of Tasmania may be considered its extreme southern limits on the west and east. Its length from north to south somewhat exceeds 6,500 miles, its breadth varies from 6,000 to 4,000 miles.

It is traversed by the equatorial current flowing east to west, and its navigation by sailing vessels is more or less modified by the periodic trade-winds and monsoons. Its chief arms are the Bay of Bengal on the east of India, and the Arabian Sea on the west, extensions of the latter being the Persian gulf and Red Sea.

Islands.—Some of the most characteristic coral atolls and islands are to be found toward the central part of the Indian Ocean, such as the great Maldive group, the Chagos, Diego Garcia, and the Keeling islands. Almost all the tropical shores are skirted by fringing and barrier reefs. Christmas island is an upraised coral formation. St. Paul's, Mauritius, Rodriguez, and others are of volcanic origin, while Madagascar, Ceylon, and Socotra are typical continental islands.

Pacific Ocean.—The largest of the great divisions of the ocean, occupying about one-half of the water-surface of the globe and more than one-third of the area of the world. It is almost landlocked toward the north, communicating with the Arctic Ocean by the narrow (40 miles) and shallow Behring strait, whereas it opens widely into the deep Southern and Antarctic oceans. Its length from north to south (the antarctic circle) is about 9,000 miles; its greatest breadth, at the equator, is over 10,000 miles; its area is approximately 70,000,000 square miles. The average depth of the Pacific appears to be greater than that of the Atlantic, and its bed more uniform. Recent soundings between the Friendly islands and New Zealand gave depths of from 5,022 up to 5,155 fathoms (nearly six miles) not far from Kermadec islands.

In the Pacific the tides never attain the maximum heights for which some parts of the Atlantic and Indian Ocean are celebrated. On all the west

coast of America the rise of the tide is usually below 10 feet, and only in the Bay of Panama does it vary from 13 feet to 15 feet.

The trade-winds of the Pacific are not so regular in their limits as those of the Atlantic, and this irregularity extends over a much wider region in the case of the southeast trade-wind than in the case of the northeast. The cause of this is the greater number of islands in the South Pacific Ocean, which, especially in the hot season, disturb the uniformity of atmospheric pressure by local condensations. The northeast trade-wind remains the whole year through within the northern hemisphere. The southeast trade-wind, on the other hand, advances beyond the equator both in summer and winter, still preserving its original direction. In the region stretching from New Guinea and the Solomon islands southeastward there are no regular winds. The zones of the two trade-winds are separated by regions of calms and of light winds, the limits of which vary of course with the varying limits of these zones. In the Chinese seas the terrible typhoon occasionally rages, and may occur at any season of the year.

Islands.—The Pacific Ocean is remarkable for the innumerable small islands and island groups which stud its surface, but the area occupied by the truly oceanic islands is very small; they are principally congregated toward the central and western portions of its basin, while the eastern portion is comparatively free from islands. The larger islands—Borneo, New Guinea, Celebes, Java, Sumatra, etc.—are continental. The oceanic islands—the Hawaiian islands, Ladrones, Carolines, Gilbert islands, Solomons, Fiji, Friendly islands, Samoa, etc.—of the Pacific are all either of volcanic or coral origin, the volcanic islands within the zone of coral-reef builders being fringed with coral reefs, while many are entirely of coral formation.

Early Navigation.—The Portuguese were the first Europeans who entered the Pacific, which they did from the east. Balboa, in 1513, discovered it from the summit of the mountains which traverse the Isthmus of Darien. Magellan sailed across it from east to west in 1520-21. Drake, Tasman, Behring, Anson, Byron, Bougainville, Cook, Vancouver, Laperouse, and others, traversed it in different directions in the seventeenth and eighteenth centuries.

POLAR REGIONS.—Antarctic.—The lands within or near the antarctic circle are imperfectly known, and a very large area around the south pole is altogether unknown. Among land-masses that have long been known to exist in the Antarctic Ocean, though our knowledge of them is very imperfect, are those to which have been attached the names Graham land, Victoria land, Wilkes land, Enderby land, South Shetland islands, etc. The antarctic regions are even colder and more inhospitable than the arctic, and partly on account of their remoteness from maritime nations there have been fewer efforts at their exploration, the south pole being far less a goal of discovery than the north.

Discoveries.—In 1841-2 Sir James Ross reached the highest south latitude attained till recent years, discovering Victoria Land (extending to about 79° south latitude) with its volcanoes Erebus and Terror. His farther progress south was checked by a barrier of solid ice, which he judged to be 300 feet high in parts, and after sailing along this for 100 miles without discovering any break in it he found it stretching away as far as the eye could reach.

A point slightly farther south was attained in 1900 by E. Borchgrevink, but the next great and important advance was made by Capt. Scott, R.N., in command of an English expedition, one of four that set out from Europe to explore the Antarctic Ocean early in the twentieth century. Capt. Scott, who was in command of the *Discovery*, reached Ross' farthest point early in 1902, and then coasted eastward along the great ice-barriers, reaching a mass of high land in longitude 152°-160°, which was named King Edward VII. Land. Turning back to the neighborhood of Mts. Erebus and Terror (found to be on an island, not on the mainland), he made a great sledge journey to the southward, which brought him to latitude 82° 17′. The expedition returned in 1904.

An Antarctic expedition was made by the *Nimrod* in command of Lieut. E. H. Shackleton, of the British navy, in 1908-9, during which a latitude of 88° 23′ was reached—at a point 110 miles from the south pole.

On March 8, 1912, Capt. Roald Amundsen announced that on Dec. 14, 1911, he, with four men and eighteen dogs from his ship, the *Fram*, reached the south pole. Here on a vast plateau, 10,500 feet above sea level, Amundsen unfurled the Norwegian flag and named the discovered region, King Haakon Land. At the time of discovery the temperature was 9.4 degrees below zero.

ANTARCTIC EXPLORATION

Commander	Nationality	Date	South Latitude	Longitude
J. Cook	British	1773	67° 5′	142° W.
J. Cook	British	1774	71° 15′	106° W
Bellingshausen	Russian	1820	67°	var.
Weddell	British	1824	74° 15′	34° W.
D'Urville	French	1840	66°	140° E.
Wilkes	British	1840	66°	var.
James Ross	British	1840	71° 56′	171° E.
James Ross	British	1843	78° 11′	161° E.
Larsen	Norwegian	1893	68° 10′	60° W
Christiansen	Swedish	1895	74° 0′	170° E.
De Gerlache	Belgian	1899	71° 36′	87° W.
Borchgrevink	Br.-Nor.	1900	78° 50′	165° W
Scott	British	1902	82° 17′	163° W.
Bruce	British	1904	74° 0′	24° W.
Shackleton	British	1909	88° 23′	
Amundsen	Norwegian	1911	Reached	pole Dec. 14
Scott	British	1912	Reached	pole Jan. 18

Arctic Regions.—Comprise the regions round the north pole, and extending from the pole on all sides to the arctic circle in latitude 66° 32′ north. The arctic or north polar circle just touches the northern headlands of Iceland, cuts off the southern and narrowest portion of Greenland, crosses Fox's strait north of Hudson's bay, whence it goes over the American continent to Behring strait. Thence it runs to Obdorsk at the mouth of the Obi, crosses northern Russia, the White Sea, and the Scandinavian peninsula, and returns to Iceland.

Though much skill and heroism have been developed in the exploration of this portion of the earth, there is still an area around the pole, estimated at 2,500,000 square miles, which is a blank to geographers.

Valuable minerals, fossils, etc., have been discovered within the arctic regions. In the archipelago north of the American continent excellent coal frequently occurs. The mineral cryolite is mined in Greenland. Fossil ivory is obtained in islands at the mouth of the Lena. In Scandinavia, parts of Siberia, and northwest America, the forest region extends within the arctic circle. The most characteristic of the natives of the arctic regions are the Eskimo. The most notable animals are the white bear, the musk-ox, the reindeer, and the whalebone whale. Fur-bearing animals are numerous. The most intense cold ever registered in those regions was 74° below zero Fahr. The aurora borealis is a brilliant phenomenon of arctic nights.

Islands.—Within the arctic circle, as far as discovered, islands cover an area of 1,233,000 square miles. The more important of these islands are:

Greenland.—838,000 square miles, of which 717,000 are within the arctic circle. The interior, a lofty plateau, is covered with a cap of ice, from which glaciers descend into the sea. Only 34,000 square miles are described as habitable. Population 11,895. Of trees there are only dwarf willows and birches, and a juniper tree in the extreme south. Fishing and hunting are the principal occupations. Exports are blubber, cod-liver oil, sealskins. Capital is Godthaab.

Arctic Islands of America.—529,000 square miles (432,000 square miles within the arctic circle). At most a thousand inhabitants. All the other islands within the arctic circle are uninhabited.

Spitzbergen.—2,570 square miles, a group of mountainous islands, accessible almost throughout the year along its western shore. There are reindeer, ice bears, foxes. The island is frequented by sealers and whalers, but has no permanent inhabitants.

Nova Zembla.—(New Land) 35,500 square miles. Samoyed fishing settlement.

Franz Josef Land.—7,400 square miles as far as known. No inhabitants, and difficult of access.

The Anjou Islands.—10,800 square miles, off the coast of Siberia, including New Siberia. Uninhabited.

Wrangel Land.—1,800 square miles. Uninhabited.

The most notable expeditions of discovery in the arctic regions are given in the following table:

ARCTIC EXPLORATION

Commander	Nationality	Date	N. lat. att'nd	Locality
John Davis	British	1587	72° 41′	West Greenland.
Wm. Barents	Dutch	1594	77° 20′	Nova Zembla.
Henry Hudson	British	1607	80° 23′	Greenland and Spitzbergen
Henry Hudson	British	1610	—	Hudson strait.
William Baffin	British	1616	77° 45′	Smith sound.
V. Bering	Danish	1728	70° 41′	disc. Bering Strait.
Tchelyuskin	Russian	1743	77° 48′	North Siberia.
J. C. Phipps	British	1773	80° 48′	Spitzbergen Sea.
William Scoresby	British	1806	81° 12′	East Greenland.
W. E. Parry	British	1827	82° 43′	Spitzbergen Sea.
John Franklin	British	1846	—	North Canada.
E. K. Kane	Amer.	1854	78° 45′	Smith Sound.
O. Nordenskiold	Swede	1868	81° 42′	Spitzbergen Sea.
C. F. Hall	Amer.	1871	82° 16′	West Greenland coast.
Julius Payer	Austria	1874	82° 5′	disc. Franz Josef Land.
G. S. Nares	British	1876	83° 20′	Grinnell Land.
Nordenskiold	Swede	1876–9	77° 41′	First northeast passage.
A. W. Greely	Amer.	1882	83° 24′	North Greenland.
Fred. Jackson	British	1895	81° 20′	Franz Josef Land.
Fridtjof Nansen	Norw.	1896	86° 14′	North of Franz Josef Land.
Duke of Abruzzi	Italian	1900	86° 33′	North of Franz Josef Land.
R. E. Peary	Amer.	1906	87° 6′	North of Grant Land.
F. A. Cook	Amer.	1908	—	Claimed to have reached the pole, April 21.
R. E. Peary	Amer.	1909	90°	Reached the pole April 6.

Grand Canyon, a gorge through which the Colorado River flows in Arizona; sixty-five miles from Flagstaff. It is one of the natural wonders with which that country abounds. The canyon is a gorge 217 miles long, or with the addition of Marble Canyon, connected with it, 286 miles. It is from nine to thirteen miles wide and 6,300 feet below the level of the plateau.

Mammoth Cave, a cavern near Green River, Edmonson County, Kentucky. The cave requires upward of 150 miles of traveling to explore its multitudinous avenues, chambers, grottoes, rivers, and cataracts. The main cave is 4 miles long, from 40 to 300 feet wide, and rises in height to 125 feet. The most interesting features of the cave are: The Chief City or Temple, covering an area of about four acres and having a dome of solid rock 120 feet high; the Star Chamber, about 500 feet long by 70 feet wide, with a ceiling 70 feet high, consisting of black gypsum dotted with many white points, which when the chamber is lighted, have all the appearance of stars; Silliman's avenue, 1½ miles long, 20 to 200 feet wide, and 20 to 40 feet high; Cleveland's Cabinet, an arch 50 feet wide, 10 feet

high and 2 miles long, covered with a variety of formations: the Mushroom, Abyss and Bottomless Pit, each of which is 20 feet wide and about 175 feet deep; and the river Styx, 450 feet long, and crossed by a natural bridge about 30 feet high. The cave contains various kinds of animals, and different sorts of fish. The latter include the famous eyeless fish, which are white in color. The atmosphere is pure and healthful and there is a temperature throughout the year of about 59 degrees.

Yosemite (yo-sem-i-te) **Valley,** one of the greatest natural wonders of North America, is in Mariposa County, California, about 140 miles southeast of San Francisco and midway between the eastern and western bases of the Sierra Nevada. It is a narrow valley at an elevation of 4,000 feet above the sea, and is itself nearly level, about six miles in length, and varying in width from one-half mile to a mile. On each side rise enormous domes and almost vertical cliffs of granite, one of them called the Half Dome, being 4,737 feet higher than the River Merced at its base, while the more important waterfalls are the Yosemite and the Bridal Veil.

Yellowstone National Park, a region mainly in Wyoming, United States, which in 1872 was withdrawn from settlement by the United States Government to become a park or tract for the recreation of the people. Its area, as fixed by Act of Congress in 1892, is about 5,000 square miles. The whole region exhibits an endless variety of wild volcanic scenery—hot springs, mud volcanoes, geysers, canyons, waterfalls, etc. The geysers are more remarkable than those of Iceland, and the Grand Geyser in Firehole Basin is the most magnificent natural fountain in the world. The Yellowstone Lake, one of many, is a magnificent sheet of water, with an area of 150 square miles.

INDEPENDENT COUNTRIES OF THE WORLD.—TABLE I.—GOVERNMENTS AND RULERS.

Country	Capital	Form of Government	Title of Ruler	Present Official Head	Born	Acceded	Population
Abyssinia Ethiopia	Addis Ababa	Feudal Monarchy	Empress	Waizeru Zauditu	1876	Sept. 27 1916	10.000.000
Afghanistan	Kabul	Monarchy	Amir	Amanullah Khan	June 1, 1892	Feb. 20, 1919	6.330.500
Albania	Tirana	Kingdom	King	Zogu I.	.....	Sept. 1, 1928	831.877
Arabia	.....	Native States	.....	.....	.....	.....	7.000.000
Argentina	Buenos Ayres	Republic	President	Hipolito Irigoyen	.....	Oct. 12, 1928	10.300.000
Australia	Canberra	British Dependency	.....	.....	.....	.....	6.138.882
Austria	Vienna	Republic	President	Wilhelm Miklas	1858	Dec. 9, 1928	6.526.661
Belgium	Brussels	Monarchy	King	Albert	April 8, 1875	Dec. 17, 1909	7.874.601
Bolivia	La Paz	Republic	President	Hernando Siles	.....	Jan. 10, 1926	2.599.398
Brazil	Rio de Janeiro	Republic	President	Washington Luis Pereira de Sousa	Oct. 6, 1870	Nov. 15, 1926	38.870.972
Bulgaria	Sofia	Monarchy	King	Boris III	Jan. 30, 1894	Oct. 3, 1918	5.483.125
Canada	Ottawa	British Dependency	Governor-General	Lord Willingdon	.....	Oct. 21, 1926	8.788.488
Chili	Santiago	Republic	President	Carlos Ibanez	1882	July 21, 1927	3 905 000
China	Nanking	Republic	President	Chian Kai-shek	.....	Oct. 10, 1928	375.000 000
Colombia	Bogota	Republic	President	Miguel A. Mendez	1867	Aug. 7, 1926	7.800 000
Costa Rica	San Jose	Republic	President	Don Cleto Gonso de Viquez	.....	May 8, 1928	471.524
Cuba	Havana	Republic	President	Gerardo Machado	1873	May 20, 1925	3.413.216
Czecho-Slovakia	Prague	Republic	President	Thomas G. Masaryk	1850	Nov. 14, 1918	13.613.172
Denmark	Copenhagen	Monarchy	King	Christian X	Sept. 26, 1870	May 14, 1912	3.434 555
Dominican Republic	Santo Domingo	Republic	President	Don Horacio Vasquez	.....	July 12, 1924	897.405
Ecuador	Quito	Republic,	President	Isidro Ayora	.....	Oct. 10, 1928	1.500.000
Egypt	Cairo	Kingdom	King	Fuad I	Mar. 26, 1868	Mar. 16 1922	14.168.756
Estonia	Tallinn	Republic	State Head	Jaan Tonisson	1868	Dec. 9, 1927	1 110.538
Finland	Helsingfors	Republic	President	L. K. Relander	.....	Mar. 1, 1925	3.526.000
France	Paris	Republic	President	Gaston Doumergue	Aug. 1, 1863	June 13, 1924	40.795.874
Germany	Berlin	Republic	President	Paul von Hindenburg	1847	April 26, 1925	62.500.000
Great Britain	London	Monarchy	King	George V	June 3, 1865	May 6, 1910	44.147.601
Greece	Athens	Republic	President (Provis'nl)	Paul Koundouriotis	.....	Aug. 22, 1926	5.447.077
Guatemala	Guatemala	Republic	President	Lazaro Chacon	.....	1927	2.119.165
Haiti	Port-au-Prince	Republic	President	Louis Borno	.....	May 15, 1922	2.300.200
Honduras	Tegucigalpa	Republic	President	Miguel Paz Barahona	1863	Feb. 1, 1925	773.408
Hungary	Budapest	Kingdom	Regent	Nicholas von Horthy	1867	Mar. 1, 1920	8.454.500
Iceland	Reykjavik	Kingdom	King	Christian X of Denmark	Sept. 26, 1870	May 14, 1912	99.836
India	Delhi	British viceroyalty	Governor-General	Lord Irwin (Edw. F. L. Wood)	.....	April 3, 1925	318.885.980
Iraq (Mesopotamia)	Bagdad	Kingdom	King	Feisal	1887	Aug. 23, 1921	3.000.000
Italy	Rome	Monarchy	King	Victor Emmanuel III	Nov. 11, 1869	July 29, 1900	42.706.082
Japan	Tokio	Monarchy	Emperor	Hirohito	April 29, 1901	Dec. 26, 1926	84.568.773
Jugo-Slavia	Belgrade	Monarchy	King	Alexander I	Dec. 17 1888	June 24, 1914	12 017 323
Latvia	Riga	Republic	President	Gustav Zengals	.....	1927	1.870.520
Liberia	Monrovia	Republic	President	Charles D. B. King	.....	1924	1.500 000
Lithuania	Kovno	Republic	President	Antons Smetona	.....	Dec. 17, 1926	2.228 368
Luxemburg	Luxemburg	Grand Duchy	Grand Duchess	Charlotte	Jan. 23, 1896	Jan. 9 1919	268 865
Mexico	Mexico	Republic	President (Provis'nl)	E. Portes Gil	1891	Dec. 11, 1928	14.308.753
Monaco	Monaco	Principality	Prince	Louis II	July 12, 1870	June 26, 1922	22.153
Morocco	Fez	Sultanate	Sultan	Moulai Mohammed	.....	Nov. 18, 1927	5.053.146
Nepal	Kathmandu	Kingdom	Maharajh	Tribhubana Bir Bikram	June 3, 1906	Dec. 11, 1911	5.639.092
Netherlands	Amsterdam, The	Kingdom	Queen	Wilhelmina	Aug. 31, 1880	Nov. 23, 1890	7.416.419
Nicaragua	Managua [Hague	Republic	President	Jose Moncada	.....	1929	638.119
Norway	Oslo	Kingdom	King	Haakon VII	Aug. 3, 1872	June 22, 1906	2.772.000
Panama	Panama	Republic	President	Don Florencio H. Arosemena	.....	Oct. 1, 1928	442.522
Paraguay	Asuncion	Republic	President	Jose P. Guggiari	Mar. 17, 1884	Aug. 15 1928	528.969
Persia	Teheran	Kingdom	Shah	Mirza Reza Pahlevi	Mar. 16, 1878	Dec. 6, 1925	10.000.000
Peru	Lima	Republic	President	Augosto B. Leguia	.....	Oct. 15, 1919	5.500.000
Poland	Warsaw	Republic	President	Ignatz Moscicki	.....	June 1, 1926	29.160.163
Portugal	Lisbon	Republic	President	Antonio O. de F. Carmona	.....	Nov. 29, 1926	5.628.610
Roumania	Bucharest	Kingdom	King	Michael	Oct. 25, 1921	July 20, 1927	17.393.149
Russia	Moscow	Republic	Chairman of Council	Alexis I. Rykov	.....	May 21, 1925	147 013 600
Salvador	San Salvador	Republic	President	Pia Romero Bosque	.....	Mar. 1, 1927	1.610.000
San Marino	.....	Republic	Great Council	60 members	.....	.....	12.952
Siam	Bangkok	Kingdom	King	Praja Dhipok	Nov. 8, 1893	Nov. 26 1925	9.831.000
Spain	Madrid	Kingdom	King	Alfonso XIII	May 17, 1886	May 17, 1886	22.127.700
Sweden	Stockholm	Kingdom	King	Gustaf V	June 16, 1858	Dec. 8, 1907	6.053.562
Switzerland	Berne	Republic	President	Robert Haab	1865	1929	3.936.330
Turkey	Angora	Republic	President	Mustapha Kemal Pasha Chasi	1880	Aug., 1923	13.641.810
United States	Washington	Republic	President	Herbert Hoover	Aug. 10, 1874	Mar. 4, 1929	120.013.000
Uruguay	Montevideo	Republic	President	Juan Campisteguy	1859	Mar. 1, 1927	1 762 451
Venezuela	Caracas	Republic	President	Juan Vincinte Gomez	.....	June 24, 1922	3.026.878

Table II.—Statistics and Industries, 1926

Countries	Population	Area Square Miles	Public Debt	Miles of Railroad	Miles of Telegraph	Standard Currency	Chief Industries	Leading Products and Exports
Abyssinia Ethiopia	10,000,000	350,000	.....	495	None	None	Grazing and agriculture.	Hides, skins, coffee, beeswax.
Afghanistan	6,330,500	245,000	.....	None	None	None	Agriculture and grazing.	Wool, skins, fruit, nuts.
Albania	831,877	17,374	.....	None	None	None	Agriculture, cattle and sheep raising.	Wood, corn, wheat, rice, tobacco, olives, oranges, fish.
Andorra	5,231	191	.....	.....	.....	.....	Sheep raising.	Cereals, fruit, vegetables.
Arabia	7,000,000	1,200,000	.....	.....	.....	Rupee	Grazing and agriculture.	Dates, wool, coffee, horses.
Argentina	10,300,000	1,153,418	.....	23,756	53,711	Gold	Grazing and agriculture.	Beef, mutton, wheat, hides.
Austria	6,526,661	32,369	$ 350,000,000	3,620	.....	Gold	Grazing and agriculture, machinery and textiles.	Grains, fruits, wine, cattle, salt, yarns, leather goods.
Belgium	7,874,601	11,752	2,000,000,000	2,954	96,516	Gold	Agriculture, forestry, manufacturing.	Textiles, leather, glass, iron, steel, zinc wares, sugar.
Congo	8,700,000	900,654	.....	1,623	.....	Gold	Mining and agriculture.	Rubber, palm oil, copal, ivory.
Bolivia	2,599,398	500,467	.....	1,170	7,000	Silver	Mining and agriculture.	Livestock, rubber, coffee.
Brazil	38,870,972	3,276,358	3,000,000,000	16,136	29,185	Gold	Mining, agriculture, lumbering.	Coffee, textiles, rubber, sugar, cocoa, cotton, cattle.
British Empire								
Australia	6,138,882	2,974,581	.....	24,485	62,619	Gold	Agriculture, mining.	Wool, sheep and cattle, dairy products, gold
British Africa	45,012,000	3,228,412	.....	16,930	40,696	Gold	Agriculture, mining.	Grains, tobacco, gold, silver, copper, diamonds, coal

TABLE II. STATISTICS AND INDUSTRIES—Continued

Countries	Population	Area Square Miles	Public Debt	Miles of Railroad	Miles of Telegraph	Standard Currency	Chief Industries	Leading Products and Exports
Canada	8,788,488	3,684,723	1,915,000,000	40,352	43,473		Agriculture, lumber, and mining.	Cattle, grain, lumber, coal, copper, metal
India	315,156,396 1,315,700	1,900,000	2,225,000,000	38,579	86,067	Gold	Agriculture	Sugar, cotton, rice, coffee, opium
New Zealand	1,407,165	103,862	£245,850,889	3,283	13,896		Agriculture, mining	Sheep, wool, cattle, butter
United Kingdom	44,147,601	94,284	37,769,000,000	20,396	81,000		Agriculture, mfg., commercial and mining.	Textiles, cutlery, coal
Bulgaria	5,483,125	39,824	486,000,000	1,824	3,701	Gold	Agriculture, grazing	Grains, cattle.
Central America								
Costa Rica	471,524	23,000	20,254,000	438	1,521	Gold		Coffee, hides, cedar, rubber
Guatemala	2,454,000	48,290	16,230,000	613	4,045	Silver		Silver, gold, coffee, rubber
Honduras	773,408	46,332	130,758,000	360	4,281	Silver		Bananas, coffee, sugar, gold, silver.
Nicaragua	638,119	49,200	18,596,000	200	3,637	Silver	Agriculture, mining, lumbering.	Mahogany, gold, gum arabic, coffee, rubber.
Panama	442,522	33,667						
Salvador	1,610,000	7,225	10,882,000	267	2,412	Silver		Coffee, rubber, sugar, tobacco.
Chili	3,100,000	289,796	225,664,000	5,105	18,181	Gold	Agriculture, mining	Grain, nitrate, copper, silver
China	400,800,000	4,277,170	859,500,000	6,467	42,097	Silver	Agriculture.	Silk, rice, tea, opium, indigo, cotton, sugar, eggs.
Colombia	7,800,000	476,915	22,316,000	708	11,721	Gold	Agriculture, mining	Cotton, sugar, coffee, gold
Cuba	3,579,507	44,164	65,923,000	2,359	5,065	Gold	Agriculture, lumbering	Sugar, tobacco, coffee, cotton, hard woods
Czechoslovakia	14,356,600	54,877					Agriculture	Grain, fruits, cattle.
Denmark	3,434,555	17,110	167,000,000	2,557	2,301	Gold	Agriculture, dairying.	Rye, barley, dairy products
Iceland	99,836	39,709					Farming.	Sheep, cattle, eider down.
Greenland	14,804	827,300					Hunting.	Furs, ivory, eider down, seal oil.
Dominican Republic	897,405	19,325	20,000,000	403	310	Gold	Agriculture.	Sugar, cacao, tobacco.
Ecuador	1,500,000	118,627	24,952,000	365	4,370	Gold	Agriculture	Cacao, ivory, nuts, panama nuts, guano.
Egypt	14,168,756	347,840				Gold	Agriculture, mining.	Cotton, petroleum, cereals, sugar cane
Estonia	1,110,538	18,355	22,000,000	1,160		Gold	Agriculture, dairying.	Wheat, rye, barley, potatoes, flax
Finland	3,526,000	149,641	34,618,000	2,527		Gold	Mining, agriculture	Iron, wheat.
France	40,938,847	212,659	34,842,993,000	31,958	120,738	Gold	Agriculture, manufacturing	Textiles, raw silk, wine, wool, coal
Algeria	5,455,408	222,180	34,787,000	2,793	9,665		Agriculture	Wine, wheat, fruit, dates
Tunis	2,159,758	50,000	68,936,000	1,252	3,118		Agriculture	Dates, palms, olives, wine
French Indo-China	19,844,181	265,004						
French Kongo	2,845,930	982,949					Agriculture	Rubber, palm oil
Madagascar	3,598,728	228,707					Agriculture, mining	Cattle, gold, sugar, coffee, rubber, graphite
Germany	62,348,782	185,589	40,000,000,000			Gold	Manufacturing, agriculture, commerce.	Iron, coal, drugs, chemicals, scientific instruments, wines, beer, linen
Greece	5,612,708	49,022	229,000,000	1,396	5,748	Gold	Agriculture	Fruits, wines, olive oil
Haiti	2,300,200	10,695	39,373,000	140	124	Gold	Agriculture, lumbering	Coffee, logwood, cocoa, mahogany
Hungary	8,454,500	35,901	2,035,000,000			Gold	Agriculture, mining	Wheat, corn, coal, iron
Iraq	3,000,000	142,240		811		Gold	Agriculture.	Wheat, barley, rye, millet, sesame
Italy	42,706,082	119,242	10,359,275,000	11,591	35,415	Gold	Agriculture.	Wine, silk, oil, sulphur, cotton, tropical fruits
Japan	83,458,405	260,738	1,099,370,000	7,690	25,821	Gold	Agriculture.	Rice, silk, porcelain, tea, sugar, textiles
Jugo-Slavia	12,017,323	96,134					Agriculture, mining	Cattle, grain, vineyards, coal, iron
Latvia	2,000,000	36,834	1,658,000				Agriculture.	Palm, oil, coffee, rubber, ivory
Lithuania	2,286,368	20,570					Agriculture	Castor, grain
Liberia	1,870,520	25,409					Agriculture.	Cereals, lumber.
Luxemburg	268,865	999	8,831,000	326	440	Gold	Mining.	steel, iron
Mexico	14,308,753	760,290	377,333,000	15,840	22,452	Gold	Agriculture, mining	Silver, gold, copper, coffee, tobacco, drugs
Monaco	22,153	8				Gold	Gambling.	Services
Morocco	5,053,146	231,000				Gold	Grazing, agriculture	Cattle, sheep, barley, olive oil
Nepal	5,639,092	54,000				Silver	Grazing, agriculture	Hides, drugs, furs, cereals
Netherlands	7,416,419	13,205	771,100,000	2,113	5,175	Gold	Agriculture, mining, manufacturing	Food products, drugs, textiles, sugar.
Borneo	1,971,000	206,810						
Celebes	1,878,473	76,679						
Java and Madura	30,098,000	50,577						
Moluccas	410,190	30,168	91,871,000	1,730	13,109	....	Agriculture, mining	Tea, coffee, rice, spices, sugar, quinine, tin, gutta
New Guinea	195,000	160,692						
Sumatra	5,848,868	163,128						
Surinam	70,007	54,291						
Newfoundland (including Labrador)	265,154	152,734	77,017,000	966			Lumbering, fishing, mining	Fish, seal oil, iron, ore,
Norway	2,772,000	124,964	456,751,676	2,231	7,468	Gold	Mining, lumbering.	Iron, copper, lumber, fish
Palestine	852,268	9,000	14,500,000	872		Gold	Agriculture.	Grain, fruits
Panama	442,522	33,667	19,921,588	301	1,004	Gold	Agriculture.	Bananas, rubber, cocoanuts, coffee
Paraguay	828,969	172,000	12,045,000	272	2,485	Gold	Grazing, agriculture	Meat, hides, tobacco, lumber
Persia	10,000,000	628,000		231	6,312	Silver	Agriculture, manufacturing	Carpets, wool, tobacco, fruits
Peru	4,500,000	697,640	34,015,000	1,724	9,321	Gold	Agriculture, mining.	Silver, copper, coal, cotton, wool, guano
Poland	29,160,163	154,340					Agriculture.	Cereals.
Portugal	14,777,477	35,490	190,015,000	2,040	4,671	Gold	Agriculture.	Wines, fruits, silk, cork, sardines
Roumania	17,393,149	122,282				Gold	Agriculture	Cereals, wines, petroleum
Russia	147,013,600	8,144,228		47,320		Gold	Agriculture, mining, trapping	Wheat, rye, oats, barley, flax, hemp, petroleum, platinum, gold, silver, lead, copper, manganese, and precious stones, furs
San Marino	12,952	38					Agriculture	Grain, livestock

TABLE II. STATISTICS AND INDUSTRIES—Continued

Countries	Population	Area Square Miles	Public Debt	Miles of Railroad	Miles of Telegraph	Standard of Currency	Chief Industries	Leading Products and Exports
Siam	[illegible]	[illegible]	[illegible]	1,651	[illegible]	Gold	Agriculture	Rice, teakwood, pepper, fish, grain
Spain	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Agriculture	[illegible]
Sweden	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Gold	Agriculture and Mining	Timber, iron, butter, cereals
Switzerland	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Agriculture and Mining	[illegible]
Turkey	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Agriculture	[illegible] coffee, wines, [illegible]
United States	[illegible]	[illegible]	[illegible] June 30, [illegible]	[illegible]	[illegible]	[illegible]	Agriculture, Mining and Manufacturing	[illegible]
Guam	[illegible]	[illegible]				Gold	Copra and Cocoanut oil	[illegible] potatoes, [illegible]
Hawaii	[illegible]	[illegible]	[illegible]	[illegible]		Gold	[illegible]	Tropical fruits, [illegible]
Philippines	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	Hemp, [illegible]
Porto Rico	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Manufacturing [illegible]	Sugar, coffee, tobacco, tropical fruits
Union of South Africa	[illegible]	[illegible]	[illegible]		[illegible]	Gold	Agriculture, Stockraising	Diamonds, wool, gold, ostrich feathers, grain
Uruguay	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	Agriculture and Grazing	Wool, hides, [illegible] meat products
Venezuela	[illegible]	[illegible]	[illegible]		5,514	Gold	Agriculture and Forest Products	Hardwoods, coffee, cocoa cattle

PANAMA CANAL

Panama is [illegible] south of Niagara Falls, within ten degrees of the equator. [illegible] "South Sea."
The climate of the Isthmus has a worse name than it deserves. [illegible] degrees. There is much rain.
[illegible] 1517, and in 1520 Charles V. ordered a survey, but the Church rulers killed the idea.
[illegible] 1855, the first train crossed.
For the haul of forty-seven miles [illegible] cents a cubic foot for [illegible] ages.
The French [illegible] assist in [illegible] the American Government bought out [illegible]
[illegible] came an independent state. On November 18, 1903, the Panama Canal [illegible]

Six days later the first Isthmian Commission was appointed by President [illegible]
[illegible] job until they were ordered home." In January, 1908, Colonel Goethals [illegible] was appointed the first Governor of the Canal Zone.
[illegible] which turned the water into the Canal.
The first ship passed entirely through the Canal in August, 1914.
[illegible] passenger.
Twenty-five hundred employees are necessary to operate the Canal.
There are three locks at Gatun, [illegible] ment being used.
The steel gates that [illegible] from 47 to 82 feet high. They weigh from 390 to 730 tons each.
The Panama Canal is the biggest job ever completed by man. By comparison the pyramid of Cheops and the Chinese Wall are insignificant.
[illegible]
The total cost of the Canal is approximately $375,000,000.
[illegible]
[illegible] New York than is San Francisco.
[illegible]

PROFILE OF THE PANAMA CANAL

STATES AND TERRITORIES OF THE UNION—

State or Territory and Area	Origin and Meaning of Name	Date of Admission Into Union	Settlement. Where, When, By Whom	Original Territory From Which Derived	Population When Admitted or Acquired	Miles of Railroad	Persons to Sq. Mile 1920
Alabama 51,998 sq. miles.	Indian—Here we rest.	1819	Mobile Bay, 1702, by the French.	Louisiana, Georgia and Mississippi and Alabama territories.	127,901	5,495	45.1
‡Alaska 590,884 sq. miles.	*Al-ay-eska*, meaning "the great country."	1867	Three Saints, 1784, by the Russians.	Purchased from Russia in 1867 for $7,200,000.		302.92	0.1
Arizona 113,956 sq. miles.	Indian—meaning "sand hills."	1912	Tucson, 1580, by the Spanish.	New Mexico territory.	205,000	2,413	2.9
Arkansas 53,335 sq. miles.	From a tribe of Indians.	1836	Arkansas Post, 1685, by the French.	Louisiana and Louisiana, Missouri and Arkansas territories.	97,574	5,294	32.8
California 158,297 sq. miles.	From an old Spanish romance.	1850	San Diego, 1768, by the Spanish.	New Albion, Upper California.	92,597	8,440	21.1
Colorado 103,948 sq. miles.	Spanish—Red, or Ruddy.	1876	Auroria, 1859, by the Americans.	Louisiana and Mexican cession. Colorado territory.	175,000	5,701	9.2
Connecticut 4,965 sq. miles.	Indian—Long River.	*1788	Windsor, 1636, by the English.	North Virginia, New England.	237,964	999	278.1
Delaware 2,370 sq. miles.	In honor of Lord De La Warr.	*1787	Wilmington, 1637, by the Swedes.	New Sweden, New Netherlands, three lower counties on the Delaware.	59,096	335	94.1
District of Col. 70 sq. miles.	In honor of Columbus.	1790	Rome, 1663, by the English.	Ceded to government by Maryland and Virginia.		36	6,292.8
Florida 58,666 sq. miles.	Spanish—Blooming	1845	St. Augustine, 1565, by the Spanish.	Florida territory.	87,445	5,279	16.4
Georgia 59,265 sq. miles.	In honor of George II.	*1788	Savannah, 1733, by the English.	One of the original thirteen states.	82,548	7,482	48.6
‡Hawaii 6,449 sq. miles.	From the native Owhyhee.	1898	Honolulu, 1820, by the Americans.	Sandwich islands.	154,001	149	3.0
Idaho 84,313 sq. miles.	Indian — Gem of the Mountains.	1890	Cœur d'Alene, 1842, by the Americans.	Oregon, Washington, and Idaho territories.	84,385	2,872	5.1
Illinois 56,665 sq. miles.	Indian—The Men.	1818	Kaskaskia, 1682, by the French.	Northwest, Indian and Illinois territories.	55,211	12,141	114.4
Indiana 36,354 sq. miles.	Indian's Ground.	1816	Vincennes, 1702, by the French.	Northwest and Indiana territories.	147,178	7,475	80.7
Iowa 56,147 sq. miles.	Indian—Drowsy Ones.	1846	Dubuque, 1833, by the Americans.	Louisiana, Missouri, Michigan, Wisconsin, and Iowa territories.	182,000	9,946	42.8
Kansas 82,158 sq. miles.	Indian—Smoky Water.	1861	Leavenworth, 1854, by the Americans.	Louisiana, Kansas territory.	107,206	9,344	21.6
Kentucky 40,598 sq. miles.	Indian—Dark and Bloody Ground.	1792	Boonesboro, 1769, by the English.	Virginia.	73,677	3,836	59.5
Louisiana 48,506 sq. miles.	In honor of Louis XIV.	1812	New Orleans, 1718, by the French.	Louisiana, Territory of Orleans.	76,556	5,603	37.1
Maine 33,040 sq. miles.	The Main Land.	1820	Saco, 1623, by the English.	New England, Laconia, and Massachusetts.	298,335	2,262	23.3
Maryland 12,327 sq. miles.	In honor of Queen Henriette Maria.	*1788	St. Mary's, 1632, by the English.	One of the original states.	319,728	1,446	119.5
Massachusetts 8,266 sq. miles.	The Place of Great Hills.	*1788	Plymouth, 1620, by the English.	North Virginia, New England, Massachusetts Bay.	378,787	2,133	454.1
Michigan 57,980 sq. miles.	Indian—Great Lake.	1837	Sault Ste. Marie, 1668, by the French.	Northwest, Indiana, and Michigan territories.	212,267	8,875	63.3
Minnesota 84,682 sq. miles.	Indian—Cloudy Water.	1858	St. Paul, 1838, by the Americans.	Louisiana and Northwest and Minnesota territories.	172,793	9,152	28.1
Mississippi 46,865 sq. miles.	Indian—Great River, or Father of Waters.	1817	Biloxi, 1699, by the French.	Louisiana and Georgia, Mississippi territory.	75,448	4,438	38.8
Missouri 69,420 sq. miles.	Indian—Great Muddy..	1821	St. Genevieve, 1755, by the French.	Louisiana and Louisiana and Missouri territories.	66,586	8,270	49.0
Montana 146,572 sq. miles.	Spanish—A Mountain.	1889	Yellowstone River, 1809, by the Americans.	Louisiana and Nebraska, Idaho, Dakota and Montana territories.	175,000	4,847	3.1
Nebraska 77,520 sq. miles.	Indian—Shallow Water.	1867	Bellevue, 1847, by the Americans.	Louisiana, Nebraska territory.	122,993	6,169	16.7
Nevada 110,690 sq. miles.	Spanish—Snow-covered.	1864	Genoa, 1850, by the Americans.	Upper California and Utah and Nevada Territories.	35,000	2,318	0.7
New Hampshire 9,341 sq. miles.	Hampshire, England.	*1788	Portsmouth, 1623, by the English.	North Virginia, New England, Laconia.	141,885	1,252	47.7
New Jersey 8,224 sq. miles.	In honor of governor of Jersey Island.	*1787	Elizabethtown, 1617, by the Dutch.	New Netherland.	184,139	2,337	372.5
New Mexico 122,634 sq. miles.		1912	Santa Fe, 1605, by the Spanish.	New Mexico.	330,000	3,039	29.0
New York 49,204 sq. miles.	In honor of Duke of York.	*1788	New York, 1614, by the Dutch.	New Netherland.	340,120	8,492	211.0
North Carolina 52,426 sq. miles.	In honor of Charles II.	*1789	Albemarle Sound, 1653, by the English.	Albemarle colony.	393,751	5 537	48.8
North Dakota 70,837 sq. miles.	Indian—Allied.	1889	Pembino, 1859, by the Americans.	Louisiana, Minnesota and Nebraska and Dakota territories.	182,000	5,274	9.1

*Original Thirteen States. ‡Organised Territories.

HISTORICAL, GEOGRAPHICAL AND INDUSTRIAL

Chief Productions	Highest and Lowest Altitudes Feet		Public Lands Acres	Motto and Meaning State Flower	Popular Name of State and People
Corn, oats, wheat, rice, cotton, sugar, iron, lumber, manufactures, potatoes.	Cheoha Mt. Venetia	2,407 7	35,220	*Here we rest.* Golden-rod.	**Ala.** "Lizards."
Seals, salmon, gold, copper, silver, lumber, tin, lead, coal.	Mt. McKinley Umga Islet	20,300 150	368,014,735	*No motto.*	‡**Alaska.**
Copper, gold, silver, alfalfa, fruits, live stock, wheat, barley.	San Francisco Mt. Yuma	12,611 142	21,256,010	*Ditat deus* (Founded by God). Sequoia cactus.	**Arizona.**
Cotton, lumber, corn, oats, wheat, fruits, wool, coal, tobacco, petroleum, rice, aluminum, diamonds.	Magazine Mt. Camden	2,800 71	288,476	*Regnat populi* (The people rule). Apple blossom.	**Ark.** Bear; "Toothpicks."
Gold, silver, copper, lead, petroleum, borax, lumber, fruits, wine, olives, beet sugar	Mt. Whitney Death Valley	14,502 —276	20,529,034	*Eureka* (I have found it). California poppy.	**Cal.** Golden; "Gold Hunters."
Gold, silver, coal, copper, vegetables, fruits, live stock, wheat, beet sugar, oats, corn.	Mt. Elbert Holmesville	14,436 3,291	10,271,955	*Nil sine numine* (Nothing without providence). Columbine.	**Colo.** Centennial; "Rovers."
Manufactures, woolen, cotton, notions; tobacco, iron, granite, cereals.	Bear Mountain New Haven	2,355 6	.....	*Qui transtulit sustinet* (He who transplanted still sustains). Mountain laurel.	**Conn.** Land of Steady Habits; Nutmeg; "Wooden Nutmegs."
Corn, wheat, tomatoes, fruits, manufactures, leather, iron, steel, machinery.	Brandywine Delaware City	440 4	.....	*Liberty and independence.* Peach blossom.	**Del.** Blue Hen; Diamond; "Blue Hens."
Flour mills, manufactures.	Ft. Reno Navy Yard	421 4	.....	*Justitia omnibus* (Justice to all).	**District of Col.**
Fruits, vegetables, tobacco, rice, cotton, lumber, turpentine, resin, fish, phosphate.	Mt. Pleasant Cleveland	301 3	114,726	*In God is our trust.* Orange blossom.	**Fla.** Flower; "Fly-up-the-Creeks."
Cotton, corn, rice, oats, tobacco, oysters, peaches, melons, marble, clay; cotton goods, lumber, fertilizers, tar.	Brasstown Bald. Brunswick	4,768 14	.....	Obverse: *Wisdom, justice, moderation.* Reverse: *Agriculture and commerce.* Cherokee rose.	**Ga.** Empire State of the South; "Buzzards;" "Crackers."
Sugar, fruits, rice, coffee, hides, wool, honey, sisal.	Mt. Mauna Kea	13,805	.....	.....	‡**Hawaii.**
Gold, silver, copper, lead, lumber, flour, wheat, oats, barley, live stock, potatoes.	Hyndman Peak Lewiston	12,078 738	13,322,716	*Salve* (Hail). Syringa.	**Idaho.**
Corn, wheat, oats, potatoes, hay, live stock, wool, meat, manufactures, coal.	Charles Mount Brooklyn	1,257 284	.....	*National union, state sovereignty.* Violet.	**Ill.** Prairie; "Suckers," "Illini."
Corn, wheat, tobacco, vegetables, fruits, wool, coal, clay, flour, machinery, Bedford Stone.	Carlos Evansville	1,208 318	.....	*No motto.* Tulip-tree flower.	**Ind.** Hoosier; "Hoosiers."
Corn, wheat, oats, potatoes, hay, live stock, butter, coal, lumber, poultry.	Waneta Primquar	1,800 477	.....	*Our liberties we prize and our rights we will maintain.* Wild rose.	**Iowa.** Hawkeye; "Hawkeyes."
Corn, wheat, hay, live stock, fruits, coal, petroleum, salt, meats, Kaffir corn.	West Boundary Kings	4,135 730	5,275	*Ad astra per aspera* (To the stars through difficulties). Sunflower.	**Kan.** Sunflower; "Jayhawkers."
Tobacco, hemp, wheat, cotton, live stock, lumber, coal, sorghum, flour.	Big Black Mt. Columbus	4,100 270	.....	*United we stand, divided we fall.* Golden-rod.	**Ky.** Blue Grass; Dark and Bloody Ground; "Corncrackers."
Cotton, corn, rice, sugar, lumber, oysters, salt, sulphur.	New Arcadia Port Hickory	359 —8	45,559	*Union, justice, and confidence.* Magnolia.	**La.** Creole; Pelican; "Creoles."
Hay, grains, dairying, potatoes, wool, granite, ice, lumber, apples, paper.	Mt. Katahdin Eastport	5,268 5	.....	*Dirigo* (I direct). Pine cone.	**Maine.** Pine Tree; Lumber; "Foxes."
Wheat, hay, corn, vegetables, fruits, oysters, coal, wool, canned fruits, vegetables.	Gt. Backbone Mt. Annapolis	3,340 2	.....	*Fatti Maschii, parole femine* (Manly deeds, womanly words.) Black-eyed Susan.	**Md.** Old Line; "Crawthumpers."
Manufactures (woolen, cotton), boots, shoes, fish, tobacco, granite, marble.	Greylock Boston	3,505 —5	.....	*Ense petit placidam sub libertate quietem* (With the sword she seeks calm peace under liberty.) Arbutus.	**Mass.** Bay; "Beaneaters."
Corn, wheat, oats, hay, fruits, vegetables, iron, copper, clay, lumber, manufactures.	Porcupine Mt. Rockwood	2,023 576	72,829	*Si quoeris peninsulam amoenam, circumspice* (If you seek a beautiful peninsula, behold it here). Apple blossom.	**Mich.** Wolverine; "Wolverines."
Corn, wheat, oats, barley, flaxseed, wool, live stock, flour, iron, lumber, dairying.	Misquah Hills Winona	2,400 606	469,973	*L'etoile du nord* (The star of the north). Moccasin.	**Minn.** North Star, Gopher; "Gophers."
Cotton, corn, wheat, oats, potatoes, rice, tobacco, oysters, shrimps.	Holly Springs Claiborne	602 4	47,058	*No motto.* Magnolia.	**Miss.** Bayou; "Tadpoles."
Corn, wheat, oats, rye, cotton, swine, honey, zinc, lead, tobacco, meats.	Cedar Gap Maywood	1,800 140	147	*Salus populi suprema lex esto* (The welfare of the people is the supreme law). Golden-rod.	**Mo.** "Pukes."
Wheat, wool, live stock, fruit, oats, barley, lumber, copper, lead, silver, coal.	Granite Peak Yakt Lawton	12,834 1,845 5,945	8,201,019	*Oro y plata* (Gold and silver). Bitter root.	**Mont.** Mountain; "Bug-eaters;" "Stubtoes."
Corn, wheat, oats, live stock, hay, chicory, sugar beets, fruits, potatoes.	Brownville	875	108,556	*Equality before the law.* Golden-rod.	**Neb.** "Tree Planters."
Gold, silver, copper, zinc, wool, live stock, lumber, borax.	Wheeler Peak Saratoga Springs	13,058 264	55,082,200	*All for our country.*	**Nev.** Silver; "Sage Hens."
Hay, corn, potatoes, oats, apples, granite, mica, manufactures.	Mt. Washington Hampton Falls	6,293 9	.....	*No motto.*	**N. H.** Granite; "Granite Boys."
Market garden crops, cereals, fruits, fisheries, manufactures, textiles, machinery.	High Point Crystal Lake	1,799 2	.....	*No motto.*	**N. J.** Jersey Blue; "Jersey Blues," "Clam-catchers."
Gold, silver, fruits, vegetables, live stock, wool, lumber, copper, coal, turquoise.	Truchas Peak Baldy Peak	13,306 12,661	19,115,544	*Crescit eundo* (It increases by going).	**New Mexico.**
Market garden crops, fruits, corn, wheat, dairying, manufactures, clothing, textiles, books, magazines, papers.	Mt. Marcy Albany	5,344 5	.....	*Excelsior* (Higher).	**N. Y.** Empire; "Knickerbockers."
Cotton, corn, tobacco, wheat, shad, oysters, lumber, mining.	Mt. Mitchell Edenton Bay	6,711 0	....	*Esse quam videri* (To be, rather than to seem). Rose.	**N. C.** Old North; Turpentine; "Tar heels."
Wheat, oats, barley, flaxseed, live stock, wool, minerals.	Summit Bowesmont	3,500 800	116,138	*Liberty and union, now and forever, one and inseparable.* Wild rose.	**N. D.** Sioux; "Tuckoes."

STATES AND TERRITORIES OF THE UNION—

State or Territory and Area	Origin and Meaning of Name	Date of Admission Into Union	Settlement: Where, When, By Whom	Original Territory From Which Derived	Population When Admitted or Acquired	Miles of Railroad	Persons to Sq. Mile 1920
Ohio 41,040 sq. miles.	Indian—Beautiful River.	1803	Marietta, 1788, by the Americans.	Northwest territory.	45,365	9,079.19	140.4
Oklahoma. 70,057 sq. miles.	Indian—Beautiful Land.	1907	Guthrie, 1889, by the Americans.	Indian and Oklahoma territories.	1,414,042	5,785.06	28.9
Oregon 96,699 sq. miles.	Spanish—WildMarjoram.	1859	Astoria, 1811, by the Americans.	Oregon territory.	52,566	2,159.55	8.1
Pennsylvania 45,126 sq. miles.	Latin—Penn's Woods.	*1787	Chester, 1638, by the Swedes.	Original state.	434,373	11,205.89	193.8
Philippines 122,000 sq. miles.	In honor of Philip II.	.....	Cebu, 1565, by the Spanish.	Archipelago de San Lasaro.	7,000,000	.....	66.0
Porto Rico 3,606 sq. miles.	Spanish—Rich Port.	.....	San Juan, 1510, by the Spanish.	.....	953,243	.....	.....
Rhode Island 1,248 sq. miles.	Rhodes, an island in the Ægean Sea.	*1790	Providence, 1636, by the English.	Providence and Rhode Island plantations.	68,825	212.54	483.5
South Carolina 30,989 sq. miles.	In honor of Charles II.	*1788	Ashley River, 1670, by the English.	Carteret colony.	249,073	3,397.37	54.4
South Dakota 77,615 sq. miles.	Indian—Allied..	1889	Southeast part, 1859, by the Americans.	Louisiana, Minnesota, and Nebraska and Dakota territories.	328,808	3,947.65	8.2
Tennessee 42,022 sq. miles.	Indian—River with the Great Bend.	1796	Fort Loudon, 1757, by the English.	North Carolina, territory south of the Ohio river.	35,791	3,761.03	55.6
Texas 265,896 sq. miles.	From tribe of Indians.	1845	San Antonio, 1692, by the Spanish.	.....	212,592	13,520.64	17.5
Utah 84,990 sq. miles.	Indian—Mountain Dwellers.	1896	Salt Lake City, 1847, by the Americans.	Mexican cession, Utah territory.	207,905	1,956.84	5.2
Vermont 9,564 sq. miles.	French — Green Mountain.	1791	Fort Dummer, 1724, by the English.	New Netherland, New Hampshire grants.	85,425	1,088.27	38.0
Virginia 42,627 sq. miles.	In honor of Elizabeth, the virgin queen.	*1788	Jamestown, 1607, by the English.	South Virginia.	748,308	4,486.64	54.1
Washington 69,127 sq. miles.	After George Washington, first President of United States.	1889	Columbia River, 1811, by the English.	Oregon and Washington territories.	349,390	4,650.63	19.7
West Virginia 24,170 sq. miles.	From Virginia.	1863	Berkeley County, 17267, by the Americans.	Virginia.	376,688	3,502.40	61.0
Wisconsin 56,066 sq. miles.	Indian—Wild Rushing Channel.	1848	Green Bay, 1745, by the French.	Northwest, Illinois, Michigan and Wisconsin territories.	305,391	7,444.83	45.9
Wyoming 97,914 sq. miles.	Indian—Extensive Plain.	1890	Cheyenne, 1867, by the Americans.	Louisiana (chiefly), Nebraska, Dakota, Idaho, and Wyoming territories.	60,705	1,618.41	2.0

*Original Thirteen States. ‡Organized Territories.

POLITICAL AND STATISTICAL

States and Population	Capitals and Population	Requirements as to Citizenship	Previous Residence Required: In State	In County	In Town	In Precinct	Woman Suffrage Amendment Ratified, 1920: Persons Excluded from Suffrage	Governors: Salaries	Governors: L'gth Term Yrs.
Alabama Pop. 2,348,174	Montgomery Pop. 43,464	Citizen of United States or alien who has declared intentions.	2 years	1 year	3 mos.	3 mos.	Convicted of treason or other felonies, idiots or insane.	$5,000	4
Arizona Pop. 334,162	Phoenix Pop. 29,035	Citizen of United States by nativity or naturalization.	1 year	30 days	30 days	30 days	Idiot, insane, felon, under guardianship.	3,500	4
Arkansas Pop. 1,752,204	Little Rock Pop. 65,142	Citizen of United States or alien who has declared intentions.	1 year	6 mos.	30 days	30 days	Idiots, insane, convicted of felony, failure to pay poll-tax, U. S. soldiers, or marines.	4,000	2
California Pop. 3,426,861	Sacramento Pop. 65,908	Citizen, by nativity, naturalization, or treaty of Queretaro.	1 year	90 days	.....	30 days	Chinese, idiots, insane, embezzlers of public moneys, convicted of infamous crimes.	10,000	4
Colorado Pop. 939,629	Denver Pop. 256,491	Citizen, native or naturalized (intentions declared), who is duly registered.	1 year	90 days	30 days	10 days	While confined in public prison, under guardianship, *non compos mentis*, insane.	5,000	2
Connecticut Pop. 1,380,631	Hartford Pop. 138,036	Citizen of United States, who can read English language.	1 year	.....	6 mos.	.....	Convicted of heinous crime, unless pardoned.	4,000	2
Delaware Pop. 223,003	Dover Pop. 4,042	Citizen who shall have paid a registration fee of $1.00.	1 year	3 mos.	.....	30 days	Insane persons and paupers, persons convicted of felony, idiots.	4,000	4
District of Col. Pop. 437,571	Washington Pop. 437,571	District is without suffrage.	.....	.....	.....	.....	District is governed by three commissioners appointed by the President.	6,000	3
Florida Pop. 968,470	Tallahassee Pop. 5,637	Citizen of United States.	1 year	6 mos.	.....	30 days	Idiots, duelists, convicted of felony or any infamous crime.	5,000	4
Georgia Pop. 2,895,832	Atlanta Pop. 200,616	Citizen of United States who can read and has paid all his taxes since 1877.	1 year	6 mos.	.....	.....	Convicted of felony, bribery or larceny, unless pardoned, idiots, and insane, delinquent taxpayer.	5,000	2
Idaho Pop. 431,866	Boise City Pop. 21,393	Citizen of United States, male or female.	6 mos.	30 days	3 mos.	10 days	Idiots, insane, convicted of felony, bigamists, polygamists, under guardianship, Chinese, Indians.	5,000	2
Illinois Pop. 6,485,280	Springfield Pop. 59,183	Citizen of United States.	1 year	90 days	30 days	30 days	Convicted of felony or bribery in elections, unless restored to citizenship.	12,000	4
Indiana Pop. 2,930,390	Indianapolis Pop. 314,194	Citizen, or alien who has declared intention and resided one year in United States.	6 mos.	60 days	60 days	30 days	United States soldiers, sailors, and marines, and persons convicted of infamous crime.	8,000	4
Iowa Pop. 2,404,021	Des Moines Pop. 126,468	Citizen of United States.	6 mos.	60 days	10 days	10 days	Idiots, insane, convicted of infamous crime, U. S. soldiers.	6,800	2
Kansas Pop. 1,769,257	Topeka Pop. 50,022	Citizen of the U. S., male or female, or alien, who has declared intention.	6 mos.	30 days	30 days	10 days	Convicted of treason or felony, insane, under guardianship.	5,000	2
Kentucky Pop. 2,416,630	Frankfort Pop. 9,805	Citizen of United States.	1 year	6 mos.	60 days	60 days	Convicted of treason, felony, or bribery in an election, idiots, and insane.	6,500	4

HISTORICAL, GEOGRAPHICAL AND INDUSTRIAL—Continued

Chief Productions	Highest and Lowest Altitudes Feet		Public Lands Acres	Motto and Meaning State Flower	Popular Name of State and People
Corn, wheat, oats, hay, potatoes, fruits, tobacco, live stock, wool, dairying, coal, petroleum, salt, iron, steel, machinery, flour.	Campbell's Hill Palestine	1,550 437	.....	*No motto.* Carnation.	**Ohio.** Buckeye; "Buckeyes."
Corn, wheat, oats, cotton, flax, live stock, petroleum, minerals.	West Beaver Co. Appalachia	5,000 411	31,715	*Labor omnia vincit* (Labor conquers everything). Mistletoe.	**Okla.** Sooner.
Lumber, live stock, wheat, hay, fruits, hops, wool, salmon, gold, silver, paper making.	Mt. Hood North Sands	11,225 5	14,325,591	*The union.* Oregon grape.	**Ore.** Beaver, Sunset; "Webfeet."
Manufactures, steel, machinery, textiles, coal, coke, petroleum, natural gas, iron, grains, wool, leather.	Blue Knob Philadelphia	3,136 9	.....	*Virtue, liberty, and independence.*	**Pa.** Keystone; "Pennanites," "Leather-heads."
Cacao, coffee, tobacco, cotton, hemp, cocoanuts, corn, sugar, rice, timber, dyewoods.	Mt. Apo	9,610	.....	.....	‡**Philippines.**
Coffee, sugar, tobacco, cotton, citrus fruits, bananas, pineapples, salt.	Loquillo Mts.	3,532	.....	.....	**Porto Rico.**
Manufactures, worsted, cotton, jewelry, machinery, rubber, minerals.	Durfee Hill Newport Depot	805 6	....	*Hope.* The violet.	**R. I.** Little Rhody; "Gun-flints."
Cotton, wheat, corn, oats, tobacco, rice, oysters, turpentine, lumber, phosphates.	Rich Mt. Port Royal	3,569 5	....	*Dum spiro, spero. Spes* (While I breathe, I hope. Hope).	**S. C.** Palmetto; "Weasels."
Corn, wheat, oats, flax, potatoes, live stock, wool, gold, silver, tin, dairying.	Harney Peak Big Stone Lake	7,240 962	837,226	*Under God the people rule.* Anemone patens.	**S. D.** Coyote. "Swinge Cats."
Corn, wheat, cotton, potatoes, tobacco, live stock, coal, iron, marble, lumber.	Mt. Guyot Memphis	6,636 117	.....	*Agriculture, commerce.*	**Tenn.** Volunteer; "Butternuts," "Whelps."
Cotton, corn, oats, wheat, rice, sugar, live stock, wool, fruits, lumber, petroleum, coal.	El Capitan Galveston	8,690 4	....	*No motto.* Blue bonnet.	**Texas.** Lone Star; "Beef-heads."
Gold, silver, copper, lead, coal, vegetables, fruits, sugar, wheat, oats, live stock, wool.	Gilbert Peak Washington	13,687 2,720	31,475,919	*Industry.* Sego lily.	**Utah.**
Hay, cereals, potatoes, lumber, marble, dairying, maple sugar, manufactures, wood pulp.	Mt. Mansfield Lake Champlain	4,406 96	.....	*Freedom and unity.* Red clover.	**Vt.** Green Mountain; "Green Mountain Boys."
Corn, wheat, oats, tobacco, potatoes, cotton, oysters, coal, iron, cotton manufacture.	Rogers Mt. Hampton	5,719 3	.....	Obverse: *Sic semper tyrannis* (Ever so to tryants). Reverse: *Perseverando* (By perseverance).	**Va.** Old Dominion; "Beagles."
Lumber, coal, wheat, barley, oats, fruits, salmon, live stock, minerals.	Mt. Rainier Tulalip	14,363 —4	1,259,913	*Al-Ki* (Bye-bye). Rhododendron.	**Wash.** Evergreen; "Chinook."
Corn, oats, hay, wheat, fruits, cattle, sheep, lumber, coal, petroleum, natural gas, mining.	Spruce Mt. Harper's Ferry	4,860 277	.....	Obverse: *Montani semper liberi* (Mountaineers are always free men). Reverse: *Libertas et fidelitas* (Liberty and fidelity).	**W. V.** Panhandle "Panhandlers."
Corn, oats, barley, wheat, hay, potatoes, fruits, beet sugar, dairying, iron, lumber.	Summit Lake Michigan Lake	1,940 579	6,146	*Forward.*	**Wis.** Badger; "Badgers."
Wool, lumber, coal, copper, petroleum, minerals.	Grand Teton Old Riverdale	13,790 3,196	25,434,194	*Equal rights.*	**Wyoming.**

FACTS CONCERNING THE STATES

Legislatures			Members' Terms		Electoral Vote 1928	Total Assessed Valuation	Per Cent Actual Value	Tax Rate per $1,000	Voting Population,			Colored Population	Foreign Population	Native Population	Name of State
Ann. or Bien.	Limit of Term	Salaries of Members	Senators	Representatives					Total	Negroes	All Others*				
Quad.	50 days	$4.00 per diem	4	4	12	$508,568,616	60	$6.50	513,111	213,923	245	827,307	14,592	1,814,105	**Alabama**
Bien.	None	$4.00 per diem	2	2	3	93,562,749	60	7.00	74,051	764	8,190	1,848	24,233	98,698	**Arizona**
Bien.	60 days	$6.00 per diem	4	2	9	327,023,552	40	6.75	395,824	111,365	158	366,856	14,289	1,297,275	**Arkansas**
Bien.	60 days	$8.00 per diem	4	2	13	2,373,897,092	50–60	3.53	920,397	8,143	65,955	11,045	367,240	1,117,813	**California**
Bien.	90 days	$1,000 per term	4	2	6	.....	.....	.....	271,648	4,283	2,762	8,570	91,155	448,545	**Colorado**
Bien.	None	$300 per annum	2	2	7	922,071,592	100	.....	347,692	4,765	535	15,226	238,210	670,210	**Connecticut**
Bien.	None	$5.00 per diem	4	2	3	86,306,694	60	.....	61,887	9,050	33	30,697	13,810	170,925	**Delaware**
United acts a	States s legisla	Congress ture.	..	..	••	323,909,530	67	15.00	103,761	27,621	375	86,702	20,119	.....	**Dist. of Col.**
Bien.	60 days	$6.00 per diem	4	2	6	136,032,089	50	7.50	214,195	89,659	225	230,730	23,832	504,710	**Florida**
Ann.	50 days	$4.00 per diem	2	2	14	604,338,208	.....	5.00	620,616	266,814	233	1,034,813	12,403	2,203,928	**Georgia**
Bien.	60 days	$5.00 per diem	2	2	4	.....	20	.....	110,863	328	3,066	293	24,604	137,168	**Idaho**
Bien.	None	$1,000 per annum	4	2	29	2,158,648,450	33	3.50	1,743,182	39,983	2,157	85,078	966,747	3,854,803	**Illinois**
Bien.	60 days	$6.00 per diem	4	2	15	1,776,132,096	60	3.33	822,434	20,651	352	57,505	142,121	2,374,341	**Indiana**
Bien.	None	$550 to $1,250 per term	4	2	13	624,391,061	25	3.30	663,672	5,528	315	12,693	305,920	1,925,933	**Iowa**
Bien.	40 days	$3.00 per diem	4	2	10	2,752,097,452	100	12.50	508,529	17,931	716	52,006	126,685	1,343,810	**Kansas**
Bien.	60 days	$5.00 per diem	4	2	13	828,275,022	65	5.00	603,454	75,694	99	284,706	50,249	2,096,925	**Kentucky**

POLITICAL AND STATISTICAL FACTS

States and Population 1920	Capitals and Population 1920	Requirements as to Citizenship	Previous Residence Required				Persons Excluded from Suffrage	Governors	
			In State	In County.	In Town	In Precinct		Salaries	L'gth Term Yrs.
Louisiana Pop. 1,798,509	Baton Rouge Pop. 21,782	Citizen of United States.	2 years	1 year	.....	6 mos.	Idiots, insane, felons under indictment, inmates of prison or charitable institution except soldiers' home.	$7,500	4
Maine Pop. 768,014	Augusta Pop. 14,114	Citizen of United States.	3 mos.	3 mos.	3 mos.	3 mos.	Paupers and Indians not taxed.	5,000	2
Maryland Pop. 1,449,661	Annapolis Pop. 11,214	Citizens who can read and write English.	1 year	6 mos.	6 mos.	1 day	Felons not pardoned, lunatics, *non compos mentis*, bribery.	4,500	4
Massachusetts Pop. 3,852,356	Boston Pop. 748,060	Citizen of United States or alien who declared intention 2 years and 6 months prior to November 8, 1894.	1 year	6 mos.	6 mos.	6 mos.	Paupers (except U. S. soldiers) and persons under guardianship.	10,000	1
Michigan Pop. 3,668,412	Lansing Pop. 57,327	Citizen of United States who has been such for 3 months preceding election.	6 mos.	20 days	20 days	20 days	Indians with tribal relations, duelists, and accessaries.	5,000	2
Minnesota Pop. 2,387,125	St. Paul Pop. 234,698	Citizen of United States who can read or understand constitution.	6 mos.	30 days	30 days	30 days	Convicted of treason or felony, unpardoned, under guardianship, insane, Indians lacking customs of civilization.	7,000	2
Mississippi Pop. 1,790,618	Jackson Pop. 22,817	Citizen of United States or alien who has declared intention not less than 1 year nor more than 5 before election.	2 years	1 year	1 year	1 year.	Insane, idiots, Indians not taxed, felons, persons who have not paid taxes, bigamists.	5,000	4
Missouri Pop. 3,404,055	Jefferson City Pop. 14,490	Citizen of the United States.	1 year	60 days	60 days	20 days	Persons in poorhouses or asylums at public expense, those in prison, or convicted of infamous crime.	5,000	4
Montana Pop. 548,889	Helena Pop. 12,037	Citizen of United States or alien who has declared intention 30 days before election.	1 year	30 days	30 days	30 days	Felons not pardoned, idiots, insane, U. S. soldiers, seamen, and marines, Indians.	7,500	4
Nebraska Pop. 1,296,372	Lincoln Pop. 54,948	Citizen of the United States, male or female.	6 mos.	40 days	30 days	10 days	Convicted of treason or felony, unless restored to civil rights, persons *non compos mentis*.	2,500	2
Nevada Pop. 77,407	Carson City Pop. 1,685	Citizen of United States.	6 mos.	30 days	30 days	30 days	Idiots, insane, unpardoned convicts, Indians, Chinese.	7,200	4
New Hampshire Pop. 443,083	Concord Pop. 22,167	Citizen of United States.	6 mos.	6 mos.	6 mos.	6 mos.	Paupers (except soldiers).	3,000	2
New Jersey Pop. 3,155,900	Trenton Pop. 119,289	Citizen of United States.	1 year.	5 mos.	.....	.....	Idiots, paupers, insane, convicted of crime, unless pardoned or restored by law.	10,000	3
New Mexico Pop. 360,350	Santa Fe Pop. 7,236	Citizen who shall have been a citizen for ninety days prior to election.	6 mos.	3 mos.	30 days	30 days	Convicted of felony, unless pardoned, U. S. soldier, sailor, or camp follower, Indians.	5,000	2
New York Pop. 10,385,227	Albany Pop. 113,344	Citizen of United States who can read.	1 year	4 mos.	30 days	30 days	Offenders against elective franchise rights, guilty of bribery, betting on elections, and persons convicted of bribery or infamous crime and not restored to citizenship by the Executive.	10,000	2
North Carolina Pop. 2,559,123	Raleigh Pop. 24,418	Citizen of United States and civilized Indian.	2 years	6 mos.	.....	4 mos.	Convicted of felony, or infamous crime, idiots, lunatics.	6,500	4
North Dakota Pop. 646,872	Bismarck Pop. 7,122	Citizen of the United States.	1 year	6 mos.	.....	90 days	Under guardianship, persons *non compos mentis*, or convicted of felony and treason, unless restored to civil rights.	5,000	2
Ohio Pop. 5,759,394	Columbus Pop. 237,031	Citizen of United States and Native Indians.	1 year	30 days	20 days	20 days	Idiots, insane and felons, persons in U. S. military and naval service on duty in Ohio.	10,000	2
Oklahoma Pop. 2,028,283	Oklahoma City Pop. 91,295	Citizen of the United States or alien who has declared intention 1 year prior to election.	1 year	6 mos.	30 days	30 days	Felons, idiots, insane.	4,500	4
Oregon Pop. 783,389	Salem Pop. 17,679	Citizen of United States at least 1 month and if 22 years old or more must have paid tax within 2 years.	6 mos.	None	None	None	Idiots, insane, convicted of felony, Chinese, U. S. soldiers and sailors.	5,000	4
Pennsylvania Pop. 8,720,017	Harrisburg Pop. 75,917	Citizen of United States.	1 year	.....	.....	2 mos.	Convicted of perjury and fraud as election officers, or bribery of voters, nontaxpayers.	10,000	4
Rhode Island Pop. 604,397	Providence Pop. 237,595	Citizen of United States.	2 years	.....	6 mos.	.....	Paupers, lunatics, felons.	3,000	1
South Carolina Pop. 1,683,724	Columbia Pop. 37,524	Citizen of United States or alien who has declared intention. Indian who has several tribal relations.	2 years	1 year	4 mos.	4 mos.	Felons, bribery, unless pardoned, insane, paupers.	3,500	2
South Dakota Pop. 636,547	Pierre Pop. 3,209	Citizen of United States who has paid poll-tax of preceding year.	6 mos.	30 days	10 days	10 days	Under guardianship, insane, convicted of treason or felony unless pardoned, U. S. soldiers, seamen, and marines.	3,000	2
Tennessee Pop. 2,337,885	Nashville Pop. 118,342	Citizen of United States or alien who has declared intention 6 months prior to election.	1 year	6 mos.	.....	.....	Convicted of bribery or other infamous offense.	4,000	2
Texas Pop. 4,663,228	Austin Pop. 34,876	Citizen of United States, male or female.	1 year	6 mos.	6 mos.		Idiots, lunatics, pauper, convicted of felony, United States soldiers, marines, and seamen.	4,000	2
Utah Pop. 449,396	Salt Lake City Pop. 118,110	Citizen of United States.	1 year	4 mos.	.....	60 days	Idiots, insane, convicted of treason or crime against elective franchise, unless pardoned.	6,000	4
Vermont Pop. 352,428	Montpelier Pop. 7,125	All persons who have paid state poll-taxes for the three preceding years; who served in time of war in the army or navy of the United States, of the Confederate states, or of any state.	1 year	3 mos.	3 mos.	3 mos.	Those who have not obtained the approbation of the local board of civil authority.	3,000	2
Virginia Pop. 2,309,187	Richmond Pop. 171,667	Citizen of the United States, and all residents of territory, prior to statehood.	2 years	1 year	1 year	30 days	Idiots, lunatics, paupers, felons.	5,000	4
Washington Pop. 1,356,621	Olympia Pop. 7,795	Citizen of the state.	1 yea	90 days	30 days	30 days	Idiots, lunatics, convicted of infamous crimes, Indians not taxed.	6,000	4
West Virginia Pop. 1,463,701	Charleston Pop. 39,608	Citizen of United States or alien who has declared intention, and civilized Indians.	1 year	6 mos.	60 days		Paupers, idiots, lunatics, convicted of treason, felony, or bribery at elections, U. S. soldiers and sailors.	5,000	4
Wisconsin Pop. 2,632,067	Madison Pop. 38,378	Citizen of United States.	1 year	10 days	10 days	10 days	Under guardianship, insane, convicted of crime or treason, betting on elections.	5,000	2
Wyoming Pop. 1,194,402	Cheyenne Pop. 13,829		1 year	60 days	10 days	10 days	Idiots, insane, felons, unable to read state constitution in the English language.	4,000	4

CONCERNING THE STATES—Continued

Legislatures			Members' Terms		Electoral Vote, 1928	Total Assessed Valuation	Per Cent Actual Value	Tax Rate per $1,000	Voting Population,			Colored Population	Foreign Population	Native Population	States
Ann. or Bien.	Limit of Term	Salaries of Members	Senators	Representatives					Total	Negroes	All Others*				
Bien.	60 days	$5.00 per diem	4	4	10	$529,419,463	...	$5.00	414,919	174,211	683	650,804	52,903	1,328,722	Louisiana
Bien.	None	$300 per annum	2	2	6	428,212,465	100	2.08	235,727	476	396	1,319	93,330	601,136	Maine
Bien.	90 days	$5.00 per diem	4	2	8	820,831,339	..	1 60	367,908	63,963	384	235,064	93,934	1,094,110	Maryland
Bien.	None	$750 per annum	4	1	18	4,770,558,822	..	....	1,021,669	12,591	2,647	31,974	846,324	1,959,022	Massachusetts
Bien.	None	$800 per annum	1	2	15	1,687,155,697	80	2 72	870,876	6,266	2,388	15,816	541,653	1,879,329	Michigan
Bien.	90 days	$500 per annum	4	2	12	1,222,430,377	36	2.70	642,669	3,390	2,376	4,959	505,318	1,246,076	Minnesota
Bien.	60 days	$400 per session	4	4	10	393,297,175	50–75	6.00	426,953	233,701	511	907,630	7,981	1,543,289	Mississippi
Bien.	70 days	$5.00 per diem	4	2	18	1,547,126,736	50	1.70	973,062	52,921	661	161,234	216,379	2,890,286	Missouri
Bien.	60 days	$10.00 per diem	4	2	4	309,673,699	50	2.50	155,017	851	5,433	1,523	67,067	176,262	Montana
Bien.	60 days	$5.00 per diem	2	2	8	412,138,607	20	5.00	353,626	3,225	1,486	6,269	177,347	888,953	Nebraska
Bien.	60 days	$8.00 per diem	4	2	3	73,856,142	.....	.....	40,026	229	3,165	134	10,093	32,242	Nevada
Bien.	None	$200 per annum	2	2	4	255,085,571	75	20.58	136,668	200	75	662	88,107	323,481	N. Hampshire
Ann.	None	$500 per annum	3	1	14	.....	.....	.....	774,702	28,601	1,258	69,844	431,884	1,451,785	New Jersey
Ann.	60 days	$4.00 per diem	2	2	3	62,860,852	20	11.00	94,637	644	5,260	1,610	13,625	181,685	New Mexico
Ann.	None	$1,500 per annum	2	1	45	9,821,620,552	80	None	2,836,773	45,877	7,515	99,232	1,900,425	5,368,469	New York
Bien.	60 days	$4.00 per diem	2	2	12	565,005,223	60	2.50	506,134	146,752	1,771	624,469	4,492	1,889,318	North Carolina
Bien.	60 days	$5.00 per diem	4	2	5	278,594,193	20	4.40	173,890	311	1,638	286	113,091	206,055	North Dakota
Bien.	None	$1,000 per annum	2	2	24	2,352,680,824	60	1.35	1,484,265	39,188	600	96,901	458,734	3,698,811	Ohio
Bien.	None	$6.00 per diem	4	2	10	860,000,000	100	2.50	447,266	36,841	15,048	18,831	15,680	769,853	Oklahoma
Bien.	40 days	$3.00 per diem	2	1	5	598,133,963	....	.....	257,188	792	11,053	1,105	65,748	347,788	Oregon
Bien.	None	$1,500 per annum	4	2	38	5,769,777,327	.....	.....	2,309,026	64,272	2,157	156,845	985,250	5 316,865	Pennsylvania
Ann.	None	$5.00 per diem	1	1	5	511,960,122	.....	1.80	163,834	3,067	355	9,092	134,519	294,037	Rhode Island
Ann.	None	$200 per annum	2	2	9	271,106,302	40	5.75	335,045	169,155	122	782,321	5,528	1,334,788	South Carolina
Bien.	60 days	$5.00 per diem	2	2	5	321,070,665	20	4.00	178,189	341	5,126	465	88,508	313,062	South Dakota
Bien.	75 days	$5.00 per diem	2	2	12	458,639,736	.....	3.50	552,668	119,142	95	480,243	17,746	2,002,870	Tennessee
Bien.	90 days	$5.00 per diem	4	2	20	2,309,803,626	.....	.40	1,003,357	166,398	981	620,722	179,357	2,869,353	Texas
Bien.	60 days	$4.00 per diem	4	2	4	146,204,050	60	5.00	104,115	568	3,098	672	53,777	222,972	Utah
Bien.	None	$4.00 per diem	2	2	4	188,493,546	.....	.....	113,506	975	18	826	44,747	298,894	Vermont
Bien.	90 days	$500 per session	4	2	12	579,565,539	.....	3.50	523,532	159,593	280	660,722	19,461	1,834,723	Virginia
Bien.	60 days	$5.00 per diem	4	2	7	789,912,979	39	31.00	441,294	3,120	15,455	2,514	111,364	406,739	Washington
Bien.	45 days	$4.00 per diem	4	2	8	1,068,000,000	75	5.00	338,349	22,757	94	43,999	22,451	936,349	West Virginia
Bien.	None	$500 per annum	4	2	13	2,743,180,404	.....	13.65	683,743	1,082	2,820	2,542	515,971	1,553,071	Wisconsin
Bien.	40 days	$7.00 per diem	4	3	3	186,560,916	75	2.67	63,201	1,325	2,156	940	17,415	75,116	Wyoming

*Includes Indians and Chinese, Japanese and other Asiatics.

PRODUCTION OF THE PRINCIPAL MINERALS AND METALS, AND THE TOTAL VALUE OF ALL MINERAL PRODUCTS IN THE UNITED STATES, BY STATES

Figures in **bold-face** indicate the ranking states.

States	Rank	Coal Net Tons	Rank	Iron Ore Gross Tons	Rank	Gold Fine Ounces	Rank	Silver Fine Ounces	Rank	Copper Pounds	Rank	Lead Short Tons	Rank	Zinc Short Tons
Alabama	7	16,061,991	3	6,121,087	13	323.62	21	27	..	..	..	..	..	..
Alaska	25	67,267	..	..	3	458,641.05	8	847,789	7	69,224,951	17	564	..	..
Arizona	..	..	..	..	6	262,919.43	6	6,686,152	1	**764,855,874**	10	6,252	16	1,135
Arkansas	22	2,111,992	..	..	..	..	..	..	..	..	19	120	18	951
California	27	5,800	16	3,121	1	**799,585.10**	7	1,427,111	8	47,674,660	9	6,686	15	2,781
Colorado	8	10,580,811	..	..	2	616,864.36	5	7,056,904	11	6,277,332	5	32,980	6	44,567
Connecticut	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	26	21,725	11	262,003	..	..	..	..	19	397,078	..	..	..	..
Idaho	..	..	..	..	10	33,998.72	4	9,172,340	10	6,533,888	2	147,348	8	22,581
Illinois	2	83,268,864	..	..	..	..	17	8,171	..	..	14	2,273	13	3,792
Indiana	6	28,961,651	..	..	..	..	..	..	..	..	..	..	..	..
Iowa	11	7,399,030	..	..	..	..	..	..	..	..	..	..	..	..
Kansas	12	7,188,358	..	..	..	..	..	..	..	..	8	7,252	7	30,197
Kentucky	5	29,350,941	..	..	..	..	..	..	..	..	18	185	19	315
Louisiana	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	..	..	..	..	17	32.99	18	6,338	17	766,000	..	..	..	..
Maryland	16	4,343,293	15	6,070	..	..	..	..	..	..	..	..	..	..
Massachusetts	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Michigan	23	1,280,658	2	17,587,416	..	..	11	509,467	4	226,794,139	..	..	..	..
Minnesota	..	..	1	**43,263,240**	..	..	..	..	..	..	..	..	..	..
Mississippi	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	14	5,119,591	13	71,968	..	..	16	46,939	18	577,665	1	**194,175**	4	55,992
Montana	18	4,177,894	..	..	7	150,192.96	1	**16,797,479**	2	323,174,850	6	18,568	2	104,629
Nebraska	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nevada	..	..	..	..	4	320,239.45	3	10,000,599	5	116,316,441	7	11,658	12	8,362
New Hampshire	..	..	..	..	..	..	..	..	..	..	20	30	21	14
New Jersey	..	..	9	375,238	..	..	..	..	..	..	..	..	3	98,470
New Mexico	20	2,836,801	10	275,266	11	33,030.02	9	782,421	6	98,264,563	12	4,199	10	12,025
New York	..	..	5	899,970	..	..	..	..	..	..	21	29	14	3,776
North Carolina	30	466	12	108,332	15	78.90	22	17	..	..	..	..	..	..
North Dakota	24	526,046	..	..	..	..	..	..	..	..	..	..	..	..
Ohio	4	42,888,610	..	..	..	..	..	..	..	..	..	..	..	..
Oklahoma	15	4,567,930	..	..	..	..	..	..	..	..	4	56,097	1	**161,401**
Oregon	28	4,112	..	..	9	61,458.74	14	107,323	12	2,451,016	24	5	..	..
Pennsylvania	1	**223,420,676**	6	515,845	..	..	..	..	16	779,393	..	..	..	..
Rhode Island	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Dakota	29	640	..	..	5	317,598.18	13	159,202	20	64,806	22	27	..	..
Tennessee	13	5,904,593	7	408,954	14	235.39	15	93,620	9	14,799,680	15	1,705	9	21,071
Texas	21	2,204,266	..	..	19	1.21	10	576,565	21	9,308	23	13	..	..
Utah	17	4,238,718	14	52,722	8	142,666.10	2	13,455,597	3	227,169,630	3	83,504	11	9,200
Vermont	..	..	..	..	..	..	..	..	14	1,116,384	..	..	..	..
Virginia	10	8,188,502	8	400,135	18	19.35	19	1,814	..	..	16	815	17	951
Washington	19	3,659,830	..	..	12	14,737.83	12	310,093	13	1,922,406	13	2,636	20	19
West Virginia	3	81,579,916	..	..	..	..	..	..	..	..	..	..	..	..
Wisconsin	..	..	4	1,167,640	..	..	..	..	..	..	11	4,533	5	50,014
Wyoming	9	9,055,252	..	..	16	42.14	20	965	15	852,777	..	..	..	..

States	Rank	Petroleum Barrels	Rank	Cement Barrels	Rank	Salt Short Tons	Rank	Natural Gas Value	Rank	Clay Products Value	Rank	Building Stone Value	Rank	Total Value
Alabama	..	..	..	..	..	..	16	$ 25,213	18	$ 2,159,104	20	$ 1,202,256	18	$ 65,371,469
Alaska	..	..	..	..	..	..	..	..	..	..	..	..	24	40,710,655
Arizona	..	..	..	..	..	..	..	..	43	134,562	38	306,579	6	212,615,978
Arkansas	4	58,332,000	..	..	..	..	13	315,612	29	679,183	36	374,465	33	12,061,702
California	1	**224,673,000**	4	5,653,362	5	**146,784**	5	6,816,524	11	4,329,220	8	3,133,305	7	175,401,518
Colorado	14	143,286	..	1,500,000	..	..	..	..	17	2,299,448	24	975,794	15	80,586,021
Connecticut	..	..	..	..	..	..	..	..	25	1,423,782	21	1,143,011	42	3,981,203
Delaware	..	..	..	..	..	..	..	..	42	164,486	41	121,354	49	523,991
Florida	..	..	..	..	..	..	..	..	38	181,339	32	479,837	38	7,294,467
Georgia	..	..	..	..	..	..	..	..	14	2,964,706	14	1,799,210	37	7,650,553
Idaho	..	..	..	..	..	..	..	..	41	173,611	42	96,382	21	55,224,026
Illinois	9	7,760,000	7	4,659,990	..	..	11	479,072	4	12,459,777	6	3,403,094	4	236,934,229
Indiana	12	877,558	2	8,705,831	..	..	12	453,310	8	7,950,926	5	4,657,813	14	85,079,370
Iowa	..	..	8	4,626,141	..	..	20	225	10	5,313,394	31	561,084	25	39,336,372
Kansas	5	41,498,000	9	4,015,169	4	527,123	6	5,701,436	19	2,064,520	30	603,490	12	102,673,055
Kentucky	12	6,274,000	..	..	..	..	10	580,380	9	6,172,554	19	1,429,838	17	77,177,421
Louisiana	7	23,201,000	..	..	..	..	7	3,262,987	35	458,445	..	..	27	36,204,387
Maine	..	..	..	..	..	..	..	..	33	500,725	23	1,068,485	43	3,726,121
Maryland	..	..	..	..	..	..	..	..	16	2,721,115	25	921,909	31	19,617,596
Massachusetts	..	..	..	..	..	..	..	..	24	1,493,765	7	3,138,165	39	7,225,750
Michigan	..	..	6	4,688,899	1	**1,762,430**	19	1,013	12	3,685,172	10	2,494,284	8	163,997,853
Minnesota	..	..	..	..	..	..	..	..	22	1,503,659	13	1,833,800	9	152,490,554
Mississippi	..	..	..	..	..	..	..	..	32	528,481	..	..	47	966,135
Missouri	..	..	3	5,882,240	..	..	17	8,230	7	9,155,088	11	2,242,742	13	105,320,378
Montana	10	7,727,000	..	..	..	..	15	81,406	34	464,715	39	261,460	10	123,733,415
Nebraska	..	..	..	..	..	..	..	..	28	789,612	35	406,707	36	7,943,729
Nevada	..	..	..	..	9	970	..	..	..	..	..	..	20	55,410,190
New Hampshire	..	..	..	..	..	..	..	..	36	235,219	22	1,141,810	45	1,594,584
New Jersey	..	..	..	..	..	..	..	..	3	20,741,244	16	1,655,692	19	57,710,181
New Mexico	..	..	..	..	..	..	..	..	38	194,533	43	77,290	23	43,312,947
New York	13	808,843	5	5,417,530	2	1,570,446	9	2,499,303	6	10,892,954	4	5,342,954	22	52,123,552
North Carolina	..	..	..	..	..	..	..	..	21	1,589,508	12	1,975,876	40	5,246,391
North Dakota	..	..	..	..	..	..	..	..	40	176,843	..	..	44	1,749,549
Ohio	11	7,272,000	12	1,566,209	3	823,234	3	18,434,815	1	**52,899,180**	2	6,611,266	5	218,181,419
Oklahoma	2	179,195,000	11	1,722,466	..	..	4	13,984,656	23	1,496,490	29	621,056	3	259,134,377
Oregon	..	..	..	..	..	..	..	..	37	232,564	34	443,524	41	4,074,247
Pennsylvania	8	8,961,000	1	**27,752,838**	..	..	2	28,716,492	2	40,467,104	1	**11,021,655**	1	**880,220,510**
Rhode Island	..	..	..	..	..	..	..	..	..	..	28	632,452	48	717,123
South Carolina	..	..	..	..	..	..	..	..	31	605,768	33	447,940	46	1,393,297
South Dakota	..	..	..	..	..	..	..	..	46	32,161	40	205,497	35	8,348,684
Tennessee	16	8,374	..	..	..	..	18	2,450	15	2,791,867	15	1,753,180	26	36,910,448
Texas	3	166,916,000	10	2,436,398	6	62,297	8	3,192,625	13	3,026,559	27	698,499	16	77,552,369
Utah	..	..	14	929,730	7	55,279	..	..	30	610,288	37	368,705	11	113,589,282
Vermont	..	..	..	..	..	..	..	..	45	87,609	3	5,729,676	34	8,980,573
Virginia	..	..	..	..	..	..	..	..	20	1,666,854	17	1,580,161	28	32,243,648
Washington	..	..	13	1,513,792	..	..	..	..	26	1,274,708	26	903,635	32	18,576,052
West Virginia	8	7,866,628	..	..	8	32,513	1	**57,389,161**	5	10,988,677	18	1,500,809	2	306,916,191
Wisconsin	..	..	..	..	..	..	..	..	27	874,172	9	2,757,790	30	24,976,780
Wyoming	6	25,776,000	..	..	..	..	14	144,425	44	110,091	44	64,509	29	29,567,250

TRAVEL DISTANCES BETWEEN IMPORTANT CENTERS IN THE UNITED STATES

	Atlanta.	Baltimore.	Boston.	Buffalo.	Chicago.	Cincinnati.	Cleveland.	Denver.	Detroit.	Galveston.	*Havana. Via Tampa.	*Honolulu Via San Francisco.	Indianapolis.	Jacksonville, Fla.	Kansas City.	Little Rock.	Los Angeles.	*Manila, Ph.Is. Via San Fran. and Honolulu.	Milwaukee.	Minneapolis.	Nashville.	New Orleans.	New York.	Omaha.	Philadelphia.	Pittsburg.	Portland, Me.	Portland, Ore.	Saint Louis.	*Salt Lake City.	San Francisco.	*San Juan, P.R. Via New York or Tampa.	*Seattle, Wash.	*Sitka, Alaska. Via Seattle.	Washington.
Atlanta		686	1104	888	731	461	705	1523	722	907	940	5165	548	351	884	553	2267	10800	816	1151	289	496	874	1020	783	774	1212	2839	607	2086	2750	1944	2992	4010	646
Baltimore	686		418	402	802	593	474	1827	653	1561	1393	5571	704	885	1211	1279	3014	11206	887	1222	810	1150	188	1292	97	334	526	3111	934	2358	3156	1747	3039	4057	40
Boston	1104	418		478	999	905	661	2024	724	1979	1811	5768	944	1303	1432	1529	3235	11403	1084	1419	1200	1568	217	1489	321	674	108	3326	1184	2555	3353	1776	3236	4254	458
Buffalo	888	402	478		527	427	183	1552	251	1575	1795	5296	466	1239	954	1051	2757	10931	612	947	722	1253	411	1017	413	235	561	2836	706	2083	2881	1970	2764	3782	442
Chicago	731	802	999	527		294	344	1025	272	1152	1671	4769	183	1096	457	628	2260	10404	85	420	442	915	912	490	821	468	1082	2309	283	1556	2354	2471	2237	3255	813
Cincinnati	461	593	905	427	294		244	1257	261	1210	1413	4996	111	812	618	686	2421	10631	379	714	295	826	757	717	666	313	988	2536	341	1783	2581	2316	2531	3549	553
Cleveland	705	474	661	183	344	244		1369	169	1392	1657	5113	283	1056	771	868	2574	10748	429	764	539	1070	584	834	493	140	744	2653	523	1900	2698	2143	2581	3599	514
Denver	1523	1827	2024	1552	1025	1257	1369		1297	1151	2462	3869	1120	1824	639	1082	1361	9504	1048	902	1234	1348	1937	538	1846	1493	2107	1409	916	657	1454	3496	1595	2613	1810
Detroit	722	653	724	251	272	261	169	1297		1351	1674	5041	272	1073	708	827	2511	10676	357	692	556	1087	662	762	664	321	807	2581	482	1828	2626	2221	2509	3527	668
Galveston	907	1561	1979	1575	1152	1210	1392	1151	1351		1613	4579	1109	1027	840	524	1681	10214	1237	1346	891	411	1749	1040	1658	1490	2087	2560	869	1713	2164	2617	2746	3764	1521
*Havana. Via Tampa	940	1393	1811	1795	1671	1413	1657	2462	1674	1613		6104	1497	586	1823	1474	3144	11739	1756	2091	1225	1202	1581	1960	1490	1655	1919	3779	1547	2954	3689	1120	3951	4969	1353
*Honolulu Via San Francisco.	5165	5571	5768	5296	4769	4996	5113	3869	5041	4579	6104		4885	5360	4479	4714	2897	5635	4789	4643	5010	4859	5681	4279	5590	5237	5851	3161	4692	3285	2415	7240	3373	4391	5582
Indianapolis	548	704	944	466	183	111	283	1120	272	1109	1497	4885		899	492	585	2295	10520	268	603	295	852	825	606	734	381	1027	2425	240	1672	2470	2384	2420	3438	664
Jacksonville, Fla	351	885	1303	1239	1096	812	1056	1824	1073	1027	586	5360	899		1185	833	2462	10995	1181	1516	654	616	1073	1385	982	1125	1411	3204	972	2387	2945	1590	3333	4351	845
Kansas City	884	1211	1432	954	457	618	771	639	708	840	1823	4479	492	1185		470	1803	10114	542	556	595	881	1342	200	1251	898	1515	2019	277	1250	2064	2901	2234	3252	1171
Little Rock	553	1279	1529	1051	628	686	868	1082	827	524	1474	4714	585	833	470		1816	10349	713	919	367	451	1410	670	1319	966	1612	2489	345	1577	2299	2478	2677	3695	1239
Los Angeles	2267	3014	3235	2757	2260	2421	2574	1361	2511	1681	3144	2897	2295	2462	1803	1816		8532	2345	2263	2183	1961	3145	1899	3054	2701	3318	1127	2080	1225	482	4107	1313	2331	2974
*Manila, Ph. Is., Via S. Fran. and Honolulu.	10800	11206	11403	10931	10404	10631	10748	9504	10676	10214	11739	5635	10520	10995	10114	10349	8532		10424	10278	10645	10494	11319	9914	11225	10872	11486	8796	10327	8920	8050	12878	9008	10026	11197
Milwaukee	816	887	1084	612	85	379	429	1048	357	1237	1756	4789	268	1181	542	713	2345	10424		335	527	1000	997	510	906	553	1167	2237	368	1576	2374	2556	2152	3170	898
Minneapolis	1151	1222	1419	947	420	714	764	902	692	1346	2091	4643	603	1516	556	919	2263	10278	335		862	1261	1332	364	1241	888	1502	1901	574	1430	2228	2891	1817	2835	1233
Nashville	289	810	1200	722	442	295	539	1234	556	891	1229	5010	295	654	595	367	2183	10645	527	862		557	998	731	907	608	1283	2550	318	1797	2595	2233	2679	3697	770
New Orleans	496	1150	1568	1253	915	826	1070	1348	1087	411	1202	4859	852	616	881	451	1961	10494	1000	1261	557		1338	1081	1247	1139	1676	2757	700	1838	2444	2206	2943	3961	1110
New York	874	188	217	411	912	757	584	1937	632	1749	1581	5681	825	1073	1342	1410	3145	11319	997	1332	998	1338		1402	91	444	325	3221	1065	2469	3266	1559	3149	4167	228
Omaha	1020	1292	1489	1017	490	717	834	538	762	1040	1960	4279	606	1385	200	670	1899	9914	510	364	731	1081	1402		1311	958	1572	1819	413	1066	1864	2961	2005	3023	1303
Philadelphia	783	97	321	413	821	666	493	1846	664	1658	1490	5590	734	982	1251	1319	3054	11225	906	1241	907	1247	91	1311		353	429	3130	974	2377	3175	1650	3058	4076	137
Pittsburg	774	334	674	235	468	313	140	1493	321	1490	1655	5237	381	1125	898	966	2701	10872	553	888	608	1139	444	958	353		782	2777	621	2024	2822	2003	2705	3723	302
Portland, Me	1212	526	108	561	1082	988	744	2107	807	2087	1919	5851	1027	1411	1515	1612	3318	11486	1167	1502	1283	1676	325	1572	429	782		3391	1267	2638	3436	1884	3319	4337	566
Portland, Ore	2839	3111	3326	2836	2309	2536	2653	1409	2581	2560	3779	3161	2425	3204	2019	2489	1127	8796	2237	1901	2550	2757	3221	1819	3130	2777	3391		2232	922	746	4780	186	1204	3122
Saint Louis	607	934	1184	706	283	341	523	916	482	869	1547	4692	240	972	277	345	2080	10327	368	574	318	700	1065	413	974	621	1267	2232		1479	2277	2624	2391	3409	894
*Salt Lake City	2086	2358	2555	2083	1556	1783	1900	657	1828	1713	2954	3285	1672	2387	1250	1577	1225	8920	1576	1430	1797	1838	2469	1066	2377	2024	2638	922	1479		870	4028	1068	2086	2369
San Francisco	2750	3156	3353	2881	2354	2581	2698	1454	2626	2164	3689	2415	2470	2945	2064	2299	482	8050	2374	2228	2595	2444	3266	1864	3175	2822	3436	746	2277	870		4825	958	1976	3167
*San Juan, P. R. Via New York or Tampa.	1944	1747	1776	1970	2471	2316	2143	3496	2221	2617	1120	7240	2384	1590	2901	2478	4107	12878	2556	2891	2233	2206	1559	2961	1650	2003	1884	4780	2624	4028	4825		4708	5726	1787
*Seattle, Wash	2992	3039	3236	2764	2237	2531	2581	1595	2509	2746	3951	3373	2420	3333	2234	2677	1313	9008	2152	1817	2679	2943	3149	2005	3058	2705	3319	186	2391	1068	958	4708		1018	3027
*Sitka, Alaska. Via Seattle.	4010	4057	4254	3782	3255	3549	3599	2613	3527	3764	4969	4391	3438	4351	3252	3695	2331	10026	3170	2835	3697	3961	4167	3023	4076	3723	4337	1204	3409	2086	1976	5726	1018		4045
Washington	646	40	458	442	813	553	514	1810	668	1521	1353	5582	664	845	1171	1239	2974	11197	898	1233	770	1110	228	1303	137	302	566	3122	894	2369	3167	1787	3027	4045	

The figures in this table are taken from the "official table of distances" used by the war department of the United States government, except the distances to cities marked with an asterisk (*), which are computed along the best routes of travel. All distances are in statute miles.

WORLD TRAVEL DISTANCES

The chief ports of the world are named in alphabetical order across the top and down the sides of the tables. The distance between any two ports will be found at the intersection of the two columns which contain the names of the selected ports. Thus the distance from Baltimore to Bombay is given as 8,431, and the small "s" shows that the route is via Suez Canal. Distances are for full-powered steam vessels reckoned in nautical miles.

	Amsterdam.	Antwerp.	Barbados.	Belfast.	Bombay.	Boston.	Bremen.	Buenos Ayres.	Cape Town.	Cherbourg.	Genoa.	Glasgow.	Hamburg.	Havana.	Havre	Hongkong.	Liverpool.	London.	Melbourne.	New Orleans.	New York.	Plymouth.	Rio de Janeiro	San Francisco.	Shanghai.	Singapore.	Southampton.	Valparaiso.	Yokohama.
Amsterdam	—	135	3877	733	s 6336	3164	272	6370	6193	303	2237	818	290	4335	267	9764	711	201	11131	4837	3346	385	5280	M 13639	10507	s 8324	277	M 8869	11226
Antwerp	135	—	3841	697	s 6300	3128	357	6334	6157	267	2201	782	385	4299	231	9728	675	180	11095	4801	3310	349	5244	M 13603	10471	s 8288	238	M 8833	11190
Baltimore	3638	3602	1823	3204	s 8431	674	3851	5898	6913	3357	4332	3250	3869	1112	3423	s 11859	3328	3562	C 12703	1614	410	3265	4808	M 13167	12602	s 10419	3383	M 8397	s 13327
Barbados	3877	3841	—	3637	H 8199	1880	4090	4169	5284	3596	4100	3719	4108	1472	3662	s 11627	3624	3801	C 11047	2115	1825	3549	3079	M 11438	12370	s 10187	3622	M 6668	s 13089
Belfast	733	697	3637	—	6245	2730	880	6271	6089	459	2146	113	891	3899	528	9673	137	663	s 11040	4401	2912	360	5168	M 13527	10535	s 8233	488	M 8757	s 11135
Bermuda	3248	3112	1222	2958	7876	707	3459	5175	6181	2967	3771	2885	3477	1141	3033	s 11627	2945	3172	C 11972	1643	699	2875	4085	M 12444	12376	s 9864	2956	M 7678	s 13094
Bombay	s 6336	s 6300	s 8199	6245	—	s 7962	6549	C 8349	4604	6040	4473	6327	6567	s 9000	6115	4090	6223	6260	6535	9502	8153	5997	C 7824	9780	4633	2450	6090	M 9875	5352
Boston	3164	3128	1880	2730	s 7962	—	3377	5804	6776	2883	3863	2777	3395	1422	2949	11390	2854	3088	12534	1924	379	2791	4714	13073	s 12133	s 9950	2909	M 8303	12852
Bremen	272	357	4090	880	C 6549	3377	—	6583	6406	513	2450	922	171	4548	480	9977	924	409	s 11344	5050	3559	598	5501	H 13852	10720	8537	479	M 9082	s 11439
Buenos Ayres	6370	6334	4169	6271	s 8349	5804	6583	—	3778	6074	6130	6350	6601	5669	6151	C 10643	6258	6294	9099	6255	5838	6029	1135	M 7536	C 11386	9376	6124	M 2766	C 12105
Cape Town	6193	6157	5284	6089	4604	6776	6406	3778	—	5897	5972	6168	6424	6716	5966	6898	6076	6117	5814	7347	6795	5852	3267	10217	7641	5631	5947	5447	8360
Charleston	3846	3810	1630	3561	s 8388	845	4059	5790	6828	3565	4459	3498	4077	605	3631	s 11986	3548	3770	C 12620	1107	614	3473	4700	13059	12729	s 10546	3591	H 8289	s 13448
Cherbourg	303	267	3596	459	6040	2883	513	6074	5897	—	1941	544	531	4029	71	s 9468	437	227	s 10835	4531	3065	108	4984	M 13343	10211	8028	83	M 8573	s 10930
Colon	4818	4782	1225	4543	9283	2173	5031	5318	6410	4537	5184	4625	5049	1380	4603	s 12711	4530	4742	C 12203	1380	1972	4445	4228	M 12587	s 13454	s 11271	4563	M 7817	s 14173
Constantinople	2898	3158	5057	3103	3837	4820	3407	7381	s 6137	2898	1312	3185	3425	5852	2975	7266	3081	3118	8633	6354	5011	2855	5997	M 14352	8009	5826	2948	9583	8728
Galveston	5031	4995	2240	4595	9696	2118	5244	6378	7470	4725	5591	4641	5262	765	4816	13124	4719	4955	13263	380	1893	4658	5288	M 13649	s 13861	s 11678	4776	H 8877	s 14586
Genoa	2237	2201	4100	2146	4473	3863	2450	6130	5972	1941	—	2228	2468	4895	2018	7901	2124	2161	9268	5397	4054	1898	5040	M 13399	8644	6461	1991	H 8626	s 9363
Gibraltar	1389	1353	3252	1298	4953	3015	1602	5282	5124	1093	854	1380	1620	4047	1162	s 8381	1276	1313	9748	4549	3206	1050	4192	H 12551	9124	6941	1143	M 7781	s 9843
Glasgow	818	782	3719	113	6327	2777	922	6350	6168	544	2228	—	1049	3945	610	9755	210	745	11122	4447	2959	442	5158	M 13609	10498	8315	570	M 8839	s 11217
Hamburg	290	385	4108	891	6567	3395	171	6601	6424	531	2468	1049	—	4566	498	9995	942	427	11362	5068	3577	616	5519	M 13870	10738	8555	497	M 9100	s 11457
Havana	4335	4299	1472	3899	s 9000	1422	4548	5669	6716	4029	4895	3945	4566	—	4120	s 12428	4023	4259	C 12512	597	1197	3962	4579	M 12974	s 13165	s 10982	4080	M 8168	s 13890
Havre	267	231	s 3662	528	6115	2949	480	6151	5966	71	2018	610	498	4120	—	9537	503	194	10904	s 4622	s 3131	175	5061	M 13412	s 10280	8097	105	M 8642	11999
Hongkong	9764	9728	s 11627	9673	4090	11390	9977	C 10643	6898	s 9468	7901	9755	9995	s 12428	9537	—	9651	9688	5031	s 12924	s 11580	9425	C 10118	6041	853	1440	s 9518	10536	1580
Honolulu	M 13882	M 13776	M 11611	M 13700	8375	M 13246	M 14025	M 7709	M 10390	M 13516	M 12386	M 13782	M 14043	M 13111	M 13585	4858	M 13690	M 13736	4916	M 7340	M 13280	M 13473	M 8587	2089	4333	5925	13566	5916	3445
Jamaica	4314	4278	1040	4039	s 8844	1658	4527	5166	6260	4033	4739	4121	4545	716	4099	s 12266	4026	4238	C 12051	1115	1457	3941	4076	M 12471	13009	s 10826	4059	7665	s 13723
Lisbon	1111	1087	3085	1020	5249	2797	1324	5304	5148	815	1150	1102	1342	4174	884	8677	998	1035	s 10044	4676	3025	770	4214	M 12573	s 9420	7237	865	M 7803	10139

K, via Kiel canal. S, via Suez canal. C, via Cape of Good Hope. M, via Strait of Magellan. H, via Cape Horn. T, via Torres strait.

WORLD TRAVEL DISTANCES—Continued

The chief ports of the world are named in alphabetical order across the top and down the sides of the tables. The distance between any two ports is found at intersection of the two columns which contain the names of the selected ports. Thus the distance from New York to Melbourne is given as 12,586, and the small "c" shows that the route is via Cape of Good Hope. Distances are for full-powered steam vessels reckoned in nautical miles.

	Amsterdam.	Antwerp.	Barbados.	Belfast.	Bombay.	Boston.	Bremen.	Buenos Ayres.	Cape Town	Cherbourg	Genoa.	Glasgow.	Hamburg.	Havana.	Havre.	Hongkong	Liverpool.	London.	Melbourne.	New Orleans.	New York.	Plymouth.	Rio de Janeiro.	San Francisco.	Shanghai.	Singapore.	Southampton.	Valparaiso.	Yokohama.
Liverpool	711	675	3624	137	6223	2854	924	6258	6076	437	2124	210	942	4023	503	9651	——	638	s 11018	4525	3036	345	5158	M 13517	s 10394	8211	463	M 8747	s 11115
London	201	180	3801	663	6260	3088	409	6294	6117	227	2161	745	427	4259	194	9688	——	638	—— s 11055	4761	3270	309	5204	M 13563	s 10437	8248	201	M 8793	s 11150
Manila	9667	9631	11530	9576	3793	s 11293	s 9880	c 10546	6801	9371	7804	9658	9898	s 12325	9440	640	s 9554	s 9591	T 4511	s 12827	11584	9328	c 10021	6238	1130	1435	s 9421	10406	1768
Melbourne	11131	11095	c 11047	s 11040	6535	12534	s 11344	9099	5814	s 10835	9268	11122	11362	c 12512	10904	5031	s 11018	11055	—— c	c 13140	c 11,586	s 10792	8827	6966	5234	3823	s 10885	6280	4875
Montreal	3317	3281	2715	2645	8141	1222	3530	6421	7108	3036	4042	2693	3548	2475	3102	s 11569	2760	3241	s 12036	2977	1451	2944	5331	M 13690	s 12312	s 10129	3062	M 8290	s 13031
New Orleans	4837	4801	2115	4401	9502	1924	5050	6255	7347	4531	5397	4447	5068	597	4622	s 12924	4525	4761	c 13140	——	1699	4464	5160	M 13524	s 13667	s 11484	4582	M 8754	s 14386
Newport News	3514	3478	1699	3080	8307	550	3727	5774	6789	3233	4208	3126	3745	988	3299	11735	3204	3438	c 12579	1490	286	3141	4590	M 13043	s 12478	s 10295	3259	8273	s 13203
New York	3346	3310	1825	2912	8153	379	3559	5838	6995	3065	4054	2959	3577	1227	3131	11580	3053	3270	c 12586	1699	——	2973	4748	M 13107	s 13324	s 10141	3091	M 8337	s 13042
Panama	M 11383	M 11347	M 9182	M 11274	s 12386	M 10817	M 11596	M 5280	M 7961	M 11087	M 11143	M 11353	M 11614	M 10682	M 11156	9324	M 11261	M 11307	7949	M 11268	M 10851	M 11042	M 6158	3277	8672	M 13405	M 11137	2615	7702
Para	4319	4193	1142	4056	s 8262	2943	4442	3235	4330	3933	4163	4138	4460	2577	4010	c 11204	4043	4153	c 10120	3136	2915	3883	2145	M 10504	c 11947	s 10250	3983	M 5734	c 12666
Philadelphia	3482	3446	1828	3048	8284	517	3694	5870	6861	3201	4185	3094	3712	1158	3267	s 11712	3172	3406	c 12652	1660	234	3109	4782	M 13141	s 12455	s 10272	3227	M 8371	13174
Plymouth	385	349	3594	360	5997	2791	598	6029	5852	108	1898	442	616	3962	175	9425	345	309	10792	4464	2973	——	4939	M 13300	10168	s 7985	129	8530	10887
Portland, (Me)	3086	3050	1927	2652	7912	98	3299	5849	6787	2805	3807	2698	3317	1470	2871	s 11334	2776	3010	s 12579	1972	427	2713	4759	M 13118	s 12077	s 9894	2831	8348	s 12796
Rio de Janeiro	5280	5244	3079	5168	7824	4714	5501	1135	3265	4984	5040	5250	5519	4579	5061	c 11118	5158	5204	8827	5160	4748	4939	——	8414	c 10861	8851	5034	M 3644	c 11580
Leningrad	1070	K 1165	4888	1606	7353	4052	951	K 7381	7204	1311	3248	1648	860	5346	1275	K S 10755	1716	K 1207	12142	5848	4234	1396	6299	M 14650	11518	9335	1277	M 9880	12237
St. Thomas	3846	3810	440	3586	8265	1516	4059	4629	5708	3570	4160	3668	4077	1040	3639	s 11687	3573	3770	c 11499	1590	1435	3473	3539	11898	s 12430	10247	3591	7128	13149
San Francisco	M 13639	M 13603	M 11438	M 13527	9780	M 13073	M 13852	7536	M 10217	M 13343	M 13399	M 13609	M 13870	M 12974	M 13412	6041	M 13517	M 13563	6966	13524	M 13107	13300	M 8414	——	5491	7330	M 13393	5140	4521
San Juan	3867	3831	502	3600	8307	1480	4080	4694	5773	3583	4202	3681	4098	975	3652	s 11730	3588	3791	c 11564	1525	1428	3494	3604	M 11963	s 12473	10289	3612	M 7193	s 13192
Savannah	3916	3880	1648	3443	8640	928	4129	5820	6860	3684	4535	3489	4147	634	3701	s 12062	3618	3840	12650	1136	695	3543	4730	M 13089	s 12805	10622	3661	M 8319	13524
Seattle	M 14418	M 14382	M 12217	M 14306	9515	M 13852	M 14631	M 8315	M 10990	M 14122	s 13509	M 14388	M 14649	M 13753	M 14191	5779	M 14296	M 14342	7326	M 14303	M 13886	M 14079	M 9193	799	5209	7068	M 14092	5917	4259
Shanghai	10507	10471	12370	10535	4633	s 12133	10720	c 11380	7641	s 10211	8644	10498	s 10738	s 13165	10280	853	s 10394	10437	5234	s 13667	s 12324	10168	c 10861	5491	——	2183	10267	M 10266	1030
Singapore	8324	8288	10187	8233	2450	s 9950	8537	9376	5631	8028	6461	8315	8555	10982	8097	1440	8211	8248	3823	s 11484	s 10141	7985	8851	7330	2183	——	8078	10899	2902
Southampton	277	238	3622	488	6090	2909	479	6124	5947	83	1991	570	497	4080	105	s 9518	463	201	s 10885	4582	3091	129	5034	M 13393	s 10261	8078	——	8623	10980
Suez	3376	3340	5239	3285	2960	5002	3589	8154	5259	3080	1513	3367	3607	6034	3157	6388	3263	3300	7755	6536	5193	3037	6179	12278	7131	4948	3130	9768	7850
Valparaiso	M 8869	M 8833	M 6668	M 8757	M 9875	M 8303	M 9082	M 2766	M 5447	M 8573	M 8626	M 8839	M 9100	M 8168	M 8642	10536	M 8747	M 8793	6280	M 8754	M 8337	M 8530	M 3644	5138	10266	M 10899	M 8623	——	9339
Yokohama	11226	11190	s 13089	11135	5352	s 12852	11439	c 12105	8360	10930	9363	11217	11457	s 13890	10999	1580	11113	11150	4875	s 14386	s 13043	10887	c 11580	4521	1030	2902	10980	9339	——

K, via Kiel canal. S, via Suez canal. C, via Cape Town. M, via Strait of Magellan. H, via Cape Horn. T, via Torres strait.

ODD FORMS OF TRANSPORTATION

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1—India—Street scene showing ox carts loaded with cotton. 2—Siam Howda—Traveling in northern Siam via elephant express. 3—India Cashmere—An inflated ox skin used as a ferry boat. 4—Drawing water from a native well near Delhi, India. 5—Burma, Rangoon—Working elephants at Rangoon. 6—Jamaica. 7—Ceylon, China—Rickshaws on a country road. 8—Ceylon—A native peddler selling live poultry. 9—An Alaskan pack train.

BOOK VI.

TRADE AND INDUSTRY

ALBERT R. MANN B.S.A. CHAS. R. TOOTHAKER B.Sc.
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AGRICULTURE is the oldest and most important industry. It is the art of tilling the ground, the planting, cultivation and harvesting of crops, and includes fruit-growing or horticulture, animal husbandry, or the rearing, breeding, feeding and management of the domesticated breeds of live stock, as well as the manufacture or evolving from products of the soil articles for home consumption or purposes of commerce. By it humanity is fed and clothed, and it contributes in many other ways to the welfare and wealth of the world. Without agriculture man would be a barbarian and the earth a wilderness.

The knowledge that centuries of research and practice give, the light contributed by agricultural chemistry supplemented by new and improved machinery and modern transportation facilities, have greatly enlarged the productions and possibilities of agriculture; and its problems, the mysteries of the soils, and of animal and plant life are engaging the best intellect.

Acreage Yields.—While in the aggregate of field productions the United States ranks first, America does not compare favorably with older countries in acre-yields. To compass this a more scientific farming, more educated farmers, more thorough tillage and cultivation, careful seed selection, proper fertilization, and rational crop rotation must be the agencies; in fact a more intimate knowledge and use of the underlying principles governing soil fertility, and crop and live stock production. What this would mean finds illustration in the examples afforded by England and Germany in wheat-growing, with averages of 32.2 and 26.1 bushels per acre, respectively, compared with the 14 bushels per acre in the United States, from a soil naturally as fertile and as well adapted as any.

Home and Foreign Markets.—In the settlement and development of America the millions of acres of fresh land brought into production yielded more than domestic consumption required, which caused the seeking of markets elsewhere for the surplus, and the resulting export trade has been a wellspring of prosperity. There are signs, however, that American farmers will not so largely depend for profits in the future upon foreign demands, as home requirements are annually increasing. A case in point is the constantly lessening difference between the production and home consumption of wheat.

In the five-year period of 1894-8 exports from the United States averaged 32 per cent of annual production, and in 1904-8 had fallen to 17 per cent, while the average annual production was 535,387,000 bushels for the first period, and 665,959,000 bushels in the latter. Deducting the average yearly exports for each period it is shown that the consumption of wheat at home increased 50 per cent. Also, for 1909, the value of agricultural exports was $903,000,000, or $151,000,000 below the highest record, made in 1907, and $114,000,000 below the next highest, in 1908, while on the other hand the imports of agricultural products were never so high in value, the amount being $637,000,000, in 1909.

Soils and Their Fertilization.—Naturally the soil is and must be of primal importance. Plants obtain their food from the soil, and atmosphere, and the mineral elements in the soil are utilized only through the plant roots. If requisite elements are lacking yields are less, however much of a factor tillage may be. Without proper proportions of plant food available in the soil, tillage and good seed do not suffice to maintain it in a high state of productivity, and a supply of suitable plant food must be maintained if maximum yields are to be realized.

Chemistry of Soil.—Vegetation requires carbon and oxygen, taken into the plant leaves from the air as carbon dioxide; hydrogen, a constituent of water absorbed through the plant roots; nitrogen, taken from the soil by all plants and also from the air, especially by legumes; and potassium, phosphorus, magnesium, calcium, iron and sulphur, drawn only from the soil.

Of these, nitrogen, the most expensive element of plant food, although comprising four-fifths of the atmosphere, is perhaps the one becoming the most seriously deficient in the ordinary soils of the wheat and corn growing sections, due largely to continuous grain-growing, resulting in a loss of vitality and dwarfed growths.

A rational rotation of crops, use of manures, with the legumes as pasture and hay crops, or used as green manure by plowing them into the soil, will upbuild the land, and the shortage of nitrogen be overcome by the liberal use of legumes, such as alfalfa, clover and peas, in the form of either green or animal manures, which also add humus of great importance.

Phosphate.—One eminent soil expert says: "To increase the value of farm manure we should add phosphate to it. Thus we can balance manure, and when used on soils rich in potassium, in rotation with nitrogen-fixing legume crops, we can provide plant food in a balanced ration to meet the needs of maximum yield. By these means we can check the progress of soil exhaustion, and even gradually increase the fertility and productive capacity of the land. Indeed, we can thus profitably enrich such land even beyond its virgin fertility," and, again ". . . land may be built up and be made richer than it ever was by a good system of strictly grain farming." The experiment stations are successfully solving these problems.

Humus, decaying vegetable or animal matter, is the great storehouse of nitrogen, and is also an indispensable element in soils, not so much because of its direct nourishment to plants but because it helps to render other materials available for the growing crops. It is humus that gives life and heart to the soil, improves its physical condition, its tilth and texture, augments its water-holding capacity, gives its dark color, modifies extremes in its temperature, facilitates the entrance of air, and is what most worn-out lands suffer for want of.

Commercial Fertilizers, by which are provided artificial plant food, are in common and extensive use where lands have been depleted and crop production decreased, as on the tobacco and cotton lands of the Southern states, acting as a sort of medicine or stimulant to the soil, but many of them have little or no further influence than is evidenced in the increase of a single season's crops or crop.

Composition of the Principal Commercial Fertilizing Materials

Fertilizing Material	Nitrogen	Phosphoric Acid			Potash	Chlorine
		Available	Insoluble	Total		
Supplying nitrogen:	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
Nitrate of soda	15.5–16.0					
Sulphate of ammonia	19.0–20.5					
Dried blood (high grade)	12.0–14.0					
Dried blood (low grade)	10.0–11.0			3.0– 5.0		
Concentrated tankage	11.0–12.5			1.0– 2.0		
Tankage (bone)	5.0– 6.0			11.0–14.0		
Dried fish scrap	7.0– 9.0			6.0– 8.0		
Cotton-seed meal	6.5– 7.5			1.5– 2.0	2–3.0	
Castor pomace	5.0– 6.0			1.0– 1.5	1–1.5	
Supplying phosphoric acid:						
South Carolina rock phosphate			26–28	26.0–28.0		
South Carolina rock superphosphate (dissolved South Carolina rock phosphate)		12–15	1– 3	13.0–16.0		
Florida land rock phosphate			33–35	33.0–35.0		
Florida pebble phosphate			26–32	26.0–32.0		
Florida superphosphate (dissolved Florida phosphate)		14–16	1– 4	16.0–20.0		
Boneblack			32–36	32.0–36.0		
Boneblack superphosphate (dissolved boneblack)		15–17	1– 2	17.0–18.0		
Ground bone	2.5– 4.5	5– 8	15–17	20.0–25.0		
Steamed bone	1.5– 2.5	6– 9	16–20	22.0–29.0		
Dissolved bone	2.0– 3.0	13–15	2– 3	15.0–17.0		
Thomas slag				11.4–23.0		
Supplying potash:						
Muriate of potash					48–52.0	45.0–48.0
Sulphate of potash (high grade)					48–52.0	0 5– 1.5
Sulphate of potash and magnesia					26–30.0	1.5– 2.5
Kainit					12–12.5	30.0–32.0
Sylvinit					16–20.0	42.0–46.0
Cotton-hull ashes				7.0– 9.0	20 30.0	
Wood ashes (unleached)				1.0– 2.0	2– 8.0	
Wood ashes (leached)				1.0– 1.5	1– 2.0	
Tobacco stems	2.0– 3.0			3.0– 5.0	5– 8.0	

The following table is given, showing the amount of fertilizing constituents in one ton of various agricultural products, if returned to the land in the form of manure:

Farm Products	Nitrogen	Phosphoric Acid	Potash
Timothy hay	19.2	7.2	25.2
Clover hay	39.4	8.0	35.0
Alfalfa hay	53.2	10.8	49.2
Cowpea hay	79.6	13.2	47.2
Field corn fodder	17.2	7.2	21.4
Corn silage	8.4	2.4	6.6
Wheat straw	8.6	2.6	14.8
Rye straw	10.0	5.8	15.8
Oat straw	13.0	4.4	24.4
Wheat	34.6	19.2	7.0
Rye	32.4	16.2	10.4
Oats	36.2	15.4	11.4
Corn	29.6	12.2	7.2
Barley	39.6	15.4	9.0
Wheat bran	51.2	58.4	31.4
Linseed meal	108.6	37.6	26.2
Cotton seed meal	142.8	61.8	36.4
Potatoes	7.0	3.2	11.4
Milk	10.2	3.4	3.0

Kinds of Soils.—Generally a soil well drained, with a sandy or gravelly subsoil, is adapted to tree and fruit growing. The deep alluvial prairie lands are premier for corn, and the rather drier and more compact soils, containing liberal proportions of lime and clay, are especially prized for wheat. Soil alone, however, does not determine the kinds of crops that should be raised.

Rainfall.—Over a large portion of America the precipitation is ample for the requirements of agriculture, but owing to wide variation in the yearly rainfall some sections have too much and others too little. In some of the plains regions west of the Missouri river, and elsewhere as well, precipitation is comparatively scant, but over considerable of these the greatest proportion of the yearly rainfall comes in the crop-growing season.

All localities are subject to vagaries of the weather, but their harmful effects are minimized by the knowledge that experience and study have brought. Diversity of crops, scientific methods of preparation and tillage best adapted to the particular locality, drainage and irrigation are being utilized through a better understanding, and have large influence on the general welfare.

Irrigation and Drainage.—Irrigation is the artificial watering of land to increase production, or make available for agriculture lands that otherwise would be too dry. Artificial watering of the land has been practiced from earliest times in the older countries, and even by the prehistoric people of some portions of what are now the United States.

Mormons, beginning late in 1840, in Utah, were the first modern people to demonstrate the practicability of extensive irrigation in America, and from their modest beginnings farming and fruit-growing by irrigation have slowly but continuously been extended until the nation, states, municipalities, companies and individuals are all interested in irrigation enterprises in the regions of insufficient rainfall. Authorities state that in 1860 about 100,000 acres of land were under irrigation in the United States, while in 1910 there were being irrigated over 10,000,000 acres, and more than 15,000,000 acres capable of irrigation were under completed canals and reservoirs.

The National Reclamation Law of 1902 gave great impetus to such undertakings in the United States. By its provisions the proceeds from sales of public lands in fourteen states and two territories have been used in the construction of irrigation systems. In each of these the reservoirs are essential parts, storehouses for the collected flood-waters thereby made usable when needed for lands otherwise barren. Most of the irrigated lands are supplied by gravity with water from reservoirs and surface streams, although the lands watered by artesian wells are not unimportant, and those irrigated by pumping from wells by wind-power and gasoline engines are increasing, especially where immeasurable quantities of water, popularly called the underflow, lie near the surface. The applying of water in the United States is quite generally by checks, flooding and furrows, and in all skill and judgment are required, the character and situation of the soil and the crops planted being governing factors.

Drainage, by either natural or artificial means, has for its principal object the removal of excess water from the land, to make it more productive. Many tracts already producing would be greatly enhanced in value if some practical system of soil drainage were installed. The most efficient method is by the use of porous tiles, buried at proper depths and distances apart in the ground. In times of too much water they quickly carry off the surplus, early leaving the surface in condition for cultivation, and in times of drought permit such action of the earth's vapors as to accumulate moisture in the soil.

Underdrainage.—The practice of underdrainage is old, but the use of specially made burnt clay tiles for the purpose is comparatively recent. Such lands, for instance, as are full of water for the first two or three feet below the surface, or those where water stands on the surface after heavy rains, are greatly improved by tile drainage, and ditches also are often profitably employed to carry off surface water. Properly drained fields obviously present many advantages. Even in lands under irrigation the circulation of water in the soils is quite necessary, to prevent injurious accumulation of soluble substances having unfavorable effects. Fortunately, most lands have natural underdrainage, but without this the removal of the excess water by tiles is to be commended.

Ground too wet is generally cold, often sour, and unfriendly to plant growth, whereas well drained land, containing the moisture held by capillarity, has appreciably more warmth and needed aëration. These conditions not only increase its powers for developing and yielding plant food, but the soil being warmer, promotes the germination of seeds and gives thriftier, healthier plants. In ordinary seasons it enables preparation, planting, cultivating and harvesting to be done at such times as experience has shown best.

Tillage and Dry Farming.—It is quite probable that low yields and failures of crops are more generally due to inadequate and improper tillage than to any other part of the farmer's work. Proper seed, a soil of average fertility, its timely and proper preparation and subsequent tillage, where crops are cultivated during their growth, very materially determine yields.

Good soils often fail of compensating returns because of poor tillage. It is through the processes aided by cultivation that plant food is available and utilized. Sowing or planting the staple crops on unbroken sod would be unprofitable. By tillage the soil is not only aërated and pulverized but moisture is conserved. The action of air and moisture in the soil brings about such changes that the otherwise largely unavailable food elements are liberated for assimilation by plants through their roots. Hence, the importance of thorough and scientific tillage for all crops, for yields are materially influenced by the frequency and kind of cultivation given.

Dry Farming.—This is all the more imperative in those regions of scant rainfall, and in these in recent years have been adopted a system of culture that makes production more certain and more abundant. This is popularly called "dry farming," the principles of which have been practiced from the most ancient times. Dry farming means simply proper tillage, an outstanding feature being suitable preparation of the soil for the reception and retention of the natural precipitation. By providing a loose, finely pulverized surface, or dust blanket, capillary attraction with the moisture beneath is broken, lessening evaporation and promoting proper percolation.

Where irrigation is impracticable for lack of water, as in the major portions of the semiarid regions, such methods prove advantageous, and by conservation the natural rainfall is made sufficient for yields that otherwise would have been impossible. Its general principles might be profitably adopted everywhere, and are absolutely essential to remunerative results in regions of scant rainfall.

Agricultural Education.—Recognizing agriculture as the country's chief industry, Americans early evinced interest in agricultural education, which took practical form in the organization of societies for its promotion. Washington, the first president of the United States, strongly urged upon Congress the wisdom of providing ways and means for agricultural research and dissemination of the useful knowledge acquired, and he was a member of the first society formed, in 1785, for the advancement of agriculture in America.

This was the nucleus from which has developed the comprehensive agricultural educational system of our day, reaching its highest efficiency in the present excellent colleges and schools maintained in the interest of husbandry, with their elaborate curricula, extensive equipment, and army of capable instructors. Now, also, nearly every farming community has an agricultural or similar association. State, county and district fairs have been educators; nearly, if not all, the states have their boards of agriculture or their equivalent, supported by public funds, and from these institutions are issued, free, a great variety of literature to those interested in rural pursuits.

Agricultural Literature.—In the same time there has been developed through private enterprise an extensive agricultural literature, of general and special works and periodicals, many of which are devoted wholly to some one branch of farming, as dairying, a single breed of live stock, orcharding, market gardening, and the like. Farmers' institutes, the agricultural college short courses and extension work, instruction by correspondence and home reading courses and other kindred methods, all aid in teaching the whys and wherefores of the business of farming.

Extension Education.—A number of colleges, with the coöperation of interested railroads, carry the gospel of better farming direct to those who cannot attend the schools, by sending out train specials

known as seed, wheat, dairy, corn, alfalfa, or poultry trains, depending on the topic selected for presentation. These trains are properly equipped and manned with college specialists, who lecture at the different railroad stations visited, and answer such questions as may be propounded, illustrating their lectures and answers by examples, specimens, diagrams, charts and tables—a method of teaching found extremely popular.

United States Department of Agriculture.—The head of the agricultural educational forces in the United States is the National Department of Agriculture, which was established in 1862 as a bureau, under direction of a commissioner, and in 1889 by an act of Congress made an executive department of the government under a secretary, appointed by the President, and who is a member of his cabinet. The work of its extensive corps of scientists and experts is principally for the nation as a whole, while that of the colleges and experiment stations chiefly concern the advancement of agriculture in the states in which they are respectively located. The national department issues bulletins, reports and other literature from its specialized bureaus, some free and others for which only nominal charges are made. The most popular are the "Farmers' Bulletins" and the "Yearbooks," both free, the latter obtained generally by application to members of Congress.

Agricultural Colleges.—While there were a number of agricultural colleges and schools supported mostly by private funds and popular subscriptions previously, the Land Grant act of 1862, by which Congress donated public lands to states and territories providing agricultural colleges, laid the broad foundation upon which have been built institutions for teaching agriculture and the mechanic arts in every state and territory. Supplemental to this endowment the states make liberal appropriations for furthering the work.

To Michigan belongs the distinction of having the oldest agricultural college in the United States, it having been created by legislative enactment in 1855, and formally opened in 1857. Nearly one-half of such colleges are connected with their state universities, and the others are separate, or are parts of technical or industrial institutes.

Curricula.—Their curricula embody many distinct courses, pertain to nearly every conceivable phase of farm affairs, and provide for teaching the sciences related to the various industries of farm, shop and home. Chemistry, physics, bacteriology, botany, entomology, zoölogy, mechanics, and kindred studies, are prominent Courses comprehend among others the study of soils, soil physics, crops and their production, farm mechanics and farm management; animal husbandry, or the origin and history of the various breeds of domesticated animals and their characteristics, care, feeding, breeding and management; dairying, horticulture, veterinary science, mechanical engineering, electrical engineering, and domestic science and art.

Agricultural Experiment Stations, as the term would imply, are for conducting agricultural experimental investigations. They are generally connected with the agricultural colleges, and the members of the faculties of the colleges usually comprise the staff of the station. The first of the regularly organized experiment stations was in Connecticut in 1875, followed by others elsewhere.

In 1887 Congress passed the Hatch act, which gave $15,000 a year for the maintenance of each agricultural experiment station, for experimentation, investigation, and the compilation and reporting of results.

Purpose and Work.—The law specifically states that these stations shall "conduct original researches or verify experiments on the physiology of plants and animals, the diseases to which they are severally subject, with remedies for the same; the chemical composition of useful plants at their different stages of growth, the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses for forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese, and such other researches or experiments bearing directly on the agricultural industry of the United States, as may in each case be deemed advisable."

In 1906 Congress passed the Adams act, having for its object extension and strengthening of the experimental work of stations by additional funds. By its provisions an initial appropriation of $5,000 was to be increased each year until 1911, when it would amount to $15,000, thereafter making annually available an aggregate of $30,000 of government funds for each station, under the Hatch and Adams acts. Several states have two stations, one being supported wholly with state funds, and several maintain branches of the government stations.

Publication of Results.—Results of the work of these stations are published in bulletins and circulars sent free to those who desire them. While the agricultural colleges and stations are in a sense separate institutions, their property and work are more or less closely interwoven, to their mutual advantage, the colleges profiting from the work of the stations, and the stations from the gratuitous use of the college farms, buildings, apparatus and equipments.

Plant Breeding, and Seeds.—A work of great importance carried on by experiment stations is that of improving crops in both yield and quality. Knowing that through the process of selection based on chemical analysis the sugar content of the sugar-beet had been increased from about 5 per cent to 16 per cent, the idea was advanced that the chemical composition of corn might be similarly changed. Experiments showed that it could be done at will, either to a high or low protein, oil content, or other constituent; that a corn rich in protein had an added value for feeding to growing animals; the corn with the larger oil content was of special worth in fattening animals, and the increase of carbohydrates rendered it more valuable for manufactures, as for starch, glucose, and other articles. Similarly, wheat had been improved for flour-making by increasing the gluten content, and such possibilities in plant-breeding seem well-nigh limitless.

Value of Selected Seed.—The wisdom of using seed selected according to approved standards has already been convincingly demonstrated, through improved quality and increased yields. Several states, notably Minnesota, Illinois and Kansas, have by these methods materially enlarged their yields of wheat and corn. Experience has shown, too, the advisability of planting only such seeds as have been graded, and tested for germination, so that a given quantity may be planted uniformly on a given area, with reasonable assurance of definite results.

Imperfect Vitality of seeds cannot be detected by mechanical examination alone, but the testing box tells in advance of the field planting. The importance of this is emphasized by the illustration that if seed corn, for instance, was only 90 per cent germinable, it would mean the vacant places in the field would aggregate 10 per cent of the area, or ten acres out of a hundred which would produce nothing, due to an uneven and imperfect stand because of the 10 per cent of worthless seed. Lacking good seed there can be no successful agriculture. (See also *Elementary Agriculture* under Education.)

Status of the United States in Agriculture.—In its aggregates of field production the United States is without a peer among the nations. Although the capabilities of some parts are as yet but poorly comprehended, the possibilities of others scarcely suspected, and developments superficial, owing to the large holdings by corporations as well as by individuals, and the variant conditions that had to be understood before they could be dealt with, the achievements of the past promise to be far surpassed by the enlightened husbandmen of the future.

Rank Among Our Industries.—The country's progress and development agriculturally is suggested by the fact that the aggregate of Indian corn raised in 1911 in the United States was considerably more than twice that in 1890. With a yield of 308,103,000 bushels, it assumed first rank in wheat in 1890; in 1909 the yield was 737,189,000 bushels, or 139 per cent greater. The 1901 crop, however, of 748,460,000 bushels was the largest ever produced, the 1909 crop being next.

In quantity and value the agricultural products of the United States exceed those from any other source. In three-score years they have advanced from the point of not equaling home demands to that of making the United States the world's largest exporter of farm products. In the aggregate of products American agriculture rivals that of all Europe. The farms not only contribute abundantly for home needs, and provide export commodities overshadowing in value all others combined, but supply the manufacturers of the country with raw materials, although, as already stated, the ratio between production and consumption at home has been gradually narrowing.

Exports.—For the year ending June, 1911, the value of farm products exported from the United States was $1,000,000,000, of which live stock and their products were an important part. Large numbers of domestic animals, especially cattle and sheep, and immense shipments of dressed meats go to foreign ports constantly. Cotton is the leading export crop, the amount thus disposed of in 1911 reached a total value of $526,000,000. For the fiscal year ending June 30, 1911, the live animals exported aggregated in value $19,050,000, while that of packing house and dairy products reached nearly $150,000,000.

TABULATIONS ON AGRICULTURE, HORTI-

TABLE I.

Crop	Soil	Planting Date	Seed to Acre	Normal Yield per Acre	Origin and Brief History	Use
Alfalfa. *Medicago sativa.* Linn. *eguminosæ.*	Deep, well-drained, nonacid, fertile, with deep, permeable subsoil.	May-August, north March-May, Aug.-Oct. south.	20-25 pounds broadcast. 15-20 pounds drilled.	3 tons.	Is native to southwestern Asia and was in use centuries before Christian era. Spread from Media to Greece about 480 B. C., Italy first century A. D., Spain eighth century, Mexico and South America sixteenth century. Was introduced from Chili into California in 1854. Came from Mexico to Texas early part of nineteenth century.	Stock feeding. Pasture. Soiling. Soil improvement.
Barley. *Hordeum sativum.* Jessen. *Gramineæ.*	Old, well-subdued land, not soggy. Rich clay loam best.	April-May north. March-April, September-March, south.	1.5 to 2.5 bushels.	25.5 bushels.	Supposed to be native of western Asia, and widely grown before Christian era. Use as bread-plant universal throughout Europe, Asia and Africa to close of fifteenth century.	Malting purposes. Hay and grain. Food for domestic animals. Human diet. Malt-sprouts and brewers' grains are by-products.
Buckwheat. *Fagopyrum esculentum.* Mœnch. *Polygonaceæ.*	Rather light, well-drained, and not over-rich. Will grow on wide range, including poor land.	May-July 15.	3-5 pecks.	18.1 bushels.	Native of Europe and northern Asia. Has been cultivated for centuries in all grain-growing countries. Is found wild in China and Siberia, and has been grown in China for food from time immemorial.	Flour for human food. Honey plant. Grain for poultry. Middlings a by-product for stock feeding.
Clover, Alsike. *Trifolium hybridum.* Linn. *Leguminosæ.*	Deep clay loam. Will do well on moist and cool land.	March-August.	8-15 pounds alone. 4-6 pounds on wheat or rye in spring.	1.5 tons hay. 4 bushels of seed.	Takes its name from parish in South Sweden. From there probably introduced into England. Is found in Europe, northern Africa, western Asia. Reached America from Great Britain or Scandinavia.	Hay. Pasture. Silage. Honey plant. Soil improvement.
Clover, Red. *Trifolium pratense.* Linn. *Leguminosæ.*	Slightly alkaline medium clay loam, underlaid with moderately porous clay subsoil.	March-August.	15 pounds alone. 8-14 pounds on small grain in spring.	1.5 tons hay. 3-6 bushels of seed.	Probably native to Europe. Introduced into England early in seventeenth century. Doubtless introduced into America by early colonists.	Hay. Pasture. Soiling. Silage. Soil improvement.
Clover, White. *Trifolium repens.* Linn *Leguminosæ.*	Light clay loam, slightly alkaline.	March-August.	10-12 pounds alone. 2-4 pounds in mixtures.	1.5 tons hay. 2.5 to 6 bushels of seed.	Indigenous to Europe, northern America and probably western Asia. Grown in every country in Europe and throughout America. Best in moderately cool, moist climate.	Lawn grass. Pasture. Honey plant. Short hay. Soil improvement.
Corn. *Zea mays.* Linn. *Gramineæ.*	Fertile, medium loam. New lands preferable.	May-June north. Late March, south.	4-8 quarts. 9-11 quarts for silage.	25.4 bushels. 8-12 tons silage.	Originated in Mexico. Found in cultivation and principal food of Indians by first explorers of North America. Is related botanically to a native Mexican grass, teosinte (*Euchlæna mexicana*).	Human food. Stock feeding. Grain for poultry. For manufacture of glucose, dextrine, alcohol, starches, grits, hominies, oil, etc.
Cotton. *Gossypium hirsutum* and *G. barbadense.* *Malvaceæ.*	Fertile clay or sandy loam, with a clay subsoil at a depth of about two feet.	April-May 15.	½ to 1 bushel.	0.5 bale.	Origin antedates recorded history. Supposed to have originated in India, or possibly China. Found in various countries of southern Asia and Africa, and Columbus and other explorers found it native in West Indies, South America and Mexico. First cultivated in United States in colony of Virginia, 1621.	Manufacture of cloth, thread and yarn. Cottonseed oil. Cottonseed meal, oil cake and hulls for stock feed.
Cowpea. *Vigna unguiculata.* Walp. *Leguminosæ.*	Wide range, sandy and loamy soils preferred.	May-June north. May-July south	1 to 1.5 bushels. 3 pecks for seed.	1.5 tons. 10 bushels of seed.	Native of India and region northwestward to southern part of trans-Caspian district. Has been cultivated more than 2,000 years. Reached West Indies latter part of seventeenth century, and mainland of America later.	Soil improvement. Forage. Seed food for man and domestic animals. To fit land for sod.
Mangels. *Beta vulgaris.* Linn. *Chenopodiaceæ.*	Wide range, deep alkaline loam preferable. Good preparation of seed-bed essential.	April-May	5-8 pounds.	24 tons.	Considered direct descendant of chard, used as vegetable by Greeks 300 B. C. Use of root for cattle feeding recorded in sixteenth century. Beets introduced in America by early colonists.	Stock feed.
Millet. Many groups and varieties. *Gramineæ.*	Fertile, mellow clay loam.	April-July.	1-3 pecks drilled.	1.5 tons.	Cultivated in China since 2800 B. C. Still largely grown in oriental countries as food grain and forage. In America, usually grown as supplementary or catch-crop.	Hay. Forage. Soiling. Silage. Pasture. Seed for stock feed.
Oats. *Avena sativa.* Linn. *Gramineæ.*	Not specially fertile. Clay loam preferable.	April-May north. February-March, September-December south.	2-3 bushels.	30.1 bushels.	Probable nativity Tartary in western Asia, or possibly eastern Europe. Largely north temperate zone crop, but grown in Australia, Africa and South America. Has been cultivated in America since advent of first settlers.	Food for animals. Human food. Forage crop. Pasture.
Rice. *Oryza sativa.* Linn. *Gramineæ.*	Rich, moist, well-drained clay loam.	March 15-June 15.	1.3 bushels	25-30 bushels.	Existed in India in early historic times, and doubtless indigenous there. Introduced into America soon after settlement of Virginia. Introduced accidentally into lower Carolina in 1694.	Human food. Stock feed. Starch. Wine.

*The bulletins herewith mentioned may be had upon application to the director of the respective agricultural experiment station or college publishing

CULTURE AND ANIMAL HUSBANDRY
FIELD CROPS

Fertilizers	Plant Diseases and Enemies	Remedies	Bulletins*
Lime to correct acidity, well-rotted manure.	Dodder.	Close cutting, removal of stalks, burning, close pasturing.	Farmers' Bulletins Nos. 194, 215, 339, 373.
Commercial fertilizer containing phosphoric acid and potash.	Leaf spot.	Mowing.	Canada Central Experimental Farm Bulletin No. 46.
	Anthracnose.	Mowing, and application of nitrate fertilizer.	Most experiment stations have issued bulletins.
	Root rot.	Plowing under.	
	Web-worm, army worm.	Mowing, fall disking.	
Barnyard manure.	Rust and mildew	No effective remedy.	
200 to 500 pounds of complete commercial fertiliser.	Closed smut.	Formaldehyde treatment: 1 pint formaldehyde into 20 gallons water in barrel. Submerge sacks of barley 10 minutes in solution, then empty on platform to dry. Preferably, cover drying seeds with blanket for two hours.	Wisconsin Experimental Station Reports Nos. 20, 21, 22, 23.
	Loose smut.	Hot water treatment, which is effective also against closed smut: Grain in gunny sacks submerged 12 hours in cold water, to soften hull; then removed and drained 1 hour; then submerged in hot water at *constant* temperature of 130° F. for not over 6 minutes. Seed should be sown same or following day.	Yearbooks of the U. S. Dept. Agr.
Fertilizer seldom needed.	Relatively free from diseases and insects.		Yearbooks of the U. S. Dept. Agr.
Light applications barnyard manure or moderate dressing of complete fertilizer on poor soil. 100 pounds of low-grade fertilizers, especially if sown late.	Birds may cause loss.		Cornell Bulletin No. 238.
Lime.	Clover failure.	Lime and manure. The addition of potash may aid.	U. S. Dept. Agr. Plant Industry Bulletins Nos. 31, 59, 66, 123.
Carbonate of lime.			
Stable manures.	Flower midge.	Feed off or mow first crop just before timothy heads out. Pasturing or clipping back to delay blooming ten days useful.	Farmers' Bulletins Nos. 123, 237, 260, 323.
	Seed fly.	No practicable remedy known.	
	Root borer.	Crop rotation.	
See alsike clover.	See alsike clover.	See alsike clover.	See alsike clover.
See alsike clover.	See alsike clover.	See alsike clover.	See alsike clover.
10-20 tons farm manure each year or two.	Root worm.	Crop rotation and fall plowing.	U. S. Dept. Agr. Office of Experiment Stations, Bulletin No. 57.
	Webworm.	Crop rotation and fall plowing.	
Phosphoric acid, nitrogen and potash.	Cutworm.	Early fall plowing. Sprinkling bran mixed with paris green and molasses in proportions of 30 pounds bran, 1 pound paris green, 2 quarts molasses, enough water to moisten the bran.	Farmers' Bulletins Nos. 32, 41, 81, 174, 199, 229, 253, 292, 298, 303, 313, 317.
Plow under large quantities of vegetable matter, preferably legumes and grasses.	Chinch bug.	Trap in dusty furrows. Destroy in furrows by kerosene. Strip of coal tar will prevent passage.	
	Grasshoppers.		
	Crows. Smut.	Burn affected plants and rotate crops.	
Acid phosphate kainit.	Webworm and cotton-square borers.	Dust with paris green.	U. S. Dept. Agr. Office of Experiment Stations, Bulletin No. 33.
Muriate of potash.			
Nitrate of soda.	Plant lice.	Plow under host plants in fall or winter, or spray with whaleoil soap, kerosene emulsion or tobacco solution.	Bureau Plant Industry Bulletin No. 62.
Cottonseed meal.			
Barnyard manure.	Cutworms. Cotton worm.	Place about fields bunches of grass immersed in paris green; or destroy by winter cultivation.	Division of Statistics Bulletin No. 16.
			Yearbooks 1902, 1904.
	Cottonboll worm.	Apply paris green to plants.	Farmers' Bulletins No. 36, 48, 217, 302, 314, 326.
	Mexican cottonboll weevil. Wilt.	Mature crop early and destroy immediately all rubbish. Fumigate seed with carbon bisuphide before planting.	
	Sore-shin or damping off.	Plant disease-resistant seed; burn infested plants; rotate crops.	
	Root knot.	Lime and cultivate to keep surface mulch dry.	
Acid phosphate 200 to 400 pounds and muriate of potash or kainit, 160 pounds per acre.	Wilt.	Bordeaux mixture. Iron variety practically immune.	U. S. Dept. Agr. Bureau of Plant Industry, Bulletin No. 25.
			U. S. Dept. Agr. Agrostology Bulletin No. 64, Circular No. 24.
	Mildew and leaf spot.	Seldom extensive damage.	Yearbook for 1896.
	Nematode worms.	Iron variety practically immune.	Most experiment stations have issued bulletins.
10 to 12 tons manure in fall. 300 to 500 lbs fertilizer rich in nitrogen.	See sugar beet.	See sugar beet.	New York (Cornell) Bulletins Nos. 243, 244.
Manures to be determined by local needs.	Smut.	Formaldehyde or hot water treatments. See under barley.	Farmers' Bulletin No. 168.
			Division of Botany Bulletin No. 23.
Requires plant food near surface.	Chinch bug.	Crop rotation. See under oats.	Kentucky Experiment Station Bulletin No. 98.
			Kansas Bulletin No. 102.
Fertilizers must be used sparingly.	Closed and loose smut.	Formaldehyde or hot water treatments of seed. See under barley.	Farmers' Bulletins Nos. 250, 395, 420, 424.
Barnyard manure, 10 to 25 loads per acre on poor soils.	Orange leaf rust.	Plant resistant and early maturing varieties.	Ohio Experiment Station Bulletins Nos. 101, 138.
	Black stem rust.		
	Chinch bugs.	Plow furrow to prevent spread. Scatter tar in furrow. In extreme cases burn one field to save another.	Kansas State Bd. Agr. 14th Report.
Fertilizer containing 10 to 20 pounds each of ammonia and potash, and 30 to 60 pounds of phosphoric acid per acre.	Army worms.		
Rich soils generally used.	Rice weevil.	Carbon bisulphide.	Farmers' Bulletin No. 110.
	Rice worm.	Draw off water and allow field to dry for few days.	Division of Botany Bulletin No. 22.
	Rice grub.	Water.	U. S. Dept. Agr. Office of Experiment Station Bulletin No. 113.
	Chinch bug.	Thorough flooding.	
	White blast.	Application of lime to soil.	Louisiana Experiment Station Bulletins Nos. 24, 50, 61, 77.
	Smut.	See under barley.	

the same, or to the United States Department of Agriculture. A list of such stations follows the tables.

TABLE I. FIELD

Crop	Soil	Planting Date	Seed to Acre	Normal Yield per Acre	Origin and Brief History	Use
Rye. *Secale cereale.* Linn. *Gramineæ.*	Light, with little clay. Well drained, will grow on poor soil.	April-May or September-November.	3-4 pecks, early. 6-8 pecks, late.	15.7 bushels. 1 ton of straw.	Original home was between Austrian Alps and Caspian Sea. Culture more than 2,000 years old. Seems to be of decreasing importance.	Grain for animal and human food. Fall pasture. Soiling. Cover-crop and green manure. Flour. Alcoholic liquors.
Sorghum. *Andropogon sorghum.* Brot. or *Sorghum vulgare.* Pers. *Gramineæ.*	Rich, well drained, sandy or clay loam.	March-June.	1.5to2bushels broadcast. 6 pounds to 0.5 bushel for silage drilled.	3-6 tons fodder. 8-20 tons green forage.	Originated in tropical or subtropical regions of old world, and in cultivation as human food for many centuries, long before Christian era. Tropical Africa generally considered birthplace.	Pasture for hogs. Hay. Fodder. Silage. Sirup.
Soybean. *Glycine Hispida.* Maxim. *Leguminosæ.*	Well-drained sandy loam or clay soil.	May-June.	2-3 pecks in drills. 1 to 1.5 bushels broadcast.	12-20 bushels.	Native of southeastern Asia. Thought to be derived from wild *Glycine soja* of Japan. Grown extensively in China and Japan.	Animal grain feed. Silage. Soiling. Hay. Cover-crop and soil improvement. Human food.
Sugar Beet. *Beta vulgaris,* Moq. *Chenopodiaceæ.*	Clay loam, or medium light sandy loam.	May, north January-May south.	8-12 pounds.	11.5 tons.	Known at least three centuries before Christian era. Sugar first extracted about middle of eighteenth century by Marggraff. First attempt to grow beets for sugar in U. S. in 1830, near Philadelphia.	Stock feeding. Sugar manufacture.
Sugar Cane. *Saccharum officinarum.* Linn. *Gramineæ.*	Well-drained soil of good average character.	March 21-May 20.	4 tons of cane.	8-25 tons.	Origin lost in antiquity. Cultivation probably among first undertaken by tropical peoples. Early use almost exclusively for eating raw. As source of sugar it stood practically alone until beginning of last century.	Manufacture of sugar and molasses.
Sweet Potato. *Ipomœa batatas.* Poir *Convolvulaceæ.*	Warm, sandy, well-drained and aerated.	March 21-May.	1.5 to 4 bushels.	100 bushels.	Nativity unknown, probably tropical America. Was cultivated in tropics of both hemispheres when authentic records began. De Candolle inclines to an American origin.	Human food.
Timothy. *Phleum pratense.* Linn. *Gramineæ.*	Deep clay loam, moist and fertile.	March-October.	8-16 pounds; with clover 10 pounds.	1.5 tons.	Native of Europe and extensively cultivated in cooler parts of North America as a forage plant. Introduced to America from England in 1720.	Hay. Pasture.
Tobacco. *Nicotiana tabacum.* Linn. *Solanaceæ.*	Rich, friable sandy loam in seed-bed, well fertilized each spring with fertilizer containing 10 per cent ammonia, 8 per cent available phosphoric acid, 12 per cent soluble potash.	February 1 to March 1 in seed-bed. April-June in field.	1 tablespoonful to 100 square yards of seed-bed, to set out six acres.	800-1000 pounds.	Of American origin. Pipes and other means for smoking tobacco were found in prehistoric mounds of the United States, Mexico and Peru. Columbus found natives using tobacco for smoking, chewing and snuff. In 1558, Jean Nicot, French ambassador to Portugal, sent a supply of tobacco seed to Queen Catherine de' Medici, and to commemorate the service the generic name Nicotiana was given.	Disinfectant. Smoking and chewing purposes. Stalks for making of paper.
Vetch. *Vicea* spp. *Leguminosæ.*	Wide range. Used on poor sandy or gravelly soils to improve them. Prefers moist clay loam.	April-June. September-December.	1 bushel.	1.5 to 3 tons.	Common spring vetch is native in Europe and western Asia. Was cultivated by Romans. Reached America 100 years ago.	Cover-crop. Stock feed. Soil improvement. Pasture.
Wheat. *Triticum sativum.* Lam. *Gramineæ.*	Light clay and glacial drift soils.	September-October. April-May.	6-8 pecks.	13.8 bushels.	Wheat cultivation antedates recorded history. Monuments more ancient than Hebrew scriptures depict its cultivation established. Chinese grew wheat 2700 B. C. Cultivation in America prior to discovery by Columbus not known.	Flour for human food. Grain for stock feeding. Straw. Bran, shorts and middlings are by-products for stock-feeding.

TABLE II. ORCHARD

Crop	Climate	Soil	Planting Time, Plants or Seed per Acre	Diseases	Remedies
Apple *Pyrus. malus.* Linn. *Rosaceæ*	Temperate	Clay loam to sandy loams, with variety preferences.	Fall or spring, fall preferable.—27-33.	Scab.	Spray thoroughly with lime-sulphur, 1-40, or bordeaux, 3-3-50, 3 times: (1) Just before blossoms open, (2) just as blossoms fall, (3) 10 to 14 days after blossoms fall.
				Fire blight.	Cut out and destroy diseased parts. Wash wound with corrosive sublimate 1 part to 1,000 of water. Paint wound with gas tar or lead paint.
				N. Y. apple tree canker.	Spray before buds start with lime-sulphur, 1-12, or bordeaux, 10-10-50; soak body and limbs when making first application for scab. Cut out cankers and treat wound as for fire-blight.
Asparagus. *Asparagus officinalis,* Linn. *Liliaceæ*	Temperate.	Warm, well-drained loam, deep rich, fertile and moist.	Early spring, April preferable for seed. -5,445-14,520. 1 oz. of seed to 400 plants. Rows 8 ft. apart, plants 1 ft. in row; or rows 4 ft. apart, plants 2 ft. in rows, 5,445. Rows 2 ft. apart, plants 18 inches in row, 14,520.	Rust.	During cutting season, permit no plants to mature. Fertilise liberally and cultivate thoroughly. Late in the fall burn all infected plants. Spray with bordeaux, 5-5-50, containing a sticker of resin, sal soda, soap. Spray when shoots are 8 to 10 inches high after cutting, and repeat once or twice a week.

CROPS—Continued

Fertilizers	Plant Diseases and Enemies	Remedies	Bulletins
250 pounds per acre of dissolved phosphate rock.	Black rust of stems. Orange rust of leaves. Smut. Ergot. Chinch bug. Hessian fly.	Burn infested stubble—rotate crops. Formaldehyde or hot water treatment. See under barley. Clean seed on clean land. Burn rubbish nearby. Rotate crops. Plow deep trenches and use tar strips. Resistant varieties, late seeding, burning stubble, sowing early wheat trap crop.	Pennsylvania Agr. Experiment Station Bulletin No. 52. U. S. Dept. Agr. Yearbooks.
Barnyard manure and leguminous green manures.	Grain smut. Whole-head smut. Chinch bugs and green aphis.	Rotation and seed selection. Hot water and formaldehyde treatments. See under barley. Seldom serious. Avoid continuous cropping on same area.	Farmers' Bulletins Nos. 37, 50 90, 135, 174, 246, 288. Bureau of Chemistry Bul etins Nos. 14, 20, 26, 34.
200 to 300 pounds high-grade acid phosphate. 50 pounds muriate or sulphate of potash per acre.	Sclerotium. Nematode root worms. Rabbits. Grasshoppers. Reddish brown hairy caterpillar.	Fatal. No treatment. Not specially serious.	Farmers' Bulletins Nos. 58, 121, 372. Connecticut Experiment Station Bulletin No. 22. Delaware Bulletins Nos. 60, 61. Georgia Bulletin No. 17. Indiana Bulletin No. 108. Kansas Bulletins Nos. 18, 92, 100, 123. Many other station bulletins.
Green fertilizers, generally alfalfa. Stable manures. Complete commercial fertilizers.	Leaf spot. Curly top. About 150 insect enemies.	Bordeaux mixture and crop rotation. Seldom occurs in two successive seasons in same locality. See entomology bulletins in next column.	Division of Entomology Bulletins Nos. 19, 23, 29, 33, 40, 43. Specia Report No. 28. Bureau of Chemistry Bulletins Nos. 27, 96. Farmers' Bulletins Nos. 52, 92.
Stable manure. Nitrogenous fertilizers, dried blood, fish refuse in small quantities. Lime extensively.	Root diseases, rind disease, sereh, pineapple disease, red top, top rot, smut, rust. Rats. Borers. Innumerable insects. Parasitic nematodes on roots.	Burn over, use quicklime as soil fungicide. Burn over or poison. Mongoose will destroy. Hand pick, rotate crops, use trap crops, or rest land. Fought by introduction of parasites. Expose soil to air and sunlight.	Bulletins of Hawaiian Sugar Planters Experiment Station, Louisiana, Cuba, and Porto Rico Experiment Stations.
Abundant humus. Light straw manure. Crimson clover sod plowed under at half-growth. Stable manure put in furrow under the crop.	Black rot. Soil rot. Soft rot. Tortoise beetles. Sawflies. Flea beetles.	Use slip-seed. Thoroughly clean and disinfect storage house. Plant in new soil. Crop rotation. Apply kainit and sulphur, 300 pounds per acre. Dry potatoes before storing. Destroy all infected potatoes. Dip plants before setting in solution of arsenate of lead, 1 pound to 25 gallons water. Paris green or the above arsenical spray. Arsenical sprays.	Farmers' Bulletins Nos. 26, 129, 324. Arkansas Experiment Station Bulletin No. 72. South Carolina Bulletin No. 63.
Top dressing with barnyard manure and complete fertilizer.	Rust Grasshoppers		Farmers' Bulletin No. 111. Division of Agrostology, U. S. Dept. Agr., Bulletins Nos. 7, 14, 17, 20. N. Y. State College of Agr. Farmers' Reading-Course Bulletin No. 10.
In field, 1,000 pounds cottonseed, 1,000 pounds cottonseed meal, 300 pounds carbonate of potash, 700 pounds fine ground bone, and 800 pounds of lime to acre. Cow manure at rate of 20 to 25 loads per acre.	Root rot. Sore skin. Wilt. Angular leaf spot. Pole burn. Flea beetle and hornworm. Tobacco worm. Cutworms. Bud worm.	Sterlize soil with heat or formalin before seed sown. Lime. Plant disease-resistant seed; burn infected plants; crop rotation. Grow vigorous plants. Apply heat carefully and ventilate sheds to reduce humidity. Light spray of paris green, 1 pound paris green, 1 pound quicklime, 100 gallons water, stirred constantly while in use. Dust or spray with paris green, 1 pound to 160 gallons water. Sow along rows bran and paris green, 1 pound paris green, 50 pounds bran. Hand pick or dust or spray with paris green.	Farmers' Bulletins Nos. 60, 82, 83, 120, 343. Plant Industry Bulletin Nos. 18, 51, 91, 96. Report on the Culture of Tobacco, U. S. Census, 1883. Bulletins from experiment stations, particularly Connecticut, Maryland, North Carolina, Kentucky.
Seldom needed. On poor land, complete fertilizer, and especially phosphoric acid and potash, may be required.			Farmers' Bulletins Nos. 18, 102, 147. Division of Agrostology Circular No. 6. Alabama Experiment Station Bulletins Nos. 87, 96, 105.
Barnyard manure. Complete commercial fertilizer. 200 to 400 pounds of a 4-12-4 fertilizer commonly used.	Hessian fly. Chinch bug Rust. Loose smut. Stinking smut or bunt.	Late seeding, burning stubble. Clean tillage, crop rotation. Plant resistant varieties. No satisfactory treatment. Formalin, 1 pound to 50 gallons water. Sprinkle the wheat and cover with cloths soaked in the solution, or immerse the sacks 30 minutes; or blue stone, 1 pound to 5 gallons water. Immerse sacks 10 minutes, then drain and dry. Apply the solution to all utensils and machinery used.	Farmers' Bulletins Nos. 132, 250. U. S. Dept. Agr. Division of Physiology and Pathology Nos. 16, 24, 29. Plant Industry Bulletins Nos. 3, 47, 78, 79. Office of Experiment Station Bulletin No. 11.

AND GARDEN CROPS

Insect and Other Enemies	Insecticides and Remedies	Time to Bear	Yield per Acre	Bulletins on Culture
Bud moth. Canker worms.	Applications of either 1 lb. paris green or 4 lbs. arsenate of lead in 100 gals. water (1) when leaf tips appear and (2) just before blossoms open. Spray once or twice before blossoms open with 1 lb. paris green, or 4 lbs. arsenate of lead in 100 gals. water. Repeat after blossoms fall. Use sticky bands or wire-screen traps to prevent ascent of wingless females.	3 to 6 years from planting. Good crop in 10 to 15 years.	Tree 30 years old 20-30 bus.	Cornell Bul. 272. Geneva Buls. 163 and 185. Cornell Buls. 93, 124, 142. Geneva Buls. 262, 296, 306, 320. Geneva Circular 9.
Codling moth.	Use burlap bags on trunk, and kill caterpillars under them every 10 days from July 1 to Aug. 1, and once later.			
Oyster shell scale.	Spray with kerosene emulsion diluted with 6 parts of water or whale oil soap, 1 lb. to 4 or 5 gals. water, in May or June when young white lice appear.			
Asparagus beetle.	Chickens and ducks will destroy. Close cutting of young shoots early in season. Use fresh air-slacked lime or arsenites dusted on dew-wet plants after cutting period.	Seed 3-4 years. Plants 1-3 years.	2000 bunches of 3½ in. diameter.	Geneva Buls. 75, 183. California Buls. 165 and 172. New Jersey Reports 1896, 1898. Farmers' Bul. 61. Massachusetts Bul. 61. Iowa Bul. 53.

TABLE II. ORCHARD AND

Crop	Climate	Soil	Planting Time, Plants or Seed per Acre	Diseases	Remedies
Beans (bush). *Phaseolus vulgaris. Leguminosæ.*	Warm temperate.	Good warm loam.	May-June—1 qt. of seed to 100 feet of drill. In drills 2 ft. apart plants 12 inches in row. In hills, 18x20 inches, 3 plants per hill.	Anthracnose or red spot.	Plant clean seed. Hand spray with Bordeaux mixture, 5-5-50, (1) when plants break through ground, (2) when first pair of leaves are expanded, (3) when pods have set.
Beans (pole). *Phaseolus vulgaris. Leguminosæ.*	Warm temperate.	Warm fertile soil.	Late spring, after danger of frost. After ground becomes warm.—1 qt. seed to 200 hills. Hills 4x4 ft., one plant per hill. Should be at least 5 plants per pole.	Blight.	Spray with bordeaux as for anthracnose.
Beets. *Beta vulgaris.* Linn. *Chenopodiaceæ.*	Temperate.	Loose, light, fresh, clean rich soil.	April-June—Seed 5-6 lbs. per acre. In drills 12x6 inches.	Scab, rust, rot, spot diseases.	Avoid following potatoes with beets. Practice clean culture and proper rotations. Spray with bordeaux mixture for leaf diseases.
Blackberry. *Rubus nigrobaccus.* Bailey. *Rosaceæ*	North temperate. Cool, northern exposure.	Strong loam, retentive of moisture and tending toward clay.	Spring preferably, or fall—900 to 1550.	Anthracnose and leaf rust. Orange rust.	Cut out bearing canes as soon as they are through fruiting. Dig up and burn infected bushes as soon as detected.
Cabbage. *Brassica oleracea.* Linn. *Cruciferæ*	Cool, moist climate.	Well-drained, rich, friable loam.	April-May to June-July—7,000-11,000. 1 oz. seed to 3,500 plants.	Club root or club foot. Black rot.	Practice crop rotation. Set only healthy plants. Do not use manure containing cabbage refuse. Lime the seed-bed at least as early as fall before. Practice crop rotation. Soak seed 15 minutes in solution made by dissolving one corrosive sublimate tablet in pint of water.
Cauliflower. *Brassica oleracea.* Linn. var. *botrytis.* D. C. *Cruciferæ.*	Temperate, cool and moist.	Richest land, strong, moist loam best.	April-July in seed-bed. July in field.—7,000 to 10,000. 1 oz. seed to 3,000 plants.	Same as cabbage.	See cabbage.
Celery. *Apium graveolens.* Linn. *Umbelliferæ.*	Temperate.	Moist peaty soil or highly fertilized land.	January-April in seed-bed. May-August in field—20,000 to 30,000. 1 oz. seed to 7,000 plants.	Cerospora leaf blight or early blight. Septoria leaf blight or late blight.	Spray with ammoniacal copper carbonate, 6-3-45, making 5 to 8 applications. Begin while still in seed-bed. Bordeaux 5-5-50, may be used for earlier application. Same treatment as for early blight, but continue till harvest.
Cherry. *Prunus avium* and *Prunus cerasus.* Linn. *Rosaceæ.*	*Sweet.* 39-44° latitude 68-86° longitude. *Sour.* 35-45° latitude, 68-100° longitude.	Elevated, light, dry, loamy, retentive soil.	Spring or fall—Sweet 48, sour 134.	Brown rot. Black knot. Leaf spot; powdery mildew.	Plant resistant varieties. Prune trees to let in sunlight and air. Spray with self-boiled lime-sulphur, 8-8-50, to which add 2 lbs. arsenate of lead to 50 gals. Spray (1) about time young fruit sets, (2) 2 to 3 weeks later, (3) 1 month before fruit ripens, omitting the arsenate. Cut out and burn all knots before leaves appear. Spray with lime-sulphur or bordeaux. Dust with sulphur or spray with potassium sulphide, 1 oz. to 3 gals. water, or lime-sulphur as for leaf spot.
Currant. *Ribes rubrum.* Linn. *Saxifragaceæ.*	Cool temperate climate.	Cool, moist and rich soil.	Fall or spring—2,178.	Cane blight or wilt. Leaf spot and anthracnose	Begin when plants are small, go over 3 or 4 times every summer and cut out and burn all diseased canes. Upon first appearance of currant worms spray with bordeaux and paris green, 1 lb. to 100 gals., or arsenate of lead, 4 lbs. to 100 gals. Repeat if second brood of worms appears.
Gooseberry. *Ribes* spp. *Saxifragaceæ.*	Cool and shady north temperate.	Moist, but not soggy, clay loams. Rich, cool, bottom lands.	Fall or early spring—2,178.	Powdery mildew.	Cut away drooping branches. Keep ground free from weeds. Spray with potassium sulphide, 1 oz. to 2 gals. Commence when buds are breaking and repeat every 7 to 10 days until fruit is gathered.
Grape. *Vitis.* spp. *Vitaceæ.*	Warm. Along shores of bodies of water best. The location must provide frost drainage.	Gravel or clay.	In spring. Completed by last of May—605.	Black rot. Downy mildew.	Remove all mummies and diseased leaves. Rake all refuse into furrows and cover. Use surface cultivation and keep down weeds and grass. Keep vines well sprouted. Spray with bordeaux, 4-4-50, till middle of July, after that with ammoniacal copper carbonate. Spray first when third leaf shows. Foliage should be protected by coating of spray *before* every rain. Make 4 applications of bordeaux, 50 to 60 gals. of spray to acre. Apply bordeaux as for black rot.
Lettuce. *Lactuca sativa.* Linn. *Compositæ*	Cool temperate.	Open, loose, rich loam.	April-June Aug-Sept.—1 oz. seed to 3,000 plants. Rows 2 ft. apart, plants 1 ft. in row equals 21,780 plants.	Rot or drop.	Steam sterilization of soil to depth of 2 inches or more; or use fresh soil for every crop. Common in greenhouses
Muskmelon. *Cucumis melo.* Linn. *Cucurbitaceæ.*	Hot, bright temperate climate.	Light and quick warm soil. Sandy loam.	May-June—1 oz. seed to 50 hills. Plants 6x6 ft. (preferable). Plants 5x5 ft.	Downy mildew. Wilt.	No effective method of control. Spray with bordeaux, 5-5-50. Gather and destroy all wilted leaves and plants.
Onion. *Allium cepa.* Linn. *Liliaceæ.*	Temperate.	A rich, moist, butnotwet, loam with subsoil of clay.	April-May—1 oz. to 100 feet of drill. 4-5 lbs. per acre. In drills, 14 to 20 in. apart, seed 5 to 6 lbs.; sets 6 to 12 bus.	Mildew. Smut.	Spray with bordeaux, 5-5-50, when plants show 3 leaves. Repeat every 10 days till harvest. Crop rotation. Drill into rows when planting seed, 100 lbs. sulphur and 50 lbs. air-slacked lime to acre.
Pea (garden). *Pisum sativum.* Linn. *Leguminosæ.*	Temperate.	Rich, friable soil, not overrich in nitrogen.	April-May or July-Aug.—1 quart of seed to 100 ft. of drill, or 2 bus. per acre Dwarf 12x1 in.; tall, double rows 3 ft. apart.	Powdery mildew.	Fungicidal spray.

GARDEN CROPS—Continued

Insect and Other Enemies	Insecticides and Remedies	Time to Bear	Yield per Acre	Bulletins on Culture
Weevil.	Use bisulphide of carbon as for pea bug.	45-65 days from seed.	75-120 bus.	Cornell Bul. 239. New Jersey Bul. 151. Geneva Bul. 48.
Weevil.	Use bisulphide of carbon as for pea bug.	65-70 days from seed.	75-100 bus. dry beans.	Cornell Buls. 87, 115. New Hampshire Bul. 62.
Not often damaged by insects.		65-150 days.	400 to 700 bus.	Cornell Bul. 163.
Saw-fly Cane borer.	Spray with paris green or arsenate of lead, or apply hellebore. In midsummer cut off and destroy the drooping tips.	1 year. Good crops in 2 and 3 years.	50 to 100 bus.	Cornell Bul. 99. Central Experimental Farm, Ottawa, Can., Bul. 56.
Cabbage worm. Cabbage Aphis.	If plants not heading, spray with kerosene emulsion or paris green to which sticker has been added. If heading, apply hellebore. Before plants begin to head spray with kerosene emulsion diluted with 6 parts water; whale-oil soap, 1 lb. in 6 gals. water; or one of tobacco extracts.	90-150 days.	7500 heads.	New Jersey Bul. 98. Geneva Buls. 232, 251, 302. Cornell Bul. 78.
Same as Cabbage.	See cabbage.	110 days from seed.	125-200 barrels, 18-30 heads per barrel.	See cabbage.
No widespread or serious insect pests.		120-150 days.	120-160 crates.	Cornell Bul. 132. Michigan Bul. 102. Geneva Bul. 51.
Aphis. Plum curculio	Spray with kerosene emulsion diluted with 6 parts of water or with one of tobacco extracts. Spray just after blossoms fall with arsenate of lead, 6-8 lbs. in 100 gals. water, and repeat in about a week. After fruit has set, jar trees daily over sheet or curculio catcher.	3 years. Commercial crops 4-6 years according to variety.	2½ tons.	Cornell Buls. 81, 98, 235. Geneva Bul. 98. U. S. Dept. Agr. Bureau of Entomology Circular 120.
Currant worm.	When worms first appear, spray with 1 lb. paris green or 4 lbs. arsenate of lead in 100 gals. of water. Ordinarily the poison should be combined with bordeaux. After fruit is half grown use hellebore.	1 year. Good crops in 2 and 3 years.	100 bus.	Geneva Buls. 167, 199. Iowa Bul. 30.
Currant worm.	See currant.	1 year. Good crops in 2 and 3 years.	100 bus.	Geneva Buls. 114, 133, 161.
Steely beetle or flea beetle. Root worm. Leaf Hopper. Rose Chafer. Little troubled by insects.	When buds begin to swell, cover with arsenate of lead, 8 lbs. in 100 gals. of water. To kill larvæ add 1 lb. paris green or 4 lbs. arsenate of lead to every 100 gals. of bordeaux mixture. Spray latter part of June with 6 lbs. arsenate of lead in 100 gals. water. Repeat in 7 to 10 days. Cultivate thoroughly in June, close to vines, to kill pupæ. Spray underside of leaves with whale-oil soap, 1 lb. in 10 gals. water, about July 1. Repeat in a week or 10 days. Spray with 10 lbs. arsenate of lead in 100 gals. water.	Fair crop in 4 years. 65 days from seed.	3 to 5 tons. 400-800 half-bushel baskets, 600 baskets good average.	Cornell Buls. 157, 208, 224, 235 254, 266. Massachusetts Bul. 69.
Striped cucumber beetle. Aphis.	Plant early squashes as trap crop. Spray with bordeaux. Dust with tobacco dust or snuff, or land plaster with a little kerosene or turpentine. Spray with kerosene emulsion diluted with 6 parts water or use one of tobacco extracts. Burn vines after harvest, and keep down weeds.	120-140 days from seed.	3,000-7,000 melons.	Cornell Bul. 95.
Onion fly or maggot. Thrips.	See cabbage-root maggot. Kerosene emulsion, diluted with 6 parts water; tobacco decoction; whale-oil soap, 1 lb. to 4 gals. water.	135-150 days from seed.	500 bus.	Geneva Bul. 182. Michigan Bul. 31.
Pea weevil or pea bug. Pea moth or worm. Pea aphis or louse.	Fumigate seed stock with carbon bisulphide. Place seed in tight vessel or room and expose to fumes for 2 or 3 days. One pound of bisulphide for 100 bushels of peas. Early planting of early varieties. Plant seed in drills and use cultivator to bury aphides after they have been brushed from vines.	50 to 80 days.	100 to 150 bus. green in pod.	Cornell Bul. 67. Farmers' Bul. 45. Florida Bul. 36. New Jersey Report 14. Delaware Bul. 49.

TABLE II. ORCHARD AND

Crop	Climate	Soil	Planting Time, Plants or Seed per Acre	Diseases	Remedies
Peach. *Prunus persica.* Sieb. & Zucc. *Rosaceæ.*	Warm and sunny. In north near body of water.	Light and sandy loam.	Spring preferable—134.	The yellows. Leaf curl. Brown rot.	Dig out and burn diseased trees as soon as discovered. Spray trees once *before buds swell* with bordeaux, 5-5-50, or lime-sulphur mixtures used for San Jose scale. Plant resistant varieties. Prune trees to let in air and sunlight. Thin fruit well. Spray with self-boiled lime-sulphur, 8-8-50, and arsenate of lead 2 lbs. to 50 gals. water. Spray (1) when shucks are shedding from young fruit, (2) 2 to 3 weeks later, (3) 1 month before fruit ripens, omitting the arsenate.
Pear. *Pyrus communis.* Linn. *Rosaceæ.*	Temperate. Best near large bodies of water.	Strong loam of moderate depth overlying a porous subsoil.	Spring or fall—48 to 108 standard plants. 193 dwarf plants.	Fire blight. Scab.	Prune out blighted branches, cutting 6 to 8 inches below diseased part. Disinfect with corrosive sublimate solution, 1 to 1,000. Clean out limb and body cankers. Disinfect all large wounds and cover with coat of paint or gas tar. Plant resistant varieties. Spray three times with lime-sulphur, 1-50, or bordeaux, 3-3-50, as for apple scab.
Plum. *Prunus domestica.* Linn. *Rosaceæ.*	Temperate.	Clay loam. Some varieties on light moist soils.	Spring or fall—108-134.	Black knot. Brown rot. Leaf spot.	Cut out and burn all knots before leaves appear in spring. See peach. Two or three applications of self-boiled lime-sulphur or bordeaux, 3-3-50. First application about 10 days after blossoms fall. Japan plums should not be sprayed with bordeaux.
Potato. *Solanum tuberosum.* Linn. *Solanaceæ.*	Moist, cloudy climate. Sensitive to frost.	Warm, rich, sandy or loamy soil.	March to May—8 to 10 bu. seed. Early, rows 18 in. apart; late, 3 ft. x 18 in. or 3 ft. x 3 ft.	Blight and rot. Scab.	Spray with bordeaux, 5-5-50. Commence when plants are 6 to 8 in. high and repeat every 10 to 14 days during season. Use 40 to 100 gals. per acre each application. Treat tubers before cutting by soaking in formalin solution, 1 pint to 30 gals. water, for 2 hours, or in corrosive sublimate, 1 oz. to 7 gals., for 1½ hours. Plant in clean soil.
Quince. *Cydonia vulgaris.* Pers. *Rosaceæ.*	Temperate	Heavy, moist, retentive clay loam, well drained.	Spring or fall—200.	Leaf and fruit spot.	Spray three times with bordeaux as for apple and pear scab.
Radish. *Raphanus sativus.* Linn. *Cruciferæ.*	North temperate.	Rich, light, loose; one that drains rapidly.	March-Sept.—1 oz. seed to 100 ft. of drill. Rows, in garden, 12 to 18 in apart.	Relatively free from diseases.	
Raspberry. *Rubus strigosus.* Michx. (red). *R. occidentalis.* Linn. (black). *Rosaceæ*	Cool temperate.	Deep, moist soil. Lighter loams for red, heavier loams for black.	Fall or spring, the latter preferable for black-caps—Black 2,420; red 2,904.	Anthracnose. Cane blight or wilt. Red rust.	Remove all old canes and diseased new ones as soon as fruit is gathered. Spray with bordeaux, 5-5-50, when new canes are 6 to 8 inches high and follow with two more at intervals of 10 to 14 days. No successful treatment known. For new settings use only plants from healthy plantations. Dig up and destroy infected plants.
Spinach. *Spinacia oleracea.* Linn. *Chenopodiaceæ.*	Cool season plant. Grown in fall and spring.	Abundance of available plant-food, particularly nitrogen. Any good garden or field soil.	March and Aug-Sept.—1 oz. seed to 100 ft. drill or 10 to 12 lbs. per acre; rows 12 to 15 in. apart.	Mildew, anthracnose, leaf blight.	Burn all affected parts. Practice crop rotation. Treat soil with mixture of flowers of sulphur and air-slacked lime.
Squash. *Cucurbita pepo,* var. *Conensa.* Linn. *Cucurbetaceæ*	Temperate.	Warm and quick soil. Sandy lands or sandy loams best.	Summer, April-May; winter, May-June—1 oz. seed for 25 hills, or 4 lbs. per acre. Summer, hills 4x4 ft.; winter, hills 8x10 ft.	Mildews.	Bordeaux mixture or ammoniacal carbonate of copper.
Strawberry. *Fragaria chiloensis,* var. *ananassa.* *Rosaceæ*	Cool season plant.	Rich, rather moist, sandy soil.	Aug. or spring—10,000 to 14,000.	Leaf-spot, rust, or leaf-blight.	In setting new plantations, remove all diseased leaves before plants are taken to field. Spray newly set plants with bordeaux, 5-5-50, as soon as growth begins. Repeat three or four times during season. The following spring, spray just before blossoming and again 10 to 14 days later. Plant resistant varieties.
Tomato. *Lycopersicum esculentum,* var. *vulgare.* *Solanaceæ*	Warm climate, long season, sunny, open position.	Warm soil, light, porous and well drained.	Start plants in hot bed Feb. or March; transplant May to June—1 oz. to 3,000 plants.	Septoria, leaf-spot. Mildew. Black rot. Bacterial blight.	Spray with bordeaux, 5-5-50, as soon as plants are set out. Spray underside of leaves. Repeat every week or ten days. Spray with bordeaux. Crop rotation. Crop rotation, destruction of affected vines and contiguous vegetable matter.
Turnip. *Brassica rapa.* Linn. *Cruciferæ.*	Cold weather plants. North temperate.	Loose, moist soil.	April, or July-Aug.—1 oz. seed to 100 ft. of drill. Rows 18 in. apart, or broadcast. Rutabaga, rows 2 ft., plants 10 inches in row.	Club root. Soft rot.	See cabbage. Plant on soils free from disease. Plant resistant varieties.
Watermelon. *Citrullus vulgaris.* Schrad. *Cucurbitaceæ.*	Warm and sunny climates. Southern temperate.	Light, quick, warm, gray, sandy soil, with strong clay subsoil.	May-June—1 oz. seed for 30 hills, or 4 to 5 lbs. per acre. Hills 8x10 ft.	Free from any vital disease.	

TABLE III. HORSES, CATTLE,

Best Breeds	Characteristics	Uses	Brief Breeding Rules
HORSES **American Saddle Horse**	Head rather small and clean cut. Eyes wide apart, full, clear and prominent. Ears pointed. Long upright neck, sloping shoulders. Deep chest, short, strong back. Barrel ribbed well back. Strong coupling, quarters level, strongly muscled. Pasterns long and sloping. Bones of leg broad and flat, strong tendons. Height about 15 hands 2 inches. Weight about 1,000 pounds.	Saddle horse for pleasure, as a gaited horse, hunter, cavalry or commercial purposes. A light harness horse also.	1. Age of puberty 12 to 24 months. 2. Best age for breeding, 2 to 3 years. 3. Period of heat, 9 days after delivery and each 2 or 3 weeks thereafter; duration of heat, 2 to 3 days.

GARDEN CROPS—Continued

Insect and Other Enemies	Insecticides and Remedies	Time to Bear	Yield per Acre	Bulletins on Culture
Peach borer.	Dig out borers in June and mound up trees. Apply gas tar or coal tar to trunk from roots up to a foot or more above surface of ground.	2 years. Good crop in 4 to 5 years.	5-10 bus. per tree in full bearing.	Cornell Buls. 176, 192, 276.
Curculio.	Spray just after blossoms fall with arsenate of lead, 6 to 8 lbs. in 100 gals. water, and repeat in a week. After fruit has set, jar tree daily over a sheet and destroy beetles.			
San Jose scale.	See apple.			
Pear psylla.	After blossoms fall, spray with kerosene emulsion diluted with 6 parts water or whale-oil soap, 1 lb. in 4 or 5 gals. water, or one of tobacco extracts. Repeat every 3 to 7 days.	3 or 4 years. Fair crop in 6 to 12 years. Dwarfs in 5 to 7 years.	A tree 20-25 years old from 6-15 bus.	Cornell Buls. 108, 145, 142, 272. Geneva Buls. 67, 84.
Leaf blistermite.	Spray with lime-sulphur wash in fall or spring, or with concentrated lime-sulphur solutions, 1 gal. in 10 gals. water.			
Pear slug.	Spray with 1 lb. paris green or 4 lbs. arsenate of lead in 100 gals. of water.			
Plum curculio.	Spray just after blossoms fall with arsenate of lead, 6 to 8 lbs. in 100 gals. water, and repeat in about a week. After fruit has set, jar trees daily over sheet and destroy the beetles.	3 years. Good crop in 5 or 6 years.	3 to 8 bus. per tree.	Cornell Buls. 38, 81, 131, 235. Geneva Buls. 98, 117.
Colorado potato beetle.	Spray with paris green, 2 lbs., or arsenate of lead, 4 lbs., in 100 gals. water, or arsenite of soda combined with bordeaux mixture.	80 to 140 days.	100-300 bus.	Geneva Buls. 101, 123, 221, 241, 264, 267, 279, 290, 311. Vermont 85. Maine 141.
Flea beetles.	Bordeaux mixture as applied for potato blight.			
Quince curculio.	When adults appear, jar them from tree onto sheets or curculio catchers and destroy them.	2 years. Good crop in 4 years.	100 to 300 bus.	Cornell Buls. 80, 145, 148.
San Jose scale.	See apple.			
Round-headed apple-tree borer.	See apple.			
Maggots.	Cover soil just after planting with a heavy dressing of unleached wood ashes. Inject bisulphide of carbon into earth about plants.	30-45 days from seed.	2,800-3,500 bunches.	
Sawfly.	See blackberry.			
Cane borer.	See blackberry.	1 year. Good crop in 2 and 3 years.	50-100 bus.	Geneva Buls. 124, 226.
Leaf miner.		30 to 60 days.	200 barrels.	Rhode Island Bul. 41. Geneva Buls. 70, 99.
Striped cucumber beetle.	See muskmelon.	Summer, 60-80 days; winter 125-160 days.	10 to 15 tons, winter.	N. Y. State Exp. Station Report 6th. New Jersey Bul. 94. Geneva Buls. 75, 113, 156, 158. Ohio Bul. 105. Cornell Bul. 31.
Squash-vine borer.	Plant a few early squashes between rows of late varieties as trap crop. As soon as early crop is harvested, remove and burn vines.			
Aphis.	Spray with kerosene emulsion diluted with 6 parts water or use one part of tobacco extract. Burn vines after fruit harvest and keep down weeds.			
Squash stinkbug.	Trap adults under boards in spring. Kill nymphs with kerosene emulsion.			
White grubs.	Dig out grubs from beneath infested plants. Destroy pupæ by early fall cultivation of land.	1 year. Heavier crop usually in 2 years.	75-250 bus.	Cornell Bul. 79.
Boll worm.	Hand picking. Use of corn as a trap crop. Destruction of wormy fruit.	150 days from seed.	8 to 16 tons.	Cornell Buls. 32, 61. Michigan Buls. 19, 31. Florida Bul. 48. Kentucky Bul. 66. Connecticut Bul. 115.
Tobacco worm.	Hand picking.			
Nematode galls.	Crop rotation and preventing contiguity of host plants, notably cowpeas.			
Root maggots.	Inject bisulphide of carbon into soil about roots before grubs have burrowed deeply into tissues. Crop rotation.	60-70 days from seed.	600 to 1,000 bus.	Geneva Report 6th.
Flea beetle.	Spray with bordeaux or sprinkle with paris green diluted with land plaster (1 part by bulk of paris green to 50 of plaster).			
Melon worm.	Spray with paris green, 4 ounces to 50 gals. water. Two or three sprayings a week apart.	120-180 days.	400-500 melons.	Georgia Bul. 38.
Melon louse.	Spray with a 1 to 20 mixture of kerosene and water, or kerosene emulsion, or whale-oil soap, 1 lb. to 1 gal.			
Striped cucumber beetle.	See muskmelon.			
Flea beetle.	Hand picking and thorough spraying with bordeaux mixture and paris green.			

SHEEP AND SWINE

Best Foods	Diseases and Symptoms	Treatment	Bulletins
For the trotter. When not in training, feed should be reduced at least one-half. Good oats and clean sweet timothy should constitute bulk of ration. Also a few carrots and a bran mash occasionally. In spring, when shedding, bran mash may be given more often to keep bowels open.	*Big-head.*—Symptoms: Loss of vitality, irregular appetite or other digestive disturbance. Tendency to stumble. Then intermittent or migratory lameness. Swelling of bones of face and jaw. Animal becomes thin, coat rough, and skin tight.	Place animal under new conditions. Give lime, one peck slacked in a cask of water, more water being added from time to time. Give a tablespoonful of powdered bone meal in each feed, with free access to a large piece of rock salt. Feeds containing mineral salts, such as beans, cowpeas, oats and cottonseed meal are good. Animal should not work during active stage or be used for breeding.	Best references to breeds in studbooks issued by breed societies.

TABLE III. HORSES, CATTLE,

Best Breeds	Characteristics	Uses	Brief Breeding Rules
HORSES—Cont'd. **Belgian Draft**	Short body set on short legs. Tendons of legs large. Head good size. Eyes small, neck short, thick and well crested. Shoulders heavily muscled. Chest deep and wide, good barrel. Back short, broad and inclined to sag. Loins wide, short and very thick. Flank low and full. Hindquarters short, very wide, muscular. Lower thighs very wide, well muscled. Hocks round and meaty. Colors, chestnut, roan. brown and bay.	Draft and crossing, especially on grade draft mares.	4. Period of gestation 11 to 12 months. 5. Proper rations and sufficient exercise important during pregnancy. 6. Fecundity favored by (a) Warm climate. (b) Abundance of exercise. (c) Generous supply of nutritious food, regularly given. (d) Crossing (e) Heredity. (f) Full maturity of animal. 7. Variation in type caused by (a) Changed conditions of life. (b) Heredity—union of two animals with diverse qualities. (c) Habit or use or disuse of parts. (d) Food.
Clydesdale	Weight 1700 to 2000 pounds for stallions, 1500 to 1800 pounds for mares. Height, 16 to 16½ hands. Colors, bay, brown, black or chestnut, with white markings on face and legs. Head intelligent. Shoulder good, which gives a free, easy, long stride. High withers. Arm well muscled. Feathering on leg is fine, silky and long. Quarters and croup muscular. Springy, strong pastern. Front action free and snappy.	Draft and crossing on native draft mares.	
French Coach	Height 16 hands. Weight 1000 to 1400 pounds. Rather upstanding Smooth and symmetrical, fine quality, clean cut, intelligent head, long graceful neck, closely ribbed body, muscular quarters. Legs well set and fine. High free knee action, regular uplifting hock action. Colors, bay, brown or black.	Coach and carriage horse, cavalry and fast saddle purposes. Crossing on common brood mares for production of grade coach horses for general city purposes.	8 Selection is of two kinds— (a) Natural. Survival of those possessing greatest ability to live and get food under particular conditions. (b) Methodical. Favoring and fixing of characters especially useful to mankind.
German Coach	Colors, bay, brown or black. Height 16 to 16½ hands. Weight 1350 to 1450 pounds. Deep round body. well proportioned, close ribs, neck long and high set on shoulders, neat head, intelligent face. Back short and strong, smooth at coupling, plump rounded quarters, strongly muscled limbs, strong hock good feet.	Saddle, carriage and draft. The horse-of-all-work.	9. Heredity—like produces like. Offspring resemble parents in stature, form and feature. Normal and abnormal characters are inherited. Predisposition to diseases is subject to laws of heredity. Characters that have appeared regularly through many generations transmitted with greatest force. Variations also transmitted.
Hackney	Considerable substance, very smooth, gracefully curved outlines, rather short legs, head well proportioned, full bright eyes, well-developed neck, shoulders long, sloping. well muscled. Body deep and round-ribbed. Muscular loins and quarters, strong hocks, excellent action. Colors, brown, bay or chestnut, with white markings. Height 15. 2 to 16 hands.	Heavy-harness horse. A desirable cross on common mares of much quality.	10. Correlation of parts. Whole organism so closely interwoven that change in one organ or set of organs almost certain to result in disturbance of the balance of other qualities and produce a change of other organs. Certain characters are normally correlated.
Percheron	Height 15. 25 to 16 5 hands Weight 1500 to 2000 pounds. Colors, gray and black. Active temperament, intelligent head, deep body, wide muscular croup, clean-cut legs, joints clean and hard; legs show abundance of quality. Good action.	Draft and crossing to produce grade draft mares.	11. Atavism, or reversion to characteristics of remote ancestors, may occur. Leading causes are change of environment and crossing.
Shetland Pony	Height 10 hands 2 inches. Weight 325 to 375 pounds. Compact build, deep body, heavy muscular quarters, short legs, short broad back, deep full chest, muscular neck, small head and ears, prominent eyes, docile disposition. Colors, brown, black and bay. Long shaggy coats, heavy, long mane.	Child's pony and light driving.	12. Inheritance of acquired characters. Acquired character is gained as result of action, nonaction, or reaction from environment. Such characters may be inherited.
			13. Determination of sex. Many theories have been advanced, but in the present state of our knowledge it is not practicable to attempt to control the sex among the mammalian animals.
Shire	Conformation low, broad and stout. Heavy in build, slow in movement. Large girth, deep and strongly coupled with broad back, quarters heavily muscled. legs strong, feet large. Feathering on legs below knees and hocks. Weight 2200 pounds. Height 17 hands. Colors, brown, bay or black with white markings on face and legs.	Draft and crossing to produce grade draft horses.	14. Prenatal influences of doubtful consequence. Pregnant animals should be kept quiet and free from causes which might produce extreme nervous shock. They should have normal exercise.
Standard-Bred Trotter	Head well proportioned, clean cut, neck long and muscular, crested in stallions. Shoulders well muscled, chest low, foreleg long from elbow to knee, short from knee to fetlock. Pasterns sloping, feet moderate in size, oily in appearance. Back and loin well muscled, hindquarters and croup well muscled and smooth. No fixed colors. Height 16 hands. Weight for mares 900 pounds, stallions 1150 pounds.	Racing, driving as a roadster, and breeding. Also heavy - harness horse. Much used in breeding "cow ponies."	15. Four methods of breeding (a) Cross-breeding. A union of different breeds or races or breeding together of different strains of families within the same breed. Increases fertility, size and restores constitution, vigor and thrift. Breaks up established types, and destroys prepotency of the breed. Not certain to produce improvement.
Suffolk Punch	Low-set, short legs, deep body, muscular, durable feet. Head clean cut, with full forehead and Roman nose, neck full, with strong crest, chest deep and wide. Barrel deep, round-ribbed, and well let down on hind flank. Legs and hindquarters muscular. Height 16½ hands. Weight 2000 pounds. Color chestnut.	Heavy draft and crossing on range mares.	(b) Grading. Breeding of unimproved females to males of well-established breeds will invariably improve stock.
Thoroughbred	Very deep, narrow chest, long legs. Refinement and clear definition of feature. Large nostrils, full, clear eyes, broad forehead, neck long and straight, sloping shoulder, muscular hindquarters, sharp withers, well marked superficial blood vessels, silky skin and hair. Colors, bay, brown, or chestnut, more or less white in face and limbs. Height 15 to 16 hands. Weight 900 to 1050 pounds.	Racing, sporting, breeding. Influence felt in all but draft breeds.	(c) Inbreeding. Breeding together of close relations. Will fix desirable qualities. Likely to diminish size, weaken constitution, impair fecundity. (d) Line-breeding. Union of animals more or less closely related. Favors fixation of characters, but may result in too great refinement and weakness of constitution.
Welsh Pony	Good shoulders, strong back, neat head, best of legs and feet. Height 12 to 13 hands. Colors, bay or brown, gray or black. Great strength and endurance.	Child's pony and for hack and tradesmen's purposes.	16. Pedigree and individual excellence should both enter into choice of breeding animals. Neither alone sufficient.

SHEEP AND SWINE—Continued

Best Foods	Diseases and Symptoms	Treatment	Bulletins
When horse goes into training, strength of food should be gradually increased. At first may have all hay he will consume. Later it may be necessary to limit it. No carrots. Bran mash once or twice a week if constipated. Oats gradually increased.	*Hives.*—Symptoms: Eruption of swellings from one-half to two inches in diameter on skin. The edges of swellings cut off sharply from surrounding tissue.	Withhold feed for 24 hours. Then give bran mashes and small quantities of hay. Cleanse digestive tract by quart of linseed oil or 1½ pounds epsom salts. To relieve itching, apply alkaline solutions, 1 tablespoonful sodium bicarbonate to 1 quart of water, or a weak solution of ammonia.	Report of Kansas State Board of Agriculture, 1899.
	Heat stroke.—Symptoms: Horse stops sweating, appears droopy in harness, drags along, soon falls and becomes unconscious. Breathing rapid and shallow, pulse rapid and weak, body temperature excessively high.	Treatment energetic. Apply ice bags to head and pour cold water over body to reduce temperature immediately. Give ½ pint whisky, followed by tincture of digitalis in 1 dram doses by mouth or ½ dram doses subcutaneously to stimulate heart. Continue cold water until temperature is reduced to 102 or 103 degrees Fahr. Rub limbs briskly with straw or the hands. Recovery is gradual, over week or two.	
	Moon blindness.—Symptoms: Great irritation in eyeball, excessive flow of tears; eye kept closed and drawn back into socket; mucous membrane on inside of eyelid red, swollen and may protrude between closed lids; eyeball enlarged and cloudy, very sensitive to light.	Keep animal in the dark and wash off eye several times daily with a 4 per cent solution of boric acid. A few drops may be dropped in eye. Ice poultices may be used 3 or 4 days, after which warmth should be applied by covering eye with cotton soaked in warm water. One or two drams of potassium iodide daily have been recommended.	Farmers' Bulletin No. 170.
For the driving horse.—Oats lead among the grains. Bran mash for constipation. When horse is not taken from stable during day, the concentrates should be reduced by one-third. Laxative foods, such as clover or alfalfa hay or bran, in too large quantities should be guarded against.	*Lampers.*—Symptoms: Mucous membrane of mouth becomes congested with blood and protrudes below incisor teeth.	May be relieved by making a few shallow punctures in mucous membrane with a sharp knife that has been thoroughly sterilized. Such treatment demands expert care.	
	Rheumatism.—Symptoms: Animal becomes stiff and lame, followed by rise of temperature (104 degrees Fahr.) A swelling appears around joints of legs which is very painful to the touch. Location may change from day to day, and attacks be intermittent.	Administer a cathartic, aloes balls containing 7 drams of aloes. Thoroughly rub affected joints with a stimulating liniment, as camphor or chloroform liniment. Follow cathartic with salicylates given in form of sodium salicylate. 6 to 8 drams may be given 2 or 3 times daily in food. Keep horse in dry place and give plenty of fresh air.	North Carolina Bulletin No. 189.
For the work horse.—In general, horse should have over 2 pounds of provender daily for each 100 pounds of weight. Of this about two-thirds should be grain, depending on heaviness of work. Morning meal should be rather light, mostly of grain. Midday ration should not be large. Heavy feeding at night. In cold weather a more carbonaceous ration may be used. Equal parts of corn and oats better than larger proportion of oats.	*Colic.*—Symptoms: Animal lags or stops in harness or walks around stall restlessly. Looks around at side, kicks at belly, may grit teeth. Tail gets a peculiar crook and is held extended. May lie down, roll, kick, or make violent movements, as slamming head against floor or biting at self or manger. Attacks may be intermittent.	Give animal plenty of room. To allay pain, cannabis indica, 1 to 2 ounces, may be given, or morphine sulphate, 5 to 7 grains, given subcutaneously. Larger doses of either dangerous. An excellent prescription is fluid extract cannabis indica, 4 drams; tincture opium, 6 drams; sulphuric ether, 1 ounce; sweet spirits of niter, 1 ounce. Give in 1 dose and repeat if necessary in an hour. To stimulate intestines, 8 drams of aloes or 1 pint of linseed oil. Injections of lukewarm water into rectum good. In fermentation colic tapping is quickest and surest method. This requires expert surgery.	Florida Bulletin No. 72.
	Heaves.—Symptoms: Distressing dry cough which often occurs in paroxysms. A double respiration present. Expired air comes from nose in 2 jets, with pause between them.	Condition incurable. Greatest benefit from regulation of diet. All dusty hay should be withheld and small quantities of best timothy given sprinkled with lime or molasses water. Nutritious concentrated foods best: corn, oats and bran with carrots and turnips or apples mixed in.	
For the brood mare.—Much the same as for work horse with the addition of more protein foods, as bran and oil-meal. If constipated, give bran mash. After foaling, a hot bran mash fed once a day has a cooling and laxative effect. To stimulate milk flow, good pasture grass best, but oats or wheat bran with equal weight of corn-and-cob meal is good.	*Bots.*—Symptoms: Cause irritation of walls of stomach and intestines and obstruction of passage between stomach and intestines.	Best treatment preventive. Eggs should be removed from hair before tenth day. If occasional bots noticed in manure, animal should be starved for 12 hours, allowing only water, after which give 2 teaspoonfuls of tartar emetic in water as a drench. Repeat in 4 hours; 8 or 12 hours later give a drench of 1 pint to 1 quart of linseed oil.	Iowa Bulletin No. 18.
	Worms.—Symptoms: Presence of worms in fæces the only sure sign.	Give animals no food for 12 to 18 hours. Then give tartar emetic in two-dram doses every 4 hours until 3 doses are given. Follow in 3 or 4 hours with 1¼ pints of linseed oil.	
	Curb.—Symptoms: A rupture of the ligament on posterior surface of hock with swelling and heat, often lameness. Leg shows bulging backward below point of hock.	In acute inflammation cold water should be applied for 10 to 12 hours daily in constant stream. If lameness persists after a week, a blister of biniodide of mercury 1 part to vaseline 8 parts should be applied and animal should rest for 2 to 4 weeks.	
	Founder.—Symptoms: Onset sudden with fever from 102.5 to 106 degrees Fahr., rapid respiration, increased pulse, intense pain in feet. Animal stands with hind feet well under body.	Give tincture of aconite in 10-drop doses every 2 hours during first day. Allow animal to stand with affected feet in a soaking-tub of cold water, or in puddle of soft clay, water to be kept cold by addition of ice. Give 2 ounce doses of saltpeter in a pint of water 3 times daily for 1 week. Case may need expert attention.	
For the foal.—Should begin to nibble grain from mother's box at 2 months, and at 5 to 6 months be eating well. Should have more protein than work horse. Oats, shorts, peas and perhaps corn, may constitute the grain. Alfalfa, clover and mixed hays may constitute the roughness. Abundant exercise important.	*Bone spavin.*—Symptoms: Onset gradual. Lameness most marked when horse is first brought out of stable and disappears on warming up. Bony enlargement on hock joint.	Proper shoeing will assist in removing lameness. 4 to 6 weeks rest with repeated blisters may give temporary relief. Most successful treatment requires assistance of a veterinarian.	New Jersey Bulletin No. 92.
	Ringbone.—Symptoms: Onset gradual with lameness. Local heat, swelling and pain in joint. Presence of bony enlargement about joint.	Foot should be properly dressed and shod. If lameness is marked, prolonged rest and repeated mercurial blisters (1 part biniodide of mercury to 8 of vaseline) should be applied. If this is not successful, call veterinarian.	
For the stallion.—During breeding season, grain ration should consist mainly of good sound oats, varied by ration of corn, corn-and-cob meal, or barley. Wheat bran is valuable. The roughness should be clean, sweet hay, timothy or timothy and clover mixed.	*Splint.*—Symptoms: Lameness. Pressure over splint will cause animal to flinch. Skin will show increase of temperature and there may be some edema. New bony growth may be seen or felt on front of internal splint bone.	For acute inflammation, let cold water run over part for several hours each day for a week. Hair should be clipped, then apply blister of one dram benzoid of mercury to one ounce of petrolatum. Animal should rest 3 to 4 weeks. In severe cases, call veterinarian.	Special Report on Diseases of the Horse, Bureau of Animal Industry, U. S. Dept. Agr., 1903.

TABLE III. HORSES, CATTLE,

Best Breeds	Characteristics	Uses	Best Foods
CATTLE			
Aberdeen-Angus	Black color, polled heads, rotund compact type, smoothness of conformation, short legs, evenness of flesh when fat, deep, full hindquarters. Beef breed.	Beef. Very valuable in crossing and grading. Little value for milk.	
Ayrshire	Medium size, standard weight for cows 1000 pounds, bulls 1500 pounds or more. A little smoother than Jersey or Holstein but from behind wedge shape is evident. Tips of ears notched, horns white with black tips and curve outward and upward. Body large and deep, ribs well sprung, hindquarters often heavy. Udder shows high development of form and setting. Color variable through red, white, and brown in patches. Mild but active disposition. Dairy breed.	Milk, butter, and cheese. Crossing to improve grade herd.	
Brown-Swiss	Weight for cows 1200 pounds and bulls 1800 pounds. Colors shade from light to dark chestnut brown. Light tuft of hair between horns, on inside of ears, and a narrow line along back. Nose black, mouth surrounded with meal-colored band. Horns with black tips, medium size. Face dishing, large, full eye; ribs well sprung. Hoofs and tongue black, udder large, extending well up in front and rear. Teats large, well placed. Short legs. Dairy breed.	Milk for condensing and butter and cheese making.	
Galloway	Low, blocky animal, with long, soft, shaggy coat of black hair, hornless, well sprung in the ribs, resembling barrel in shape, which is evenly covered with juicy lean flesh. Head short and wide, forehead broad, face clean, nostrils large. Eye large and prominent. Neck short, clean. Shoulders broad, joining body smoothly. Hindquarters long, wide, well filled. Rump straight, wide, carrying width of body out uniformly, well filled with flesh. Thighs broad and thick. Legs short and clean. Beef breed.	Beef, hides and crossing. Very prepotent.	
Guernsey	Clean-cut, lean face, long, thin neck, backbone rising well between shoulder blades, pelvis arching and wide, rump long, abdomen large and deep, udder full in front, of large size and capacity. Teats well apart, and of good even size. Hair a shade of fawn with white markings, cream colored nose, horns amber, small, curved and not coarse. Mature cows about 1050 pounds. Bulls 1200 to 1500 pounds. Dairy breed.	Milk, cream and butter. Cross-breeding.	
Hereford	Color, red and white. Head, including jaws and throat, white, white under neck, down the breast, under belly, and on legs. Bush of tail white, white strip on top of neck to top of shoulders, remainder of body red. Head short, forehead broad, eyes full, horns rather strong and of whitish yellow color, free from black tips, more or less drooping, neck short and thick. Hide heavy and loose and covered with dense soft coat of hair. Breast broad and full, free from loose dewlap. Shoulders broad on top. Ribs well sprung and extending well backward. Rump bones wide apart. Legs short, straight and set well apart. Line of back straight and level. Quarters full and well rounded. Beef breed.	Beef, especially early or "baby" beef.	
Holstein-Friesian	Color, black and white piebald. Head, broad between eyes, eyes large and bright, horns small, tapering toward tips, neck long, chest moderately deep and low, barrel long and wedge shaped, large abdomen, legs rather short and nearly straight and wide apart. Hair fine, soft and furry. Udder very capacious, extending well forward in front; teats well formed and wide apart. Dairy breed.	Milk, butter and cheese. Fair beef qualities.	
Jersey	Small head, muzzle black or dark in color surrounded by light or mealy strip of light skin and hair. Eyes prominent, bright and wide apart. Horns crumpled, small, often black tipped. Neck fine, clean and small. Legs short, fine boned and small. Body well rounded, large and deep. Skin mellow, loose, yellow, with short fine silky hair. Udder large, not pendulous. Teats medium size, placed far apart. Back straight from shoulder to tail. Movement light and graceful. Cows 800 to 1000 pounds, bulls 1200 to 1500 pounds. Dairy breed.	Milk and butter.	
Red Polle	Weight for bulls 1800 to 2000 pounds, cows 1300 to 1500 pounds. Color red. Nose flesh color. Switch of tail and udder white. Head medium length, wide between eyes. Poll well defined and prominent, neck of medium length, clean cut, straight from head to top of shoulder. Chest broad and deep, back long, straight and level, hips wide and well covered, legs short and straight. Udder full and flexible. Teats well placed and wide apart. Hide, loose, mellow, with full coat of soft hair. Dual purpose breed.	Beef, milk and butter.	
Shorthorn	Head wide between eyes, short from eyes to nostril. Horns short, curved forward, waxy white with dark tips. Neck short and fine. Back straight, level and broad and deeply covered with flesh. Thighs wide, deep and long, well filled down in the twist. Body deep, squarely built. Flanks well let down, underline nearly straight. Legs medium length. Colors, pure red, pure white, a mixture of these colors, or roan. Beef breed.	Beef, crossing, grading. Fair results for milk, butter and cheese.	

For dairy cattle

1. The dairy calf.—Avoid fattening feeds. Choose such as tend to develop a vigorous muscular system. Gradually substitute skimmed milk for full milk after first few days. A small quantity of some concentrated feed, as shorts, linseed meal, or flaxseed meal boiled into a jelly with water (1 part meal to 6 of water) is fed daily with the skimmed milk. Milk should be at blood heat unless calf is accustomed to cold milk. At 6 or 8 weeks other feeds are given, preferably oats wheat middlings, or a mixture of both. For older calves, mill feeds, oil-meal, barley, malt sprouts, etc., are desirable. Keep fine quality of early-cut hay before calves.
2. Dairy heifer.—As time of parturition approaches, feeding should be plain, good clean hay from clover or mixed grasses, corn fodder, corn silage (not to exceed 25 to 30 pounds a day) or roots. Both dry and succulent roughage is fed, and small amounts of bran, ground oats, shorts, gluten feed and perhaps corn. Shortly before calving, feeding of all grains except about 2 pounds of bran, is discontinued and dry roughage and roots are fed till cow freshens. Directly after calving a warm thin slop of oatmeal, bran or shorts is given or warm water only. Until danger of fever is over, feed should be very light and gradually increased for 2 or 3 weeks until cow is on full feed. Corn meal good for a heavy milking heifer.
3. Dairy cow.—
   (a) Summer.—Ample pasturage. Later in the season add soiling crops, such as corn, alfalfa, peas and oats, rye, rape, etc. Summer silage: corn, red or other clover and alfalfa. 30 pounds of soiling crop or silage average allowance for dairy cows on poor pastures, to be increased as conditions demand. In case of heavy milkers or very short pasture, add few pounds of wheat bran or wheat bran and oats, throughout season.
   (b) Winter.—Succulent feeds should be provided during entire lactation period. Silage and roots are main available feeds. Best results from not over 40 pounds silage fed daily, and fed with some dry roughage, hay or corn fodder. Protein feeds, as clover hay, wheat bran or oil-meal should be fed with corn silage or fodder. Clover hay or hay of other legumes stands first for dairy cows. Pure timothy, especially if late cut, is a poor cow feed. Other kinds of hay are millet, oat, sorghum, alfalfa and pea. Common concentrates are the cereals and mill refuse, starch or glucose factory refuse, brewery and distillery feeds and oil-meals. Good rule is to feed as many pounds of grain feeds a day as cow produces pounds of butterfat during week and to feed as much roughage as cow will eat up clean. Should give variety of feeds containing liberal amount of easily digestible substances. Feeding must be regular.
4. Dairy bull.—Ground oats, wheat bran, gluten meal, oil-meal, silage, clover hay; grain ration not to exceed 5 or 6 pounds per day for 1000-pound animal. Keep animal vigorous, not fat and lazy.

For beef cattle

Baby beeves (10 to 16 months).—Require heavy grain feeding. Corn depended on largely, fed with a food rich in protein, as oil-meal or gluten feed. Oats and bran may be added if not too expensive. Good ration is 5 pounds corn, 2 pounds oats, ½ pound oil-meal, plenty of good clover or alfalfa hay. Corn silage is valuable. Daily ration must be increased as fast as calves can handle it.

Long yearlings (18 to 23 months).—When calves are born in spring they are given little or no grain before or after weaning. Through summer and fall depend on grass. In winter a liberal feed of hay with small allowance of grain. Pasture without grain following summer and full feed of grain next fall and winter. If roughage is largely alfalfa, clover or cowpea hay, the grain ration may consist of corn alone. If other roughage used, supplement corn with equal weight of bran, or one-third to one-half of that weight of oil-meal. In the second fall feed close grown corn fodder, shelled corn, alfalfa, clover or cowpea hay. If non-legume roughage used make night grain ration one-fifth to one-fourth oil-meal, gluten or cottonseed meal.

Short two-year-olds.—Finish by feeding grain in connection with spring and summer pasture. With this system a light grain ration is fed the first winter and less than half feed of grain second winter. Soaked shell corn is effective for spring and summer feeding.

Fall feeding two-year-olds.—Corn fodder on pasture. May begin about September 15 and continue in field for 3 months. Begin with 3 pounds of corn a day and increase till cow's capacity is reached. 3 pounds bran and 1 pound oil-meal or cottonseed meal per steer per day will greatly increase gains.

Winter feeding range two-year-olds.—Cattle which have had no grain during summer and fall. Snapped corn most used early in feeding with alfalfa, clover or cowpea hay. Field-cured stalks with alfalfa equally good. After 6 to 8 weeks begin shelled corn gradually to replace snapped corn. If non-leguminous hays used, supplement corn with about 2 pounds per day of bran, oil-meal, gluten or cottonseed meal. On full feed will take 20 to 25 pounds grain per day, plus all roughage desired.

Range three-year-olds.—Require smaller proportion of protein foods than above, but consume a larger proportion of grain to hay.

SHEEP AND SWINE—Continued

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
1. Age of puberty 4 to 18 months.	*Caked udder.*—Part or all of udder becomes enlarged and firm. Cow is depressed and there may be a slight rise of temperature. Gland is sensitive to pressure and flow of milk is lessened. Milk is watery and may be tinged with blood.	Give sparingly of milk producing food. Massage udder with hand and rub in camphorated oil or tincture of iodine 1 part, alcohol 8 parts. Then severe warmth should be applied by sponges wrung out of hot water and held against udder. In case of development of abscess or gangrene expert assistance will be needed.	Herdbooks of all breeding and registration societies. Special Report on Diseases of Cattle and Cattle Feeding, U. S. Department of Agriculture, Bureau of Animal Industry, 1892. Revised 1904.
	Chapped teats.—Symptoms: Apparent on teats. May cause great difficulty in milking.	In fresh cows wean calf as soon as possible. See that teats are dry before cow goes out into the cold or wet weather. Bland antiseptic ointment, as a 10 per cent ointment of calomel in petrolatum should be applied after milking. Yellow oxide of mercury in a 5 per cent ointment is also good. Care must be taken to prevent milk becoming contaminated. In very bad cases milk should be withdrawn for few milkings with tube and udder massages. End of teat and milking tube must be sterlized before inserting. Astringent applications, as lead water with laudanum or tannic acid ointment, are good when there is considerable discharge from the sores.	Bureau Animal Industry Circular No. 51.
2. Best age for breeding beef cattle, 20 to 27 months, dairy cattle 18 to 24 months.			Same Bulletin No. 108.
			Same, 15th Annual Report.
	Milk fever.—Symptoms: Attack usually comes on within two days after calving. Cow is restless, staggering gait, especially in hind legs, weakening of knees and fetlocks in front. This increases until paralysis becomes general, and animal goes down. Cow takes very characteristic position—head turned round to side, usually left, rests against chest, causing peculiar arching of neck. If head drawn out straight, immediately flops back to above position. Animal quiet and insensible.	Because of paralysis of the throat, great care should be taken in administration of medicines by the mouth. Patient should be kept in an upright position on the breastbone, and not on her side. Only successful treatment is the injection into the udder of atmospheric air, which requires the assistance of a surgeon.	Farmers' Bulletins Nos. 55, 205, 346.
			Connecticut Reports, 1893-1901.
3. Period of heat, 40 to 60 days after delivery, if suckling the calf, and 20 to 30 days if calf is taken away at birth. Period recurs each 3 weeks thereafter. Duration 12 to 24 hours.			Cornell Bulletins Nos. 268, 269.
			Florida Bulletin No. 96.
	Sore tongue.—Inability to eat, frequent movement of lips with formation of froth on their margin, driveling of saliva. Ulcers occur on gums around teeth, inside lips and on tip of tongue. Muzzle dry and parched, and crusts and scabs form over the parts. The thin skin in clefts between jaws may become fissured and eroded, causing a slight swelling with pain. Animal takes position with back arched and feet propped under body.	Remove herd from pasture to barn or corral and feed on soft nutritious food, such as bran mashes, ground feed and gruels. Keep clear cool water in manger. Dissolve 2 heaping tablespoonfuls of borax or one tablespoonful potassium chlorate in each of first 2 buckets of water taken during day. Astringents, such as ½ tablespoonful alum, borax or chlorate of potash, should be placed on tongue. Feet may be treated with a 2 per cent solution of carbolic acid or of creolin. Fissures or lesions of skin benefited by carbolized vaseline or zinc ointment.	Georgia Bulletin No. 49.
			Illinois Bulletin No. 142.
			Indiana Bulletins Nos. 129, 130, 136, 137; Circulars Nos. 12, 14.
4. Period of gestation 9 to 9½ months (285 days).			Kansas Bulletin No. 81.
	Indigestion.—Symptoms: When stomach and small intestines affected, loss of appetite and rumination, coated tongue and emaciation. Constipation is usual, although diarrhœa may be present. Fæcal matter contains imperfectly digested food and more or less mucus. When large intestine involved, appetite may not be affected. Diarrhœa marked, droppings coated with mucus. No undigested food present. Animal will lose flesh and become hidebound.	In constipation, 1 quart of castor oil should be given. Easily digested and nutritious food should be given in small quantities. Green food best or hot bran mashes, with small amount of good sweet hay. In diarrhœa and fermentation a mixture of bismuth subnitrate 1 dram and creosote ½ dram shaken up with milk or given as a drench twice daily for 2 or 3 days is beneficial. For a tonic powder, nux vomica 1 dram, reduced iron ½ dram, powdered gentian root 1 ounce, should be given in the feed 2 or 3 times daily for a few weeks	Louisiana Bulletins Nos. 104, 115.
			Maryland Bulletin No. 84.
			Massachusetts Report, 1908.
Breeder should work toward a certain standard or ideal and should choose parents that approach that ideal. The parents, especially the male, should have known ancestry of approved type, as there is less danger of undesirable variations in the offspring.			Michigan Bulletins Nos. 149, 257; Circular No. 4.
	Choking.—Symptoms: Champing of jaws, driveling of saliva, ceasing to chew and choking movements, head extended, eyes bulging, inability to swallow.	When obstruction is in pharynx, a block of wood should be placed in mouth between back teeth, and object removed with hand. If in gullet, small amount of olive oil should be given at frequent intervals to lubricate the esophagus and allow object to pass into stomach. If this fails, the probang, a long, hollow, flexible tube, may be used. It is oiled. By means of probang, foreign body gradually forced into stomach.	Mississippi Bulletins Nos. 70, 121.
			Missouri Bulletins Nos. 53, 58.
	Cough.—Symptoms: Chilly sensations or a chill followed by rise of temperature to 103 to 105 degrees Fahr., loss of appetite and rumination, dry muzzle, constipation, rapidity of pulse and respiration. Cough at first dry, harsh and painful. Later cough becomes moist and there is nasal discharge.	Animal should be placed in light, comfortable stall and given plenty of clear water. Keep bowels open with 1 pound of Glauber's salts. Feed green succulent materials if possible or bran mashes and moistened hay. An electuary consisting of extract of belladonna leaves 5 grains, morphine sulphate 3 grains, powdered licoriceroot 4 drams and sufficient sirup to make an electuary, should be given on tongue 4 times daily. If cough persists after the secretion ceases a mixture of ammonium chloride 1 dram in ½ ounce of brown mixture should be given 4 or 5 times daily.	New York (Geneva) Bulletin No. 317.
The feeding and environment are important if best results are desired.			Ohio Bulletin No. 193.
			Oregon Bulletin No. 102.
			Pennsylvania State Board of Agriculture Bulletin No. 16.
	Warts.—Symptoms: Appear as grayish or grayish red projections of skin or mucous membrane. Favorite location is udder and teats, sides of head and neck, on lips and belly.	May be removed with scissors or fingers, or ligatured by rubber band or horsehair. Roots should be cauterized with tincture of iron, glacial acetic acid or lunar caustic. Acids should not be used around eyes or mouth. When warts are found in large numbers, arsenic in form of Fowler's solution should be given in 1 teaspoonful doses twice a day for a 6-months calf.	Pennsylvania Bulletin No. 88; Report, 1908.
The various breed associations have established standards of excellence which serve as guides to breeders in choice of parents.			Rhode Island Bulletin No. 77.
	Mange.—Symptoms: Contagious disease. Points of redness, pimples, vesicles and formation of scabs. Intense itching which becomes unbearable at night in hot stables or when exposed to sun. Animals scratch, rub, and bite themselves. Hair falls out and skin is bloody. In worst stages skin moist and bloody, ulcerated, scabby, thickened and wrinkled.	A good combination of drugs for killing parasites is flowers of sulphur 1 ounce, vaseline (or lard) 10 ounces. Best method is to dip animal in a vat containing flowers of sulphur 24 pounds, unslaked lime 12 pounds, water 100 gallons. This should be repeated in 10 days to 2 weeks.	South Carolina Bulletin No. 67.
			Tennessee Press Bulletin No. 1900.
	Ringworm.— Symptoms: Formation of circular patches on skin which soon becomes denuded of hair. Outer layer of skin is inflamed and vesicles form which exude a gummy liquid. Scaly crusts are formed, usually on head and neck.	Remove crusts by washing with soap and water, then apply acetic acid, 10 per cent sulphur ointment, tincture of iodine, or nitrate of mercury ointment once daily. Cleanse and whitewash stable to destroy spores scattered by crusts.	Texas Bulletin No. 110.
For additional breeding rules, see horses.			Wisconsin Bulletins Nos. 33, 38, 116, 117, 151.

Best Breeds	Characteristics	Uses	Best Foods
SHEEP			
Cheviot	Medium size, hornless, face and legs white, body closely covered with wool of soft fiber and pure white. Head bold and broad. Fleece forms almost a ruff about face. Deep and large in breast, back wide and straight. Short legs set well apart, hoofs black. Mature rams 200 pounds, ewes 150 pounds.	Mutton. Not superior as a wool producer. Wool of good quality, but light.	A clean and dry feeding place is necessary. Regularity in feeding imperative. Ordinarily best to feed sheep twice a day. Sheep need to have access to salt and water at all times.
Cotswold	Large, high-standing breed with heavy fleece of long white, lustrous wool. Ample topknot often covering eyes. Bold upright carriage. Head moderately small, face white or mixed with gray, eyes prominent, neck short, thick and strong, shoulders broad and full, back broad, breast broad and well forward, quarters long and full, mutton quite down to hock. Weight of ram 250 pounds, ewe 200 pounds.	Mutton and wool, the latter especially. Crossing on native and merino sheep.	*Feeding lambs.*—When ewe has a single lamb, not necessary to feed any grain until near weaning time. When a ewe has two lambs, they should get some grain. If lambs are to be sold before weaning, grain feeding must begin as early as possible. A mixture of three-fourths corn meal and one-fourth bran is satisfactory. Right after weaning it is well to have fresh pasture, or rape or other succulent feed. In addition, lambs should be fed liberally on grain.
Dorset-Horn	Face and legs pure white, flesh-colored nose. Both sexes have horns. Eyes prominent, neck short and symmetrical, shoulders broad and full. Chest full and deep, quarters wide and full with mutton extending down to hock. Fleece medium grade, of even quality, extending over belly and well down on legs. Short stout legs. Weight for rams 200 pounds, ewes 160 pounds.	Mutton breed. Early breeder, valuable for production of hothouse or winter lambs. Fleece light.	For fattening, corn is best. combined with peas and bran, Grain feeding must come gradually. For fattening mature lambs during fall, good grass pasturage and rape or rutabagas, with a mixture of corn and oats, is most satisfactory.
Hampshire Down	Black face, head large, well covered with wool on forehead and cheeks, nostrils wide. Ears large and drooping, eyes prominent and lustrous, legs well under outside of body, straight, almost black. Chest deep and full with breast prominent and full, back straight, quarters long and deep in thigh. Ewes prolific and heavy milkers. Weight for rams 250 pounds, ewes 185 to 195 pounds.	Mutton and production of early market lambs. Fleece inferior.	For final fattening, lambs should be confined in yard. During winter dry succulent fodder with grass will give good results; for dry fodders, alfalfa or clovers; for succulence, corn silage or roots; for grain, corn, oats, bran and oil-meal or cottonseed meal.
Leicester	Hornless, large size, rectangular form of body on clean legs, bare faces or carrying a very scant topknot. Head long, tapering toward muzzle, face wedge-shaped. covered with fine white hairs, eyes large and prominent, neck strong and moderately short. Breast deep, broad and full. Back broad and well fleshed. Legs of moderate length. Fleece fine, uniform, curly, with bright luster.	Crossing purposes to get early lambs for market. For wool especially, and mutton.	To fatten lambs in a short period give preparatory feeding on rape or roots for about six weeks. Should have pasture before going on rape, which must be restricted in quantity. For grain, begin with bran or oats. Give one-fourth pound per head daily at start. Increase quantity slowly. At end of a month about 1 pound per head, which should consist of ½ corn and ½ bran or oats, given in 2 feeds. For fodder, clover hay, corn stalks or pea-straw. Increase amounts gradually.
Lincoln	Large size with heavy fleece of long wavy or curly wool and moderate tuft of wool on face. Color white, head large, without horns, body deep, back wide and straight. Legs broad and set well apart. Weight for rams 250 pounds, ewes 200 pounds.	Wool. Crossing, especially on merino stock.	*Breeding ewes.*—Fond of clover hay, alfalfa, alsike, pea-straw, shredded corn fodder and oat hay. A ewe weighing 100 to 150 pounds will eat 2 to 3 pounds of such fodders daily during winter. May need to supplement pasture with small grain, as oats. Just before lambing time, ewes should be fed liberally on variety of roughage. Some succulent food. as corn silage and roots, will help to produce good flow of milk. After lambing they should receive some wheat bran or oats, unless they can go on good pasture.
Merino	Distinguished by its very fine wool, usually delicately crimped. Wool generally short and dense. Grows to tips of ears and hoofs of feet. Form, when shorn, angular, shoulders narrow, back not usually so straight or strong as English breeds, legs less straight and neck more slender. Ram usually has horns. Very enduring and resistant. *The American merino* has 3 to 5 heavy folds on neck, and folds on arm and sides and across hips. Fleece covers entire sheep except tip of nose and hoofs. Eyes hidden by wool. Outside of fleece a dirty brown, but inside white. Ewes 80 to 100 pounds, rams 100 to 175 pounds. *Delaine merinos* have smoother bodies than the American, and fewer folds and wrinkles. Mature ewes 100 to 150 pounds, rams 140 to 200 pounds. *Rambouillet merinos* have large bodies, usually smooth and free from wrinkles, except perhaps on neck. Fleece fine and white. Rams usually have large spirally curved horns, ewes hornless. Legs long. Rams 175 to 185 pounds, ewes 140 to 160 pounds.	Wool Fleece especially fine, strong and heavy. Used for crossing to increase wool production. Delaine merino mutton of fair quality.	*Feeding rams.*—For ram lambs, clean, heavy oats and pasture are best. In winter, clover hay and corn fodder, roots or silage, should constitute the ration. During breeding season, bran, oats, roots and clover hay should be fed liberally.
Oxford Down	Largest of down breeds. Nearly straight on underline. Long and coarse fleece. Very stately appearance. Color of face and legs brown, which is often flecked with gray. Ewes very prolific and heavy milkers. Not hardy under American climatic conditions. Rams 250 to 350 pounds, ewes 180 to 275 pounds.	Representative mutton breed. Fleece long and coarse.	
Shropshire Down	Dark brown face and legs. Broad head, short face, thick muscular neck, body somewhat barrel shaped, except that it is straight on back Body, head and legs to knees covered with fleece of even length and quality. Weight for rams 225 pounds, ewes 175 pounds.	Mutton and wool.	
South Down	Smallest of down breeds, but the model in form. Short straight legs, wide apart; broad level back thickly fleshed; long broad hips; neck short, thick at shoulder; head small, forehead full, face short, eyes prominent, ears small. Face and legs uniform reddish brown. Hindquarters carry down very heavy; breast broad and prominent. Fleece compact, long and close wool, white and carrying some yolk. Best weight for rams 200 pounds, ewes 150 pounds.	Mutton breed; used for crossing to produce early lambs. Wool of good quality.	
Suffolk Down	Large, rangy sheep, black-faced, hornless, with long clean, black legs. Wool is of good quality and mutton is excellent. A good feeder and very prolific.	Mutton breed; used also for crossing. Wool is short.	

Best Breeds	Characteristics	Uses	Best Foods
SWINE			
Berkshire	Rather more than medium size. Snout of medium length, face dished. Ears nearly erect, well carried. Jowl heavy. Neck short with considerable crest. Shoulder, back and rump of good width. Body deep. Ham thickly meated, strong constitution. Color black with a white mark on face. White on each foot and on tip of tail.	Lard and pork. Meat lean and of high quality.	*Breeding boar.*—Should not be overfed, but given just what he will eat up clean. Ration needs to be varied and have bulk, and always contain a succulent food. Young boars should be fed more concentrated foods than older animals. Boar should be fed more liberally during breeding season, than remainder of year. Food should consist of grain (finely ground oats with one-third to one-half ration of wheat middlings or wheat bran), skimmed milk, succulent food (roots, finely cut second-crop clover or alfalfa leaves).
Cheshire	Medium size. Body has good length. Shoulders and hams well developed. Face slightly dished. Ear small and erect. Bone fine and of fair quality. Color white. Black spots often occur on skin.	Lard, pork and bacon.	
Chester-White	Medium size, face straight or very slightly dished. Ear droops and is somewhat loosely attached to head. Color white, hair in many specimens wavy or curly. Neck wide, deep and short. Jowl smooth, neat and firm. Shoulders broad, deep and full. Chest large, deep, full in girth. Sides full, smooth, deep; ham broad, full, long, wide and deep. Back broad on top, straight or slightly arched, legs short and straight. Coat fine. Weight of boars 2 years old 500 pounds, sows 450 pounds.	Lard and pork. Crossing, especially with Poland-China.	*Breeding sows and young.*—Good pasture (blue-grass, clover, field-pea, alfalfa, cowpea, soybean) is essential and cheap. Mature sows need little except good pasture in August and September. In October about 2 pounds per head of corn should be given. After sows are bred they should have pasture and some grain, preferably equal parts of corn and oats at the rate of 3 or 4 pounds to 300

SHEEP AND SWINE—Continued

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
Age of puberty 6 to 10 months.	*Stomach worm.*—Symptoms: Sheep become unthrifty, dull and lose flesh and strength. A soft non-inflammatory swelling appears under the jaws. Diarrhœa appears.	Change flock to high, well-drained land which has not been occupied by sheep for some time. Feed generously and provide plenty of salt. Mix 10 drams of coal-tar creosote in a gallon of water and give to lambs 4 to 6 tablespoonfuls, and to yearlings and older sheep 8 to 10 tablespoonfuls every other day until 3 doses have been given. Feed should be withheld for 12 hours before and 3 hours after medicine.	Best breed information found in flockbooks published by the various breed societies. Experiment station records will reveal innumerable experiment station bulletins.
Best age for breeding 18 to 20 months.			
Period of heat, regularly during spring and autumn months. At other seasons period is irregular and often absent. Duration 2 to 3 days.	*Tapeworms.*—Symptoms: Slow development. Weakness and loss of flesh. Flanks are drawn up or distended with gas. Unsteady on feet. Excessive diarrhœa may develop.	Fringed tape worm difficult to control by medicine. For broad tapeworm, give every sheep in flock ½ to 1 dram of extract of male fern in 2 to 4 ounces of castor oil, or 1 to 1½ drams of kamala. Withhold feed night before and in the morning of the day in which the medicine is given and give no water for 5 or 6 hours after medicine.	
Period of gestation 5 months (21 weeks).	*Bloating.*—Symptoms: Abdomen becomes bloated and distended, filling with gas. Feeding falls off, animal shows stupidity, and respiration is difficult.	Surgical treatment is necessary.	Arizona Bulletin No. 60 Report, 1908.
One ram to 30 to 50 ewes. Ram may be allowed to run with flock at night. In north, breed in October to December to get lambs in March-May; in South breed in August or September. Ewes have passed greatest usefulness at 7 to 8 years.	*Liver rot or fluke disease.*—Symptoms do not appear until disease is far advanced. Rapid loss of condition and weakness, wool becomes dry and may drop off. Eyes and lips become bloodless. Appetite falls off. Bowels irregular.	Remove sheep to high, dry pastures and separate the sick from the well. Give nourishing food and plenty of salt. Infested pastures and pools should be drained and should be used for other purposes until clean. Snails should be destroyed. Drugs have little effect.	Illinois Bulletin No. 129, Circular No. 125.
	Gid, staggers or sturdy.—Symptoms: Animal moving in a circle, swaying, reeling, running forward with head elevated, turning about sharply, showing lack of control. Animal may be stupid. Eyes becoming staring, sight lost.	Animals in advanced stage should be slaughtered. Carcasses of infested sheep should be completely disposed of so that dogs cannot get at them. As precaution, give dogs that have run of place 1 or 2 teaspoonfuls of castor-oil, followed 12 to 24 hours later by 25 minims of extract of male fern, followed with another dose castor-oil in 2 hours. Keep dog tied and burn all discharges.	Michigan Bulletin No. 178.
Lambs may be allowed to run with mother 3 to 4 months. Should be weaned by 4 months. To get hot-house lambs, have rams and ewes in good physical condition, not overfat. Use a young ram and keep him well fed while in service. Give ewes abundance of succulent food and some corn. If ewe was not shorn in fall, shear as early as safe. Have ram with ewes not earlier than March 15 nor later than May 15.	*Scab.*—Symptoms: Sheep scratch, rub and bite infested places. Little blisters form which rupture and exude a yellowish liquid which dries on skin and forms scab. Mites may be found in margin of scab. Wool mats and falls out. Shoulders, sides, back and rump most affected.	Shear all sheep and confine for 2 to 4 weeks. Then dip in a mixture that will kill the mange mites. Lime and sulphur dip is very good. Repeat 7 to 10 days later. Each sheep must be kept in dip 2 minutes and head dipped at least once.	Missouri Board of Agriculture, Missouri Bulletin 7 (1909), No. 2.
	Sheep Ticks.—Symptoms: Animals show itching and pain caused by ticks, and bite and scratch themselves.	Dip flock in lime and sulphur mixture or in a kerosene emulsion. Dip twice with an interval of two weeks. Pens and resting places must be thoroughly cleaned before animals are returned.	
	Foot rot.—Symptoms: Lameness is apparent. Foot reveals red, moist spot in cleft just above the horny part. A sticky offensive discharge from hole in horn of hoof follows. Just above hoof there is swelling, accompanied by heat and sensitiveness.	Treat feet of healthy sheep with a solution of 1 pound chloride of lime to 12 quarts water or 1 pound carbolic acid crystals to 4 gallons water. Remove sheep to clean fields. To treat diseased sheep, cut away all loose or undermined horn and all proud flesh, and stand sheep for 10 minutes in solution containing 4 pounds copper sulphate in 5 gallons water. When disease has reached deeper, area should be washed with a solution containing 1 ounce carbolic acid crystals in 20 ounces water, then dusted with a powder of equal parts boric acid and oxide of zinc and covered with soft bandage.	Missouri Station, Circular Information No. 25.
For additional breeding rules see horse.	*Paper skin or lung worm disease.*—Symptoms: A fitful or spasmodic cough leaving animal almost suffocated. Discharge accompanies cough. In final stages skin becomes dry and papery. Appetite falls off, resulting in weakness and decline.	Market infested animals or separate from flock. Remove flock to clean inclosures and give nourishing feed, plenty of salt and pure water. Fumigation is best, using a mixture of flowers of sulphur and alcohol in a deep vessel floating in pan of water. Place in tight room and ignite. Attendant should remain to see that none suffocate. A mixture of 1 part salt to 25 parts of copperas should be kept constantly before sheep.	Nevada Bulletin No. 63.
	Sore feet and sore mouth.—Symptoms: Lameness and difficulty in eating. Ulcers appear on skin of leg above hoof and in membrane lining the lips.	Remove scabs and wash twice daily with solution of 1 tablespoonful creolin in 1 quart of water. Then paint infected parts only with Lugal's solution of iodine.	New York (Cornell) Bulletin No. 285.
	Garget.—Symptoms: Udder is swollen and hot. Milk contains streaks of blood or clumps of pus.	Give 5 ounces of epsom salts dissolved in a pint of water, as purgative. Bathe udder often with warm water and rub with camphorated oil, and keep udder milked out clean.	Oklahoma Report, 1908.
	Grass staggers.—Symptoms: Failing appetite, constipation, abdominal pain, fever, restlessness, unsteadiness, delirium, running against objects aimlessly.	Affected animals should receive a strong laxative. Then give 2 tablespoonfuls, twice a day, of following mixture in a half pint of linseed tea: Aromatic spirits of ammonia 1½ ounces, alcohol 2½ ounces, fluid extract of nux vomica ½ dram.	Tennessee Bulletin No. 84. Wisconsin 23d Report. Virginia Bulletin No. 178. Wisconsin Report, 1907.
	Scours.—Symptoms: Offensive diarrhœa, loss of appetite, distended abdomen, abdominal pain. Depression and weakness.	2 teaspoonfuls castor-oil containing 2 or 3 drops of creolin should be given at once and followed by a tablespoonful of following mixture 3 times daily: Paregoric 1 dram, subnitrate of bismuth 2 drams, sherry wine 3 drams, salol ½ dram, mucilage of acacia 5 ounces.	Wyoming Bulletins Nos. 79, 81, Report 1908.

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
1. Age of puberty 3 to 7 months.	*Mange.*—Symptoms: The crusts about eyes and ears are often the first evidence of disease. Disease spreads until it may cover entire body. Marked itching. Sometimes loss of flesh and decline.	Crusts may be removed by scrubbing with soap and water followed by application of a 3 per cent solution of creolin or an ointment made of sulphur 2 drams, resorcin 1 dram and vaseline to make an ounce. Continue daily until all parasites are killed. When large numbers are affected, dipping in lime and sulphur dip (described under mange in cattle) is necessary. Dipping should be repeated after 6 days.	Best breed information found in herdbooks published by various breed associations.
2 Best age to breed 8 to 12 months.	*Verminous bronchitis.*—Symptoms: Bronchial tubes inflamed, very severe coughing. Growth stunted. Caused by a small round worm in bronchial tubes.	Kill adult pigs for food in first stages. Give young pigs a teaspoonful of turpentine in swill 3 times daily.	Bureau of Animal Industry Bulletin No. 48. Farmers' Bulletin No. 331. Colorado Bulletin No. 146. Report 1907.
3. Period of heat, 3 days after weaning the pigs and every 9 to 12 days thereafter. Duration 1 to 3 days.	*Paralysis.*—Symptoms: Hind legs affected first, gradually extending over entire body.	Surgical treatment requiring extreme care is necessary.	Illinois Circulars Nos. 126, 133.
4. Period of gestation 112 to 116 days.	*Rickets or rachitis.*—Symptoms: Animals stunted and poorly nourished. Lameness appears and bones about joints swell. Bones may become very weak and body fall over.	Feed concentrated and nutritious food rich in proteids. Milk, middlings, bran and ground bone meal are good. Lime water should be given. Sunlight, fresh air, clean quarters and exercise must be provided. Precipitated phosphate of calcium in 1 dram doses 2 or 3 times daily in the feed, with oil of phosphorus in 1 drop doses is helpful.	Indiana Bulletins Nos. 100, 126. Iowa Bulletin No. 106. Mississippi Bulletin No. 107.

TABLE III. HORSES, CATTLE.

Best Breed	Characteristics	Uses	Best Foods
SWINE—Cont'd **Duroc-Jersey**	Medium size, fine bone. Snout medium length, face slightly dished, ear drooped, jowl heavy, body wide and deep set on short legs. Ham heavily fleshed. Cherry red the popular color, but yellowish red and chestnut are often seen. Weight of boars 2 years old 600 pounds, sows 500 pounds.	Lard and pork. Crossing, especially with Berkshire and Poland-China.	or 400 pound sows, until late December. Then substitute daily 5 or 6 pounds of ration, ground oats 2 parts, ground corn 2 parts and bran 1 part. Skimmed milk is especially recommended for mixing grain ration. In winter give liberally of clover, alfalfa, or pea-hay.
Hampshire or **Thin-Rind Swine**	Medium size, face straight, ear inclined forward, but does not droop. Jowl light, as is also shoulder and ham. Back of medium width. Legs of medium length and bone of good quality. Color, black extremities with a white belt 4 to 12 inches wide encircling body and including fore-legs, which should also be white. Weight, boars 2 years old 450 pounds, sows 400 pounds.	Bacon and pork. Almost general purpose.	For first 24 hours after pigs are born, give sow no food. Then give light ration of ¼ ground corn, ½ shorts. ¼ ground oats mixed with 3 to 5 pounds skimmed milk to one of grain. Pigs should be given a little feed at 3 weeks, using same ration as for sow. Feed liberally to 3 months of age.
Large Yorkshire or **Large White Swine**	One of the largest breeds. Snout of medium length, with little or no dish. Moderate dish in face. Jowl of good width and muscular. Ears rather large, firmly attached, fringed with fine hair. Shoulders and back of medium width. Side long. Ham lighter than that of lard type with flesh carried well round inside of thigh. Legs medium length. Bone fairly heavy, clean and flinty. Color, white.	Bacon. Valuable for crossing on Poland-China, Berkshire and Chester-White.	*The bacon hog.*—Best feeds are mixed peas, barley, oats, shorts and skimmed milk. Barley, ground or soaked over night is feed most used. Oil-meal or tankage may be added advantageously. Summer feeding on pasture of clover, alfalfa or rape.
Poland-China	Medium size. Face slightly dished. Jowl full and heavy. Ears fine, firmly attached; about one-third of ear droops. Neck short, thick and heavily arched on top. Shoulder heavy. Side short. Back wide. Ham very wide and deep. Legs short, bone fine. Black, with 6 white points on face, feet and tip of tail. Weight of boars 2 years old 600 pounds, sows 500 pounds.	Lard and pork. Valuable in crossing.	*The lard hog.*—Principal source of food the undigested food in droppings of steers. Follow steers with equal number of pigs of about 6 months of age, and give them one-fourth to one-third pound of tankage daily. For the last 4 or 5 weeks of fattening they should be removed from steer lots and fed as much corn as they will consume. Method will vary according to method of feeding the steers. Pigs that do not follow steers are fattened on pasture, clover or alfalfa or June-grass being best. Corn alone or abundant clover pasture is excellent ration.
Tamworth	Should have golden-red hair on a flesh-colored skin, free from black. Snout long and straight. Ear large. Jowl narrow and light. Neck and shoulder are light; back and loin of medium width, side of good length, moderately deep. Rather deficient in ham. Legs long and strong.	Bacon. Crossing, especially with Berkshire.	

TABLE IV. CHICKENS, TURKEYS,

Best Breeds	Characteristics	Uses	Best Foods
CHICKENS **Plymouth Rock**	Three varieties, the barred, white and buff. Back and body rather long, breast broad and deep. Single combs, yellow shanks. Cocks weigh 9½ pounds and hens 7½ pounds.	General purpose, for both meat and eggs. Brown egg.	A good ration must contain sufficient digestible nutrients to meet needs of animal. Animal's appetite is safest guide as to amount of food needed.
Wyandotte	Eight standard varieties, white, buff, black, silver, golden, silver penciled, partridge and Columbian. A bird of curves, back short and broad, body deep and round, breast broad and deep, with a low-set keel. Shanks short, strong and carried well apart. Colors silver, white, black, buff and mixtures. Close-fitting rose combs. Abundant fluffy, close-fitting plumage. Weight 8½ pounds for cocks, 6½ pounds for hens.	General purpose, for both meat and eggs. Brown egg.	
Rhode Island Red	Two varieties, single comb and rose-comb. Tail color black. Rhode Island red has a red surface of body plumage, with a red under color, free from slate. Buckeye breed surface color is dark, rich garnet, and under color allows a bar of slate-color next to surface. Body of bot-long, Rhode Island reds level. Buckeye body shows slight elevation in front. Weight of Rhode Island red cocks 8½ pounds, hens 6½ pounds, Buckeye cocks 9 pounds, hens 6 pounds.	General purpose. Brown egg.	*Balanced ration.*—For egg production, 1 part protein to 4.6 parts carbohydrates. For fattening, 1 part protein to 7 or 8 parts carbohydrates. For raising young chickens, 1 part protein to 4 parts carbohydrates.
Brahma	Two varieties, light and dark. Show heavy leg and toe feathering, thick, close plumage. General color of light Brahma, white, with black tail and black center stripes in both hackle and saddle feathers. In dark Brahma, wings of cock crossed by heavy black bar, and entire breast, body, leg and toes black. Back, wings, body and breast of female have a basis of gray on which are distinct dark pencilings. Weight for dark cocks 11 pounds, hens 8½ pounds; for light cocks 12 pounds, hens 9½ pounds.	Meat breed. Brown egg.	The ration should consist of foods which the fowl likes. The following grains are preferred by fowls in order named: wheat, corn, oats, peas, barley, buckwheat, rye. The ration should provide a good variety and sufficient bulk to aid digestion. Wheat, bran, clover and alfalfa meal provide bulk in ration. The ration should contain easily digested foods, as whole grain and part ground feed. Feed at least one-third ground grain, as wheat or bran middlings, ground oats, corn meal and very small quantities of gluten meal. Wheat is most desirable of grains. Corn should be used largely because it is cheaper. Heavy oats rank next. Meat in some form, as beef scrap or green cut bone or skimmed milk should be included in every ration. It should form at least 10 to 15 per cent of total food consumed each day. Green food in form of cabbage, roots or cut clover should be given each day. Grit in form of cracked oyster shells or mortar is indispensable. Because of cost, wheat bran and middlings, and buckwheat middlings may be much used. Chickens should be fed according to age and season of year, giving the more heat producing foods in winter. The lighter and more active breeds can be fed a wider ration than the heavy and more sluggish breeds. The ration should be balanced in such a way that the appetite is kept good, the needs of egg production met, and the fowls prevented from becoming too fat.
Cochin	Four varieties, buff, partridge, white, black. Peculiarity is an appearance of massiveness and fluffiness. Heavy, short feathering is piled high on back and extends wide at sides. Excessive thigh and shank feathering. Combs single, low, close on head and evenly serrated with five distinct points. Cocks weigh 11 pounds, hens 8½ pounds.	Meat breed. Brown egg.	
Leghorn	Eight varieties, single-comb and rose-comb brown single-comb and rose-comb white, single-comb and rose-comb buff, single-comb black and single-comb silver duckwing. Characterized by early maturity and great activity. Large combs on top of head.	Egg production. White egg.	
Minorca	Three varieties, single-comb black, rose-comb black, single-comb white. Long body, carried rather upright, deep at breast with back tapering sharply toward tail, which is long and carried rather low. Comb large. Ear lobes large and pure white. Cocks of rose-comb weigh 8 pounds, hens 6½ pounds. Single-combs weigh 1 pound heavier.	Egg breed. White egg.	
Dorking	Three varieties, colored, white and silver-gray. Body long and deep. Carries abundance of flesh. Skin white. Colored largest cocks weigh 9 pounds and hens 7 pounds. White cocks weigh 7½ pounds, hens 6 pounds. Silver-gray variety is between these two. All have a fifth toe.	General purpose, meat especially. Egg of very light color.	
Orpington	Three varieties, buff, black and white. Long body, abundant plumage, white skin. Short heavy shanks. Tendency to feathering on shanks. Cock weighs 10 pounds, hen 8 pounds.	General purpose. Egg tinted.	
Houdan	Color black and white evenly broken in alternate splotches throughout entire plumage. Head ornaments of crest and beard. White skin. Carry fifth toe on each foot. Cocks weigh 7 pounds, hens 6 pounds.	General breeding purposes. White egg.	
Hamburg	Six varieties, golden spangled, silver spangled, golden penciled, silver penciled, white and black. About size of the Leghorn.	Egg and fancy breed. White egg.	
Indian	Two varieties, Cornish and white. Beaks and shanks yellow. Bird of strong proportions. Back and wings of cock mixture of red and black, tail and breast black. Hen's back, wings, breast and body a rich bay penciled with black. Cocks weigh 9 pounds, hens 6½ pounds.	Meat breed. Tinted egg.	

SHEEP AND SWINE—Continued

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
Boars do not show best form before 4 or 5 months old, and should not begin service under 10 months. Give best service 2 to 5 years old. Sows should be prolific and good milkers. For pork, breed sows any time after 8 months of age, but for pure-bred breeding stock 12 months of age better. Should breed twice a year, to get 1 litter in early spring (April to May), the second in September or October. Pigs may run with sows 8 to 10 weeks.	*Sore mouth.*—Symptoms: Aversion to food and saliva dripping from mouth. Gums become congested and later necrotic patches develop, especially about front teeth and tusks. Offensive odor to mouth. Jaws are swollen, lips and mouth often cracked and covered with scabs. Rapid decline and prostration.	Affected animals should be separated from well animals and pens thoroughly disinfected. Wash mouth with 2 per cent warm creolin solution to remove patches. Then a 10 per cent ointment of salicylic acid may be applied in severe cases. Treat daily until ailment is cured.	
	Cottonseed poisoning.—Symptoms: Loss of appetite accompanied by thumps. Animal drops over, kicks and squeals for a few minutes and dies.	Complete elimination of cottonseed meal from ration is the only positive prevention. Given in proper quantities it is normally safe, but its use demands special precautions.	Ohio Bulletins Nos. 209, 213. Oklahoma Bulletin No. 80. Pennsylvania Bulletin No. 95. South Dakota Bulletin No. 105. Wisconsin Bulletin No. 184; Report 1907.
	Catarrhal rhinitis or snuffles.—Symptoms: Animal more quiet than usual and may experience slight chills. Eyes are red, appetite lessened and constipation is present. Watery discharge from nostrils, which later thickens and makes breathing difficult.	Keep animal warm and provide clean, well-lighted pen. Liquid foods should be warmed, 1½ ounces of castor oil should be given. Fumigation by burning tar in close room may help. To lessen nasal discharge, tincture of belladona leaves in ½-teaspoonful doses twice daily may be added to feed.	
	Thumps.—Symptoms: Sets in suddenly with a jerking or twitching movement of flanks, which may become excessive, producing a thumping. Animal keeps quiet and has a poor appetite. May fall off in weight.	If caused by worms, give dried sulphate of iron in swill once a day for 7 or 8 doses, ¼ pound sulphate for 40 pigs. If caused by indigestion, give less food and allow access to charcoal and wood ashes. Exercise should be allowed also on free pasture. In first stages give every 4 hours a physic of 2 ounces raw linseed oil followed with 3 to 10 drops of tincture of opium in a little oil.	
	Hog cholera.—Symptoms: Continuous fever and discoloration of skin. Animals lack spirit and lie huddled together. Refuse to move when disturbed.	Demands expert and immediate care.	
For additional breeding rules see horses.	*Swine plague.*—Symptoms: Aversion to food. Much coughing, back arched, groin sunken, eyes reddened and skin in front takes reddish tinge.	Demands expert and immediate attention.	

DUCKS AND GEESE

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
Very close inbreeding tends to produce chicks that are weak and fall an easy prey to disease or are infertile. Line breeding is better. Mate offspring of a pair with father and mother rather than brother with sister.	*Simple canker.*—Symptoms: Appears as yellowish or whitish patches in mouth or throat. Surrounded by inflamed mucous membrane.	Dust powdered boric acid on sores or apply pure creolin with soft cotton cloth. Fifteen grains boric acid in 1 ounce water may be used freely as a wash.	Ontario Department of Agriculture Bulletin No. 151.
	Lice.—Symptoms: May be found under wings and on skin about feather roots, on abdomen, back, neck and head.	Dust thoroughly with pure fresh Persian insect powder. Work well down to skin. Repeat in 10 days.	Farmers' Bulletins Nos. 41, 51, 64, 177, 182, 200, 234, 287, 355, 357.
	Mites.—Symptoms: Red, black and gray. Breed in cracks and crevices of building or under droppings.	Keep roost clean. Use abundance of mixture of 1 quart kerosene and 1 fluid ounce creolin or good liquid lice killer for painting roosts and droppings-board.	Bureau of Animal Industry Bulletin No. 110; Same Circular No. 140. Arizona Bulletin No. 60. Connecticut Bulletins Nos. 52, 55.
Grandchildren of original father may be mated to those of original mother.			
	Diphtheria.—Symptoms: Fowl becomes suddenly ill and loses appetite; legs are hot, comb hot and deep red. Difficult breathing and sharp cough. Inflammation of throat. Legs and wings may become paralyzed.	Segregate sick fowl and preferably kill and burn. May give fowl four times daily a 0.01 grain tablet of biniodide of mercury. Cleanse mouth and throat often with strong peroxide of hydrogen, or 1 tablespoonful creolin in 4 fluid ounces of water.	Kansas Bulletins Nos. 162, 164.
Selection involves the careful inspection of the individuals of any generation and preservation for breeding of only the best.	*Scaly leg.*—Symptoms: Rough grayish or whitish scales and crusts on shanks and feet.	Apply ointment made by mixing 1 teaspoonful creolin in 1 cupful melted lard. Stir until cool and apply daily until scales and crusts drop off.	Maine Bulletins Nos. 157, 159, 165, 166, 168 (contains bibliography). Maryland Bulletin No. 138. Missouri Board of Agriculture Missouri Bulletin No. 6 (1908), No 12. New York (Cornell) Bulletins Nos. 212, 258, 274, 277, 282, 284. Oregon Bulletin No. 100; Circular No. 4. Pennsylvania Bulletin No. 87. Rhode Island Bulletin No. 126, Report 1908.
Hybridization involves the crossing of two strains, varieties, or races in order to combine the favorable qualities of the two. Sex control seems at present beyond human power.	*Colds.*—Symptoms: Sneezing, watery eyes, discharge from nostrils and swollen face. Bubbles or drops form in corners of eyes.	Sleeping quarters should be well ventilated. Give condition powders or tonic in food or drinking water, or season mashes with ginger and red pepper. Following mixture will usually cure if taken at start: 20 to 30 drops spirits of camphor with a tablespoonful granulated sugar. Dissolve in pint of drinking water and allow birds access to no other drink.	
Period of incubation is 19 to 24 days, average 21	*Catarrh* (contagious) *or roup.*—Symptoms: Peculiar, strong offensive odor. A glairy water-white or yellowish discharge from nostrils and under eyelids. Legs hot. Comb and wattles hot and deep red. Characteristic roup smell always present.	Kill and burn all very sick birds. Segregate in an open shed all that show symptoms. Use creolin dip—1 teaspoonful pure creolin in 1 pint water and dip heads in solution, using fresh solution for each 6 birds—and make fowl inhale creolin vapor by spraying over with the same solution. Thoroughly cleanse head, mouth, eyes, nostrils and throat with this disinfectant, and keep fowls in wide open, fresh pens.	
To get early market poultry mate late in fall. Brahma and Cochin pullets begin to lay at 7 to 9 months. Leghorns and other small breeds 4 to 6 months. Plymouth Rock and Wyandottes, 5 to 7 months. Mate breeding hens 2 to 6 weeks before earliest date for hatching. Hens should have few weeks rest before breeding season, for high-class stock. Breeding stock should have free range or, if confined, be not crowded and fed green feed and meat scrap in addition to that given laying stock. Hold eggs for hatching in cool, dry place, at temperature of 40 to 55 degrees Fahr. Hen for setting should be in fair condition, should feel hot to hand when handled, and should allow herself to be handled freely.	*Worms.*—Symptoms: Will appear in the excrement.	Allow no food for 12 hours. Then give in 1 dose a mixture of 2 teaspoonfuls oil of turpentine and 1 tablespoonful sweet oil. Administer directly into crop through rubber tube passed down throat. May be necessary to repeat in 12 to 24 hours.	
	Gapes.—Symptoms: Difficult breathing and characteristic gaping attitude. Caused by a parasitic worm which attaches itself to mucous lining of windpipe.	Remove worms by a loop of horsehair or a wire gape-worm extractor dipped in a weak solution of creolin. Stretch fowl's neck forward and introduce extractor into windpipe. Carefully twist it as withdrawn. Immediately disinfect extractor bearing worms.	
	Diarrhœa.—Symptoms: Looseness of bowels. Discharges yellowish, greenish, dark or watery.	Give bird dry grain with abundance of charcoal, and do not allow any meat food. Scalded milk, thickened with well-boiled flour and seasoned with ginger, makes a desirable food and remedy.	
	Contagious diarrhœa.—Symptoms: Thirst, little appetite, stupidity, bowel discharge loose and watery, often dark or bluish green, sometimes blood streaked. Comb and wattles dark red or purplish, and legs hot.	Segregate affected birds. Disinfect and remove excrement. Give calomel in 0.01 of a grain dose 3 times daily. For difficult cases dissolve 12 tablets of mercury bichloride, 0.001 of a grain drug strength each, in 1 quart of drinking water and allow no other drink. This medicine should be given less frequently as soon as improvement appears.	

TABLE IV. CHICKENS, TURKEYS,

Best Breeds	Characteristics	Uses	Best Foods
CHICKENS—Cont'd **Bantam**	Ornamental birds of many varieties: Sebright, rose-comb, booted white, Brahma, Cochin, Japanese, Polish, game, black-breasted red Malay.	Fancy and ornamental varieties of many foregoing breeds.	See page 392d.

Best Breeds	Characteristics	Uses	Best Foods
TURKEYS			
Bronze	Largest and hardiest of all varieties for the market. Adult cock 36 pounds, hen 20 pounds.	Meat.	The young must be fed with care at first, allowing only bread and milk mixed with ¼ pot cheese and a little chopped onion, given 2 or 3 times a day. Once or twice a day feed finely cracked corn, wheat and oatmeal mixed in equal parts. After second week, bread and milk should be decreased and grains and pot cheese increased. Fine grit and charcoal should be available. Water should be provided in such a way that young turkeys cannot become wet. When turkeys graze in fields during day they should be fed grain at night, corn, wheat, oats or peas. During breeding season, one feeding a day of mixture of equal parts by weight of wheat middlings, wheat bran, corn meal, ground oats and meat scraps, stirred up with skimmed milk, should be given. In fattening turkeys for market they should be fed all the whole corn they will eat at night. In morning a mixture of 6 parts corn meal, 3 parts wheat middlings, 1 part beef scraps, mixed as thick paste with sour skimmed milk may be given. Turkeys do best on free range.
Narragansett	Plumage bronze and black with a mixture of white. Second in size to bronze. Cock 30 pounds, hen 18 pounds. General color gray.	Meat.	
Buff	Feathers a reddish buff, the wing flights being white.	Meat.	
Slate	Plumage of a bluish slate shade. Cock 27 pounds, hen 18 pounds.	Meat.	
Black	Plumage pure black. Otherwise same as above.	Meat.	
White Holland	Plumage pure white throughout; has pinkish white shanks. Cocks 28 pounds, hens 18 pounds.	Meat.	
Bourbon Red	A kindred variety to the buff, having deep reddish-buff plumage.	Meat.	

Best Breeds	Characteristics	Uses
DUCKS		
Rouen	Largest and most popular of all colored market varieties. Weight 9 pounds for drakes, 8 pounds for ducks.	Meat.
Black Cayuga	Largest solid black duck known. Mature pair weighs 15 pounds. Body of good length.	Meat. A fair layer.
Pekin	Largest white duck in existence. Specimens weigh as high as 10 or 12 pounds. Head and beak long and of good size, beak orange-yellow, back, breast and body long, broad and deep, with deep keel. Creamy white.	Meat. A good layer.
Crested White	Medium-sized white duck with large white crest or topknot, about two-thirds the size of Pekin, which it resembles in color and shape of body, except crest.	Meat. A fair layer.
Indian Runner	Head long and flat, light fawn in color, cap and cheek markings light fawn, bill straight, green with black bean at tip, eyes hazel, neck white from head to beginning of breast markings, back, light fawn or gray, breast light fawn, body light fawn, rear half white. Shanks and feet orange-yellow. Carriage very erect. Small size.	Meat. The best layer.
Colored Muscovy	Good size, black and white in color, black predominating. Side of head and region around eye are without feathers and are carunculated or corrugated and scarlet. Builds her nest and never scatters her eggs. Never quacks. Active on wing.	Meat.
White Muscovy	Same as colored muscovy except that it is pure white.	Meat.

Best Breeds	Characteristics	Uses
GEESE		
African	Large head with pronounced black knot and heavy gray dewlap under throat. Neck long, back broad and flat, breast full and round, body large and upright, thighs short and plump. Shanks medium length and dark orange color. Wings of good size, close fitting. General color, gray. Mature gander 20 pounds, goose 18 pounds.	Meat and feathers.
Embden	Color white. Square, compact body. Neck long and massive appearing, large head. Medium-size orange-colored bill. Back slightly arched, breast round, deep and full. Shanks short, stout, deep, orange color, thighs strong, wings large, tail short. Eyes bright blue. Mature gander 20 pounds, goose 18 pounds.	Meat and feathers.
Toulouse	Blue-gray in color, marked with brown. Head large but short, bill short and stout, neck medium long, body compact, medium length, deep, belly almost touching ground, back broad, slightly arched, breast broad and deep, wings large, strong, close fitting, tail short. Adult gander 20 pounds, goose 18 pounds.	Meat and feathers.
White and Brown Chinese	Bodies plump and round, covered with coat of soft feathers and fine down. Medium size, mature specimens weighing 10 to 14 pounds. Long arch necks, with large round knob at base of beak. Short erect body and carriage.	Meat and feathers. Much in demand for ornamental purposes.

DUCKS AND GEESE—Continued

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
Set fresh eggs from vigorous stock having the qualities particularly desired. Eggs should not be more than 1 week old, and must be clean. For: Asiatic breeds, mate 1 male to 6 to 10 females; for Americans, 1 male to 15 to 20 females; for Mediterraneans, 1 male to 20 to 25 females. In selecting breeding stock, pedigree, appearance, condition and performance are of first importance in the parents. Strong, constitutional vigor and early maturity essential.	*Fowl cholera.*—Symptoms: A yellowish discoloration of part of droppings usually white. Fowl becomes unsteady on legs, feathers rumpled, wings droop, head drawn down, comb and wattles pale, legs hot. Food repulsive. *Pip.*—Symptoms: Mucous membrane of mouth dries and a hard horny scale is formed on end of tongue. The hard scale or pip will in time fall off of its own accord. *Bronchitis.*—Rattling in throat and difficult loud breathing.	Use mercury bichloride as on page 409 (contagious diarrhœa). 1 per cent solution carbolic acid in drinking water and cayenne pepper in food are recommended. Treatment seldom satisfactory. Apply equal parts of glycerine and water freely or wash mouth frequently with a solution of 15 grains boracic acid in 1 ounce of water. Remove fowl to comfortable fresh-air pen, protected from drafts. Give nourishing, bracing food. Use 12 tablets arsenite of antimony, 0.001 of a grain each, to each pint of drinking water and allow bird no other drink.	See page 409.

Brief Breeding Rules	Diseases and Symptoms	Treatment	Bulletins
Select big, strong, vigorous, healthy, well-matured stock, not closely related. Constitutional vigor of first importance. Introduce new blood into flock. Males should be unrelated to females, as inbreeding weakens flock. Medium-sized male with good, fair-sized females of strong constitutional vigor and mature age will give best results. Have 4 or 8 females to 1 male. Hen lays 20 to 40 eggs in a season, beginning March or April. 1 mating sufficient to fertilize entire batch of eggs. Hen will lay 15 to 20 eggs before becoming broody, and if broken up then will lay another batch. Period of incubation 26 to 30 days. Old birds in good condition, not overfat, best breeders. Birds of either sex may be used for breeding until 8 or 10 years old. Laying generally begins in March or April.	*Blackhead.*—Symptoms: Turkeys look pinched, shrunken and purple about head. Feathers rough. Diarrhœa present with bright yellow excrement. Birds have little life and drag about. *Colds.*—See under chickens. *Roup.*—See under chickens. *Gapes.*—See under chickens. *Tapeworms.*—Symptoms: Presence of worms in fæces. *Diarrhœa.*	Kill and burn affected birds, and thoroughly disinfect coops, buildings, feeding and drinking troughs, etc. Pepper, ginger and something sour in food aid in prevention. Freshly powdered kuosso, tansy and pumpkin seeds are recommended. Turpentine in small doses has given success. Mix 2 ounces sulphuric acid and ½ pound copperas in 2 gallons water, and give 1 teaspoonful of mixture in each quart of drinking water.	See chicken references. Farmers' Bulletin No. 200.

Brief Breeding Rules	Best Foods	Diseases and Symptoms	Bulletins
Mate only standard specimens. Select meaty birds, deep keeled and strong in bone. Attention must be given to pedigree, appearance, condition and performance. Quick growth is important. Better ducklings result from eggs from old ducks, but young ducks lay a month earlier than old ones, and their eggs may be used for early hatching. Laying period December to June. Usually 1 male to 5 females till June, then to 10 females. Birds are kept in flocks of 25 to 40 of both sexes. Laying season extends from January to August. Period of incubation 25 to 32 days. Ducks are poor sitters and eggs generally hatched by hen or incubator. For general breeding notes see chickens.	When breeding birds have free range and water-run, they may be fed either whole corn, wheat, oats or barley, or a mixture. If eggs are desired, supply good beef scrap. The birds may be allowed to help themselves. When confined and heavy egg production desired, soft food should be fed morning and night and a light feed of hard grains in middle of day. Corn meal, low-grade flour, wheat bran, meat scrap and some green food, as turnips, cabbage, cut clover or alfalfa, make a valuable mixture. Drinking water should always be within reach. Begin to feed ducklings when 40 to 48 hours old. Start with mixture of two-thirds wheat bran and one-third corn meal, moistened with water or milk; a raw egg stirred in with each quart of grain is good addition, as is also a little sand or prepared grit. Keep before ducklings for 2 days if it remains sweet. Otherwise renew. When ducklings 1 week old, they may take 0.05 beef scrap, 3 parts wheat bran, 2 parts corn meal, 4 feedings a day. Gradually increase proportion of corn meal so that at 6 weeks the meal and bran are equal, and the beef scrap is 0.15 of the whole. At 6 weeks feed 3 times daily. If this feed too laxative, reduce the beef scrap. Excess green food likely to make skin yellow. Abundance of grit and fresh water must be constantly available.	Ducks are remarkably free from disease and there are no diseases peculiar to them. Ducks running with other fowls may contract diseases, which should be treated as for other fowls. Lameness may result from damp quarters. Ducks having colds, as shown by frothy scum over eyes, should have eyes washed with warm water containing a little carbolic acid. Treat as for cold.	See chicken references. Farmers' Bulletin No. 64.

Brief Breeding Rules	Best Foods	Diseases and Symptoms	Bulletins
Choose bright, active goose and gander of good parentage, 2 to 5 years old. Mate in fall or early winter. Gander and geese 1 to 4 in number, should be put together and isolated till they become acquainted. Young ganders often take but 1 goose. Hens may be placed on the eggs. Goose will usually lay 2 litters. Wild ganders do not mate until 2 to 3 years old, and frequently will not mate first year in captivity. Period of incubation 27 to 33 days. Laying season is very short, beginning about February 1. Will lay 20 to 50 eggs per year. Geese not fully mature until 1 year old, and first year eggs frequently infertile. Best laying is from second year on. Ganders are most valuable at 3 to 7 years. Goose becomes broody after laying about 15 to 20 eggs. If these taken away and goose shut up for few days she will then lay another batch, and with similar treatment a third batch. Eggs for hatching should be held at 50 to 60 degrees and turned each day. For general breeding notes, see chickens.	Geese graze freely and in this way pick up much of their food. In winter, supply a little grain and liberal allowance of succulent food, as roots and cabbage. At laying time the feed should be increased. A liberal ration, as prepared for ducks, containing considerable animal food, should be given twice a day. Water and grit should always be accessible. In finishing grass-fed geese for market, feed corn meal with 10 per cent of beef scrap, scalded or wet with cold water. Once a day give whole corn. Keep goslings in warm place, and first 2 or 3 days feed a little soaked bread and water. Gradually let them out, and in a week they may go free. Will need nothing but a little stale bread first 5 weeks, if on good free range. After 5 weeks a mash of one-third corn meal, two-thirds bran should be given. After 6 weeks give equal parts of corn and bran, to fatten.	Geese are almost wholly free from disease, and the grower is seldom troubled in this respect.	See chicken references. Farmers' Bulletin No. 64.

TABLE OF SHRUBS AND HEDGES

Name of Shrub	Height in Feet	Time of Flowering	Color of Flowers	Distance Apart in Feet	Uses	Remarks
Althea, or Rose of Sharon (*Hibiscus*).	8 to 10	August September	Red, pk., wht.	3	Screen.	Single kinds better; makes good screen; stands pruning well.
Common Barberry (*Berberis vulgaris*.)	6	June	Yellow	2	Defensive screen.	Foliage dense, very dark green.
Japanese Barberry (*Berberis Thunbergii*)	4	June	Yellow	1½	Boundary, drive, terrace.	Bears red berries; fall color striking.
Single Bridal Wreath (*Spiraea Van Houtter*)	5 to 6	June	White	2 to 3	Boundary.	Widely planted, showy and economical.
Sea Buckhorn (*Hippophae rhamnoids*).	6 to 10	.....	.....	3	Screen.	Gray foliage makes it distinctive.
Dogwood (*Cornus alba*).....	8	June	White	2½	Screen or background for lower growths.	Bark blood-red and showy in winter.
Slender Deutzia (*Deutzia gracilis*).	2½	June	White	2	Edging.	Showiest of dwarf-flowering hedges.
English Privet, or Prim (*Ligustrum vulgare*).	2 to 6	.....	.....	1	Best clipped hedge; edging, terrace, etc.	Better than California, because hardier.
English Wayfaring Tree (*Viburnum lantana*).	10 to 15	June	White, large	5	Screen.	Grows rapidly, has attractive, dark foliage and purple fruit.
Golden Bell (*Forsythia intermedia*).	5 to 8	Early May	Yellow	3	Boundary.	Best of yellow shrubs; blooms before Cydonia; too striking for wide use.
Tartarian Honeysuckle (*Lonicera Tatarica*).	10	June	Pink	3	Screen.	Dense foliage, showy flowers and berries.
Large-flowered Hydrangea (*Hydrangea paniculata, var. grandiflora*).	3 to 15	July, August	White pink	2 to 3	Screen, boundary.	Blooms when flowers are scarce; showy.
Japanese Briar (*Rosa rugosa*).	5 to 8	All summer	Wt., pk., red	2	Boundary.	The only rose suitable for a hedge.
Japanese Snowball (*Viburnum plicatum*).	6 to 8	June	White	4	Screen, boundary.	Showy and better than Common Snowball.
Japan Quince (*Cydonia Japonica*).	4	May	Red	1½	Defensive boundary.	Blooms among first of all the shrubs; thorny, subject to scale.
Lilac (*Syringa vulgaris*)	8 to 15	June	Purple, white	2	Screen.	Spreads all over creation if given a chance, but is an excellent screen.
Honey Locust (*Gleditschia triacanthos*).	3 to 15	May	Greenish	1½	Defensive.	Requires close attention to pruning; apt to become bare near bottom. Being supplanted by better kinds.
Garland's Mock Orange (*Philadelphus coronarius*).	8 to 15	Early June	White	3	Screen.	Flowers highly scented; grows rapidly.
Osage Orange (*Maclura pomifera*).	3 to 15	May	White	2 to 3	Defensive screen.	Bears yellow fruit 3 to 4 inches in diameter, when not clipped.
Spirea (*Spiraea arguta*).	2 to 3	Early May	White	2	Edging, terrace.	Two weeks earlier than *Spiraea*; showy, but not a sure bloomer.
Spirea (*Spiraea, Anthony Waterer*).	2 to 3	All summer	Magenta	2	Boundary, edging, terrace.	Good for those who like such things.
Native Thorn (*Crataegus coccinea*).	3 to 12	May	White	2½	Screen; defensive boundary.	One of the best native shrubs, or small trees. Bears showy scarlet fruit; improves with shearing, making very dense hedge. Can be kept at any height.
Cockspur Thorn (*Crataegus Crus-galli*).	3 to 15	Late May	White	2½	Defensive screen; boundary.	Native plant, with very long thorns. Fruit showy. Good windbreak.
Wistaria or Wisteria (*W. Frutescens*).	8 to 15	All summer	Lilac	2	Screen; trellis.	Handsome, hardy, slow-growing, climbing shrub. Flowers in elegant racemes, slightly scented.

FLOWER PLANTING TABLE

May is the almost sole flower-planting month; the Adonis, Cornflower, Pink, Primrose and Sweet Pea may also be planted in April.

Name of Flower	Life of Plant	Blooms	Plants In. Apart	Seeds Inches Deep	Colors
Achillea.....	Annual-Perennial	May-June	6	.....	Yellow
Adonis.....	Annual	June-October	6	¼	Blue-White
Ageratum.....	Perennial	August-October	10	.....	White-Rose
Anemone.....	Annual	July-September	14	¼	Various
Aster.....	Annual	July	8	½	Blue-White-Pink
Bachelor's Button.....	Annual	June-September	14	¼	Various
Balsam (Lady's Slipper).....	Perennial-Annual	June-July	10	¼	Blue-White-Pink
Bellflower (*Campanula*).....	Perennial	May-August	26	.....	Crimson
Bleeding Heart (*Dicentra*).....	Perennial	June-October	12	½	Orange
Calendula.....	Annual	August	10	½	Orange
California Poppy.....	Annual	June-September	8	½	Orange
Candytuft.....	Annual	August	36	¼	Green
Castor Bean.....	Perennial-Annual	August-October	18	½	Various
Chrysanthemum.....	Annual	June-September	10	¼	White-Purple-Rose
Clarkia.....	Annual	June-October	10	¼	Red-Purple-Yellow-White
Cockscomb.....	Perennial	June-July	12	.....	Various
Columbine (Aguiligia).....	Perennial	July-August	12	.....	Coral
Coral Bell.....	Annual	June-August	12	½	Yellow-Brown
Coreopsis.....	Annual	June	10	½	Blue-White-Rose
Cornflower.....	Annual	August-September	24	¼	Red-White-Pink
Cosmos.....	Annual	July-September	36	.....	Various
Dahlia.....	Perennial	Aug.-Sept.	10	.....	White-Pink-Rose
Daisy.....	Perennial	July-August	10	.....	Yellow
Evening Primrose.....	Perennial-Biennial	April-July	6	¼	Blue

FLOWER PLANTING TABLE—Continued

Name of Flower	Life of Plant	Blooms	Plants In. Apart	Seeds Inches Deep	Colors
Forget-Me-Not	Perennial	July	10	.....	Various
Four-o'Clock	Perennial-Annual	July-August	12	¼	Red-White-Yellow
Foxglove	Perennial-Biennial	June	12	⅛	White-Pink
Gaillardia	Perennial	July-October	12	⅛	Yellow-Red
Globe Amaranth	Annual	July	12	¼	Pink
Godetia	Annual	July-October	12	⅛	White-Red
Gourds	Annual	July-October	14	⅛	Various
Heliopsis	Perennial	July	12	¼	Yellow
Helianthus	Perennial	August-September	18	.....	Yellow
Hollyhock	Biennial	August	16	½ drills	Red-Pink-Purple-White-Yellow
Iceland Poppy	Perennial-Annual	June-September	6	⅛	White to Orange
Iris	Annual	May-July	12	.....	White-Blue-Yellow
Larkspur	Perennial-Annual	June-July	8	⅛	Blue-White-Pink
Lavatera	Annual	July	8	¼	Rose
Lobelia	Annual	June-September	4	⅛	Blue-Red
Love-Lies-Bleeding	Annual	June-July	10	¼	Scarlet
Love-in-a-Mist	Annual	June-September	8	¼	Blue-White
Lupine	Perennial-Annual	June	5	.....	Blue-White-Pink
Mallow	Perennial	July-September	10	.....	White-Rose
Marigold	Annual	August-October	6	¼	Lemon to Orange
Mignonette	Annual	July-October	12	⅛	Whitish Green
Monkshood	Perennial	July-August	8	.....	White-Blue
Moonflower	Annual	August-September	5	¼	White
Morning Glory	Annual	July-August	12	¼	Various
Nasturtium	Annual	July-October	10	½	Various
Nicotiana	Annual	July-August	8	¼	Red-White
Pansy	Perennial-Annual	May-October	12	⅛	Various
Peony	Perennial	May-June	48	.....	Red-White-Pink
Petunia	Annual	July-September	8	Scatter	White-Pink-Blue-Wine
Phlox	Perennial-Annual	July-October	8	⅛	Various
Pink	Perennial-Annual	August	6	⅛	White to Rose
Poppy	Annual	July-August	5	⅛	Various
Portulaca	Annual	July-October	5	⅛	White-Red-Yellow
Primrose	Perennial	April-May	6	.....	Yellow-Pink
Pyrethrum	Perennial	August-October	12	.....	Various
Rudbeckia	Perennial	August-September	12	.....	Yellow
Salpiglossis	Annual	June-August	8	⅛	Various
Salvia	Perennial-Annual	August-October	6	⅛	Scarlet
Scabiosa	Perennial	June-August	8	.....	Blue-Yellow-White
Schizanthus	Annual	July-August	10	¼	Yellow-Lilac
Silene	Perennial	June-August	6	.....	White to Rose
Snapdragon	Perennial-Annual	July-August	8	¼	Various
Stock	Annual	June-July	6	¼	White to Red
Sunflower	Perennial-Annual	August	36	¼	Yellow
Sweet Alyssum	Annual	May-September	5	⅛	White
Sweet Pea	Annual	June-October	8	3 trench	Various
Sweet William	Perennial-Biennial	July-August	10	¼	Red-White-Pink
Verbena	Perennial	June-August	8	.....	Various
Veronica	Perennial	August	6	.....	Purple
Violet	Perennial	March	6	.....	Violet
Wallflower	Perennial-Biennial	July-August	8	½	Yellow-Brown
Zinnia	Annual	July-October	10	½	Various

THE ROSE GARDEN

There are numerous varieties of roses, and their care occupies an important province in flora culture. The best results are obtained from setting out the plants or roots in the spring—from the middle of April to the middle of May. For practical purposes they may be divided into the following classes, with the leading examples of each:

Classes	Characteristics
The Hybrid Perpetuals	Hardiest of the garden roses
Frau Karl Druschki	An ideal white rose
Jacqueminot ("Jack Rose")	Brilliant scarlet
Paul Neyron	Dark rose—largest of all
Magna Charta	Bright pink—a favorite
George Arends	Splendid soft pink
The Hybrid Teas	The most satisfactory for the general garden
Robert Huey	One of the largest bright reds
The Lyon	Deep coral pink verging on yellow
White Killarney	One of the best pure whites
La France	Clear satiny pink
Burbank	Rich pink
Richmond	Brilliant crimson
The Teas	Much tenderer than the Hybrid Teas; sweet scented
The Bride	Pure white
Perle des Jardins	Beautiful rich yellow
Papa Goutier	Dark Crimson
Hardy Climbers	Popular and showy
American Pillor	Large, single, pink flowers
Excelsa	Finest of crimson ramblers
Hiawatha	Single, brilliant crimson
Dorothy Perkins	Soft shell-pink, fragrant

Classes	Characteristics
Lady Gay	Delicate cerise-pink which change to creamy white.
Wichmoss	A "Moss" rose, light bluish-pink, fragrant.
Hybrid Briers	Hardy semi-climbing roses
Lord Penzance	Beautiful contrasting shades
Refulgence	Dazzling scarlet, in clusters
Juliet	Rosy red with reverse petals of old gold
The "Baby Ramblers"	Dwarf, "perpetual bloomers"
Phyllis	Beautiful pink
Jessie	Bright cherry-red, white center
Orleans	Brilliant red, white center
Snowball	White, free flowering
Noisette	Excellent climber for walls
William Allen Richardson	Deep orange-yellow flowers
Garland	Semi-double, blush and white
Longworth Rambler	Splendid autumn climber; flowers, semi-double and crimson
Japanese and Chinese	
Blairii (China)	Vigorous climber for sunny walls; flowers, blush and rose
Rugosa (Japanese)	No pruning is needed; flowers, white, rose and violet

NUMBER OF YEARS SEEDS RETAIN THEIR VITALITY

Vegetables	Years	Vegetables	Years	Vegetables	Years	Vegetables	Years
Cucumber	8 to 10	Asparagus	2 to 3	Radish	4 to 5	Pepper	2 to 3
Melon	8 to 10	Beans	2 to 3	Beets	3 to 4	Tomato	2 to 3
Pumpkin	8 to 10	Carrots	2 to 3	Cress	3 to 4	Egg Plant	1 to 2
Squash	8 to 10	Celery	2 to 3	Lettuce	3 to 4		
Broccoli	5 to 6	Corn (on cob)	2 to 3	Mustard	3 to 4	HERBS	
Cauliflower	5 to 6	Leek	2 to 3	Okra	3 to 4	Anise	3 to 4
Artichoke	5 to 6	Onion	2 to 3	Rhubarb	3 to 4	Caraway	2
Endive	5 to 6	Parsley	2 ro 3	Spinach	3 to 4	Summer Savory	1 to 2
Pea	5 to 6	Parsnip	2 to 3	Turnip	3 to 6	Sage	2 to 3

COMPARATIVE YIELD OF VARIOUS GRAINS, VEGETABLES, AND FRUITS

	Lbs. per acre		Lbs. per acre
Hops	442	Parsnips	11 200
Wheat	1,260	Grass	7,000
Barley	1,600	Carrots	6,800
Oats	1,840	Potatoes	7,500
Peas	1,920	Apples	8,000
Beans	2,000	Turnips	8,420
Plums	2,000	Cinquefoil grass	9,600
Cherries	2,000	Vetches, green	9,800
Onions	2,800	Cabbage	10,900
Hay	4,000	Mangel-Wurzel	22,000
Pears	5,000		

ECONOMICS OF PLANTS, ANIMALS AND MINERALS

I. Foodstuffs. II. Narcotics and Medicines. III. Fibers. IV. Commercial Woods. V. Gums, Resins and Extracts. VI. Oils, Fats and Waxes. VII. Dyestuffs and Tanning Materials. VIII. Animal Products. IX. Mineral Products.

The most important commercial products are summarized in the following pages. The materials are grouped according to their sources: thus all the many products of the cotton plant are treated under one head; and since cotton fiber is the most important product of this plant, it is placed under the general heading of vegetable fibres, even though it supplies oil, cattle food and other articles. Countries of production are mentioned in the order of their relative importance.

FOODSTUFFS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Wheat is the fruit of a grass (*Triticum sativum*). Fr., *Froment, Blé;* Ger., *Weizen;* Sp., *Trigo.*	Its commercial varieties, hard, soft, red, white, etc., differ in percentage of starch and gluten. The whole grain is ground into *graham flour*, made into *breakfast foods* and used in brewing. From parts of the grain are prepared *whole wheat flour, white flour, middlings, bran, wheat grits, wheat starch, macaroni, spaghetti*, etc. Wheat straw is plaited into braids (Leghorn, etc.) for hat making, and is used like the straw from other grains for packing material and as bedding for animals.	Grows in temperate climates, the largest crops being raised in United States (especially in Minnesota, North Dakota, Ohio, South Dakota and Kansas); Central Europe (Russia, France, Austria-Hungary and Italy); India, Argentina, Canada and Australia. The area of wheat production is steadily increasing and wheat raising has become an important industry in newly developed countries, such as parts of British America, West Australia and Manchuria. The United States is the chief exporter of flour.	Wheat flour may be said to be the standard foodstuff of modern civilized man. In the modern flour mill, heavy rollers of steel or porcelain have replaced the old-style millstones. The bran, middlings and flour are separated by sieves, the finest being of silk bolting cloth. Macaroni is made from special varieties of hard, glutinous wheat. The principal countries exporting wheat are United States, Russia, Argentina, Canada, Roumania, India and Australia. Straw braids come largely from Italy, China and Japan.
Barley is the seed of a grass (*Hordeum sativum*, variety *vulgare*, etc.). Fr., *Orge;* Ger., *Gerste;* Sp., *Cebada.*	It is used chiefly in brewing and for horse feed; also in soups. *Pearl barley, barley flour, malt, beer* and *alcohol* are its chief products.	Cultivated chiefly in north and central Europe, the colder parts of Asia and North America.	Malt is made by moistening barley and allowing it to sprout in a dark room. During germination the starch is converted into dextrine and maltose. On fermentation, maltose produces alcohol. Pearl barley is prepared by removing the hard outer coats of the grain.
Rye is the seed of a grass (*Secale cereale*). Fr., *Seigle;* Ger., *Roggen;* Sp., *Centeno.*	It is used in the form of *rye flour* and for distilling whisky and vodka. Rye straw is plaited into *hat braids.*	Cultivated in the cold climates of northern Europe, especially in Russia. Only small amounts are grown in the United States.	Rye flour is the chief breadstuff in parts of Russia, Scandinavia and Germany. Whisky is distilled from fermented rye and corn.
Oats is the fruit of a grass (*Avena sativa*). Fr., *Avoines;* Ger., *Hafer;* Sp., *Avenas.*	Used chiefly for horse feed, and in lesser amounts for making *oatmeal* and breakfast foods.	Grown in largest amounts in Russia and the United States (especially Illinois and Iowa). Cultivated throughout the temperate parts of the civilized world.	The manufacture of oatmeal is of relatively small importance since the more nourishing products of wheat are increasingly used.
Corn, Maize or **Indian Corn** (*Zea mays*) belongs to the grass family. Flint, dent, sugar, soft and pop corn differ in percentage of starch and gluten, and the grain may be white, yellow, red or black in color. Fr., *Blé, Grain;* Ger., *Getreide, Korn;* Sp., *Grano.*	Among the dozens of useful products made from corn are *corn meal, corn grits, hominy, breakfast foods, beer, whisky, alcohol, cologne spirits, cornstarch, dextrine, glucose, grape sugar, corn sirup, corn oil, soap, rubber substitute* and *cattle foods.* A special variety of corn is raised to make *cob pipes.* Compressed *corn pith* is packed between the double hulls of warships. Corn husks are used in *mattresses* and *paper* is made in very limited amount from the leaves and stalks. Large amounts of *popcorn*, plain and candied, are eaten in the United States.	Corn is the most valuable farm crop of the United States. The chief corn growing states are Illinois, Iowa, Kansas, Nebraska and Missouri. The bulk of the world's production of maize is grown in this country, although it is an important crop in Hungary, Italy, Egypt, South Africa, and other parts of the world.	Corn is of primary importance as a food for live stock, enormous quantities being used to fatten cattle and swine. The manufacture of starch and other products from corn is an industry of increasing magnitude. The chief starch derivatives are *dextrine* and *glucose* or *grape sugar* (used in brewing beer and as a substitute for true sugar). Corn oil may be called a by-product in starch manufacture, yet the annual value of corn oil is greater than that of cornstarch produced in the United States. It is used in soap and paints. Vulcanized by heating with sulphur, it forms a widely used adulterant and substitute for rubber.
Rice is the fruit of a grass (*Oryza sativa*). Fr., *Riz;* Ger., *Reis;* Sp., *Arroz.*	*Rough rice* and *clean rice* are the common commercial articles. *Rice polish, saké* or rice wine, rice straw and rice paper are of lesser importance. Rice, steamed and swelled, is now extensively used as a breakfast food.	It is usually grown in swampy land or else on irrigated fields. In most countries rice is grown in the most primitive fashion. Immense irrigating plants and modern agricultural machinery make possible the large production in parts of the United States. It is the chief crop in southeastern Asia, from India through Indo-China, a great part of China, southern Japan and many islands of the Pacific. Rice of excellent quality is raised in Texas, Louisiana, Arkansas and South Carolina, and an amount about equal to the production of this country is imported from eastern Asia.	It is estimated that one-third of the people of the world live principally on rice. Rough rice or paddy (rice in the hull) is first hulled by machinery and then the grains are polished or whitened. The *rice polish*, which consists of the powdered outer coats, is a very nourishing cattle food. *Saké*, the national drink of Japan, is a weak alcoholic liquor brewed from rice. Rice straw is of enormous use in Asia, being employed for hundreds of purposes, some of them as unexpected as the making of bags, ropes and sandals.
Millet and **Sorghum** are cultivated grasses of many genera (*Panicum, Setaria, Andropogon*, etc.). Fr., *Millet;* Ger., *Hirse;* Sp., *Mijo.*	Guinea corn, kaffir corn, broom corn and other names are employed to distinguish the different kinds.	These grains are grown in practically all parts of the world. In Europe and America they are important chiefly as fodder plants, although in many other parts of the world the seeds are used as human food.	In some places the juice of sorghum is boiled down to make sirup or sugar. Common brooms are made of the tops of one variety of sorghum (broom corn). These grains are mainly of local importance.

FOODSTUFFS—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Buckwheat (*Fagopyrum esculentum*) is regarded as a cereal because its seeds are used like those of wheat, rye and other grains. Fr., *Sarrasin;* Ger., *Buchweizen;* Sp., *Trigo sarraceno.*	The seeds are ground into buckwheat flour. Buckwheat fields are especially attractive to bees and a fairly important source of honey.	Buckwheat cultivation has decreased in recent years. New York and Pennsylvania produce the greater part of the crop in the United States. Abroad it is raised chiefly in Russia, France and Japan.	Buckwheat flour is less used than formerly. Very little of this grain enters into foreign trade.
Hay is made from many grasses and leguminous plants. Fr., *Foin;* Ger., *Heu;* Sp., *Heno.*	Timothy, clover and alfalfa are the chief sources of hay in the United States.	It is produced almost exclusively in temperate climates. Its yearly value in the United States is almost equal to that of the wheat crop.	Hay is most important in the cattle raising sections of the world. Some baled hay is exported to Europe and a little is sent to the tropics.
Starch is prepared from many seeds and roots. The common starches are from corn, wheat, rice, potatoes (*Solanum tuberosum*), cassava, tapioca (*Manihot utilissima*), arrowroot (*Maranta arundinaceæ*) and the pith of the sago palm tree (*Metroxylon* sp.) Fr., *Amidon;* Ger., *Stärke;* Sp., *Almidón.*	Starches appear on the market in powder, lump, flake and pearl forms. Starch grains differ in size and shape according to their source so that it is not difficult under a microscope to identify the various kinds. Glucose, dextrine and alcohol are made from starch.	For industrial purposes starch is prepared chiefly from potatoes in Europe and from corn and potatoes in the United States. Cassava is a very important foodstuff in almost all parts of the tropics. Many starches are of great local importance, such, for example, as taro in Hawaii. Comparatively few enter into general commerce.	In general, starches are separated from roots or seeds by grating them and washing with water. The starch grains are carried off in suspension and later separated from the water. Starch and starchy foods are of the greatest importance to men and animals. Aside from the manufacture of glucose, dextrine and alcohol, starch is used for sizing yarn, cloth and paper, for making paste and laundry purposes. Tapioca comes on the market chiefly from Brazil and Straits Settlements. Arrowroot starch is produced in Bermuda, St. Vincent and Jamaica. Sago is exported from Straits Settlements.
Vegetables of an almost infinite variety are used in all parts of the world. Many of these are roots, some seeds, some leaves or other parts of plants.	The bulk of the crop is consumed fresh, although beans, peas, etc., are dried and increasing amounts of vegetables are canned or otherwise preserved.	The largest cultivation of fresh vegetables is as a rule near great cities.	Vegetables are so heavy in proportion to value that they are not normally shipped long distances. Potatoes and onions, being least perishable, are most important in general commerce. Better transportation facilities naturally increases the trade in both fresh and canned vegetables.
Fruits, like vegetables, are used in great variety. Those deserving special mention are: **Apple** (*Pyrus malus*).—Fr., *Pomme;* Ger., *Apfel;* Sp., *Manzana.* **Plum** (*Prunus domestica*).—Fr., *Prune;* Ger., *Pflaume;* Sp., *Ciruela.* **Grape** (*Vitis* sp.).—Fr., *Raisin;* Ger., *Weinbeere;* Sp., *Uva.* **Orange** (*Citrus sinensis* and *aurantium*).—Fr., *Orange;* Ger., *Orange;* Sp., *Naranja.* **Banana** (*Musa sapientum*).—Fr., *Banane;* Ger., *Banana;* Sp., *Banana, Guineo.* **Date** (*Phoenix dactylifera*).—Fr., *Datte;* Ger., *Dattel;* Sp., *Datil.* Many others are of almost as great value.	Large quantities of dried and evaporated fruits are produced, among which are apples, apricots, plums (prunes) and grapes (raisins). Canned fruits, jellies, sirups, wines, liquors and vinegar are manufactured.	Different fruits thrive in different climates. Apples are widely raised in temperate regions, the largest production being in the northern United States and parts of Canada. France, Italy and Spain, the greatest grape-growing countries, are the largest producers of wine.	Refrigerator cars and special steamers make possible the shipment of fresh fruits to parts of the world distant from the region of production. There is a large export of green, ripe and dried apples from the United States and Canada to England and the Continent. Australia and South Africa are increasing their export of apples and other fresh fruit. Prunes, raisins and other dried fruits are shipped to all parts of the world from California and Mediterranean countries. Bananas, oranges and pineapples are the chief tropical fruits in general commerce. Florida and southern California, with the West Indies, Central America and northern South America, supply the markets of the United States. Those used in England and northern Europe come from the Canary islands and the West Indies. Dates come chiefly from northern Africa and western Asia.
Sugar is obtained from the juice of the sugar cane (*Saccharum officinarum*) and from the juice of the sugar beet (*Beta vulgaris*). Fr., *Sucre;* Ger., *Zucker;* Sp., *Azucar.* Maple sugar is from the juice of the sugar maple tree (*Acer saccharinum*). Sugar and sirup are made also from the juice of several palm trees.	Pure cane and beet sugar are in every way identical. Raw cane sugar, brown to yellowish in color, produced by evaporation of the juice in open pans (muscovados), and crystals from vacuum pans are both important commercially. The price of raw sugar is determined by its purity as shown on chemical analysis. A fairly good indication of purity is found in color, and raw sugars are graded according to an accepted standard which is set by the Dutch government. *White sugar*, granulated, loaf and pulverized, as commonly sold, is more nearly chemically pure than most other articles of commerce. *Molasses*, from cane juice boiled in open pans, is palatable for human food, and, like all cane molasses, is fermented and distilled to make *rum*. *Molasses* from vacuum pans (whether from cane or beet juice) is not pleasant in taste, but is an important food for cattle and is distilled to make alcohol.	Sugar cane is grown in India, Cuba, Hawaii, Java, Brazil, Mauritius, Louisiana and other parts of tropics and subtropics. India's large production is consumed locally and enters little into export trade. Sugar beets are grown most extensively in Germany, Austria, Russia, France and United States. More than half of the world's supply of sugar (exclusive of India) now comes from the sugar beet. Economic modern processes necessitate the building of enormous mills and the manufacture of sugar on a very large scale. A factor of great importance in this has also been the production of sugar from beets, grown on the farms of the temperate zone, close to the point of consumption. Here the refuse or pulp from the beets, along with the molasses, is promptly used for stock food.	After harvesting, sugar cane is carried (usually by rail) promptly to the mill, where the juice is pressed out. Modern mills have nine rollers, arranged in three sets. The trash, or bagasse, is almost dry when it leaves the last rollers and is used as fuel to run the mill. The juice is boiled down, generally in vacuum pans heated by steam, and the sugar crystals which form are separated from the molasses in centrifugals. Sugar beets are sometimes stored for several months before being used. The juice is commonly extracted by diffusion; that is, the beets are sliced and soaked in warm water. The sweet liquid is then treated in practically the same way as cane juice. Raw sugar is refined or purified by dissolving it in water, treating it with lime and the serum of blood, filtering through animal charcoal and recrystallizing. The large sugar refineries are located in the United States and Europe. Sugars from the maple and the palm are produced only in small amounts and are only of local value. Sugar of milk is of some importance medicinally and industrially.

FOODSTUFFS—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Alcohol is formed as a result of the fermentation of sugar and is therefore obtainable from practically any fruit or from any starchy matter through conversion of the starch into sugar. Alcohol is also a product of wood distillation. Fr., *Alcool;* Ger., *Weingeist;* Sp., *Alcohol.*	Alcohols differ in chemical composition according to the source. Grain alcohol, denatured alcohol and wood alcohol are the chief commercial types.	All parts of the world make and use alcoholic liquors. Distilled liquors contain more alcohol than fermented drinks Wood alcohol and denatured alcohol are finding an increasing use for many industrial purposes in Europe and America, largely because of the lessened tax on their production.	Grain alcohol is distilled from fermented grain, chiefly Indian corn, in the United States. Potatoes are the most important source of alcohol in Germany. For industrial purposes it is denatured, or rendered unfit for use in beverages, by the addition of substances which give it an objectionable taste, odor or color. Alcohol finds a large use for heating, lighting and the development of power in alcohol motors. In these uses Europe leads. It is employed also in the manufacture of artificial silk, ether, paints, varnishes and hundreds of other products.
Tea, as it appears in commerce, is the prepared leaves of a bush or small tree (*Thea sinensis*). Fr., *Thé;* Ger., *Thee;* Sp., *Té.*	Teas are classed commercially according to the district of production as China, Ceylon, India, Assam, Japan, Formosa, Java; according to the method of preparation giving sun-dried, pan-fired, basket-fired; (*a*) green—Gunpowder, Imperial, Hyson, Caper, etc.; (*b*) black—Pekoe, Oolong, Souchong, Congou, etc., and according to the quality, dependent chiefly on the age of the leaf. *Brick tea* is commonly of low grade and not salable in the United States. It is made from tea dust and sweepings or from large leaves and trash. It has a large sale in Tibet and Russia. *Soluble tea,* or tea extract, and *tablet tea* are not of great commercial importance.	Tea is grown chiefly in hilly country throughout eastern and southern Asia. China, Ceylon, India, Japan and Java are the chief producing countries. The cultivation of the tea plant requires great care to produce leaves of perfect quality, young, tender and fragrant. The very youngest leaves and leaf buds, when properly prepared, sell for the highest price. In some places tea is picked only once or twice a year, while in other countries, where the climate is favorable to rapid growth of new shoots, the pickings are very frequent.	Green and black teas are made from leaves of the same species of plant. For black tea the leaves are allowed to wither and ferment slightly before being dried, usually over a charcoal fire. Green teas are prepared by drying the leaves more quickly and not allowing them to ferment. Tea is popular because of its pleasant taste and stimulating quality (due to the theine, or caffeine, which it contains). Outside of tea producing countries, the chief consumers are English-speaking people. The United Kingdom buys about half of all export teas, chiefly from Ceylon, Assam and Bengal. The United States uses more green tea than any other country, much of our supply coming from Japan, Formosa and China. Much Chinese tea is exported overland to Russia.
Coffee is the seed of a small tree. The world's supply of coffee is produced chiefly by the species of tree which was originally native in Abyssinia and cultivated in Arabia (*Coffea arabica*). The Liberian coffee tree (*C. liberica*) is cultivated to a limited extent. Fr., *Café;* Ger., *Kaffee;* Sp., *Café.*	The commercial varieties of coffee are named according to the districts of production, and to a very considerable extent these names when so applied indicate flavor (Mocha, Java, La Guayra, Santos, Rio, etc.) Such names as Mocha and Java, indicating high-grade coffees, have in the past been applied to beans from other localities, but this practice has been stopped in the United States by recent pure food laws. *Coffee extract* is prepared for sale to only a small amount. The popularity of coffee is due to the fact that, like tea and chocolate, it contains caffeine, a mild stimulant.	Coffee is cultivated in many parts of the tropics. Brazil is by far the greatest producer, the coffee district being mainly in the states of Sao Paulo, Rio de Janeiro, Minas Geraes and Espirito Santo. Much coffee is grown in the mountains of northwestern South America, Central America and the West Indies. Coffee is grown in Java and other parts of the East Indies, as well as in smaller quantities in Arabia, Africa and Australia.	Two beans are usually contained in each red coffee berry. The berries are sometimes dried in the sun and then cleaned by machinery to separate the beans from the several coats which cover them. In the wet method the berries are first crushed and washed to free them from the pulp, after which the beans are dried in the sun and cleaned by machinery. Coffee is roasted before use and people in some parts of the world prefer a much darker roast than others Coffee is but little adulterated at the present time, but there are various substitutes on the market, such as chicory, roasted barley, etc. The United States uses more coffee than any other part of the world both in total amount and per capita.
Cacao Beans are the seeds of a rather small tree (*Theobroma cacao*). Fr., *Cacao;* Ger., *Cacao;* Sp. *Cacao.* (This species is absolutely distinct from the cocoanut palm and from coca, the leaves of which yield cocaine.)	Cacao beans are classified commercially according to the place of origin as San Thomé, Bahia, Esmeralda, Guayaquil, Mexican, etc., and according to the method of drying as fermented (rotted) or unfermented. *Cocoa* and *chocolate* in its many forms, bitter, sweet, milk, candy, etc., are increasingly used for food and drink. They are in some respects superior to both tea and coffee in supplying nutriment (oil, starch and albuminoids) in addition to the same stimulant principle. *Cocoa butter* is added to some of the finest candies and enters into the manufacture of cosmetics, pomades and salves. Cocoa shells are of scarcely any importance.	Cacao trees are grown in warm moist climates, usually in the shade of larger trees. Brazil, Ecuador and the island of Sao Thomé in the gulf of Guinea, Venezuela, Trinidad, Mexico, Central America, Ceylon and the East Indies produce cacao. The beans grow in pods six to ten inches long, each of which contains, perhaps, fifty seeds. These, after removal from the rind, are dried, generally in the sun, on especially prepared floors. It is customary to allow them to ferment slightly before drying, to develop the flavor.	Chocolate is made by grinding cacao beans which have first been cleaned, roasted, crushed and separated from the thin skin or shell which covers each. Sugar, vanilla or other ingredients are added to make sweet chocolate, etc. Cocoa or cocoa powder is made by pressing the ground-up beans in a powerful machine to remove some of the oil, and then pulverizing the remaining mass. Because it contains less fat than chocolate some people find it easier of digestion. Cocoa butter is the solid oil or fat removed in making cocoa. Great factories in the United States, Holland, France, Switzerland, England and Germany use the bulk of the crop of cacao beans. The United States imports beans from the producing countries and prepared chocolate and cocoa from Europe.
Yerba Mate or (Paraguay tea), the dried leaves of a tree (*Ilex paraguayensis*). Fr., *Maté;* Ger., *Maté;* Sp., *Maté.*	These leaves contain caffeine and are used like tea.	The tree grows wild in Paraguay and adjoining regions of Argentina and Brazil. The leaves are not selected but entire branches are taken.	After drying, the leaves and twigs are broken up and packed for sale. Maté is a common beverage in many parts of South America. Attempts, not very successful, have been made to popularise it in Europe and America.
Mustard is the seed of plants of the genera *Brassica* and *Sinapis.* Fr., *Moutarde;* Ger., *Senf;* Sp., *Mostazo.*	*Yellow* and *black mustard* are the important kinds, although some seeds are brown, red or white in color. Mustard is used in condiments and medicinally. *Oil* pressed from mustard seeds is used in some countries for burning and soap-making.	Widely cultivated in Europe, as well as in the United States, Asia and the East Indies.	Used in larger amount than any other spice. Black mustard, or a mixture of black and yellow mustard, produces on mixing with water a very pungent essential oil. To this is due the sharp smell and taste of mustard and its action on the skin (in mustard plasters, etc.). The flour made by grinding the seeds of black and yellow mustard enters into a great many condiments.
Pepper is the fruit of a vine (*Piper nigrum*). Fr., *Poivre;* Ger., *Pfeffer;* Sp., *Pimienta.*	*Black pepper* consists of the dry, unripe berries, while *white pepper* is the ripe fruits with the outer skin removed.	Grown chiefly in the neighborhood of Singapore and on the Malabar coast of India.	Whole peppers, *i. e.*, the entire berries, are pulverised to make ground pepper. Half the value of spices imported into the United States consists of whole black and white pepper.

FOODSTUFFS—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Red Pepper (Cayenne pepper or chillies) is the fruit of a small plant (*Capsicum* spp.). Fr., *Poivre de Cayenne;* Ger., *Spanische pfeffer;* Sp., *Pimiento.*	Enters into the composition of many condiments, and unripe appears as green peppers. There are large and small varieties.	Grown in almost all parts of the world and used in large amounts by people in warm climates, as Mediterranean countries, India, Africa, Mexico and West Indies.	In addition to the local production, the United States imports red peppers from Africa and Japan.
Allspice (or Pimento) is the dried unripe fruit of a tree (*Pimenta officinalis*). Fr., *Piment;* Ger., *Jamaikapfeffer;* Sp., *Pimento.*	A common spice, sometimes called *Jamaica pepper.*	Grown and produced almost exclusively in Jamaica.	The berries are simply dried in the sun and are commonly used whole. Popular because of its cheapness.
Cloves are the dried flower buds of a tree (*Caryophyllus aromaticus*). Fr., *Girofle;* Ger., *Gewurznelke;* Sp., *Clavos de Girofle.*	A spice used in food, confectionery and liquors. *Clove oil* is employed also in medicine and dentistry and is the basis for the manufacture of artificial vanilla.	Cultivated in the Molucca islands, East and West Indies, Zanzibar and Pemba.	The manufacture of vanillon, or artificial vanilla, from oil of cloves is important. The United States is the largest consumer of cloves.
Nutmegs are the kernels of the fruits of a small tree (*Myristica fragrans*). Fr., *Muscade;* Ger., *Muskatnuss;* Sp., *Moscada.*	The fruit looks like a small pear and the kernel is covered by a thin shell, outside of which is a red seed coat, which when dry is *mace,* another spice.	Nutmegs and mace are produced chiefly in Banda islands, East Indies.	The selling price has fallen within recent years so that West Indian plantations are no longer profitable.
Vanilla is the prepared, unripe seed pod of an orchid (*Vanilla planifolia*). Fr., *Vanille;* Ger., *Vanille;* Sp., *Vainilla.*	The pods, or beans, are used in flavoring. *Vanilla extract* is made from the beans and is imitated with tonka beans (from a South American tree) and artificial vanilla (from coal tar or oil of cloves).	Vanilla beans are produced in greatest amount and best quality in the state of Vera Cruz, Mexico. Reunion, Tahiti and Mauritius supply inferior grades. The vine requires a very moist climate.	Aside from the use in food, candy, chocolate, ice cream, etc., the cheaper grades of vanilla are employed extensively in flavoring chewing tobacco.
Ginger is the dried rootstalk of a plant (*Zingiber officinale*). Fr., *Gingembre;* Ger., *Ingwer;* Sp., *Gengibre.*	*Coated ginger* is dried with the skin on, while *peeled ginger* is scraped and bleached. Candied and preserved ginger, powdered ginger and ginger ale are commonly sold.	Grown in tropical countries, particularly in Bengal, Cochin China, China, Africa and Jamaica. African is usually coated ginger and Jamaica is the best quality of peeled ginger.	Ginger is next to pepper among spices in the amount imported yearly into the United States. Candied ginger is exported in large amount from Canton, China.
Turmeric consists of the dried stems of a plant of the ginger family (*Curcuma longa*). Fr., *Curcuma;* Ger, *Gelbwurzel;* Sp., *Curcuma.*	*Curry,* a much used condiment, is compounded with turmeric powder.	Grown in southeastern Asia and neighboring islands.	Used industrially in making yellow dye for cotton goods, in preparing fancy leather and in chemical work.
Cinnamon is the dried bark from young twigs of a small tree (*Cinnamomum zeylanicum*). Fr., *Cannelle;* Ger., *Zimmt;* Sp., *Canela.*	The best is in quills, or long rods, composed of pieces of bark rolled together. *Chinese cinnamon* or *cassia* is inferior. Used as a spice, usually in powdered form. *Cinnamon oil* is distilled from the bark as well as from leaves and twigs.	The best quality is from Ceylon. Cassia is from China, India and Indo-China.	Cassia is cheaper and much more common than true cinnamon.
Caraway, *anise, sesame, cardamoms, coriander,* and *pistachio* are less important spices.	*Sarsaparilla, fruit juices, aloes, asafetida* and many *essential oils* are used in flavoring.	Most spices are natives of Asia and the East Indies and are cultivated in the tropics and subtropics.	Many flavoring materials and extracts are made artifically in the chemical laboratory.
Olives are the fruit of a tree (*Olea europea*). Fr., *Olive;* Ger., *Olive;* Sp., *Oliva;*	*Pickled olives* are usually the unripe fruits prepared and bottled in salt water. *Olive oil* (sweet oil) is the most popular oil for table purposes. Oils from cotton seeds, peanuts, sesame seeds and other sources are used like olive oil.	The tree, which lives to a great age, grows in Mediterranean countries, California and Australia. Only limited districts produce olives fit for bottling. Most olives are grown for the production of oil.	Olives for pickling are soaked in lye to remove bitterness and often spices are added to the pickle to give an aromatic flavor. Olive oil is pressed from the ripe fruit. The poorer grades of oil are used in lubricating and for soap-making.

NARCOTICS AND MEDICINES

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Tobacco is the prepared leaf of a plant (*Nicotiana tabacum, N. rustica,* etc.). Fr., *Tabac;* Ger., *Tabak;* Sp., *Tabaco.*	Commercial grades are named from the locality of production as Havana, Sumatra, Mexican, Turkish, Virginia, etc. Certain grades are appropriate for use as cigar wrappers and others for fillers and are so named in the trade. *Cigars, cigarettes, chewing tobacco, smoking tobacco* and *snuff* are extensively used. The stems and ribs of the leaves are employed in *sheep dip* and for fumigating greenhouses.	More tobacco is raised in the United States than in any other country and Kentucky raises more than any other state. India is the second largest producer. In Europe it is cultivated in Austria-Hungary, Russia, Germany, Netherlands, France, Belgium and Turkey. Cuba, Porto Rico, Mexico, Central and South America, China, Java, Sumatra, Philippines, Ceylon, Syria and Cape Colony are important producers. Seeds of Havana tobacco plants raised in Connecticut or elsewhere produce a grade of Havana tobacco. The many grades of tobacco are due to the varieties of the plant, as well as to soil, climate and cultivation. The curing of the leaf is of the utmost importance. It includes a period of slight fermentation and drying in well ventilated barns.	Cigars are nearly all made by hand, but many cigarettes are manufactured by machinery. Nearly all plug tobacco is flavored with molasses, vanilla, licorice or other substances. The United States exports over half of the tobacco raised, chiefly to England in the form of leaf tobacco. Few cigars are exported, but cigarettes and plug tobacco go to the East Indies, China and Australia. Leaf tobacco is imported in large amount from Cuba, Sumatra, and Turkey and manufactured cigars are brought from Cuba. Large revenues are raised in many countries from the taxation of tobacco, and in Austria, France, Spain, Italy and Japan the tobacco business is a government monopoly.
Hops are the dried fruits of the hop vine (*Humulus lupulus*). Fr., *Houblon;* Ger., *Hopfen;* Sp., *Lupulo, hoblon.*	Hops are employed chiefly in brewing beer and malt liquors.	They are cultivated in almost all parts of Europe, especially in England, Germany and Austria. In the United States, California, Oregon, Washington, New York and Wisconsin produce the largest crops.	Hops are added to the malt, liquor, or wort, before fermentation and give a bitter flavor to malt liquors. Hops are not exported on a large enough scale to be an important item in commerce.

NARCOTICS AND MEDICINES—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Opium is the dried juice of the white poppy (*Papaver somniferum*). Fr., *Opium;* Ger., *Opium;* Sp., *Opio.*	Opium is valuable as a narcotic because of the morphine and other alkaloids it contains. *Laudanum* is a tincture of opium and alcohol. Paregoric is a common preparation in which opium is an ingredient.	Opium culture is an important industry in northern India, China, Persia, Asiatic Turkey and Egypt. In China the government strongly discourages opium smoking and has greatly restricted the cultivation of the poppy. The juice is obtained by scratching the seed capsule and collecting the little drops which exude on it. The juice is then further dried in the sun.	Opium for smoking is exported to China from India. It is used in the form of pills in Mohammedan countries like Persia and Turkey. The United States imports opium for medicinal purposes chiefly from Turkey in Asia.
Quinine is the bark of a tree (*Cinchona sp.*). Fr., *Quinquina;* Ger., *Chinarinden;* Sp., *Quina.*	A drug of great importance, much used in the form of sulphate of quinine or other salts.	Originally native in the Andes and hence called Peruvian bark. The world's supply now comes from plantations in Java. Produced also in South America, Ceylon and India.	The principal market is Batavia, Java, from whence it is largely shipped to Holland.
Coca is the leaf of a small tree or bush (*Erythroxylon coca*). Fr., *Coca;* Ger., *Cocablatter;* Sp., *Coca.*	*Cocaine*, an alkaloid which produces local anæsthesia, is the important constituent	Cultivated chiefly in steep valleys in the Andes of Peru and Bolivia, in smaller quantities in India, Ceylon and Java.	The Indians of the Andes chew the leaves on account of the stimulating effect, and the bulk of the crop is so used. The residue is exported to manufacturers of medicinal preparations in Europe and America.
Medicinal Plants and drugs are numbered by the hundred. Among the most important are:	These are used in the form of extracts, tinctures and other pharmaceutical preparations.	Many grow wild, but the tendency of modern medicine is to use material from carefully selected plants cultivated for the purpose.	The preparation of medicines is carried on by a large number of firms in practically all parts of the world. The trade in drugs, however, is of less relative importance now than it was in the middle ages, when rhubarb, for example, occupied a prominent place in the list of commodities.
Rhubarb, a genus of plants belonging to the family *Polygonaceae.* Fr., *Rhubarbe;* Ger., *Rhabarber;* Sp., *Ruibarbo.*	Its root has long been recognized as of medicinal value owing to its astringent properties. The principal kinds of medicinal rhubarb have received such names as Russian or Turkey, East Indian, Himalayan, Chinese, and English, according to their source.	The best comes from China, though it is called Turkey rhubarb. In Europe and America generally there are several kinds of rhubarb cultivated for the sake of their stalks.	Rhubarb possesses more or less purgative and astringent properties; this is essentially the case with the roots, and hence these are largely used in medicine. The leaf-stalks of certain species are now largely used for tarts, puddings, jam, etc., and the juice is made into a kind of wine.
Sarsaparilla, the dried roots of several plants of the genus *Smilax.* Fr., *Salsepareille;* Ger., *Sarsaparilla;* Sp., *Zarzaparrilla.*	*Smilax medica* supplies the sarza of Vera Cruz. *S. siphilitica*, or *S. papyracea*, yields the Lisbon or Brazilian sort. *S. officinalis* belongs to Central America, although it yields the kind known as Jamaica sarsaparilla. *Hemidesmus indicus* yields the East Indian sort.	There are two special varieties obtained from Jamaica and Lima respectively. The roots are very long, of the thickness of a quill, dark brown in color and bitter in taste.	Sarsaparilla is valued in medicine on account of its mucilaginous and demulcent qualities. Various decoctions made from the roots are medicinally used as tonics and diuretics, and derive their properties from the presence of starch, resin, a volatile oil, and the crystalline principle smilacine.
Aconite is a hardy herbaceous plant, of the family *Ranunculaceae*, represented by the well-known wolfsbane or monkshood. Fr., *Aconit;* Ger., *Eisenhütchen, Wolfswurz;* Sp., *Acónito.*	An alkaloid contained in the leaves of monkshood. It is one of the most powerful poisons known.	The plants are natives of Europe, Asia, and North America, but the woolly aconite, or monkshood, is probably a native of Great Britain.	They are remarkable for their poisonous properties and medicinal qualities, being used internally as well as externally in rheumatism, gout, neuralgia, etc. In certain forms, a tincture of the root is used medicinally in cases of heart disease.
Ipecacuanha, the dried root of several plants of the family *Rubiaceae.* Fr., *Ipecacuana,* Ger., *Ipecacuanha, Brechwurzel;* Sp., *Ipecacuana.*	The best is the annulated, yielded by the *Cephaelis ipecacuanha.*	It is a native of Brazil, and the dried root is exported from the Rio Janeiro, Buenos Ayres, and other South American ports. Recently the cultivation of the plant has been introduced into India and Ceylon. The name of *American ipecacuanha* is given to the *Euphorbia ipecacuanha*, a plant which grows in sandy places in North America.	It is simply the root that is valuable, and in its bark exists the active principle emetine, which renders ipecacuanha of service in medicine. The color of the root is generally brown or red. The cases in which ipecacuanha is used are mainly dysentery, asthma, and coughs.
Belladonna, a plant, *Atropa belladonna*, or deadly nightshade of the family. *Solanaceae.* Fr., *Belladone;* Ger., *Belladonna;* Sp., *Belladama.* All parts of the plant are poisonous, and the incautious eating of the berries has often produced death.	The inspissated juice is commonly known by the name of extract of belladonna.	A plant which has narcotic and poisonous berries, a native of Europe.	The extract of the plant is used medicinally for soothing irritation and pain, and by oculists for the purpose of dilating the pupil during an examination of the eye, and diminishing the sensibility of the retina to light. The activity of belladonna is owing to the presence of the alkaloid atropine.
Nux Vomica, the fruit of a species of *Strychnos*, order *Loganiaceae.* Fr., *Noix vomique;* Ger., *Brechnuss;* Sp., *Nuez vómica.*	The taste of the berries is exceedingly bitter, and from them the two alkaloids strychnine and brucine are obtained.	The plant is chiefly found in Cochin China and the East Indies. The fruit of the tree is a large berry, much like a small orange, and in it the seeds are laid flat.	The seeds are mainly exported from India, and their only value is for the extraction of the alkaloids, which are used in medicine. The alkaloids are known as a very virulent poison.
Castor, the name of the plant *Ricinus communis*, and also of the oil extracted from the seeds of the plant. Fr., *Huile de ricin;* Ger., *Rizinusöl;* Sp., *Aceite de ricino.*	The beans and the oil made therefrom.	It is a native of India, but its cultivation is now very widespread. The seeds are oval in shape, and mottled brown in color.	The oil is obtained from the seeds by bruising and pressing. It is afterward heated to the boiling point, which coagulates and separates the albumen and impurities. Castor-oil is used medicinally as a mild but efficient purgative. It is chiefly imported from India.
Areca, a genus of lofty palms with pinnated leaves, and a drupe-like fruit inclosed in a fibrous rind. Fr., *Arec;* Ger., *Areca;* Sp., *Areca.*	It produces nuts and fibers.	The tree grows in various parts of the East Indies, and is cultivated on account of its nuts. There are two species of areca and each of them is remarkable for the for the purposes to which its fruit is applied. One is the *Areca catechu*, also known as the betel-nut palm, which is one of the most beautiful trees of the East Indies.	With lime and the leaves of the betel pepper, the areca-nuts when green form the celebrated masticatory of the east. They are an important article in eastern trade. The nuts are also imported into Europe and America for the manufacture of tooth powder.

MAKING WILLOW FURNITURE

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1—The willow withes as they come already stripped of bark and tied up in bundles from Europe. The best willow comes from France. **2**—The first step in making furniture is to soak the willow for several hours in water. This makes it soft and pliable. This photograph shows an operator putting a bundle of willow in the tank to soak. **3**—Showing chairs made of willow which are almost finished. The withes are carried up through the frame and back of the chair and finished off in a heavy braid around the top edge. The ends are then clipped off and the chair is finished. **4**—This photograph shows an expert workman weaving a chair from willow withes. The best workmen are Hungarians. This art has been introduced into this country from Europe. **5**—This photograph shows an expert workman weaving a chair from willow withes. **6**—A fine specimen of the willow weavers art. A finished chair with the workman going over the edge and clipping off the last projecting ends of the willow. **7**—Before leaving the factory the willow porch sets are fitted with seat cushions and pillows. This photograph shows the cushion maker supplying a beautiful porch settee with pillows and cushions.

NARCOTICS AND MEDICINES—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Aloe, a plant of which there are nearly two hundred species Fr., *Aloès;* Ger., *Aloe;* Sp , *Aloe.*	From the juice of the leaves of many species a drug is obtained, known as aloes, which is of much value in medicine. *Aloe fiber* is obtained from species of *aloe, agave, yucca, etc.*, and is made into coarse fabrics, ropes, etc.	The principal drug-producing species are the Socotrine aloe, the Barbadoes aloe, the Cape aloe, etc. A beautiful violet color is afforded by the leaves of the Socotrine aloe. The American aloe is a different plant altogether; as are also the aloes or lign-aloes of scripture, which are supposed to be the *Aquilaria Agallochum* or aloe wood.	Some of the larger kinds are of great use, the fibrous parts of the leaves being made into cordage, fishing nets and lines, cloth, etc. The inspissated juice of several species is used in medicine, under the name of *aloes,* forming a bitter purgative. Formerly the chief source of the drug was Socotra, but it is now imported from various parts of the world.
Kola, the seeds or fruit of the *Sterculia acuminata* The nuts are also known as guru nuts, Fr., *Noix de kola;* Ger., *Kotanüsse;* Sp., *Nueces de kola.*	Nuts and alkaloids.	The tree grows extensively in tropical Africa.	Medicinally the nuts are employed in case of diarrhœa and affections of the liver. Large supplies are shipped from the Gambia to France and Germany, where they are used to adulterate cocoa and chocolate.
Angostura Bark, the aromatic bitter medicinal bark obtained chiefly from *Galipea officinalis.* Also called cusparia bark. Fr., *Ecorce d'Angostura de Columbie;* Ger., *Angosturarinde;* Sp., *Corteza de Angostura.*	Chiefly valuable for its bark.	The tree is 10 to 20 feet high, and grows in the tropical regions of South America.	The bark is valuable as a tonic and febrifuge and is also used for a kind of bitters. From this bark being adulterated by the poisonous bark of *Strychnos Nux Vomica, its use* as a medicine has been almost given up. It is an article of considerable commerce in Venezuela.

FIBERS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Manila Hemp is a fiber obtained from the leaf stalk of the abaca (*Musa textilis*) of the banana family. Fr., *Chanvre de Manille, Abacá;* Ger., *Manila hanf;* Sp., *Abacá.*	The strongest rope fiber in common use, especially desirable for marine cordage. The finest fibers are used by natives in the Philippines for weaving sinamay cloth.	Produced commercially only in the Philippine islands. Practically all of this fiber is cleaned by hand.	The most important export from the Philippines. The bulk of the production is sent to the United States and England.
Sisal (or sisal hemp) is a hard, strong fiber from the leaves of a century plant (*Agave sisalana*). Fr., *Sisal, Chanvre d'Amerique;* Ger., *Sisal hanf;* Sp., *Henequen, Maguey.* Many similar fibers are obtained from the leaves of other species of *agave* plants.	Sisal is very important for making rope and twine. All of these fibers are used locally for making mats, bags, ropes, harness, hammocks, etc., and several of them are employed in the United States and Europe for making sacking and brushes. *Mezcal* and *pulque* are alcoholic drinks made in Mexico from the sap of agave plants.	Sisal is cultivated in Yucatan and the Bahamas. The home of the agave plants is Mexico and Central America and this part of the world produces most of these fibers.	On modern plantations machines have superseded the primitive hand methods of cleaning the fiber. Sisal is the chief product of Yucatan and its greatest export. The bulk of the production is used in the United States in making rope, twine and sacking. All of the other agave fibers are of less commercial importance than sisal.
New Zealand Flax (or New Zealand hemp) is a fiber from the leaves of a plant (*Phormium tenax*) of the lily family. Fr., *Chanvre de la Nouvelle Zelande;* Ger., *Neuseeland-Hanf;* Sp., *Cañamo de la Neuva Zelanda.*	Used in rope making.	A wild plant in New Zealand. Prepared by scraping away the pulpy part of the leaf.	An important cordage fiber. The fiber exported is all graded by New Zealand government inspectors, who certify to its quality.
Fibers more or less similar to the foregoing are obtained from the leaves of other plants	These are all cordage fibers and some of them are much used by native people.	The plants grow wild in the warmer parts of both the old and the new worlds. Some are cultivated, but on a smaller scale than with sisal.	While these fibers are used to some extent in the mills of Europe and America, they are of relatively small importance.
Flax is the bast fiber of an annual herb (*Linum usitatissimum*) Fr., *Lin;* Ger., *Flachs, Lein;* Sp., *Lino.*	Flax or linen fiber and linseed oil are the chief products of the plant. *Tow* is a by-product in making linen and flax yarns and fabrics. *Linseed oil* is used in paints, varnishes, printer's ink, oilcloth and linoleum. *Linseed oil-cake* is a valuable cattle food. *Flax seeds* find limited use in medicine.	Flax is grown for fiber in Russia, Belgium, Italy, France, Holland, Ireland and Egypt. Little flax fiber is produced in the United States. Plants for fiber production are straight stemmed, while the varieties grown for seed have many branches. Flax seeds are produced in Russia, India, Argentina and the United States. Plants harvested for fiber are pulled up by the root in order to obtain the greatest possible length. The fiber is separated from the stalk of the plant by retting, a process of partial decay, breaking and scutching to remove the woody parts and hackling or combing. In the best grades of flax most of this work is done by hand.	Flax yarns are used in making rope, twine, bagging and coarse unbleached fabrics. Linen yarns are made into products of the better grade, including fine linens, cambrics, laces, etc. Linen is bleached by exposure to the sun and by treatment with a dilute solution of chloride of lime. Linen rags are the stock for the best qualities of paper. The United States imports flax fiber mainly from Europe, as well as large quantities of linens, laces, etc. Some flax seeds are imported and large amounts of linseed oil-cake are sent to Europe.

FIBERS—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Hemp is the bast fiber from a tall plant (*Cannabis sativa*) of the nettle family. Fr., *Chanvre;* Ger., *Hanf;* Sp., *Canamo.* Other hemps of different botanical origin and having quite different qualities are called by such names as manila hemp, sisal hemp, tampico hemp, Mauritius hemp, sunn hemp, bowstring hemp, etc. Strictly speaking, none of these is true hemp.	As with other cordage fibers of this character, the long, combed fibers are called line and the short strands, tow. The commercial fiber is longer, coarser and less strong than flax. It cannot be bleached perfectly white, although used in so-called coarse linens. Russian, Italian and Kentucky, as applied to hemp, denote the country of origin. Italian hemp is the finest, Kentucky the strongest. *Hemp oil* is pressed from the seeds. The dried leaves (*bhang*) are smoked or made into a drink in India and used, as is an extract (*hasheesh*), as an intoxicant.	Cultivated in Russia, the warm countries of Asia, the shores of the Mediterranean, Kentucky, Missouri, Illinois and California. The fiber is extracted by rotting, cleaning and combing, but more of the work is done by machinery than in the case of flax.	Russia produces more hemp fiber than all the rest of the world. Russia and Italy are the largest exporters. The United Kingdom uses a very large amount of the fiber in making binder twine and bagging. Hemp is considerably used in carpet manufacture. The use of jute for making bagging and burlap has had the effect of lessening the demand for hemp. Hemp oil is used in paints, varnishes and soap. The oil-cake is a cattle food.
Jute is the bast from a tall plant (*Corchorus sp*). Fr., *Jute, Chanvre de l'Inde;* Ger., *Jute, Jutehanf;* Sp., *Cañamo de las Indias.*	The commercial fibers are long, but softer and weaker than hemp. It does not bleach well and is less durable than hemp, especially when exposed to dampness. Extensively employed in cordage, burlap, bagging, carpets, etc. *Jute butts,* or rejections, are an important paper stock.	Grown in large quantities in the Ganges valley, India, and in lesser amount through other parts of southeastern Asia. The stalks are rotted and treated like flax and hemp.	Jute does not easily spin into fine threads. Its chief use is in making burlap and gunny sacks, although it is used in twine, rope, carpets, curtains, upholstery fabrics such as plushes, etc. Calcutta is the great shipping port for jute fiber and Dundee, Scotland, the most important place for its manufacture. There are large jute mills making burlap, etc., in India, the United States and other countries. Paper factories in this country use a large amount of jute butts for making wrapping papers.
Ramie is the bast fiber from a plant (*Boehmeria nivea*) of the nettle family. Fr., Ger. and Sp., *Ramie.*	Commonly called China grass, or rhea, although fibers from other plants sometimes receive these names. Usually strong and silky in appearance but difficult to clean and bleach.	Cultivated chiefly in China. Produced in Indo-China, India and on a small scale in Mediterranean countries. Will probably be cultivated widely when cheap processes can be employed for the preparation of clean fiber.	Used largely in China for weaving grass cloth, or Canton linen. The fiber is very difficult to "de-gum." Many experiments are being made to find a satisfactory process. Now used in making fabrics which resemble linen, laces, underwear, plushes, etc. Will be used more largely as its manufacture is improved.
Bast Fibers from other plants are of some importance; among these are *sunn hemp, linden bast, Cuba bast* and *lace bark.*	Sunn hemp is similar to jute in its qualities and uses. Linden bast or Russian bast is made into mats, ropes, etc.		These fibers are not used on a large scale. Cuba bast is woven into ladies' hats and used for tying bundles of cigars.
Cocoanut Palm.—This tree (*Cocos nucifera*) yields a great variety of useful products. Fr., *Cocotier;* Ger., *Cocospalme;* Sp., *Coco.*	*Cocoanut fiber* (*coir,* or cocoa fiber) is obtained from the outer husk of the nut. The shells are made into cups. The milk is a nourishing drink. The kernel or meat of the nut is used for food as *shredded* or *desiccated cocoanut.* Dried cocoanut meat (*copra*) is pressed to make *cocoanut oil* for soap and candle making and cooking. The *oil-cake* is a valuable cattle food. Cocoanut wood (porcupine wood) from the trunk of the tree is not of great importance. *Palm sugar* is made from the juice collected from the flower spathe or this juice is fermented to make alcoholic drinks, (*toddy, tuba, arrack*).	The cocoanut (or coco-nut) palm grows in coast regions throughout the tropics. It is commonly cultivated, but frequently its products are of only local use. Plantations in nearly all parts of the world supply some articles for export.	Cocoanut fiber is made into matting, ropes and brushes, and the poorer grades are used in upholstery. Coir fiber comes chiefly from Ceylon and India. Much is imported into the United States in the form of yarn. Cocoanut oil and copra are among the chief exports of Ceylon. Copra is obtained also from islands in the Pacific and Indian oceans and in smaller quantities from other parts of the tropics. Cocoanut oil is manufactured and used on a larger scale in Europe than in the United States. Fresh cocoanuts come to this country largely from the West Indies and northern South America.
Cotton consists of the seed hairs of a plant (*Gossypium* spp.). Fr., *Coton;* Ger., *Baumwolle;* Sp., *Algodon.*	The chief commercial types of cotton are American upland, sea island, Egyptian, Indian, Brazilian and Peruvian. These differ in the length of the individual fibers (staple). The quality is indicated by the grading under such names as fine, good, good fair, fully fair, middling fair, good middling, middling, etc. Cotton fiber is spun into *yarn* and made into *thread, muslin, calico* and hundreds of other cotton or part cotton fabrics. *Mercerized yarn* is prepared by treatment with strong caustic alkali. *Cotton linters* are used in cheap yarns, cotton batting, mattresses, and the manufacture of celluloid and artificial silk. *Cottonseed oil* is used for table purposes, for packing sardines, for cooking, making soap, candles, etc.	Cotton is next to corn the most valuable farm crop of the United States. Nearly three-fourths of all the cotton produced annually in the world is grown in the south Atlantic and gulf states. The remainder comes mostly from India, Egypt, China, Brazil, and Asiatic Russia. A comparatively small percentage of the crop is sea island cotton from the coast of Georgia and from islands in the West Indies. The area of cotton production is spreading in the United States as well as in foreign countries. The cotton fiber, attached to the seeds, is picked by hand from the plants in the field. The seeds and fiber (or lint) are separated by machines (cotton gins) and the cotton is pressed into bales. Cotton seeds are subjected to heavy pressure in machines in order to extract the oil. The oil-cake is a valuable cattle food and the hulls are used for fuel or for paper making.	The greatest centers of cotton manufacture are in England, New England, the Carolinas and Georgia. Germany, Russia, India and Japan are among the important manufacturing nations Modern cotton mills are of immense size. The bales are opened, the cotton cleaned, carded, and twisted into slivers, rovings, and finally into yarn. Raw cotton, cotton yarn and cotton fabrics are all important in trade. About half the crop of the United States is exported in bales to be manufactured in the mills of other countries. Sea island cotton has the longest staple and is used for the finest qualities of yarn and fabrics. Egyptian cotton also has a long staple. Large amounts are imported into the United States. England has an enormous foreign trade in cotton fabrics. The United States exports chiefly unbleached muslin, more of which goes to China than to any other country.
Silk Cotton consists of the seed hairs of various trees and plants. Kapok is from a large tree (*Ceiba pentandra*). Fr., *Kapok, Soie vegetale;* Ger., *Kapok, Wolle der Wollbaume;* Sp., *Kapok, Algodon de seda.*	*Kapok* or *ceiba* is the commonest vegetable silk in commercial use. Similar fibers from other sources are called *balsa, pochote* and other names.	Kapok comes chiefly from Java, although the tree is common in many parts of the tropics. The crop is principally from wild trees.	These fibers can not be spun satisfactorily and are therefore used only for upholstery. The chief European market is in Holland.

FIBERS—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Raphia is peeled from the large leaflets of a palm tree (*Raphia pedunculata*). Fr., *Raffia;* Ger., *Raphiafaser;* Sp., *Raphia.*	Madagascar raphia is the only important grade. A similar soft fiber used locally is produced in West Africa.	From a very common wild tree.	Exported in considerable amounts from Madagascar and used by gardeners for tying plants. Used for making mats and basketry and in kindergartens.
Piassava comes from the sheathing bracts of certain palm trees, in West Africa *Raphia vinifera;* in Bahia, Brazil, *Attalea funifera;* in Para, Brazil, *Leopoldinia piassaba.* Fr., Ger. and Sp., *Piassava.*	Stiff coarse fibers known as West African bass, Bahia or Para bass or piassava.	From wild trees.	Used in making brooms and brushes. Piassava is an important export from the producing regions.
Kittool (*Caryota urens*) and **Palmyra** fiber or **bassine** (*Borassus flabellifer*) are from the leaf sheaths of other palms.	These and several other palm fibers of lesser importance are finer and less stiff than piassava.	Produced in Ceylon and India.	Fairly important for brush making, having some resemblance to bristles.
Palmetto fiber is from the leaf stalks and creeping stems of a palm (*Serenoa serrulata*).	The fiber and an extract used in tanning are both obtained from this palm.	Grows in Georgia, Florida, Alabama and Mississippi.	Manufactured in limited amount. Used for upholstery and in paper making.
Crin Vegetal is the shredded leaves of a palm (*Chamaerops humilis*). **Panama Straw** (*Carludovica palmata*) and many other fibers are of commercial value.	*Crin vegetal* and *Spanish moss* are used in upholstery, *zacaton* in brush making, *esparto* for paper stock, and *Panama straw* for weaving hats.	Crin vegetal grows wild in Algeria. Spanish moss is prepared for use in the Southern states. Esparto comes from North Africa. Zacaton roots from Mexico. The best Panama straw is prepared in Ecuador and Peru.	These fibers are fairly important in trade. Panama straw enters into commerce only as Panama hats and is not an article of export in its crude state.
Rattan is the stem of a climbing palm (*Calamus* species). Fr., *Rotin;* Ger., *Indianische Rohre, Rotang;* Sp., *Roten, Bejuco.*	Rattan cane is used whole or peeled. Split rattan is the bark which is removed from the peeled rattan.	Rattan vines grow wild in tropical forests of southeastern Asia. The thorny leaves and branches are cleaned away from the stems and the outer skin is removed. Then the rattan is cut into lengths, sorted according to thickness and tied in bundles.	Used for a multitude of purposes in the east. In Europe and America for making furniture, baskets, whips, etc. Split rattan is used for chair seats and peeled rattan for brushes and basketry. Exported largely from Singapore and Java.
Bamboo is the stem of the largest plant of the grass family (*Bambusa* spp.). Fr., *Bambou;* Ger., *Bambusrohr;* Sp., *Bamboa, Bambu, Caña.*	One of the most useful plants in the world. Whole stems and split bamboo are both important commercially.	Grows in tropical countries. Most common in southern Asia and the East Indies.	In the east, large bamboo serves for house construction, furniture, utensils, agricultural implements, fishing rods, canes and hundreds of other purposes. The young shoots are eaten as a fresh vegetable. Split bamboo is woven in basketry, mats, etc., and used in stiff brushes. Imported from the East Indies.

COMMERCIAL WOODS

SOFT WOODS OR NEEDLE-LEAVED WOODS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Pine Wood is from various species of coniferous trees (*Pinus strobus, P. palustris,* etc.) Fr., *Pin;* Ger., *Fichte, Tanne;* Sp., *Pino.*	Soft pines are of several kinds, chiefly *white pine, western white pine, sugar pine* and *red pine.* Hard or *yellow pines* are more numerous and include *longleaf, (Georgia, hard* or *southern) pine, shortleaf (bull, spruce, Cuban, slash, pitch* or *loblolly) pine, western yellow pine* and *European (northern) pine,* called also *yellow deal* and *Scotch fir. Turpentine (spirits of turpentine)* and *rosin (colophony)* are prepared from the sap of certain species of yellow pine trees. *Tar, pitch, charcoal* and other products are obtained by distilling yellow pine wood.	Soft pine forests yield lumber in the northern United States and Canada and in the Rocky mountains. White pine was formerly the common timber in the Appalachians, but the supply is almost exhausted. Yellow pine is cut in large amount in the forests from North Carolina to Texas, and other hard pines come from the middle and far west, as well as from Mexico and the West Indies. Scotch fir is one of the most important woods of northern Europe. Turpentine is distilled from the sap of pines in Georgia and adjacent states, Russia, Austria, France and India.	The industries relying mainly on the forest and its products in the United States employ almost a million workers and add perhaps two billion dollars annually to the wealth of the nation Pine is the most important construction wood in use. Very little of the great area formerly covered with white pine now remains in this country. The yellow pine is being cut rapidly and the price of lumber has practically doubled in the past twenty years.
Spruce (*Picea spp.*). Fr., *Sapin, Epinette;* Ger., *Fichte;* Sp., *Abeto, Picea.* **Hemlock** (*Tsuga* spp.). Fr., *Cigue;* Ger., *Schierling;* Sp., *Pinabete.* **Fir** (*Abies* or *Pseudotsuga* spp.). Fr., *Sapin;* Ger., *Tanne;* Sp., *Abeto,* are coniferous soft woods of great importance.	These are known by many names and there are several botanical species of each. *Black, white, red, tideland* and *Norway spruces, Douglas fir* and *European silver fir (Swiss pine)* are most important.	The spruces are common in Canada, northern Europe and on the northern Pacific coast of America and Asia. Hemlock is cut in northern United States, Canada, Japan and Siberia. Fir is found in the same general region as spruce.	The United States exports soft woods, chiefly pine, spruce and hemlock, to Europe, the West Indies, South America, Austria, Hawaii and Africa. Canada exports large quantities of spruce and pine to the United States and England. Russia and Sweden supply great quantities of soft woods to Europe, although the forests of Sweden are being rapidly cut away. Northern Japan and eastern Siberia contain forest areas rich in soft woods, which are beginning to be developed.
California Redwood comes from a coniferous tree (*Sequoia sempervirens*).	A soft, straight-grained, durable wood. Much used in shingles.	One of the largest trees of the world. Found only on the Pacific coast.	
Cedar. Fr., *Cedre;* Ger., *Zeder;* Sp., *Cedro,* and **Cypress.** Fr. *Cypres;* Ger., *Cupresse;* Sp., *Cipres,* are of many species. The true cedars belong to the genus *Cedrus.*	*Bald cypress, yellow cypress, Indian cypress, white cedar, juniper, red cedar* and dozens of other woods have more or less similarity.	These woods are widely distributed and extensively used, but are not marketed in such large amounts as the pines, spruces and firs.	

COMMERCIAL WOODS—Continued

HARD WOODS OR BROAD LEAVED WOODS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Populus, spp., a misnomer Tulip tree. **Carolina Poplar** (*Populus deltoides*) large trees. Fr., *Peuplier;* Ger., *Pappelholz;* Sp., *Alamo.*	Tulip tree (*whitewood*) and Carolina poplar (*cottonwood*), although classed in the trade as hard woods, are almost as soft as pine.	Both are from large trees in the eastern and central United States.	These are soft, light, comparatively cheap woods, extensively used for general construction. They are not especially strong. All of them are important in paper making.
Linden comes from the basswood or lime tree (*Tilia* spp.). Fr., *Tilleul;* Ger., *Linde;* Sp., *Tila, Tilo.*	*Linden, basswood* and *whitewood* are the names used in America. *Linden, lime* or *lin* are European names. The bark supplies a useful bast fiber for ropes, mats, etc.	Common in southern Canada, central United States and Europe, growing to be trees of fairly large size.	Similar to Carolina poplar.
Maple (*Acer* spp.).—Fr., *Érable;* Ger., *Ahorn;* Sp., *Arce, Meple.* **Birch** (*Betula* spp.).—Fr., *Bouleau;* Ger., *Birke;* Sp., *Abedul.* **Beech** (*Fagus* spp.).—Fr., *Hêtre;* Ger., *Buche;* Sp., *Haya.* **Sycamore** (*Platanus* spp.).—Fr., *Sycomore;* Ger., *Platane;* Sp., *Platano.* These are among the important hard woods in common use.	*Sugar maple, silver maple, rock maple, black birch, cherry birch,* and many other names are employed. Peculiarities of the grain are known as bird's-eye, curly, etc., in the trade.	All of these are obtained from the hardwood forests of central United States and Europe. In some European forests the trees have been carefully planted and scientifically tended.	These are close-grained hard woods, suitable for furniture and cabinet work. Birch is the wood commonly used in imitation of mahogany. The silver maple and the Japan maple are highly valued as shade and ornamental trees.
Oak is from many species (*Quercus alba, Q. rubra, Q. robur,* etc.). Fr., *Chene;* Ger., *Eiche;* Sp., *Roble, Encino.*	*White oak, chestnut oak, live oak, red oak, black oak, swamp oak, willow oak,* and many other varieties are found in the lumber trade. *Oak bark* is used in tanning leather. *Cork* is the bark of one species (*Q. suber*) found in Portugal, Algeria and Spain.	Chiefly from eastern and central United States and Europe. Oaks are found also in many other parts of the world.	An open-grained hard wood of great strength and durability. When cut parallel to the medullary rays (quartered oak) it exhibits a beautiful grain valued highly for cabinet work.
Chestnut (*Castanea* spp.) is a large tree. Fr., *Châtaigne;* Ger., *Kastanien;* Sp., *Castaña.*	American and European chestnut woods are very similar. The nuts are popular for food. An extract from wood and bark is used in tanning.	Formerly a very common tree in the northern United States and still abundant. Common also in Europe.	The wood is used extensively for cabinet work. It is open-grained, softer and much less strong than oak.
Ash (*Fraxinus* spp.).—Fr., *Fréne;* Ger., *Esche;* Sp., *Fresno.* **Elm** (*Ulmus* spp.).—Fr., *Orme;* Ger., *Ulme;* Sp., *Olmo.* **Hickory** (*Carya* spp.).—Fr., *Noyer;* Ger., *Hickory;* Sp., *Nogal americano.*	These woods are of much commercial value. Hickory nuts are marketed.	The trees are found in the central United States, some on the west coast. Ash and elm grow also in Europe and Asia.	Valuable for their toughness and elasticity. Used for tool handles, carriage and wagon building, furniture, etc.
Walnut (*Juglans* spp.).—Fr., *Bois de noyer;* Ger., *Nusskolz;* Sp., *Nogal.*	*American* black walnut, *English, Italian, French* and *Circassian* walnut are commercial varieties. The nuts are exported from southern Europe.	Formerly a very abundant tree in the central United States. Has now become scarce, and high priced. Grown in many parts of Europe.	Used for gun stocks, cabinet work, veneering, etc. A highly decorative wood which has gone out of style in the United States because it is difficult to obtain.
Cherry is from the wild black cherry tree (*Prunus serotina*).		Native in the eastern United States.	Valued on account of its red color. Like walnut, cherry has become scarce and high priced.
Sweet Gum is from a common tree (*Liquidambar styraciflua*).	The wood is called *gum, red gum, hazel* or *bilsted.*	Native in the United States and Mexico. Cut chiefly in the Southern states.	A cheap cabinet wood, used to some extent in building.

IMPORTED CABINET WOODS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Mahogany is the wood of a tropical tree (*Swietenia mahagoni.* Fr., *Acajou;* Ger., *Mahoganyholz;* Sp., *Caoba.*	*Santo Domingo, Cuban* and other kinds are named from the locality of production. Honduras *bay wood* is of inferior quality. Nearly all of the wood with a beautiful grain, or figure, is cut into thin veneers.	A wild tree in tropical forests of the West Indies, Mexico, Central and South America. African mahogany (*khaya*) comes from the west coast.	One of the most sought for of all cabinet woods. Largely imported into Europe and America. Particularly useful because of its beautiful color, grain and durability.
Cigar-Box Cedar is from a tree of the mahogany family (*Cedrela ovorata*).	*Cedro* is the name under which this wood is largely handled.	Produced largely in West Indies, Mexico, Central America and northern South America. Tuna mahogany of Australia is very similar.	One of the important woods of commerce. Too soft for work of the best grade but considerably used for furniture.
Teak is from a large tree (*Tectona grandis*). Fr., *Teck;* Ger., *Teakholz;* Sp., *Teca.*	Especially valuable for shipbuilding because it is practically indestructible.	Chiefly from Burma. Grows in southeastern Asia and adjacent islands.	A very important export from farther India.
Ebony (*Diospyros* spp. and other tropical trees).—Fr., *Ebène;* Ger., *Ebenholz;* Sp., *Ebano;* and **Rosewood** (*Dalbergia* or *Machoeium* sp.)—Fr., *Bois de rose;* Ger., *Rosenholz;* Sp., *Palo de rosa.*	*Cocobolo, tulip, amaranth, padauk, satinwood,* and many others are used for cabinet work and fancy articles.	Nearly all of these hard woods of beautiful colors are from tropical forests.	*Lignum vitæ* is especially useful for making pulleys and caster wheels. These woods are obtained in only limited quantity and many of them are sold by weight rather than measure.

MAKING FELT HATS

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1—4000 pounds of fur, technically called center back (taken from the center of the rabbit's back), imported from Australia, will make 15,000 hats. **2**—When in motion the air coming through the holes in the revolving cone causes the fur to stick to the wet cone. Another cone is placed over this one and the inside cone is drawn out. The soft fur covering the mold is then removed. **3**—When removed from the blowing machine the fur is very soft and requires delicate handling. This is the hat before the shrinking process begins. **4**—Several of these are wrapped together in burlap, placed between rollers several times in many similar machines, being wet before going into each machine. **5**—The final shrinking is done slowly by a skilled workman (on right). The hats are then measured (on left). **6**—On the inspection table the first pile are unshrunk; the second half weighed through shrinking process; the third shrunk, dyed, and waiting to be dried. **7**—The edges of the hats are then dipped in shellac to give stiffness to the brims; passed upward through rollers to wring out surplus liquid. **8**—The dyeing vat where the hats are thrown in and are dyed the proper shade. **9**—The hats are then dried and passed through grinding rollers of fine emery to trim off the ragged fur and give them a smooth appearance.

GUMS, RESINS AND EXTRACTS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Gum Arabic is from small thorny trees (*Acacia* spp.). Fr., *Gomme arabique;* Ger., *Arabisches gummi;* Sp., *Goma arabiga.* **Gum Tragacanth** and **Mesquite Gum** are similar.	*Kordofan gum, Senegal gum, Barbary gum, Cape gum* and *wattle gum* are all of similar nature.	The trees grow wild in sandy regions in Africa and Australia.	These gums are soluble in water. Used for making mucilage, confectionery, etc., and in stiffening and printing silk and cotton fabrics.
Copal is resin produced by trees of many species. Fr., and Ger. *Copal;* Sp., *Goma copal.* (*Trachylobium, Dammara, Hymenaea, Agathis,* etc.).	Copals are named usually from their locality as *Zanzibar* (the hardest), *Sandarusi, Mozambique, Sierra Leone, Benguela, Angola, Lodngo, South American, Manila,* etc. *Kauri* is from the kauri pine tree of New Zealand.	These resins are mostly gathered from the trunks and branches of living trees. The best and hardest varieties, like Zanzibar and kauri, are found underground, having been formed perhaps ages ago and become partly fossilized.	Used for making varnishes by dissolving them in spirits of turpentine and oil. These substances are commercially important.
Dammar, Sandarach, Benzoin, Asafetida, Myrrh, Olibanum, Aloes, Guiac, Dragon's blood, Kino, Peru Balsam, Tolu, Copaiba, Storax and **Gamboge** are resins, gum resins or extracts from the juices of plants.	Gum resins and resins of many kinds are used in varnishes, medicines, incense, etc.	Such forest products are gathered in nearly all countries.	Not of so much relative commercial importance as such materials were in the middle ages.
Rubber is the milky juice (latex) of many trees and vines of the tropics and subtropics. (*Hevea, Manihot, Castilloa, Ficus, Landolphia,* etc.). Fr., *Caoutchouc, Gomme elastique;* Ger., *Kautschuk, Federharz;* Sp., *Caucho, Hule, Goma elastica.*	Crude india rubber, or *caoutchouc,* has dozens of commercial varieties differing greatly in quality according to the nature of the plant and the process of preparation (*Para, Ceara, Central American, African, Ceylon, plantation,* etc.) Crude rubber is treated with sulphur (vulcanized) to make elastic and waterproof articles, as well as hard rubber goods (*vulcanite* and *ebonite*). Substitutes for rubber are made from rape oil, corn oil, etc.	The largest supplies of rubber come to market from the East Indies. Para rubber is prepared by smoking (drying) the latex over a fire. The latex is coagulated often by simple drying in the air and frequently by chemical or mechanical processes. Mexico and Central America, Africa and the East Indies furnish large amounts. Most of the world's supply comes from wild trees. Every year there is a larger production from plantations, and much of this, like the Ceylon rubber, is of very fine grade and brings the highest market price.	Rubber has, within a very few years become an important article in the world's commerce. Its uses are multiplying and its price has risen in proportion. Factories in Europe and America make automobile tires, rubber bands, elastic cloth, toys, shoes, tubing, hose, waterproof cloth, stoppers, erasers, etc., as well as articles of hard rubber, such as combs, buttons, surgical and chemical appliances. Rubber is used in floor cloths, cements and varnishes. Old rubber articles are worked over and the reclaimed rubber utilized.
Gutta-Percha is from the milky juice of a tree (*Palaquium gutta*). Fr., and Ger., *Gutta-Percha;* Sp., *Guta-Percha.*	Similar in some ways to rubber.	From the East Indies.	Used to insulate submarine cables and for making golf balls. Singapore is the chief port of shipment.
Balata is similar.			
Chicle or *Sapodilla* is from the milky juice of a tree (*Achras sapota*). Fr., Ger. and Sp., *Chicle.*	Chicle is called also *gum chicle,* or *crude chewing gum.*	Chiefly from Yucatan.	Used in chewing gum.

OILS, FATS AND WAXES

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
See Cotton, Corn, Olive, Flax, Hemp, Cocoanut, Cacao for other oils. See also various animal oils and petroleum.	Vegetable oils are of two important types, *fixed* or *fatty oils* and *volatile* or *essential oils.* Fixed oils are either *drying oils* like linseed or *nondrying* like olive.	Fixed oils are obtained from seeds by pressure in powerful machinery or by chemical processes. The oil-cake remaining is used for cattle food and fertilizer.	Drying oils are used in paints and varnishes, preparing leather, etc. Nondrying oils are used for table purposes, cooking, illuminating, lubricating, soap and candle making, etc. *Glycerine* is a by-product in soap making.
Castor Oil is from the seeds of the castor plant (*Ricinus communis*). Fr., *Huile de ricin;* Ger., *Rizinusöl;* Sp., *Aceite de ricino.*	The cold drawn or cold pressed oil is used in medicine. Much castor oil is treated with sulphuric acid to produce *Turkey red oil* for use in dyeing and calico printing.	The largest production is in India. Grown in the tropics and warm temperate climates.	Used in soap making, lubricating, preparing artificial leather and celluloid.
Palm Oil is from the pulp and seeds of a palm (*Elaeis* spp.). Fr., *Huile de palme;* Ger., *Palmfett;* Sp., *Aceite de palme.*	Palm oil is from the pulp, palm kernel oil from the seeds.	From the coast of the gulf of Guinea, West Africa.	For making soap and candles, and used in the preparation of tinplate.
Peanut Oil, *sunflower, almond, sesame, poppy, rape seed, kapok, soy bean* and various other oils are used.		Seeds for oil production are little cultivated in the United States with the exception of flaxseed, cotton and corn.	Marseilles, Rotterdam, and several other European cities have great mills for the production of vegetable oils of this character.
Essential Oils are made chiefly from flowers and leaves of plants.	*Attar of roses, patchouli, lavender, violet, geranium, cedar, wintergreen, cloves, lemon, orange, sassafras, peppermint, citronella, lemon grass, cinnamon, bay, almond, eucalyptus* and many others are prepared.	Fragrant oils are prepared in large amount for the perfumery trade in France, Italy, Germany and Austria, from roses, violets and other cultivated plants. Peppermint oil is produced in the United States, and it, as well as menthol, comes from Japan.	These oils are obtained by distillation of the plant with water or else by absorbing the fragrance in lard or oil (enfluerage). They are used in perfumery, for flavoring and in medicine.
Camphor is from the wood of the camphor tree (*Cinnamomum camphora*). Fr., *Camphre;* Ger., *Kampher;* Sp., *Alcanfor.*	Although called *gum camphor,* this is strictly a volatile or essential oil.	From Formosa, Japan, China and Borneo. Prepared by distilling the wood with water.	Nine-tenths of the world's supply is exported from Formosa. Its production is a monopoly of the Japanese government. Used in making celluloid and smokeless powder, in medicine and as a protection against insects.

OILS, FATS AND WAXES—Continued

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Vegetable Waxes are from myrtleberries (*Myrica* spp.), Japanese waxberries (*Rhus* spp.) or the leaves of the carnauba palm (*Copernicia cerifera*). Fr., *Cire végetal;* Ger., *Vegetabilishes Wachs;* Sp., *Cera vegetal.*	*Myrtleberry* or *Bayberry wax, Japan wax* and *carnauba wax* are much like beeswax in their nature and uses.	Japan wax is produced only in Japan. Carnauba wax is from Brazil.	These waxes are found in commerce but are not of great importance.

DYESTUFFS AND TANNING MATERIALS

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Logwood (*Hoematoxylon campechianum*).—Fr., *Campeche;* Ger., *Kampeschenholz, Farbholz;* Sp., *Palode Campeche.* **Brazil wood** (*Coesalpinia* spp.).—Fr., *Bois de Bresil;* Ger., *Brasilholz;* Sp., *Madera de Brasil.* **Fustic, Young Fustic, Sappan, Cam, Bar, Peach** and other woods.	Handled commercially in logs, chips, or very commonly in the form of extract.	From the forests of tropical America and the West Indies.	Aniline and other coal-tar dyes have lessened the demand for these, as well as almost all other vegetable dyes. There is still a fairly large trade in logwood.
Indigo is obtained from the juice of the indigo plants (mostly *Indigoferum* spp.). Fr., *Indigo;* Ger., *Indigo;* Sp., *Añil, Indigo.*		India, Ceylon, Java and Central America are the chief producers. Formerly cultivated much more extensively.	Prepared by soaking the plants in water. The green solution turns blue on exposure to the air, the indigo separates and falls to the bottom of the tank.
Madder, Annatto, Safflower, Quercitron, Turmeric, Turnsole, Persian Berries, Saffron, Archil, Cudbear, Litmus, Woad and many other vegetable substances are used as dyes.			
Tanbarks are from many species of trees.	*Hemlock, white oak, wattle, mangrove, larch* and *willow* are used.	Obtained mostly as by-products of lumber industry. In the United States, hemlock is most important.	Extracts from the bark are usually prepared and the material is found in commerce in this form. The value is largely dependent on the percentage of tannin.
Tanning extracts are prepared from many woods, fruits, leaves, roots and galls.	*Oak, chestnut, quebracho* and *cutch* are extracts from wood. *Myrobalans, valonia, divi-divi* and *algarobilla* are fruits yielding tannin. *Sumac* and *gambir* leaves, *canaigre* and *palmetto* roots and oak and sumac galls are all employed.	Obtained in nearly all parts of the world.	Different substances or extracts are employed in preparing different qualities of leather.

MISCELLANEOUS SUBSTANCES

Name of Raw Material	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Vegetable Ivory is the seed of a palm tree (*Phytelephas* spp.). Fr., *Ivoire végetal;* Ger., *Holzelfenbein;* Sp., *Corozo, Tagua.*	Other species of palms produce vegetable ivory in the South Sea islands.	From Ecuador, Colombia and Panama.	Used for making buttons, etc. Exported to United States and Europe.
Argols, a deposit in wine casks. Fr., *Tartre;* Ger., *Weinstein;* Sp., *Tártaro.*	*Argal* or *lees* are the only source of tartaric acid and tartrates.	Principally from Portugal.	Used in dyeing, making baking powder, cream of tartar, seidlits powders and tartar emetic.
Lycopodium powder consists of the spores of club mosses. Fr., *Lycopode;* Ger., *Lycopodium, Barlapp;* Sp., *Licopodio.*		Exported from Russia.	Used in fireworks and by pharmacists.
Pyrethrum is the powdered flowers of a plant allied to the chrysanthemum. (*Pyrethrum* spp.).	Used in insect powders.	From Persia and southeastern Europe.	

ANIMAL PRODUCTS

Animal	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Cattle are of several important types. The most abundant is the domestic **ox** (*Bos taurus*). Fr., *Bétail;* Ger., *Rindvieh;* Sp., *Ganado.* The Indian Humped Ox and the Water Buffalo are raised in the East.	*Beef,* fresh, dried, salted, canned or otherwise preserved is the most valuable of all cattle products. *Hides* (including kips and calfskins) are second only to beef in importance. *Milk* is sold fresh, condensed, evaporated, or is made into butter, cheese, *casein* and *sugar of milk.* Horns, hoofs and bones are used for buttons, handles for knives, brushes, umbrellas and fancy articles, or made into *gelatine* and *glue.* *Tallow* from beef fat is used in food, soap, candles and lubricants. *Oleo oil* and *stearine* are from tallow and are used in making oleomargarine or butterine. *Neat's-foot oil* is a lubricant. *Dried blood* is used in purifying sugar, clarifying wines, and in dyeing. *Cow hair* is mixed in plaster. *Pepsin* and rennet are made from the stomach. All waste parts go into *fertilizers.*	The United States, Russia, India, Argentina, Germany, Austria-Hungary, France and Australia are the greatest cattle raising countries. In this country, the cattle raising area has moved rapidly westward. More than half of the beef cattle are now found in Texas, Iowa, Missouri, Kansas, Nebraska, Colorado and Wyoming. They are fattened in the corn belt (Illinois, Iowa, Nebraska, Kansas) and killed in the slaughter houses of Chicago, Kansas City, St. Louis and Omaha. The by-products of slaughtering are very numerous and the industry is conducted so economically that, in the great slaughter houses, no part of the animal is wasted. In some parts of the world hides and tallow are the chief products of the cattle industry on account of the difficulty of transporting the meat.	The United States, Argentina and Australia are the greatest exporters of live cattle and beef. Great Britain buys the greater part of the cattle products exported by the United States. Refrigerator cars and cold storage in steamships make possible the shipment of fresh meat to long distances. Fresh meat is a growing export from Argentina, Australia, New Zealand and South Africa to Europe. The dairy industry is of growing importance and New Zealand exports butter and cheese to England. Denmark, Sweden, Holland, Switzerland, Canada and Australia export dairy products. Notwithstanding the large production of hides in the United States, our tanning industry is so large that millions of dollars worth are annually imported, chiefly from South America. Sole leather is made from cattle hides. Leather is split and finished in a great number of styles.

SHOE INDUSTRY

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1—Cutting room where uppers and linings are cut out from strong canvas. Patterns are so arranged as to allow little waste. **2**—Weighing scraps to ascertain percentage of waste. **3**—This machine cuts the lining from strong, white canvas. 20 thicknesses of cloth are cut at one time. Assistant at left holds two cutting dies. **4**—The ingenious machines which insert the eyelets in the canvas uppers of the shoes. One of these machines will insert two rows of hooks or eyelets in ten seconds. **5**—The shaping machine which stretches the upper in a smooth even form over the wooden last and takes the edge down. **6**—Rubber is placed between these plates, then placed in a hydraulic press which forces the rubber into design of the sole. Surplus rubber soles to the canvas uppers of the shoes. **7**—Cutting insoles from sheets of composition cork. These insoles insulate and keep rubber from heating foot. **8**—Machine cutting out rubber heels from large thick mass of rubber resembling dough. Scraps are thrown back in mixer and used again. **9**—Building up the rubber soles on the shoes. The workman is seen here smoothing down the rubber edging on a shoe. **10**—Attaching the rubber soles to the canvas uppers of the shoes. **11**—Trucks loaded with shoes ready for vulcanizing oven. This process hardens and cements together soles, heels and edgings. **12**—Shoes just out of vulcanizing oven, where the canvas upper is cemented to the rubber sole. **13**—Finishing off the edges of the rubber soles on buffer machines. **14**—In the finishing department. Here the girls are threading the laces into the shoes.

ANIMAL PRODUCTS—Continued

Animal	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Sheep (*Ovis aries*) are of a great number of breeds (Merino, Lincoln, Leicester, Southdown, Highland, etc.). Fr., *Moutons;* Ger., *Schafe;* Sp., *Carneros.*	*Wool* is the most valuable product of the sheep. The grades of wool are named according to the breed of sheep, the locality and the use to which they may be put. Clothing wools are fine and comparatively short, combing wools are of medium length, carpet wools are long and coarse. *Meat* (mutton and lamb) is of less importance than beef and pork. *Sheep* and *lamb skins* are used with the wool on, for rugs and furs (Persian lamb, broadtail, Astrakhan, Tibet). *Skins* (roans) are tanned for morocco and fancy leather. *Chamois* is usually oil-tanned sheepskin. *Catgut* is made of sheep intestines, *tallow* from the fat, *cheese* from the milk and *fertilizer* of all waste.	Raised chiefly in temperate countries, in largest numbers in Australia, Argentina, Uruguay, Russia and the United States. The finest wools are raised in Germany, Argentina, Australia, South Africa, and the United States. Combing wools come from England, Scotland, France, Australia and the United States. Carpet or native wools are produced in Russia, Asia Minor and China from sheep of unimproved breed. Sheep raising is an industry appropriate to a fairly open, temperate country which is sparsely settled. For this reason it has prospered in the western United States, Argentina, Australia, New Zealand and South Africa, where good breeds of sheep have been introduced.	Within the past hundred years, cotton has displaced wool as the most important commercial textile fiber. Wool is carded and spun into woolen yarns or combed and spun into worsted yarns. Woolens and worsteds are the two types of wool fabrics. Cotton is very largely mixed with wool to cheapen the product. The United Kingdom, Germany and France supply the world with woolen and worsted fabrics. The United States mills supply mainly the home market. Nearly all the factories are in New England and the Middle states. Live sheep are exported from Argentina, Australia, the United States and Canada, but a larger value is represented in frozen mutton, which goes in refrigerator ships from New Zealand, Australia and Argentina to Europe.
Swine are of many breeds (*Sus scrofa*). Fr., *Cochon;* Ger., *Schwein;* Sp., *Puerco, Cochino.*	The *meat* is by far the most valuable product. It is sold fresh, salted, pickled and smoked and in the form of ham, bacon and sausage. *Lard, lard oil, stearine,* and other fats and oils are obtained from the fat. The *skins* are made into leather and all waste parts are utilized in *fertilizers* or converted into *prussiate* (cyanide) *of potash.* *Bristles* come chiefly from China and Russia, where pigs have not been improved by breeding.	Pigs are raised in almost all parts of the world, but the hog raising industry is greatest in the United States. Corn is the food which is most important in fattening the animals for market.	Chicago, Kansas City and Omaha are the chief pork packing centers. Probably in no other industry is every by-product more completely utilized. Hog products constitute one of the most valuable of this country's exports, greatly exceeding the value of even cattle products.
Goats are less varied in their breed than many other domestic animals (*Capra* species). Fr., *Chevre;* Ger., *Zeige;* Sp., *Cabra.*	*Angora* and *Cashmere* are breeds which produce exceptional qualities of hair. The hair from the common goat is coarse and is used in making carpets and blankets. *Goat* and *kid skins* are the most valuable products of these animals.	The greatest number of goats are raised in western Asia. There are many in southern Europe and northern Africa. Angora goats are raised in Asia Minor, South Africa, Texas and Australia. In Switzerland they are raised for their milk, and cheese made from it.	Large numbers of goat and kid skins are imported into the United States, chiefly from the East Indies, Mexico and South America. These are largely tanned with chrome to make glazed kid and soft leathers. By other processes morocco and glove leather are prepared.
Camels (*Camelus* species) are of two types, the one-humped or dromedary, and the two-humped or Bactrian. Fr., *Chameau;* Ger., *Kameel;* Sp., *Camello.*	*Camel hair* is the only product which enters into general commerce. Locally the flesh, milk and hide are utilized.	Camels are found throughout central Asia and northern Africa. Camel hair comes chiefly from interior Asia.	The hair or wool is soft and suitable for making hosiery, underwear and shawls.
Alpaca is an animal similar to the camel (*Auchenia pacos*). Fr., *Alpaga;* Ger., and Sp., *Alpaca.*	The wool of this animal is used to make dress goods.	Raised in Peru.	Imported into Europe and United States.
Horses are chiefly beasts of burden (*Equus caballus*). Fr., *Chevaux;* Ger., *Pferde;* Sp., *Caballos.*	*Horsehair* is from manes and tails. *Hides* are tanned to make leather. Horse flesh is eaten in Europe. *Pony skins* are used as furs.	Horsehair is exported chiefly from Russia, Argentina, Germany, and other countries.	The hair is used for making haircloth and brushes, and for stuffing mattresses and furniture.
Wild Animals of many kinds are killed for the sake of their skins.	Important *furs* are obtained from the sable, fox, weasel, marten, ermine, mink, skunk, raccoon, bear, otter, beaver, muskrat, seal, nutria, squirrel, chinchilla, mole, monkey, rabbit, etc.	Good furs come mostly from Siberia, Russia and British America, with the exception of skins of the monkey and cat families.	London and Leipzig are the world's great fur markets. Skins of the domestic cat are dyed and dressed so as often to resemble more costly fur. Rabbit fur is similarly altered. Great numbers of rabbit skins are imported from Australia and New Zealand to the United States and the fur from them is used in making felt hats. Nutria fur is used for the same purpose.
Other Animals furnish products of value.	*Ivory* is chiefly from the tusks of African and Indian elephants.	*Deer horns* for knife handles, etc., come from many parts of the world. *Deer skins* are tanned for leather.	*Musk*, a perfume, comes from the musk ox of Asia. *Castoreum* from the beaver and *civet*, from the civet cats of Africa and Asia, are the bases for perfumes.
Whales are of several species (*Balœna, Physeter*). Fr., *Baleine;* Ger., *Wallfisch;* Sp., *Ballena.*	*Whale oil* (sperm oil) is drained from the blubber. *Whalebone* is from the mouth, *spermaceti* from the blubber and cavities in the head and *ambergris* from the intestines. *Porpoise leather* is from the skin of the white whale.	The Greenland fishery is most important, but whale fishing is not as prosperous an industry now, as it was one hundred years ago. This is largely because of the scarcity of whales and partly because kerosene is so generally used for illuminating.	Whale oil is used in leather dressing, burning, soap making and lubricating. Spermaceti is used in candle making and for waxing cartridge covers; whalebone for stiffening dresses, making brushes and whips; and ambergris in perfumes.
Sponges are the skeletons of peculiar animals (*Spongidœ*). Fr., *Eponge;* Ger., *Schwamm;* Sp., *Esponji.*	The qualities differ with the species and locality.	Obtained in the Mediterranean and West Indies.	Imported largely from the eastern Mediterranean.
Fish are of hundreds of species but there are comparatively few that are of great commercial importance. Fr., *Poisson;* Ger., *Fisch;* Sp., *Pescado.*	Of the food fish, cod, haddock, herring, sardines, mackerel and salmon are handled in large quantities fresh, canned, salted or otherwise cured. *Caviare* is the prepared roe of sturgeon. *Isinglass* is a pure gelatine made from the swimming bladders of sturgeon and other fish.	The great fisheries of the world are the "Grand Banks" off Newfoundland, the North Sea and the coast of Norway. Salmon are canned on the northwest coast of America and on a smaller scale in Japan, Siberia and Norway. Portugal, Spain and France lead in canning sardines. *Oils*, made from menhaden and other fish are used in preparing leather, in paints, oiling ropes, etc. *Cod liver oil* is used in preparing chamois and other leather and in pharmacy.	Canned salmon leads in value our exports of fish products, and goes mainly to England. We import herring, etc., in oil from Europe and considerable quantities of fresh or canned lobsters from Nova Scotia and Newfoundland. *Fertilizers* are prepared from the refuse from fish canneries and from fish which are not otherwise useful.

ANIMAL PRODUCTS—Continued

Animal	Chief Commercial Articles Produced	Habitat and Cultivation	Manufacture, Uses and Trade
Oysters are the most valuable shellfish. (*Ostrea* species, *Meleagrina*, etc.) Fr., *Huitres;* Ger., *Austern;* Sp., *Ostras.*	Oysters are gathered on the coasts of Europe and America. Some are canned but the greater amount are consumed fresh. Pearl oysters (*Meleagrina*) supply *mother of pearl* and occasionally true pearls. Abelone (*Haliotis*) and various mussel shells are also used.	Pearl oysters are found off the coasts of Ceylon, Society islands, northern Australia, Panama, in the Gulf of California, the Red Sea and the Persian gulf. Abalone shells come from the shores of the Pacific.	Pearl shell is used for buttons, knife handles, etc. Mother of pearl is imported largely from the South Pacific.

PRODUCTS OF BIRDS

Raw Material	Chief Commercial Articles Produced	Habitat and Production	Manufacture, Uses and Trade
Eggs are chiefly from the domestic fowl. Fr., *Oeufs;* Ger., *Eier;* Sp., *Huevos.*	Aside from their use as food, eggs supply *egg albumen*. Large numbers are bought in the spring and summer and preserved by cold storage.	There is a large and increasing foreign trade in fresh eggs.	Eggs are used in preparing tanned leather for gloves, etc.; and egg albumen in photographic paper, clarifying sugar, etc.
Feathers and bird skins are from many kinds of wild and tame birds. Fr., *Plumes;* Ger., *Federn;* Sp., *Plumas.*	Ostrich, cock, goose, duck, turkey, pheasant, heron, grebe, and many wild birds furnish *plumes* for decorative purposes.	Ostrich feathers are obtained by killing wild birds in central Africa and from ostrich farms in South Africa. Smaller quantities come from North Africa, Argentina and California. Down, for pillows and feather beds, is from the domestic goose.	The United States imports feathers and down chiefly from Europe. The greater part of the supply of ostrich feathers comes from South Africa, and from California ostrich farms.
Guano is the accumulated excrement of birds and bats. Fr., Ger. and Sp., *Guano.*	A valuable fertilizer. Refuse from fish canneries and oil factories goes under the name of fish guano.	From dry islands and caves.	Exported mainly from islands in the Pacific.

INSECT PRODUCTS

Silk is from the cocoons of the cultivated silkworms (*Bombyx mori*). Fr., *Soie;* Ger., *Seide;* Sp., *Seda.* Pongee and other wild silks are produced by insects of different species (*Antheræa*).	*Silk cocoons* are reeled to obtain *raw silk*. The unreelable parts of the cocoons are *silk waste*, which is converted into *spun silk*. Raw silk is "thrown" or twisted giving *tram* and *organzine* for weaving.	Silkworms are reared and cocoons produced commercially only in China, Japan, India and Mediterranean countries, particularly Italy, southern France, Greece, Turkey and western Asia. Here, cheap and competent labor can be obtained as it cannot in any other part of the world where the climate is favorable. The reeling of the raw silk from the cocoon is largely conducted in modern factories.	China exports almost half the raw silk of commerce. Japan and Italy each export less than half as much as China. The United States leads the world in the quantity of silk manufactured. France uses almost as much raw silk and makes fabrics of high grade. More than half the raw silk imported into the United States comes from Japan. We import silk fabrics in large amount from France, Germany and Switzerland.
Honey (Fr., *Miel;* Ger., *Honig;* Sp., *Miel*) and **Beeswax** (Fr., *Cire de abeilles;* Ger., *Bienenwachs;* Sp., *Cera de las abejas*) are produced by the honey bee (*Apis mellifica*).	*Honey* is sold either in the comb or extracted. *Beeswax* is obtained by melting the comb. Beeswax is adulterated and imitated by the use of paraffin, stearine, and vegetable waxes. Wax is used for candles, waxing floors and thread, artificial plants, salves, etc.	Honey and wax are produced in northern Europe and the United States.	Much honey is shipped from California to other parts of the United States and to Europe. Beeswax is imported from Europe and South America.
Lac is a resinous substance formed on twigs by the lac insect (*Coccus lacca*). Fr., *Laque;* Ger., *Lack;* Sp., *Laca.*	*Stick lac* is the crude material as gathered from the trees. *Seed lac* and *button lac* are partly purified. Red lac dye is a by-product now of little importance or value. *Orange shellac* is bleached to make white shellac.	From forests of northern India and Indo-China.	Dissolved in alcohol to make varnishes. Used in sealing wax, putty, for sizing paper, stiffening felt hats, etc.
Cochineal consists of the dried bodies of insects (*Coccus cacti*). Fr., *Cochenille;* Ger., *Cochenille;* Sp., *Cochinilla.*	Used as a red dye for wool.	Raised on cactus plants in Mexico, Central America, Teneriffe, and the East Indies.	Of little present importance due to the extensive use of dyes from coal tar.
Cantharides are the dried bodies of beetles (*Cantharis, Mylabris,* etc.) Fr., *Cantharides;* Ger., *Kantharidin;* Sp., *Cantáridas.*	*Cantharides*, Spanish flies and Chinese blistering beetles are similar.	From southern Europe, India and China.	Used medicinally for blistering purposes, and internally as a stimulant to the urinary organs.

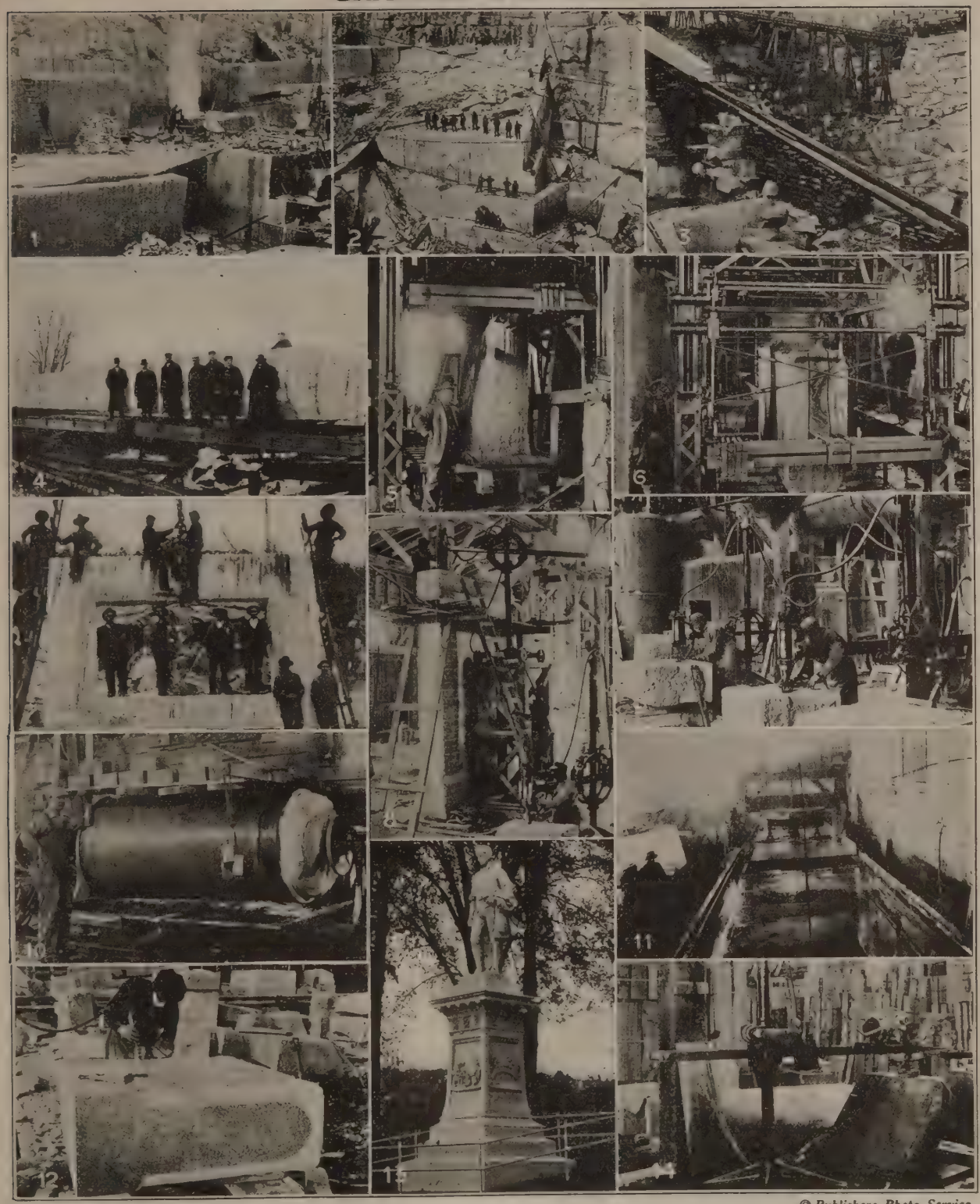
MINERAL PRODUCTS

Metals	Ores and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Iron is the most useful metal. Fr., *Fer;* Ger., *Eisen;* Sp., *Hierro.*	*Hematite* (sesquioxide of iron) is the ore which supplies three fourths of the iron of commerce. *Limonite* brown (homatite) is a hydrous oxide and furnishes nearly one-fourth of the world's supply of the metal. Magnetite and siderite are less common ores. *Pig iron* is the crude form of the refined metal and is transformed into *cast iron, wrought iron* and *steel* in their multitudinous forms. These three forms of iron differ in hardness, strength, elasticity, malleability, etc., according to the amounts of carbon, sulphur, phosphorus, manganese and other elements. *Ochers* and metallic paints are iron oxides. *Prussian blue* and *copperas* are iron compounds. *Pyrite* (iron pyrites or fool's gold) is a sulphide of iron, useless as an iron ore.	The United States, Germany, Great Britain, Spain and France are the greatest producers of iron. Its ores occur in almost all parts of the world. Hematite is mined in Minnesota, Michigan, Alabama and other parts of the United States and in Germany, England, France, Spain, Russia, etc. Limonite is also widely distributed. Pig iron is made by smelting iron ore in a blast furnace. The ore, mixed with limestone, is melted by burning coke, coal or charcoal. Pyrite is found in Spain and many other parts of the world and is valuable in the preparation of sulphuric acid (oil of vitriol).	The United States manufactures more iron and steel than any other country. Almost half of the production is in Pennsylvania. Cast iron appears in many articles but is weaker than other forms of iron. Wrought iron contains less impurity and is used for bars, plates, wire, structural material and parts of machinery. Steel (Bessemer, Siemens-Martin, open hearth, etc.) contains more carbon than wrought iron, possesses both strength and hardness, and is used for rails, structural material, machinery, tools, wire rope, sheet steel, etc. Its hardness may be increased by tempering. The United States imports iron ore from Cuba and Spain, pig iron from the United Kingdom and a little manufactured iron and steel from Europe. We export large quantities of manufactured iron and steel.

MINERAL PRODUCTS—Continued

Metals	Ores and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Lead is the softest, heaviest, most malleable and most easily melted of the common metals. Fr., *Plomb;* Ger., *Blei;* Sp., *Plomo.*	*Galena* (lead sulphide) is the only important ore, it often carries a considerable percentage of silver. Carbonates and sulphates of lead are less common. *Solder* and *type metal* are alloys of lead with tin and antimony. *White lead* is a carbonate, *red lead* and *litharge* are oxides. *Chrome yellow* and *orange mineral* are lead compounds used as pigments.	Ores are found in many countries but the main supply is from the United States, Spain, Germany and Mexico. The chief lead mines of the United States are in Missouri, Idaho, Utah Colorado and Kansas. Much lead bullion is from smelters where silver ores are reduced.	Th. chief use of metallic lead is in piping. sheet lead, shot and alloys. Large amounts of ore are transformed not into metallic lead but into white lead for use in paints. Lead ores and lead bullion are imported from Mexico. England is the greatest importer of lead and lead ores.
Zinc is one of the most useful metals. Fr., *Zinc;* Ger., *Zink;* Sp., *Zinc.*	*Sphalerite* or blend (zinc sulphide) is the chief ore. Carbonates, silicates and oxides of zinc are found. Crude zinc (*spelter*) is distilled from roasted ore. *Brass, German silver* and other alloys contain zinc. *Galvanized iron* consists of a coating of zinc on sheet iron. *Zinc oxide* (zinc white) resembles white lead and is used in paints.	Germany, United States and Belgium supply most of the zinc. In this country, Missouri and Kansas lead in zinc production.	Used in electric batteries, making hydrogen, zinc etchings, etc. The greatest amount of zinc is used in alloys and zinc compounds. Zinc and zinc ores are both imported and exported by the United States, the imports exceeding the exports. Zinc oxide is exported in larger amount than any other form.
Copper is, next to iron, the most important metal in use. Fr., *Cuivre;* Ger., *Kupfer;* Sp., *Cobre.*	There are many ores *Chalcopyrite,* and *bornite,* (sulphides of copper and iron) are widely distributed. *Chalcocite* (copper sulphide) is mined in Montana, *malachite* and *azurite* (carbonates of copper) in Arizona and metallic copper in Michigan. *Copper matte* is the crude metal as it comes from the smelter. *Brass* and *bronze* are alloys of copper with zinc, tin, aluminium, etc. *Copper sulphate* (blue vitriol) is the most important chemical compound of copper.	The greatest production is in the United States, in Arizona, Montana, Michigan, and Utah. Spain, Japan, Chili, Australia and Germany produce smaller amounts. The metal is purified by smelting, and refined, often by electrolytic methods.	The value of copper has increased within recent years, due to its enormous use in electrical work. Aside from this, copper is employed in large amount in the various alloys into which it enters, and in coins, utensils, printing plates, etc. Copper sulphate is extensively used in electrical apparatus, dyes, chemical work and as an antiseptic. Large amounts of manufactured copper are exported to Europe. Smaller quantities of ores, matte and regulus are imported from Mexico, South America and other countries. Copper wire is extensively used by telephone and telegraph companies.
Gold is the standard precious metal. Fr., *Or;* Ger., *Gold;* Sp., *Oro.*	Gold ores are usually gravels or beds of quartz rock in which the metal occurs in small particles *Chloride of gold,* used in photographic work, is its only important compound. Pure gold is called 24 carats fine. A smaller figure indicates that the metal is alloyed to harden it.	Found in nearly all parts of the world. South Africa and the United States are the leading producers. Australia, South America and parts of Europe possess important gold fields. Gold is separated from gravel (placer mines) by washing with water. The particles of metal, being heavy, sink and can be collected. Rock containing gold is crushed to fine powder and the gold combined with mercury (amalgamation). Low-grade ores are treated with a solution of cyanide of potassium which dissolves the gold and the metal is later separated.	Gold is used for money, jewelry, gold leaf (gilding) and in dentistry. It is almost always alloyed with copper and silver. Gold is the world's accepted standard of value. Shipments of gold go from one country to another chiefly to balance international business dealings. Government treasuries and bank vaults are the chief storehouses for gold. either as bullion or coin.
Platinum is a rare metal. Fr., *Platine;* Ger., *Platin;* Sp., *Platina.*	Found with gold, iridium and other rare metals in placer mines.	Chiefly from Russia. Smaller amounts from Colombia, California, Canada and Australia.	Used in the terminals of incandescent electric lamps. Also employed by chemists, jewelers and dentists.
Silver is the common precious metal Fr., *Argent;* Ger., *Silber;* Sp., *Plata.*	*Argentiferous galena* (lead ore) is the commonest ore of silver. The amount of silver per ton varies greatly. Zinc and copper ores often carry silver. Many sulphides of silver (argentite, pyrargyrite, etc.) are found, as well as chlorides and bromides (cerargyrite and bromyrite). *Chloride* and *nitrate of silver* are used in photography.	Silver is produced in greatest amount in the Rocky mountains and the Andes. The United States, Mexico, Australia, Bolivia, Chili, Peru and Germany furnish nearly the entire supply. Montana, Colorado, Nevada and Utah lead in silver production in the United States. The ores are usually smelted and refined to purify the metal.	Manufactured into innumerable articles for household use and personal adornment. The cheapest are not solid (sterling) but are electrically plated with a very thin coating of silver. Silver coins form the bulk of the currency of the world, although in most countries gold is the standard.
Mercury (or quick silver) is a heavy metal which is liquid at ordinary temperatures Fr., *Mercure;* Ger., *Merkur, Quecksilber;* Sp., *Mercurio.*	*Cinnabar* (sulphide of mercury) is the source of the metal, although a little is found in nature in the pure state. *Vermilion* (artificially prepared cinnabar) is used in paints. *Calomel* and *corrosive sublimate* are used in medicine and *fulminates* of mercury in explosives.	Produced in Spain, the United States, Austria, Italy and Russia. California supplies most of this country's quota. Obtained by distillation of the ore.	Used principally in the extraction of gold and silver from their ores by amalgamation. Employed in thermometers and barometers, silvering mirrors, and in making amalgams for dental work. Half of the mercury produced in this country is exported to Mexico, Central America and China.
Aluminium (or aluminum) is the lightest metal in common use. Fr. and Ger., *Aluminium;* Sp., *Aluminio.*	*Bauxite* (aluminium hydrate) is the only ore. *Cryolite* (fluoride of aluminium and sodium), a mineral mined only in Greenland, was formerly used as an ore but is now utilized in the manufacture of alum and soda. *Alum* (a sulphate) is made from cryolite or clays.	Bauxite is mined in France, Ireland, Austria, Arkansas, Alabama and Georgia. Aluminium is refined by electric processes, the works in America being located near Niagara Falls.	Used largely as an addition to iron and steel, preventing bubbles and waste in castings. Used in electrical work, and for purposes where a light. strong metal is necessary, as in certain machinery, hulls for small boats, etc. Refineries are located in Switzerland, France and Great Britain.
	Corundum (aluminium oxide) is, next to diamond, the hardest natural mineral. *Sapphire* and *ruby* are transparent forms suitable for gems *Emery* is an impure form of corundum.	Canada, North Carolina, Alabama and India have mines of corundum. Emery is produced chiefly in Greece and Asia Minor. Rubies and sapphires are found in Ceylon, India and Montana.	Corundum and emery are powdered for use as abrasives in wheels, sharpening stones, polishing powder and cloth.
	Feldspar is a silicate of aluminium with other metals.	Mined in Canada, Pennsylvania, Connecticut, New York, Maine and Norway.	Ground up for use in pottery making. The location of manufacturing centers of pottery of all kinds and of bricks, is dependent on clay deposits In pottery making, Ohio, New Jersey and Pennsylvania lead the United States. Abroad, fine china is made in France, Germany, Austria, England, Japan, and China. All of these countries export chinaware
	Clay is chiefly silicate of aluminium and other metals *Kaolin* is its purest form. The properties of clay vary with its composition, as china clay, fire clay, pipe clay, brick clay etc.	Clays are found in all parts of the world as a result of the decomposition of other rocks. For many purposes they are freed from sand and grit by washing with water, the clay being carried away in suspension. Later it is allowed to settle and gathered up in the form of mud.	

GRANITE INDUSTRY



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1—Sectional quarry view showing the quarrying of large blocks. **2**—Quarry view showing sheet formation where extra large stones are removed through channeling operations. **3**—Raising a spire memorial in the rough, 5'-0x5'-0x51-0, from the bottom of the quarry hole. **4**—Spire memorial in the rough already for transportation from the quarry to cutting plant. Size 5'-0x5'-0x51-0. **5**—Gang granite saw in operation. **6**—Another gang granite saw in operation. **7**—Granite base for monument. Base 18'-3x13'-7x1'-0. **8**—Penumatic surfacing machine working on extra large stone. **9**—Pneumatic surfacing machines in operation. **10**—Polishing granite column. **11**—The largest granite polishing machine in the world operated by electricity with four traveling machines. **12**—Skilled letter cutter using fine pneumatic tool. **13**—Robert Burns Statue showing artistic carving in Barre granite. **14**—A small electric polishing machine.

MINERAL PRODUCTS—Continued.

Metals	Ores and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Tin is less abundant than most of the common metals. Fr., *Etain;* Ger., *Zinn;* Sp., *Estaño.*	*Cassiterite* (tin oxide) is the only important ore This mineral is commonly found as pebbles (stream tin) in gravel. *Tinplate* and alloys containing tin are of enormous importance in the arts Of these, *bronze* is chief. *Gun metal, pewter, solder, type metal* and *britannia metal* are other alloys. Salts of tin are used in dyeing, glass making, etc.	The Malay peninsula and nearby islands (Banca and Billiton) produce over half the tin ore of the world. The remainder is mined in Bolivia, Australia, Tasmania and Cornwall, England. Small deposits occur in the United States. Tin melts at a low temperature and is easily refined.	England manufactures more tin than any other country. Tinplate, used for tin cans, roofing and kitchen utensils, is made by dipping sheet iron or steel in a bath of melted tin, thus covering it with a thin layer of tin. Tinplate is manufactured in the United States and imported from England. Tin metal is imported from England and Straits Settlements.
Antimony. — Fr., *Antimoine;* Ger., *Antimon;* Sp., *Antimonio.* **Bismuth.**— Fr., Ger. and Sp., *Bismuth.*	*Stibnite* (antimony sulphide) is the chief ore of antimony. Bismuth occurs in small amounts in a pure state and also combined with sulphur These metals form many alloys such as *type metal, anti-friction metals, white metal, babbitt metal, fusible metals,* etc. *Tartar emetic* and other antimony compounds are used in medicine and dyeing.	Antimony is produced in Germany, France, Italy, Hungary, United States, Japan, and other countries. Bismuth comes mainly from Bolivia and Australia. Some is produced in Saxony and England.	While the total amounts of these metals in use are relatively small, they are of high importance due to their peculiar properties. Our imports of antimony are mainly in the form of regulus or metal.
Nickel.—Fr. and Ger., *Nickel;* Sp., *Niquel.* **Cobalt** is found with nickel and forms pigments. Fr., *Cobalt;* Ger., *Kobalt;* Sp., *Cobalto.*	*Garnierite* (a silicate of nickel and magnesium) is the common ore. Magnetic iron pyrite (*pyrrhotite*) often carries several per cent of nickel. Sulphides and other compounds occur. *German silver* contains nickel, copper and zinc. It enters into other alloys.	In Ontario, Canada, nickel is found in pyrrhotite. Garnierite is mined in largest amount in New Caledonia. Norway produces other ores.	France and Germany refine nickel from imported ore, chiefly from New Caledonia. Nickel steel, being especially hard and tough, is used for armor plate, special machinery and wire rope. Nickel is extensively used for cheap electro-plating. Nickel and nickel oxide are exported to Holland and England from the United States and ores and matte are imported from Canada.

THE FOLLOWING METALS ARE LITTLE USED IN THE PURE STATE, BUT ENTER INTO THE COMPOSITION OF MANY USEFUL MINERALS

Metals	Ores and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Magnesium.—Fr., *Magnésium;* Ger., *Magnesium;* Sp., *Magnesio.*	The metal is used in flash powders for photographic use. *Magnesite* (magnesium carbonate) is used in making carbon dioxide gas and *epsom salts* and for preparing *magnesia* (calcined magnesia).	Chiefly mined in Austria, Germany and Greece.	Used in chemical manufacture, in fireproofing and lining furnaces. Imported into the United States.
	Dolomite (magnesium calcium carbonate) is common limestone, used for building.	Found in many parts of the world.	Calcined dolomite is used for lining iron furnaces.
	Talc (hydrous magnesium silicate), soapstone or steatite, is a soft mineral.	Mined in Maryland, Virginia, North Carolina, etc., and in Europe.	Made into laundry tubs, firebrick, hearthstones, griddles, slate and tailor's pencils, gas tips, etc. Imported in small amount from France and Italy.
	Meerschaum or sepiolite (magnesium silicate).	From Asia Minor and New Mexico.	Easily carved. Made into pipes and cigar holders in Austria and France. Largely imitated.
	Asbestos is a fibrous variety of serpentine (a magnesium silicate). *Mineral wool* is an artificial fibrous mineral.	Mined in Quebec, Canada. Another variety of asbestos comes from Italy. Mines recently discovered in Wyoming.	A fireproofing material. This mineral fiber is spun and woven into fireproof fabrics for theater curtains or made into felt building paper, pipe covering, etc.
Calcium (Fr., *Calcium,* Ger., *Calcium;* Sp., *Calcio*) has no commercial use in the metallic state. Its compounds, both natural and artificial, are of great economic importance.	*Limestone* (calcium carbonate) is a very common rock used for building. It may be of almost any color and coarse or fine in texture. *Marble* is a name applied to limestones suitable for polishing or ornamental work. *Mexican onyx* is translucent. *Chalk* is of peculiar soft texture; *whiting* is prepared chalk used to make putty and paints; *precipitated chalk* is similar.	Limestones are found and utilized in all parts of the world. In the United States, Pennsylvania, Illinois, Ohio, Indiana, New York and Missouri are the chief producers. Fine marbles are quarried in Italy, Egypt, France, Spain and Greece. Vermont, Georgia, Tennessee and New York supply the greater part of the marble used in the United States. Hydraulic and Portland cements are of enormous commercial importance, being used in concrete construction work. Europe and the United States produce large quantities. Pennsylvania is the leading state in this industry.	As building material, limestone is used everywhere. Lime is used in chemical industries and mortar. Handsome marbles are imported from Carrara, Italy, and other parts of Europe. Mexican onyx is also imported. Chalk comes mainly from the south of England. We export some Portland cement and import a little from Europe.
	Lime is made by burning (calcining) common limestone. *Portland* and *hydraulic cements* are prepared by calcining siliceous limestones or a mixture of limestone and clay. *Chloride of lime* (or bleaching powder), *acetate of lime, calcium carbide* and many other compounds are of industrial value.		Buildings (both shops and residences) are now being extensively constructed of cement—in the former case being reënforced by iron rods.
	Gypsum (hydrous calcium sulphate) is used in fertilizers (*land plaster*). *Plaster* is prepared by calcining (burning) gypsum. *Plaster of paris* is its purest form. *Alabaster* is compact white gypsum.	A common mineral mined in many parts of the world. Michigan, Kansas, New York, Ohio and other states produce it.	Fertilizers and plaster use up large quantities of this mineral. Plaster of paris is used for casts, decorative plaster work, cement, etc.
	Fluorite (calcium fluoride) is a less common mineral.	Mined in England, Kentucky and Illinois.	Used in chemical manufacture and as a flux for ores.
	Phosphate rock (chiefly calcium phosphate, is important in the preparation of fertilizers, and chemicals containing phosphorus.	Found in deposits of organic origin in South Carolina, Florida, Tennessee, the West Indies, Canada, Spain, France, Germany and England.	The natural phosphates are treated with sulphuric acid as a first step in the manufacture of phosphatic fertilizers. Exported in large amount to Germany, England and other countries.
Arsenic.—Fr., *Arsenic;* Ger., *Arsenik;* Sp., *Arsénico.*	*Arsenopyrite* (arsenic and iron sulphide), *orpiment* and *realgar* (sulphides of arsenic) are the sources of arsenic. *Arsenic* (white arsenic, arsenious acid or oxide of arsenic), *paris green* and other compounds and salts are prepared.	Germany, England, Canada the United States and Spain produce the ores. Chemical laboratories transform them into the useful compounds.	Sheep dip, rat poison, insecticides, embalming fluid, pigments and dyes are prepared with arsenic compounds. Arsenic salts are used in preparing certain coal-tar colors.

METALS—Continued

Metals	Ores and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Chrome.—Fr. and Ger., *Chrome;* Sp., *Cromo.*	*Chromite* (oxide of chromium and iron) is the only ore. *Bichromate of potash* is the most important compound.	Mined in Asia Minor, Greece, Canada, New Caledonia, California, etc. Salts are prepared in the chemical laboratory.	Bichromate of potash and chromic acid are used in tanning soft leather. A small percentage added to steel makes it very hard and suitable for burglar-proof safes, tools, etc. Salts of chrome are used for dyes and pigments (chrome yellow, chrome green).
Barium.—Fr., *Baryte;* Ger., *Barium, Baryt;* Sp., *Bario.*	*Barytes* or barite is a heavy white mineral (barium sulphate).	Mined in the United States and Germany.	A substitute or adulterant for white lead in paints and used in making oxygen.
Strontium.—Fr. and Ger., *Strontium;* Sp., *Estroncio.*	*Strontianite* (strontium carbonate) and *celestite* (strontium sulphate) contain this element.	Found in Germany, Scotland, Texas and New York.	Strontium salts are used in sugar refining and making red fire.
Potash (or potassium), an alkaline metal. Fr *Potasse;* Ger., *Kalium;* Sp., *Potasio.*	Chlorides, sulphates, etc., are found in Germany. Wood ashes and sugar beet refuse furnish much of the world's potash.	Stassfurt, Germany, possesses the only known large deposit of natural potash salts.	These salts are the source of potash in many chemical industries and in fertilizers. Exported in large amount from Germany to England, France and America.
Sodium (Fr., *Sodium;* Ger., *Natrium;* Sp., *Sodio*); is the most important alkaline metal.	*Salt* (rock salt, sea salt, lake salt, halite or sodium chloride) is the commonest natural compound of sodium. Important for food and in chemical manufacture.	Rock salt is mined in Germany, Austria, Spain, England, Louisiana, Kansas, India and other parts of the world. Obtained by evaporating salt water from wells in England, Michigan, New York, Ohio and China, or by evaporating salt water in the West Indies, Great Salt lake, etc.	Used for meat packing, curing fish, in silver refining, and the preparation of hydrochloric acid, soda ash, carbonate of soda, etc. The foreign trade in salt does not represent very large values.
	Soda niter (nitrate of sodium) is a very easily soluble mineral.	Found in quantity only in the deserts of northern Chili.	Exported in large amounts to Europe and America for fertilizer and the manufacture of nitric acid and other chemicals.
	Borax (hydrous sodium borate) occurs in nature in an impure form and is prepared also from calcium borates.	Borates are found in Tuscany, Central Asia, California and Nevada, and in South America.	Borax and boracic acid are used in pottery manufacture, for the preservation of meat, in dyeing and in medicine.
Rare Metals.—Tungsten, molybdenum; vanadium, uranium.	The ores of these metals are unusual minerals.	Found in Colorado, Arizona, Germany, England and Sweden.	Used in making special high grades of steel. Their salts are used in dyeing.
Thorium, cerium, lanthanum and yttrium.	Monazite, samarskite, thorite and other rare minerals contain these elements.	Found in North Carolina, Norway, Brazil and Ceylon.	Used in preparing the mantles for incandescent gas lights.
Lithium.	Lithium silicates are the source of this element.	Principally from South Dakota, California and Sweden.	In chemical laboratories converted into lithium carbonate for medicinal tablets and mineral waters
Radium.	Occurs with ores of uranium.	A newly discovered very rare element.	The chloride has peculiar properties and is used chiefly by physicians.

NONMETALLIC MINERALS

Mineral	Ores and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Sulphur.—Fr. *Soufre;* Ger., *Schwefel;* Sp., *Azufre.*	*Sulphur* or *brimstone* is found in a pure state in volcanic regions or associated with gypsum and limestone. *Pyrite* (sulphide of iron) is also a source of sulphur compounds.	Sicily, Italy, Japan, Louisiana and Utah have mines of native sulphur.	Used in manufacturing sulphuric acid, gunpowder, matches, as a disinfectant, for bleaching and vulcanizing rubber. Blue vitriol, green vitriol and alum are sulphates. Sulphur is imported from Sicily and Italy.
Quartz (silica) is of many varieties, crystalline to amorphous. Fr., *Quartz;* Ger., *Quarz;* Sp., *Cuarzo.*	*Rock crystal* is employed for lenses. Many semiprecious stones are varieties of quartz, as *agate, moss agate, onyx, sard, chalcedony, chrysoprase, jasper,* etc. *Rock flint, flint* and *quartz sand* are used in making glass and pottery. *Sandstones* of various colors are chiefly quarts.	Rock flint is mined in Connecticut and Pennsylvania. Flint comes from the chalk cliffs of England and France. Sandstones are quarried and used for building in almost all parts of the world. Pennsylvania, Ohio, and New York supply the greatest quantities in the United States. Honestones and whetstones are mostly sandstone, and in this country are largely quarried in Arkansas, Michigan and New Hampshire.	Outside of building stones, quartz is used in greatest amount in making glass and pottery. For glass it is melted with alkali (soda ash) and either lime or lead oxide. Glass is either blown or molded. Belgium, Austria, Germany, France, Great Britain and the United States manufacture glassware. Pennsylvania, Indiana and New Jersey are the leading states. Large amounts are imported by England and the United States.
Gems of many kinds are found in nature. Fr., *Pierres precieuses;* Ger., *Edelsteine;* Sp., *Piedras preciosas.*	These are nearly all transparent stones having brilliancy or beauty of color Aside from diamond, corundum and varieties of quartz, the following are important—*topaz, emerald, aquamarine, tourmaline, olivine, spinel, moonstone, opal, turquoise* and *garnet.*	Produced in many parts of the world. Siberia, Russia, Ceylon, India, Brazil, North Carolina and Montana are all important.	Cut and polished for use in jewelry. Much of this work is done abroad.
Mica is a common mineral found in rocks in many parts of the world. Fr., *Mica;* Ger., *Marienglas, Glimmer;* Sp., *Espejuelo.*	Several varieties occur (*muscovite, biotite,* etc.) Valuable only when found in large sheets which can be split smoothly.	Mined in India, Canada, North Carolina and South Dakota.	Transparent sheets are used for lamp chimneys and stove doors. Employed in electrical work, and lubricating. Imported from India.
Building Stones.—Fr., *Pierres de construction;* Ger., *Bausteine;* Sp., *Piedrasde construcción.*	*Granite, syenite, gneiss, basalt* and other hard or durable rocks.	Quarried for local use in all parts of the world.	Only stone of exceptional beauty is shipped to a great distance. Scotland, Norway, Massachusetts, Maine and other localities produce fine stones.

CARBON AND CARBON COMPOUNDS

Mineral	Forms and Chief Products	Locality and Preparation	Manufacture, Uses and Trade
Coal is the most important fuel. Fr., *Charbon de terre, houille;* Ger., *Kohle, Steinkohle;* Sp., *Carbon mineral.*	*Peat, lignite* and *brown coal* are poor in quality, retaining much appearance of vegetable origin. *Bituminous coal,* coking coal, non-coking coal, cannel coal, cherry coal, splint coal, gas coal, steam coal, etc., are all varieties of soft coal and contain a considerable percentage of volatile matter. *Anthracite coal* is almost pure carbon. By distillation, bituminous coal yields *gas, ammonia, coal tar* and *coke.* Coal tar products are numbered by the thousand. Among them are *naphtha, benzene, oil of mirbane, perfumes, flavors, drugs, saccharine, aniline* and other dyes, *phenol, carbolic acid, salicylic acid, napthaline, photographic developers, creosote, oils, tar* and *pitch.*	Coal is a result of the alteration of vegetable matter. Deposits occur in almost all parts of the world, but many are almost entirely undeveloped; as, for example, the coal fields of China. The largest production is in the United States, Wales, England, Germany, Austria, Russia and Australia. Mines are worked in India, Japan, Mexico, South America, South Africa, China and the Philippines. Pennsylvania, Ohio, West Virginia, Alabama, Indiana, Iowa and many other states mine coal in great amount. Pennsylvania produces nearly all of the anthracite and a large quantity of bituminous coal.	Bituminous coal is the fuel which runs the factories, railways and steamships of the world. The distillation of coal tar and the utilization of its numerous by-products, is one of the best examples of modern economy which turns waste material into useful products and large profits. Much coke is made without saving the by-products. The United States exports coal, both bituminous and anthracite to Canada and ships bituminous coal to Mexico, Cuba and other countries. Some coal is imported from British America. Great Britain has a large export trade in coal. Much of that shipped from Cardiff, Wales, is in the form of briquettes or blocks made by mixing small coal with pitch or tar and pressing it into shape.
Petroleum (or coal oil).—Fr., *Pétrole;* Ger., *Petroleum, Bergol;* Sp., *Petróleo.*	Petroleum or *coal oil,* in its crude state, is a dark colored liquid. It yields by distillation, first; light oils, *gasoline, naphtha, benzine;* second, *illuminating oils, kerosene, headlight oil,* etc.; third, *lubricating oils, engine oil, cylinder oil, machine oil;* fourth, *petroleum residuum* (for asphalt paving) and *coke. Petrolatum, vaseline* and *paraffin wax* are by-products in petroleum refining.	Obtained from wells in the United States, Russia, Dutch East Indies, Galicia, Roumania and other countries. More than half of the world's output is from the United States, the leading districts being (1) Kansas and Oklahoma, (2) California, (3) Illinois, (4) Pennsylvania and (5) Texas. Crude oil is transported from the wells for hundreds of miles through pipe lines to the refineries.	Probably no modern industry is more effectively organized and carried on than the petroleum business. There is no waste in the distillation of the crude oil and no part of it for which uses have not been found. In addition, the business of selling the oil is managed with the highest skill. American kerosene oil is exported to all parts of the globe. Crude oil is also exported as well as other petroleum products.
Asphaltum (or mineral pitch).—Fr., *Asphalte, Goudron minéral;* Ger., *Asphalt;* Sp., *Asfalto.*	A bituminous mineral substance found more or less pure, in some localities. *Rock asphalt* consists of sandstone or limestone impregnated with asphalt. Much asphalt is produced in refining certain grades of petroleum—such as those obtained in California and Texas.	The pitch lake of Trinidad and the Bermudez lake at the mouth of the Orinoco in Venezuela, are the largest known deposits of moderately pure asphalt. Smaller deposits of high grade occur in Utah, Cuba and the Barbadoes. Rock asphalts are mined in France, Switzerland, Sicily, California, Kentucky and Oklahoma.	For paving, rock asphalts are much used in Europe. Trinidad and Venezuelan asphalts are exported in large quantities to the United States and Europe. For paving, these lake asphalts are mixed with broken stone, sand and petroleum residuum. Pure varieties (gilsonite, marjak, glance pitch) are made into black varnish, used for insulating, etc.
Graphite is almost pure carbon. Fr., *Graphite;* Ger., *Graphit;* Sp., *Grafito.*	*Plumbago* or *black lead* is used in making crucibles, lead pencils, lubricants for heavy machinery, stove polish, foundry facings, paint, etc. *Artificial graphite* is made from coal or coke by an electric process.	Produced in Bohemia, Ceylon, Italy, Germany, Mexico and the United States. The deposits in Ceylon are the largest in the world. Much of that mined in New York and Alabama is of very high grade.	Powdered graphite is mixed with fine clay in greater or less proportion and then molded and baked to form such articles as crucibles and lead for pencils. Graphite is imported from Ceylon to the United States, and lead pencils from Europe.
Diamond is pure crystallized carbon. The hardest known substance. Fr., *Diamant;* Ger., *Diamant;* Sp., *Diamante.*	Many diamonds are transparent, colorless stones. Some are blue or yellow. Some stones (*bort* and *carbonado*) are unfit for gems but valuable for polishing or in diamond drills.	South Africa produces the bulk of the world's supply. These deposits are in rock. In Brazil and India a few diamonds are found in gravel. Most of those from Brazil are opaque and dark colored (carbonado).	The beauty of a diamond is largely due to cutting. The diamond cutting industry is centered in Amsterdam and Antwerp. Diamonds are imported to the United States mainly from Holland and Belgium after cutting. Carbonado is used in diamond drills. Diamonds are used in cutting glass and for grinding and polishing.
Amber is a fossil resin. Fr., *Ambre;* Ger., *Bernstein;* Sp., *Ambar.*		Found chiefly along the shores of the Baltic.	Used in making mouthpieces for pipes, cigar holders, beads, etc.
Carborundum.	Carbide of silicon. Harder than any known substance but the diamond.	Manufactured at Niagara Falls, by electrically heating a mixture of coke, sand and salt.	Used for making polishing powder, in grinding wheels, sharpening stones, abrasive cloth, etc.

MONEY, BANKING AND FINANCE.—Money comprises all things which every one accepts in exchange for his property and services and in exchange for which one can always procure the property and services of others which are on the market for sale. It includes coins made of gold, silver and copper, notes issued by banks, and, in the United States and some other countries, certain government notes.

Functions of Money may be described by the phrases *standard of value* and *medium of exchange.* By the former is meant that commodity in terms of which the value, or ratios of exchange, of commodities are measured and expressed. Gold is that commodity in the chief commercial countries of the world at the present time, and a certain definite portion of it, in the United States 23.22 grains, is declared by statute to be the unit of value and is given a special name, as the dollar, pound sterling, mark, franc, etc. By the medium of exchange is meant those things which *mediate,* or act as go-betweens, in exchanges. It includes coins made of the standard commodity, all other things included under the head money, and many things not ordinarily so included, such as bank deposits, some other book accounts, various devices for making payments used by express companies and post offices, private tokens, etc.

The Elements of the Medium of Exchange common to the leading countries at the present time may be classified as *standard coins, subsidiary coins* and *bank currency.* In some countries are also found certain special coins not classifiable either as standard or subsidiary, and certain *government notes.*

Standard Coins are those made from the commodity which serves as the standard of value, are minted freely or at a small charge for whoever brings metal of the proper standard to the mints, and are legal tender for all payments public and private.

Subsidiary Coins are usually made of silver with an intrinsic value below their face value, are redeemable in standard coins, are legal tender only for small amounts, and are minted in limited quantities on government account. Among special coins may be mentioned the United States silver dollar, the five-franc piece of France, Belgium, Switzerland and Italy, and the thaler of Germany. These are coins which possess full legal tender power in their respective countries, and are not directly redeemable in standard coins, but are either no longer coined at all or only coined from time to time in limited quantities under the authority of special laws.

The Government Notes referred to are usually noninterest-bearing promissory notes issued by governments in various denominations suitable for monetary purposes, and payable to bearer on demand. In the early stages of their history they are frequently not redeemable on demand in standard coins, and consequently depreciate in various degrees according to the likelihood of their redemption in a long or a short period, the fiscal condition of the government issuing them, and other circumstances.

United States Money.—The medium of exchange of the United States at the present

time, exclusive of its bank currency, consists of gold coins, silver dollars, silver half and quarter dollars and dimes, a nickel five-cent piece, a copper cent, gold certificates, silver certificates, greenbacks and Sherman notes.

Gold and Silver Certificates are issued, the former chiefly in large, and the latter in small denominations, by the treasury department in exchange for gold coins and silver dollars respectively, which are held for their redemption.

Greenbacks, also called United States notes, were first issued in 1862 and 1863 to assist in financing the Civil war. Until January 1, 1879, they were not redeemable in coin and were consequently depreciated. Since that time the Secretary of the Treasury has been obliged to redeem them in gold on demand, and for that purpose has kept on hand a gold reserve, which was fixed at $150,000,000 by the act of 1900. When redeemed, they can only be reissued in exchange for gold coin, and the total amount which may be issued under existing laws is $346,681,016.

The Sherman Notes were issued under authority of an act passed in 1890 providing for the purchase each month of 4,500,000 ounces of silver bullion at its market price, to be paid for in treasury notes, which were to be redeemable on demand in gold coin or silver dollars at the option of the Secretary of the Treasury.

In 1893 the silver purchase clause of this act was repealed, about $150,000,000 of the certificates having been issued to that time. The bullion accumulated in the vaults of the treasury under authority of this act was subsequently coined by authority of law, silver certificates issued, and, by authority given in the act of 1900, gradually substituted for the Sherman notes, less than $1,000,000 of which still remain in circulation.

MONETARY SYSTEM OF THE UNITED STATES AS AT PRESENT CONSTITUTED

I. Gold, Silver and Minor Coins

	Gold Coin	Standard Silver Dollars	Subsidiary Silver Coin	Minor Coin
Weight	25.8 grains to the dollar.	412.5 grains	385.8 grains to the dollar	5 cent piece: 77.16 grains, 75 per cent copper, 25 per cent nickel. 1 cent piece: 48 grains, 95 per cent copper, 5 per cent tin and zinc.
Fineness	900-1000.	900-1000.	900-1000.	
Ratio to gold		15.988 to 1.	14.953 to 1.	
Limit of issue	Unlimited.	Coinage ceased in 1905, resumed in 1921.	Needs of the people.	Needs of the people.
Denominations	$20, $10, $5, $2½.	$1.	50 cents, 25 cents, 10 cents.	5 cents, 1 cent.
Legal tender	Unlimited.	Unlimited, unless otherwise contracted.	Not to exceed $10.	Not to exceed 25 cents.
Receivable	For all public dues.	For all public dues.	For all dues up to $10.	For all dues up to 25 cents.
Exchangeable	For gold certificates, as below, and subsidiary and minor coin.	For silver certificates and minor coin.	For minor coin.	
Redeemable			In Lawful money at the treasury in sums or multiples of $20.	In lawful money at the treasury in sums or multiples of $20.

II. Paper Currency

	Gold Certificates	Silver Certificates	United States Notes	Treasury Notes of 1890	National Bank Notes	Federal Reserve Notes	Federal Reserve Bank Notes
Limit of Issue	Unlimited for gold coin unless gold reserve falls below $100,000,000.	Amount of silver dollars coined, $562,173,530.	$346,681,016.	No further issues; volume steady diminishing by redemption in silver dollars.	Not to exceed capital of banks.	Unlimited, not to exceed collateral deposited.	Unlimited, not to exceed collateral deposited.
Denominations	$10,000, $5,000, $1,000, $500, $100, $50, $20, $10.	$100, $50, $20, $10, $5, $2, $1.	$1,000, $500, $100, $50, $20, $10, $5, $2, $1.	$1,000, $500, $100, $50, $20, $10, $5, $2, $1.	$1,000, $500, $100, $50, $20, $10, $5.	$10,000, $5,000, $1,000, $500, $100, $50, $20, $10, $5.	$1,000, $500, $100, $50, $20, $10, $5, $2, $1.
Legal tender		Not a tender.	For all debts, public and private, except customs and interest on public debt.	Unlimited, unless otherwise contracted.	Not a tender.	Not a tender.	Not a tender.
Receivable	For all public dues.	For all public dues.	For all public dues.	For all public dues.	For all public dues except customs.	For all public dues.	For all public dues except customs.
Exchangeable	For subsidiary and minor coin.	For silver and minor coin.	For subsidiary and minor coin.	For silver and minor coin.	For subsidiary silver and minor coin.	For subsidiary and minor coin.	For subsidiary silver and minor coin.
Redeemable	In gold coin at the treasury.	In silver dollars at the treasury.	In gold at the treasury.	In gold or silver at the treasury.	In lawful money at the treasury, or at bank of issue.	In gold at the treasury or at any Federal Reserve Bank.	In lawful money at the treasury, or at the bank of issue.

COINAGE OF THE UNITED STATES, 1792-1926

Denomination	Pieces	Values
GOLD		
Double eagles	168,820,856	$3,376,417,120.00
Eagles	52,811,985	528,119,850.00
Half eagles	78,249,869	391,249,345.00
Three-dollar pieces (coinage discontinued under act of September 26, 1890)	539,792	1,619,376.00
Quarter eagles	19,222,833	48,057,082.50
Dollars (coinage discontinued under act of September 26, 1890)	19,499,337	19,499,337.00
Dollars, Louisiana Purchase Exposition (act of June 28, 1902)	250,258	250,258.00
Dollars, Lewis & Clark Exposition	60,069	60,069.00
Total gold	339,454,999	$4,365,292,437.50
SILVER		
Dollars (coinage discontinued, act of Feb. 12, 1873, resumed act of Feb. 28, 1878)	843,826,021	$843,826,021.00
Trade dollars (discontinued, act of Feb. 19, 1887)	35,965,924	35,965,924.00
Dollars (Lafayette souvenir, act of March 3, 1899)	50,026	50,026.00
Half dollars	455,621,800	227,810,900.00
Half dollar (Columbian souvenir)	11,310,170	5,655,085.00
Quarter dollars	604,154,341	151,038,585.25
Quarter dollars (Columbian souvenir)	40,023	10,005.75
Twenty-cent pieces (coinage discontinued act of May 2, 1878)	1,355,000	271,000.00
Dimes	1,278,356,797	127,835,679.70
Half dimes (coinage discontinued, act of February 12, 1873)	97,604,388	$4,880,219.40
Three-cent pieces (coinage discontinued, act of Feb. 12, 1873)	42,736,240	1,282,087.20
Total silver	3,371,020,730	$1,398,625,533.30
MINOR		
Five-cent pieces, nickel	1,401,129,862	$70,056,493.10
Three-cent pieces, nickel (coinage discontinued, act of September 26, 1890)	31,378,316	941,349.48
Two-cent pieces, bronze (coinage discontinued, act of September 26, 1890)	45,601,000	912,020.00
One-cent pieces, copper (coinage discontinued, act of February 21, 1857)	156,288,744	1,562,887.44
One-cent pieces, nickel (coinage discontinued, act of April 22, 1864)	200,772,000	2,007,720.00
One-cent pieces, bronze	5,252,120,427	52,521,204.27
Half-cent pieces, copper (coinage discontinued, act of February 21, 1857)	7,985,222	39,926.11
Total minor	7,095,275,571	$128,041,600.40
Total coinage	10,805,751,300	5,891,959,571.20

Silver-dollar coinage under acts of April 2, 1792, $8,031,238; February 28, 1878, $378,166,793; July 14, 1890, $187,027,345; March 3, 1891, $5,078,472—total $578,303,848.

The Medium of Exchange of other Countries, exclusive of their bank currency, resembles that of the United States in most essentials, but differs from it in some particulars.

Canada.—That of Canada approximates it most closely, the unit of value being the same, and government notes playing an important role. The gold coins of both England and the United States, however, are there current, and the governor-general may declare other gold coins legal tender at their bullion value.

England has a large unit of value, consisting of 123.274 grains of standard and 113.001 grains of pure gold, which is represented in a coin called the *sovereign*. Its silver coins are all subsidiary, the shilling weighing 87 3/11 grains 0.925 fine, being the unit among them and having a tale value of one-twentieth of a sovereign. The penny and the farthing are minor coins of copper having tale values respectively, of one-twelfth and one-forty-eighth of a shilling.

Only during and since the World War have government notes constituted an element of the English currency.

England's currency was inconvertible until 1925 when the gold standard was resumed. The par value of the sovereign is $4.8665 in United States currency.

France, Belgium, Switzerland, and Italy prior to the war had the so-called franc system, the franc consisting of 4.978 grains of standard and 4.4802 grains of pure gold, being the unit (par value 19.30 cents U. S. currency). In these countries all the silver coins were subsidiary, except the five-franc piece which in its status closely resembles the silver dollar of the United States. It contains 385.8 grains of standard and 347.22 grains of pure silver, and from 1865

to 1878 they were coined in limited quantities for government account only, but since the latter date their coinage has been suspended. However, they still remain legal tender at their tale value for all amounts.

All of these countries suspended specie payments shortly following the outbreak of the World War. The Swiss franc, however, depreciated very little. In October, 1926, the Belgian government established a new unit of currency, the Belga with a fine gold content of 0.209211 grams (par value in U. S. currency of 13.90 cents) and a fixed relation to the Belgian paper franc of 5 to 1, making the latter worth 2.78 in United States currency. In 1927, France and Italy still had inconvertible paper currency, the French franc being worth approximately four cents and the Italian lira about five cents in United States currency.

Germany makes the mark its unit, consisting of 6.1457 grains of standard gold. All silver coins are subsidiary except the thaler. The silver mark weighs 85.733 grains, and all subsidiary coins are legal tender only in payments of twenty marks or less. The thalers are remnants of the old currency systems in use before the foundation of the empire and are legal tender for any amount. Imperial treasury notes constitute a small element of the currency of the empire.

During the war Germany's currency became inconvertible and in 1923 it was practically worthless. Later one trillion of the old marks were exchanged for one of the new marks issued by the Reichsbank established under the Dawes plan. The gold content of the new mark is the same as that of the old.

Banks.—The largest element of the medium of exchange of commercial nations is supplied by banks, which also frequently perform other important financial functions, such as the encouragement of saving, the purchase and sale of securities, the promotion of industrial enterprises and the execution of trusts of various kinds. Their most fundamental operations are *the conduct of deposit accounts* and *the making of loans and discounts.*

Deposits are credits on the books of a bank obtained by business men and others by the sale to the bank of their surplus cash, their own personal notes, and of credit instruments representing payments due them from other people. These credits give the customer the right to call upon the bank for legal tender money or for a transfer to the credit of some other person of all or some part of the amount due him.

Some, known as *demand deposits*, give the right to demand payment at any time without notice, and others, known as *time deposits*, only after the lapse of a certain time from the date of demand.

Check.—In making use of his rights the customer employs the *check*, which is a written order to the bank to pay to bearer or to the order of a specified person a specified sum.

Loans and Discounts.—The personal notes and bills of exchange payable at some future date received by the bank in return for credits allowed or cash advanced are usually described in bank accounts as *loans* and *discounts.*

Bank Notes.—Instead of opening credit accounts or advancing legal tender money to its customers a bank having the authority may *issue notes*—that is, transfer to them its promises to pay to bearer on demand—in denominations convenient for use as money. To the bank these notes represent obligations of the same kind as deposits, but to the customer they serve as hand-to-hand money and may be substituted for government notes, and, for many purposes, for coin.

Banking Processes.—Through the processes involved in *loaning, discounting, conducting deposit accounts,* and *issuing notes,* banks perform a large part of the world's exchanges, in the United States the major part. Nearly all business men and a large percentage of other people are their customers.

Purchases of goods are generally made on time, the credit instruments, such as personal notes and bills of exchange, which represent the obligations thus created, are discounted by the banks, and deposit accounts opened against them. By transfers of these from one person to another the mutual indebtedness created by purchases and sales on credit are canceled and the transactions thus completed and closed.

Profits.—The interest on the discounted notes and bills, which it has purchased by credit accounts bearing no interest or a lower interest than is charged on loans or by notes, is the chief source of a bank's profits.

Exchange.—In the conduct of their business banks find themselves each day in the possession of checks, drafts and other bills of exchange drawn on other banks in the same or other cities.

Clearing Houses.—In order to collect those drawn on banks located in the same town clearing houses have been organized in all large and in many small cities. These are places at which clerks of the various banks meet for the purpose of exchanging checks, drafts, etc., and settling mutual obligations.

Correspondents.—For the collection of paper drawn on out-of-town banks and the supply of their customers with the means of meeting out-of-town payments, banks usually employ what are known as correspondents. These are banks in commercial and financial centers with which they arrange to have credited the amounts of checks, drafts, etc., sent for collection, and debited the drafts drawn in favor of their customers.

Through this correspondence system the banks of the entire commercial world have been organized into a great machine for the conduct of commerce, business men anywhere being able through their banker to make payments in any part of the world or to receive amounts due them.

Through it, also, the mutual indebtedness of the people of different cities, states and nations, created by mutual trade, investments, and other financial operations, are canceled in substantially the same manner as those between citizens of the same place are canceled by local banks and clearing houses.

Bank Balances.—The aggregates of the debits and credits which the banks of a place have with their correspondents represent with a considerable degree of accuracy what the people of the place owe to outsiders and what outsiders owe to them. The balance between these aggregates may be great or small, in favor of the banks or against them, and their payment, if demanded, must be accomplished by the shipment of money. If payment is not demanded the banks will ordinarily pay interest on adverse balances and receive interest on favorable ones. The banks are thus put to expense whenever the balance is against them and are making a profit whenever it is in their favor. In the first case, in order to indemnify themselves, they must charge a premium on drafts on out-of-town places, and in the second case they can afford to sell drafts at a discount, provided they can make more out of their funds at home than the interest allowed on their balances with correspondents.

Rate of Exchange.—This premium charged or discount allowed on drafts is known as the *rate of exchange.* If a premium is charged, *exchange is said to be at a premium;* if a discount is allowed, it is *said to be at a discount.*

The rate of exchange at a given time is fixed by a process of bargaining between either the banks of a place which have favorable balances with correspondents and therefore desire or are willing to sell exchange, and those which have unfavorable balances and consequently desire or are willing to buy exchange, or, in case all the banks are in the same situation as regards the condition of their balances, between the banks and those of their customers who want exchange.

Foreign Exchange.—In the foreign exchange, between countries having the same standard, the so-called *par of exchange* must be calculated; that is, the exact equivalent of the unit of one nation in terms of the other. Between the United States and other nations this calculation consists of dividing the number of grains of pure gold contained in the foreign unit by 23.22, the number of grains of pure gold in our dollar.

Between countries having different standards—for example, between gold and silver standard countries—the place of the par of exchange is taken by the relative market values of the two metals. If one or both of the nations have a secondary standard its depreciation must be calculated as well as the par of exchange or the relative values of the metals constituting their primary standards.

The rates of exchange between foreign countries fluctuate above or below the par of exchange or the substitute for it as the domestic rate fluctuates above and below the par value of domestic drafts. Between gold standard countries the upper and lower limits of these fluctuations are determined by adding to and subtracting from the par of exchange the cost of obtaining and shipping gold, and are called the *gold points.*

Foreign exchange during and since the war is discussed below under the title "Inconvertible Notes and Government Budgets."

Foreign Drafts are drawn by parties of various degrees of financial reputation and are made payable at different dates. Accordingly the element of interest enters into the calculation of their market values and consequently into the prices at which they are quoted.

When a New York banker sells a cable there is no appreciable interval between the time at which his balance with his foreign correspondent is diminished by the amount drawn, but when he sells a *sixty-day* draft he receives the pay for it at the date of sale and still draws interest on the total amount of his balance for sixty days, the draft not being payable until after the lapse of that period of time.

Leaving out of consideration, therefore, the cost of the cablegram, he could afford to sell a sixty-day draft at the price of a cable, minus interest, on the amount for sixty days at the rate received on balances with his correspondent.

Classes of Banks.—From the standpoint of the *source* of their authority to do business, banks in the United States may be classified as national, state and private,

according as they are chartered by Congress or by state legislatures, or operate without charters under the authority of the common law.

In the first group (chartered by Congress) belong the National, Federal Reserve, Federal Land, and Federal Intermediate Credit Banks, and in the second (State chartered) belong State and Savings Banks and Trust Companies. Private banks without special charters are prohibited in some states but permitted in others.

On the basis of their *functions* banks may be classified as commercial and investment banks and trust institutions; the first group playing an essential role in the exchange of commodities and services and supplying the greater part of the medium of exchange; the second serving as intermediaries in the assembling and the investment of the savings of individuals; and the third administering trusts of many kinds—such as the estates of deceased persons, of living persons who are unable or unwilling to administer them for themselves, and of charitable, educational and other institutions, acting as financial agents for corporations, states and municipalities and promoting and financing new enterprises, especially combinations, mergers and trusts.

The National Federal Reserve, State and some private banks primarily perform commercial banking functions but combine investment and sometimes trust banking with them, while the Federal Land Savings and most private banks are primarily investment institutions, and Trust companies are primarily trust and investment institutions, sometimes, when the law of the state in which they are located permits, combining commercial banking functions with these.

Banking Laws.—The laws governing the different classes of institutions are not uniform throughout the United States, although a tendency towards uniformity is observable in recent legislation.

The Federal Reserve, Federal Land, and Federal Intermediate Credit Banks were created by special acts of Congress, passed respectively in 1913, 1916, and 1923, and the National Banks by an act passed in 1863.

Several amendments to these laws have been passed since their original enactment. Under the authority of the National Banking act and its amendments, several thousand National Banks have been incorporated and are now in operation. From time to time our states have enacted and amended general laws under the authority of which thousands of State Banks, Savings Banks, and Trust Companies have been established and are regulated and administered.

The Federal Reserve act and amendments provide for twelve Federal Reserve Banks and the machinery for their administration and control, and the Federal Farm Loan act for a like number of Federal Land banks and an indefinite number of Joint Stock Land Banks.

The characteristic features of National Banks, as determined by the laws at present in force, are: A minimum capitalization of $25,000 in towns of small size and of correspondingly larger amounts in larger cities; the right to issue notes on the security of certain specified classes of government bonds deposited with an officer known as the Comptroller of the Currency; the maintenance of a percentage of deposits as reserves, this percentage varying in size according as the bank is located in so-called country towns, reserve cities or central reserve cities; limitations of the amount as the reserves required by law, amount and kinds of real estate mortgages which may be purchased, and of the amount that may be loaned to any single firm or person to ten per cent of the bank's capital and surplus; five detailed reports per annum to the Comptroller of the Currency, at times specified by him, and examinations by officers appointed by him; and the requirement that each bank must subscribe to the capital stock of the Federal Reserve Bank of its district an amount equal to six per cent of its own capital.

State Legislation.—The legislation of the various states regarding commercial banks is far from uniform, but the national banking code has served as a model in many cases. The chief differences between the rights and privileges of the two classes of institutions are the following:

(1) State Banks do not issue notes chiefly because the National Government levies a tax of 10 per cent on such notes and sometimes also because such issues are prohibited by law.

(2) In most states commercial banks with a capital stock as small as $10,000 are permitted and in a few no minimum is prescribed.

(3) The laws of most states are more liberal than the national banking code in the matter of real estate loans and in that of the amount permitted to be loaned to a single firm or individual.

The laws regarding Savings Banks differ somewhat according as the institution belongs to the mutual or the stock class, but usually limit their investments to certain specified classes of securities, limit the amount of deposits in the name of a single individual, and permit the bank to require a certain number of days' notice of the depositor's intention to withdraw deposits.

Legislation regarding trust companies is changing rapidly. The tendency in some states now is to require them to segregate the different branches of their business and to conform to the laws regulating institutions which specialize in each branch; for example: to the laws regarding Commercial Banks in the management of their strictly commercial business, to those regarding Savings Banks in their savings business, etc.

The Banking System of the United States.—Under the operations of these laws the banking institutions of the country have been organized into a system, the machinery of which may be briefly described as follows:

The country is divided into twelve districts, in each of which is located a Federal Reserve Bank. A board of seven persons, consisting of the Secretary of the Treasury, the Comptroller of the Currency (the executive head of the national banking system) and five other persons appointed by the President, with offices at Washington, exercises important administrative and controlling powers over these banks. With the Federal Reserve Bank of each district, through stock ownership and in other ways, are affiliated all the National Banks located in the district and such State Banks and Trust Companies as have elected to become so affiliated, such affiliated institutions being known as *member banks*. *Non-member banks* are indirectly connected with the Federal Reserve system through affiliation with member banks, which serve as their correspondents and reserve agents.

For their member banks each Federal Reserve Bank serves as reserve and collection agent and rediscounts certain kinds of commercial paper. Service as reserve agent means that balances of member banks with the Federal Reserve Bank of their district which in the case of banks in New York, Chicago, and St. Louis, known as central reserve cities, must amount to at least 13% of their demand deposits, in that of banks in more than fifty other large and moderate sized cities, known as reserve cities, to 10% of their demand deposits, and in that of other banks, known as county banks, to 7% of their demand deposits. All member banks must keep an additional reserve amounting to at least 3% of their time deposits.

As collection agent each Federal Reserve Bank collects for its member banks at par "checks drawn on all member and clearing member banks" (certain non-member banks admitted to the system for clearing purposes only) "and on all other non-member banks which agree to remit at par through the Federal Reserve Bank of their district." This process of check collection involves the interchange between the Federal Reserve Banks of checks received by each one drawn on banks in the other districts, the balances being debited or credited to each bank, as the case demands, by the Federal Reserve Board at Washington on an account established by each bank by the deposit with this board of a fund of gold known as the "gold clearance fund."

Commercial paper discounted by a member bank for its customers which conforms to certain requirements prescribed by law and the regulations of the Federal Reserve Board may be rediscounted at the Federal Reserve Bank of its district at rates prescribed by the Federal Reserve Board.

The Federal Reserve Banks also serve as depositories and as disbursing and financial agents for the Federal Government. Funds received by the Government from taxes, sales of securities, or any other source may be deposited with the Federal Reserve Banks and credited to its account, and payments may be made by checks drawn against and debited on these accounts. The Government may also deposit funds with National Banks, but to an increasing extent it is using for this purpose the Federal Reserve Banks, which may also be called upon to perform other financial services for the Government, such as the sale of bonds, the payment of coupons, etc.

In order to perform these services for member banks and the Federal Government, the Federal Reserve Banks have been equipped with certain powers, among the most important of which is the right to issue notes and to conduct certain open market operations. With the consent of the Federal Reserve Board, any Federal Reserve Bank may deposit with one of its officers, known as the Federal Reserve Agent, commercial paper which it has rediscounted for its member banks and gold or gold certificates, and issue notes known as *Federal Reserve* notes, to the par value of the security deposited, provided a gold reserve amounting to at least 40% of the amount issued be held by the bank. Another kind of note, known as *Federal Reserve Bank* notes, may be issued by Federal Reserve Banks on conditions identical with those under which National Banks are permitted to issue notes, namely the deposit with the Comptroller of the Currency of certain classes of bonds of the Federal Government.

While the Federal Reserve Banks do not conduct checking accounts and transact other kinds of banking business with private persons and corporations, they are permitted to buy and sell upon the open market certain carefully specified and defined classes of securities, among the most important of which are those issued by the Federal Government, and high grade bills of exchange.

The McFadden amendments to the Federal Reserve Act passed in 1927 were designed to put National Banks in a position of competitive equality with State Banks in regard to branch banks and real estate loans.

Operation of the System.—The commercial banking business of the country is performed through this machinery in substantially the following manner: Private persons and corporations, states, municipalities and other local political bodies, as well as innumerable associations of other kinds, deposit their current funds with local banking institutions and sell them their own promissory notes and the other forms of commercial paper which regularly comes into existence in the transaction of the commerce of the country, and are credited with the amounts deposited and the proceeds of these sales on so-called checking accounts. They make their disbursement by drawing checks against these banks which are debited on these accounts. For these checks they receive hand-to-hand money, if that is what they need, or drafts on banks in other cities, if they have out-of-town payments to make, or send them directly to their creditors, who deposit them in their own banks for collection and crediting to their accounts. Local banks thus become responsible for the supply of their communities with the hand-to-hand money required and with the loans needed to carry on current commercial processes.

The banks in each locality conduct checking accounts with banks in the reserve and central reserve cities and, if they are members of the Federal Reserve system, with the Federal Reserve Banks of their respective districts, through the use of which they collect the checks on out-of-town institutions received from their customers, supply their own cash needs and dispose of surplus cash. If at any time their balances on these out-of-town checking accounts are exhausted or approach exhaustion, they replenish them through rediscounts of paper purchased from their customers, or through loans on security of their own paper.

The responsibility for the distribution of the cash resources of the entire country and for the adjustment of the total volume to its changing needs as well as for the intra and inter-district clearing of the vast volume of checks used in the transaction of the country's business and for the smooth running of its commercial credit machinery rests upon the Federal Reserve Banks. They serve as central reservoirs, into which regularly flows surplus cash from every part of the country and from which regularly are supplied the needs of localities in which there is a shortage. Adjustments of the total volume of hand-to-hand money to meet the changing needs occasioned by seasoned and other fluctuations are made through the issue and retirement of Federal Reserve notes. The need for an increase in their volume shows itself in the first place in the form of the presentation for discount at the local banks of an increasing volume of commercial paper, a portion of which in turn is sent for rediscount to the Federal Reserve Banks. Against these rediscounted notes and bills of exchange Federal Reserve notes are issued and sent to the local banks and through them to their customers. When the need which occasioned the increase disappears or decreases, these notes accumulate in the local banks, having been deposited by customers who do not need them, are returned to the Federal Reserve Banks in payment of the matured commercial paper they have rediscounted, and for other purposes, and are cancelled and retired.

Through the rediscount of commercial paper for member banks the Federal Reserve Banks make it possible for local institutions to discount the commercial paper of their customers and make loans to them in other forms and thus to meet their commercial credit needs.

Additional Machinery for Investment Banking.—In the assembling and investment of the savings of the people of the United States, besides the commerical banking machinery, function the Federal Land and Joint Stock Land Banks, Farm Loan Institutions chartered by some of the states, a large and increasing number of Trust Companies, and Savings Banks, Insurance Companies, a large number of private banks, bond and mortgage houses, brokerage firms and stock exchanges. The Federal and State Farm Loan Banks and some other institutions aim primarily at obtaining

capital to loan to farmers for agricultural purposes, chiefly through the sale of bonds to the investing public and the loan of the proceeds to farmers on the security of mortgages on their property. Insurance companies invest in the same form of security large amounts of the premiums they collect on the policies they issue. Commercial and Savings Banks, Trust Companies and many private banks receive savings deposits from their customers and invest them in bonds, mortgages and other investment securities. Brokers and bond houses serve chiefly as middlemen and distributing agents.

Stock exchanges are organizations of brokers and other dealers in securities to facilitate the purchase and sale of the bonds and stocks of railroad, public service, industrial and public corporations. They consist of offices located in the financial districts of large cities like New York, Chicago, Boston, and Philadelphia, equipped with telephone and telegraph instruments which connect them with similar institutions in all parts of this and other countries, and with brokers' offices, banks, Trust Companies and other institutions directly in touch with the people who save and invest, and open at regular hours on week days for the meeting of brokers who execute orders for purchase and sale received from customers. The operations of the New York exchange extend to all parts of the country and to Europe, while those of the other exchanges are more restricted in scope.

European Banking Systems.—European banking systems differ from ours in the peculiarities both of the constituent institutions and of the central banking machinery.

The English, French and German systems, for example, consist of a relatively small number of large banks, each with many branches scattered throughout the country, a single central bank, also with branches, and numerous institutions of a more or less specialized character. The chief English institutions are the Bank of England, whose beginning dates back to the end of the seventeenth century; several large so-called joint stock and private banks, foreign and colonial banks and discount firms and companies. The French system is headed by the Bank of France, which was established at the beginning of the nineteenth century by the first Napoleon with which are associated five very large incorporated banks, with numerous branches scattered throughout France and several other countries, provincial, foreign and colonial banks. In Germany there is the new Reichsbank, the successor to the Imperial Bank, established in 1875. In addition to this central note issuing institution there are branches and small local, commercial, mortgage and cooperative banks.

In the performance of commercial banking functions the chief peculiarities of these foreign systems appear in the organization and operations of their central banks and in the relations of these with the other institutions.

The Bank of England.—In its ownership and management the Bank of England is a private institution and the laws passed by Parliament for its regulation and control leave wide scope for the exercise of intiative and judgment by its officers and board of directors. The privilege of issuing bank notes in England, while to a very limited extent shared with a small number of other institutions, is practically confined to this one. It is limited, however, in such a manner as to render the issues inelastic. The law required that beyond the relatively small amount of 18,450,000 pounds, which may be issued against public securities, every note must be backed pound for pound by coin or bullion. This means, of course, that the notes practically replace an equivalent amount of coin when they are issued, and restore the same amount to circulation when they are retired, thus leaving the total volume of the circulating medium of the country unchanged.

The vaults of the Bank of England constitute the central cash reservoir of the British Isles. Other banks as a rule carry in their vaults only a sufficient amount of cash to supply the daily needs of their customers, depending upon other London banks, and ultimately upon the Bank of England, for additional supplies when needed, and shipping surplus accumulations to them and finally to the Bank of England. Through the conduct of checking accounts with these other banks and the discount for them of short-time commercial paper in case of need the bank places these cash resources at their disposal and distributes them throughout the country as needed.

On account of the large volume of foreign commerce conducted by Englishmen for centuries the city of London has become the chief market in the world for foreign bills of exchange, and the Bank of England has acquired a unique position in the distribution of the cash resources of the world. By raising its rate of discount, and through it the market rate in London, it may attract funds from every financial center in Europe and even from the United States, and by lowering its rate may turn the stream in the opposite direction. It is through the exercise of this unique power that it is able to render the total volume of the English currency responsive to business needs and elastic. The Bank of England also serves as depository, disbursing and fiscal agent for the English government.

The London Stock Exchange.—The London Stock Exchange also occupies a unique position in the investment markets of the world. Before the world war it regularly dealt in a larger variety and volume of foreign securities than any other exchange in the world, and, while since then its relative importance has considerably decreased, no other exchange has as yet succeeded to its unique position. It still serves as an international distributor of investment funds.

The position of London is, however, being threatened by New York, due to the large investments of American funds abroad, and the New York Stock Exchange is now planning to list foreign securities.

The Bank of France and the Imperial Bank of Germany (Reichsbank).—The bank of France and the old German Reichsbank (1875) were privately owned and controlled by officers directly or indirectly appointed by their governments. With the dissolution of the old Imperial Bank in October, 1924, the assets being assumed by the New Reichsbank, the control of the Federal Government over the bank was removed. The new bank is an autonomous institution independent of the German government, is located in Berlin and its name is unchanged. Both the Reichsbank and the Bank of France are endowed with the right to issue notes against commercial securities and thus have the power to supply an elastic element to the currencies of their respective countries. Both conduct checking accounts, rediscount commercial paper and make advances to other banks and thus serve as the distributors of the cash resources of their respective countries. Through changes in their discount rates both exercise a considerable degree of control over the expansion and contraction of credit by other banks. Both serve as depository, disbursing and fiscal agents for their respective governments.

Effects of the World War.—The World War threw the financial machinery of the world into a state of disorder unparalleled in modern times. This was accomplished chiefly through the suspension of specie payments throughout Europe, the issue of huge quantities of inconvertible government and bank notes, an enormous increase in the total indebtedness of all belligerent and most neutral countries, and the dissolution of old and the creation of new government units.

Suspension of Specie Payments.—Soon after it became known that the Archduke Francis Ferdinand was assassinated and that steps were being taken by the Austrian government which might lead to war, the Austrian public began to sell securities on the Vienna stock exchange. The sales were so heavy that the stock exchange closed on July 27th, other continental exchanges following a few days later. The London Stock Exchange closed on July 31st and New York followed the same day. The central banks, however, found it necessary to take steps to prevent a panic. Gold was disappearing from circulation and depositors were demanding more of the yellow metal. The Bank of England on July 30th raised its discount rate to 6 per cent on July 30, the next day to 8 per cent; and on August 1st to 10 per cent. The Bank of France, the Imperial Bank of Germany, the Bank of the Netherlands, the Bank of Belgium, the Austro-Hungarian Bank, the Bank of Norway and the National Danish Bank followed a similar course. In addition most countries declared a moratorium for financial obligations. The scarcity of gold and the uncertainty of conditions soon lead to a suspension of specie payments, and the nations of Europe were to experience again the devastating effects of inconvertible paper currency. The gold was left intact in the vaults of the banks except when needed by the various governments to ship abroad in payment of much needed supplies. Ordinary trade was disrupted and each country reorganized so as to make full use of its resources for the struggle.

Inconvertible Notes and Government Budgets.—The expenses of the war constituted a heavy drain on the treasuries of the warring nations. This was met by levying taxes, selling bonds, and issuing inconvertible currency. The Central banks were required by the governments to make additional loans. The rapid depreciation of the currencies, however, did not begin until the postwar period.

The English pound, though inconvertible, did not depreciate to the extent of other currencies. During the period 1916-1919, exchange rates were "pegged" at $4.76 and fluctuations one way or the other were slight. Early in 1919 when artificial stabilization was discontinued, exchange rates on London fell rapidly, going as low as $3.33. The increased gold holdings of the Bank of England and the retirement of its notes made possible a return to the gold standard in 1925. On the whole, England has escaped the worst ravages of an inconvertible currency, though she still suffers from the disorganization of world markets.

On August 5th, 1924, the legal maximum limits of note issues of the Bank of France was raised from 6.8 billion to 12 billion francs. This limit was gradually increased until it reached 43 billion on July 31st, 1920. Since that date it has been decreased. Exchange rates on France fell rapidly during 1915 and reached a low point in April, 1916, of about 16½ cents. During most of the war the franc was worth approximately 17 cents. In March, 1919, the franc was "unpegged" and immediately there began a precipitous fall. From over 18 cents in March, 1919, the franc fell to less than 6 cents in April, 1920. In March, 1924, it reached the low point of about 3½ cents, much the lowest point that the franc had ever touched since the days of the assignats at the time of the French Revolution. The French have attempted to balance their budget but as yet have not returned to the gold standard.

At the outbreak of the Great War, Italy was still on an irredeemable paper basis as a result of the suspension of specie payments in 1893. However, the paper circulation was covered by approximately 60% gold reserve. Immediately upon the outbreak of the war the maximum note issue limits of the issuing banks was increased. Subsequent issues brought the total from about 2,500,000,000 lire in 1914 to about 22,000,000,000 lire in 1920, since which time it has gradually declined. Some of these issues were for state and other for business purposes. Prices and exchange rates rose and fell accordingly. As in the case of Britain and France, the exchange rate was pegged for the lira until 1919. When the artificial support was withdrawn the lira fell from 19 cents to less than 4 cents in April, 1920, around which point it has fluctuated since. As yet, Italy has not returned to the gold standard.

Germany furnishes perhaps the best example of the disastrous effects of the issue of inconvertible currency. In 1914 the Reichsbank had about 2,000,000,000 marks of notes outstanding. Although the government resorted to taxation, there was a deficit of 134,000,000,000 marks for the period—April 1, 1914, to March 31, 1919. To cover its constant deficits the Government issued long term loans amounting to 97,000,000,000 marks and borrowed the rest from the Reichsbank. The demands of the Treaty of Versailles for reparations payments increased the budget deficit although efforts were made by the new government to increase revenues by taxation. This was, however, unsuccessful and the deficit was met by increasing the note circulation of the Reichsbank until by November 15, 1923, it had increased from the bare two billion in 1914 to 92,844,720,743,000 million marks.

While during the four years of war, prices just about doubled in Germany, by November 15, 1923, they had multiplied by about 720 billion times over 1913. The effects of this chaotic condition of the currency was to destroy all normal business and to turn the nation into a speculative paradise. Thousands of people had their savings disappear because the savings were in terms of money which came to have practically no value. Instituions with endowments were impoverished. The thrifty classes who had saved were reduced to penury, and the practice of saving had been discouraged. On the whole all debtors benefited at the expense of creditors. In 1924 the gold standard was restored in Germany.

Russia, Austria, Poland, Hungary all had experiences similar to those of Germany. In all these countries issues of paper money in almost unlimited amounts were followed by a rise of prices to fantastic heights—thus in Germany a newspaper would cost about 100,000,000,000 marks. Merchants adjusted prices several times a day and before the basketfuls of paper money received for an article could be counted, the money would have lost part of its value.

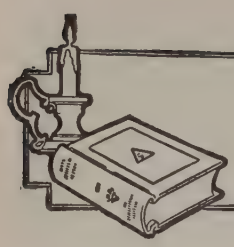
Stabilization.—Efforts have been made to stabilize the currencies and budgets of the old and newly created governments of Europe. England and Germany are now on the gold exchange standard. France, Italy, and Belgium have balanced their budgets and are on the road to stabilizing their currency. Austria has a new unit called the Schilling (par value 14.07 cents U. S. Currency), issued by the new National Bank of Austria. In Hungary a new bank of issue, The National Bank of Hungary, began business in June, 1924. Its new currency unit is the Pengo (17.49 cents). Czecho-Slovakia has also a National Bank of Czecho-Slovakia and the Crown has been stabilized at about 2.96 cents. Poland in 1924 introduced the Zloty (19.30 cents), Russia has the Chervonetz (par value about $5.15), Finland, the Markka (2.52 cents), Lithuania, the Rouble (10 cents), Latvia, the Lat (19.3 cents). In almost all cases the Gold Exchange standard is used, foreign exchange being used as a reserve.

The United States.—In the United States there was no suspension of specie payments. The national debt was increased by about 18 billion dollars. This has been in part retired and refinanced at lower rates of interest. The nation has been prosperous and taxation has yielded large revenues. Adjustments of foreign debts owed to the Government of the United States have been made with Great Britain, Italy, France and the other allied nations, which, calculated on a 5% interest rate, are equivalent to a cancellation of 50% of the original amount due. The ability of the allies to pay depends in part on their own prosperity and the ability of Germany to collect and transfer reparations payments under the Dawes Plan. Gold imports into the United States have increased, bank reserves are large, foreign trade and the purchase of foreign securities have developed at a rapid rate.

THE STORY OF IRON AND STEEL IN PICTURES

Photos by courtesy Youngstown Sheet and Tube Company

1—An Open-Pit Mine. Scene in Minnesota where the largest iron ore mines in the world are located. Trains travel up circular terraces to take out the ore. **2**—Loading an ore ship at docks on the Great Lakes. Loaded trains from the mines run out on tracks over the ore pockets. Loading chutes convey the ore into the hold of the ship. **3**—The Blast Furnace. The four huge stacks, or "stoves," heat the air for the furnace, which is seen at the right directly under the elevator which carries up the materials to fill the blast furnace. **4**—A Bessemer converter, making steel from iron. This is one of the most spectacular scenes around a steel mill. **5**—After steel has been made in a Bessemer converter it is emptied into a great fire brick lined ladle. Our picture shows the ladle pouring into the ingot molds. **6**—Tapping the open-hearth furnace, showing large ladle which receives the steel. Smaller cinder ladle at right. **7**—In the puddle mill, making wrought iron. Puddler drawing ball of the plastic metal from the furnace. **8**—Rolling an ingot in the blooming mill. Thrust after thrust elongates the ingot to many times its original length. **9**—Mighty rolls of the sheet mill rolling sheet steel. **10**—Car loaded with sheet and tube pipe, ready for shipment.



BOOK VII

ATLAS

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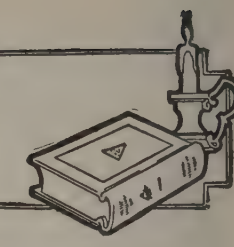

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NOTE—Numbers indicate area in square miles, and location on map.

MAINE
Pop. 768,014

COUNTIES

Pop. Thous.

Androscoggin 20D 65
Aroostook 8O..81
Cumberland 22D 124
Franklin 16E 19
Hancock 17M.30
Kennebec 18F.63
Knox 20J ...26
Lincoln 20F...15
Oxford 19C...37
Penobscot 16K.87
Piscataquis 13H 20
Sagadahoc 21F 23
Somerset 16F.37
Waldo 18J ...21
Washington 16P 41
York* 23B...70

TOWNS

Town. Key. Pop.

Alfred 22V...†7
Anson 15F ...2
Ashland 5L ...2

MAINE.
Towns—Cont.

Town. Key. Pop.
Auburn 20D...16
Augusta 18F..14
Baileyville 14P.2
Bangor 15K..25
Bar Harbor 18N 3

Bath 21F.....14
Belfast 18J....5
Belgrade 18F..1
Benton 17G....1
Berwick 24B...2
Biddeford 23C.18
Blaine 6N.....1
Blue Hill 18K.1
Boothbay 21G..1
Boothbay Harbor 21G.....2
Bowdoinham 20E 1

Brewer 16K....6
Bridgewater Cen 6O......1
Bridgton 20B..1
Bristol 20G....1
Brooksville 18K 1
Brunswick 21E.5
Bucksport 17K.1
Buxton 22C...1

Calais 13Q....6
Camden 19J...3
Canton 18D...†7
Cape Elizabeth 22D 1
Caribou 4N....6
Carmel 16J....1
Chelsea 19F...2
Cherryfield 17N 1
China 17G.....1
Clinton 16G....1
Coopers Mills..1
Corinna 16H...1
Corinth 15J...†8
Cumberland 21D 1

Danforth 11N..1
Deer Isle 19L.1
Dexter 14H....4
Dixfield 17C...1
Dover 13H....2
Durham 20E...1

Eaglelake 3L...1
East Livermore 18E 2
East Machias 16P 1
Easton 5O.....1
Eastport 15R..4
Eden 18M.....4
Eliot 25B......1
Ellsworth 17L..3

Fairfield 17G..2
Falmouth 21D.1
Farmington 16E 1
Fort Fairfield 5N 2
Fort Kent 2L..4
Foxcroft 13J...2
Frankfort 17K.1
Franklin 17M..1
Frenchville 1M.1

Gardiner 19F..5
Gorham 22C...2
Gouldsboro 17N 1
Grant Isle 1N..1
Gray 21D.....1
Greenville 12G.1
Greenville Jc. 12G 1
Guilford 13H..1

Hallowell 18F..2
Hampden 16K.2
Hapden Cor. 16K ....
Harpswell Cen. 21F 1
Harrington 17O.1
Hartland 16H..1
Hermon 15J...1
Hodgdom 9O...1
Hollis 22C.....1
Houlton 8O...6

Island Falls 9M 1

Jay 17D.......3
Jefferson 19G.†3
Jonesport 17P..2

Kennebunk 23C.3
Kennebunk Port 24C....3
Kittery 25B...4
Knightsville 22D 1

Lebanon 23A..1
Lewiston 20B.31
Limestone 4N..1
Lincoln 12L...1
Lisbon 20E....4
Lisbon Falls 20E 1
Litchfield 19F.†8
Littleton 8O...1
Livermore 18D.1
Livermore Falls 18E 1
Lubec 15R.. ..3

Machias 16P..2
Machiasport 16Q 1
Madison 15F..2
Mapleton 5M...1
Mars Hill 6N 1

20C 1
Mexico 17C....8
Millbridge 17O..1
Millinocket 11K 4
Milltown 13Q ...1
Milo 13J.....2
Monmouth 19E.1
Monson 13H...1
Monticello 7O..1
Mount Desert 18M 1

New Castle 20G 1
New Gloucester 20D 1
Newport 16H...1
Norridgewock 16F 1
North Berwick 20B 1
Norway 19C....3

Oakland 17F....2
Oakland Station 17F 2
Old Town 15K..6
Orland 17K ....†9
Orono 15L....3
Orrington 16K.1

Paris 19C......3
Patten 9L....1
Pembroke 15Q.1
Perry 14R.....1
Phillipsburg 21F 1
Pittsfield 16H..2
Poland 20D......1
Portland 22D 69
Presque Isle 5N 3
Princeton 13P..1

Randolph 19F..1
Richmond 20F..1
Rockland 19J..8
Rockport 19J..1
Rumford 17C..7

Saco 23C.....6
St. Agatha 2M.1
St. Albans 16H.1
Saint George 20J 1
Sanford 23B 10
Sangerville 13H.1
Scarboro 22D..1
Sherman 10M..1
Skowhegan 16G.5
Solon 15F....1
South Berwick 21B 2
South Brewer 16K 1
South Gardiner 19E 1
South Paris 19C 1
South Portland 22D 7
South Thomaston 20J 1
Spragues Mill 5O 1
Standish 21C...1
Stockton Sprgs. 17K 1
Stonington 19L.1
Sullivan 17N.†9

Thomaston 19J..2
Topsham 20E..2
Tremont 19M..1
Turner 19D....1

Union 19H.....1

Van Buren 2N.4
Vassalboro 17G.1
Vinal Haven 20K 2

Waldoboro 19H.2
Wallagrass 2L..1
Warren 19H...1
Washburn 4M..1
Waterville 17G.11
Webster 20E...1
Wells 25C.....1
Westbrook 22D.8
Whitefield 19G.†8
Wilton 17D.....2
Windham Cen. 21D 1
Winslow 17G...3
Winterport 16K.1
Winthrop 19E..1
Wiscasset 20F..1

Yarmouth 21D.2
Yarmouthville 21D 1

York 25C......2

POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

NEW HAMPSHIRE Towns—Cont.

Town.	Key	Pop.
Gilmanton	1D	3
Gilsum	3B	1
Derry	6D	3
Dover	5E	8
East Concord	5C	1
East Jaffrey	4E	1
East Rochester	5E	1
Enfield	4C	1
Epping	5D	1
Exeter	6D	4
Farmington	5D	2
Franklin	4B	6
G. Bridge	4C	2
Gilford	3D	1
Gilman	3D	2
Glen	4C	1
Gorham	2A	1
Hampton	6E	1
Hampton Falls	6E	1
Hancock	3B	3
Hanover	3C	1
Hillsboro	5C	3
Hinsdale	4B	4
Holderness	4B	1
Hudson	6D	1
Jaffrey	4B	2
Jefferson	2C	1
Keene	6B	11
Kingston	6D	1
Laconia	5D	10
Lancaster	3B	6
Lancaster	2D	2
Lincoln	4B	1
Lisbon	3C	2
Littleton	3C	4
Londonderry	6C	1
Lyme	3B	18
Manchester	6C	78
Marlboro	6B	1
Meredith	4D	1
Merrimack	6C	1
Milford	6C	3
Milton	5D	1
Nashua	6C	28
New Market	6E	3
Newport	5B	4
North Conway	4D	1
Northfield	5C	1
North Londonderry	6C	1
North Umberland	2D	2
Northwood	5D	8
Ossipee	4D	1
Pembroke	5D	2
Penacook	5C	2
Peterborough	5B	2
Piermont	2D	1
Pittsfield	5D	1
Plainfield	3C	1
Portsmouth	5E	12
Raymond	5D	1
Rochester	5D	9
Rollinsford	5E	1
Rye	6E	1
Salem	6D	2
Salmon Falls	5E	1
Sanbornville	4D	1
Sandwich	4D	1
Seabrook Sta.	6E	1
Somersworth	5E	6
Stewartstown	1D	1
Stratford	1C	1
Sunapee	5B	3
Suncook	5C	1
Swanzey	6B	1
Tilton	5D	2
Troy	4B	1
Walpole	4D	1
Warner	5C	2
Warren	3C	1
Wentworth	3C	1
West Derry	6D	2
West Lebanon	3C	1
Whitefield	2C	1
Winchester	5B	2
Wolfeboro	4D	2
Woodsville	3C	1
Woodstock	4B	1

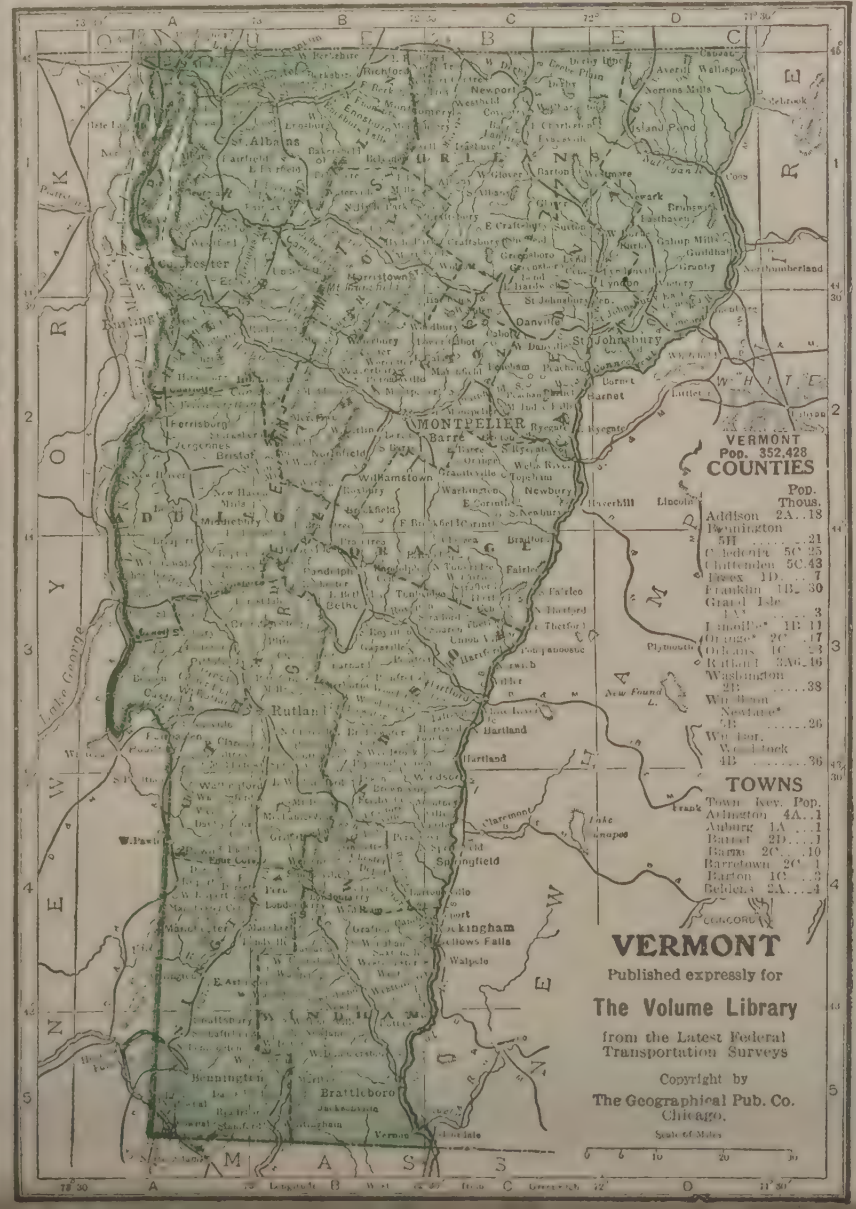
VERMONT Towns—Cont.

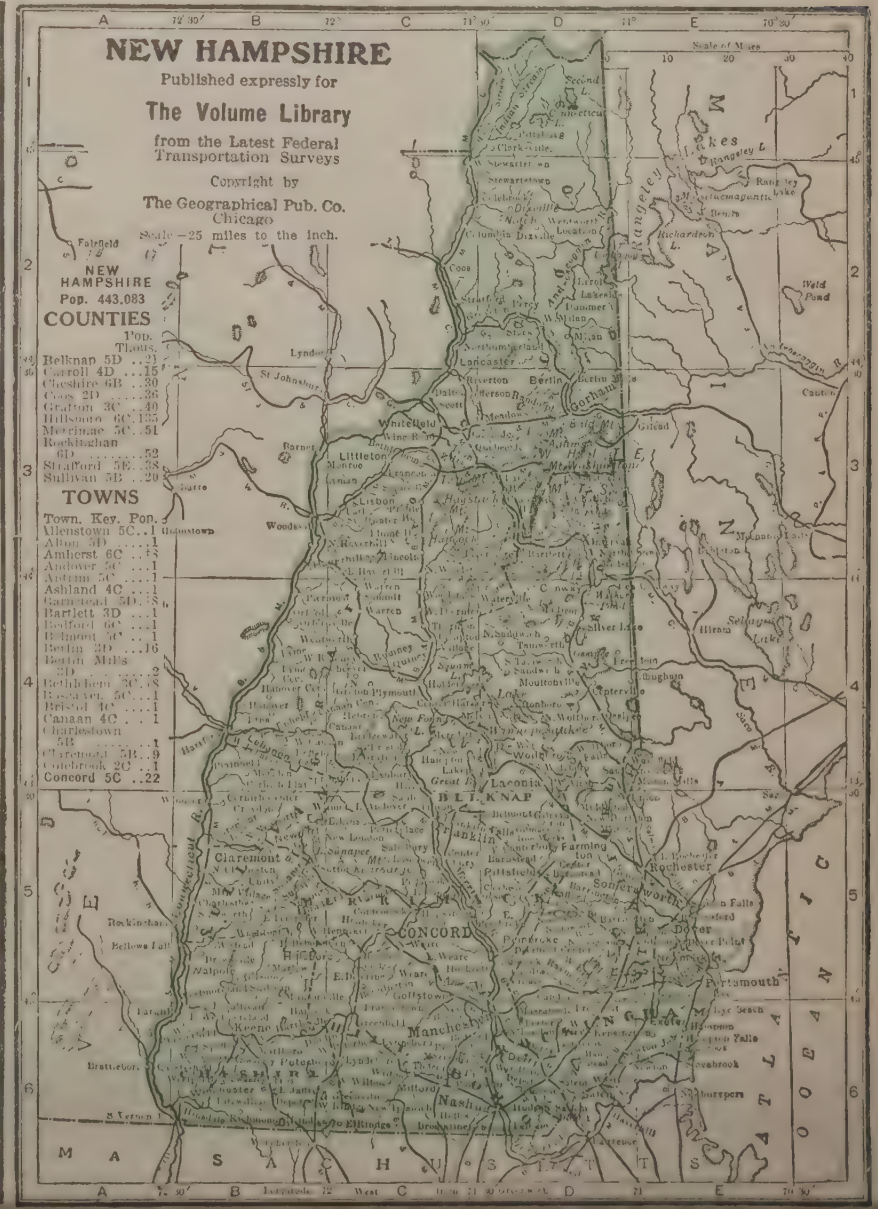
Town.	Key	Pop.
Bolton's Falls	4C	1
Bonnington	4C	1
Bethel	1E	1
Bradford	3C	1
Brandon	3A	1
Brattleboro	5B	7
Brighton	1D	2
Bristol	2A	1
Burlington	2A	22
Cabs Falls	1B	1
Calais	2A	1
Cambridge	1B	15
Castleton	3A	1
Cavendish	4B	1
Charlotte	2D	1
Chelsea	10K	1
Chester	2C	1
Clarendon	2A	1
Colchester	1A	6
Corinth	2C	1
Dalton's Four Cor.	4A	1
Danville	2C	1
Derby	1C	3
Dorset	15E	4A
East Montpelier	1B	1
Enosburg	1B	1
Essex	2A	1
Fairfax	1A	1
Fairfield	Sta. 1B	1
Fairhaven	3A	1
Franklin	1E	1
Georgia	1A	1
Guilford	1D	16
Hardwick	1C	1
Hartford	3C	4
Highgate	1A	1
Hydepark	1B	1
Island Pond	1D	1
Jericho	2A	1
Johnson	1B	1
Lowell	1C	1
Ludlow	4B	1
Lyndon	1C	3
Lyndonville	1D	1
Manchester	Cen. 4A	1
Middlebury	2A	2
Montgomery	1B	1
Montpelier	2B	7
Morrisville	1B	2
Newport	2M	1
Newtane	5b	4
North Bennington	1C	18
North Ferrisburg	2A	1
Northfield	2B	4
North Troy	1A	1
Norwich	3C	14
Orwell	3A	1
Pawlet	3D	1
Peacham	2E	1
Pittsford	3A	2
Poultney	3A	2
Pownal	5A	1
Proctor	2C	2
Proctor Village	2A	2
Randolph	3B	2
Randolph Cen.	3B	1
Richford	1B	1
Rochester	2E	1
Rockingham	5B	1
Rutland	3A	6
Rutland	3B	1
Saxtons River	4C	1
Shaftsbury	5A	1
Shelburne	2A	1
Springfield	4C	1
St. Albans	1B	7
St. Johnsbury	1C	5
Stockbridge	3C	1
Stowe	2B	1
Swanton	1A	2
Thetford	3C	1
Thetford Center	3C	1
Townshend	5C	1
Troy	1C	5
Underhill	1B	1
Vergennes	2A	1
Waitsfield	2B	1
Wallingford	4A	1
Waterbury	2B	3
Waterbury	3B	1
Weathersfield	3B	1
Wells River	2C	1
Westminster	6B	1
West Rutland	3A	1
White River Jc.	3C	3
Williamstown	3C	1
Wilmington	5A	1
Windsor	4C	1
Winooski	2A	1
Woodstock	4B	1

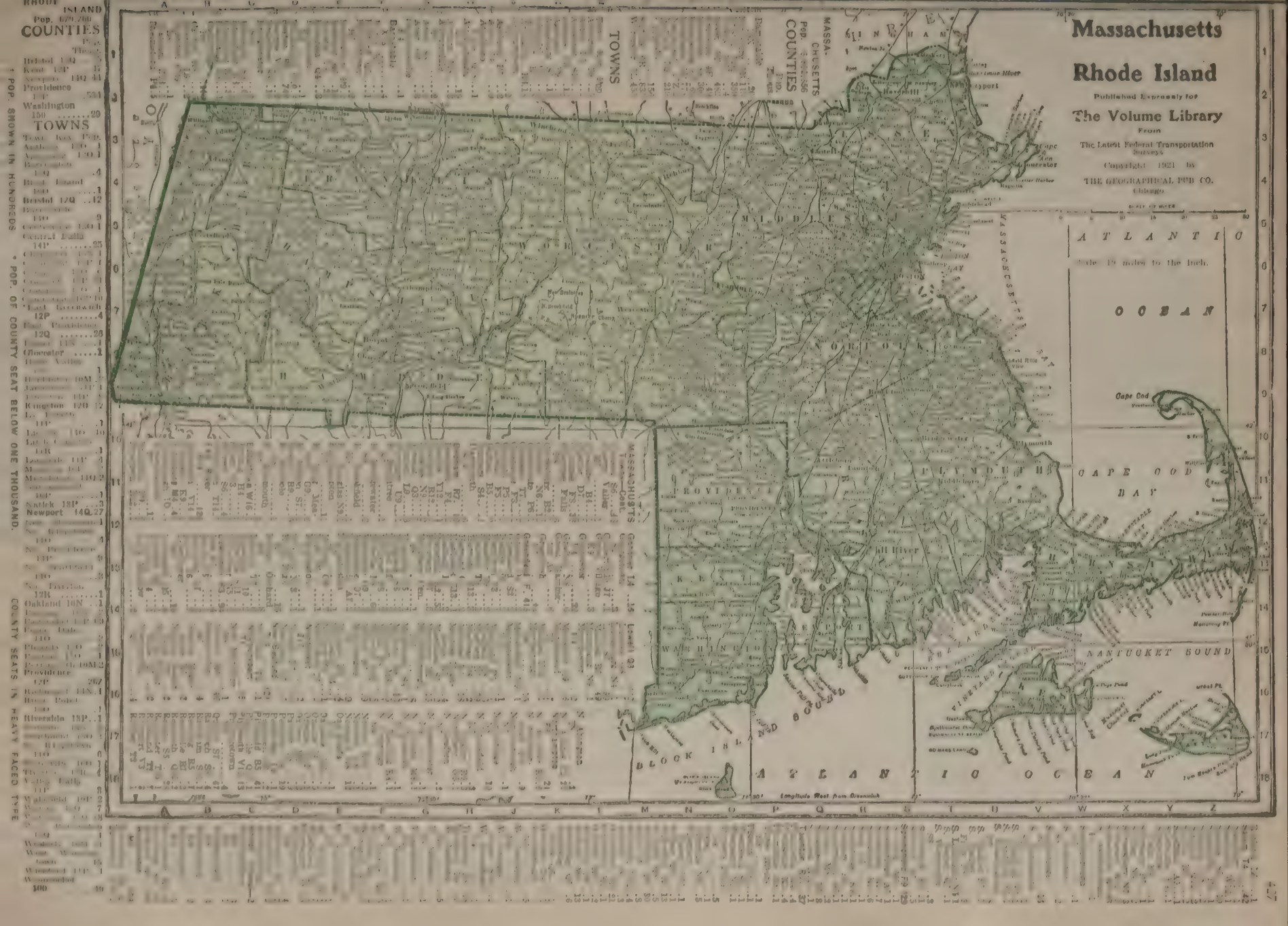
* POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.



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TOWNS
RHODE ISLAND
COUNTIES
TOWNS
POP. SHOWN IN HUNDREDS
POP. OF COUNTY SEAT BELOW ONE THOUSAND.
COUNTY SEATS IN HEAVY FACED TYPE

CONNECTICUT.
Pop. 1,380,631

COUNTIES

	Pop. Thous.
Fairfield 13D	320
Hartford 5J	336
Litchfield 6E	76
Middlesex 10K	47
New Haven 11G	415
New London 9O	104
Tolland 4M	27
Windham 4P	52

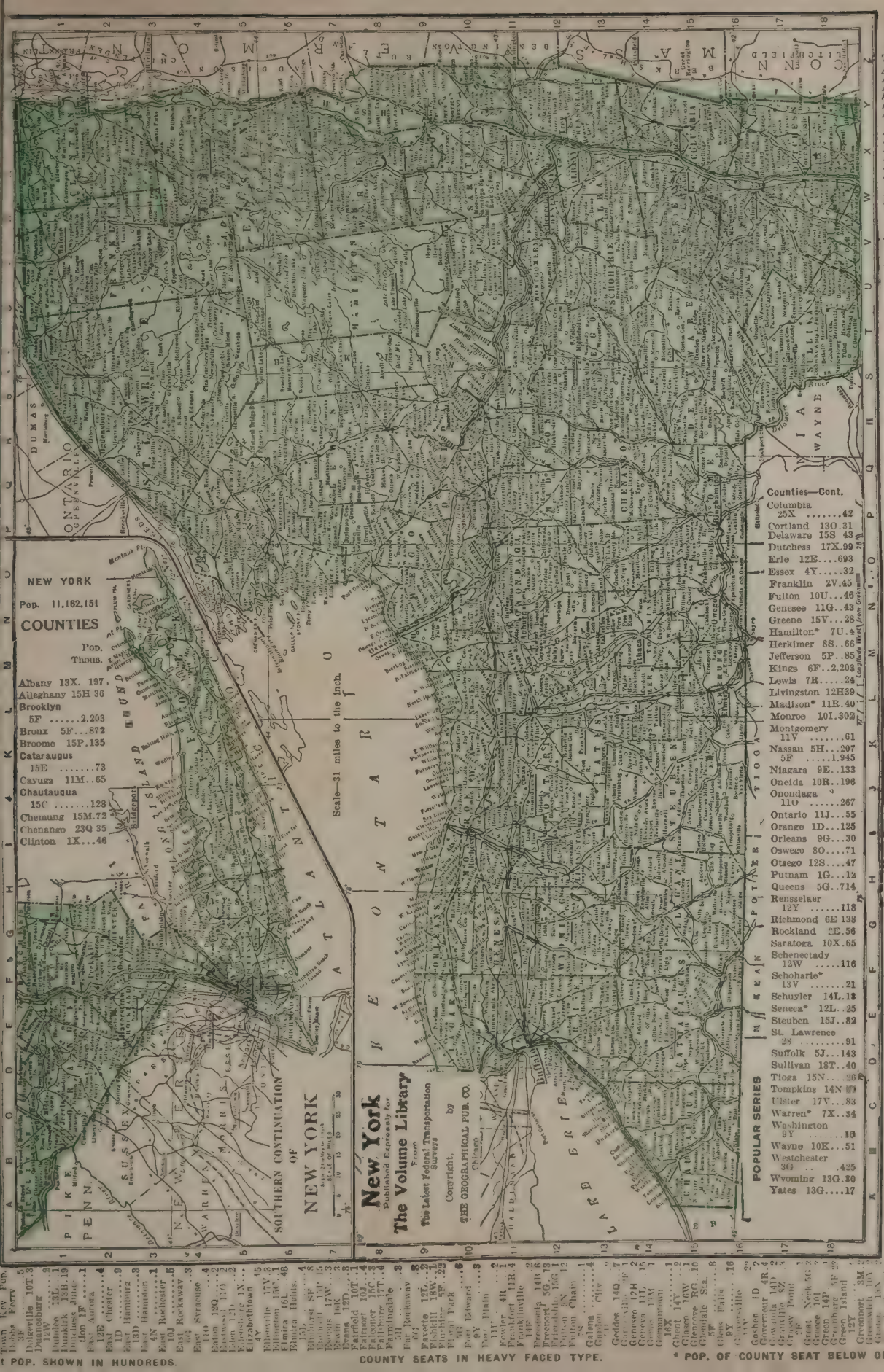
TOWNS

Town. Key.	Pop.
Ansonia 12F	17
Avon 4H	1
Beacon Falls 11F	1
Berlin 8J	4
Bethel 12C	3
Bloomfield 4J	2
Branford 13H	6
Bridgeport 15E	**143**
Bristol 7G	20
Brookfield 10C	†8
Brooklyn 5P	1
Burlington 5G	1
Canton 4G	2
Cheshire 10G	1
Chester 11L	1
Clinton 14K	1
Cornwall 4D	†8
Coventry 5M	1
Cromwell 8J	2
Danbury 11C	**18**
Danielson 5P	3
Darien 17C	4
Derby 13F	11
E. Haddam 11L	2
E. Hampton 8K	2
E. Hartford 5J	11
East Haven 13H	3
East Lyme 12N	2
Easton 14D	1
E. Windsor 3K	3
Ellington 3L	2
Enfield 2K	11
Essex 12L	2
Fairfield 16D	11
Farmington 6H	3
Forestville 7G	1
Gildersleeve 8K	1
Granby 2H	1
Greenwich 17B	22
Griswoldo 8P	4
Groton 12O	9
Guilford 13J	2
Haddam 10K	1
Hamden 11G	8
Hartford 5J	**138**
Harwinton 5F	2
Huntington 13E	9
Jewett City 8P	3
Kent 6C	1
Killingly 4P	8
Lebanon 8N	1
Ledyard 11O	1
Litchfield 6E	**3**
Madison 13K	1
Manchester 5K	18
Mansfield 4M	2
Meriden 9H	29
Middlefield 9J	1
Middletown 9J	**13**
Milford 14F	10
Monroe 12E	1
Montville 11O	3
Naugatuck 10F	15
Naugatuck Jc. 15F	13
New Britain 7H	59
New Canaan 15C	3
New Hartford 3G	1
New Haven 13G	**162**
Newington 6J	2
New London 12O	**25**
New Milford 8C	**4**
Newtown 11D	2
Niantic 12N	1
Noank 13P	1
Norfolk 1E	1
N. Canaan 1D	1
N. Grosvenor Dale 1P	2
North Haven 12H	1
N. Stonington 11P	1
Norwalk 16C	27
Norwich 9O	**22**
Oakville 8F	1
Old Lyme 12M	1
Old Saybrook 13L	1
Orange 13F	16
Oxford 11F	1
Plainfield 7P	7
Plainville 7H	4
Plantsville 8G	1
Plymouth 7F	5
Pomfret 3P	1
Poquonock 12O	1
Portland 8K	3
Preston 9P	2
Putnam 3P	**7**
Redding 13C	1
Ridgefield 13C	2
Rockville City 4L	7
Rocky Hill 7J	1
Salisbury 1C	**2**
Sandy Hook 11D	1
Saybrook 13L	1
Seymour 11F	6
Sharon 3C	1
Shelton 13F	9
Simsbury 3H	2
Somers 2L	1
Southbury 10E	1
S. Coventry 5M	1
S. Glastonbury 7K	1
Southington 8G	8
S. Manchester 5K	8
S. Norwalk Cy 16C	8
Southport 16D	1
S. Windsor 4K	2
Sprague 8O	2
Stafford 1M	5
Stafford Sprs 2M	3
Stamford 17B	35
Sterling 6Q	1
Stonington 12P	9
Stony Creek 14J	1
Stratford 15F	12
Suffield 2J	4
Taftville 9O	2
Talcottville 4K	3
Terryville 7F	1
Thomaston 7F	3
Thompson 2Q	5
Thompsonville 1K	4
Tolland 4M	**1**
Torrington 4F	**22**
Trumbull 14E	2
Union City 9F	2
Unionville 5G	1
Vernon 4L	8
Wallingford 10H	12
Warehouse Pt 2K	1
Washington 7D	1
Waterbury 9F	**91**
Waterford 12O	3
Watertown 8F	6
Waterville 8F	3
Wauregan 6P	1
W. Hartford 5J	8
W. Haven 13G	8
Westport 16D	5
Wethersfield 6J	4
Willimantic 6N	12
Willington 3M	1
Wilton 15C	1
Winchester 3F	9
Windham 6N	13
Windsor 4J	5
Windsor Locks 2J	3
Winsted 3F	**8**
Woodbury 9E	1
Woodstock 2P	1

† POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.



TOWNS

Town. Key. Pop.

Adams 7O.....1
Addison 16J...1
Akron 11F....2
Albany 12X..117
Albion 10G....5
Alexandria Bay 4P 2
Alleghany 16F.1
Allentown 16G.6
Amenia 17X...1
Amity 2C.....1
Amityville 5H..4
Amsterdam 11W 35
Andover 15H..1
Arcade 13F....1
Athens 15X...1
Attica 11G....2
Auburn 11M..35
Aurelius 11M...1
Ausable Forks 3X 2
Avoca 14J.....1
Avon 11I.....2
Babylon 5I....3
Bainbridge 15Q1
Baldwinsville 10N 3
Ballston Sprgs. 11X 4
Batavia 11G..15
Bath 14J.....4
Bayshore 5I....3
Bayside 5G....4
Beacon 17X..11
Belmont 15G...1
Bethlehem 13X 4
Binghamton 16P 71
Bolivar 15G...1
Bombay 1U....2
Booneville 8R..1
Brant 13D.....2
Bridgehampton 4N 1
Brighton 10I...2
Brockport 10H..3
Brocton 14B...1
Bronxville 3G..4
Brookhaven 5K16
Brunswick 17V 2
Buffalo 11D 538
Burlington 12S.1
Caledonia 11H.1
Cambridge 10Z.1
Camden 9Q...2
Canandaigua 11J 7
Canajoharie 11U 2
Canasota 10Q..4
Caneadea 14G.1
Canton 2S.....2
Cape Vincent 5N .....†9
Carlisle 12U..1
Carmel 1G.....2
Carroll 15E....1
Carthage 6Q...4
Castile 13G....1
Castleton 13X..1
Canton 16K....1
Catskill 15X...5
Cattaraugus 14D 1
Cazenovia 11P..1
Cedar Hurst 5H3
Champlain 1Y.1
Charlotte 9I...2
Chateaugay 1W 1
Chatham 14Y..2
Chautauqua 15B 3
Cheetawaga 13E11
Cicero 11I.....2
Chester 1D....1
Clarence 11E..2
Clarkstown 10R 7
Claverack 15X.3
Clay 11O.....2
Clymer 16A...3
Colden 13E...8
Collins 13E....4
College P5 F9
Clayton 4O.....1
Clifton Springs 11K 1
Clinton 11R....1
Clyde 10L 2
Cobleskill 12U.2
Coeymans 14X .4
Cohoes 12X..22
Colchester 16S.2
Cold Spring Harbor 4H..1
Colton 3T 1
Concord 4
Cooperstown 12S 2
Corinth 9X....2
Corning 15K..15
Cornwall 1E...2
Cornwall-on the Hudson 1F..1
Cornwall 5F....14
Cortland 13O..13
Cortlandville 13O 3
Coxsackie 14X.2
Croton-on the Crownpoint 6Y.2
Cuba 15G 1
Dannemora 1X.2
Dansville 13I..4
Darien 11F....1
Dekalbstown 5P 2
Delhi 15T 1
Depew 11E....6
Deposit 16Q . 2
Dexter 5O.....1
Dewitt 11O ..10
Diana 5R 2
Dickinson Center 2U 1
Dix 20R.....3

† POP. SHOWN IN HUNDREDS. COUNTY SEATS IN HEAVY FACED TYPE. * POP. OF COUNTY SEAT BELOW ONE THOUSAND.

NEW YORK
Towns—Cont.

Town.	Key	Pop.
Harrison	4G	
Hastings	9O	
Hastings-on-Hudson	3F	6
Haverstraw	2F	5
Hempstead	5G	6
Herkimer	11S	10
Highland Falls	1F	3
Highlands	17W	6
Highland Station	1F	1
Hillburn	3E	1
Holley	10H	1
Homer	15O	2
Honeoye Falls	11I	1
Hoosick	11Z	6
Hoosick Falls	11Z	5
Hopewell	15X	1
Hopkinton	2T	1
Hornell	14I	15
Horseheads	15L	5
Howard	14I	1
Hudson	15X	11
Hudson Falls	9V	
Hume	14G	
Huntington		
Huron	10L	1
Hydepark	17W	2
Ilion	11S	10
Independence	16H	1
Indian Lake	7V	1
Inwood	6G	2
Irondequoit	10I	3
Irvington	3F	3
Islip	5I	18
Ithica	14M	18
Jamaica	5G	18
Jamestown	16	43
Jay	3X	2
Jerusalem	13X	2
Johnson	15P	11
Johnstown	11V	10
Keeseville	3Y	1
Kenmore	12E	6
Kingston	16W	28
Kingsburg	9Z	7
Kirkland	9R	4
Lackawanna	12D	20
Lagrange	12H	1
Lake Placid	4W	2
Lake Pleasant	8V	†4
Lake George	9X	†8
Lancaster	11E	6
Lansing	8N	2
Larchmont	3G	3
Lasalle	10D	6
Lawrence	5H	2
Leroy	11H	4
Lestershire	16O	3
Liberty	17T	3
Lindenhurst		3
Lisbon	2R	2
Little Falls	11T	12
Little Valley	15D	1
Liverpool	10O	1
Lloyd	13Q	3
Longbeach	6G	2
Lockport	10E	21
Long Island City	5F	60
Lowville	7Q	3
Lynbrook	6G	8
Lyons	10L	4
Lysander	10N	4
Malone	1V	8
Mamaroneck	4G	10
Marnakating	10T	2
Marbletown	17W	2
Marion	10K	2
Marlborough-town	17W	3
Masbeth	5F	14
Massena	1T	5
Mattewan	1F	6
Mayville	15B	1
Mechanicsville	11X	8
Medina	10F	6
Mendon	11J	2
Meredith	14T	1
Mexico	8O	1
Middleburg	13Y	1
Middleport	10F	1
Middleton	1D	3
Middletown	1D	20
Milltown	5F	5
Millbrook	17X	1
Milo	13L	6
Milton	18W	5
Minden	11V	4
Mineola	5G	5
Mohawk	11X	
Moira	1U	
Monroe	1E	
Monticello	18T	3
Montour Falls	14L	
Moravia	12N	1
Moreau	5F	
Moriah	5Y	
Morrisville	11Q	†5
Mount Kisco	2G	1

NEW JERSEY
Pop. 3,155,900

COUNTIES

	Key	Pop. Thous.
Atlantic	20K	83
Bergen	4P	210
Burlington*	15K	81
Camden	6G	190
Cape May	24H	19
Cumberland	21F	61
Essex	6N	651
Gloucester	18F	48
Hudson	7O	629
Hunterdon	9G	32
Mercer	12J	159
Middlesex	10L	162
Monmouth	12N	104
Morris	6L	82
Ocean	15N	22
Passaic	4N	259
Salem	19D	36
Somerset	9K	48
Sussex	2J	24
Union	8N	199
Warren	6G	45

TOWNS

Town.	Key.	Pop.
Arlington	6O	3
Asbury Park	12P	12
Atlantic City	22M	50
Atlantic Highlands	10P	1
Audubon	17G	4
Barrington	21K	1
Bayonne	7O	76
Belleville	6O	15
Belmar	13P	1
Belvidere	6F	1
Bergensfield	5P	3
Beverly	14H	2
Blairstown	4G	1
Bogota	6P	3
Bloomfield	6N	22
Bloomingdale	4M	2
Boonton	5M	5
Bordentown	13J	4
Boundbrook	9L	5
Bradley Beach	13P	2
Bridgeton	21E	14
Burlington	14H	9
Butler	4M	2
Caldwell	6M	3
Camden	15F	116
Cape May	26H	2
Carlstadt	5B	4
Cateret	8N	4
Cedarville	22E	1
Chatham	7M	2
Chester	6J	†7
Clayton	18F	1
Cliffside Park	5P	4
Clifton	5O	26
Closter	4P	1
Collingswood	15F	8
Cranbury	11L	†7
Cranford	8N	5
Delford	5P	1
Dover	5L	9
Dumont	4P	2
Dunellen	8L	3
East Newark	7O	3
East Orange	7N	50
East Rutherford	6O	5
Edgewater	6P	3
Egg Harbor City	20K	2
Elizabeth	7N	95
Elmer	19E	1
Englewood	5P	11
Fairview	6P	4
Flemington	9H	2
Florence	17H	1
Fort Lee	5P	5
Franklin	3K	4
Freehold	12N	4
Garfield	5O	19
Garwood	8N	1
Glen Ridge	7N	4
Glen Rock	5P	2
Gloucester	16F	12
Greenwich	21D	1
Guttenburg	6P	6
Hackensack	5P	17
Hackettstown	5H	2
Haddonfield	16G	5
Haddonheights	16G	2
Haledon	5N	3
Hammonton	18J	6
Harrison	1L	15
Hasbrouck Heights	5P	2
Hawthorne	5O	5
Hibernia	4L	1
High Bridge	7H	1
Highland Park	10M	4
Highlands	10P	1
Hightstown	12L	2
Hoboken	7P	68
Holly Beach	26J	1
Hopewell	10J	1
Irvington	6N	25
Jamesburg	11L	2
Jersey City	7P	298
Kearny	7O	26
Keyport	10O	4
Lakewood	14N	5
Lambertville	11G	4
Leonia	5P	2
Little Falls	5N	2
Little Ferry	5P	2
Livingston	6N	1
Lodi	5O	6
Long Branch	11P	13
Lyndhurst	7P	9
Madison	7L	5
Manasquan	13P	1
Mattawan	10N	1
Mays Landing	20J	1
Medford	16H	1
Mendham	6K	1
Merchantville	15G	4
Metuchen	9M	3
Midland Park	4O	2
Millburn	7N	4
Millstown	10M	2
Millville	21G	14
Montcair	6N	28
Montville	5M	1
Moorestown	15G	3
Morristown	6L	12
Mt. Holly	15H	6
Netcong	5J	1
Newark	7O	414
New Brunswick	9L	32
New Egypt	14L	1
Newport	22E	1
Newton	3J	4
North Plainfield	8M	6
Nutley	6O	9
Ocean City	22L	2
Ocean Grove	12P	2
Orange	6N	33
Oxford	6G	3
Palisades Park	5P	2
Palmyra	14G	2

NEW JERSEY
Towns—Cont.

Town.	Key.	Pop.
Park Ridge	4P	1
Passaic	5O	63
Paterson	5O	135
Paulsboro	16E	4
Penn Grove	17C	6
Perth Amboy	9N	41
Phillipsburg	7E	16
Pitman	17F	3
Plainfield	8M	27
Pleasantville	21L	5
Point Peasant	14P	1
Pompton Lakes	4N	2
Port Norris	23G	1
Princeton	11K	5
Prospect	17D	4
Rahway	8N	11
Ramsey	3O	2
Raritan	8K	4
Red Bank	11P	9
Ridgefield P.	5L	8
Ridgewood	4O	7
Riverside	14H	4
Riverton	14G	2
Rockaway	5L	2
Roselle	7M	5
Roosevelt	8N	11
Rumson	12O	1
Rutherford	6O	9
Salem	13C	7
Sayreville	10M	1
Secaucus	7P	5
Somerville	8K	6
South Amboy	9N	7
South Boundbrook	9L	1
South Orange	7N	7
South River	10M	6
Springfield	7M	1
Stanhope	5J	1
Summit	7M	10
Sussex	2K	1
Swedesboro	17D	1
Tenafly	5P	5
Titusville	11H	1
Toms River	15O	2
Totowa	4M	1
Trenton	12J	119
Tuckerton	19M	1
Union	7N	21
Verona	6N	3
Vineland	20G	6
Wallington	5P	5
Washington	6G	3
Weehawken	6P	14
Westfield	8M	9
West Hoboken	7P	40
West Millford	2M	1
West New York	7P	29
West Orange	6N	15
Westville	16F	2
Westwood	4P	2
Wharton	5K	2
Williamstown	18G	1
Woodbine	23H	1
Woodbridge	9N	2
Woodbury	16F	5
Woodridge	5P	1
Woodstown	18D	1
Wrightstown	12L	5

NEW YORK
Towns—Cont.

Town.	Key.	Pop.
Mount Morris	12H	3
Mount Pleasant	17W	14
Mount Vernon	4F	30
Movers	1Y	3
Murray	9G	
Naples	13J	
New Ablon		
Newark	11K	
New Baltimore	11X	1
New Berlin	13R	1
New Berlin Center	13R	1
New Bremen	6R	1
New Brighton		20
Newburgh	18W	30
Newcastle	5F	3
New City	3F	†3
New Hartford	10R	1
Newhaven	8N	1
New Hyde Park	5G	1
New Paltz	17W	1
New Rochelle	4F	44
New Scotland	13X	2
New Stead	5F	8
New Windsor	1D	2
New York	5F	5,873
Bronx		872
Brooklyn		2,203
Manhattan		1,945
Queens		714
Richmond		138
New York Mills	10R	4
Niagara Falls	10D	57
Niagara	10D	4
Niles	12N	1
Niskayuna	12W	3
Norfolk	1T	3
Northampton	10W	2
North Collins	13D	1
Northbansville	3F	4
North Elba	4W	4
North Hampstead	5F	26
North Harmon	3F	41
North Pelham	3G	4
Northport	4H	2
North Tarrytown	3G	7
North Tonawanda	10D	17
Northville	9W	1
Norwich	13Q	8
Norwood	1S	1
Nunda	13N	1
Nyack	3F	4
Oakfield	10G	2
Ogdensburg	2Q	17
Olean	16F	21
Oneida	10Q	10
Oneonta	14S	12
Onondaga	11O	6
Ontario Beach	9I	2
Orangetown	1D	14
Ossining	2F	12
Oswegatchie		
Oswego	9N	15
Ovid	13L	
Owego	16N	
Oxford	14Q	
Oyster Bay	4H	20
Ozone Park	5F	
Painted Post	15K	
Palmyra	10K	
Perry	9Q	
Parishville	2T	1
Parma	10H	
Patchogue		
Pearl River	3E	1

Cont. on page 431

† POP. SHOWN IN HUNDREDS. COUNTY SEATS IN HEAVY FACED TYPE. * POP. OF COUNTY SEAT BELOW ONE THOUSAND

MARYLAND.
Pop. 1,449,661

COUNTIES

Allegany 4D	69
Anne Arundel [illegible]	43
Baltimore 3K	74
Baltimore City 4K	773
Calvert* 6K	9
Caroline 5N	18
Carroll 2H	34
Cecil 2N	23
Charles* 6J	17
Dorchester 6M	27
Frederick 3G	52
Garrett 5B	19
Harford 2L	29
Howard 3J	15
Kent 4M	15
Montgomery 4R	34
Prince Georges* [illegible]	43
Queen Annes 4M	16
Saint Marys* 7K	16
Somerset 8O	24
Talbot 5M	18
Washington 2F	59
Wicomico 7O	28
Worcester 8P	22

TOWNS

Town. Key.	Pop.
Annapolis 5L	11
Baltimore 4K	7/3
Barton 5C	[illegible]
Bel Air 2L	1
Berlin 7Q	1
Bethesada	4
Brunswick 3F	3
Cambridge 6M	7
Centerville 4M	1
Chestertown 4M	2
Dames Quarter 8N	1
Denton 5N	1
Easton 5M	3
Crisfield 9N	3
Cumberland 4D	29
Eastport 5L	1
Elkton 2N	2
Ellicott City 3I	1
Emmitsburg 2G	1
Federalsburg 6N	†1
Ford's Store 5L	1
Frederick 3G	11
Frostburg 4D	6
Hagerstown 2F	28
Havre de Grace 2M	4
Hyattsville 4J	2
La Plata 6J	†3
Laurel 4J	2
Leonardtown 7K	†5
Lonaconning 5D	2
Midland 5D	†9
Mt. Rainier 5J	2
Mt. Savage 4D	3
Oakland 5B	1
Oxford 6M	1
Pocomoke City 8O	2
Prince Fredericktown 6K	†4
Port Deposit 2M	1
Princess Anne 8O	†9
Relay 4K	1
Rockville 4N	1
St. Michaels 5L	1
Salisbury 7O	7
Snow Hill 8P	1
Sparrows Point 4L	2
Stevensville 5L	1
Takoma 4H	3
Taylor's Island 7L	1
Towson 3K	3
Upper Marlboro 5J	†3
Western Port [illegible]	3
Westminster 2H	3
Williamsport 2E	1
[illegible]	13

DELAWARE
Pop. 223,003

COUNTIES

	Pop. Thous.
Kent 4O	[illegible]
Newcastle 1O	148
Sussex 6P	43

TOWNS.

Delaware City 2O	1
Dover 4O	4
Georgetown 6P	1
Harrington 5O	[illegible]
Laurel 6O	[illegible]
Lewes [illegible]	[illegible]
Middletown 3O	1
Milford 5P	[illegible]
Milton 5P	1
Newark [illegible]	[illegible]
New Castle 2O	3
Seaford 6O	2
Smyrna 3O	[illegible]
Wilmington 1O	110

DISTRICT OF COLUMBIA.
Pop. 431,571

Washington 5H	268
Georgetown	17

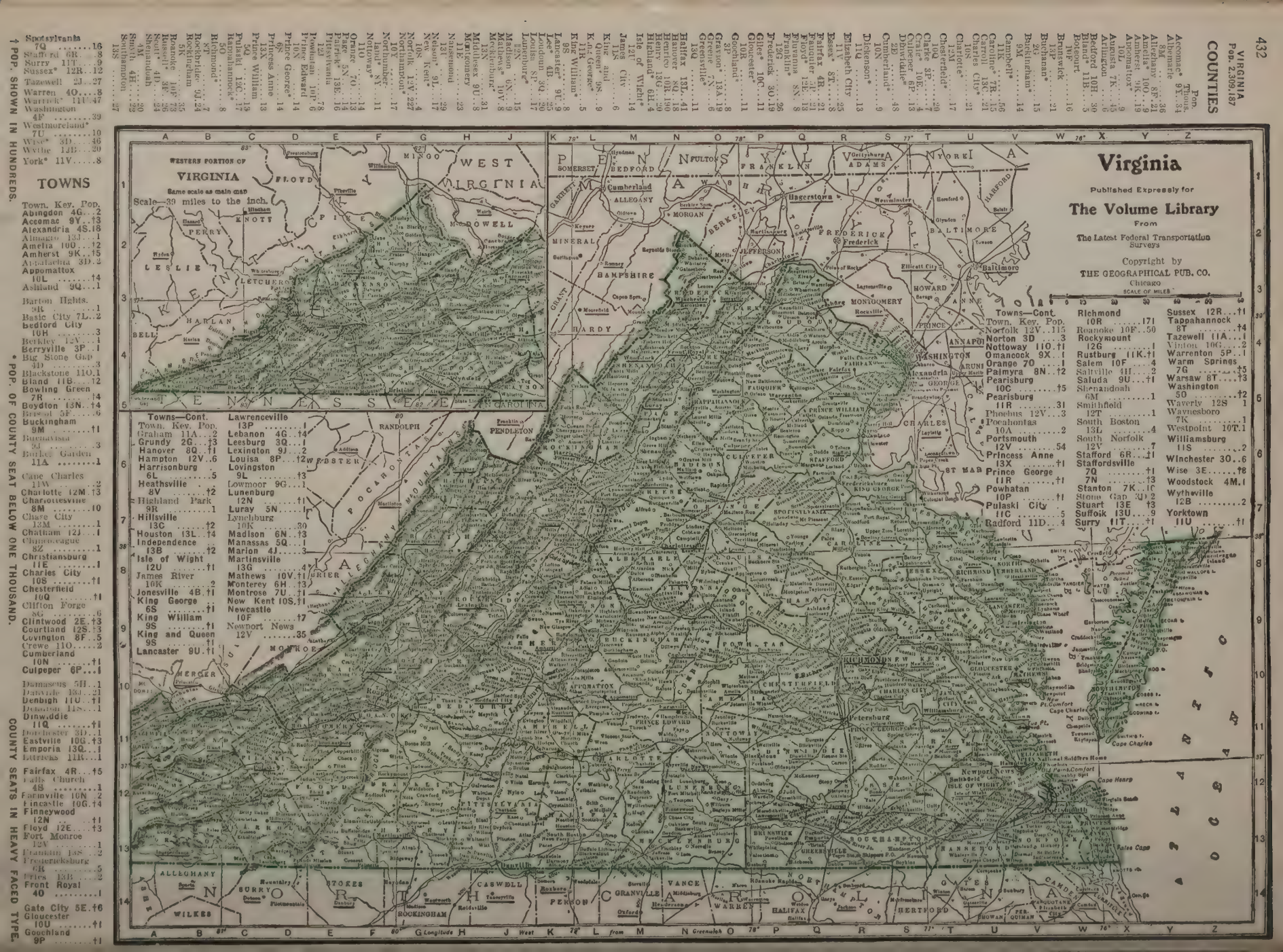
NEW YORK
Towns—Cont.

Town. Key	Pop.
Peekskill 2F	17
Pelham Manor [illegible]	3
[illegible] 5F	[illegible]
[illegible]	[illegible]
Penn Yan 15K	5
[illegible]	[illegible]
[illegible]	4
Persia [illegible]	[illegible]
Phelps 11K	1
Philmont 15Y	1
[illegible] 2Y	[illegible]
Phillipstown 15B	3
Phoenix 10N	1
Piermont 3F	1
Pittsford 10T	1
Pittstown 12Y	2
Plattsburg 1Y	11
Pleasantville [illegible]	3
[illegible] 14B	7
[illegible]	2
[illegible]	1
Port Chester [illegible]	19
Port Ewen [illegible]	1
Port Henry 5Y	2
Port Jefferson 4T	2
[illegible] 1B	10
[illegible] 14B	3
Port Richmond 5F	15
Port Washington 4G	5
Potsdam 2S	4
Poughkeepsie 17W	35
Pulaski 8O	1
Queensbury 7Y	2
Ramapo 3E	17
Randolph 15D	1
Ravena 14X	1
Rensselaer 13X	11
Rhinebeck 16X	1
Richfield Springs 12S	1
Richland 8O	2
Richmond 6E	1
Richmond Hill 5F	11
Richfield Spgs. 11T	1
Ridgeway 9F	5
Riverhead 4L	5
Ripley 9H	2
Rockaway Beach 6G	4
Rochester 10I	316
Rockland 17T	3
Rockville Center 6G	10
Rome 9R	30
[illegible] 12L	4
[illegible]	5
[illegible] 5G	1
[illegible] 11W	7
[illegible] 15U	2
[illegible] 9E	3
Rush 11I	2
Rouse Point 1Y	1
Rye 3G	6
Sag Harbor 3N	3
[illegible] 11U	2
St. Regis Falls [illegible]	1
[illegible]	9
Salem 10Z	1
Salina 11O	4
Sandyhill 9Y	5
Sanford 15P	2
Saranac Lake 4W	6
Saratoga Sprgs. 10X	13
Saugerties 16W	4
Savville [illegible]	1
Scarsdale 3H	5
Schenectady 12U	92
Schodack 12Y	3
Schoharie 13V	†8
Schroeppel 12Y	2
Schuyler 11S	1
Schuylerville [illegible]	1
[illegible] 12W	5
Sea Cliff 4G	3
Seneca Falls [illegible]	6
Shandaken 16B	2
Shawangunk 16B	2
Shelby 10H	3
Sherill 9R	3
Sheridan 13C	1
Shortsville 11K	1
Sidney 15R	2
Silver Creek 13C	3
Sloan 12E	2
Smithtown 4I	9
[illegible]	1
[illegible]	7
[illegible] 9H	3
Southampton [illegible]	3
[illegible]	2
[illegible]	2
[illegible]	2
[illegible] 16L	3
[illegible]	10

New York Towns—Cont.

[illegible] 3E	[illegible]
Springville 13E	[illegible]
Stafford 11G	[illegible]
[illegible]	1
Starkey 13L	[illegible]
Sterling 2E	[illegible]
Stillwater 11Y	[illegible]
[illegible]	[illegible]
Stonypoint 2H	[illegible]
Suffern 3E	5
[illegible]	[illegible]
Sweeden 10I	[illegible]
Syracuse 11O	182
[illegible]	[illegible]
[illegible]	4
[illegible] 6Y	8
[illegible] 6E	3
[illegible] 11D	11
[illegible]	72
Troy 12X	[illegible]
Tupper Lake 4U	3
Tuxedo Park [illegible]	2
[illegible]	[illegible]
Unadilla 14R	1
[illegible]	[illegible]
Utica 10R	101
[illegible]	[illegible]
[illegible] 5G	7
[illegible]	[illegible]
Warsaw 12G	3
Warwarsing 5F	6
[illegible]	[illegible]
Washington [illegible]	[illegible]
Waterford 12X	3
Waterloo 11L	3
Watertown 6P	32
Waterville 11R	[illegible]
[illegible] 12Y	16
Watkins 14L	[illegible]
Waverly 16M	[illegible]
[illegible]	[illegible]
Weedsport 11M	1
Wellsboro 12O	[illegible]
[illegible]	[illegible]
Westfield 14A	[illegible]
[illegible]	[illegible]
[illegible] 8F	2
West [illegible]	[illegible]
White Plains 3G	27
Woodhaven 5F	15
Worcester 13T	2
Yonkers 4F	113

† POP. SHOWN IN HUNDREDS. COUNTY SEATS IN HEAVY FACED TYPE. * POP. OF COUNTY SEAT BELOW ONE THOUSAND.



1 POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.

NO. CAROLINA
Pop. 2,559,123

COUNTIES

County	Key	Pop. Thous.
Alamance	3K	32
Alexander*	4D	12
Alleghany*	2D	7
Anson	8H	28
Ashe*	2B	21
Avery*	11J	10
Beaufort	5U	31
Bertie*	3T	23
Bladen*	9N	19
Brunswick	11P	14
Buncombe	13H	64
Burke	5B	23
Cabarrus	6F	33
Caldwell	4B	19
Camden*	2W	5
Carteret	9V	15
Caswell*	2K	15
Catawba	5C	33
Chatham	5L	23
Cherokee*	15B	15
Chowan*	3V	10
Clay	15C	14
Cleveland	6B	34
Columbus	11N	30
Craven	7T	29
Cumberland	7M	35
Currituck*	2X	7
Dare*	4Y	5
Davidson	5H	35
Davie	4F	13
Duplin	7Q	30
Durham	3M	42
Edgecombe	4R	37
Forsyth	3G	77
Franklin	3O	26
Gaston	6D	51
Gates*	2U	10
Graham	14C	4
Granville	2N	26
Greene*	6R	16
Guilford	3I	79
Halifax*	2R	43
Harnett*	6M	28
Haywood	13G	23
Henderson	14I	18
Hertford*	2U	16
Hoke*	8K	11
Hyde*	5X	8
Iredell	5E	37
Jackson	14F	13
Johnston	5O	48
Jones*	7S	9
Lee	6L	13
Lenoir	7R	29
Lincoln	6C	17
McDowell	12J	16
Macon*	15E	12
Madison*	12G	20
Martin	4T	20
Mecklenburg	7E	80
Mitchell*	11J	11
Montgomery	6I	14
Moore	6K	21
Nash	3Q	41
New Hanover	11R	40
Northampton*	2S	23
Onslow*	9S	14
Orange	3L	17
Pamlico*	7V	9
Pasquotank	2W	17
Pender*	9Q	14
Perquimans	3W	11
Person	2M	18
Pitt	5S	45
Polk	14J	8
Randolph	5I	30
Richmond	8L	25
Robeson	9L	54
Rockingham	2I	44
Rowan	5F	44
Rutherford	6A	31
Sampson	8O	36
Scotland	8K	15
Stanly	6G	27
Stokes*	2H	20
Surry	2F	32
Swain*	13E	13
Transylvania*	14G	9
Tyrrell*	4X	4
Union	8F	36
Vance	2O	22
Wake	4N	75
Warren*	2P	21
Washington	4V	11
Watauga*	3A	13
Wayne	6P	43
Wilkes	3D	32
Wilson	5Q	36
Yadkin*	3F	16
Yancey*	11I	15

TOWNS

Town	Key	Pop.
Albemarle	6H	2
Ashe[illegible]	5I	3
Asheville	13H	28
Ashboro	5I	†9
Bakersville	11J	†1
Bayboro	7U	†3
Beaufort	9V	2
Belhaven	5V	1
Belmont	7D	2
Bessemer City	6C	3
Boone	3A	†3
Brevard	14G	1
Bryson City	13E	†8
Burgaw	9Q	1
Burlington	3K	[illegible]
Burnsville	11I	†4
Camden	2X	†1
Canton	13G	2
Carthage	6K	†9
[illegible]	7A	1
Chadbourn	10M	1
Chapel Hill	4L	1
Charlotte	7E	46
Cherryville	6C	1
Clayton	5O	1
Clinton	8O	2
Columbia	4W	†7
Columbus	7L	†1
Concord	6F	9
Currituck	2Y	†2
Dallas	6D	1
Danbury	2H	†2
Davidson	6E	1
Dunn	6N	2
Durham	4M	21
East Spencer	5G	2
Edenton	3V	2
Elizabeth City	3X	8
Elizabethtown	9N	†3
Elkpark	11J	†4
Enfield	3R	1
Fayetteville	7M	8
Forest	6O	2
Franklin	14E	†7
Gastonia	7D	12
Gatesville	2V	†3
Goldsboro	6P	11
Graham	2K	2
Greensboro	3I	19
Greenville	5S	5
Halifax	2R	†3
Hamlet	8L	3
Haysville	15C	†2
Henderson	3O	5
[illegible]	7O	1
Hertford	3O	1
Hickory	5[illegible]	5
[illegible]	6S	11
Highpoint	4H	14
Hillsboro	3L	1
Jackson	2S	†5
Jacksonville	9S	†6
Jefferson	2B	†1
Kenansville	8Q	†3
Kernersville	3H	1
Kings Mountain	7C	2
Kinston	7R	9
Lagrange	6Q	1
Laurinburg	9J	2
Leaksville	2L	1
Lenoir	4B	3
Lexington	4G	5
Lillington	6M	†5
Lincolnton	6C	3
Littleton	2Q	1
Louisburg	3O	1
Lumberton	9M	2
Madison	2I	1
Manteo	4Z	†3
Marion	12J	1
Marshall	12H	†7
Maxton	9K	1
Mocksville	4F	1
Monroe	8F	4
Mooresville	5E	4
Morehead City	9V	2
Morganton	5B	2
Mountairy	2F	4
Mount Olive	7P	2
Murphy	15C	1
Nashville	4Q	†9
New Bern	7T	12
Newton	5D	3
Northwilkesboro	3D	2

*POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

Towns—Cont.

Town. Key. Pop.
Oxford 3N....3
Pittsboro 3L...15
Plymouth 4U....1
Raeford 8K....1
Raleigh 4N....24
Randleman 5J....1
Rutherfordton 14K....1
Salisbury 5F...13
Sanford 7K....2
Scotland Neck 2K....2
Selma 6O....2
Shelby 6G....3
Smithfield 6O....3
Southport 7P....1
Statesville 4I....5
Tarboro 4R....4
Taylorsville 14K....1
Thomasville 4D....5
Troy 6I....1
Wadesboro 8H....1
Wake Forest 4N....1
Warrenton 2N....1
Washington 5T.6
Waynesville 13F....1
Weldon 2R....1
Webster 14F....1
Wentworth 4I....1
Whiteville 10M....1
Williamston 4T....1
Wilmington 11P....33
Wilson 5Q....8
Windsor 3T....1
Winston 3G....16
Yadkinville 3F....1
Yanceyville 2K....3

Pop. 1,683,724

COUNTIES

Abbeville	4D	27
Aiken	6F	45
Allendale	8G	16
Anderson	3D	10
Bamberg	7H	2
Barnwell	7G	1
Beaufort	9J	2
Berkeley	7L	22
Calhoun	5J	18
Charleston		109
Cherokee	1F	19
Chester	2H	5
Chesterfield	2L	8
Clarendon	5L	31
Colleton	8K	34
Darlington	4M	39
Dillon	1K	19
Edgefield	5F	25
Fairfield	3H	27
Florence	4M	50
Georgetown	6O	15
Greenville	2D	38
Greenwood	4E	8
Hampton	8H	17
Horry	1O	32
Jasper	9H	9
Kershaw	3K	29
Lancaster	2J	15
Laurens	3F	24
Lee	3M	26
Lexington	5H	18
Marion	4N	35
Marlboro	3M	33
McCormick	5D	16
Newberry	4G	35
Oconee	1D	15
Orangeburg	6J	64
Pickens	2C	18
Richland	5I	75
Saluda	4F	22
Spartanburg		94
Sumter	5L	30
Union	2G	26
Williamsburg		30
York	2H	33
COUNTY SEAT		33

TOWNS

Town. Key. Pop.
Abbeville 4D....4
Aiken 6F....4
Allendale 7H....1
Anderson 3D....10
Bamberg 7H....2
Barnwell 7G....1
Batesburg 5G....2
Beaufort 9J....2
Bees. 3D....1
Bennettsville 3M....3
Bishopville 4L....2
Blacksburg 1G....1
Blackville 6H....1
Branchville 7J....1
Camden 3K....3
Charleston 8M.67
Chester 2M....3
Chesterfield 2L....†8
Clinton 2E....1
Clinton 3F....3
Clover 1H....1
Columbia 5H.37
Conestee 2F....2
Conway 5O....1
Cowpens 1F....1
Darlington 4M..4
Denmark 7H..1
Dillon 3N....2
Easley 2D....3
Eau Claire 1C..2
Edgefield 5F....1
Enoree 2F....2
Florence 4M...10
Fort Mills 1J..1
Gaffney 1F....5
Georgetown 6O..4
Graniteville 6H..1
Greenville 2D 23
Greenwood 4E....8
Greer 2G....2
Hampton 8H..17
Harleyville 7L..3
Honeapath 3D..1
Kershaw 3K....1
Kingstree 6M..2
Lake City 5M..1
Lancaster 2J....3
Latta 4N....1
Laurens 3F....4
Lexington 5H †8
Liberty 2C....1
McColl 2N....2
Manning 5L....2
Marion 4N....3
Monks Corner 7M....†3
Moultrieville 8M....1
Mount Pleasant 8M....1
Mullins 4O....2
Newberry 4G....5
N. Augusta 6F..1
Orangeburg 6J..7
Pelzer 2D....1
Pickens 2C....†8
Piedmont 2E....4
Ridgeland 9H..3
Rockhill 2H....8
St. Matthews 5J....1
Saluda 4F....†6
Seneca 2C....1
Spartanburg 2F....22
Summerville 7L.2
Sumter 5L....9
Thomasville 4M....1
Union 2G....6
Walhalla 2B..2
Walterboro 8K..1
Westminster 2B..1
Whitmire 3G..1
Williamston 3D..2
Winnsboro 3H..1
Woodruff 2F..2
Yorkville 2H...2

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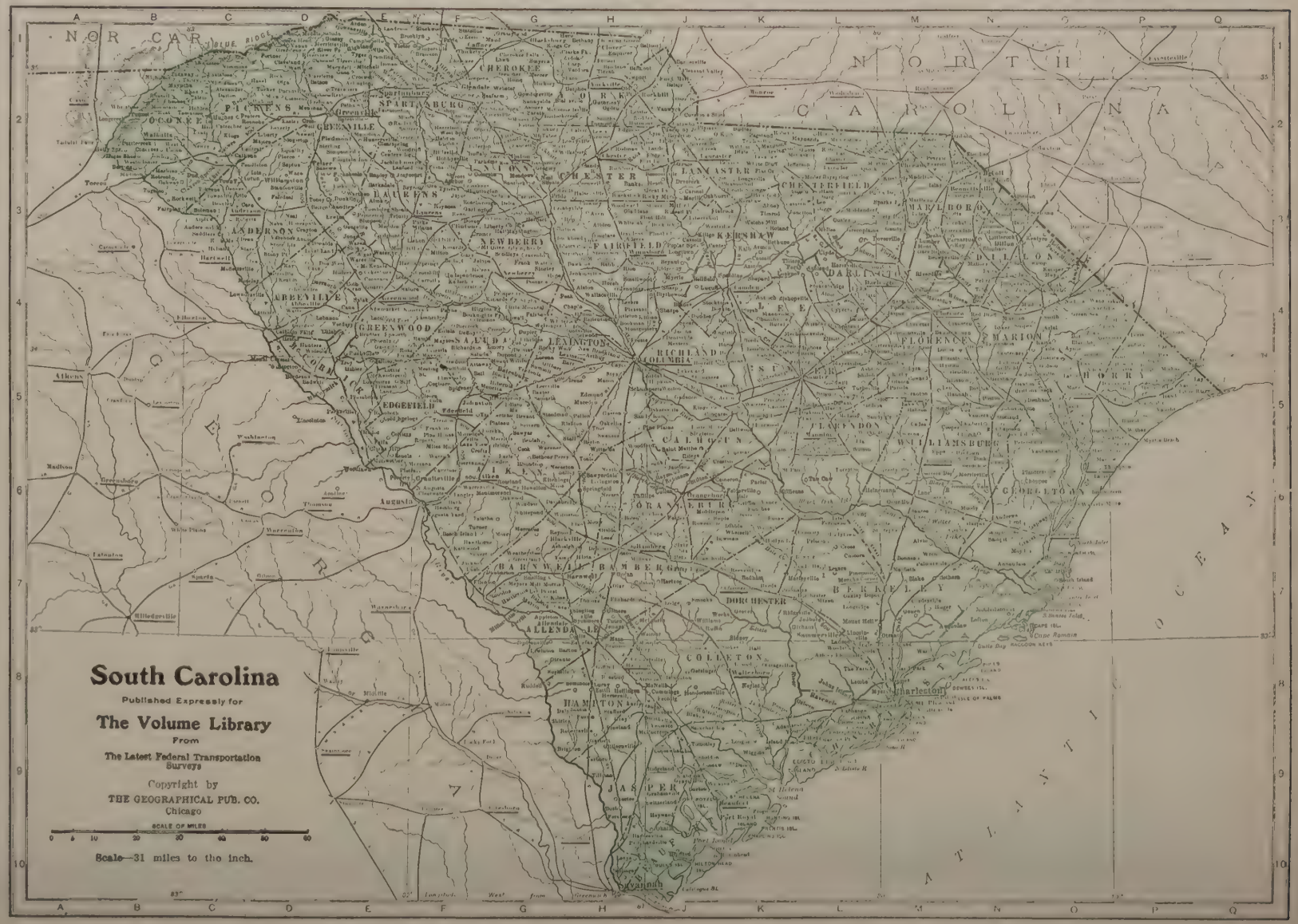
* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.



GEORGIA

Pop. 2,895,832

COUNTIES

Appling* 17M.10
Atkinson 19K..7
Bacon 17M....6
Baker* 19D....8
Baldwin 11J..19
Banks* 5H...11
Barrow 7G ...13
Bartow 6C ...24
Ben Hill [illegible]
Berrien* 20J..15
Bibb 12G.....[illegible]
Bleckley 14H..1[illegible]
Brooks 20 ...[illegible]
Brantley 20O...7
Bryan 16Q.....6
Bulloch 14P..26
Burke 4O.....30
Butts 10F....12
Calhoun* 18G.10
Camden* 21Q..6
Campbell 9D .11
Candler 14N ..9
Carroll 9B ...34
Catoosa* 2B...6
Charlton* 21I..4
Chatham 16R 100
Chattahoochee* 15C 5
Chattooga* 4A 14
Cherokee 6D..18
Clarke 7H.. 26
Clay 18B 7
Clayton* 9E..11
Clinch* 20L...7
Cobb 7D 30
Coffee 18K....18
Colquitt 20G..29
Columbia* 9M 11
Cook 20H....11
Coweta 10G...29
Crawford* 13F.8
Crisp 16G....18
Dade* 3A.....8
Dawson 5E....4
Decatur 21G..31
DeKalb 8E....44
Dodge 15G....22
Dooly 16G...20
Dougherty 18E 20
Douglas 8C...10
Early 19B ...18
Echols* 22K...3
Effingham 14Q 9
Elbert 6K....23
Emanuel 13M.25
Evans 15O.....6
Fannin* 3E...12
Fayette* 9D..11
Floyd 5A.....39
Forsyth* 6E...11
Franklin* 5H.19
Fulton 8D...232
Gilmer* 4D....8
Glascock* 10L..4
Glynn 20Q....19
Gordon 4B....17
Grady 21E...20
Greene 8J ...18
Gwinnett 7F.30
Habersham* 4H 10
Hall 5G 26
Hancock 10K.18
Harrison* 7A.14
Harris* 12B...15
Hart 5K 17
Heard* 10B...11
Henry* 9E....20
Houston* 14G.21
Irwin* 18J....12
Jackson 6H...24
Jasper 10G....16
Jeff Davis 17L.7
Jefferson 12M.22
Jenkins 12O..14
Johnson 13L..13
Jones* 11H...13
Lamar 11E....12
Lanier 21K....5
Laurens 14K..39
Lee* 17E.....10
Liberty* 17P..12
Lowndes 22J..26
Lincoln* 8M...9
Long 17P 5
Lumpkin* 4F..5
McDuffie 9M .11
McIntosh 19Q .5
Macon* 15F..17
Madison* 6J..18
Marion 14O....7
Meriwether* 11C 26
Miller* 20G...9
Milton* 6E....6
Mitchel 20E..25
Monroe 11F...20
Montgomery* 16L 9
Morgan 9H...20
Murray* 3G....9
Muscogee 14B.44
Newton 9G ...21
Oconee* 8H...11
Oglethorpe 7J.20
Paulding 7G..14
[illegible]
[illegible]
[illegible]
[illegible]

GEORGIA.

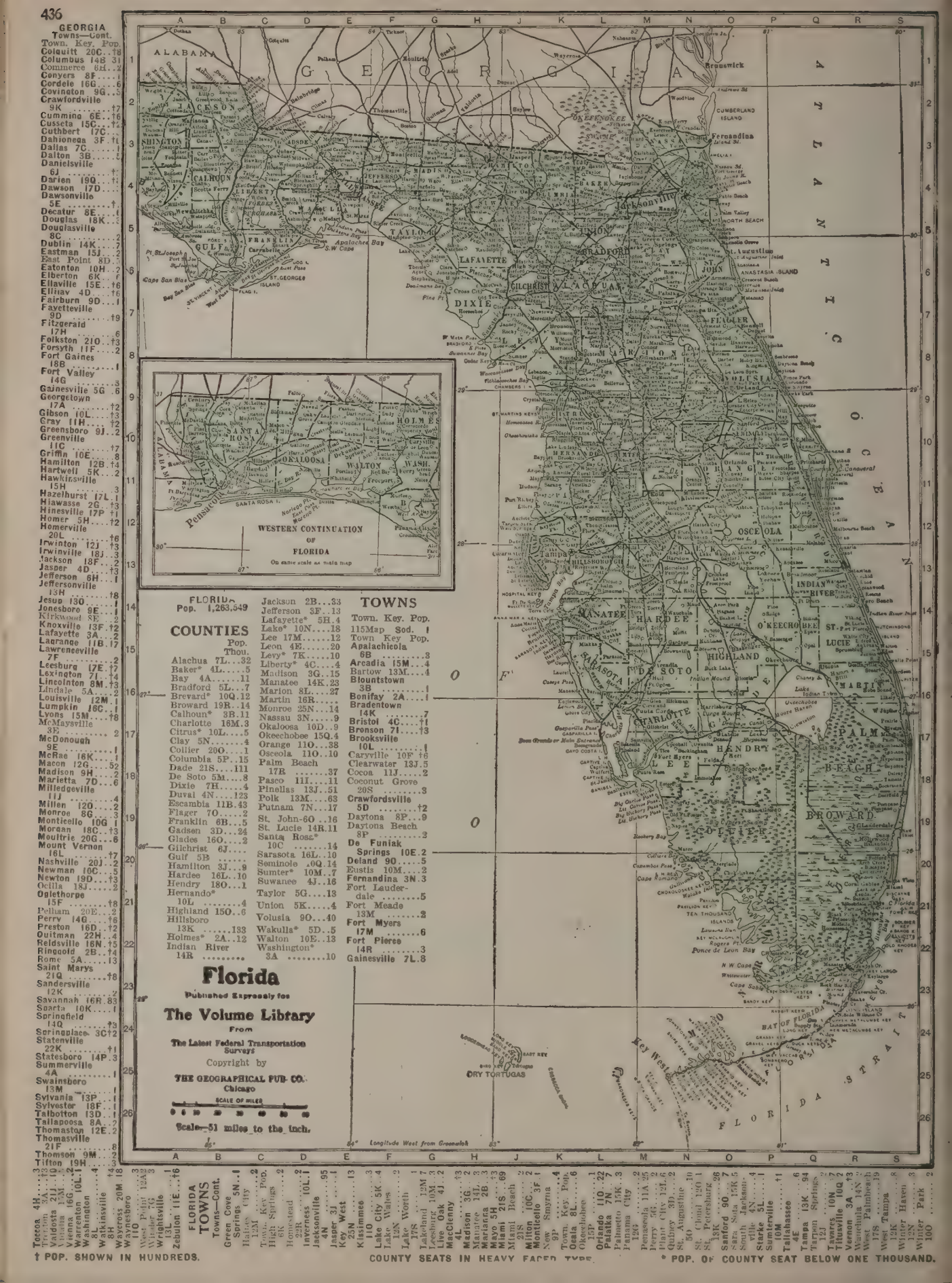
Counties—Cont.

Polk 7A 20
Pulaski 15H..11
Putnam 10H..15
Quitman* 17A.3
Rabun* 3H....5
Randolph 17C 16
Richmond 9O 63
Rockdale 8F...9
Schley* 15E...5
Screven 13P...23
Seminole 21C.10
Spalding 10E.21
Stephens 4H..11
Stewart 16C...12
Sumter 16E...29
Talbot 13D...11
Taliaferro* 9K.8
Tattnall* 16N.11
Taylor* 13E...11
Telfair 16K...15
Terrell 17D...19
Thomas 21F...33
Tift 19H......11
Toombs* 15M.13
Towns* 2G....3
Treutlen 14L..7
Troup 11B...36
Turner 18G...12
Twiggs* 13H..10
Union* 3F.....6
Upson 12E....11
Walker 3A....23
Walton 8G....24
Ware 20M....28
Warren 10L...11
Washington 12K 28
Wayne 18O...14
Webster* 16D.5
Wheeler 16L..9
White* 4G.....6
Whitfield 3B.16
Wilcox 16J...15
Wilkes 8L....24
Wilkinson* 13J 11
Worth 18F...23

TOWNS

Town Key. Pop.
Abbeville 16J...1
Acworth 6C....1
Adel 20H....1
Alamo 16J ...†5
Albany 18E...14
Alma 17M 1
Alpharetta 6A †3
Americus 16E..9
Appling 9M ...†1
Ashburton 18C ..1
Ashburn 18G...2
Athens 7H ...18
Lawrenceville 21J..20
Atlanta 8D ..200
Augusta 9O ..52
Bainbridge 21C.4
Barnesville 11E 3
Baxley 17M....1
Blackshear 19N..1
Blairsville 3F.†2
Blakely 19B....1
Blueridge 3E..†9
Bolton 22G....1
Brunswick 20Q 14
Buchanan 7A.†4
Buena Vista 14D 1
Buford 6F....2
Butler 13E...†7
Cairo 21E......1
Calhoun 4B.....1
Camilla 20E....2
Canton 6D.....2
Carrollton 9B..4
Carnesville 5H ....†4
Cartersville 6C.4
Cedartown 7A..4
Clarkesville 4H ......†5
Claxton 15O......1
Clayton 3H...†5
Cleveland 4G.†3
Clyde 16Q.....1
Cochran 14H...2
Collegepark 8D 8

‡ POP. SHOWN IN HUNDREDS.   * POP. OF COUNTY SEAT BELOW ONE THOUSAND.   COUNTY SEATS IN HEAVY FACED TYPE.



FLORIDA TOWNS

Green Cove Springs 5N..1
Hallowes City 2
Town. Key. Pop.
High Springs 2
Homestead 22R 2
Inverness 10L..1
Jacksonville 4N 95
Jasper 3I.....1
Key West 20T....13
Kissimmee 3
Lake City 5K..4
Lake Wales 2
Lake Worth 17S 1
Lakeland 12M.7
Leesburg 10M..3
Live Oak 4J..2
MacClenny 4L 3
Madison 3G....2
Manatee 14L..3
Marianna 2B..3
Miami 21S....69
Miami Beach 2
Milton 10C....2
Monticello 3F.1
New Smyrna 9P 4
Town. Key. Pop.
Ocala 8L.....6
Okeechobee 15P 1
Orlando 11O..22
Palatka 7N..7
Palmetto 17K..3
Panama City 2
Pensacola 11A..25
Perry 6G....2
Plant City 12L.6
Quincy 3D....2
St. Augustine 5O 10
St. Petersburg 38
Sanford 9O....7
Santa Rosa 15K..5
Starke 4N.....4
Tallahassee 5L .....†1
Tampa 13K..94
Tarpon Springs 7
Tavares 10N..2
Titusville 10Q..2
Vernon 3A..13
Waucheula 14N..1
West Palmbeach 19
West Tampa 8
White Springs 1S 3
Winter Haven 18N..2
Winter Park 10O 2

† POP. SHOWN IN HUNDREDS. COUNTY SEATS IN HEAVY FACED TYPE. * POP. OF COUNTY SEAT BELOW ONE THOUSAND.

PENNSYLVANIA
Pop. 8,720,017

COUNTIES

Pop. Thous.
Adams 16O ...34
Allegheny 13C ...1,185
Armstrong 11E 75
Beaver 11B..111
Bedford 15J..38
Berks 13U...200
Blair 13I....128
Bradford 5R..53
Bucks 13X...82
Butler 10D...77
Cambria 13I.197
Cameron 7K...6
Carbon 10V...62
Center 10M...44
Chester 16V.115
Clarion 8F ..36
Clearfield 10J 103
Clinton 9N...33
Columbia 10R 48
Crawford 6C 60
Cumberland 14O 58
Dauphin 14Q 153
Delaware 16W 173
Elk 7I 34
Erie 3C 153
Fayette 16D.188
Forest* 7F ...7
Franklin 16M.62
Fulton* 16L...9
Green 17N ..30
Huntington 13L 39
Indiana 12G..80
Jefferson 9G ..62
Juniata* 12N.14
Lackawanna 7X 286
Lancaster 15S 173
Lawrence 9B..85
Lebanon 13S..63
Lehigh 12W 148
Luzerne 8U..390
Lycoming 8P..83
McKean 5J...48
Mercer 8B....93
Mifflin 12N ..31
Monroe 10X..24
Montgomery 15W 199
Montour 10R..14
Northampton 11X 153
Northumberland 10Q 122

Counties—Cont.
Perry* 13O...22
Philadelphia 16X 1,823
Pike* 8Z 6
Potter 5L ...21
Schuylkill 11T 217
Snyder* 11P..17
Somerset 15G.82
Sullivan* 7R..9
Susquehanna 5U 34
Tioga* 5O ...37
Union 10Q....15
Venango 7D..59
Warren 5G...40
Washington 14B 188
Wayne 6W...27
Westmoreland 14E 273
Wyoming 7U..14
York 16Q ...144

TOWNS

Town. Key. Pop.
Albion 4B 1
Aliquippa 12B.2
Allen 14O 1
Allentown 12W 73
Altoona 12J..60
Ambler 14X ..3
Ambridge 11B 12
Anita 10G.....2
Annville 14R...1
Apollo 11E....3
Archbald 7V...8
Ardmore 3
Arnold 14E....6
Arnot 6O......2
Audendried 10V 1
Ashland 11S...6
Ashley 9U.....6
Aspinwall 12D.3
Athens 4R.....4
Austin 5L.....1
Avalon 13C....5
Avoca 8U......4
Avonmore 12E.1
Bangor 10X...5
Barnesboro 12H 4
Bath 11W.....1
Beaver 11B ...4
Beaver Falls 11G 12

PENNSYLVANIA.
Towns—Cont.

Town. Key. Pop.
Beaver Meadows 10U....1
Bedford 15J 2
Bellefonte 10M.4
Belle Vernon 15D 2
Bellevue 13E...8
Bellwood 12J..2
Ben Avon 13C.2
Bentleyville 14B 3
Berlin 16H....1
Berwick 9S...12
Bethlehem 12W 50
Big Run 10H..1
Birdsboro 14U.3
Blairsville 13G.4
Blakeley 7V...6
Blandburg 12J.7
Bloomsburg 10R 7
Blossburg 6P..2
Boswell 16G...2
Brackenbridge 13D 4
Braddock 13D.20
Bradford 4I..15
Brentwood 13C.1
Bridgeport 15W 4
Bridgeville 13D3
Bridgewater 11B 1
Bristol 15Y ..10
Brockwayville 8H 2
Brookville 9G..3
Brownstown 15T 1
Brownsville 15C 2
Bryn Mawr 15X 1
Burgettstown 13B 2
Burnham 12N..2
Butler 10D 23
California 15C.2
Cambridge Sprgs. 5C...1
Canonsburg 14B 10
Canton 6Q.....2
Carbondale 6W 18
Carlisle 14O..10
Carnegie 13C..11
Carrick 13C...10
Catasauqua 12W 4
Catawissa 10R.2
Centerville 14B.4
Centralia 11S..2
Chambersburg 16M 13
Charlevoi 15C.11
Chartois 5
Chester 16W..58
Chicora 10D...1
Clairton 13C..6
Clarion 8F 2
Claysville 15A 1
Clearfield 10J 8
Clifton Hghts 16K...3
Clymer 12G....2
Coaldale 11T..6
Catsville 16U 14
Cokeburg 14B..1
Collingdale 16X 3
Columbia 15S.10
Colwyn 16X...1
Conemaugh 13H 6
Connellsville 15E 13
Conshohocken 15X 8
Conway 11B...1
Coplay 12W...2
Corapolis 12B.6
Cornell 11
Cornwall 14S..2
Corry 4E......7
Costello 6K....1
Cowdersport 5L 2
Crafton 13C...5
Cresson 13I....2
Cressona 12T..1
Crossfork 7M.†7
Curwensville 10J 2
Dale 12I......3
Dallastown 16Q 2
Danville 10R..6
Darby 16X....7
Derry 14E....2
Dickson City 7V 11
Donora 14D..14
Doremont 13C.6
Dorranceton 8T 6
Dowington 16V 4
Doylestown 13X 3
Dravosburg 13D 2
Drifton 10U...2

Dubois 9H....13
Duncannon 13P 1
Dunbar 16E..1
Dupont 8U...4
Dunmore 7V..20
Duquesne 13D 19
Duryea 9T.....7
E. Bangor 10X 1
E. Brady 10E 1
E. Conemaugh 13I 5
E. Greenville 14W 1
E. McKeesport 13C 9
E. Mauch Chunk 10V. 3
Eston 11X....33
E. Pittsburg 13C 6
E. Stroudsburg 10X 4
E. Washington 14A 1
Edwardsville 8T 9
Ebensburg 13I.2
Eckley 10N...1
Eddystone 16X 2
Edgewood 13C.3
Edgeworth 13C.1
Eldred 4J.....1
Elizabeth 14D.2
Elizabethtown 15R 3
Elkland 4O....1
Elklick 17G...1
Ellsworth 15C..2
Ellwood City 10B 8
Emaus 12W....4
Emlenton 8E..1
Emporium 7K.3
Ensworth 12C..2
Ephrata 14T..8
Erie 3C.....93
Etna 13C....[illegible]
Evansburg 10D.[illegible]
Evans City 11C 1
Everett 15J....1
Exeter 7U.....4
Fairchance 16D.2
Falls Creek 9H.1
Farrell 15
Fayette City 15D 2
Fleetwood 13U.1
Flemington 9N.1
Ford City 11E.5
Forest City 6W 6
Forty Fort 8T.3
Fountain Hill 12V 2
Frackville 11T.5
Franklin 7D..9
Fredericksburg 13S ....†9
Freedom 11B..3
Freeland 10U..6
Freeport 11D..2
Galeton 5M....2
Gallitzin 13I .3
Gettysburg 16O 4
Gilberton 11T..4
Gilbertsville 14V 4
Girardville 11S.4
Glassport 13C..6
Glenlyon 9T..3
Glenolden 16X.1
Glenrock 17Q..1
Gordon 11S....1
Grassflat 10K..1
Greencastle 17M 2
Greensburg 14E 15
Greentree 13C..1
Greenville 7B..8
Grove City 8C.4
Hallstead 4U..1
Hamburg 12U..2
Hanover 17Q..8
Harrisburg 14Q 75
Hastings 12I..2
Hawkrun 10K.1
Hawley 7X....1
Hays 13C......2

† POP. SHOWN IN HUNDREDS.
* POP. OF COUNTY SEAT BELOW ONE THOUSAND.
COUNTY SEATS IN HEAVY FACED TYPE.

PENNSYLVANIA.

Towns—Cont.

Town. Key. Pop.
Hazelton 10S.32
Heidelberg 13C.2
Hellertown 11X.3
Highspire 14Q.2
Hollidaysburg 13I 4
Homestead 13D 20
Honesdale 6W.2
Houtsdale 11J.1
Hudson 8U....2
Hughestown 8U 2
Hughsville 8Q..1
Hummelstown 14Q 2
Huntingdon 13L 7
Hyndman 17I..1

Indiana 12G...7
Ingram 13C....3
Irwin 13D....3

Jeansville 10U.1
Jeannette 13E.10
Jenkintown 15X 3
Jermyn 7V....3
Jersey Shore 8O 6
Jessup 7V....2
Johnsonburg ..5
Johnstown 13H 67
Juniata 13J...7

Kane 6H......7
Kennett Square 16V 2
Kingston 8U...8
Kinzua 2H....1
Kittaning 11E..7
Kulpmont 13C.4
Kutztown 12V..2

Lancaster 15S.53
Landsford 10V.8
Lansdowne 15X.4
Laporte 7R...†1
Larksville 8U..9
Lansdale 14X..4
Larimer 13E...1
Latrobe 11F...9
Lebanon 13S..24
Leechburg 12E.4
Leetsdale 12B..2
Lehighton 17V.6
Lemoyne 15O..2
Leroi Mills 16W 1
Lewisburg 10Q 3
Lewistown 12N 9
Ligonier 11F 1
Lilly 13L.....2
Lititz 15S.....3
Littlestown 17P 1
Lockhaven 9N..8
Locust Gap 11R 1
Lopez 7S.....1
Luzerne 8U .. 6
Lykens 12Q....2

McAdoo 11T...4
McDonald 13B.2
McConnellsburg 16L ....†6
McKeesport 13D 46
McKees Rocks 13C 16
McSherrystown 17P 1
Mahanoy City 11T 15
Maltby 8U....2
Malvern 15W..1
Manheim 14S..2
Manor 13E....1
Mansfield 5P...1
Marcus H. 16X.5
Mariana 14B.1
Marietta 15R..1
Marion Heights 10Q 1
Mars 10D.....1
Marysville 15P.1
Matamoras 7Z.1
Mauch Chunk 10V 3
Mayfield 6V...3
Meadville 6C.14
Mechanicsburg 15O 4
Media 16W....4
Mercer 8B.....2
Mercersburg 17L.1
Meyersdale 17G.3
Middleburg 11P ....†9
Middleport 11T 1
Middletown 14Q 5
Midland 11A...5
Mifflinburg 10P 1
Mifflintown 12N 1
Milford 8Z...†7
Millersburg 12P 1
Millersville 15S 1
Millhall 9N....1
Millvale 13C...3
Milton 10Q....8
Miners Mills 8U 4
Minersville 12S.7
Mohonton 13U.1

Monaca 11B...3
Monessen 14D.18
Monongahela 14C 8
Montgomery 9P 1
Montourville 8P 1
Montrose 5U...1
Moores 16X....1
Moosic 8U.....4
Morris Run 6P 1
Morrisville 14Z.3
Mt. Carmel 11S 17
Mt. Oliver 13C 5
Mt. Jewett 5I. 1
Mt. Joy 15R...2
Mt. Pleasant 13Y 5
Mt. Union 13L.4
Muncy 9Q. . 3
Munhall 13C...6
Myerstown 3S..2

Nanticoke 8T.22
Nantyglow 13H.5
Narbeth 14W..3
Natrona 12D...1
Nazareth 11X..4
Nescopeck 9S..1
New Bethlehem 9F.... 1
New Bloomfield 13O 1
New Brighton 11B 9
New Castle 9B 44
New Cumberland 14Q....1
Newhope 13Y..1
New Kensington 12D 11
New Philadelphia 11S....2
Newport 13Q...1
Newtown 6F...1
Newville 14N..1
Norristown 15W 32
Northampton 11W 9
Northampton Hghts 11W..3
North Bellevernon 15D 2
North Braddock 13D 14
North Catasauqua 12W....2
North Charlerio 15C 1
Northeast 2D..3
Northumberland 10Q....4
North Wales 14X 2
Norwood 16X..2

Oakdale 13D ..1
Oakmont 12D..4
Oil City 7D..21
Oldforge 8U..12
Olyphant 7V..10
Orwigsburg 12T.1
Osceola Mills 11K 2
Oxford 17U....2

Palmerton 10V.7
Palmyra 14R..3
Palo Alto 11T.1
Parkersburg 16U 2
Parkers Landing 9E..1
Parnassus 12E.3
Parsons 8U....5
Patton 12I....3
Pen Argyle 10X 4
Penbrook 13Q..2
Penn 14S.....1
Pennsburg 13W.1
Perkasie 13X .3
Philadelphia 16X 1,823
Philipsburg 10K 3
Phoenixville 15W 10
Pine Grove 12S 1
Pitcairn 13D .5
Pittsburg 13C.588
Cont. on page 15

WEST VIRGINIA.

Pop. 1,463,701

COUNTIES

Co. Index. Pop. Thous.
Barbour 9O...18
Berkeley 7W..24
Boone* 15F...15
Braxton 11L..23
Brooke 3L ...16
Cabell 13C...65
Calhoun* 10J.10
Clay* 13J.....11
Doddridge* 8L 11
Fayette* 15K.60
Gilmer* 10L..10
Grant 10T.....8
Greenbrier* 16M 26
Hampshire 8T 11
Hancock 1L..19
Hardy* 9T.....9
Harrison 8N..74
Jackson* 11G.18
Jefferson 8X..15
Kanawha 16G 119
Lewis 10M...20
Lincoln* 13E.19
Logan 16F ..41
McDowell 18G.68
Marion 7N...54
Marshall 5L..33
Mason 10E...21
Mercer 19J...49
Mineral 7S ..19
Mingo 17D...26
Monongalia 6O 33
Monroe 18M..13
Morgan* 6W...8
Nicholas 14L.20
Ohio 4L.......62
Pendleton 12R.9
Pleasants 7J...7
14O 15
Pocahontas 14O 15
Preston* 6P..27
Putnam 12F .17
Raleigh 16J..42
Randolph 10P 26
Ritchie* 9J...16
Roane 10H 20
Summers 17K 19
Taylor 8O . 18
Tucker 9P... 16
Tyler* 7K.. .14
Upshur 10N .17
Wayne* 14D 26
Webster 12M.11
Wetzel 6K....23
Wirt* 9H.....7
Wood 8G 42
Wyoming* 17G 15

TOWNS

Town. Key. Pop.
Adanaston 8N.1
Alderson 17L..1
Ansted 14K...1
Avis 17K......1
Beckley 16J...4
Bellington 10O.1
Benwood 4L...4
Berkeley Sprgs. 6W ....†9
Bluefield 19J.15
Bramwell 19J..1
Buckhannon 10N 3
Cameron 5M...2
Ceredo 13C....1
Charleston 13G 39
Charlestown 8X 2
Chester 1L.....3
Clarksburg 8N 27
Clay 13J..... †6
Davis 9R......2
Edgewood 4L..1
Elizabeth 9S..†6
Elkhorn 18H...2
Elkins 10P....6
Elmgrove 4L...1
Fairmont 7N..17
Fayetteville 15K ......†6
Follansbee 2L..3
Franklin 12R.†3
Fulton 4L.....1
Glenville 10L..†3
Grafton 8O....8
Grantsville 10J ....†4
Guyandotte 13D 1
Hamlin 13E..†5
Harrisville 9J..1
Hinton 17K....3
Holden 16E....2
Huntington 13C 50
Keyser 7S....6
Keystone 18H..1
Kimball 19G...1
Kingwood 6P..1
Lewisburg 16M 1
Logan 16F.....2
Macdonald 15J.1
McMechen 4L..3
Madison 15F..†6
Mannington 18N 3
Marlington 14O 1
Martinsburg 7W 12
Maybeury 19H.2
Middlebourne 7K ...... †9
Monogah 7N...2
Montgomery 14 H 2
Moorefield 9T.†6
Morgantown 6O 12
Moundsville 5L 10
New Cumberland 1M.....1
New Martinsville 6K.....2
Parkersburg 8G 20
Parsons 9P....2
Pennsboro 8K..1
Petersburg 10T ....†8
Phillippi 9O...1
Piedmont 7S...2
Pineville 17G.†3
Point Pleasant 10E.....?
Princeton 19J..6
Ravenswood 10F 1
Richwood 14M.4
Ripley 11G...†5
Romney 8T....1
Ronceverte 16M 2
Saint Albans 13F 2
St. Marys 7J..1
Salem 8L.....2
Scarbo 16J.....1
Sheperdstown 7X 1
Shinnston 8N..?
Sistersville 6K.3
South Buckhannon 10N †6
Spencer 10H...1
Summerville 14L ....†2
Sutton 11L ..1
Terra Alta 7Q.2
Thomas 9Q....2
Union 18M . †4
Webster Sprgs. 12M ....†5
Winfield 12F.†2
Wayne 14D...†4
Welch 18G ...3
Wellsburg 3L..4
Weston 10M...5
West Union 8L 1
Wheeling 4L..56
Williamson 17D ....?
Williamstown 7H ....?

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

Kentucky

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SCALE OF MILES 0 5 10 20 30 40 50

KENTUCKY
Pop. 2,416,630

COUNTIES

Pop Thous

Adair 13O....17
Allen 14L....16
Anderson 8Q....9
Ballard* 13A....12
Barren 13M....27
Bath* 8U....11
Bell 14U....33
Boone 4Q....9
Bourbon 7S....17
Boyd 6Y....29
Boyle 10Q....14
Bracken* 5T.10
Breathitt 10V.20
Breckenridge* 9K....19
Bullitt* 8N....9
Butler 12J....15
Caldwell 12E.13
Calloway 15C 2
Campbell 3R.61
Carlisle 13A..8
Carroll 5P....8
Carter 7X....22
Casey 11P....17
Christian 14F.35
Clark 8S....17
Clay* 12U....19
Clinton 14P....8
Crittenden 11D....13
Cumberland* 10O....10
Daviess 10H..40
Edmondson* 12L....10
Elliott* 8W....8
Estill* 10T....15
Fayette 8R....54
Fleming 7U....15
Floyd 10Y....27
Franklin 7Q..19
Fulton 15A....15
Gallatin* 5Q..4
Garrard 10R..12
Grant* 5R....10
Graves 14B..32
Grayson 11L..19
Green* 12O....11
Greenup* 6X..20
Hancock 9G....6
Hardin 10M..24
Harlan* 14W.31
Harrison 7S..15
Hart* 12M....18
Henderson 9F.27
Henry* 6P....13
Hickman 14A.10
Hopkins 12F..34
Jackson* 11T 11
Jefferson 7N 286
Jessamine 9R 12
Johnson* 9X..19
Knott* 11X....11
Kenton 3R....73
Knox 14U....24
Larue* 10N....10
Laurel 12T..19
Lawrence 8X..17
Lee 10U....11
Leslie 12Y....10
Letcher* 12X.24
Lewis 6V....15
Lincoln 11R..16
Livingston* 12C....9
Logan 14J....23
Lyon 13D....8
McCracken . 3.
McCreary 14S 11
McLean* 10G.12
Madison 10R.26
Magoffin* 9W.13
Marion 10O 15
Marshall* 14C 15
Martin* 9Z....7
Mason 5U....17
Meade* 8L....9
Menifee* 9U....5
Mercer 10Q..14
Metcalf* 13N 10
Monroe* 14N.14
Montgomery 8T....12
Morgan* 9W..16
8T....12
Muhlberg 12G....33
Nelson 9O..16
Nicholas 7T..9
Ohio* 11H..26
Oldham 7O....7
Owen 6Q....12
Owsley* 11U..7
Pendleton 5S.11
Perry* 12W..26
Pike 11X....49
Powell* 9U..6
Pulaski 13R.34
Robertson 6T..3
Rockcastle 11S....15
Rowan 7V....9
Russell* 13P..11
Scott 7R....15
Shelby 7O..18
Simpson 14K.11
Spencer* 8O..7
Taylor 11O..12
Todd 14G..15
Trigg 14E..14
Trimble* 6O..6
Union 10E..18
Warren 15K.30
Washington 10P....14

KENTUCKY Counties—Cont.
Wayne 14O..16
Webster* 11E.20
Whitley 14S..27
Wolfe* 9V....8
Woodford 8R 11

TOWNS

Town Key Pop
Albany 14P †5
Ashland 6Y 14
Augusta 5T 1
Barboursville 14U....1
Bardstown 9O 1
Bardwell 13A..1
Beattyville 10U....1
Bedford 6O....†2
Bellevue 4S....7
Benton 14C....†8
Berea 10S....1
Booneville 11U....†2
Bowling Green 13K....9
Brandenburg 8L....†5
Brooksville 5T....†5
Brownsville 12L....†2
Burkesville 10O....†7
Burlington 4Q....†1
Burnside 13R.1
Calhoun 10I.†7
Campbellsville 11Q....1
Campton 9V....†2
Carlisle 7T....1
Carrollton 5P..2
Catlettsburg 6Y....4
Cayce 15A....3
Central City 12G....3
Clay 11E....1
Clinton 14A....1
Cloverport 9J....1
Columbia 13O....1
Corbin 13T....3
Covington 3R.57
Cynthiana 7S....3
Danville 10Q.5
Dawsonsprings 12E....1
Dayton 3R....7
Dixon 10E....†7
Drakesboro 12H....1
Earlington 12F.3
Eddyville 13D †
Edmonton 13N....†2
Elizabethtown 10M....2
Elkton 14G....1
Eminence 7P....1
Falmouth 5S....1
Flemingsburg 7U....1
Fort Thomas 5R....5
Frankfort 7Q.9
Franklin 14K.3
Frenchburg 9U....†2
Fulton 15A....3
Georgetown 7R....3
Glasgow 13M.2
Grayson 7X....†8
Greensburg 12O....†4
Greenup 6X †9
Greenville 12G.1
Guthrie 14G....1
Hardinsburg 9K....†8
Harlan 14W....2
Harrodsburg 10Q....3
Hartford 11H....†9
Hawesville 9J †8
Hazard 12W....4
Henderson 9F 12
Hickman 15A 2
Highland Park 8N....3
Hindman 11X....†4
Hodgenville 10N....1
Hopkinsville 14F....9
Hyden 12V....†3
Inez 9Z....†3
Irvine 10T....2
Jackson 10V....1
Jamestown 13P....†2
Jenkins 12X....4
La Grange 7O....1
Lancaster 10R.2
Lawrenceburg 8Q....1
Lebanon 10O....3
Leitchfield 11L.1
Lexington 8R.41
Liberty 11P....†3
Livermore 11G.1
London 12T....1
Louisa 8Y....2
Louisville 7N 234
Ludlow 4R....4
McKee 11T....†1
Madisonville 12F....5
Manchester 12U....†6
Marion 11D....1
Mayfield 14B....6
Maysville 5U....6
Middlesboro 15U....8
Monticello 14Q.1
Morehead 7V....1
Morganfield 10E....2
Morgantown 12J....†7
Mount Olivet 6T....†3
Mount Sterling 8T....3
Mount Vernon 11S....†7
Munfordville 12M....†5
Murray 15C....2
Newcastle 6P....†4
Newport 3R 29
Nicholasville 9R....2
Oakdale 10V....3
Oakwood 6T....†1
Owensboro 10H....17
Owenton 8Q....1
Owingsville 8U....†7
Paducah 12B 24
Paintsville 9Y....1
Paris 7S....6
Pikeville 11Y.2
Pineville 14U.2
Prestonburg 10Y....1
Princeton 12E.3
Providence 11E.4
Richmond 10R.5
Russell 6X....1
Russellville 14J....3
Salyersville 9W....†4
Sandyhook 8W....†1
Scottsville 14L....2
Sebree 10F....1
Shelbyville 7O 3
Shepherdsville 8N....†5
Smithland 12C.†5
Somerset 13R 4
Springfield 10P.1
Stanford 11R....1
Stanton 9U....†3
Sturgis 10D....1
Taylorsville 8O....†6
Tompkinsville 14N....†7
Uniontown 9E....1
Vanceburg 6V....1
Versailles 8R..2
Warsaw 5Q....†8
West Covington 4R....1
West Liberty 9W....†4
Whitesburg 12X....†7
Wickliffe 13A.†9
Williamsburg 14S....1
Williamstown 5R....†8
Winchester 8S.8

PENNSYLVANIA.

Towns—Cont.

Town. Key. Pop.
Pittston 8U....18
Plymouth 8U.16
Point Marion 16C....1
Polk 8D....2
Portage 13I....4
Port Allegany 5K....2
Port Carbon 11T....2
Port Vue 13D.2
Pottstown 14V....17
Pottsville 11T.21
Prospect Park 16X....2
Pulaski 9A...†3
Punxsutawney 10H....10
Quakertown 15W....4
Ramey 11G....1
Rankin 13D....7
Reading 13U.107
Red Lion 16R.3
Renovo 8M....5
Reynoldsville 9H....4
Ridgway 7I....6
Ridley Park 16X....2
Roaring Spring 14J....2
Robertsdale 15L....1
Robesonia 13T.1
Rochester 11B.6
Rockwood 16G.1
Roscoe 15D....1
Rossiter 10H..3
Royalton 14Z..1
Royersford 14W....3
St. Clair 11T..6
St. Marys 7I..6
Saltsburg 12F..1
Saxton 14K....1
Sayre 4R....8
Scalp Level 14H.1
Schuylkill Haven 12S..5
Scottdale 15E.5
Scranton 7V 137
Selinsgrove 11Q.1
Sellersville 15X.1
Sewickley 12B..4
Shamokin 11R.21
Sharon 8A....21
Sharon Hill 16W....1
Sharpsburg 12D....8
Sharpsville 8A.4
Sheffield 6G....1
Shenandoah 11T....24
Shickshinny 9T....2
Shillington 13U....2
Shinglehouse 4K....1
Shippensburg 15N....4
Shoemakersville 12U....†7
[illegible] 11W.1
[illegible] 11V..4
Smethport 5J..1
Somerset 15G..3
Souderton 14X.3
South Allentown 12V....2
South Bethlehem 12W....10
South Brownsville 16D....4
South Fork 13H.4
South Greensburg 13F....2
South Renovo..1
South Sharon 8B....10
South Waverly 5R....1
South Williamsport 7P....4
Southwest Greensburg 13F....2
Spangler 13I....3
Spring City 14W....2
Spring Grove 16Q....1
Springdale 13C.?
State College 11L....2
[illegible] 7C..1
Steelton 13Q..13
Stroudsburg 10X....5
Sugar Notch 9T....3
Summit Hill 11U....5
Sunbury 10Q..15
Susquehanna 4V....3
Swarthmore 16W....3
Swissvale 13C.10
Swoyersville 8T....6
Sykesville 9H..2
Tamaqua 11U.13
Tarentum 12D.8

PENNSYL-VANIA.

Towns—Cont.

Taylor 7V....9
Throop 7V....8
Tionesta 7F....1
Titusville 6E....8
Towanda 5R..4
Tower City 12R....2
Trafford 13F....2
Tremont 12S....2
Trevorton 11R.3
Troy 5Q....1
Tunkhannock 7U....7
Turtle Creek 13D....8
Tyrone 12K....9
Union City 4D.3
Uniontown 16D....15
Upland 16W....2
Upper Lehigh 9U....1
Vanderbilt 16D.1
Vandergrift 12E.9
Verona 13D....3
Versailles 13C.1
Vintondale 13H.2
Wall 13C....2
Walnutport 11W....1
Warren 5G..14
Warrior Run 9T....1
Washington 14B....21
Watsontown 9Q....2
Wayne 15W....3
Waynesboro 17N....9
Waynesburg 16B....3
Weatherly 10U....2
Wellsboro 5O....3
West Berwick 9S....5
West Bridgewater 11B....1
West Brownsville 15C....1
Westchester 16V....11
West Conshohocken 15X..2
West Easton 11X....1
West Fairview 14R....1
Westfield 4N..1
West Hazleton 8T....5
West Homestead 12D....3
West Middlesex 8B....1
Westmont 13I....1
West Newton 14D....2
West Pittston 8U....6
West Reading 13T....2
Westview 13D..2
West Wyoming 8U....2
West York 16Q....3
Whitaker 13D..1
Wilkes-Barre 8U....73
Wilkinsburg 13D....21
Williamsburg 13K....1
Williamsport 8P....36
Williamstown 12R....2
Wilmerding 13D....6
Wilson 13D....3
Windber 14H....7
Winton 7V....7
Woodland 10J.1
Woodlawn 12R....12
Wrightsville 15R....2
Wyoming 8U....3
Yatesboro 11F....3
Yeagertown 12N....1
York 16Q....47
Youngsville 5F.1

† POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.

OHIO
Pop. 5,759,394

COUNTIES

Pop. Thous.
Adams 3I.....22
Allen 2D......68
Ashland 5C...24
Ashtabula 8A.65
Athens 6G....50
Auglaize 1D...29
Belmont 8E...93
Brown 2H.....22
Butler 1G.....87
Carroll 8D....15
Champaign 2E.25
Clark 2F......80
Clermont 1H..28
Clinton 2G....23
Columbiana 8D 83
Coshocton 6E..29
Crawford 4D..36
Cuyahoga 6B.943
Darke 1E......42
Defiance 1B...24
Delaware 4E..26
Erie 4B.......39
Fairfield 5F..40
Fayette 3G ...21
Franklin 4F.283
Fulton 2B....23
Gallia 5I.....23
Geauga 7A....15
Greene 2F....31
Guernsey 7F. 45
Hamilton 1H.493
Hancock 3C...38
Hardin 3D....29
Harrison 8E..19
Henry 2B.....22
Highland 3H..27
Hocking 5G...23
Holmes 6D....16
Huron 5B.....32
Jackson 5H....27
Jefferson 8E...77
Knox 5E.....29
Lake 7A......28
Lawrence 5I..39
Licking 5E....56
Logan 2E.....30
Lorain 6B....90
Lucas 3A....275
Madison 3F...19
Mahoning 8C.186
Marion 4D....42
Medina 6C....26
Meigs 6H.....26
Mercer 1D....26
Miami 1E.....48
Monroe 3E....20
Montgomery 1F 209
Morgan 6F....14
Morrow 4D...15
Muskingum 6F 57
Noble 7F.....17
Ottawa 4B....22
Paulding 1C...18
Perry 5F......36
Pickaway 4G..25
Pike 4H......14
Portage 7C...36
Preble 1F.....23
Putnam 2C...27
Richland 5D..55
Ross 4G......41
Sandusky 4B..37
Scioto 4I.....62
Seneca 4C....43
Shelby 2E....25
Stark 7D....177
Summit 7C..286
Trumbull 8B..83
Tuscarawas 7D 63
Union 3E.... 20
Van Wert 1C 28
Vinton 5H....12
Warren 1G....25
Washington 7G 43
Wayne 6D....41
Williams 1B..24
Wood 3B.....44
Wyandot 3C...19

TOWNS

Town. Key. Pop.
Ada 2D........2
Addyston 1H...1
Akron 7C ..208
Alliance 8C...21
Amherst 5B ...2
Amsterdam 3D.1
Antwerp 1B....1
Arcanum 1F...1
Archbold 1B...1
Ashland 5C....9
Ashtabula 8A.22
Athens 6G.....6
Barberton 7C..18
Barnesville 8E.4
Batavia 1H....1
Bedford 7B....2
Bellaire 8E...15
Bellefontaine 2E 8
Bellevue 4B ...5
Belleville 5D...1
Belpre 7G.....1
Berea 6B 2
Bergholz 8D...1
Bethel 2H.....1
Bethesda 8F...1
Blanchester 2G.1
Bluffton 2C....1
Bowling Green 3B 5
Bradford 1E...2
Bradley 8E....1
Bridgeport 8E 3
Brookville 1F..1
Bryan 1B......4
Buchtel 5G....1
Bucyrus 4D...10
Byesville 7F...2
Cadiz 8E 2
Caldwell 7F....1
Cambridge 7F.13
Canton 7D....87
Carlington 4D.1
Carey 3C 2
Carrollton 8D..2
Carthagena 1D.3
Cedarville 2F..1
Celina 1D 4
Chagrin Falls 7B 2
Chardon 7A....1
Cheviot 1H....4
Chicago 1C....2
Chillicothe 4G 15
Cincinnati 1H ..401
Circleville 4G...7
Cleveland 6B.796
Cleveland Hgts 6B 15
Cleves 1K 1
Clyde 1B 3
Coal Grove 5I.1
College Hill 2J 1
Columbiana 8C 2
Columbus 4F.237
Columbus Grove 1C....1
Conneaut 8A...9
Continental 1C 1
Corning 6G....1
Coshocton 6E.10
Covington 1E..1
Crestline 1D...4
Crooksville 6F.3
Cuyahoga Falls 7C 10
Dayton 1F...152
Defiance 1B...8
Delaware 4E...8
Delphos 1C....5
Delta 2B 1
Dennison 7E...5
Deshler 2B 1
Dillonvale 8E..1
Dover 7D......1
Dresden 6F....1
E. Cleveland 7B ...27
E. Liverpool 8D ...21
E. Palestine 8C 5
E. Youngstown 8C ...11
Eaton 1F......3
Edgerton 1B...1
Elmwood Place 1H 3
Elyria 6B ...20
Euclid 7A 3
Fairport 7A....4
Findlay 3C ...17
Forest 3D 1
Ft. Recovery 1D 1
Fostoria 3C....9
Franklin 1G...3
Fredericktown 5D 1
Fremont 4B...12
Galion 1D 7
Gallipolis 5I...6
Garrettsville 8B 1
Geneva 8A 3
Georgetown 2H.1
Germantown 1G 1
Gibsonburg 3B.1
Girard 8C 6
Glendale 1G...1
Glen Roy 5H..1
Glouster 6G....3
Granville 5E...1
Greenfield 3G..4
Greenville 1E...7
Hamilton 1G..39
Harrison 1G....1
Hartwell 1H...2
Hicksville 1B...2
Hillsboro 3H...4
Holgate 2B 1
Hubbard 8C...8
Hudson 7B 1
Huron 5B 1
Irondale 8D....1
Ironton 5I....14
Jackson 5H ..5
Jacksonville 6G.1
Jamestown 2G.1
Jefferson 8A... 1
Kenmore 7B..12
Kent 7C 7
Kenton 3D ...7
Lakewood 6B..41
Lancaster 5F..14
Lebanon 1G....3
Leetonia 8C....2
Leipsic 2C.....1
Lima 2D......41
Lisbon 8D.....3
Lockland 1H...4
Lodi 6C........1
Logan 5G 5
London 3F.....4
Lorain 5B....37
Loudonville 5D.1
Louisville 7C...2
Loveland 1H 1
Lowellville 8C 2
McArthur 5H..1
McComb 2C. 1
McConnelsville 6F 1
Madisonville 1H 5
Manchester 3I..1
Mansfield 5D 27
Marblehead 4B 1
Marietta 7G...15
Marion 4D....27
Martins Ferry 8E 11
Marysville 3E..3
Massillon 7C..17
Maumee 3B.. .3
Mechanicsburgh 3E 1
Medina 6C ...3
Miamisburg 1G.4
Middleport 6H.3
Middletown 1G 23
Milford 1H....1
Millersburg 6D.2
Minerva 7D....2
Mingo Junction 8E 4
Minster 1D....1
Monroeville 4B.1
Montpelier 1A. 3
Mt. Gilead 4D.1
Mt. Healthy 1H 2
Mt. Sterling 3F 1
Mt. Vernon 5E.9
Murray 5G.....1
Napoleon 2B...4
Navarre 7D....1
Nelsonville 5G.6
Newark 5E....26
New Boston 4H 4
New Bremen 1D 1
Newburg 7B...2
New Carlisle 2F 1
New Commers-town 7F....3
New Lexington 5F 3
New London 5C 1
New Philadel-phia 7D... .10
New Richmond 1H ..1
New Straitsville 5G 2
Niles 8B 13
N. Baltimore 3B 2
N. Lawrence 7C 1
N. Olmsted 6B.1
Norwalk 5B....7
Norwood 1H..24
Oak Harbor 4B 1
Oak Hill 5H...1
Oakley 3K.....1
Oberlin 5B....4
Orrville 6C.....4
Ottawa 2C.....2
Oxford 1G.....2
Painesville 7A .7
Paulding 1C.. 2
Perrysburg 3B 2
Piqua 1E.....15
Plain City 3E..1
Plymouth 5C...1
Pomeroy 6H...4
Port Clinton 4B .3
Portsmouth 4I 33
Ravenna 7C....7
Reading 1H....4
Richwood 3D . 1
Ripley 2I......1
Rockford 1D...1
Rockport 6B...1
Rocky River 6B 1
Roseville 5F...1
Sabina 3G.....1
St. Bernard 1H 6
St. Clairsville 8E 1
St. Marys 1D..5
St. Paris 2E...1
Salem 8C.... 10
Salineville 8D..2
Sandusky 4B. 22
Sebring 8C.....3
Shawnee 5G....1
Shelby 5C.....5
Shreve 6D 1
Sidney 2E.....8
Somerset 5F...1
S. Charleston 3F 1
Spencerville 1D 1
Springfield 2F.60
Steubenville 8E 28
Struthers 3C. 5
Stryker 1B.....1
Swanton 2A....1
Sylvania 3A ...1
Syracuse 6H...1
Tiffin 4C......14
Tippecanoe City 1F 2
Toledo 3A....243
Toronto 8D....4
Troy 1E.......7
Uhrichsville 7D 6
Union City 1F 1
Upper Sandusky 3C 3
Urbana 2E 7
Utica 5E 1
Van Wert 1C 8
Vermilion 5B. 1
Versailles 1E...1
Wadsworth 6C.4
Wapakoneta 1D 5
Warren 8B....27
Washington C. H. 3G.......7
Wauseon 2B...3
Waverly 4H .. 1
Wellington 5C 2
Wellston 5H.. 6
Wellsville 8D..8
W. Alexander 1F 1
W. Carrollton 1F 1
Westerville 4E 2
W. Jefferson* 3F 1
W. Liberty 3E 1
W. Milton 1F 1
Westpark 6B...8
W. Union 3I. .1
Willard 5B.....3
Willoughby 7A.2
Wilmington 2G 5
Woodsfield 8F..2
Woodstock 3E.†3
Wooster 6D 8
Wyoming 1H.. 2
Xenia 2F ..9
Yellow Springs 2F 1
Youngstown 8C 132
Zanesville 5F.29

Ohio

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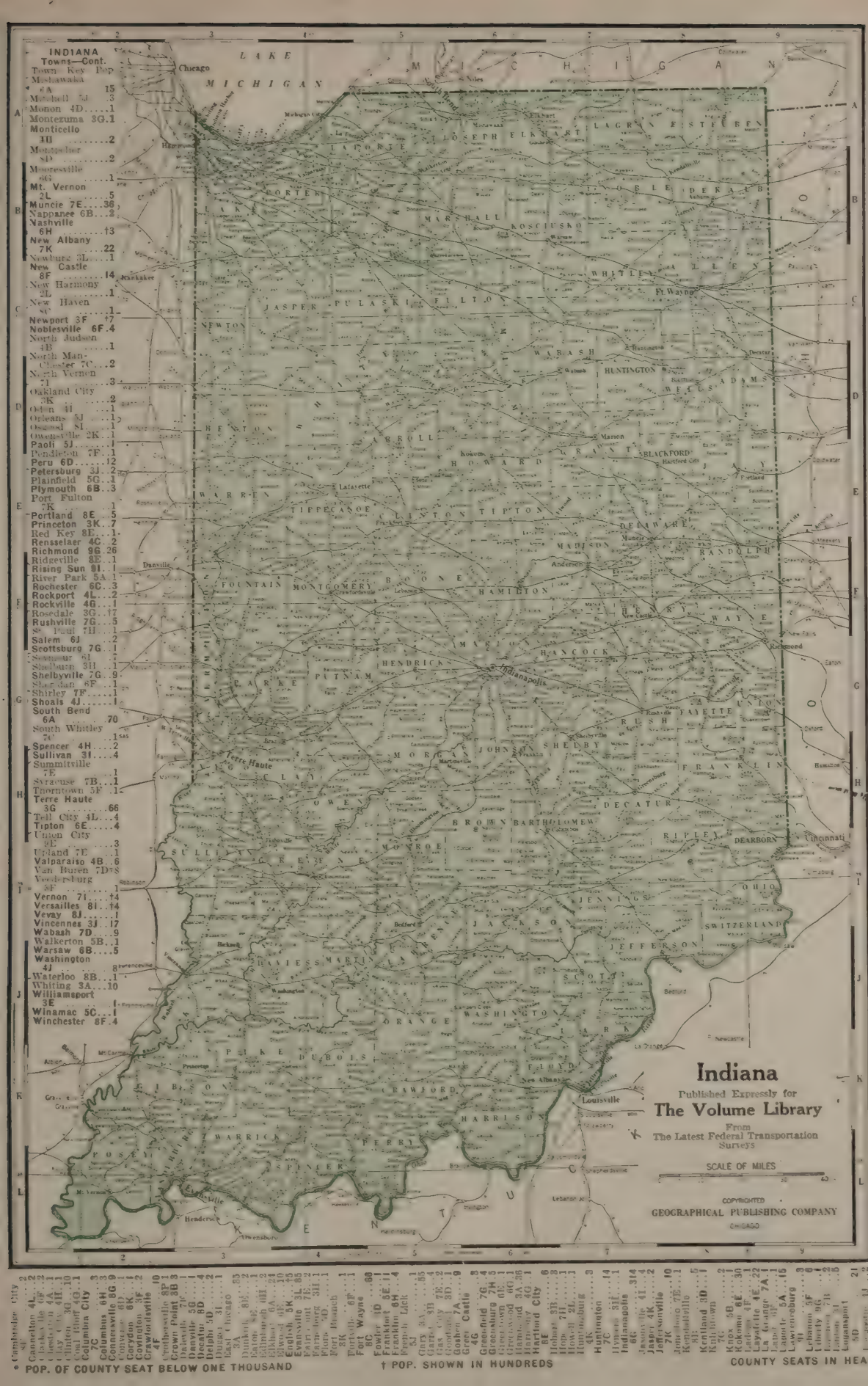
† POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE



INDIANA Towns—Cont.

Town Key Pop.

Mishawaka 6A 15
Mitchell 5J 3
Monon 4D 1
Montezuma 3G 1
Monticello 3D 2
Montpelier 5D 2
Mooresville 6G 1
Mt. Vernon 9L 5
Muncie 7E 38
Nappanee 6B 2
Nashville 6H ..... †3
New Albany 7K 22
Newburg 3L 1
New Castle 8F 14
New Harmony 2L 1
New Haven 5C 1
Newport 3F ..... †7
Noblesville 6F 4
North Judson 4B 1
North Manchester 7C 2
North Vernon 7J 3
Oakland City 9K 2
Odon 4J 1
Orleans 5J 1
Osgood 8J 1
Owensville 2K 1
Paoli 5J 1
Pendleton 7F 1
Peru 6D ..... †2
Petersburg 3J 2
Plainfield 5G 1
Plymouth 6B 3
Port Fulton 7K 1
Portland 8E 5
Princeton 3K 7
Red Key 8E 1
Rensselaer 4C 2
Richmond 9G 26
Ridgeville 8E 1
Rising Sun 9I 1
River Park 5A 1
Rochester 6C 3
Rockport 4L 2
Rockville 4G 1
Rosedale 3G ..... †7
Rushville 7G 5
St. Paul 7H 1
Salem 6J 2
Scottsburg 7G 1
Seymour 8J 1
Shelburn 3H 1
Shelbyville 7G 9
Sheridan 6F 1
Shirley 7F 1
Shoals 4J 1
South Bend 6A 70
South Whitley 7C ..... †1
Spencer 4H 2
Sullivan 3I 4
Summitville 7E 1
Syracuse 7B 1
Thorntown 5F 1
Terre Haute 3G 66
Tell City 4L 4
Tipton 6E 4
Union City 9E 3
Upland 7E 1
Valparaiso 4B 6
Van Buren 7D ..... †8
Vevay 8J 1
Vincennes 3J ..... †7
Wabash 7D 9
Walkerton 5B 1
Warsaw 6B 5
Washington 4J 8
Waterloo 8B 1
Whiting 3A 10
Williamsport 3E 1
Winamac 5C 1
Winchester 8F 4

INDIANA COUNTIES

Pop. 2,930,390

	Pop. Thous.
Adams 8D	20
Allen 8C	14
Bartholomew 6H	23
Benton 3D	12
Blackford 8E	14
Boone 5F	23
Brown* 6H	7
Carroll* 5D	16
Cass 5D	38
Clark 7K	29
Clay* 4H	20
Clinton 5E	27
Crawford* 5K	11
Daviess* 4J	26
Dearborn 9I	26
Decatur 7H	17
DeKalb 8B	25
Delaware 7E	56
Dubois 4K	19
Elkhart 7A	56
Fayette 8G	17
Floyd 7K	30
Fountain 3F	18
Franklin 8H	14
Fulton 6C	16
Gibson 3K	29
Grant 6H	51
Greene 4I	36
Hamilton 6F	24
Hancock 7G	17
Harrison 6K	18
Hendricks 5G	20
Henry 8F	34
Howard 6E	43
Huntington 7C	31
Jackson 6I	24
Jasper 4C	13
Jay 8E	23
Jennings* 7I	13
Jefferson 8J	20
Johnson 6H	20
Knox 3J	46
Kosciusko* 4B	27
Lagrange 7A	14
Lake 3B	159
Laporte 5A	50
Lawrence 5I	28
Madison 7F	69
Marion 6G	348
Marshall 6B	28
Martin 4J	11
Miami 6D	28
Monroe 5H	24
Montgomery 4F	28
Morgan 5H	20
Newton 3C	10
Noble 7B	22
Ohio 9I	4
Orange 5J	16
Owen* 4H	12
Parke 4G	18
Perry 4L	16
Pike 4K	18
Porter 4B	20
Posey 2L	19
Pulaski 5G	12
Putnam 4G	19
Randolph 8F	26
Ripley 8I	18
Rush 7G	19
St. Joseph 6A	103
Scott 7G	7
Shelby 7G	25
Spencer 4L	18
Starke 5B	10
Steuben 8A	13
Sullivan 3L	31
Switzerland 8J	9
Tippecanoe 4E	42
Tipton 6E	16
Union 9G	6
Vanderburg 3L	92
Vermillion* 1F	17
Vigo 3G	100
Wabash 7D	27
Warren 3E	9
Warrick 3L	19
Washington 6J	16
Wayne 9G	48
Wells 8C	20
White 4D	17
Whitley 7C	15

TOWNS

Town. Key. Pop.

Albany 8E 1
Albion 7B 1
Alexandria 7E 4
Anderson 7F 29
Angola 8A 2
Argos 6B 1
Attica 3E 3
Auburn 8B 4
Aurora 9I 4
Batesville 8H 2
Bedford 5I 9
Berne 8D 1
Bicknell 3J 7
Bloomfield 4I 1
Bloomington 5H 11
Bluffton 8D 5
Boonville 3L 4
Bourbon 6B 1
Bowling Green 4H 1
Brazil 4G 9
Bremen 6B 1
Brook 3C 1
Brookville 8H 2
Brownstown 6I 1
Butler 5B 1
Cambridge City 8F 2
Cannelton 4L 2
Carmel 6G 1
Clayton 5G 1
Coal Bluff 4G 1
Columbia City 7C 3
Columbus 6H 3
Connersville 8G 8
Converse 6D 1
Corydon 6K 2
Covington 3F 2
Crawfordsville 4F 10
Crothersville 8I 1
Crown Point 7B 3
Danville 7F 1
Decatur 8D 4
Delphi 5D 2
Dugger 3I 1
East Chicago 3A 53
Elkhart 7A 27
Elwood 6F 11
English 5K 1
Evansville 2L 85
Farmland 8H 1
Ferdinand 3I 1
Flora 7D 2
Fort Branch 8K 1
Fortville 8F 1
Fort Wayne 8C 86
Fowler 3D 2
Frankfort 5E 11
Franklin 6H 4
French Lick 6J 1
Gary 3A 55
Gas City 7E 2
Goodland 3D 1
Goshen 7A 9
Greencastle 4G 6
Greendale 7K 3
Greenfield 7G 4
Greensburg 6I 4
Greentown 6E 1
Hagerstown 8E 2
Hammond 3A 36
Harmony 4G 1
Hartford City 8E 6
Hebron 3B 1
Hope 7H 1
Howe 2L 1
Hudson 2C 1
Huntingburg 4K 3
Huntington 7C 14
Huntsville 8H 1
Indianapolis 6G 314
Jeffersonville 4I 2
Jasper 4K 4
Jeffersonville 7K 10
Kendallville 7C 5
Kentland 3D 1
Kirklin 5F 1
Kokomo 7D 21
Knox 4B 3
Kokomo 7D 21
La Fayette 4E 22
La Grange 7A 1
Lapel 6F 1
Laporte 5A 16
Lawrenceburg 9I 5
Lebanon 5F 8
Liberty 9G 2
Linton 3I 5
Logansport 5D 21
Loogootee 5J 2
Madison 8I 13
Marion 6H 23
Martinsville 5H 4
Michigan City 4A 19
Middletown 7F 1

* POP. OF COUNTY SEAT BELOW ONE THOUSAND

† POP. SHOWN IN HUNDREDS

COUNTY SEATS IN HEAVY FACED TYPE

MICHIGAN
Pop. 3,668,412

COUNTIES

Pop. Thous.

Alcona* 13N...5
Alger 5J. ..9
Allegan 21F..37
Alpena 12N 17
Antrim 13H 11
Arenac* 16M 9
Baraga* 4E 7
Barry 21H 21
Bay 17M 69
Benzie 14F ..6
Berrien 23E 62
Branch 23J 23
Calhoun 22J..72
Cass 23G.....20
Charlevoix 11H 15
Cheboygan 8P.13
Chippewa 5P..24
Clare 16K. ..8
Clinton 20K..23
Crawford 13K..4
Delta 7H.....30
Dickinson 7F.19
Eaton 21J....29
Emmet 9O. 15
Genesee 20M.125
Gladwin* 16K 8
Gogebic 5A...23
Grand Traverse 13H 19
Gratiot 18K 3
Hillsdale 23K 28
Houghton 3E 71
Huron 17O 32
Ingham 21K 81
Ionia 20J. ..35
Iosco 15N 8
Iron 6E..... 22
Isabella 17K 22
Jackson 22L..72
Kalamazoo 22G 71
Kalkaska 13J 5
Kent 20G.. 183
Keweenaw 2F. 6
Lake* 16G ..4
Lapeer 19N...25
Leelanau* 12G 9
Lenawee 24L..47
Livingston 21M ..17
Luce 5N ...6
Mackinac 7O...8
Macomb 21P ..38
Manistee 15F 20
Marquette 5H 45
Mason 16E . 19
Mecosta 17H..17
Menominee 10G 23
Midland 17L..17
Missaukee* 15J 9
Monroe 24N..37
Montcalm 19J.30
Montmorency* 12L 4
Muskegon 19F.62
Newaygo 18G 17
Oakland 21N 90
Oceana 17E 15
Ogemaw 15L 7
Ontonagon 4C.12
Osceola* 17H.15
Oscoda* 13L...1
Otsego 12K....6
Ottawa 19F...47
Presque Isle* 8R 12
Roscommon 14K 2
Saginaw 18M 100
St. Clair 20P.58
St. Joseph* 24G 26
Sanilac* 18P.31
Schoolcraft 7L.9
Shiawassee 20L 35
Tuscola 18O .33
Van Buren 22G 30
Washtenaw 22M 49
Wayne 22O.1,177
Wexford 15H.18

TOWNS

Town. Key. Pop.
Adrian 24L...11
Albion 22K....8
Algonac 21P...1
Allegan 21F...3
Allenville 6O..2
Allouez 2E.....1
Alma 18K.....7
Alpena 12N...11
Ann Arbor 22M 19
Atlanta 12L..†8
Atlantic Mine 3E ...2
Bad Axe 17O 2
Baldwin 16G. †4
Bangor 22F 1
Baraga 4E.....1
Bark River 8H ....†7
Battle Creek 22H .... .36
Bay City 17M.47
Belding 19H...3
Benton Harbor 23E 12
Bessemer 5A...5
Big Rapids 17H 4
Birmingham 21O 3

MICHIGAN
Towns—Cont.

Town. Key. Pop.
Blissfield 24M 1
Boyne City 12J 4
Bronson 24H. .1
Buchanan 24E. 3
Cadillac 15H 9
Calumet 2E 21
Caro 18O . 2
Carrollton 18N 1
Cass City 17O.1
Cassopolis 23G 1
Centerville 23G ....†7
Charlevoix 11H 2
Charlotte 21J..5
Chassel 3E....†7
Cheboygan 8P..5
Chelsea 22M 2
Chesaning 19L.1
Clare 17K.....1
Coldwater 23J..6
Constantine 24G 1
Corunna 20L...4
Croswell 18P..1
Crystal Falls 6E 3
Decatur 23F. .1
Delray 22O....6
Detroit 22O..993
Dowagiac 23F..5
Eagle River 2F ....†1
East Jordan 12J 2
East Tawas 15N 1
Eaton Rapids 21K 2
Ecorse 22N.....4
Escanaba 7H. 13
Essexville 17N.1
Evart 16H.....1
Fenton 20M....2
Flint 20M....91
Ford City 20N.4
Frankfort 14F..1
Fremont 18F...2
Gaylord 12K...1
Gladstone 7H..4
Gladwin 16K..1
Grand Haven 19F 7
Grand Rapids 20G 137
Grayling 13K...2
Grand Ledge 22O 3
Greenland 4D..1
Greenville 19H.4
Hancock 2E ..7
Harbor Beach 17P 1
Harbor Springs 8O 1

Harrison 16K.†4
Harrisville 13N .... †4
Hart 17F 1
Hartford P. 23F 1
Hastings 21H..5
Hersey 17H...†2
Highland Park 22O 46
Hillsdale 23K..5
Holland 20F..12
Holly 20N 1
Homer 23J. ...1
Houghton 3E..4
Howard City 18H ....†9
Howell 21M....2
Hubbell 2E....1
Hudson 24K...2
Imlay City 20O 1
Ionia 20J......6
Iron Mountain 7F 8
Iron River 6E..4
Ironwood 5A..15

MICHIGAN
Towns—Cont.

Town. Key. Pop.
Ishpeming 5G.10
Ithaca 18K....1
Jackson 22L 48
Jonesville 23K.1
Kalamazoo 22G 18
Kalkaska 13J.†8
Lake City 15J †5
Lake Linden 2E 2
Lake Odessa 20J 1
L'Anse 4E... .1
Lapeer 19N....4
Lansing 21K..57
Laurium 2E....6
Lawton 23G....1
Leland 12G...†3
Leslie 22K ... 1
Lowell 20H. .1
Ludington 16E.8
Mancelona 13J.1
Manchester 23L 1
Manistee 15F. 9
Manistique 7L.6
Marcellus 23G.1
Marine City 21Q 3
Marlette 18O..1
Marquette 5H.12
Marshall 22J...4
Mason 21K....1
Menominee 10G 8

Midland 17L...5
Milan 23M ...1
Monroe 24N ..11
Morenci 24L ..1
Mio 13L ... †1
Mt. Clemens 21P ... 9
Mt. Pleasant 17K ... 4
Munising 5J ...5
Muskegon 19F 36
Muskegon Heights 19F .9
Nadeau 8G ...2
Nashville 21J ..1
Negaunee 5G ...7
Newaygo 18G ...1
Newberry 5N ...2
Niles 24F ...7
Northville 22O .1
Norway 7G ...4
Onaway 9O ...2
Ontonagon 4C ...1
Otsego 21G ...3
Ovid 19L 1
Owosso 20L ..12
Oxford 20N ..1
Paw Paw 22G ..1
Pellston 8O ...1
Pentwater 17E †9
Petoskey 9O ...5
Plainwell 22G ..2
Plymouth 22N ..2
Pontiac 21N .34
Port Huron 20P ...25
Portland 20J ..1
Quincy 23J ...1
Reading 24K ...1
Red Jacket 3E ..2
Reed City 16H .1
Republic 5F ...2
Richmond 20P .1
River Rouge 22O ...9
Rochester 21O .2
Rockland 4C ...1
Rogers 8R ...2
Romeo 20O ...2
Roscommon 14K ...†3
Royaloak 21O .6
Saginaw 18M 61
Saint Charles 18L ...1
St. Clair 20Q .3
St. Clair Heights 22O .1
St. Ignace 7O ...1
St. Johns 20K .3
St. Joseph 23E .7
St. Louis 18K .3
Sandusky 18P ..1
Sault Ste Marie 5P ..12
Sebewaing 17N .1
Shelby 17E .1
South Haven 22F ...3
South Range 3E ...1
Sparta 19G ...1
Stambaugh 6E ...2
Standish 16M †8
Stanton 19J †8
Sturgis 24H .5
Tawas City 15N ...1
Tecumseh 23M .2
Three Oaks 24E ...1
Three Rivers 23G ...5
Traverse City 13H ...10
Trenton 23O ...1
Union City 23J .1
Vassar 18N ...1
Vicksburg 23G .1
Wakefield 5A ...4
Wayne 22N ...1
West Branch 15L ...1
Whitehall 18F .1
Williamston 21L ...1
Wyandotte 22O ...13
Yale 19P ...1
Ypsilanti 22N .7
Zeeland 20F .2
Zilwaukee 18M ...1

† POP. SHOWN IN HUNDREDS. COUNTY SEATS IN HEAVY FACED TYPE. * POP. OF COUNTY SEAT BELOW ONE THOUSAND.

WISCONSIN
Pop. 2,632,067

COUNTIES

County	Pop. Thous.
Adams* 21N	9
Ashland 10J	24
Barron 14F	34
Bayfield 9H	17
Brown 3G	61
Buffalo 19F	15
Burnett* 11C	10
Calumet 20V	17
Chippewa 15H	36
Clark 17K	35
Columbia 23Q	30
Crawford 21I	16
Dane 6I	89
Dodge 23T	49
Door 16Y	19
Douglas 9E	49
Dunn 16E	26
Eau Claire 17H	35
Florence 11T	3
Fond du Lac 22T	56
Forest 13S	9
Grant 26J	39
Green 27O	21
Green Lake 22R	14
Iowa 26L	21
Iron 10M	10
Jackson 4C	17
Jefferson 25S	35
Juneau 21M	19
Kenosha 28W	51
Kewaunee 18X	16
La Crosse 21I	44
Lafayette 27M	20
Langlade 14Q	21
Lincoln 14O	21
Manitowoc 20W	51
Marathon 16O	65
Marinette 13E	34
Marquette 21P	10
Milwaukee 25W	539
Monroe 21K	28
Oconto 16U	27
Oneida 12P	13
Outagamie 19U	55
Ozaukee 24W	16
Pepin 18F	7
Pierce 17C	21
Polk 13C	26
Portage 18P	33
Price 12L	18
Racine 27V	78
Richland 24K	19
Rock 27R	66
Rusk 14I	16
Saint Croix 15C	26
Sauk 24N	32
Sawyer 11H	8
Shawano 17S	33
Sheboygan 22W	59
Taylor 15K	18
Trempealeau* 20H	24
Vernon 23I	29
Vilas 10O	5
Walworth 27T	29
Washburn* 11F	11
Washington 24V	25
Waukesha 25U	42
Waupaca 18R	34
Waushara* 20P	16
Winnebago 20S	63
Wood 19M	34

TOWNS

Town.	Key	Pop.
Algoma	19X	1
Alma	**19D**	**1**
Antigo	**13R**	**8**
Appleton	**19U**	**19**
Arcadia	19G	1
Ashland	**9J**	**11**
Augusta	16G	1
Baraboo	**23L**	**5**
Barron	**16D**	**1**
Bafield	**9G**	**1**
Beaver Dam	23R	7
Beloit	28R	21
Berlin	21R	1
Black River Falls	**9J**	**1**
Bloomer	16G	1
Boscobel	26J	1
Brodhead	26J	1
Burlington	26X	3
Cedarburg	24X	1
Chilton	**21U**	**1**
Chippewa Falls	**16G**	**9**
Clintonville	19B	3
Columbus	23O	2
Crandon	**11R**	**1**
Cudahy	26X	6
Cumberland	13D	1
Darlington	**28L**	**1**
Dartford	**21R**	**14**
Delavan	28U	3
Dodgeville	**26L**	**1**
Durand	**19D**	**1**
Eagle River	**11P**	**1**
Eau Claire	**16G**	**20**
Edgerton	28R	2
Elkhorn	**28U**	**1**
Ellsworth	**16B**	**1**
Elroy	21L	1
Evansville	28R	2
Fennimore	26J	1
Florence	**11T**	**1**
Fond du Lac	**21R**	**23**
Fort Atkinson	26R	4
Friendship	**21O**	**†4**
Grantsburg	**11B**	**†7**
Green Bay	**19U**	**31**
Hartford	23T	4
Hayward	**11G**	**1**
Highland	26L	1
Horicon	23R	2
Hudson	**16B**	**3**
Hurley	**9L**	**3**
Iron Belt	8L	1
Iron River	8G	1
Janesville	28R	18
Jefferson	**26R**	**2**
Juneau	**23R**	**1**
Kaukauna	19U	5
Kenosha	**28X**	**40**
Kewaunee	**19X**	**1**
Kiel	21U	1
Kilbourn	23O	1
La Crosse	**21G**	**30**
Ladysmith	**13G**	**3**
Lake Geneva	28T	2
Lake Mills	26R	1
Lancaster	**26J**	**2**
Little Chute	19U	2
Lodi	23O	1
Madison	**26O**	**38**
Manitowoc	**21X**	**17**
Marinette	**13U**	**13**
Marshfield	19L	7
Mauston	**21L**	**1**
Mayville	23R	3
Medford	**13J**	**1**
Mellen	9J	1
Menasha	21U	7
Menomonie	**16D**	**5**
Merrill	**13L**	**8**
Milwaukee	**26X**	**457**
Mineral Point	26L	2
Mondovi	19D	1
Monroe	**28O**	**4**
Montello	**21O**	**1**
Mount Horeb	26O	1
Neenah	21U	†8
Neillsville	**16J**	**2**
Nekoosa	19L	1
New Lisbon	21L	1
New Richmond	16B	2
Niagara	13T	1
North Fond du Lac	21R	2
North Milwaukee	26X	3
Oconomowoc	26T	3
Oconto	**16U**	**4**
Oconto Falls	16T	1
Omro	21U	1
Onalaska	21G	1
Oshkosh	**21U**	**33**
Park Falls	11L	2
Peshtigo	13U	1
Phillips	**11L**	**1**
Platteville	26J	4
Plymouth	21U	3
Port Washington	**23X**	**3**
Portage	**23O**	**5**
Prairie du Chien	**23G**	**3**
Princeton	21R	1
Racine	**26X**	**58**
Redgranite	21O	1
Reedsburg	23L	2
Rhinelander	**11O**	**8**
Rib Lake	13J	1
Rice Lake	13D	4
Richland Center	**23J**	**3**
Ripon	21R	8
River Falls	16B	2
Seymour	19U	1
Shawano	**16R**	**3**
Sheboygan	**21U**	**30**
Sheboygan Falls	21U	2
Shell Lake	**11D**	**†9**
Shullsburg	28L	1
South Milwaukee	26X	7
Sparta	**21J**	**4**
Spooner	11D	2
Stanley	16G	2
Stevens Points	**19O**	**11**
Stoughton	26O	5
Sturgeon Bay	**16X**	**4**
Sun Prairie	26O	1
Superior	**9D**	**39**
Tomah	21J	3
Tomahawk	13L	2
Two Rivers	21X	7
Viroqua	**23G**	**2**
Washburn	**9G**	**3**
Waterloo	26R	1
Watertown	23R	9
Waukesha	**26U**	**12**
Waupaca	**19R**	**2**
Waupun	23R	4
Wausau	**16L**	**18**
Wautoma	**21O**	**1**
Wauwatosa	26X	5
West Allis	26X	13
West Bend	**23U**	**3**
West Milwaukee	26X	2
Whitehall	**19G**	**†8**
Whitewater	28T	3
Wisconsin Rapids	19L	7
Wittenberg	16R	†8

† POP. SHOWN IN HUNDREDS

* POP. OF COUNTY SEAT BELOW ONE THOUSAND

COUNTY SEATS IN HEAVY FACED TYPE

Illinois
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Chicago
SCALE OF MILES
0 5 10 20 30 40
LAKE MICHIGAN
Chicago
ILLINOIS
Towns—Cont.
Town. Key. Pop.
East St. Louis 3I 66
Edwardsville 3J 5
Effingham 5H..4
Eldorado 5K..5
Elgin 5A.... 27
Elmhurst 5B...4
Elmwood 3D...1
El Paso 4D....1
Equality 5K,..1
Eureka 4D.....1
Evanston 6A.37
Fairbury 5D...2
Fairfield 5J....2
Farmer City 5E.....1
Farmington 3D 2
Flora 5I.....3
Forest Park 6B 10
Fort Sheridan 6A 1
Freeburg 3I....1
Freeport 4A..19
Fulton 3B.....2
Galena 3A.....4
Galesburg 3D 23
Galva 3C.....2
Geneseo 3C....3
Cont. on page 21
Geneva 5B....2
Genoa 5A.....1
Georgetown 6F.3
Gibson 5E.....2
Gillespie 3H...4
Gilman 5D....1
Girard 3G.....2
Glen Carbon 3I 1
Glencoe 6A....3
Glen Ellyn 5B.2
Golconda 5L...1
Grafton 3H.....1
Granite 3I....14
Granville 4C...1
LAKE
COUNTIES
Pop. Thous.
Adams 2F....62
Alexander 4L..23
Bond 4H.....16
Boone 5A.....15
Brown 2F.....9
Bureau 4C....42
Calhoun* 2H..8
Carroll 6I.....19
Cass 3F.....17
Champaign 5F 56
Christian 4G..38
Clark 6G.....21
Clay* 5L.....17
Clinton 4I....22
Coles 5G.....35
Cook 6B...3,053
Crawford 6H..22
Cumberland* 5H 12
Dekalb 5B....31
Dewitt 4F....19
Douglass 5G..19
Dupage 5B ...42
Edgar 6G.....25
Edwards 5G...9
Effingham 5H.19
Fayette 4H....26
Ford 5E.....16
Franklin 4J...57
Fulton 3E....38
Gallatin 5K...12
Greene 3H....22
Grundy 5C....18
Hamilton 5G..15
Hancock 2E..28
Hardin* 5L....7
Henderson* 2D..9
Henry 3C.....45
Iroquois 6D...34
Jackson 4K...37
Jasper 5H....16
Jefferson 4J...28
Jersey 3H.....12
Jo Daviess 3A 21
Johnson 4L...12
Kane 5B.....99
Kankakee 6C..44
Kendall* 5B..10
Knox 3D 46
Lake 5A.....74
Lasalle 5C....92
Lawrence 6I..21
Lee 4B.....28
Livingston 5D.39
Logan 4F.....29
McDonough 2E 27
McHenry 5A..33
McLean 4E...70
Macon 4F.....65
Macoupin 3H..57
Madison 3J...106
Marion 4I....37
Marshall 4D..14
Mason 3E.....16
Massac 5L....13
Menard 3F....11
Mercer* 2D...18
Monroe 3G....12
Montgomery 4H 41
Morgan 5G...33
Moultrie 5G..14
Ogle 4B.....26
Peoria 4D....111
Perry 4J.....22
Piatt 5F.....15
Pike 2G.....26
Pope 5L.....9
Pulaski 4L....14
Putnam* 4C ...7
Randolph 3K.29
Richland 5I....14
Rock Island 2C 92
St. Clair 5A.136
Saline 5K....38
Sangamon 4F.....100
Schuyler 2F...13
Scott 3G 9
Shelby 5G 29
Stark 3D.....9
Stephenson 4A 37
Tazewell 4E ..38
Union 4L.....20
Vermilion 6F.86
Wabash 6I....14
Warren 2D...21
Washington 4J 18
Wayne 5J.....22
White 5J.....20
Whiteside 3B.36
Will 5C.....92
Williamson 4K 61
Winnebago 4A 90
Woodford 4D.19
TOWNS
Town. Key. Pop.
Abingdon 3D ...2
Albion 5G....1
Alsey 2C....1
Altamont 5H.1
Alton 3H....24
Amboy 1B....3
Anna 1L.....3
Arlington Heights 6A ...2
Ashton 3G....3
Aurora 5B...36
Avery ville 4D.3
Barrington 5A..1
Barry 2H.....4
Batavia 5B....7
Beardstown 3F....9
Belvidere 5A...7
Benld 3H....2
Benton 4I....8
Berwyn 6B....14
Bloomington 4E 28
Blue Island 6B....11
Bluffs 6C....2
Blackwood 5G..2
Bushnell 3E....2
Cairo 4L....15
Cambridge 3C..1
Canton 3D....11
Carbondale 4K..6
Cardiff 5D....1
Carlinville 3H..5
Carlyle 4I....2
Carmi 5J....2
Carrollton 3H..3
Carthage 2E....2
Casey 6G....3
Central City 4I..1
Centralia 4I..13
Champaign 5F..15
Charleston 5G..1
Chatsworth 5D..1
Cherry 6F....2
Chester 3K....2
Chicago 6B 2,701
Chicago Heights 6A 19
Chillicothe 3D..1
Christopher 4K..3
Cisco 5L....1
Clinton 4F....44
Coal City 5C..1
Colchester 2E..1
Collinsville 3I..5
Colp 5C....1
Crystal Lake 5A 2
Cuba 3E.....1
Dallas 2F....1
Danville 6F....33
Decatur 5E....21
Delavan 4E....1
Des Plaines 6A 2
Dieterich 4G..3
Dixon 4B....7
Dorrisville 5K..1
Dongers Grove 6B 1
Dundee 5A....2
Dupo 4J....2
Dwight 5D....1
Earlville 4B....1
East Dubuque 3A 1
East Moline 3A....3
East Peoria 4D 2
† POP. SHOWN IN HUNDREDS
* POP. OF COUNTY SEAT BELOW ONE THOUSAND
COUNTY SEATS IN HEAVY FACED TYPE

TENNESSEE

Pop. 2,337,885

COUNTIES

Pop. Thous.

Anderson 7V..18
Bedford 10N.21
Benton* 7H..12
Bledsoe* 10S..7
Blount 9W...28
Bradley 12T..18
Campbell 6W.28
Cannon* 9P..10
Carroll 8F....24
Carter 2Y....21
Cheatham* 6L 10
Chester 10F...9
Claiborne* 6X 23
Clay* 6R......9
Cocke 8Z.....20
Coffee* 10P...17
Crockett* 9D.17
Cumberland* 8S 10
Davidson 7M 167
Decatur* 10G.10
Dekalb* 8P..15
Dickson* 7K..19
Dyer 8C......29
Fayette 11C..31
Fentress* 6T..10
Franklin 11Q.20
Gibson 8D....[illegible]
Giles 11L....30
Grainger* 7Y.13
Greene 3X....32
Grundy* 9Q....9
Hamblen 7Z..15
Hamilton 12R 115
Hancock* 6V.10
Hardeman 11D 22
Hardin 11G...17
Hawkins 6Z..22
Haywood 10C.25
Henderson 9F.18
Henry 7G....27
Hickman 9J..16
Houston* 7J...6
Humphreys* 7H 13
Jackson* 6Q..14
James* 12T....5
Jefferson* 8Y.17
Johnson* 1Z..12
Knox 8W....112
Lake* 6C......9
Lauderdale 9B 21
Lawrence 11K.23
Lewis* 10K...[illegible]
Lincoln 11M..25
Loudon* 9V..16
McMinn 10U..25
McNairy* 11F.18
Macon* 6P...14
Madison 10E..43
Marion* 10Q..17
Marshall 10M.17
Maury 10L...35
Meigs* 10T...6
Monroe* 10V.22
Montgomery 6L 32
Moore* 10O....4
Morgan* 7U..13
Obion 6D....28
Overton 6S...17
Perry* 10J....7
Pickett* 5S....5
Polk* 12V....14
Putnam 7R...22
Rhea 10S....13
Roane* 8U...24
Robertson 7G.25
Rutherford 9N33
Scott* 6U....13
Sequatchie 10R3
Sevier* 8X...22
Shelby 12A..223
Smith* 7P....17
Stewart 6J...14
Sullivan* 1Y.36
Sumner 6N...27
Tipton 10B...30
Trousdale* 6O.5
Unicoi 6J...10
Union* 7W...11
Van Buren* 9R2
Warren 9Q...17
Washington* 2X 34
Wayne* 11J..12
Weakley* 7E.31
White* 8R...15
Williamson 8M *3
Wilson 7O....26

TOWNS

Town. Key. Pop.

Alamo 9D....†7
Alton Park 12R3
Alcoa 9W.....3
Ashland 6L...†6
Athens 10U...2
Altamount 9Q ....†1
Benton 12V..†5
Blountville 1Y ....†2
Binghampton 11A 1
Bolivar 11D...1
Bristol 1Y....8
Brownsville 10C 3
Byrdstown 5S ....†1
Camden 7H..†8
Carthage 7P.†9
Celina 6R....†4
Centreville 9I.†8
Chattanooga 12R 57
Clarksville 6L.8
Cleveland 12T.6
Clinton 7V....1
Charlotte 7K ....†2
Coal Creek 7W1
Columbia City 10L 5
Cookeville 7B..2
Covington 10B.3
Crossville 8S ....†9
Dandridge 8Y ....†4
Dayton 10S...1
Decatur 10T .†1
Decaturville 10G ....†3
Dickson 7K...2
Dover 6J.....†4
Dresden 7F ..1
Dunlap 10R...1
Dyer 8D......1
Dyersburg 8C..6
Elizabethtown 2Y 2
Lawrenceburg 11K 2
Erin 7J......†8
Erwin 6J......2
Etowah 10U...2
Fayettville 11M3
Franklin 8M..8
Gainsboro [illegible]Q ....†8
Gallatin 6N...2
Glass 7D.....1
Greenville 8X.3
Greenfield 7F..1
Harriman 8U..4
Hartsville 6O..1
Henderson 12F.1
Hohenwald 10K ....†7
Humboldt 9E..3
Huntington 8F.1
Huntsville 6U ....†2
Jacksboro 6W ....†6
Jackson 10E..†7
Jackson City 6Q 18
Jamestown 6T ....†4
Jasper 12Q...†7
Jefferson 7Y...1
Jefferson City 7X 1
Jellico 6W....1
Johnson 2X..12
Jonesboro 2X ....†8
Kingston 8U ....†5
Kingsport 1Y..5
Knoxville 8W 77
Lafollette 6W..3

TENNESSEE. Towns—Cont.

Town. Key. Pop.

Lebanon 7O...4
Lenoir 9V 4
Lewisburg 10M.2
Lexington 9F..1
Linden 10J..†5
Livingston 6S..1
Loudon 9V....1
Lynchburg 11O ....†3
McKenzie 7F..1
McMinnville 9Q2
Madisonville 10V ....†8
Manchester 10P 1
Martin 6E....2
Maryville 9W..3
Maynardville 7W ....†4
Memphis 12A162
Milan 8E.....3
Monterey 7R..1
Morristown 7Z.5
Mountain City 1Z ....†7
Mount Pleasant 10M 2
Murfreesboro 9N 5
Nashville 7M 118
Newbern 7C...1
Newport 8Z...2
Obion 7D.....1
Ooltewah 12T ....†6
Paris 7G.....4
Pikeville 10S ....†4
Pulaski 11L..2
Ripley 9B....2
Rockwood 8T.4
Rogersville 6Z.1
Rutledge 7Y ....†3
Savannah 11G†7
Selmer 11F..†5
Sevierville 8X ....†7
Sewanee 11P..1
Shelbyville 10N2
Smithville 8P ....†6
Sparta 8R.....1
South Pittsburg 12P 3
St. Elmo 11S.3
Somerville 11C.1
South Fulton 6D 1
Spring City 9T 4
Springfield 6M.3
Sweet Water 10U 1
Sneedville 6Y ....†2
Spencer 9R...†2
Sparta 8R.....1
Tazewell 6X..†4
Tiptonville 6C 1
Tracy City 12P 3
Trenton 8D...2
Tullahoma 11O.8
Union City 6D 4
Waverly 7H...1
Waynesboro 11J ....†5
Wartburg 7U ....†2
Whitewell 15R 2
Winchester 11O 3
Woodbury 9P ....†2

ILLINOIS Towns—Cont.

Town. Key. Pop.

Grayville 3G...1
Greenfield 3G..1
Greenup 5H....1
Greenville 4H..3
Griggsville 2F..1
Hamilton 2E...1
Hardin 2H. ..†6
Harrisburg 5K.7
Harvard 5A....3
Harvey 6B.....9
Havanna 3E...3
Hennepin 4C..†3
Henry 4D.....1
Herrin 4K.....10
Highland 4I....2
Highland Park 6A 6
Highwood 6A...1
Hillsboro 4H...5
Hinsdale 5B....4
Homer 6F......1
Hoopeston 6E..5
Jacksonville 5G 15
Jerseyville 3H..3
Jornstown 5G .7
Joliet 5C 38
Jonesboro 4L..1
Kankakee 6C.16
Keithsburg 2C.1
Kewanee 3C...16
Knoxville 3D...1
Lacon 4D......1
Ladd 4C.......2
La Grange 6B.6
La Grange Park 6B 1
La Harpe 2E..1
Lake Forest 6A.3
Lanark 4A.....1
LaSalle 4C...13
Lansing 6B....1
Lawrenceville 6I 5
Lebanon 3I....1
Lemont 5B.....2
Lena 3A......1
Le Roy 5E....1
Lewistown 3E..2
Lexington 5E..1
Lincoln 4F....11
Litchfield 3H..6
Livingston 3I..1
Lockport 5C...2
Lovington 5G...1
Louisville 5I. †7
McHenry 5A...1
McLeansboro 5G 1
Macomb 2E....6
Madison 3J....5
Manteno 6C...1
Marengo 5A...1
Mark 4C.......1
Marion 4K.....9
Marissa 3J.....1
Maroa 4F......1
Marseilles 5C...3
Marshall 6G...2
Martinsville 6G.1
Maywood 6B..12
Mascoutah 3I..2
Mason City 3F.1
Mattoon 5G...13
Melrose Park 6B 7
Mendota 4C...3
Metropolis 5L 5
Milford 6E. 1
Minonk 4D....2
Moline 3C....30
Momence 6C ..2
Monmouth 2D..8
Monticello 5F..2
Morgan Park 6B 3
Morris 5C.....4
Morrison 3B...3
Morton 4E.....1
Mound City 4L 2
Mounds 4L....3
Mount Carmel 6I 7
Mount Olive 3G 3
Mount Vernon 4I 9
Moweaqua 4G.1
Murphysboro 4K 10
Naperville 5B..3
Nashville 4J...2
Nauvoo 2E... 1
Neoga 5G.....1
New Athens 3J.1
New Baden 4I.1
Newman 5G...1
Newton 5H....2
Nokomis 4H...3
Norris City 5K.1
Normal 4E.. .5
North Chicago 6A 5
Oak Park 6B.39
Oakland 5G...1
Oblong 6H.....1
Odin 4I 1
O'Fallon 3I ..2
Oglesby 5C 4
Olney 5I......4
Onarga 5D ...1
Oquawka 2Q †8
Oregon 4B.... 2
Ottawa 5C...10
Palatine 5A ..1
Palestine 6H..1
Pana 4G 6
Paris 6G 7
Park Ridge 6B3
Pawnee 4G ..1
Paxton 5E. 3
Pecatonica 4A 1

Towns—Cont.

Pekin 4E....12
Peotone 6C....1
Peoria 4D 76
Percy 3I 1
Peru 4C ....[illegible]
Petersburg 3F 2
Pinckneyville 4J 2
Pittsfield 2G ..1
Plainfield 5B ..1
Plano 5B ...1
Polo 4B 1
Pontiac 5D 6
Princeton 4C 4
Quincy 2F.....35
Rantoul 5E....1
River Forest 6B 1
Riverton 4F ...1
Roanoke 4D ...1
Robinson 6H ...3
Rochelle 4B ...3
Rockdale 6C ...1
Rock Falls 4B.2
Rockford 4A .85
Rock Island 2C 35
Roodhouse 3G .2
Rossville 6E ..1
Rushville 2F ..2
St. Anne 6D ..1
St. Charles 5B 4
St. Elmo 4H ..1
Salem 4I 3
Sandoval 4I ...1
Sandwich 5B ..2
Savanna 3A ...5
Seneca 5C 1
Sesser 4J.....2
Shawneetown 5K 1
Sheffield 4C ..1
Shelbyville 5G.3
Sheldon 6D 1
Silvis 3C 2
Sorento 4H 1
So. Wilmington 5D 1
Sparta 3J 3
Springfield 4F59
Spring Valley 4C 6
Staunton 3H ...6
Sterling 4B ...8
Stockton 3A ...1
Streator 5D ...14
Sullivan 5G ...2
Summit 6B 4
Sumner 6I 1
Sycamore 5B ..3
Taylorville 4G 5
Thayer 3G 1
Toledo 5H ....†7
Tolono 4D 2
Toulon 3D 1
Trenton 4I 1
Troy 3I 1
Tuscola 5G ...2
Up. Alton 3H.2
Urbana 5F ...10
Utica 4C 1
Vandalia 4H ..3
Venice 3I 3
Vienna 4L ....†9
Villa Grove 5F2
Virden 3G 4
Virginia 3F ...1
Warren 3A 1
Warsaw 2E 2
Washington 4D 1
Waterloo 3G ...1
Watseka 6D ...2
Waukegan 6A 19
Waverly 3G 1
Wenona 4D 1
W. Frankfort 4K 8
W. Hammond 6B 7
W. Chicago 5B 2
Westville 6F ..4
Wheaton 5B ...4
White Hall 3G.2
Willisville 3K.1
Wilmette 6A ..7
Winchester 11P.1
Winnetka 6A ...6
Witt 4H 2
Woodstock 5A.5
Worden 3H 1
Wyoming 4D ...1
Yorkville 5B †4
Zion City 6A ..5

ALABAMA.
Pop. 2,348,174

COUNTIES

	Pop. Thous.
Autauga 14J	18
Baldwin* 28E	20
Barbour 17F	32
Bibb* 11G	23
Blount 6K	25
Bullock 16N	25
Butler 18J	29
Calhoun 7N	47
Chambers 12P	41
Cherokee 5O	20
Chilton 12J	22
Choctaw* 16B	20
Clarke* 18D	26
Clay 10N	22
Cleburne* 8P	13
Coffee 19M	30
Colbert 3E	31
Conecuh 19H	24
Coosa* 11L	14
Covington 20L	38
Crenshaw 18L	23
Cullman 6J	33
Dale 19O	22
Dallas 15C	54
Dekalb* 8H	34
Elmore 13N	28
Escambia 21H	22
Etowah 6M	47
Fayette* 8E	18
Franklin 4D	22
Geneva* 21N	29
Greene 12D	18
Hale 13E	24
Henry 19P	21
Houston 21P	37
Jackson 2M	35
Jefferson 9H	310
Lamar* 7C	18
Lauderdale 1E	39
Lawrence* 1G	24
Lee 13P	32
Limestone 2H	31
Lowndes* 16J	25
Macon 14O	23
Madison 2K	51
Marengo 15D	30
Marion* 5D	22
Marshall 4L	32
Mobile 22C	100
Monroe* 19F	28
Montgomery 10L	80
Morgan 4H	40
Perry 13F	25
Pickens* 10C	25
Pike 18M	31
Randolph* 10P	27
Russell* 15P	27
Shelby 10K	27
St. Clair* 7L	23
Sumter* 14C	25
Talladega 10M	41
Tallapoosa 12M	29
Tuscaloosa 14F	53
Walker 7F	50
Washington* 20C	14
Wilcox* 17F	31
Winston* 5F	14

TOWNS

Town.	Key.	Pop.
Abbeville	18Q	1
Adger	9L	1
Alabama City	6M	5
Albany	3H	7
Albertville	3L	1
Alexander City	11N	2
Altoona	6L	1
Andalusia	20K	4
Anniston	8N	17
Ashland	10N	1
Ashville	7L	13
Athens	2H	3
Atmore	21F	1
Attalla	6M	3
Auburn	13P	2
Battelle	3O	1
Bessemer	9H	18
Birmingham	9J	178
Blocton	11G	2
Bridgeport	1N	2
Boaz	5L	1
Brewton	21H	2
Brighton	9H	3
Brookwood	10G	1
Butler	16C	13
Camden	16C	17
Carbon Hill	7F	2
Carrollton	10C	15
Center	5O	12
Centerville	12G	17
Chickasaw	23C	7
Clanton	12K	1
Clayton	17P	1
Columbia	20Q	18
Columbiana	10K	1
Cordova	7G	1
Cullman	5J	2
Dadeville	12N	1
Daphne	24D	13
Decatur	3H	4
Demopolis	11D	2
Double Springs	20I	10
Edwardsville	5F	12
Elba	19K	3
Enterprise	20N	3
Eufaula	17Q	4
Eutaw	12D	1
Evergreen	19H	1
Fairfield	3D	5
Fayette	8D	2
Florence	2E	10
Fort Payne	4N	2
Gadsden	6M	14
Greensboro	13D	4
Greenville	17K	3
Guntersville	4L	3
Hamilton	5D	1
Hartselle	3E	1
Headland	21O	3
Heflin	2D	1
Huntsville	2K	8
Hayneville	15K	1
Jacksonville	19D	1
Jasper	7F	2
Kellerman	9H	1
Lafayette	12P	1
Lanett	15Q	4
Linden	16D	1
Livingston	14C	1
Luverne	18L	1
Marion	13G	2
Monroeville	21C	1
Montgomery	10F	43
Moulton	4G	3
Mount Vernon	14L	1
New Decatur	3H	1
Oakhurst	8F	1
Opelika	13P	6
Oneonta	6K	2
Opp	19O	2
Orrville	15C	1
Ozark	20L	5
Phenix City	14Q	3
Pratt City	9H	2
Prattville	14K	2
Rainsville	1D	1
Rockford	12L	2
Russellville	2J	2
Samson	8J	1
Scottsboro	1M	3
Scale	15Q	1
Selma	14H	5
Sheffield	2G	6
St. Stephens	21D	3
Talladega	9M	6
Tallassee	14N	3
Thomasville	8J	1
Troy	17N	5
Tuscaloosa	10E	11
Tuskegee	14O	3
Union Springs	15O	4
Uniontown	14D	1
Vernon	7C	1
Wedowee	9P	1
Wetumpka	13M	3
Whistler	23C	1

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

Alabama

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SCALE OF MILES
0 5 10 20 30 40 50

MISSISSIPPI
Pop. 1,790,618

COUNTIES

Adams 19G...22
Alcorn 1P....21
Amite* 20E...18
Attala 11L...24
Benton* 2M...9
Bolivar* 7E..57
Calhoun* 6L..18
Carroll* 9J...20
Chickasaw 6N 22
Choctaw* 9M.12
Claiborne 17E.13
Clarke* 16P..17
Clay 8P......17
Coahoma 5G..41
Copiah 17G..28
Covington 18L.14
De Soto* 2J..24
Forrest 20M..21
Franklin* 19E.14
George* 22P...5
Greene* 20P..10
Grenada 7K..13
Hancock 25M.10
Harrison 25N.32
Hinds* 15G..57
Holmes 11J...31
Humphries 10G 19
Issaquena* 12E 7
Itawamba 4Q 15
Jackson 25P..19
Jasper* 16N..18
Jefferson* 18D.15
Jefferson Davis* 18K 12
Jones 18N....32
Kemper* 12P.19
Lafayette 4L..19
Lamar* 21M..12
Lauderdale 14P 45
Lawrence* 19H 13
Leake* 12E...16
Lee 5P.......29
Leflore 8H....37
Lincoln 18G..24
Lowndes 8Q..27
Madison 13J..29
Marion 20K..17
Marshall* 2L.26
Monroe 7P....32
Montgomery 9K 13
Neshoba 12N.19
Newton 14N..20
Noxubee 11P..23
Oktibbeha 9O.16
Panola* 4J...27
Pearl River 22L 15
Perry* 20N....8
Pike 21G......28
Pontotoc 5N..19
Prentiss 3P...17
Quitman* 5G.19
Rankin* 15J..20
Scott 14L.....16
Sharkey* 12E.14
Simpson* 16K.18
Smith* 16L...16
Stone 22N.....6
Sunflower 9F..46
Tallahatchie 6G 35
Tate 3J.......19
Tippah* 2N...15
Tishomingo 2R 15
Tunica* 2G...20
Union 3N.....20
Walthall 21J.13
Warren 14E..33
Washington 9D 51
Wayne 18P...15
Webster* 8M.12
Wilkinson 21C 15
Winston 10M..18
Yalobusha* 6K 18
Yazoo 12F....37

TOWNS

Town. Key. Pop.
Aberdeen 7P...4
Ackerman 10N.1
Amory 6P......2
Ashland 2M...†1
Batesville 4I..1
Bay St. Louis 25M 3
Belen 5G .....†1
Belzona 10G..2
Biloxi 24O....10
Booneville 3P..1
Brandon 15J..†6
Brookhaven 18G 4
Canton 13J.....3
Carrollton 9J.†5
Carthage 12L.†6
Charleston 6J..3
Chester 9M...†1
Clarksdale 5G..7
Cleveland 7F..1
Coffeeville 6K.†4
Collins 18L....1
Columbia 20K..2
Columbus 8Q..10
Corinth 1P....5
Crystal Springs 16G 1
Decatur 14N..†3
Dekalb 12P...†5

MISSISSIPPI.
Towns—Cont.
Durant 11K...1
Ellisville 18N...1
Fayette 18D...†8
Forest 14L...1
Friarpoint 4F..†9
Fulton 4Q......†2
Gloster 20E...1
Glendora 7L...1
Greenville 9D..11
Greenwood 8H...7
Grenada 7K...3
Gulfport 25N...8
Hattiesburg 20M.......13
Hazlehurst 17G..1
Hernando 2J..†7
Holly Springs 2L.......2
Houston 7N.....1
Indianola 9F....2
Itta Bena 9G...1
Iuka 2R......1
Jackson 15H..22
Kosciusko 11L..2
Laurel 16N..13
Leaksville 20P.†5
Leland 9E....2
Lexington 11J...1
Liberty 20E..†5
Louisville 10N..1
Lucedale 22P..†6
Lumberton 21L..2
McComb 20G....7
Macon 11P.....2
Magnolia 21G...2
Mayersville 12E.......†1
Meadville 19E..†3
Mendenhall 16K.......†6
Meridian 14P..23
Monticello 19H.......†4
Moorhead 9F...1
Moss Point 24Q...3
Natchez 19C..12
New Albany 3N.......2
New Augusta 20.......†2
Ocean Springs 24O.....1
Okolona 6O.....3
Oxford 4L....2
Pascagoula 25Q.......6
Pass Christian 25M.....3
Paulding 16N..†3
Pelahatchee 15J.....1
Philadelphia 12N.......1
Picayune 25M..2
Pittsboro 6M..†2
Pontotoc 5N...1
Poplarville 22L..1
Port Gibson 17E.......1
Prentiss 18K...4
Purvis 21M..†9
Quitman 16P...1
Raleigh 16L...†1
Raymond 15G..†5
Richton 19O...1
Ripley 2N...†8
Rolling Fork 12E.......†7
Rosedale 7E...1
Sardis 4J....1
Senatobia 3J..1
Shubuta 17P..†9
Starkville 9O...2
Stonewall 16O...1
Summit 20G....1
Sumner 6G...†6
Sumrall 19L..1
Tunica 2G....†9
Tupelo 5P....5
Tylertown 21H..1
Union 14N...1
Vaiden 9K...†7
Vicksburg 14E.......18
Water Valley 5L.......4
Waynesboro 18P.......†6
Westpoint 8P....4
Wiggins 23N...1
Winona 9K...2
Woodville 21C...1
Yazoo City 12G........5

†POP. SHOWN IN HUNDREDS. *POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

MINNESOTA
Pop. 2,387,125

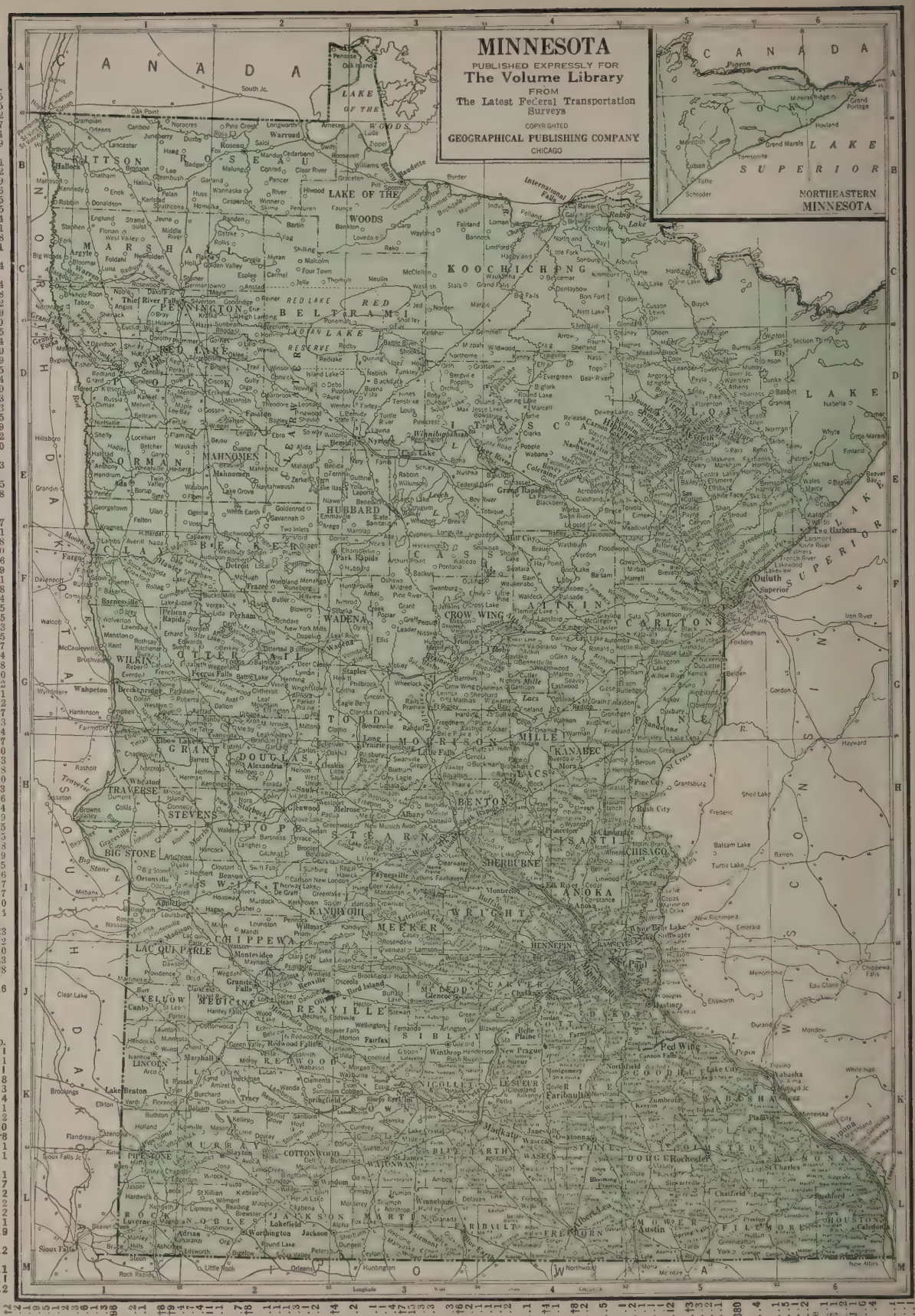
COUNTIES

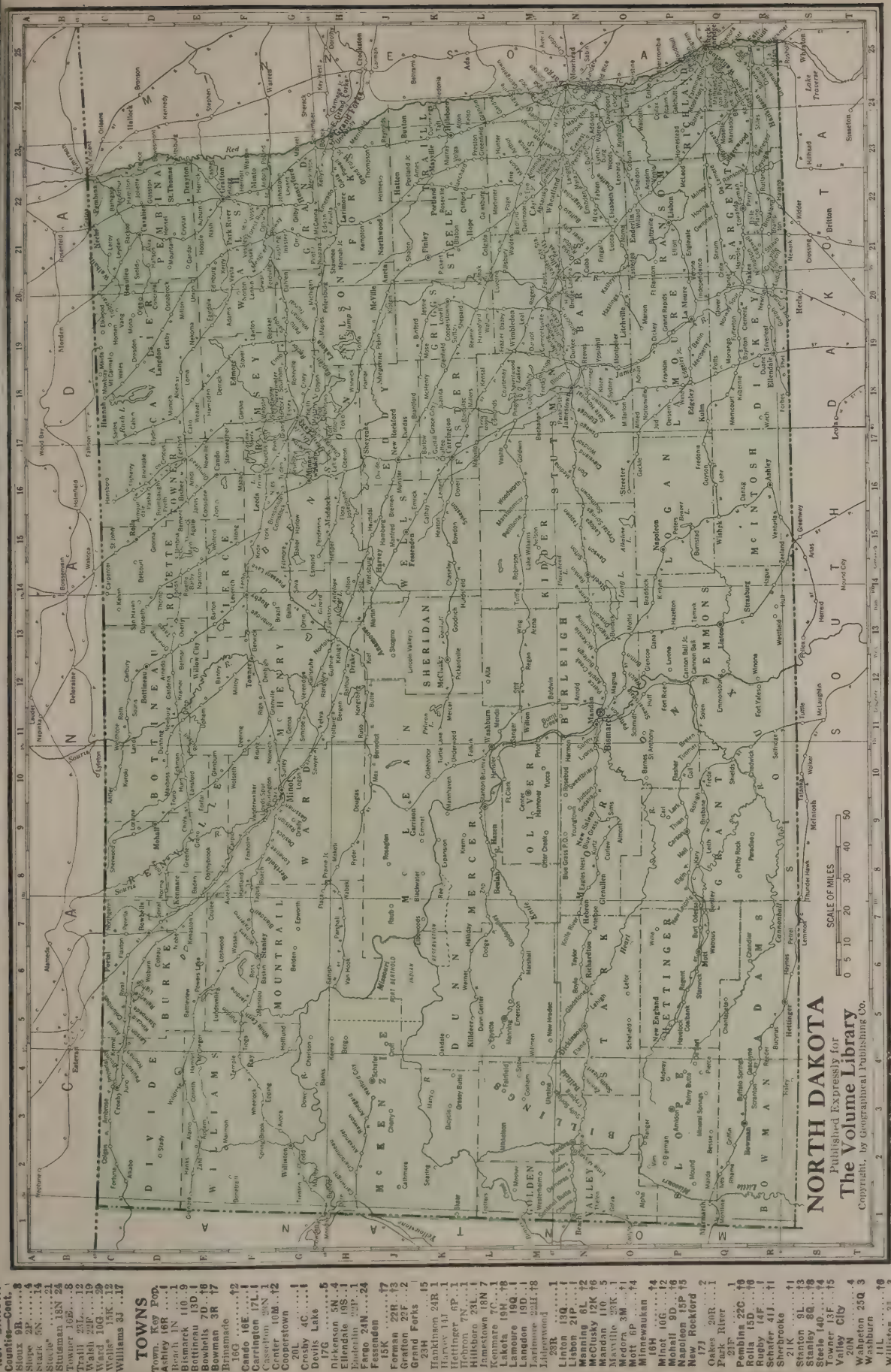
	Thous.
Aitkin 4F	15
Anoka 4I	15
Becker 2F	22
Beltrami 3E	27
Benton* 4H	14
Bigstone 1I	9
Blue Earth 4K	31
Brown 3K	22
Carlton* 5F	19
Carver 4J	16
Cass* 3E	15
Chippewa 2J	15
Chisago* 5L	14
Clay 1F	21
Clearwater* 2E	8
Cook* 6B	1
Cottonwood 2L	14
Crow Wing 3G	24
Dakota 5J	28
Dodge* 5K	12
Douglas 2H	19
Fairbault 3L	20
Fillmore 5L	25
Freeborn 4L	24
Goodhue 5J	30
Grant* 2H	9
Hennepin 4J	415
Houston 6L	14
Hubbard 2F	10
Isanti* 4H	13
Itasca 4E	22
Jackson 2L	15
Kanabec* 4H	9
Kandiyohi 2I	22
Kittson* 1B	10
Koochiching 4C	13
Lacqui Parle 1I	15
Lake 6E	8
Lake of the Woods 2B	
LeSeuer 4K	17
Lincoln* 1K	11
Lyon 2K	18
McLeod 3J	20
Mahnomen* 2E	6
Marshall 1G	19
Martin 3L	21
Meeker 3I	18
Mille Lacs 4H	14
Morrison 3H	25
Mower 5L	25
Murray* 2L	13
Nicollet 4K	15
Nobles 2L	17
Norman 1E	14
Olmsted 5K	28
Ottertail 1G	50
Pennington 1C	12
Pine 5H	21
Pipestone 1K	12
Polk 1D	37
Pope 2H	13
Ramsey 4J	244
Red Lake 1D	7
Redwood 2J	20
Renville* 3J	23
Rice 4K	28
Rock 1L	10
Roseau* 2B	13
St. Louis 5F	206
Scott 4J	14
Sherburne* 4L	9
Sibley* 4K	15
Stearns 3H	55
Steele 4K	18
Stevens 2H	9
Swift 2I	15
Todd 3H	26
Traverse 1H	7
Wabasha 6K	17
Wadena 2G	10
Waseca 4K	11
Washington 5I	23
Watonwan 3L	12
Wilkin 1G	10
Winona 6K	33
Wright 4I	28
Yellow Medicine 2J	16

TOWNS

Town.	Key.	Pop.
Ada	1E	1
Adrian	2L	1
Aitkin	4F	1
Albert Lea	4L	8
Alexandria	2H	3
Anoka	4I	4
Appleton	2I	1
Aurora	5E	2
Austin	5L	10
Bagley	2E	†8
Osakis	3H	1
Barnesville	1F	1
Belle Plain	4J	1
Bemidji	3E	7
Benson	2I	2
Biwabik	5E	2
Blue Earth	3L	2
Bovey		1
Brainerd	3G	9
Breckenridge	1G	2
Brown Valley	1H	1
Buffalo	4I	1
Buhl	5E	2
Calendonia	6L	1
Cambridge	4H	1
Canby	1J	1
Cannon Falls	5K	1
Carlton	5F	2
Cass Lake	3D	2
Center City		†2
Chaska	4J	1
Chatfield	5L	1
Chisholm	5E	9
Cloquet	5F	5
Coleraine	4F	2
Columbia H.	4I	3
Crosby	3D	3
Crookston	1D	5
Detroit	2F	3
Duluth	5F	98
East Grand Forks	1D	2
Edina		1
Elbow Lake	2H	†8
Elk River	4I	†8
Ely	5E	4
Fairfax	3L	4
Faribault	4K	11
Fairmont	3L	7
Fergus Falls	1G	†8
Foley	4H	1
Fort Snelling		1
Preston	2D	1
Gilbert	5E	3
Glenwood	2H	2
Glencoe	3J	2
Grand Rapids	4E	†4
Granite Falls	2I	2
Hallock	1B	1
Hastings	5J	4
Henderson	4K	†7
Hibbing	5E	13
Hopkins	4J	3
Hutchinson	3J	6
International Falls	4C	†2
Ivanhoe	2K	1
Jackson	2L	2
Janesville	4K	1
Jordan	4J	1
Kenyon	5K	2
Lake City	5K	†6
Lake Crystal	3K	1
Lester Prairie	3J	†1
Lester	4K	1
Leseuer Center	4K	†8
Litchfield	3I	5
Little Falls	3H	1
Long Prairie	3H	1
Luverne	1L	2
Madison	1I	1
Mahnomen	2E	†2
Mankato	4K	12
Mantorville	5K	†3
Marshall	2K	†3
Melrose	3H	2
Milaca	4H	1
Minneapolis	380	
Montevideo	2J	4
Montgomery	4K	†5
Moorhead	1F	1
Mora	4H	2
Morris	2H	1
Mountain Lake	4L	1
Nashwauk	4E	1
New Prague	4J	1
New Ulm	3K	6
Northfield	4K	4
North Saint Paul	5J	1
Olivia	3J	1
Ortonville	1I	1

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEAT IN HEAVY FACED TYPE.





MINNESOTA
Towns—Cont.

Town. Key Pop.
Owatonna 4K..7
Park Rapids 2F 1
Pelican Rapids 1F 1
Perham 2F.....1
Pine City 5H..1
Pipestone 1K..3
Plainview 5K...1
Preston 5L.....1
Princeton 4H...1
Proctor 5F.....2
Red Lake Falls 1D 1
Red Wing 5J..8
Redwood Falls 2J 2
Benville 2J....1
Richfield 2
Rochester 5K..13
Roseau 2B.....1
Rushford 6L...1
Saint Charles 5L 1
Saint Cloud 3H 15
Saint James 3L.2
Saint Louis Park 4J.....2
Saint Paul 4J .....[illegible]
Saint Peter 4K 4
Sandstone 5G..1
Sauk Center 3H 2
Sauk Rapids 3H 2
Shakopee 4J...2
Slayton 2L....1
Sleepy Eye 3K 2
South Saint Paul 4J.....6
South Stillwater 5J.....1
Springfield 3K..1
Spring Valley 5L 1
Staples 3G....2
Stillwater 5I...7
Thief River Falls 1C.....4
Tracy 2K.....2
Two Harbors 6E 4
Virginia 5E...14
Wabasha 6K...2
Wadena 2G....2
Walker 3E....†7
Warren 1C....1
Waseca 4K....3
Waterville 4K..1
Wells 4L.....1
West Minneapolis 3
West Saint Paul 2
Wheaton 1H...1
White Bear 5I.2
Wilmar 2I.....5
Windom 2L....2
Winnebago 3L..1
Winona 6K...19
Winthrop 3J...1
Worthington 2L 3
Zumbrota 5K..1

N. DAKOTA
Pop. 641,192

COUNTIES

Pop. Thous.
Adams 5
Barnes 20N .18
Benson* 16H.12
Billings* 3M .2
Bottineau 13D.13
Bowman* 3R ..4
Burke* 7D....3
Burleigh 11D..17
Cass 24N 44
Cavalier 19D..14
Dickey 19S ...10
Divide* 3D ...9
Dunn* 6L 8
Eddy* 17J 6
Emmons* 13Q.11
Foster 17L....5
Golden Valley 2M 4
Grand Forks 22H 29
Grant 9Q 9
Griggs 20L ...6
Hettinger* 6P..7
Kidder* 14Q..7
Lamoure* 19Q.11
Logan* 15P ...7
McHenry* 13F.15
McIntosh* 16R.9
McKenzie* 4J..8
McLean* 11L.16
Mercer* 9L ..8
Morton 11O ..18
Mountrail* 8Q.12
Nelson 19H..10
Oliver* 10M ..4
Pembina* 22C.14
Pierce 14F ...[illegible]
Ramsey 17G .15
Ransom 21P..10
Renville* 9D...[illegible]
Richland 25Q 20
Rolette* 15D .[illegible]
Sargent* 22R..9
Sheridan* 12K [illegible]

NO. DAKOTA
Counties—Cont.
Sioux 9R.....8
Slope 2P.....4
Stark 5N.....14
Steele* 21
Stutsman 18N 24
Towner 16E....8
Traill 23L....12
Walsh 22F....19
Ward 10G....29
Wells* 15K..12
Williams 3J ..17

TOWNS

Town. Key Pop.
Ashley 16R 1
Beach 1N 1
Bismarck 110..9
Bottineau 13D.1
Bowbells 7D..†6
Bowman 3R †7
Brinsmade 16G .....†2
Cando 16E.....1
Carrington 17L.1
Casselton 23N 1
Center 10M..†2
Cooperstown 20L 1
Crosby 4C.....1
Devils Lake 17G 5
Dickenson 5N..4
Ellendale 19S..1
Enderlin 22P..1
Fargo 24N....24
Fessenden 15K .....†7
Forman 22R..†3
Grafton 22F...2
Grand Forks 23H 15
Hankinson 24R 1
Harvey 14J ...1
Hettinger 6P..1
Hebron 7N....1
Hillsboro 23L..1
Jamestown 18N 7
Kenmare 7C...1
Lakota 19H..†8
Lamoure 19Q..1
Langdon 19D..1
Larimore 22H.†8
Lidgerwood 23R 1
Linton 13Q.....1
Lisbon 21P.....1
Manning 6L †2
McClusky 12K †6
Mandan 110..5
Mayville 23K..1
Medora 3M...†1
Mott 6P .....†4
Minnewaukan 16H .....†4
Minot 10G....†2
Mohall 9D...†6
Napoleon 15P †5
New Rockford 17J 2
Oakes 20R....1
Park River 21F 1
Pembina 22C..†6
Rolla 15D...†6
Rugby 14F....1
Schafer 41J...†1
Sherbrooke 21K .....†1
Stanton 9L...†3
Stanley 8Q...†8
Steele 14O.....†4
Towner 13F...†5
Valley City 20N 4
Wahpeton 25Q 3
Washburn 11L .....†6
Williston 3J ..3
Wishek 15R ..1

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

S. DAKOTA
Pop. 636,547

COUNTIES

County. Key.	Pop.
Armstrong 4B	13
Aurora* 6C	....[illegible]
Beadle 6B	....[illegible]
Bennett* 3D	3
Bonhomme 7D	11
Brookings 8B	17
Brown 6A	....[illegible]
Brule 5C	8
Buffalo* 5B	2
Butte 1B	6
Campbell* 4A	5
Charles Mix	18
Clark 7B	11
Clay 8D	10
Codington 7B	17
Corson* 3A	8
Custer* 1C	4
Deuel* 8B	9
Dewey* 4A	5
Douglas* 6C	....[illegible]
Edmunds* 5A	8
Fall River 1C	6
Faulk* 5B	6
Grant 8A	....[illegible]
Gregory* 6D	13
Haakon 3B	4
Hand 6B	9
Hamlin* 7B	....[illegible]
Day 7A	....[illegible]
Hughes 4B	6
Hutchinson*	....[illegible]
Hyde 5B	4
Jackson 3B	2
Jerauld 6B	6
Jones 4C	3
Kingsbury 7B	13
Lake 7C	....[illegible]
Lawrence 1B	14
Lincoln 8C	14
Lyman* 4C	7
McCook 7C	10
McPherson* 6A	8
Marshall* 7A	9
Meade 1B	9
Mellette 4C	5
Miner 7C	8
Minnehaha 8C	47
Moody 8B	9
Pennington 1B	14
Perkins 2A	7
Potter* 5B	5
Roberts 7A	16
Sanborn 6B	7
Shannon 2C	2
Spink 6B	16
Stanley* 4B	2
Sully* 4B	3
Todd 4D	4
Tripp 5C	14
Turner 7C	14
Union 8D	11
Walworth* 4A	8
Washabaugh* 3C	2
Washington 2C	2
Yankton 7D	16
Zieback* 3A	4

TOWNS

Town. Key.	Pop.
Aberdeen 6A	15
Alexandria 7C	....†8
Allen 3C	....†1
Arlington 7B	1
Armour 6C	1
Bellefourche 1B	1
Beresford 8C	1
Beresford 8B	1
Bison 2A	....†1
Britton 7A	1
Brookings 8B	4
Buffalo G. 1A	....†1
Canton 8C	2
Castlewood 7B	....†5
Centerville 8C	1
Chamberlain 5C	1
CheyenneAgency 4A	....†3
Clark 7B	1
Clearlake 8B	1
Custer 1C	....†8
Deadwood 1B	2
Dell Rapids 8C	1
Desmet 7B	1
Edgemont 1C	1
Elkpoint 8D	1
Eureka 5A	1
Fairfax 6D	....†5
Faulkton 5B	....†8
Flandreau 8B	1
Fort Pierre 4B	....†8
Gamble	....
Gannvalley 5B	....†2
Geddes 6C	1
Gettysburg 5B	....†1
Gregory 5C	1
Groton 6A	1
Highmore 5B	1
Hot Springs 1C	2
Howard 7C	1
Huron 6B	10
Ipswich 5A	....†9
Keystone	1
Kimball 6C	1
Lake Preston 7B	1
Lead 1B	6
Lemmon 2A	1
Lennox 8C	1
Leola 6A	....†6

S. DAKOTA
Towns—Cont.

Town. Key.	Pop.
Little Eagle	....†7
McIntosh 3A	....[illegible]
Madison 7C	....[illegible]
Milbank 8A	2
Miller 6B	....[illegible]
Mitchell 6C	10
Mobridge 4A	....[illegible]
Mound City 4A	....†1
Oacoma 5C	....†2
Olivet 7C	....†2
Onida 4B	....†8
Parker 7C	1
Parkston 7C	1
Pierre 4B	3
Pineridge 4C	5
Plankinton 6C	....†8
Platte 6C	1
Porcupine 2C	1
Rapid City 1B	7
Redfield 6B	2
Rosebud 4C	5
Salem 7C	1
Scotland 7C	1
Sioux Falls 8C	30
Sisseton 7A	1
Spearfish 1B	1
Sturgis 1B	1
Tyndall 7D	1
Vermilion 8D	3
[illegible] 6C	1
Watertown 7B	10
Waubay 7A	1
Webster 7A	1
Wessington Springs 6B	1
Wheeler 6C	....†1
Winner 5C	2
Woonsocket 6B	1
Yankton 7D	5

Towns below 1 Thousand Pop. in Hundreds.

Town. Key.	Pop.
Artesian 7C	....†6
[illegible] 8A	....†5
Blunt 5B	....†5
Bonesteel 5C	....†6
Bowdle 5A	....†7
Bryant 7B	....†6
Bridgewater 7C	....†9
Carthage 7B	....†8
Castlewood 7B	....†5
Conde 6A	....†5
Custer 1C	....†8
De Land? 6B	....†6
Egan 8C	....†4
[illegible] 8B	....†8
Estelline 8B	....†5
Fairfax 6D	....†5
Faulkton 5B	....†8
Ft. Pierre 4B	....†7
Freeman 7C	....†9
Garretson 8C	....†6
Hartford 8C	....†6
Hurley 7C	....†6
Iroquois 7B	....†6
Lake Andes 6C	....†8
Mount Vernon 6C	....†6
Phillips 3C	....†7
Plankinton 6C	....†8
Presho 4C	....†5
Selby 4A	....†5
Spencer 7C	....†6
Springfield 7D	....[illegible]
Summit 7A	....†4
[illegible] 1B	....[illegible]
Terry 1B	....†5
Trimm 7C	....†9
Wessington 6B	....†7

† POP. SHOWN IN HUNDREDS.   * POP. OF COUNTY SEAT BELOW ONE THOUSAND   COUNTY SEATS IN HEAVY FACED TYPE.

IOWA

Pop. 2,404,021

County	Pop. Thous.
Adair 7D	13
Adams 7D	10
Allamakee 2J	16
Appanoose 8G	28
Audubon 6C	12
Benton 5J	23
Black Hawk 4H	57
Boone 5E	29
Bremer 3H	16
Buchanan 4J	18
Buena Vista 3C	16
Butler 3G	17
Calhoun 4D	17
Carroll 5D	21
Cass [illegible]	[illegible]
Cedar 6J	[illegible]
Cerro Gordo 2G	37
Cherokee [illegible]	16
Chickasaw 2H	15
[illegible]	[illegible]
[illegible]	[illegible]
Clay[illegible] 3J	[illegible]
Clin[illegible] 5K	48
Craw[illegible]	20
Dallas 6E	23
Dav[illegible] 8H	[illegible]
Dec[illegible] 8F	15
Dela[illegible] 4J	[illegible]
Des Moines 7J	[illegible]
Dick[illegible] 2C	[illegible]
Dub[illegible] 4K	[illegible]
Emm[illegible] 2D	[illegible]
Fay[illegible] 3I	29
Floy[illegible] 2G	[illegible]
Fra[illegible] 3G	15
Fre[illegible] 8B	[illegible]
Gree[illegible] 5D	16
Gru[illegible] 4G	14
Guth[illegible] 6D	[illegible]
Ham[illegible] 4F	20
Han[illegible] 2F	14
Hardin 4G	22
Harr[illegible] 6B	23
Henry 7J	[illegible]
Howard 2H	13
Hum[illegible] 3E	12
Ida* 4B	11
Iowa [illegible]	13
Jacks[illegible] 5K	[illegible]
Jasper 6G	[illegible]
Jeff[illegible] 7I	15
John[illegible] 6J	29
Jones 5J	[illegible]
Keokuk 7H	[illegible]
Koss[illegible] 2F	[illegible]
Lee 8J	[illegible]
Linn 5J	80
Louisa 7J	[illegible]
Lucas 7G	15
Lyon 2A	15
Madison 7E	14
Mahaska 7H	26
Marion 7G	24
Marshall 5G	33
Mills 7D	13
Mitchell 2G	14
Mon[illegible] 5A	15
Monroe 7G	20
Montgomery 7C	[illegible]
Muscatine 6J	29
O'Brien 2B	18
Osceola 2B	10
Page 8C	23
Palo Alto 2D	15
Plymouth 3A	23
Po[illegible]as 3D	15
Polk 6F	1[illegible]9
Pottawattomie 7B	65
Powe[illegible] 6H	18
Ringgold 8E	12
Sac 4C	17
Sc[illegible] 6K	[illegible]9
Shelby 6B	15
Sioux 2A	[illegible]
Story 5F	29
Tama 5H	[illegible]
Taylor 8D	15
Union 7E	[illegible]
Van Buren 8I	13
Wa[illegible] 7H	[illegible]
Warren 7F	[illegible]
Washington 7I	19
Wa[illegible] 8F	14
Webster 4E	[illegible]0
Wi[illegible] 2F	13
Win[illegible] 2I	21
W[illegible] 4A	[illegible]7
Worth 2G	11
Wright 3F	20

TOWNS

Town.	Key.	Pop.
A[illegible]	4G	1
Adel	6E	1
A[illegible]	[illegible]B	1
A[illegible]	[illegible]A	1
Albia	7H	5
Algona	2E	[illegible]
Allison	3H	[illegible]
Alton	3B	[illegible]
Ames	5F	9
Anamosa	5J	2
Akron	3A	1
Atlantic	6D	5
A[illegible]	[illegible]	[illegible]
A[illegible]	[illegible]	1
B[illegible]	[illegible]D	[illegible]
B[illegible] P[illegible]	[illegible]	3
B[illegible]	4K	1
Belmond	3F	1
Bloomfield	8H	2

Boone 5F	12
Britt [illegible]	1
Brooklyn [illegible]	1
Burlington 8J	26
Buxton [illegible]	2
Carroll 5D	4
Cascade [illegible]	1
Cedar Falls 4H	8
Cedar Rapids 5I	50
Centerville 8H	8
Chariton 8G	5
Charles City 2G	6
Cherokee 3C	4
[illegible] 8G	1
Clarinda 8D	4
Clarion 3F	2
Clear Lake 2F	[illegible]
Clinton 5L	26
Colfax 6G	2
Columbus Junction 7J	1
Coon Rapids [illegible]	1
Corning 8D	1
[illegible]	1
Council Bluffs 7B	30
Crescent 7B	[illegible]
Cresco 2I	3
Creston 8E	8
[illegible]	1
Davenport 6K	52
Decorah 2I	4
Denison 5C	3
DesMoines 6F	141
De Witt 6K	2
Dubuque 4K	40
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	4
Eldon 8I	2
Eldora 4G	2
[illegible]	[illegible]
Emmetsburg 2D	2
Estherville 2D	5
[illegible]	1
Fairfield 8I	6
[illegible]	1
Forest City 2F	2
Fort Dodge 4E	21
Fort Madison 8J	11
Garner 2I	1
Gilbert 5F	2
Glenwood 7B	2
Grand Junction 5E	1
Greene 3G	1
Greenfield 7D	1
Grinnell 6H	4
Grundy Center 4G	1
Guthrie Centre 6D	1
[illegible]	1
[illegible]	[illegible]
[illegible]	[illegible]
Harlan 6C	2
[illegible]	1
[illegible] 3A	2
[illegible]	1
[illegible]	[illegible]
[illegible]	1
Ida Grove 4C	2
Independence 4I	3
Indianola 6F	3
Iowa City 6J	15
Iowa Falls 4G	4
Jefferson 5E	3
[illegible]	14
Keosauqua 8I	1
Knoxville 7G	3
[illegible]	[illegible]
Lake Mills 2F	1
Lamont 8E	1
[illegible]	1
[illegible]	1
Lemars 3A	4
[illegible]	1
Leon 8F	2
Logan 6B	1
[illegible]	1
[illegible]	2
[illegible]	1
Manchester 4J	3
[illegible]	1

COUNTY SEATS IN HEAVY FACED TYPE.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND

Cont. on page 452

IOWA

Towns—Cont.

Town. Key. Pop.
Manson 4D....1
Mapleton 5B 1
Maquoketa 6I..2
Marion 5J. ...4
Marshalltown 5G 16
Mason City 2B 22
Missouri Valley 6B 4
Montezuma 6H.1
Monticello 4K..2
Mount Ayr 8E.1
Mount Pleasant 8G 4
Mount Vernon 5J 1
Muscatine 6J..16
Mystic 8H.....2
Nashua 3H 1
Nevada 5F.... 2
Nevenville 7D. 2
New Hampton 2H 2
New London 8J 1
New Sharon 6H 1
Newton 6G.....7
Northwood 2G..1
Oakland 7C....1
Odebolt 4C....1
Oelwein 3I 8
Ogden 5E......1
Onawa 5B 2
Orange City 2B 1
Osage 6F......2
Oskaloosa 7H.10
Ottumwa 7H..26
Pella 6G 3
Perry 5E 5
Pocahontas 3D 1
Primghar 2B...1
Red Oak 8C....5
Reinbeck 4H ..1
Remsen 3B 1
Rock Rapids 2A 2
Rock Valley 2A.1
Rockwell City 4D 2
Sac City 4D...2
Sheldon 2B. ..3
Shenandoah 8C 5
Sibley 2B......1
Sidney 8B......1
Sigourney 7I...2
Sioux Center 2A 1
Sioux City 4A.76
Spencer 2C.....4
Spirit Lake 2C 1
Storm Lake 3C.3
Story City 5F.1

Tama 5H. 2
Tipton 6H 2
Toledo 5H 1
Traer 5H 1

Valley Junction 6F 4
Villisca 8D....2
Vinton 5I......3

Wapello 7K ...1
Washington 7J .4
Waterloo 4H..36
Waukon 2J 2
Waverly 3H....3
Webster City 4F 6
West Burlington 8K 1
West Liberty 6J 1
West Union 3I.1
What Cheer 7H 1
Williamsburg 6I 1
Wilton 6K.....1
Winterset 6E...3

NEBRASKA TOWNS

Town. Key. Pop.
Ainsworth 3F..1
Albion 5I......1
Alliance 4B....4
Alma 8G.......1
Ashland 6K.. .1
Auburn 7L.....2
Aurora 6I.....2
Bartlett 4H...†1
Bassett 3G....†6
Beatrice 7K ...9
Beaver City 8F 1
Benkelman 8D .1
Benson 5L.....3
Blair 5L......2
Bloomfield 3I. 1
Bloomington 8G ....†5
Brewster 4F .†2
Bridgeport 5A..1
Broken Bow 5F 2
Burtwell 5G. ..1
Butte 2H.....†5

Cambridge 8F..1
Center 3I....†1
Central City 6I.2
Chadron 2B. ..4
Chappell 6B....1
Clay Center 7I †9
Collegeview 6K 2
Columbus 5J.. 5
Creighton 3I.. 1
Cozad 6F......1
Crawford 3A 1
Crete 7J... .2
Bayard 5A....2
Dakota City 3K ....†4
David City 6J..2
Dundee 5L...1
Edgar 7I 1
Elwood 7F ....†4
Fairbury 8J....5
Falls City 8L..4
Florence 5L....1
Fremont 5K....9
Friend 7J....1
Fullerton 5I ....†1
Gandy 5E 1
Geneva 7J 1
Genoa 5I....1
Gering 4A 2
Gothenburg 6F 1
Grand Island 6H 13
Grant 6C....†5
Greeley 5H....†5
Harrisburg 5A.†1
Harrison 3A....†4
Hartington 3J....1
Harvard 7I....1
Hastings 7H....11
Havelock 6K....3
Hayes Center 7D ....†2
Hebron 8J 1
Holdrege 7G....3
Humboldt 8L....1
Hyannis 4D...†3

Imperial 7D ....†7
Indianola 8E....†7

Kearney 7G....7
Kimball 6A....1

Lexington 7F...2
Lincoln 6K 54
Loup 4G....1
McCook 8E....4
Madison 4J....1
Minden 7G....1
Mullen 4D....†4

Nebraska City 7L 6
Neligh 4I....1
Nelson 8I ....†9
Norfolk 4J....8
North Bend 5K 1
N. Platte 6E..10
Oakland 4K 1
Ogalalla 6C....1
Omaha 5L....191
O'Neil 3H 2
Ord 5G 2
Osceola 6I....1
Oshkosh 5C....†7
Papillion 6L..†6
Pawnee 6E 1
Pender 4K ....†9
Pierce 4I....1
Plattsmouth 6L.4
Ponca 3K....1

Ravenna 6G....1
Redcloud 8H....1
Rulisville 3B..†9
St. Paul 6H....1
Schuyler 5J....2
Scotts Bluff 4G.6
Seward 6J....2
Shelton 6H....2
Sidney 6B....2
South Omaha 6L 26
South Sioux City 3K....2
Springview 3F.†3
Stanton 4J....1
Stockville 7E.†2
Stromsburg 6J 1
Superior 8J....2
Sutton 7I....1

Taylor 4G....†2
Tecumseh 7K....1
Tekamah 4K....1
Thedford 4E....†2
Trenton 8D....†5
Tryon 5D....†1
University Place 6K....4
Valentine 2E....1
Wahoo 6K....2
Wayne 4J....2
Weeping Water 6L....1
Westpoint 4K....2
Wilbur 7K....1
Wisner 4K....1
Wymore 8K....2
York 6J....6

NEBRASKA
Pop. 1,192,214
COUNTIES

Pop. Thous.
Adams 7H ..22
Antelope 4I ..15
Arthur 5C.. ..1
Banner* 5A ...1
Blaine* 4F .1
Boone 5I .13
Box Butte 4B..8
Boyd* 2H ...8
Brown 3F 6
Buffalo 7G . .23
Burt 4K.... ..12
Butler 6J. . 14
Cass 6L 18
Cedar 3J.. .16
Chase* 7D.....4
Cherry 2E.....11
Cheyenne 6B...8
Clay 7I . . 14
Colfax 5J ..11
Cuming 4K .13
Custer 5F .26
Dakota 3K. ..7
Dawes 2B.. .10
Dawson 7F...16
Deuel* 6B.....3
Dixon 3K.. ..11
Dodge 5K 23
Douglas 5L..204
Dundy* 8D. ..4
Fillmore 7J...13
Franklin* 8G.10
Frontier* 7E...8
Furnas* 8F. .11
Gage 7K 29
Garden 5C.....4
Garfield* 5G ..3
Gosper* 7E....4
Grant* 4D .1
Greeley* 5H ...8
Hall 6H.. 23
Hamilton 6I..13
Harlan 8G.....9
Hayes* 7D.....3
Hitchcock* 8D .6
Holt 3H......17
Hooker 4D.. .1
Howard 6H...10
Jefferson 8J. .16
Johnson 7K... 8
Kearney 7G ...8
Keith* 6C. .5
Keyapaha* 3F.3
Kimball* 6A...4
Knox 3I......18
Lancaster 6K.85
Lincoln 6E....23
Logan* 5E.....1
Loup* 4G......1
McPherson 5D.1
Madison 4J.. 22
Merrick 6I....10
Morrill* 5A. ..4
Nance 5I 8
Nemaha 7L...12
Nuckolls* 8I..13
Otoe 7L. .19
Pawnee 6E....9
Perkins* 6C....3
Phelps 7G.....9
Pierce 4I.....10
Platte 5J.....19
Polk 6I.......10
Red Willow 8E ... .11
Richardson 8L 18
Rock* 3G......3
Saline 7K . .16
Sarpy* 6L.. ..9
Saunders 6K..20
Scotts Bluff* 4A 20
Seward 6J....15
Sheridan* 3B..9
Sherman* 4G..8
Sioux* 3A.. ..4
Stanton 4J.... 7
Thayer 8J... .13
Thomas* 4E...1
Thurston* 4K..9
Valley 5G .. .9
Washington 5L 12
Wayne 4J. ...9
York 6J.......17
Webster 8H...10
Wheeler* 4H...2

* POP. OF COUNTY SEAT BELOW ONE THOUSAND

† POP. SHOWN IN HUNDREDS

COUNTY SEATS IN HEAVY FACED TYPE

KANSAS
Pop. 1,769,257

COUNTIES

Pop. Thous.

Allen 6G ... 23
Anderson 5G 12
Atchison 3G..23
Barber 7D....9
Barton 5D ..18
Bourbon 6H...23
Brown 2G ...20
Butler 6F ...43
Chase* 5F 7
Chautauqua 7F 11
Cherokee 7H..33
Cheyenne* 2A.5
Clark* 7C 4
Clay 2E 14
Cloud 2E 17
Coffey 2G 14
Comanche* 7C.5
Cowley 7E....35
Crawford 7H..61
Decatur 2B ...8
Dickinson 4E.25
Doniphan* 2G.13
Douglas 4G...23
Edwards 6C...7
Elk 7F 9
Ellis 4C .. 14
Ellsworth 4D.10
Finney 6B.....7
Ford 6B 14
Franklin 4G..21
Geary 4F 13
Gove* 4B 4
Graham* 3C ..7
Grant* 6A ...1
Gray* 6B 4
Greeley 5A ..1
Greenwood 6F.14
Hamilton 6A...2
Harper 7D ..13
Harvey 6E ...20
Haskell* 7A...1
Hodgeman* 5C.3
Jackson 3G...15
Jefferson* 6G.14
Jewell 2D ...16
Johnson 4H...18
Kearney* 6A .2
Kingman 6D..12
Kiowa 6C 6
Labette 7G ..34
Lane* 5B 2
Leavenworth 3H 38
Lincoln 4D ...9
Linn* 5H 13
Logan* 4A ...3
Lyon 5F 26
McPherson 5E.21
Marion 5E ...22
Marshall 2F..22
Meade* 7B.... 5
Miami 4H ...19
Mitchell 3D...13
Montgomery 7G 49
Morris 4F ...12
Morton 6H 3
Nemaha 2F...18
Neosho 6G ...24
Ness* 5C 7
Norton 2C ...11
Osage* 4G ...18
Osborne 3D...12
Ottawa 3E ..10
Pawnee 5C ..9
Phillips 2C ..12
Pottawatomie 3F 16
Pratt 6D 12
Rawlins* 2A.. 6
Reno 6E 44
Republic* 2E 15
Rice 5D 14
Riley 3F 20
Rooks 3C 9
Rush* 5C.....8
Russell 4D ..10
Saline 4E ...25
Scott* 4B 3
Sedgwick 6E..92
Seward 7B .. 6
Shawnee 3G..69
Sheridan* 3B..5
Sherman 3A ..5
Smith 2D .. 14
Stafford 6D ..11
Stanton* 7A...9
Stevens* 7A ..3
Sumner 7E ..29
Thomas 3A ...5
Trego 4C 5
Wabaunsee 4F 11
Wallace* 4A..2
Washington 2E 17
Wichita* 5A ..1
Wilson 7G ..21
Woodson 6G ..8
Wyandotte 3H 122

TOWNS

Town. Key. Pop.

Abilene 4E .. 4
Alma 4F ....†7
Altoona 7G.. 1
Anthony 7D ..2
Argentine 8H..6
Arkansas City 8E 11
Ashland 7C 1
Atchison 3G..12
Atwood 2A...†9
Augusta 6F ...4
Baldwin 4G ...1
Baxter Springs 8H 3
Belleville 2E...2
Beloit 3D 3
Blue Rapids 3F 1
Bonner Springs 3H 1
Burlingame 4G 1
Burlington 5G 2
Caldwell 8E ..2
Caney 8G 3
Chanute 6G ..10
Cherokee 7H...1
Cherryvale 7G.4
Chetopa 8G ...1
Cimarron 6B †5
Clay Center 2E.3
Clyde 2E 1
Coffeyville 8G 13
Colby 3A 1
Columbus 7H..3
Colwich 6E ..2
Concordia 2E..4
Conway Springs 7E 1
Cottonwood Falls 5F 1
Council Grove 4F 2
Dighton 5B †2
Dodge City 6B.5
Downs 3D 1
Eldorado 6F..10
Ellis 4C . 1
Ellsworth 4D..2
Empire City 7H 1
Emporia 5F..11
Erie 6G 1
Eureka 6F 2
Florence 5F...1
Fort Leavenworth 3H ...2
Fort Riley 3F.2
Fort Scott 6H 10
Frankfort 2F..1
Fredonia 7G.. 3
Frontenac 7H..3
Galena 8H 4
Garden City 6B 3
Garnett 5G ...2
Girard 7H 3
Goodland 3A..2
Gove 4B .....†1
Greatbend 5D..4
Greensburg 6C.1
Halstead 6E ..1
Hanover 2F...†9
Harper 7D ...1
Hays 4C 3
Herington 4F..4
Hiawatha 2G..3
Hill City 3C..†7
Hillsboro 5E...1
Hoisington 5D.2
Holton 3G ...2
Horton 2G 4
Howard 7F ...1
Hoxie 3B ....†6
Hugoton 7A..†6
Humboldt 6G..2
Hutchinson 6E 23
Independence 7G 11
Iola 6G 8
Jetmore 5C ..†5
Johnson 7A ..†1
Junction City 4F 7
Kansas City 3H . [illegible]
Kingman 6D ..2
Kingsley 6C 1
Kiowa 8D 1
Lacrosse 5C ..†8
Laharpe 6G....1
Lakin 6A ....†5
Larned 5C ...3
La[illegible] 4G..12

KANSAS
Towns—Cont.

Town. Key. Pop.

Leavenworth 3H ..16
Leoti 5A ...†3
Liberal 7B.....3
Lincoln 4D....1
Lindsborg 5E..1
Lyndon 4G....†7
Lyons 5D......2
McPherson 5E.4
Manhattan 3F.7
Mankato 2D...1
Marion 5E ...1
Marysville 2F..3
Meade 7B....†8
Medicine Lodge 7D 1
Minneapolis 3E.1
Mound City 5H .....†7
Mulberry 6H...2
Neodesha 7G...3
Ness City 5C †9
Newton 6E ..9
Nickerson 5D..1
Norton 2C. ..2
Oakland 3G...1
Oberlin 2B....1
Olathe 4H 3
Osage City 4G 2
Osawatomie 5H 4
Osborne 3D.. .1
Oskaloosa 3G.†7
Oswego 7G.....2
Ottawa 4G.....9
Paola 4H......3
Parsons 7G...16
Peabody 5E.. .2
Phillipsburg 2C 1
Pittsburg 7H 18
Plainville 3C...1
Pleasanton 5H.1
Pratt 6D 5
Redfield 6H. .†2
Richmond 5G †4
Rosedale 3H...7
Russell 4D....1
Russell Sprs. 4A .. .†1
Sabetha 2G ..2
Saint Francis 2A .†7
St. John 6D. .1
St. Marys 3F .1
Salina 4E... 15
Santa Fe 7A †1
Scammon 7H..1
Scott 4B......1
Sedan 7F......1
Seneca 2F... .1
Sharon Springs 4A .... †8
Smith Center 2D 1
Stafford 6D 1
Sterling 5D 2
Stockton 3C....1
Syracuse 6A...1
Tonganoxie 3G ......†9
Topeka 3G ...56
Tribune 5A ...†2
Troy 2G.......1
Valley Falls 3G ..1
Wakeeney 4C..1
Wamego 3F....1
Washington 2E.1
Weir 7H ..1
Wellington 7E.7
Westmoreland 3F ..†9
Wichita 6E...72
Winfield 7E ...7
Yates Center 6G 2

MISSOURI

Counties—Cont.

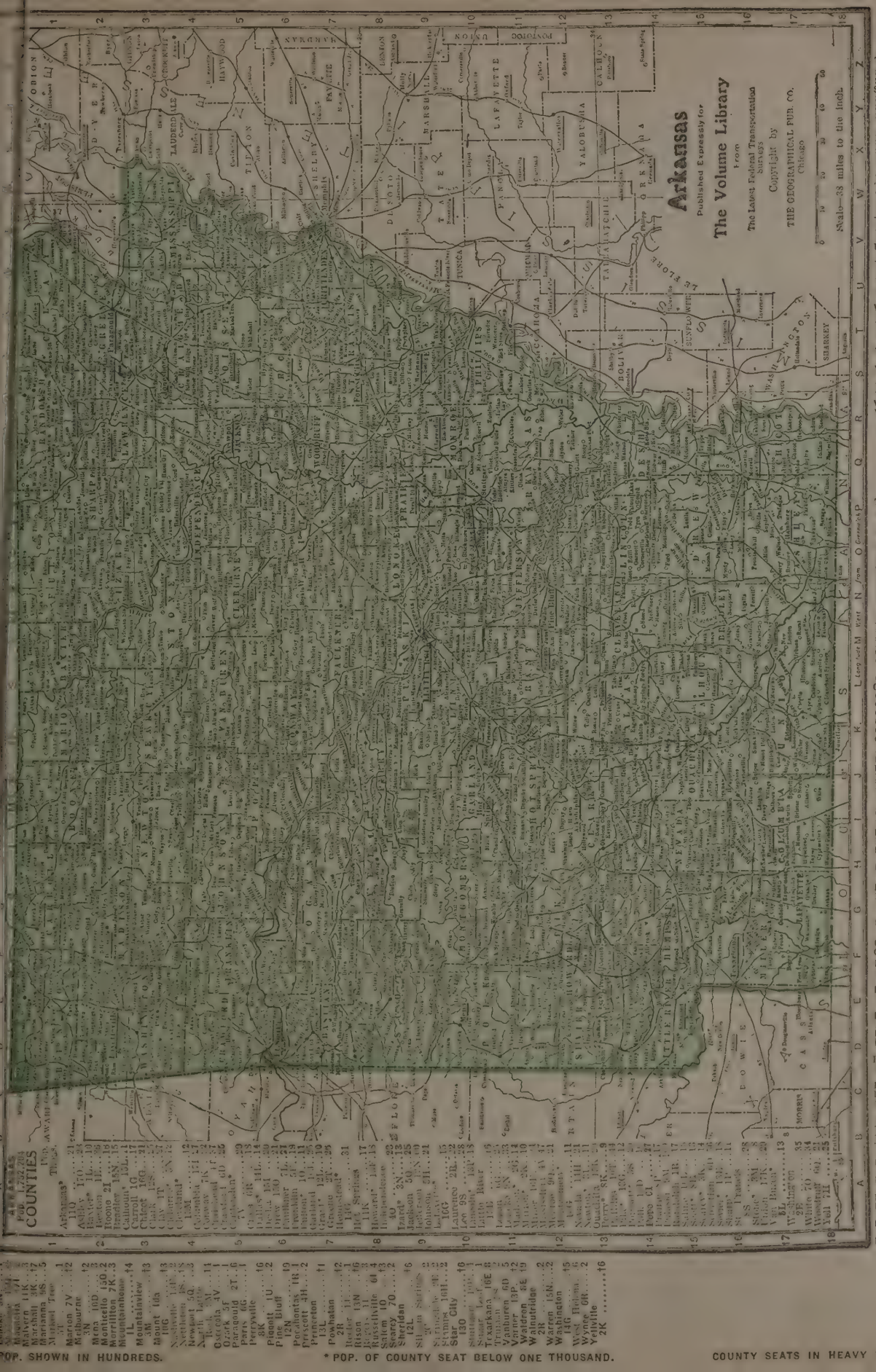
Texas* 8G ...20
Vernon 7C ...23
Warren* 4H ..8
Washington* 6I 13
Wayne* 8I...13
Webster 8E..16
Worth 1C 7
Wright* 8F...17

TOWNS

Town. Key. Pop.
Albany 1C.....2
Alton 9H ...†4
Appelton City 6C 1
Ash Grove 8D.1
Aurora 8D ...3
Ava 8F .....†8
Benton 8K ..†3
Bethany 1C ..2
Bevier 2F 1
Bloomfield 9J..1
Bolivar 7D....1
Bonneterre 6I..3
Boonville 4E...4
Bowling Green 3H 1
Braymer 3D...1
Breckenridge 2D ....†8
Brookfield 2E..6
Brunswick 3E..1
Buffalo 7E....†9
Butler 6C 2
California 5F .12
Cameron 2C...3
Campbell 5K 9J 2
Canton 2G ...3
Cape Girardeau 8K 10
Carl Junction 8B 1
Carrollton 3D 3
Carterville 8B.2
Carthage 8C..10
Caruthersville 6L 4
Cassville 9C 1
Centerville 7H ....†2
Centralia 4F...2
Chaffee 3
Charleston 8K 3
Chillicothe 2D.6
Chitwood 8H..1
Clarence 2F...1
Clayton 5I....†4
Clayton 7B ...3
Clinton 5D.....5
Columbia 4F..10
Crystal City 6I 2
Danville 4H..†1
Deepwater 6D..1
Desloge 6I ...4
DeSoto 6I....5
Dexter 9J... 2
Doniphan 9I...1
Drenweg 8B...1
East Prairie 9K 1
Edina 2F......1
Edina 1
Eldon 5F 2
Eldorado Springs 7C....1
Elsberry 4I ...1
Elvins 7I 2
Eminence 8H †3
Excelsior Springs 3C..4
Farmington 7I.2
Fayette 4E....2
Ferguson 5J...1
Festus 6I 3
Flat River 6I 5
Forsyth 9E...†2
Fredericktown 7J 3
Fulton 4G 5
Galena 9D ..†3
Gallatin 2C....1
Gainesville 9F ....†2
Glasgow 4E ..1
Granby 9C ...2
Grandin 9I ..2
Grant City 1C.1
Green City 1E†9
Greenfield 6C..1
Greenville 8I..†6
Hamilton 2C...1
[illegible] 3H [illegible]
Harrisonville 5C 2
Hartville 8F..†5
Havti 6L 1
Hermann 5H...1
Hermitage 6D †3
Hibbard 1
Higbee 3F ...1
Higginsville 4D 2
Hillsboro 6I..†2
Holden 5C 3
Houston 8G...†7
Huntsville 3F..2
Independence 3C 11
Trenton 7I ...†8
Jackson 7K ...2

Jefferson City 5F 14
Joplin 8B....29
Kahoka 1G ...1
Kansas City 4B 324
Kennett 9K ...3
Keytesville 3E [illegible]
Kingston 3C ....†3
Kirksville 1F ...7
Kirkwood 5I...4
Labelle 2G ...1
[illegible] ...2
Lamar 7C ...2
Lancaster 1F ...†8
[illegible]
[illegible]
Lebanon 7F ...2
Lees Summit ...1
Lexington 4C ...4
Liberty 3C ...3
Linn 5G ...1
[illegible] ...1
Linneus 2E...†3
[illegible] ...1
Macon 2F ...3
Malden 5L ...2
[illegible] ...7
Marble Hill 8J ...†3
[illegible] 3E ..3
[illegible]
[illegible] ...1
Marshall 4E...5
Marshfield 8E...1
Maryville 1B...4
Maysville 2C...1
Memphis 1F...1
Mexico 4G...5
Milan 1E ...2
[illegible] 7J 1
[illegible] ...1
Monett 9C ...1
Monroe City 3G 1
Montgomery City 4G ...1
Monticello 2G †2
[illegible] ...1
Mound City 1A 1
[illegible] 8F 2
Mount Vernon 8C 1
Neosho 9C 3
Nevada 7C 7
New London 3H 19
New Madrid 5L 1
Norborne 3D....1
[illegible]
Odessa 4C 1
Oran 8K 1
Oregon 2A [illegible]
Oronogo 8B ...3
Osceola 6D ...1
Ozark 8D [illegible]
Pacific 5I 1
Palmyra 2G ...2
Paris 3G ...1
Pattonsburg 2C.1
Perryville 7J ...1
[illegible] ...1
Pierce City 9C 1
Pineville 9C [illegible]
Platte City 3B 15
Plattsburg 3C..1
[illegible] 4C 1
Poplar Bluff 9I 8
Potosi 6I [illegible]
Princeton 1D ..1
[illegible] ...2
Richmond 3C..4
Rockport 1A ..1
Rolla 6G ...2
Saint Charles 4I 8
[illegible]
[illegible] 6G 2
Saint Joseph 2B 77
Saint Louis [illegible]
Salem 7G ...1
[illegible]
[illegible]
Savannah 2B ...1
Sedalia 5D...21

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE



MISSOURI. Towns—Cont.

Town.	Key.	Pop.
Senath	6K	1
Shelbina	5G	1
Shelbyville	2G	16
Sikeston	9K	3
Slater	4E	3
Springfield	4D	39
Sturberry	1E	1
Steelville	6H	17
Stockton	7C	16
Sweet Springs	4D	1
Tarkio	1A	1
Thayer	9H	1
Tipton	4F	1
Trenton	2D	6
Troy	4H	1
Tuscumbia	6F	12
Union	5H	1
Unionville	1E	1
University	5F	6
Vanburen	8H	14
Vandalia	3H	2
Versailles	5E	1
Vienna	6G	12
Warrensburg	5D	4
Warrenton	4H	18
Wartaw	6D	19
Washington	5H	3
Waynesville	7F	12
Webb City	8B	7
Webster Groves	5F	9
Wellsville	4G	1
Weston	2B	19
Westplains	9G	3
Willow Springs	8G	1
Windsor	5D	2

ARKANSAS TOWNS

Town.	Key.	Pop.
Arkadelphia	12J	3
Arkansas City	16J	1
Ashdown	15E	2
Athens	7J	1
Augusta	6Q	1
Batesville	4O	4
Benton	10L	2
Bentonville	1E	2
Berryville	1G	1
Blackrock	5Q	18
Blytheville	3W	6
Booneville	7F	2
Brinkley	8Q	3
Camden	15K	3
Centerpoint	13F	12
Clarendon	6Q	2
Clarksville	5H	2
Clinton	5L	13
Coalhill	6G	1
Conway	7L	4
Corning	1A	1
Cottonplant	8Q	1
Crossett	17N	2
Danville	7H	18
Dardanelle	7I	1
D. Queen	13D	2
Dermott	15Q	3
Desarc	8P	1
Devills Bluff	9P	19
Dewitt	11Q	1
Earle	6Q	2
Eldorado	17K	3
Elm Hall	10N	2
Eureka Springs	1G	2
Evening Shade	2O	12
Fayetteville	2E	5
Fordyce	11K	2
Forest City	8S	3
Fort Smith	6D	28
Greenwood	7D	1
Gurdon	14J	1
Hamburg	17O	1
Hampton	12L	12
Hardy	1F	14
Harrisburg	8S	1
Harrison	2I	3
Hartford	8D	2
Helena	19T	9
Heber Springs	3N	1
Hope	16G	4
Hot Springs	10J	11
Hughes	7D	1
Huntsville	2G	15
Jasper	3I	12
Jonesboro	4R	9
Judsonia	5K	1
Lake City	4T	16
Lake Village	16Q	1
Lamar	7I	1
Lewisville	16G	1
Little Rock	9M	65
Lockesburg	15E	17

POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

OKLAHOMA

Pop. 2,028,283

COUNTIES

	Pop. Thous.
Adair* 6Y	13
Alfalfa 2J	16
Atoka 14S	20
Beaver* 17H	14
Beckham 6C	18
Blaine 7H	15
Bryant 16R	40
Canadian 8K	22
Caddo 11J	34
Carter 15O	49
Cherokee 6X	19
Choctaw 16V	32
Cimarron* 17B	3
Cleveland 10M	19
Coal 14S	18
Cotton 14J	16
Comanche 13J	26
Crair 2W	19
Creek 6S	62
Custer* 8F	18
Delaware* 3Y	13
Dewey* 6F	12
Ellis* 16V	11
Garfield 4L	37
Garvin 12N	32
Grady 11K	33
Grant 2L	16
Greer 11D	15
Harmon* 12B	11
Harper* 2C	
Haskell* 10W	19
Hughes 11R	26
Jackson 13F	22
Jefferson 16Y	17
Johnston 12Q	20
Kay 1O	34
Kingfisher 7L	15
Kiowa 11F	23
Latimer 11W	13
LeFlore 11Y	42
Love 16O	12
Lincoln 8O	33
Logan 6N	27
Marshall 16P	14
Major 4H	12
Mayes 4V	16
McClain 11N	19
McCurtain 17Y	37
McIntosh 9V	26
Murray 13O	13
Muskogee 7V	61
Noble 4N	13
Nowata 2U	15
Okfuskee 9R	25
Oklahoma 9M	116
Okmulgee 8T	55
Osage 2R	36
Ottawa 1X	41
Pawnee 4P	19
Payne 5O	30
Pittsburg 11T	52
Pontotoc 12Q	30
Pottawatomie 16O	46
Pushmataha 15U	17
Roger Mills* 8O	10
Rogers 4U	17
Seminole 10Q	23
Sequovah 9Y	26
Stephens 13K	22
Texas 1SE	13
Tillman 14F	22
Tulsa 5S	109
Wagoner 6V	21
Washington 2T	27
Washita 9F	22
Woods 2G	15
Woodward 3D	14

TOWNS

Ada 12Q	8
Afton 2X	1
Altus 13E	4
Alva 2G	3
Anadrake 11J	3
Antlers 15U	1
Arapaho 8F	†3
Ardmore 15O	14
Arnett 5C	†4
Atoka 14S	2
Bartlesville 2T	14
Beaver 17H	†9
Blackwell 2N	7
Boise City 17B	†2
Boley 9R	1
Bristow 2R	3
Broken Arrow 6T	2
Buffalo 2C	†4
Caddo 15S	1
Capitol Hill 9M	1
Cestos 5F	†3
Chandelr 8O	2
Checotah 9V	2
Chelsea 3Y	1
Cherokee 2J	2
Cheyenne 8C	†4
Chickasha 11K	10
Claremore 4U	3
Cleveland 4R	2
Clinton 8F	3
Coalgate 13S	3
Collinsville 4T	3
Comanche 14K	1
Cordell 9F	1
Coweta 6U	1
Cushing 6P	6
Davis 14O	1
Dewey 2T	3
Duncan 14K	3
Durant 16R	3
Edmond 9M	2
El Reno 8K	5
Enid 4L	16
Eufaula 10U	1
Fairview 4H	1
Fort Gibson 7W	1
Frederick 14F	3
Geary 8J	1
Grove 3Y	†8
Guthrie 6N	11
Guymon 18E	1
Hallerville 12U	2
Hartshorne 12Y	2
Haskell 10W	1
Henryetta 9S	3
Hobart 11F	3
Holdenville 11R	2
Hollis 12B	1
Hugo 16V	6
Idabel 17Y	3
Kingfisher 7L	2
Kiowa 11T	1
Lehigh 14S	1
Lawton 13J	8
Lindsay 12M	1
McAlester 11T	12
Madill 16P	2
Manguim 16O	3
Marlow 13K	2
Medford 2L	1
Miami 1X	6
Muskogee 7V	†30
Newkirk 1O	2
Norman 10M	5
North McAlester 11U	1
Nowata 2U	4
Okemah 9N	2
Oklahoma 9M	9
Okmulgee 8T	17
Pauls Valley 12N	3
Pawhuska 2R	6
Pawnee 4P	2
Perry 4N	1
Pichee 1X	0
Ponca 2O	2
Pondrea 2J	2
Poteau 1Y	2
Pryor 4V	1
Purcell 11N	2
Roff 13I	1
Ryan 16K	1
Sallisaw 9Y	2
Sapulpa 6S	11
Sand Springs 5S	4
Sayre 9C	1
Seminole 10Q	4
Shawnee 1P	15
Snyder 1F	1
Stilro 10X	1
Stilzer 10W	1
Stillwater 5O	11
Sulphur 13O	3
Tahlequah 6X	†3
Talaga 6F	†3
Tecumseh 10O	1
Thomas 7G	1
Tishomingo 15Q	1
Tonkawa 3C	1
Stigler 10W	2
Tulsa 5S	72
Vinita 3W	3
Wagoner 6V	3
Walter 14J	0
Waurika 15K	3
Wetumka 13O	1
Wewoka 12O	1
Wilburton 11W	2
Woodward 3D	3
Wynnewood 13O	1
Yukon 8L	1

† POP. SHOWN IN HUNDREDS. • POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

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OKLAHOMA

PUBLISHED EXPRESSLY FOR The Volume Library From The Latest Federal Transportation Surveys

LOUISIANA
Pop. 1,798,509

PARISHES

Parish	Key	Pop. Thous.
Acadia	9J	34
Allen	8G	18
Ascension	9N	22
Assumption	10M	17
Avoyelles	6J	35
Beauregard	8D	20
Bienville	2G	20
Bossier*	2D	22
Caddo	2D	83
Calcasieu	9F	32
Caldwell*	3J	9
Cameron*	10F	3
Catahoula*	4K	11
Claiborne	1G	27
Concordia	5L	12
DeSota	4D	29
East Baton Rouge	8M	44
East Carroll	1M	11
East Feliciana*	7M	17
Evangeline*	8J	23
Franklin*	3K	24
Grant	5G	14
Iberia	10K	26
Iberville	9M	26
Jackson*	3H	14
Jefferson	11P	21
Jefferson Davis	9G	18
La Salle*	5J	9
Lafayette	9J	30
Lafourche	10N	30
Lincoln	2H	16
Livingston	8N	11
Madison*	2M	10
Morehouse*	1K	19
Natchitoches	4F	38
Orleans	10P	387
Ouachita	2J	30
Plaquemines	11Q	10
Pointe Coupe	8L	24
Rapides	6U	59
Red River*	4E	15
Richland	2K	20
Sabine*	5E	20
Saint Bernard*	10Q	4
Saint Charles*	10O	8
Saint Helena*	7N	8
Saint James	9N	21
Saint John the Baptist*	9O	11
Saint Landry	8J	51
Saint Martin	9K	21
St Mary	10L	30
Saint Tammany	8P	20
Tangipahoa	8O	31
Tensas*	4M	12
Terrebonne	11N	28
Union*	1H	19
Vermillion	10J	28
Vernon	6F	20
Washington	10L	24
Webster	2F	24
West Baton Rouge*	8M	11
West Caroll*	1L	8
West Feliciana*	7L	12
Winn	4H	16

TOWNS

Town	Key	Pop.
Abbeville	10J	3
Alexandria	6H	17
Amite	8O	1
Arcadia	2G	1
Bastrop	1K	1
Baton Rouge	8M	21
Benton	2D	†3
Berwick	10M	1
Breaux Bridge	9K	1
Bunkie	7J	1
Cameron	10F	†1
Clinton	7M	†7
Colfax	5G	1
Convent	9N	†6
Coushatta	4E	†9
Covington	8P	2
Crowley	9J	6
De Ridder	7F	3
Donaldsville	9N	3
Edgard	9O	†8
[illegible]	8H	3
Farmerville	1H	†6
Franklin	10L	3
[illegible]	6F	2
[illegible]	2F	6
Greensburg	7N	†2
Gretna	10P	7
[illegible]	10H	1
Hahnville	10O	†4
Hammond	8O	3
Harrisonburg	4K	†3
Houma	11N	5
Independence	8O	1
Jackson	7N	2
Jeanerette	10L	2
Jena	5J	†5
Jennings	9G	8
Jonesboro	3G	18
Kenner	10P	1
Kentwood	7O	3
Lafayette	9J	7
Lake Arthur	9H	1
Lake Charles	9F	13
Lake Providence	1M	1
Lecompte	6H	1
Leesville	6F	2
Lutcher	9N	1
Madisonville	8P	1
[illegible]	9P	1
Mansfield	4D	2
Many	5E	†6
Marksville	6J	1
Melville	8K	1
Merryville	8E	2
Minden	2F	6
Monroe	2J	12
Morgan City	10N	5
Napoleonville	10M	1
Natchitoches	4F	3
[illegible]	7F	†4
New Iberia	10K	6
New Orleans	10P	387
New Roads	8L	1
Oakdale	8G	4
Opelousas	8J	4
Patterson	11M	2
[illegible]	7F	7
[illegible]	6H	2
Plaquemine	9M	4
Pte. a la Hache	11Q	†4
Ponchatoula	8O	†9
Port Allen	8M	†9
Rayne	9J	2
Rayville	2K	1
Ruston	2H	3
St. Bernard	10Q	†3
St. Francisville	7L	†6
St. Joseph	4M	†7
St. Martinsville	9K	2
Shreveport	2D	43
Slidell	8Q	2
Springville	8N	†1
Sulphur	9E	1
Tallulah	2M	1
Thibodaux	10N	3
Vernon	3H	†1
Vidalia	5J	1
Ville Platte	8J	1
Vivian	1D	1
Washington	8J	1
Welsh	9G	1
Westlake	9F	1
West Monroe	2J	2
White C.	9M	1
Winnfield	4H	2
Winnsboro	3K	1

POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.

TEXAS.
Pop. 4,663,228

COUNTIES

Anderson 26L.34
Andrews* 11J.†3
Angelina 28M.22
Aransas 23U...2
Archer 20G....5
Armstrong 14D2
Atascosa 20S.12
Austin 24P...18
Bailey 11F...†5
Bandera 18Q..4
Bastrop 18G..26
Baylor 19G....7
Bee 22T 12
Bell 22N.....46
Bexar 20R..202
Blanco 20O....4
Borden 14I....1
Bosque 22L...18
Bowie 29G...39
Brazoria 26R.20
Brazo 25N...21
Brewster* 10P.4
Brisco 14E....2
Brooks 21N....4
Brown 19L...21
Burleston 24O16
Burnet 20N....9
Caldwell 22Q.25
Calhoun 24T...4
Callahan 18J.11
Cameron 22Y.36
Camp 27I....11
Carson 14C....3
Cass 28H.....30
Castro 12E....1
Chambers 28P..4
Cherokee 27K.37
Childress 16E.10
Clay 20G.....16
Cochran 11G.†1
Coke 16K.....4
Coleman 18L..18
Collin 24H ..49
Collingsworth 16D ....■
Colorado 24Q.19
Comal 20P ...8
Comanche 20K25
Concho 17M ..5
Cooke 23G ...25
Coryell 21M ..20
Cottle 16F ...6
Crane 11M ..†03
Crockett 13N ..1
Crosby 14G ..6
Culberson 7L.†9
Dallam 12A ..4
Dallas 23I..210
Dawson 13I ..4
Deaf Smith 12D3
Delta 26G ..15
Denton 22H..35
Dewitt 22R ..27
Dickens 15G..5
Dimmit 17T ..5
Donley 15D ...8
Duval 20V 8
Eastland 19J..58
Ector 11K ...†7
Edwards 16P..2
Ellis 23J 55
El Paso 5L..101
Erath 20J ...28
Falls 23M ...36
Fannin 25G..48
Fayette 32O..29
Fisher 10I....11
Floyd 14F 9
Foard 17F ...4
Fort Bend 62O22
Franklin 27H.9
Freestone 25L.23
Frio 19S 9
Gaines 11I ...1
Galveston 27Q53
Garza 14H ...4
Gillespie 19O.10
Glasscock 14L†5
Goliad 22S ...9
Gonzales 22R.28
Gray 15C 4
Grayson 23G..74
Gregg 28J ...16
Grimes 25N ..23
Guadalupe 21P27
Hale 13F 10
Hall 15E 11
Hamilton 20L.14
Hansford 14A.1
Hardeman 17F12
Hardin 29O..15
Harris 26P..186
Harrison 28I..43
Hartley 12B...1
Haskell 17H.14
Hays 21P ...15
Hemphill 16B.4
Henderson 25S28
Hidalgo 21Y..88
Hill 23K ...43
Hockley 12G..†1
Hood 21J 8
Hopkins 26H.34
Houston 26M.28
Howard 14J...6
Hudspeth 5L.†9
Hunt 25H ...50
Hutchinson14B†7
Irion 15M 1
Jack 20H 9
Jackson 24O..11
Jasper 29N...15
Jeff Davis 8N .1
Jefferson 29P 73
Jim Hogg 20W1
Jim Wells 21V.6
Johnson 22J..37
Jones 17I ...22
Karnes 21S ..19
Kaufman 24I.41
Kendall 19P ..4
Kent 15H ...3
Kerr 18P 5
Kenedy 22X
Kimble 17O ...8
King 16G....†6
Kinney 16R ..3
Kleberg 22V ..†
Knox 17G 9
Lamar 26G ..55
Lamb 12F 1
Lampasas 20M 8
La Salle 19T. 4
Lavaca 23R ..28
Lee 23O 14
Leon 25M ...18
Liberty 28O ..14
Limestone 24L33
Lipscomb 16A..3
Live Oak 21T..4
Llano 19O ... 5
Loving 9K ...†1
Lubbock 13G.11
Lynn 13H 4
McCulloch 18M 11
McLennan 22M 82
McMullen 20T†9
Madison 25N.11
Marion 28I ..10
Martin 13J ...1
Mason 18N ...4
Matagorda 25S 16
Maverick 16R..7
Medina 19R..11
Menard 17N...3
Midland 13K..2
Milam 23N..38
Mills 20L 9
Mitchell 15J ..7
Montague 21G22
Montgomery 26O 17
Moore 13B ..†5
Morris 28H ..10
Motley 15F ...4
Nacogdoches 28L 28
Navarro 24K..50
Newton 30N..12
Nolan 16J ...10
Nueces 22V...22
Ochiltree 15A..2
Oldham 12C..†7
Orange 30P ..15
Palo Pinto 20I 23
Panola 29J ..21
Parker 21I ..23
Parmer 11E ..1
Pecos 11N ...3
Polk 28N 16
Potter 13C ..16
Presidio 7P ..12
Rains 25I 8
Randall 13D . 3
Reagan 14M..†3
Real 16Q 1
Red River 27G 35
Reeves 9M 4
Refugio 23T ..4
Roberts 15B ..1
Robertson 24M.27
Rockwall 24I..8
Runnels 17K.17
Rusk 28J 31
Sabine 30L ..12
San Augustine 29L 13
San Jacinto 27N 9
San Patricio 22U 11
San Saba 19M10
Schleicher 16N.1
Scurry 15I ...■
Shackleford 18I 4
Shelby 29L ..27
Sherman 13A..1
Smith 27J 46
Somervell 21K 3
Starr 19X ...11
Stephens 19I..15
Sterling 15K ..1
Stonewall 16H.4
Sutton 16O ...1
Swisher 13E ..4
Tarrant 22I.152
Taylor 17J ..24
Terrell 12P ...1
Terry 12H 2
Throckmorton 18H 3
Titus 27H....18
Tom Green 19I 15
Travis 21O ..57
Trinity 27M.13
Tyler 29N....10
Upshur 27I...22
Upton 13L...†2
Uvalde 17R ..10

POP. SHOWN IN HUNDREDS.
* POP. OF COUNTY SEAT BELOW ONE THOUSAND.
COUNTY SEATS IN HEAVY FACED TYPE

TEXAS.

Counties—Cont.

	Pop. Thous.
Van Zandt 25I	36
Victoria 23S	18
Walker 26N	18
Waller 25P	10
Ward 10L	3
Washington 24O	26
Webb, Laredo 18V	28
Wharton 25S	24
Wheeler 16C	7
Wichita 19F	72
Wilbarger 18F	15
Willacy 22X	1
Williamson 22O	42
Wilson 21R	17
Winkler 10K	31
Wise 21H	23
Wood 26I	27
Yoakum 11H	15
Young 19H	19
Zapata 19X	3
Zavalla 17S	8

TOWNS

Town. Key.	Pop. Thous.
Abilene 17J	10
Alba 26I	1
Albany 18J	1
Alice 21V	1
Alpine 9P	1
Alvarado 23J	1
Alvin 27Q	1
Alvord 22H	1
Amarillo 13C	15
Anderson 26Q	18
Angleton 27R	1
Anson 17J	1
Aransas Pass 25U	1
Archer City 20H	16
Arlington 22I	3
Athens 25K	3
Atlanta 29I	1
Austin 21P	34
Baird 18J	1
Ballinger 17L	2
Bandera 19Q	17
Barstow 9L	14
Bartlett 22N	1
Bastrop 23P	1
Batesville 22	12
Bay City 25R	2
Beaumont 29P	40
Beeville 23T	3
Bellevue 20H	17
Bellville 25P	2
Belton 22N	5
Benavidez 21V	15
Benjamin 17H	1
Big Spring 14K	6
Boerne 29H	1
Bonham 28H	6
Boston 28H	1
Bowie 21H	3
Bracketville 16R	1
Brady 18N	2
Breckenridge 19J	1
Brenham 25P	5
Bridgeport 21H	1
Bronson 30M	1
Brownfield 12H	12
Brownsville 22Y	11
Brownwood 19L	9
Bryan 24O	6
Burkburnett 20M	5
Burnet 20N	19
Caldwell 24O	1
Culvert 24N	2
Cameron 23N	4
Canadian 16B	2
Canton 22J	15
Canyon 13D	1
Carrizo Springs 18T	19
Carthage 29K	1
Center 29L	1
Centerville 26M	11
Channing 11C	14
Childress 16E	5
Chillicothe 18F	1
Circo 19J	7
Clairemont	11
Clarendon 15D	2
Clarksville 27G	3
Claude 14D	17
Cleburne 22K	12
Houston 27O	138
Cleveland 27O	1
Clifton 22L	1
Coldspring 2700	15
Coleman 13L	2
Colorado 15K	1
Columbus 24Q	2
Comanche 20L	3
Commerce 26H	3
Conroe 26O	1
Cooper 26H	2
Corpus Christi 22V	10
Corsicana 25K	11
Coutlia 19T	1
Crockett 27M	3
Crowell 17F	1
Cuero 22R	3
Daingerfield 28I	1
Dalhart 12A	2
Dallas 24I	138
Decatur 22I	2
De Leon 20K	3
Del Rio 15R	10
Denison 23H	17
Deshonima 19K	3
Detroit 27O	1
Dimmit 17S	1
Dixie 27P	1
Dublin 20K	2
Dumas Lake	2
Eagle Pass 19T	3
Eastland 20K	9
Edna 24S	2
El Campo 24R	1
Eldora 16N	1
El Paso 3L	77
Electro 19F	4
Emory 29H	1
Fairfield 26N	2
Farmersville 29H	1
Ferris 25I	3
Floresville 24R	1
Floydada 13F	1
Forney 27K	1
Fort Davis 9O	1
Fort Stockton 12N	1
Fort Worth 22J	106
Fostoria 24N	1
Fredericksburg 19O	2
Gale 13I	1
Galveston 28R	44
Garden City 22H	1
Gatesville 22M	2
Georgetown 22O	2
Giddings 24P	1
Gilmer 27J	2
Glen Rose 22K	1
Goliad 23I	2
Goldthwaite 20M	1
Gorman 19J	3
Gonzales 23Q	2
Graham 20J	1
Granbury 21J	1
Grand Saline 27J	1
Grand View 29K	1
Granger 22N	1
Grapevine 23J	1
Greenville 25I	12
Groesbeck 24L	2
Groveton 27M	1
Guthrie 16G	1
Halletsville 24R	3
Hamilton 21L	2
Hamlin 17J	3
Hansford 13A	1
Harrington 17I	3
Haskell 17I	3
Hearne 24N	3
Hebbronville 20W	1
Hemphill 30M	3
Hempstead 26K	2
Henderson 29G	2
Hereford 11D	1
Hico 21K	1
Hidalgo 21Y	3
Hillsboro 23K	3
Hondo 19R	1
Honey Grove 28I	3
Houston 27P	6
Howard 26L	1
Howells 26L	1
Humble 27P	1
Huntsville 24N	3
Hutto 23K	1
Idalou 13G	1
Jacksboro 20I	3

POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE

TEXAS

Towns—Cont.

Town.	Key.	Pop.
Jacksonville	26K	3
Jasper	29N	5
Jefferson	29I	2
Johnson City	20D	1
Junction	18O	1
Karnes City	21R	7
Kaufman	25J	2
Keltys	28M	1
Kemp	25J	1
Kennedy	21S	2
Kerrville	19P	2
Killeen	22N	1
Kingsville		4
Kirbyville	29N	1
Kountze	29O	2
Ladonia	26H	1
Lagrange	23P	1
Lamesa		1
Lampasas	20N	2
Lancaster	24J	1
Laredo	18V	22
Leakey	16Q	2
Lipscomb		2
Lexington	24O	1
Liberty	21P	1
Linden	28I	7
Livingston	28N	9
Llano	20N	1
Lockhart	22P	3
Longview	28J	5
Lott	23M	1
Lubbock	3G	4
Lufkin	28M	4
Luling	22Q	1
McAllen		5
McGregor	22M	2
McKinney	24I	6
Madisonville	26N	1
Magnolia Park		4
Marfa	6O	3
Marlin	24M	4
Marshall	29J	14
Mart	23L	3
Mason	18N	1
Matador	15G	1
Memphis	15D	2
Menard	18N	1
Mercedes	21Y	3
Meridian	22L	1
Merkel	17J	1
Mexia	24L	3
Miami	15B	1
Midland	12L	1
Miles	16L	1
Mineola	26J	2
Mineral Wells	20J	7
Mission	20Y	3
Mobeetie	16C	1
Montague		5
Mount Pleasant	28I	4
Mount Vernon	27H	1
Nacogdoches	28L	3
Naples	28H	1
Navasota	25O	5
New Boston	29H	1
New Braunfels	21Q	3
Newton	30N	1
Nixon		1
Norona		1
Oakville	21T	1
Ochiltree	15A	1
Odessa	12L	1
Olney	19H	1
Olton	12F	1
Orange	30P	9
Ozona	14N	1
Paducah	16F	1
Paint Rock	17M	1
Palacios		1
Palestine	26L	1
Palo Pinto	20J	5
Panhandle	14C	1
Paris	22G	1
Pearsall	19S	2
Pecos	9M	1
Pilot Point	23H	1
Pittsburg		2
Plainview	13F	3
Pleasonton	20S	1
Plemons		1
Polytechnic		4
Port Arthur	29P	2
Port Lavaca	24T	1
Post	14H	1
Quanah	17F	3
Quitman	27I	1
Ranger	20J	1
Refugio	23T	1
Richmond	26Q	1
Riogrande	20Y	3
Robert Lee	16L	1
Roby	16J	1
Rockdale	23O	2
Rockport	23U	1
Rocksprings	16P	1
Rockwall	24J	1
Rogers	22N	1
Rosebud	23N	1
Rosenberg	26Q	1
Rotan		1
Royse City	24I	1
Runge	22S	1
Rusk	27L	2
Sabinal	17R	1

Towns—Cont.	Key.	Pop.
San Angelo	15M	10
San Antonio	16I	8
San Augustine	30L	1
San Benito	22Y	5
Sanderson	12P	15
San Diego	20V	2
San Marcos	21P	4
San Saba	20M	2
Savoy	27K	1
Saratoga	26O	1
Schulenburg	23Q	1
Sealy	25Q	2
Sequin	21Q	3
Seminole	1H	2
Seymour	18H	1
Shallowater	7F	1
Sherman	24H	15
Sherwood	15M	1
Shiner	23Q	1
Silverton	14E	1
Sinton	22U	2
Smithville	23R	2
Snyder	16J	2
Somerville	24O	1
Sonora	15N	1
Sourlake	25F	3
Stamford	18J	3
Stanton	13K	6
Stephenville	20K	3
Sterling City	15L	1
Stockdale	12A	1
Stratford	12A	1
Strawn	20J	2
Sulphur Springs	26I	5
Sweet Water	16J	4
Tahoka	22O	3
Taylor	23O	11
Temple	25N	11
Terrell	25J	8
Texarkana	29II	1
Texcessa		1
Throckmorton	18I	1
Thurber	20J	4
Tilden	20T	2
Timpson	29K	1
Toxico		1
Toyah	8M	1
Troup	27K	1
Tulia	13E	1
Tyler	27J	3
Uvalde	17R	
Vernon	18F	5
Victoria	23S	5
Waco	23K	38
Wallisville		1
Walnut Springs	21K	1
Waxahachie	23F	7
Weatherford	21J	6
Wellington	16D	1
West	23L	1
Wharton	25R	2
Whitesboro	23H	1
Whitewright	24H	1
Wichita Falls	20G	40
Willis	27O	1
Wills Point	26J	1
Winnsboro	27I	2
Winters	17L	1
Woodville	28N	1
Yoakum	22R	6
Ysleta	22H	1

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE

UTAH
Pop. 449,396

COUNTIES

Beaver 19E....5
Boxelder 5H..18
Cache 4H....26
Carbon 13M...15
Daggett 8Q ...†5
Davis 7H.....11
Du Chesne 10N 9
Emery 15L....7
Garfield 21F...4
Grand 18Q ..1
Iron 21E.....5
Juab 13H.....9
Kane 24F.....2
Millard 16G...9
Morgan 7J....2
Piute 14G.....2
Rich 14L.....1
Salt Lake 8H 159
San Juan 2?R
Sanpete 15J..1?
Sevier 17G ...1?
Summit 8K....?
Tooele 9F....?
Uinta 10Q ...8
Utah 11J 40
Wasatch 9K...4
Washington 24B 6
Wayne 19J....2
Weber 6H ...45

TOWNS

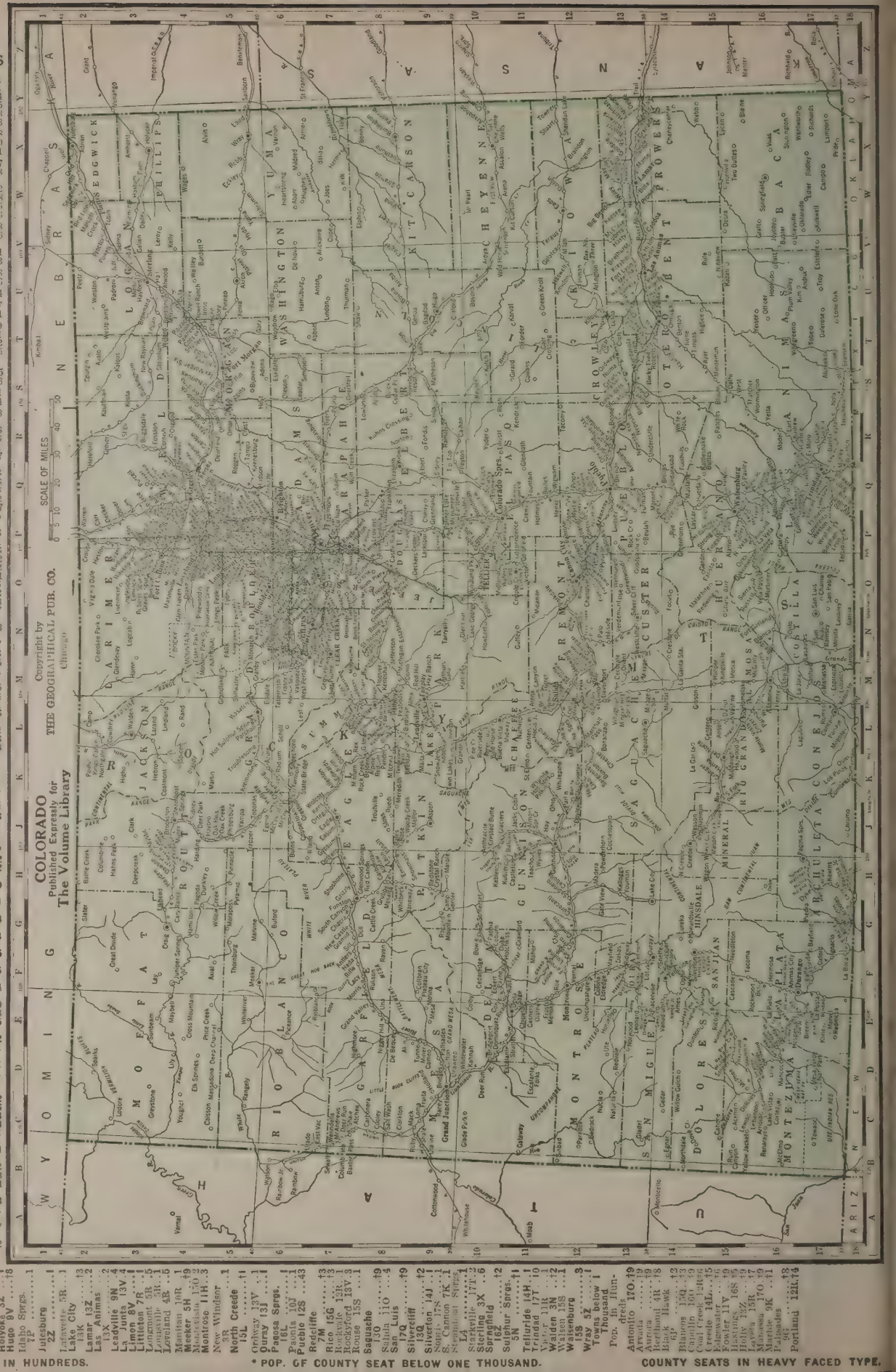
Town. Key. Pop
American Fork 10J 3
Beaver 19E....1
Bingham 9G...3
Bountiful 8H..3
Brigham 5H...5
Castledale 15L ....†7
Castlegate 13L 1
Cedar City 22D 3
Coalville 8K..†7
Ephraim 15J..2
Escalante 21A.1
Eureka 12G...3
Fairview 13K..1
Farmington 7H.1
Fillmore 16G..1
Forest Dale 9H 1
Fountaingreen 13J 1
Grantsville 9F.1
Huntington 15 L........1
Gunnison 13J.†1
Heber 9K......1
Helper 13M...†1
Hooper 7H 1
Huntington 15L 1
Huntsville 6H..1
Hiawatha 14L.1
Hurricane 24D.1
Hyrum 4J.....1
Junction 19G †3
Kanab 24F....1
Kayville 7H..†8
Layton 7H.....1
Lewiston 3H...1
Lehi 10H......3
Loa 19J......†5
Logan 4H.....9
Mammoth 12G.1
Manila 7P....†1
Manti 15J 2
Mercur 10G ..1
Midvale 9H....3
Milford 19D...1
Monticello 2?R ....†7
Moab 18Q....†8
Monroe 18G...1
Moroni 14J....1
Morgan 7J....1
Mount Pleasant 14K 2
Murray 9H....4
Nephi 13H....2
North Ogden 6H 1
Ogden 6H ...32
Panguitch 21F.1
Park City 9J..3
Parowan 21E..1
Payson 12J ...3
Pleasant Grove 10J 1
Price 13M 2
Providence 4H.1
Provo 11J....10
Richfield 17G..3
Richmond 3H..1
Roosevelt 11P..1
Saint George 24B 2
Salina 16H....1
Salt Lake City 8H 118
Sandy 9J.....1
Smithfield 3H ?
Spanish Fork 11J 4
Spring City 14J 1
Springville 11J.3

Summit 21D ..1
Sunnyside 14N 2
Tooele 9F....3
Toole 9G....2
Vernal 10Q....1
Wellsville 4H .1
West Jordan 9H 1

Towns below 1 Thousand
Pop. in Hundreds

Alpine 10H...†4
Bear River City 5G ....†4
Brighton 9H..†6
Centerville 8H ......†7
Clarkston 3H .†5
Clearcreek 13L ....†8
Cleveland 15M ......†2
Collinston 4G †4
Deseret 15E...†5
Draper 9H ...†7
Elsinore 17G..†8
Emery 19K...†8
Ferron 16L....†4
Garland 4G...†9
Geneva 10H...†4
Goshen 12H..†5
Greenriver 16O ....†6
Hinckley 15E ....†8
Holliday 9H..†7
Hydepark 4H.†7
Kamas 9K ....†5
Kanosh 17F ..†5
Kaysville 7H...†8
Levan 14H ....†6
Mapleton 11J..†5
Mayfield 16J..†5
Mendon 4H...†4
Midway 9K...†8
Minersville 19D ....†6
Mona 12H......†5
Newton 3H....†5
Orangeville 15L ....†5
Paradise 5H...†5
Peoa 8K ....†5
Plain City 6H ....†8
Randolph 14L.†5
Redmond 16H.†6
Riverton 9H...†8
St. John 10F..†4
Salem 11J.....†6
Santaquin 12H ....†9
Scipio 15G....†5
Scofield 13L..†6
Thurber 19J..†3
Toquerville 24C ....†8
Tremonton 4F.†9
Vernon 11G...†3
Willard 5H...†6

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE



† POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.

WYOMING
Pop. 206,381

COUNTIES

	Pop. Thous.
Albany 17U	..12
Bighorn* 4M	..10
Campbell* 1U	..5
Carbon 15P	..11
Converse 11V	..7
Crook* 3Y	..4
Fremont 10K	..8
Goshen 13Y	..7
Hot Springs 6Y	..4
Johnson 4Q	..3
Laramie 17X	..18
Lincoln 8E	..10
National Park Reservation 12E	..†1
Natrona 10S	..35
Niobrara 9X	..3
Park 5J	..5
Platte 13W	..7
Sheridan 2Q	..15
Sublette 11G	..1
Sweetwater 16H	..15
Teton 7E	..1
Uinta 17D	..6
Washakie 5N	..3
Weston 6Y	..4

TOWNS

Town, Key, Pop.	
Basin 4M	..1
Buffalo 4Q	..1
Casper 10S	..23
Cheyenne 17X	..13
Cody 3J	..1
Douglas 11V	..1
Evanston 17D	..3
Gillette 4U	..†7
Glenrock 10T	..1
Green River 16H	..2
Greybull 3M	..2
Hanna 15R	..1
Kammerer 15E	..2
Lander 10G	..1
Laramie 17U	..9
Lovell 2L	..1
Lusk 11Y	..†9
Newcastle 6Y	..1
Midwest 9I	..2
Monarch 1P	..1
Mills 9I	..1
Powell 2K	..1
Rawlins 15P	..5
Riverton 9L	..1
Rock Springs 16I	..6
Sheridan 2Q	..8
Sundance 3Y	..†3
Superior 14J	..1
Thermopolis 7M	..1
Tosrington 13Y	..†8
Wheatland 14W	..1*
Worland 5M	..1

Towns below 1 Thousand
Pop. in Hundreds

Afton 11L	..†8
Aladdin 2Y	..†1
Almy 17C	..†4
Atlantic City 12K	..†1
Baggs 18N	..†2
Beaford 10D	..†3
Bighorn 2Q	..†1
Buford 18V	..†1
Burns 10G	..†3
Byron 2K	..†3
Cambria 5Y	..†8
Carpenter 18X	..†1
Centennial 17F	..†2
Clark 1J	..†1
Clearmont 2R	..†2
Conley 2L	..†5
Dayton 2P	..†1
Diamondville 15E	..†8
Dixon 18O	..†1
Dubois 7H	..†2
Encampment 17Q	..†2
Fairview 11D	..†2
Fort Washakie 9J	..†1
Guernsey 13X	..†4
Gunn 15I	..†3
Hartville 12X	..†1
Hiddale 17Y	..†1
Jameson 10K	..†3
Jawbone 7I	..†3
Manville 11X	..†2
Meeteetse 14S	..†2
Meeteetse 5K	..†4
Moorcroft 4W	..†2
Opal 15F	..†1
Orin 4L	..†1
Pine Bluff 17Z	..†4
Saratoga 16Q	..†5
Shoshoni 8M	..†2
Soldier 14E	..†4
Sunrise 12X	..†6
The Siding 14F	..†1
Union 5X	..†2
Yellowstone Park 1E	..†1

† POP. SHOWN IN HUNDREDS. COUNTY SEATS IN HEAVY FACED TYPE. * POP. OF COUNTY SEAT BELOW ONE THOUSAND

MONTANA
Pop. 548,889

COUNTIES

Beaverhead 14G 7
Big Horn 13S ..7
Blaine 4O 9
Broadwater 10J 3
Carbon 14O ..15
Carter 3Z ...3
Cascade 7J ..38
Chouteau 6L ..11
Custer 10V ...12
Daniels 2W .....
Dawson 8Y 9
Deerlodge 11F .15
Fallon 12Y 4
Fergus 8N 28
Flathead 4D ..21
Gallatin 13K ..15
Glacier 2G ...4
Garfield 7T 5
Golden Valley 10O ....
Granite 10F ...4
Hill 3K 13
Jefferson* 11H .5
Judith Basin 8M
Lake 6D .....
Lewis & Clark 10I 18
Liberty 6K 2
Lincoln* 3A ...7
Madison* 14I ..7
McCone 6L ...4
Meagher* 10K .2
Mineral 9D 2
Missoula 9D ..24
Musselshell 10P 12
Park 13L 11
Phillips 4Q 9
Ponderra 4H ...5
Powder River 13W 3
Powel 10G 6
Prairie 8Y 3
Ravalli 11D ..10
Richland 8Y ...8
Roosevelt 4X ..10
Rosebud 10T ...8
Sanders 6B 4
Sheridan 3W ..13
Silverbow 12G .60
Stillwater 7
Sweet Grass 12M 4
Teton* 5H 5
Toole 3I 3
Treasure 11S ...1
Valley 4T 11
Wheatland 10M 5
Wibaux 8Y 3
Yellowstone 12P 29

TOWNS

Anaconda 11F 11
Argenta 14F ...1
Baker 10Z 1
Belt 7K 1
Bigtimber 12M .1
Billings 12P ..15
Boulder 11H .†6
Bozeman 13K ..6
Butte 12G 41
Chester 3K ...†4
Chinook 3O 1
Chouteau 5H ...1
Columbus 12N .1
Cut Bank 3H ..1
Deer Lodge 10G 3
Dillon 14G 2
Ekalaka 12Y ..†4
Ennis 14I 1
Eureka 2B 1
Forsyth 10T ...1
Fort Bental 6L .1
Glasgow 4T ...2
Glendive 8Y ...3
Great Falls 7J 24
Hamilton 11D ..1
Hardin 12R 1
Harbowton 10M .1
Havre 3N 5
Helena 10I ...12
Kalispell 4D ...5
Laurel 13P ...2
Lewistown 8N ..6
Libby 3A 1
Livingston 13L .6
Malta 4R 1
Medicine Lake 2Y ....†2
Miles City 10V 7
Missoula 9D ..12
Phillipsburg 10F 1
Plentywood 3Y†8
Polson 6D 1
Red Lodge 14O .4
Roundup 10P ..2
Poplar 4X . 1
Scobey 3W 1
Thompson F. 6E ....†5
Sidney 6Z 1
Three Forks 12J 1
Townsend 10J .†8
Virginia City 14I ....†3
Walkerville 12G 2
Whitefish 4D ...2
White Sulphur Springs 10K .†5
Wolf Point 4W 2

Pop. in Hundreds.
Absorokee 13N †3
Albright 8K ..†1
Armstead 15G ....†1
Augusta 7H ...†3
Bainville 4Z .†3
Ballantine 12Q ....†3
Bannack 14I ..†1
Basin 11H ...†2
Bear Creek 14O ...†7
Belfry 14O ...†3
Belgrade 12J .†5
Benchland 8M ....†2
Bigfork 5D ....†3
Big Sandy 4M .†5
Bonner 9E ...†1
Boulder 11H ..†6
Bridger 14O ...†6
Broadview 11O ....†2
Dewey 11A ....†1
Dodson 4Q ......†3
Drummond 9F ......†3
Dutton 6J .....†3
East Helena 10I ....†8
Ekalaka 12Y ..†4
Elliston 10H †2
Fromberg 14O .†5
Harlem 3P ...†7
Helmville 9G ..†2
Hingham 3L ..†1
Hinsdale 4S ..†3
Huntleys 12Q ..†2
Hysham 11S ..†3
Inverness 3L ...†2
Ismay 10Y ...†3
Jackson 13E ..†1
Jardine 14L ..†2
Joliet P. O. or Wilsey 13Q ...†4
Joplin 3L ....†5
Judith Gap 9N ....†5
Kendall 8N ...†2
Laurel 13P ....†8
Lavina 11O ...†3
Lima 16G ....†4
Logan 12J ....†3
Melstone 10R .†4
Moore 9N .....†3
Musselshell 10Q ....†3
Nashua 4U ....†2
Neihart 8K ...†7
Plains 7B ....†4
Poney 13I ....†2
Ronan 7D .....†6
Saco 4S ....†4
Sandcoulee 7J ....†6
Sheridan 13H ..†5
Somers 5D .....†5
Stanford 8M ...†3
Stevensville 10D ......†7
Stockett 7K ..†8
Superior 7B ..†2
Terry 9W .....†7
Thompson Falls 6B ..†5
Toston 11J ....†1
Troy 3A ....†7
Twin Bridges 13H ....†2
Twodot 10M ...†2
Victor 10D ....†4
Whitehall 12H .†6
Wibaux 8Z ....†6
Wisdom 13E ..†2

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

IDAHO

COUNTIES

Pop. 431,866

Pop. Thous.

Ada 12D . . 25
Adams 9C ...2
Bannock 13N. 27
Bear Lake 10O 8
Benewah 4C ..6
Bingham 12M.18
Blaine 12H ...4
Boise* 10E ...1
Bonner 2C ...12
Bonneville 12N 17
Boundary 1C...4
Butte 11K 2
Canas 12F 1
Carilou 13N...2
Clark 10M .. 1
Canyon 11C . 26
Cassia 14J ...15
Clearwater 5D 4
Custer 10H ..3
Elmore 12E ..5
Franklin 14N .8
Fremont 10M 10
Gem 10D ...6
Gooding 13G..7
Idaho 7E . .11
Jefferson 11L 9
Jerome 13H ...5
Kootenai 3C . 17
Latah 5C . 18
Lemhi 9H . ..5
Lewis 6C ...5
Lincoln 13H ..3
Madison 11N ..9
Minidoka 13J..9
Nez Perce 6C 15
Oneida 14M...6
Owyhee 13C. .4
Payette 10C . 7
Power 13L....5
Shoshone 4E..14
Teton 11N 3
Twin Falls 14G 28
Valley 9E . .2
Washington 10C 9

TOWNS

Town. Key. Pop.
American Falls 13L 1
Ashton 10N ...1
Blackfoot 12M.3
Boise 11D ...21
Bonners Ferry 1D 1
Buhl 14G .. .2
Burke 4E 1
Burley 14J ..5
Caldwell 11C. 5
Challis 10H..†3
Cascade 9D †3
Coeur d'Alene 3C 6
Emmet 11C ...2
Fairfield 12F..†2
Dubonis 10M.†2
Glenns Ferry 13F 1
Gooding 13G. 1
Grangeville 7D 1
Hailey 12H...1
Jerome 13H 1
Idaho City ..11E ......†1
Idaho Falls 12M . .. 8
Kellogg 3D .3
Lewiston 6C...6
Malad City 14M 2
Meridian 11D 1
Minidoka 13J.†2
Montpelier 14O.2
Moscow 5C ...3
Mountainhome 12E 1
Nampa 11C 7
Oakley 14J....1
Oxford 14M ..†5
Paris 14O .. 1
Payette 10C .2
Pocatello 13N.15
Potlatch 5C...1
Preston 14N 3
Rexburg 11N 3
Rigby 11N . 1
Rupert 13J 2
Saint Anthony 11N . . 2
St Maries 4D 1
Salmon 8J 1
Standpoint 2C..2
Shelley 12M .1
Shoshone 14H.1
Silver City 12C ......†3
Twin Falls 14G ... 8
Wallace 4E ..2
Weiser 10C ..3

Towns below 1 Thousand

Pop. in Hundreds

Albion 14J ..†3
Almo 15J ...†3
Ammon 12N..†3
Archer 11N ..†3
Arco 11K ....†7
Basalt 12M ..†8
Bellevue 12H ..†5
Bliss 13G ....†2
Bloomington 14O ....†4
Bourne 10C ..†3
Cambridge 9C ..†4
Carey 12H ....†9
Challis 10H ....†4
Clayton 10H ..†2
Franklin 15N †5
Genesee 5C ..†6
Georgetown 14O ....†4
Granite 2C ...†2
Hadon 11O ...†6
Hagerman 13G†3
Harrison 1C ..†6
Horseshoe Bend 11D ..†2
Idaho City 11E ....†1
Independence 11N ....†4
Iona 12N ...†6
Juliaetta 5C.†4
Kendrick 5C..†5
Ketchum 11H †3
Keuterville 6D ....†3
Kimberly 14H†5
Kooskia 6E ..†4
Kuna 12D ..†3
Laclede 2C...†2
Lago 14N ....†8
Lewisville 12M ....†3
Lorenzo 11N..†8
McCammon 13M ....†4
Mackay 11J ..†8
Marion 14J .†3
Marysville 10O ....†3
Meadows 9D .†4
Menan 11M ..†3
Middleton 11C†5
Minkcreek 11N ....†2
Mount Idaho 7D ....†2
Murray 3E...†3
New Plymouth 11C ....†4
Nezperce 6D..†6
Orofino 6D..†5
Oxford 11M..†2
Parker 11N..†4
Parma 11C...†5
Peck 6D ......†1
Pine 12F .....†1
Postfalls 3C..†5
Priest River 2C ....†5
Prospect 11N †3
Rathdrum 3C.†5
Rockcreek 14H ....†3
St. Charles 14N .....†5
Samaria 14M.†3
Soda Springs 13N ..†9
Soldier 12G..†2
South Boise 11D ......†8
Southwick 5D.†2
Spirit Lake 3C .....†9
Star 11D ....†1
Stites 6E ..†3
Sugar 11N ..†6
Teton 11N ..†5
Thatcher 11N ..†3
Troy 5C ..†6
Vandyck 10D ..†3
Victor 11O ..†2
[illegible]
Wardner 3E ..†7
Warren 8E ..†2
Wendell 14G ..†2
Westlake 4D ..†2
Weston 14M ..†2
Whitebird 7D ..†2

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

WASHINGTON
Pop. 1,356,621

COUNTIES

County	Pop. Thous.
Adams 11U	9
Asotin 14Y	6
Benton 15Q	10
Chelan 9O	20
Clallam 6E	11
Clarke 17G	32
Columbia 14V	6
Cowlitz 16G	11
Douglas 8R	9
Ferry 4S	5
Franklin 15S	5
Garfield 13X	3
Grays Harbor 11C	44
Grant 10Q	7
Island 6G	5
Jefferson 7F	6
King 8I	389
Kitsap 9G	33
Kittitas 11M	17
Klickitat 17M	9
Lewis 11E	36
Lincoln 8V	15
Mason 9F	4
Okanogan 4P	17
Pacific 13D	14
Pend Oreille 5X	6
Pierce 10H	144
San Juan 4F	3
Skagit 5I	33
Skamania 17J	2
Snohomish 7I	67
Spokane 8X	141
Stevens 4V	21
Thurston 11G	22
Wahkiakum 15E	3
Walla Walla 15C	27
Whatcom 2H	50
Whitman 11X	31
Yakima 13N	63

TOWNS

Town. Key.	Pop.
Aberdeen 11D	15
Anacortes 4H	5
Arlington 6I	1
Auburn 10I	3
Asotin 14Y	†8
Ballard 8H	12
Bellingham 2H	25
Black Diamond 10I	2
Blaine 2G	2
Bremerton 9G	8
Buckley 10I	1
Burlington 4I	1
Camas 18H	1
Carbonada 11H	1
Cashmere 9O	1
Cathlamet 15E	†4
Centralia 12F	7
Charleston 8G	3
Chehalis 11E	4
Cheney 9U	1
Chelwelah 5W	1
Clarkston 14Y	1
Cle Elum 10M	2
Colfax 11X	3
Columbia 9I	1
Colville 4V	1
Conconully 4P	†2
Cosmopolis 11D	1
Coupeville 6G	†3
Davenport 8V	1
Dayton 14V	2
Deerpark 7X	1
Doty 13E	1
Edmonds 8H	†9
Ellensburg 11M	3
Elma 10E	1
Enumclaw 10I	1
Ephrata 10Q	†6
Everett 7I	27
Friday Harbour 4F	†5
Georgetown 9I	3
Goldendale 17M	1
Grandview 8Q	1
Hillyard 8X	3
Hoquiam 11C	10
Kalama 16G	1
Kelso 15G	2
Kennewick 15S	1
Kent 9I	2
Kirkland 8I	1
Leavenworth 9M	1
Lynden 2H	1
Malden 10X	1
Marysville 6I	1
Medical Lake 8W	2
Montesano 11D	2
Monroe 7I	1
Mt. Vernon 5I	3
Newport 6Y	†9
North Yakima 13N	14
Odessa 10T	1
Okanogan 5Q	1
Olympia 11G	7
Palouse 11Y	1
Pasco 15S	3
Pomeroy 13X	1
Port Angeles 6E	5
Port Orchard 9G	1
Port Townsend 6J	2
Prosser 15Q	1
Pullman 12Y	2
Puyallup 10I	6
Raymond 13C	4
Renton 9I	3
Republic 4S	†7
Ritzville 11U	1
Roslyn 10M	2
Ruston 10X	1
Seattle 8I	315
Sedro Wooley 4I	3
Shelton 10F	1
Snohomish 7I	2
South Bend 13D	1
South Park 9H	1
Spokane 8X	104
Stevenson 17J	†3
Sunnyside 14P	1
Tacoma 10H	96
Tekoa 10Y	1
Tenino 12G	1
Toppenish 14O	3
Vancouver 17G	12
Waitsburg 14V	1
Walla Walla 15U	15
Wapato 14N	1
Waterville 8P	1
Wenatchee 9O	6
West Seattle 9I	1
Yakima 13N	18

Towns below 1 Thousand

Pop. in hundreds

Town. Key.	Pop.
Asotin 14Y	†8
Bothell 8Q	†6
Bridgeport 7Q	†3
Castle Rock 14F	†8
Chelan 7P	†8
Chinook 14C	†5
Concrete 4H	†9
Connell 13S	†3
Eatonville 12Q	†8
Endicott 11W	†6
Ferndale 3H	†7
Garfield 11Y	†7
Granite Falls 6J	†6
Hamilton 4J	†4
Harrington 9T	†8
Ilwaco 14B	†7
Issaquah 9I	†7
La Conner 5H	†5
Lind 11T	†7
Little Falls 11F	†6
Lowell 7I	†8
New Castle 9I	†8
North Port 2W	†9
Oakdale 10Y	†8
Orting 11I	†9
Pe Ell 13E	†8
Prescott 14U	†5
Republic 4S	†7
Rockford 9Y	†4
Rosalia 10Y	†7
Sprague 10V	†8
Stanwood 5I	†7
Starbuck 13V	†5
Sultan 7I	†6
Sumas 2I	†8
Wellington 8L	†6
White Salmon 17K	†8
Wilbur 8Q	†8
Wilkeson 11I	†8
Winlock 14F	†8

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

OREGON COUNTIES

Pop. 783,389

Co.	Key.	Pop.
Baker	7W	17
Benton	8F	13
Clackamas	5I	57
Clatsop	2E	23
Columbia	2G	13
Coos	13D	22
Crook	9M	3
Curry	17D	3
Deschutes	12M	9
Douglas	13G	21
Gilliam	4O	3
Grant	8S	5
Harney	14S	3
Hood River	4K	8
Jackson	17G	20
Jefferson	8M	3
Josephine	17E	7
Klamath	17K	11
Lake	16N	4
Lane	10H	36
Lincoln	7D	6
Linn	3I	24
Malheur	13W	10
Marion	6H	47
Morrow	1Q	5
Multnomah	4I	275
Polk	6F	14
Sherman	4N	3
Tillamook	4E	8
Umatilla	4T	25
Union	4V	16
Wallowa	3X	9
Wasco	5L	15
Washington	3G	26
Wheeler	7P	2
Yamhill	5F	20

TOWNS

Town.	Key.	Pop.
Albany	**8G**	**4**
Ashland	18H	4
Astoria	**1E**	**14**
Baker City	**7V**	**7**
Bandon	14B	1
Bend	**12L**	**5**
Burnes	**12S**	**1**
Canyon City	**8S**	**†3**
Clatskanie	1G	1
Condon	4O	1
Coquille	**13C**	**1**
Corvallis	**3F**	**5**
Cottage Grove	1G	1
Dallas	**6F**	**2**
Elgin	4V	1
Enterprise	**4X**	**1**
Eugene	**10G**	**10**
Forest Grove	4G	1
Fossil	**6O**	**†5**
Gladstone	5I	1
Goldbeach	**17D**	**†1**
Grants Pass	**16F**	**3**
Gresham	4I	1
Heppner	**5Q**	**1**
Hillsboro	**4G**	**2**
Hood River	**3L**	**3**
Independence	7G	1
Jacksonville	**17F**	**†4**
Klamath Falls	**17K**	**4**
La Grande	**5V**	**6**
Lakeview	**18O**	**1**
Lebanon	8G	1
McMinnville	**5G**	**2**
Madras	**3M**	**†3**
Marshfield	13C	1
Medford	17G	5
Milton	2U	1
Milwaukee	3H	1
Moro	**4N**	**†4**
Mount Tabor	4I	1
New Astoria	1E	1
Newburg	5G	2
North Bend	12C	3
Ontario	10Y	2
Oregon City	**4I**	**5**
Oswego	4H	1
Pendleton	**3S**	**7**
Portland	**4H**	**258**
Prineville	**9N**	**1**
Rainier	1H	1
Roseburg	**13F**	**4**
Saint Helen	**2H**	**2**
Saint Johns	3H	5
Salem	**6G**	**17**
Seaside	2E	1
Sheridan	13C	1
Silverton	6R	2
Springfield	10G	1
The Dalles	**3M**	**5**
Tillamook	**4E**	**1**
Toledo	**7D**	**†6**
Union	5V	1
Vale	**10X**	**†9**
West Linn	**3H**	**1**
Woodburn	5H	1

Towns below 1 Thousand

Pop. in Hundreds

Town.	Key.	Pop.
Amity	5G	†5
Arlington	3P	†5
Athena	**3T**	**†6**
Beaverton	4H	†5
Bridal Veil	4J	†3
Brownsville	8G	†7
Canby	5H	†8
Canyon City	**8S**	**†3**
Carlton	5G	†5
Cascade Locks	3K	†1
Central Point	17G	[illegible]
Clifton	7U	[illegible]
Coburg	9G	[illegible]
Cornelius	4G	†1
Cove	5V	†1
Creswell	10G	†2
Dayton	5G	†4
Drain	11F	†6
Dufur	4M	†5
Echo	3R	†5
Estacada	5I	†4
Falls City	6F	†9
Florence	10D	†3
Fossil	6O	†5
Flavel	2U	†6
Gardiner	11C	†4
Glendale	15F	†5
Goldhill	16G	†1
Grass Valley	4N	†3
Haines	6V	†5
Halsey	8G	†3
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Huntington	9X	†6
Jacksonville	17F	†4
Jefferson	7G	†1
Joseph	4X	†7
Junction City	9G	†6
Lafayette	5G	†4
Mill City	7I	†4
Monmouth	7F	†5
Moro	4N	†4
Mount Angel	6H	†9
Myrtle Creek	14F	†3
Myrtlepoint	14C	†9
Newport	7D	†5
North Powder	6V	†6
Nyssa	10Y	†5
Oakland	12F	†5
Philomath	8F	†5
Prairie City	8T	†6
Richland	7Y	†2
[illegible]	6N	†1
Sheridan	5F	†3
[illegible]	7H	†2
[illegible]	7U	†2
Toledo	7D	†6
Troutdale	3I	†1
Vale	10X	†9
Wallowa	4W	[illegible]
Warrenton	1E	†7
Wasco	4N	†7
Weston	2T	[illegible]
Willamina	4H	†3
[illegible]	5F	†2
[illegible]	4I	†3
Yamhill	4G	†3

† POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE.

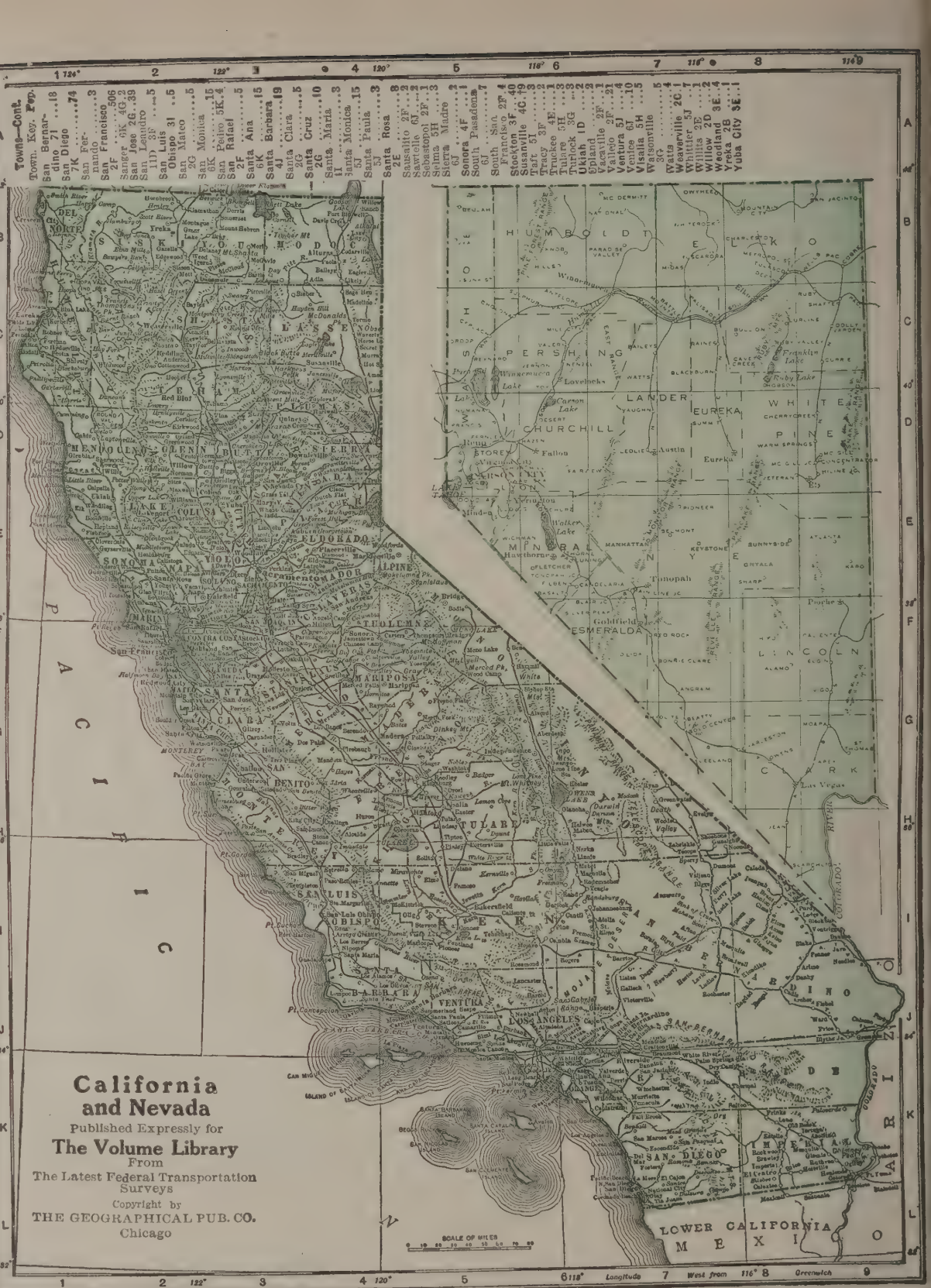
CALIFORNIA
Pop. 3,426,861

COUNTIES

	Pop. Thous.
Alameda 3F	344
Alpine* 4E	2
Amador 4E	6
Butte 3D	30
Calaveras 4F	6
Colusa 2E	9
Contra Costa 3F	53
Del Norte 1B	2
Eldorado 4E	6
Fresno 5G	128
Glenn 2D	11
Humboldt 1C	37
Imperial 8K	13
Inyo* 6G	7
Kern 5I	54
Kings 4H	22
Lake* 2E	5
Lassen* 4C	8
Los Angeles 6J	936
Madera 4G	12
Marin 2F	27
Mariposa* 4G	2
Mendocino 1D	24
Merced 3G	24
Modoc* 4B	5
Mono* 5F	3
Monterey 3H	37
Napa 2E	20
Nevada 1D	10
Orange 6K	61
Placer 1E	18
Plumas* 4D	5
Riverside 8K	50
Sacramento 3E	91
San Benito 3H	8
San Bernardino 7I	73
San Diego 7K	112
San Francisco 2F	506
San Joaquin 3F	79
San Luis Obispo 3I	21
San Mateo 2F	36
Santa Barbara 4J	41
Santa Clara 2G	100
Santa Cruz 2G	26
Shasta 3C	13
Sierra* 4D	1
Siskiyou 2B	18
Solano* 3E	30
Sonoma 2E	52
Stanislaus 3G	43
Sutter 3E	10
Tehama 2D	12
Trinity 2C	2
Tulare 5H	59
Tuolumne 4F	7
Ventura* 5J	28
Yolo 3E	17
Yuba 3E	10

TOWNS

Town. Key.	Pop.
Alameda 2F	28
Albany 2F	2
Alhambra 6J	9
Alturas 4B	19
Anaheim 6J	5
Angels Camp 4E	1
Antioch 3F	1
Arcata 1C	1
Auburn 4E	2
Azusa 6J	2
Bakersfield 5I	18
Banning 7J	1
Benicia 3F	2
Berkeley 2F	56
Bishop 6G	1
Brawley 8L	5
Burbank 6J	2
Burlingame 2F	4
Calexico 8L	6
Chico 3D	9
Chino 6J	2
Claremont 6J	1
Clovis 5G	1
Coalinga 4H	2
Colton 6J	4
Colusa 2E	1
Corona 6J	4
Coronado 7K	3
Covina 6J	2
Crescent City 1B	1
Daly 2F	3
Dinuba 5H	3
Downieville 4D	†5
Dunsmuir 2B	2
Eagle Rock 6J	2
E. San Diego 7L	4
El Centro 8K	5
Emeryville 2F	1
Escondido 7K	2
Eureka 1C	12
Fairfield 3E	1
Folsom City	1
Fort Bragg 1E	2
Fresno 5G	87
Fullerton 6J	4
Gilroy 2G	2
Glendale 6J	12
Glendora 6J	2
Grass Valley 3D	4
Hanford 4H	5
Hayward 3F	3
Healdsburg 2E	2
Hollister 3H	2
Huntington Beach 6J	4
Imperial 8K	1
Independence 6G	†4
Inglewood 6J	3
Jackson 4E	1
Kern 3I	1
Lakeport 2E	1
Lemoore 4H	1
Lindsay 5H	2
Livermore 3F	2
Lodi 3F	3
Lompoc 4I	3
Long Beach 6J	56
Los Angeles 6J	576
Los Gatos 2G	2
Madera 4G	3
Mariposa 4G	1
Martinez 3F	3
Marysville 3E	5
Markleeville 4I	1
Maxwell 2G	1
Merced 3G	3
Mill Valley 2F	2
Modesto 3G	9
Monrovia 6J	5
Montebello 6J	3
Monterey 3H	4
Napa 2E	6
National City 7L	3
Needles 5L	1
Nevada City 4D	1
Oakdale 3F	1
Oakland 2F	216
Oceanside 7K	3
Ontario 6J	3
Orange 6J	4
Oroville 3D	3
Oxnard 5J	4
Pacific Grove 3G	3
Palo Alto 2G	15
Pasadena 6J	45
Paso Robles 4I	2
Petaluma 2F	6
Piedmont 2F	4
Placerville 4E	3
Pomona 6J	13
Port Costa 2F	1
Porterville 5H	4
Quincy 5E	4D† 2
Ramsburg 5I	1
Red Bluff 2D	3
Redding 3C	3
Redlands 7J	9
Reno 1I	21
Redwood City 2F	4
Richmond 2F	16
Riverside 8K	4
Roseville 3E	4
Sacramento 3F	65
Saint Helena 2E	1
Salinas 3H	4
San Andreas 4F	†6
San Anselmo 2F	2
San Bernardino 7J	18
San Buenaventura 4I	3
San Diego 7L	39
San Fernando 6J	2
San Francisco 2F	416
San Gabriel 6J	3
San Jacinto 7J	2
San Jose 3G	39
San Leandro 3F	5
San Luis Obispo 3I	5
San Mateo 2G	5
San Monica 6J	15
San Pedro 5K	4
San Rafael 2F	5
Santa Ana 6K	15
Santa Barbara 4J	19
Santa Clara 2G	5
Santa Cruz 2G	10
Santa Maria 3I	3
Santa Monica 5J	15
Santa Paula 5J	3
Santa Rosa 2E	8
Sausalito 2F	2
Selma 5H	3
Sebastopol 2F	3
Sierra 6J	1
Sonora 4F	3
South Pasadena 6J	7
South San Francisco 2F	4
Stockton 3F	40
Susanville 4C	3
Taft 5I	3
Tracy 3F	3
Truckee 4E	3
Tulare 5H	3
Turlock 3G	3
Ukiah 1D	2
Upland 6J	2
Vacaville 2F	2
Ventura 5J	4
Venice 6J	10
Visalia 5H	5
Watsonville 3G	4
Watts 6J	5
Weaverville 2C	1
Whittier 6J	2
Willow 2D	1
Woodland 3E	4
Yreka 2B	1
Yuba City 3E	1



† POP. SHOWN IN HUNDREDS.

* POP. OF COUNTY SEAT BELOW ONE THOUSAND.

COUNTY SEATS IN HEAVY FACED TYPE.

NEVADA
Pop. 77,407

COUNTIES

Churchill* 6D..4
Clark 9H 4
Douglas* 5E ..1
Elko 8B......8
Esmeralda* ..2
Eureka* 8D ..1
Humboldt 6B..3
Lander* 7D ..1
Lincoln* 8F ..2
Lyon 6E 4
Mineral 6E ...1
Nye 7E 6
Ormsby 5D ...2
Pershing 6C...2
Storey 5D 1
Washoe 5C ..18
White Pine 8D 8

TOWNS

Town	Key	Pop.
Austin	**7D**	...
Carson City	**5D**	.
Columbia	7F	..
Dayton	5D	...†5
Elko	**8C**	2
Ely	**9E**	2
Eureka	**8E**	....†5
Fallon	6D	...1
Gardenerville	5E	1
Genoa	**5E**	.....†
Goldfield	7F	..1
Hawthorne	**6E**	†4
Las Vegas	**8H**	.2
Lovelock	**6C**	..
Pioche	**9F**	....†3
Reno	**5D**	12
Stillwater	**6D**	.†
Sparks	5D	...2
Tonopah	**7E**	...4
Virginia City	**5D**	....
Winnemucca	**7C**	2
Yerington	6E	..1

ALASKA

Town	Key
Afognak	.....7G
Amalga	......6O
Anvik	.......5D
Artic City	...3D
Atwood	.....5F
Belkoffski	...8C
Beluta	......5F
Bethel	......6D
Bettles	......3F
Burches	.....4G
Caro	.......3H
Candle	......3D
Center	.....5F
Chatanika	4
Chatham	....7O
Chegnik	.....8E
Chena	......4H
Chicken	.....4K
Chilkoot	.....6N
Circle	.......3K
Cordova	.....6J
Council	......4D
Coal Harbour	.8D
Deadwood	...3K
Deering	.....3D
Dickinson	...4D
Douglass	....6O
Eagle	.......3K
Fairbanks	4
Franklin	....4K
Ft. Gibbon	...4G
Ft. Liscum	5
Ft. Yukon	....3J
Gilmore	4
Golovin	.....4D
Gulkana	.....5J
Haines	......6N
Hogan	......5E
Homer	......6H
Hooniah	....7N
Hope	.......6H
Hot Springs	..4F
Innoko	......5E
Juneau	......6O
Kaltag	......4E
Karluk	......7G
Kasilos	.....6H
Katalla	......6J
Kemperville	.4E
Kenai	......6H
Ketchikan	...8P
Kinah	.......6H
Kividlow	....3C
Knik	.......5H
Kodiak	......7G
Kokrines	....4G
Kolmahoff	...5E
Kotlik	......4D
Koyukuk	....4F
Koserefski	..5E
Lougass	.....8P
[illegible]	...7
Loriden	4
McCarthy	4
McCullum	...5F
McKinley	4
Melozi	4
Meskik	8
Metlakatla	..8P
Mulato	4
[illegible]	5
Nation	......3K
[illegible]	1
Nohlalohton	..4
[illegible]	2
Nome	.......4D
Nushogak	....6E
Ophir	.......5F
Orca	.......6J
Ovinhagak	...6D
Park	5
Port Safety	.7
Prince Kliwac	.7
Rampart	....4G
Richardson	..
Salenaket	..
Sanac	......8C
Sandpoint	...8D

[illegible] City 3H
St. Michael 4D
Sundum 7O
Susitna 5H
Tanana 4H
Tanana Crossing 4K
Taylor 3D
Teller 3D
Tikchik 6E
Tin City 3C
Treadwell 6O
Tununak (insert)
Tyonek 5H
Ugashik 7E
Unalaska 8A
Unga 8D
Uyak 7G
Valdez 5J
Wales 3C
Washburn 4J
White Pass ..6N
Wrangell 7P
Yakutat 6M

Minor Divisions

Admiralty Is. ..7O
Afognak Is. ...7G
Akun Is. 8B
Akutan Is. 8A
Baranoff Is. ..7O
Chichagof Is. .7N
Kodiak Is. 7G
Middleton Is. .6J
Nelson Is. 5C
Nunivak Is. ...5B
Pribilof Is. ..6A
Prince of Wales Is. 7P
Seward Penin. 3D
St. Lawrence Is. 4B
St. Matthew Is. 5A
Thetis Is. 1H
Trinity Is. ...8D
Umnak Is. 8A
Unalaska Is. ..8A
Unimak Is. ...8B

HAWAII

DIVISIONS

Hawaii 4F
Kauai 1B
Lanai 3E
Maui 3E
Molokai 2D
Niihau 1A
Oahu 2D

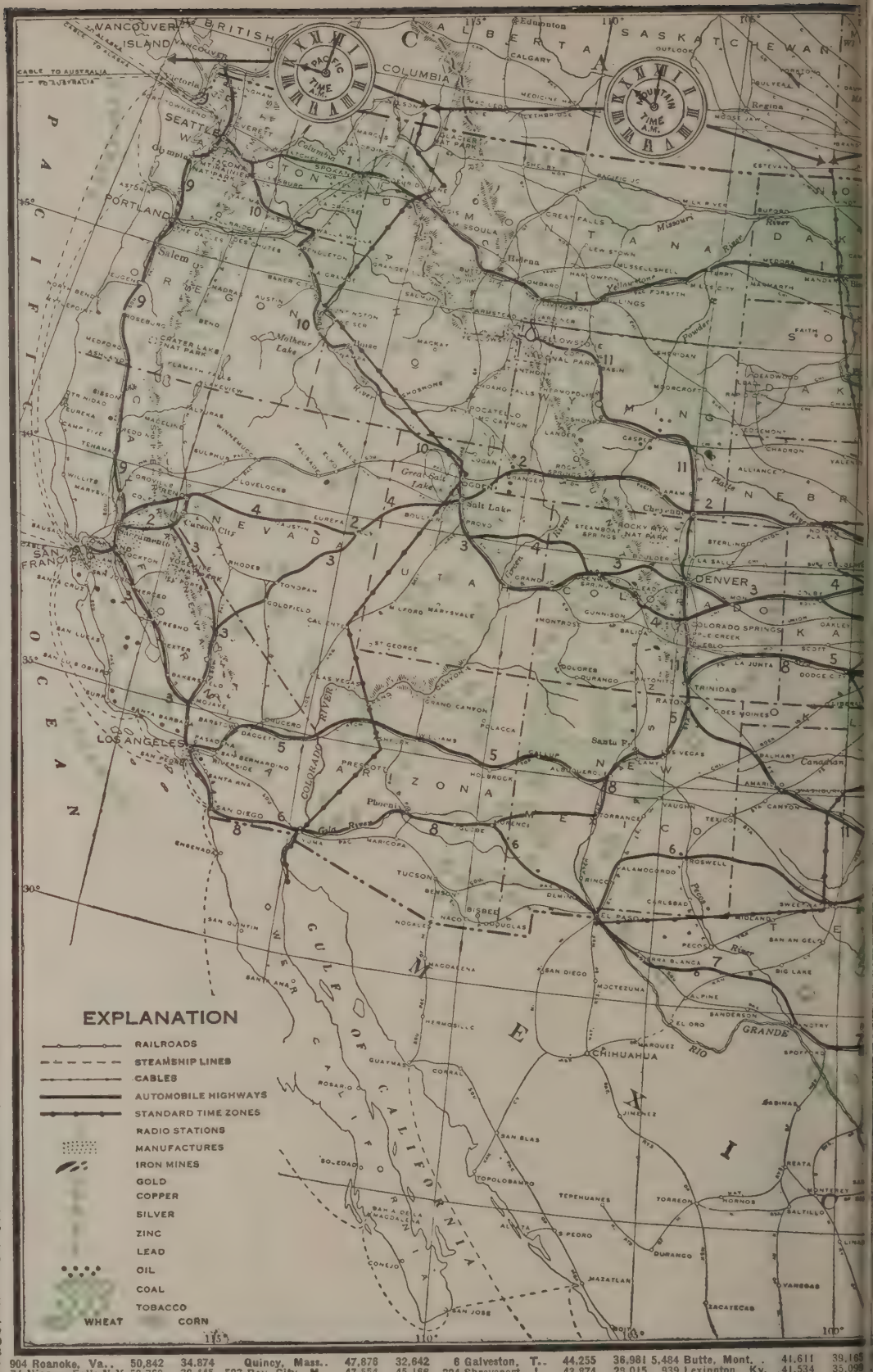
CITIES

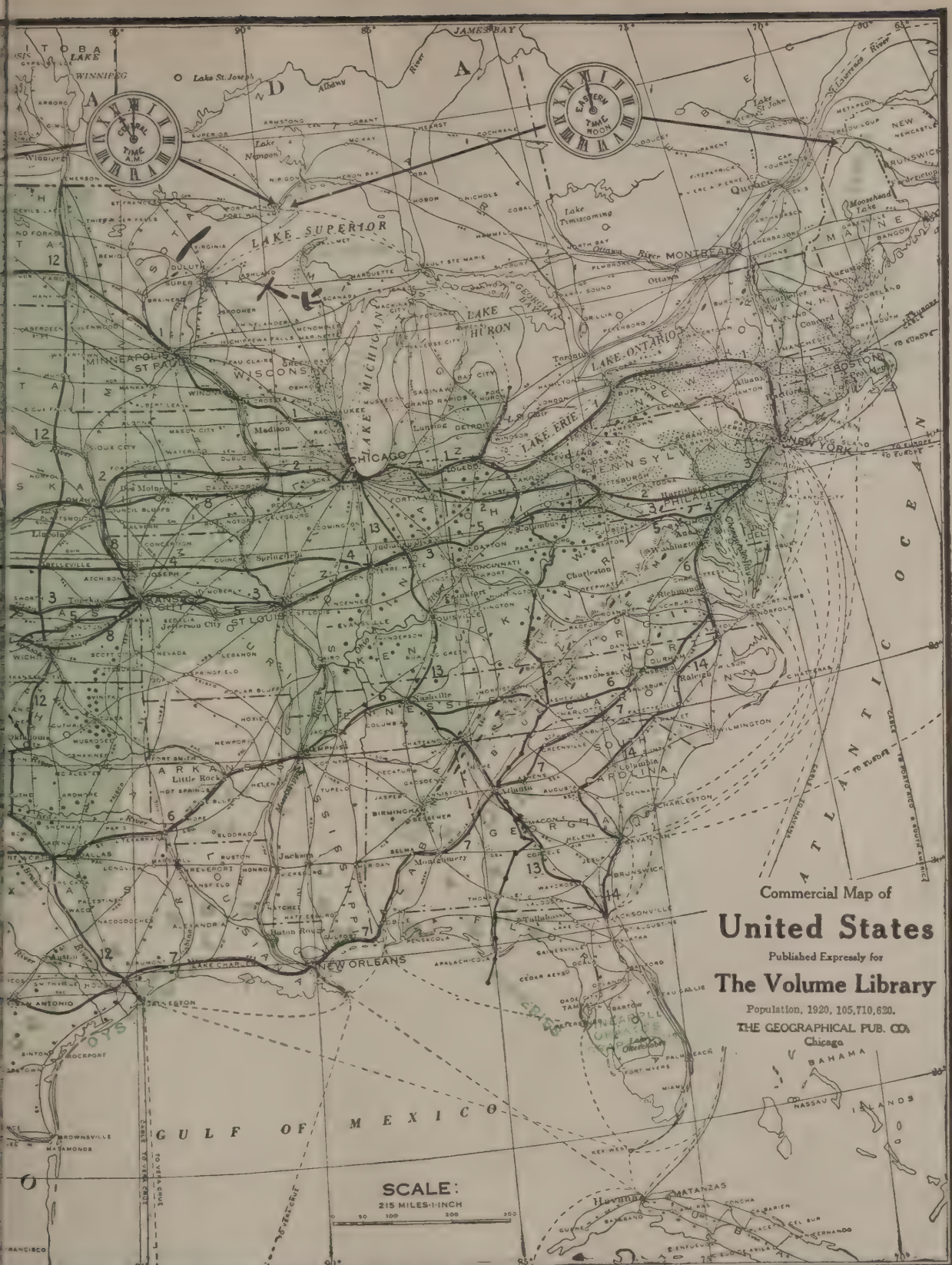
Halenkala 3E
Halawa 2E
Hana 3E
Hanapepe 2B
Hauula 2D
Hilo 4F
Honokakia 2E
Honolulu 2D
Kahuku 2D
Kahului 3E
Kailua 4F
Kalawao 2F
Kamalo 2E
Kaneohe 2D
Kaunakakai ...2D
Kawaihau 1B
Kawaihae 3F
Kealakekua ...3F
Keauhou 4F
Kohala 4F
Koloa 2B
Lahaina 3E
Laie 2D
Lihue 2B
Makaweli 2B
Mana 1B
Napili Bay ...3E
Olaa 2D
Pearl City ...2D
Puko 2E
Punaluu 2D
Wahiawa 2C
Waianae 2C
[illegible] 2D
[illegible] 2B
[illegible] 2E
Waipahuwa 2C
Waialua 2C

POP. SHOWN IN HUNDREDS. * POP. OF COUNTY SEAT BELOW ONE THOUSAND. COUNTY SEATS IN HEAVY FACED TYPE

U. S. TOWNS

Elevation in ft.	City and State	1920 Census Pop.	1910 Census Pop.
54	N. York, N.Y.	5,620,048	4,766,883
580	Chicago, Ill.	2,701,705	2,185,283
9	Philadelphia, P.	1,823,779	549,008
596	Detroit, Mich.	993,678	465,766
762	Cleveland, O.	796,841	560,663
455	St. Louis, Mo.	772,897	687,029
125	Boston, M. ...	748,060	670,585
123	Baltimore, M..	733,826	558,485
842	Pittsburgh, Pa.	588,343	533,905
338	Los Angeles, C.	576,673	319,198
576	Buffalo, N. Y.	506,775	423,715
155	San Francisco, C.	506,676	416,912
636	Milwaukee, W.	457,147	373,587
91	Washington, D.C.	437,571	331,069
55	Newark, N. J.	414,524	347,469
628	Cincinnati, O.	401,247	363,591
5	New Orleans, L.	387,219	339,075
782	Minneapolis, M.	380,582	301,408
963	Kansas City, M.	324,410	246,381
19	Seattle, W.	315,312	237,194
720	Indianapolis, I.	314,194	233,650
21	Jersey City, N.	298,103	267,779
523	Rochester, N..	295,750	218,149
11	Portland, O...	258,288	207,214
5,279	Denver, Colo..	256,491	215,381
628	Toledo, O. ...	243,164	168,497
11	Providence, R.I.	237,595	224,326
772	Columbus, O..	237,031	181,511
525	Louisville, K..	234,891	223,928
694	St. Paul, M..	234,698	214,744
36	Oakland, Cal..	216,261	150,174
940	Akron, O.	208,435	69,067
1,032	Atlanta, Ga....	200,616	154,839
1,123	Omaha, Neb..	191,601	124,096
475	Worcester, M..	179,754	145,696
606	Birmingham, Ala.	178,806	132,685
404	Syracuse, N..	171,717	137,249
164	Richmond, V..	171,667	127,628
107	New Haven, C.	162,551	133,605
117	Memphis, T...	162,351	131,105
654	S. Antonio, T.	161,379	96,614
436	Dallas, Texas.	158,976	92,104
790	Dayton, O. ...	152,559	116,577
15	Bridgeport, C.	143,555	102,054
53	Houston, Tex..	138,276	78,800
38	Hartford, C....	138,036	98,915
305	Scranton, Pa..	137,783	129,867
610	Grand Rapids.	137,034	112,571
100	Paterson, N. J.	135,875	125,600
863	Youngstown, O.	132,358	79,066
119	Springfield, M.	129,614	88,926
861	Des Moines, Ia.	120,468	86,368
88	New Bedford, M.	121,217	96,652
200	Fall River, M.	120,485	119,295
60	Trenton, N. J.	119,289	96,815
546	Nashville, T..	118,342	110,364
1,248	Salt Lake City, Ut.	118,110	92,777
31	Camden, N. J.	116,309	94,538
12	Norfolk, Va..	115,777	67,452
18	Albany, N. Y.	113,344	100,253
100	Lowell, Mass .	112,759	106,294
78	Wilmington, D.	110,168	87,411
74	Cambridge, Mass.	109,694	104,839
280	Reading, Pa..	107,784	96,071
670	Ft. Worth, T.	106,482	73,312
1,891	Spokane, W....	104,437	104,402
4,334	Kansas City,	101,177	82,331
10	Yonkers, N.Y.	100,176	79,803
26	Lynn, Mass...	99,148	89,336
602	Duluth, M. ..	98,917	78,466
110	Tacoma, W. ..	96,965	83,743
40	Elizabeth, N.J.	95,783	73,409
51	Lawrence, M..	94,270	85,892
407	Utica, N. Y..	94,156	74,419
713	Erie, Pa.	93,372	66,525
13	Somerville, M.	93,091	77,236
800	Waterbury, C.	91,715	73,141
726	Flint, Mich. .	91,599	89,550
43	Jacksonville, Fla.	91,558	57,699
1,197	Okla. City, Ok.	91,253	64,205
246	Schenectady, N.Y.	88,723	72,826
1,070	Canton, O. ...	87,091	50,217
780	Ft. Wayne, I.	86,549	63,933
378	Evansville, Ind.	85,264	69,647
21	Savannah, Ga.	83,252	65,064
246	Manchester, M.	78,384	70,063
813	St. Joseph, Mo.	77,939	77,403
933	Knoxville, T..	77,818	36,346
3,762	El Paso, Tex.	77,560	39,279
50	Bayone, N. J.	76,754	55,545
464	Peoria, Ill. ..	76,121	66,950
374	Harrisburg, P.	75,917	64,186
42	San Diego, C.	74,683	39,578
575	Wilkes-Barre, P.	73,883	67,105
321	Allentown, P..	73,502	51,913
1,358	Wichita, Kan.	72,217	52,450
35	Troy, N. Y...	72,013	76,813
1,135	Sioux City, Ia.	71,227	47,828
712	South Bend, I.	70,983	53,684
26	Portland, M..	69,272	58,571
7	Hoboken, N.J.	68,166	70,324
10	Charleston, S.C.	67,957	53,833
1,169	Johnstown, P..	67,327	55,482
865	Binghamton, N.Y.	66,600	48,443
415	E. St. Louis, I.	66,767	58,547
128	Brockton, M..	66,254	56,878
485	Terre Haute, I.	66,033	58,157
30	Sacramento C.	65,908	44,696
716	Rockford, Ill..	65,651	45,401
299	Little Rock, A.	65,142	45,941
79	Pawtucket, R..	64,248	51,622
88	Passiac, N. J.	63,841	54,773
590	Saginaw, M. .	61,903	60,510
980	Springfield, O.	60,849	46,921
1,182	Altoona, Pa...	60,331	52,127
954	Holyoke, Mass.	60,203	57,730
57	Mobile, Ala. .	60,777	51,521
199	New Britain, C.	59,316	43,916
598	Sp'gfield, Ill..	59,183	51,678
633	Racine, Wis. .	58,593	38,002
24	Chester, Pa..	58,030	38,537
674	Chattanooga, T.	57,895	44,604
828	Lansing, M. ..	57,327	31,229
513	Covington, Ky.	57,121	53,270
529	Davenport, Ia.	56,727	43,028
183	Berkeley, Cal..	56,036	40,434
55	Long Beach, C.	55,593	17,809
580	Gary, Ind. ...	55,378	16,802
1,189	Lincoln, Neb..	54,948	43,973
12	Portsmouth, W.V.	54,387	33,109
637	Wheeling, W..	56,208	41,641
35	Haverhill, M..	53,884	44,115
413	Lancaster, Pa.	53,150	47,227
311	Macon, Ga. ..	52,995	40,665
34	Tampa, Fla. .	51,608	37,782
904	Roanoke, Va..	50,842	34,874
74	Niagara Falls, N.Y.	50,760	30,445
73	E. Orange, N.J.	50,710	34,371
52	Atlantic City, N.J.	50,707	46,150
565	Huntington, W.V.	50,177	31,161
998	Topeka, Kan..	50,022	43,684
34	Malden, M. ..	49,103	44,404
678	Decatur, Ill.	48,818	31,140
78	Kalamazoo, Mich.	48,487	39,437
940	Jackson, M. ...	48,374	31,433
	Quincy, Mass..	47,876	32,642
593	Bay City, M..	47,554	45,166
385	York, Pa.	47,512	44,750
773	Charlotte, N. .	46,338	34,014
33	Newton, M. ..	46,054	39,006
752	McKeesport, P.	46,781	42,694
733	Cedar Rapids, Ia.	45,566	32,611
863	Elmira, N. Y.	45,393	37,175
829	Pasadena, Cal.	45,354	30,291
806	Newcastle, Pa.	44,938	36,280
	6 Galveston, T..	44,255	36,981
204	Shreveport, L.	43,874	29,015
162	Woonsocket, R.I.	43,496	38,125
222	Montgomery, Ala.	43,464	38,136
	11 Chelsea, Mass.	43,184	32,452
4,609	Pueblo, Col. .	43,050	44,395
114	Mt. Vernon, N.	42,726	30,919
	10 Salem, Mass..	42,529	43,697
1,038	Pittsfield, M..	41,763	32,121
	61 Perth Amboy, N.J.	41,707	32,121
5,484	Butte, Mont. .	41,611	39,165
939	Lexington, Ky.	41,534	35,099
833	Lima, O.	41,326	30,508
550	Fitchburg, M..	41,029	37,826
	34 Stamford, C...	40,967	28,836
	W. Hoboken, N.J.	40,074	35,403
655	Hamilton, O...	39,675	35,279
1,324	Sp'gfield, Mo..	39,631	35,201
628	Superior, Wis.	39,671	40,384
98	San Jose, Cal.	39,642	28,946





38 Dubuque, Ia..	39,141	38,494	84	Chicopee, M..	36,214	25,401	604	Danville, Ill..	33,776	27,871	617	Green Bay, W.	31,017	25,236	1,009	Joplin, Mo. ..	29,902	32,073
28 Jamestown,N.Y.	38,917	31,297	72	N. Rochelle,N.Y.	36,213	28,876	204	Amsterdam, N.	33,524	31,267	589	Sheboygan, W.	30,955	26,398	704	Zanesville, O..	29,569	26,026
34 Joliet, Ill. .	38,442	34,670	522	Williamsport,P.	36,108	32,860	79	Wilmington, N.	33,372	25,748	106	Waltham, M..	30,915	27,834	503	Newport, Ky..	29,417	30,309
55 Madison, Wis.	38,378	25,531	643	Auburn, N. Y.	36,192	34,668	166	Orange, N. J..	33,268	29,630	94	Newburgh,N.Y.	30,366	27,805	781	Bloomington, I.	28,755	29,768
54 Brookline, M..	37,748	27,792	823	Battle Creek,M.	36,164	25,267	744	Oshkosh, Wis..	33,162	33,062	714	La Crosse, W.	30,421	30,417	125	Nashua, N. H.	28,379	26,005
24 Waco, Texas .	38,500	26,425	990	Council Bluffs,Ia.	36,162	29,292	4,307	Ogden, Utah..	32,804	25,580	588	Muskogee, Ok.	30,277	25,278	12	Everett, Wash.	27,614	33,484
10 Loraine, O. ..	37,295	28,883	360	Quincy, Ill. . .	35,978	36,587	83	Norristown, P.	32,319	27,875	44	Newport, R. I.	30,255	27,149	715	Elgin, Ill. . . .	27,454	25,976
10 Taunton, M...	37,137	34,259	180	Poughkeepsie,N.Y.	35,000	27,936	1,624	Hazelton, Pa.	32,277	25,432	6,022	Colo.Spgs.,Colo.	30,105	39,078	822	Newark, O. . . .	26,718	25,404
76 Aurora, Ill. . .	36,397	29,807	150	Meriden, C. . .	29,867	32,066	185	Lewiston, Me..	31,791	26,247	650	Austin, Tex.. .	34,876	29,860	233	Kingston, N.Y.	26,688	25,708
56 Waterloo, Ia..	36,230	26,693	325	Easton, Pa.	33,813	28,523	486	Watertown, N.	31,285	26,730	681	Lynchburg, V.	30,070	29,494	33	Norwich, Ct...	22,304	28,219

WEST INDIES

Island, Republics, Cities, Towns.

Name Key Pop. Thous.
Acklin I 2D...1
Agua 3E.....19
Andros Is. 1C..7
Anguilla I 3G.4
Annotte 3C.....
Antigua I 3G.35
Aquin 3D......
Arecibo 3F.....
Aux Cayes 3D..
Azura 3E.....19
Bahama Is. 1D 53
Bahai Honda 2B ....
Bainet 3D......
Barocoa 2D.....
Barbados I 4H 198
Barbuda I 3G .... (included in Antigua)
Basse Terre 3G.8
Batabano 2B....
Bayomo 2C.....
Beata I 3E.....
Bejucal 2B.....
Bemini Is. 1C..
Beni 3E........
Blanquilla 5F...
Bridgetown 4H 10
Buen Ayre I 4E ....
Caicos Is. 2E...
Caimonere 3D...
Camaguey 2C.98
Cape Haiti 3D 15
Gardenas 2B..32
Castries 4G.....
Cat I 1D.......
Cayman Brae I 3C ....
Cayo Grande I 5F ....
Charlotte Amalie 3F.......
Charlottetown 4G ....
Ciego de Avilla 2C ....
Cienfuegos 2B.95
Coamos 3F.....
Cobre 2C.......
Cocoskey I 2C..
Codrington 3G..
Crooked I 1C..1
Cuba I 2C..2,889
Curacao I 4E.53
Dajabon 3E.....
De Vieques I 3F ....
Dominica I 4G.37
Dry Tortuga I 1B ....
El Can 3E.....
Eleuthera I 1C.6
Exuma Is. 1C.3
Fort de France 4G ....
Frederikstaed 3F ....
Gibara 2C......
Gonaives 3D...8
Gonave I 3D....
Grand Cayman I 3B.........
Grande Terre I 3G ....
Great Abaca I 1C 4
Great Bahama Bank 2C......
Great Bahama I 1C........1
Greater Antilles 3D ....
Great Inagua I 2D ....
Grenada I 4G.66
Grenadines I 4G ....
Guadeloupe I 3G 212
Guanabacha 2B.
Guane 2A .....
Guavama 3F....
Haiti I 3E.2,703
Haiti Rep. 3D 2,029
Harbor I 1C...1
Havana 2B..363
Higuey 3E ....
Hincha 3E......
Holguin 2C.....
Isle of Pines 2B.
Jamaica I 3C.857
Jeremie 3D.....
Jucaro 2C......
Jumentos Keys 2D ....
Kingston 3C..57
Kingstown 4G.4
La Isabela 2C..
Las Tunas 2C...
La Vega 3E....
Leeward Is 3G.
Les Coteaux 3D ....
Lesser Antilles 4F ....
Little Abaco I 1C ....
Little Cayman I 3B ....
Long I 2D.....4
Long Key 2B...
Los Roques Is... 5F ....
Manzanillo 2C 56
Margarita I 5F.
Marie Galoute I 4G.........
Mariguana I 2D ....
Martinique I 4G 193

Matansas 2B..62
Mathewtown 2D 1
Mayaguana I 1C ....†4
Mayagues 3F..19
Miragoane 3D...
Mona I 3F....
Monte Christi 3E 8
Montserrat I 3G 12
Moron 2C.......
Nevis I 3G...12
Nassau 1C.......
New Providence I 1C.......13
Neyba 3E.......
Pinar de Rio 2B 47
Pointe a Pitre 3G 27
Ponce 3F.......41
Port Antonio 3C 7
Port au Prince 3D 120
Port de Paix 2D 5
Port of Spain 5G 70
Porto Rico I 3F 1,229
Puerto Plata 3E 26
Quiabon 3E ....
Quita Buena Bank 4B......
Remedios 2C....
Roseau 4G.......
Rum Cay 2D.....
Sabana 3E.......
Sagua la Grande 2C ....
St. Andrews I 4B
St. Christopher I 3G ....
St. Croix I 3F... (See Danish W. I.)
St. George 4G...
St. John 3G..29
St. Lucia I 4G 51
St. Martin I 3G.
St. Pierre 4G...
St. Thomas I 3F
St. Vincent I 4G 44
Sale Trou 3D...
Sanchez 3E....5
Sancti Spiritus 2C 58
San Felipe Keys 2B......
San Juan 3F..70
San Luis 2D....
San Salvador I 1D 4
Santa Clara 2B 63
Santiago 3E..12
Santiago de Cuba 3C 70
Santo Domingo 3E 45
Santo Domingo Rep 3E...897
Savanna la Mar 3C 3
Scarborough 5G.
Soco 3E......
Spanish Town 2C 7
Tiburon 3D.....
Tobago I 5G....
Tortuga I 5F...
Trinidad 2B..40
Trinidad I 5G 391
Tunas de Zaza 2C ....
Vinales 2B......
Virgin Is. 3F 26
Watling I 1D †9
Windward Is. 4G ....

† POP. SHOWN IN HUNDREDS. WHERE POPULATION IS NOT GIVEN, LATE FIGURES WERE NOT OBTAINABLE.

MEXICO
SCALE
150 Miles to One Inch
0 50 100 150 200
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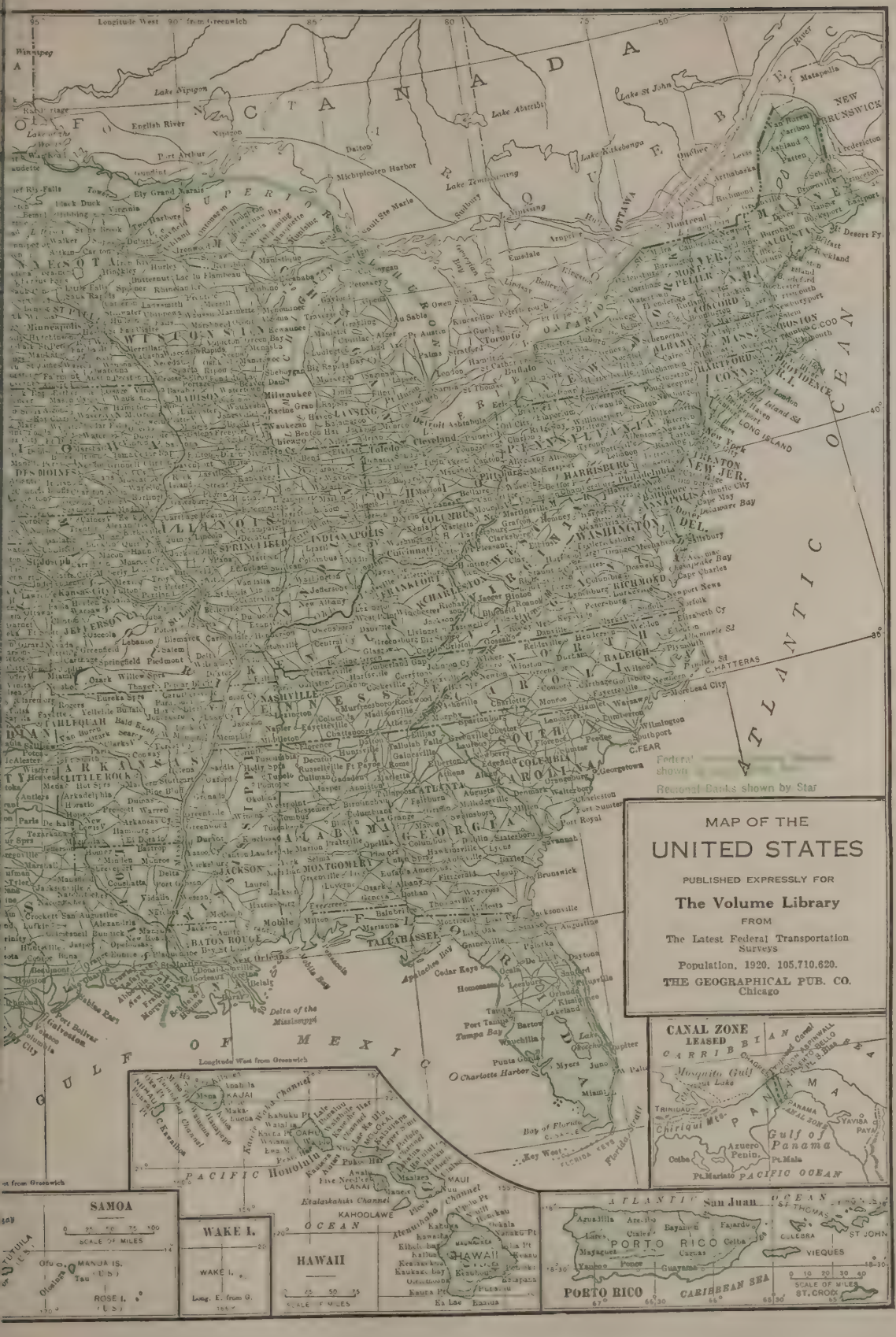
PRINCIPAL CITIES
Pop.—Thousands
8 Acambaro ..G 8
23 Acanceh ....G 14
5 Acapulco ...J 9
6 Acatlan ....H 10
45 Aguascalientes G 7
8 Ameca .....G 6
8 Amecameca H 9
5 Angangueo .H 8
6 Arandas ....G 7
9 Atlixco .....H 9
8 Autlan .....H 6
17 Campeche ..H 13
7 Catorce .....F 8
6 Cedral .....F 8
26 Celaya .....G 8
39 Chihuahua ...C 5
8 Chilpanzingo J 9
7 Cholula .....H 9
18 Ciudad Guzman H 7
8 Ciudad Juarez B 5
25 Colima .....H 7
8 Cordoba ....H 10
6 Cuautla ....H 9
13 Cuernavaca .H 9
14 Culiacan ...E 5
6 Dolores Hidalgo G 8
34 Durango ....E 6
6 El Carmen. H 13
8 El Rosario ..F 6
5 Encarnacion G 7
2 Ensenada de Todas Santos..B 1
5 Etzatlan ....G 6
6 Fresnillo ...F 7
5 Garcia .....E 8
8 Gomez Palacio E 7
6 Gonzales Junction .....G 8
119 Guadalajara G 7
9 Guadalupe ..F 7
35 Guanajuato .G 8
9 Guaymas ...D 3
15 Hermosillo ..C 3
7 Iguala .....H 9
20 Irapuato ....G 8
7 Ixtapalapa ..Q 6
25 Jalapa .....H 10
9 Jimenez ....D 6
12 Juchitan ....J 11
7 La Barca ...G 7
16 Lagos de Moreno .....G 8
5 Lampazos ...D 8
5 La Paz .....E 3
63 Leon .....G 8
7 Linares .....E 9
7 Mapimi .....E 6
8 Matamoros E 10
14 Matehuala ..F 8
18 Mazatlan ...F 5
62 Merida .....G 14
471 Mexico ....H 9
6 Miahuatlan .J 10
7 Monclova ...D 8
5 Montemorelos E 9
81 Monterrey ..E 8
39 Morelia ....H 8
5 Muzquiz ....D 8
7 Nuevo Laredo D 9
37 Oaxaca .....J 10
33 Orizaba ....H 10
30 Pachuca ....G 9
15 Parral .....D 6
6 Parras .....E 7
8 Patzcuaro ..H 8
8 Penjamo ....G 8
8 Piedras Negras C 8
8 Pinos .....F 8
5 Progreso ....G 14
101 Puebla ....H 9
35 Queretaro ..G 8
14 Salamanca ..G 8
35 Saltillo .....E 8
12 San Juan Bautista .....J 12
83 San Luis Potosi F 8
9 San Pedro ..E 7
8 Sierra Mojada G 14
15 Silao .....G 9
16 Tampico ....F 10
7 Tehuacan ..H 10
10 Tehuantepec J 11
6 Tenango ....H 9
17 Tepic .....G 6
12 Teziutlan ..H 10
6 Tixtla .....J 9
6 Tlacolula ...J 10
6 Tlacotalpan H 11
3 Tlaxcala ....H 9
8 Tlaxiaco ....J 10
31 Toluca .....H 9
14 Torreon ....E 7
5 Tuxpam ....G 10
10 Tuxtla Gutierrez .....J 12
10 Uruapan ...H 7
5 Valladolid ..G 14
13 Valle de Santiago .....G 8
6 Venado .....F 8
29 Vera Cruz ..H 10
18 Victoria ....F 9
4 Zacapu .....H 8
26 Zacatecas ...F 7
7 Zacoalco ....G 7
UNITED STATES
ARIZONA
NEW MEXICO
TEXAS
LOUISIANA
MISSISSIPPI
ALABAMA
FLORIDA
SONORA
CHIHUAHUA
COAHUILA
NUEVO LEON
DURANGO
ZACATECAS
TERR. TEPIC
JALISCO
MICHOACAN
GUANAJUATO
HIDALGO
MEXICO
VERA CRUZ
OAXACA
CHIAPAS
TABASCO
CAMPECHE
YUCATAN
TERR. QUINTANA ROO
BRITISH HONDURAS
CENTRAL AMERICA
GUATEMALA
HONDURAS
GULF OF MEXICO
BAY OF CAMPECHI
GULF OF TEHAUNTEPEC
PACIFIC OCEAN
Brownsville
Galveston
Monterey
Tampico
Vera Cruz
Mouths of Mississippi River
Gulf of Honduras
Port Barrios
Port Cortes

BRITISH COLUMBIA
ALBERTA
ASSINIBOIA
DOMINION
VANCOUVER ISLAND
Str. of Juan de Fuca
PACIFIC OCEAN
WASHINGTON
OLYMPIA
Seattle
Tacoma
Spokane
OREGON
SALEM
Portland
IDAHO
BOISE
MONTANA
HELENA
Butte
Anaconda
NORTH DAKOTA
BISMARCK
SOUTH DAKOTA
PIERRE
WYOMING
CHEYENNE
YELLOWSTONE NATIONAL PARK
NEBRASKA
CALIFORNIA
SACRAMENTO
San Francisco
Los Angeles
San Diego
SANTA BARBARA ISLANDS
NEVADA
CARSON CITY
UTAH
SALT LAKE CITY
GREAT SALT L. DESERT
COLORADO
DENVER
KANSAS
OKLAHOMA
ARIZONA
PHŒNIX
NEW MEXICO
SANTA FE
TEXAS
AUSTIN
San Antonio
El Paso
MEXICO
Lower California
GULF OF CALIFORNIA
Ciudad Porfirio Diaz
Longitude East from Greenwich
Longitude West from Greenwich
PHILIPPINE ISLANDS
LUZON I.
Manila
CHINA SEA
PACIFIC OCEAN
BISAYAS
ISLAS ADJACENTES
MINDANAO
Sulu Sea
BORNEO
0 50 100
SCALE OF MILES
ALASKA
ARCTIC OCEAN
BERING SEA
NORTH PACIFIC OCEAN
CANADA
G. of Alaska
Juneau
Sitka
ALEUTIAN IS.
0 100 200 300 300
SCALE OF MILES
GUAM
Agana


MAP OF THE
UNITED STATES
PUBLISHED EXPRESSLY FOR
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FROM
The Latest Federal Transportation Surveys
Population, 1920, 105,710,620.
THE GEOGRAPHICAL PUB. CO.
Chicago
Longitude West 90° from Greenwich
Longitude West from Greenwich
Federal
shown
Regional Banks shown by Star
CANADA
ATLANTIC OCEAN
GULF OF MEXICO
PACIFIC OCEAN
CANAL ZONE
LEASED
CARRIBBEAN SEA
Mosquito Gulf
Gulf of Panama
PANAMA
PACIFIC OCEAN
SAMOA
SCALE OF MILES
WAKE I.
WAKE I.
Long. E. from G.
HAWAII
SCALE OF MILES
PORTO RICO
CARIBBEAN SEA
San Juan
ST. THOMAS
ST. JOHN
VIEQUES
ST. CROIX
SCALE OF MILES

NORTH AMERICA.

Area 8,559,000 Sq. Miles. Pop. 147,419,857.

COUNTRIES, ISLANDS ETC.

Name Key Pop. Thous.
Acklin Island 15M 1
Alaska 7V ..55
Anguilla Island 16O 4
Antiqua 16O..35
Bahama Islands 15M 53
Barbados 17P 198
Barbuda Island 16O (See Antiqua)
Bermuda Islands 14O 21
British Honduras 16Ka 45
Canada 10K 8,772
Central America 17K...5,000
Chipperton Island 18G...
Costa Rica 17L 468
Cuba 16M.2,889
Dominica 17O 37
Duncan Island 18G ....
Eleuthera Island 15M 6
Greater Antilles 16M
Greenland 4P.13
Grenada 17O..66
Guadalupe Island 14F
Guadeloupe 16O 212
Haiti 16M.2,029
Hawaiian Islands 16A191
Isle of Pines 16L
Jamaica 16L.857
Labrador 10O..4
Lesser Antilles 16O
Margarita 17O
Martinique 17O 193
Mexico 16H 15,063
Newfoundland 11P 260
Nicaragua 17L 638
Panama 18L.401
Panama Canal Zone 20K..23
Porto Rico 16N 1,299
Revillagigedo Islands 16E
St. Lucia 17O.51
St. Thomas Island 16O
San Salvador 15M 4
Salvador 17K 1,501
Santo Domingo 16N 897
United States 13J ...105,710
West Indies 16O
Yucatan 16K 347

TOWNS

Exclusive of U S
Town Key Pop. Thous.
Acapulco 16H.5
Agiavarik 8A ......††30
Attemut 7B
Battleford 10O
Belize 16K
Bersimis 11M
Bethel 8A..††20
Bohis 21G....†5
Border 6D
Brandon 11J..13
Calgary 11G..63
Cardenas 15M 32
Chagres 21C...1
Chihuahua 15H 39
Christianshaab 6P
Circle 7C.....†2
Colon 17L....26
Corozal 20O..†6
Cristobal 20D..3
Culebra 21M...5
Dawson 7D
Durango 15H.34
Dyea 9D.....†2
East Main 11M
Eaton 7A
Edmonton 10G 58
Edmundston 11N
Egedesminde 7P
Emperador 20L 5
Etah 3M
Fredericton 12N 7
Frederkshaab 8P
Frijoles 21H..†7

Gatun 21E ..3
Gorgona 21J ..2
Guadalajara 16H 119
Guatemala 17K 90
Guaymas 15O 6
Halifax 12O ..58
Hamilton 14O 114
Havana 16L 363
Hermosillo 14G 17
Igagik 9A ......†2
Iliamna 8B ..††76
Juneau 9D 3
Kakwok 8B ..††45
Kenai 8B ......†2
Kingston 12M 21
Kingston 16M 57
Koggiung 9A †5
Kutlik 8A ..††13
La Boca 21P †9
La Paz 15G ..4
Leon 16H 57
Matachin 21K 2
Matanzas 16L 64
Medicine Hat 11H 9
Meshik 9A ††74
Mexico 16J 1,080
Mindi 20D ††79
Miraflores 20N †4
Monterey 15H 73
Montreal 12M 618
Monkey Hill 20D ....†6
Nassau 15M
New Westminster 11G 14
Obispo 20K 1
Okkak 9O
Ottawa 12M 107
Panama 18L ..61
Peavy 6C ....††15
Pedro Miguel 20N 1
Pike Fort 11M
Port Arthur 11K 14
Prince Albert 10H 7
Progreso 16K
Quebec 11M ..95
Rampart City 7B ....†2
Regina 11H ...34
Santiago de Cuba 16M ..70
Santo Domingo 16N
San Juan 16N
San Luis Potosi 16J 63
San Pablo 21J 1
Seldovia 9B ...†1
Shaktolik 7B ....††38
Sitka 9D ....†5
Skagway 9D ......†8
St Johns 12O .34
St Michael 7A ....†8
St Pauls Bay 11M
Sushitna 8C ..†1
Tabernilla 21H 2
Tampico 16J ..11
Tanana 7C ....†1
Tehuantepec 16J 9
Toronto 12L 521
Tyoonok 8B ..†1
Unangashik 9A ....†1
Unga 9A ....†1
Valdez 8C .....†8
Vancouver 11F 118
Vera Cruz 16J 48
Victoria 15H
Victoria 11E ..38
White Horse 8E
Windermere 11L
Winnipeg 11J 179
Zacatecas 15H 25

SOUTH AMERICA

Area sq. m., 7.598.000
Pop., 49.080.907

Name Key Pop. Thous.
Argentina 3F 8,698
Barbados 5A.....
Bolivia 4D 2,889
Brazil 6C.30,645
British Guiana 5B 297
Chatham Island 2B.....
Chile 3F...3,754
Curacao 4A.....
Colombia 3B 5,855
Dutch Guiana 5A 173
Ecuador 3B 2,000
Falkland Islands 5H..3
Fernando Noronha Island 7C ....
French Guiana 6B 49
Galapagos Island 1B....
Grenada 4A.....
Martinique 4A..
Panama 3A..401
Paraguay 5E 1,000
Peru 3D.. 4,500
South Georgia 7I ....
Staten Island 4I ....
Tobago 4A......
Tortuga Island 4A ....
Trinidad 5A.391
Uruguay 5F 1.494
Venezuela 4A 2,411
Wollaston Islands 4I....

CITIES

Town Key Pop. Thous.
Abancay 3D. ..
Alagoas 7C ..
Alcantara 6B...
Ancud 3G ...
Antioquia 3A...
Antofagasta 3E 51
Aracati 7C.....
Arauco 3F......
Arequipa 4D..40
Arica 4D......
Asuncion* ...99
Ayacucho 3C..14
Bahia 7C. ..348
Bahia Blanca 5F 44
Barcelona 4A...
Barquisimeto 3A ....
Barranquilla 3A 64
Belem (Para) 6B 275
Bogota* 160
Bucaramanga 3B 24
Buenaventura 3B ....
Buenos Aires* 5F 1,674
Cajamarca 3C...
Caldera 3E.....
Callao 3C....52
Cameta 6B.....
Campos 7D.....
Caracus* 4A..92
Cartagena 3A.51
Castro 3G......
Catamarca 4E..
Caxias 7C.....
Cayenne* 6B..13
Ceara 7C....33
Chiclayo 3C...
Chillan 3F...30
Ciudad Boliar 4B ....
Cochabamba 4D 31
Colon 26
Colonia 5F.....
Conception C 3F 66
Conception A 5F 15
Constitucion 3F
Copiapo 3E. ...
Coquimbo 3E...
Cordoba 4F..156
Corrientes 5E.28
Corumba 5D....
Cucuta 3A...29
Cuenca 3B....30
Cumana 4A....
Cora 3A......
Curico 15
Curitiba 6E....
Cuyaba 5D.....
Cuzco 3D....15
Desterro 6E....
Diamantina 7D.
Fortaleza 7B...
Georgetown* 5A 53
Guanare 4A....
Guayaquil 3B.93
Honda 3B......
Huacho 3C ..6
Huanchaca 4D
Iquique 4D...37
Iquitos 3C....12
Itajahy 6E. ...
Juaja 3C. ...
Jujuy 4E .....

LaPaz 4D...107
LaPlata 5F...90
LaRioja 4E....
Launa unga 3C..16
Lima* 3C....176
Loja 3C.....10
Maceio 7C...68
Maldonado 5F...
Manaos 5B...80
Maracaibo 3A..46
Maranhao 6B...
Mar del Plata 5F......27
Matto Grasso 4D.......
Mendoza 4F...58
Merida 3B.....
Mollendo 3D....
Montevideo* 5F......361
Moyobamba 3C...
Natal 7C.......
Nictheroy 7D..86
Oruro 4D....31
Osborno 3F.....
Ouro Preto 6D...
Panama* 3A..61
Para 6B...
Parahyba 7C..32
Paramaribo* 5B.......70
Parana 5F....36
Paysandu 5F..26
Pasco ....
Pelotas 6F....
Pernambuco 7C.......216
Pisagua 3D....
Pisco 3D.....
Popayan 3B....
Porto Algere 6E.......150
Port Stanley 5H........
Potosi 4D....29
Puerto de Corral 3G....
Puerto Cabello 4A.....
Puno 3D......
Punta Arenas 3I ....
Quillota 3F...
Quito* 3B...70
Riobamba 3B..12
Rio de Janeiro* 6D 1,157
Rio Grande do Sul 6F......
Rosario 222
Salta 3F......28
San Bernardino
San Felipe 3F
San Fernando 3F ......
San Juan 4F..15
San Luiz 4F..16
San Nicolas 5F ......
Santa Cruz 4D 25
Santa Fe 5E..59
Santa Marta 3A ......
Santiago* 4F..307
Santos 6E....35
Sao Luiz Maranhao 6B......
Sao Paulo 6E 301
Serena 3E....15
Sucre* 4D....29
Tacna 3D.....36
Talca 3F.....22
Talcahuano 3E.....11
Taltal 3E...
Tarija 4E.....16
Temuco 3G....
Trujillo 3C....
Tucuman 4E..91
Valdivia 3F..26
Valparaiso 3F 182
Villa Pilar 5E 10
Villa Rica 5E..26
Vina del Mar..33

EUROPE

PRINCIPAL DIVISIONS

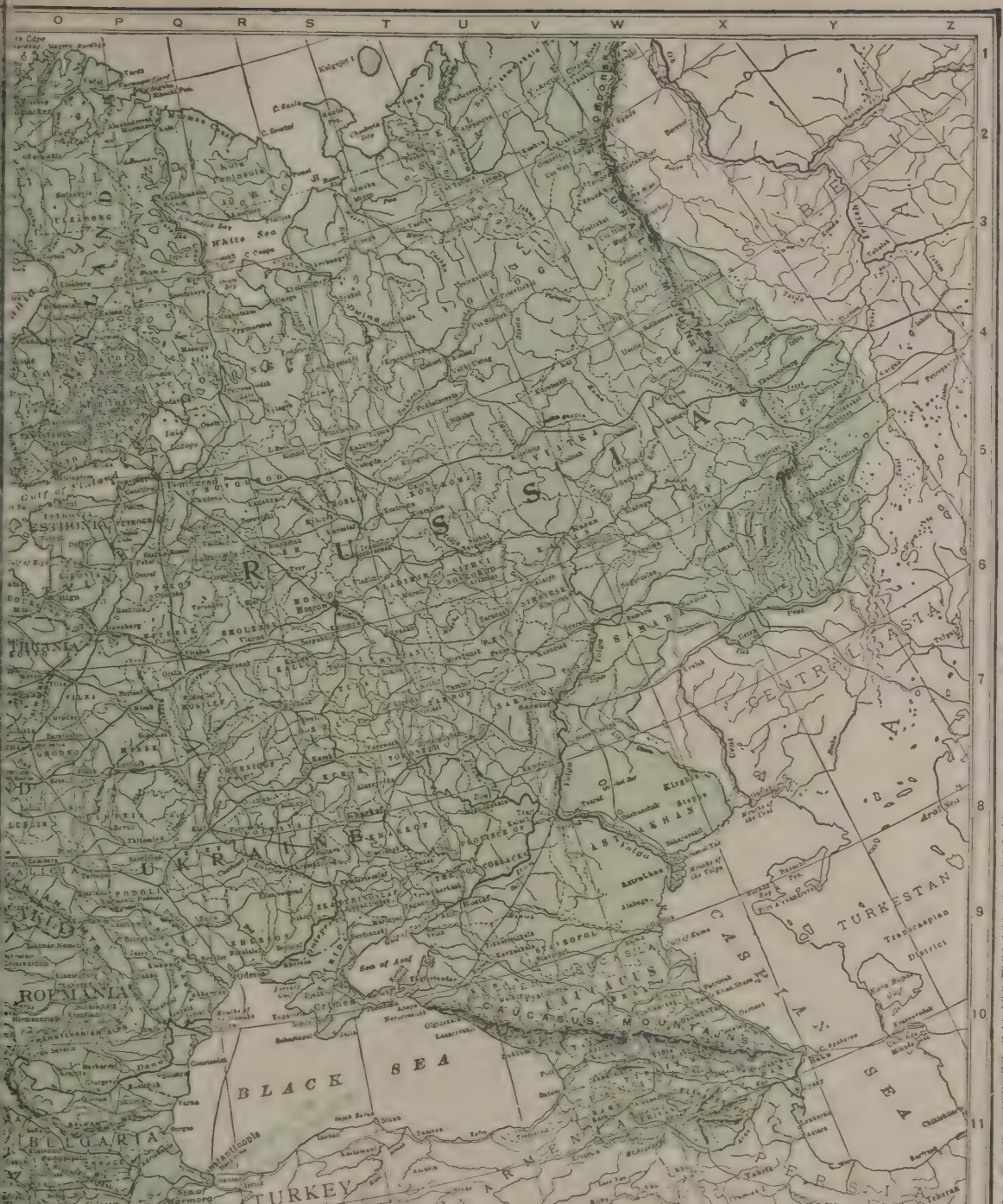
Countries	Key
Albania	12N
Andorra	10E
Armenia	11W
Austria	9K
Azerbaijan	11Y
Baltic Provinces	6O
Belgium	8F
British Isles	6E
Bulgaria	11O
Czecho-Slovakia	9L
Denmark	6J
England	6E
Esthonia	6O
Finland	4O
France	9E
Free State of Ireland	6C
Georgia	11W
Germany	8K
Greece	12N
Holland	8G
Hungary	10M
Iceland	2D
Italy	11H
Jugo-Slavia	11L
Latvia	6O
Liechtenstein	8G
Lithuania	8O
Luxemburg	8G
Monaco	11G
Montenegro	11M
Netherlands	8G
Norway	5J
Poland	8M
Portugal	11A
Rhenish Republic	8G
Roumania	10O
Russia	6U
Ruthenia	9O
San Marino	11I
Scotland	6E
Serbia	11N
Spain	11B
Sweden	5L
Switzerland	10G
Turkey	12P
Ulster	6D
Ukraine	6Q
Wales	7D

MINOR DIVISIONS

	Key
Aland Is.	5M
Alsace Lorraine	9G
Balearic Is.	12D
Bosporus	11Q
Corsica	11G
Dalmatia	11K
Dardanelles (Hellespont)	12P
Elba	11I
Faroe Is.	4E
Gibraltar	5M
Gotland	6M
Guernsey Is.	8D
Hebrides	5D
Helgoland	7H
Hellespont (Dardanelles)	12P
Ionian Is.	13N
Isle of Man	6D
Isle of Wright	8E
Iviza	11D
Jersey Is.	8D
Kiel Canal	7H
Kolguiev Is.	1T
Lofoden Is.	3L
Majorca	11D
Minorca	11D
Orkney Is.	5F
Sardinia	12G
Scilly Is.	7C
Shetland Is.	5E
Sicily	12H

IMPORTANT CITIES

Town	Key	Pop. Thous.
Aberdeen	6F	158
Amiens	8F	90
Amsterdam	8F	642
Antwerp	8G	333
Astrakhan	9X	162
Athens	13O	300
Augsburg	9J	102
Auxhaven	7H	*
Barcelona	11D	582
Basle (Basel)	9G	137
Belfast	6D	393
Berlin	8K	3,801
Birmingham	7E	919
Bologna	10J	190
Bordeaux	9D	267
Bremen	7H	257
Breslau	8L	528
Bristol	7D	377
Brussels	8G	684
Bucharest	10P	345
Budapest	9M	1,184
Cardiff	7D	200
Cartagena	12C	102
Cassel	8H	162
*Cetinje	11M	*
Christiania	5J	258
Cologne	8H	633
Constantinople	11Q	1,200
Copenhagen	7K	666

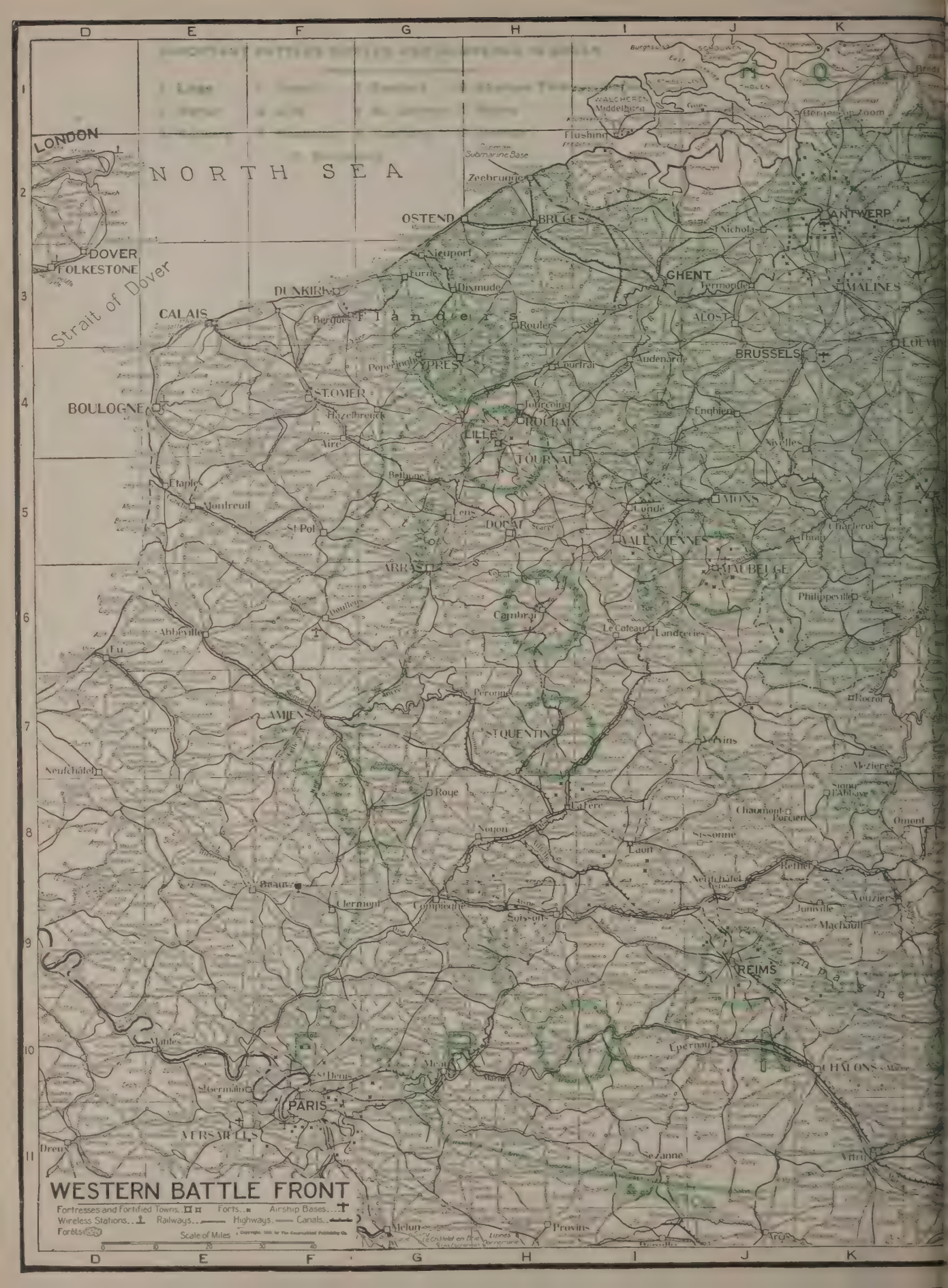


PRINCIPAL DIVISIONS OF EUROPE

ALBANIA	GERMANY	NETHERLANDS
ANDORRA	GREECE	NORWAY
AUSTRIA	HOLLAND	POLAND
ARMENIA	HUNGARY	PORTUGAL
AZERBAIZAN	FREE STATE OF IRELAND	ROUMANIA
BELGIUM	JUGO SLAVIA	RUSSIA
BULGARIA	ICELAND	SCOTLAND
CZECHO-SLOVAKIA	ITALY	SERBIA
DENMARK	LATVIA	SPAIN
ENGLAND	LIECHTENSTEIN	SWEDEN
ESTHONIA	LITHUANIA	SWITZERLAND
FINLAND	LUXUMBURG	TURKEY
FRANCE	MONACO	UKRAINE
GEORGIA	MONTENEGRO	WALES

Cracow (Krakow) 9M..176
Danzig 7M...330
Dresden 8J..529
Dublin 6D...399
undee 6E...168
*Durazzo 12M..5
Dusseldorf 8G 407
Edinburgh 6E 420
Elberfeld 8H..157
Essen 8G....439
Fiume 10K....*
Florence 11H..242
Frankfort 8L..433
Geneva 10F...135
Genoa 10G...300
Ghent 8F....265
Glasgow 6D 1.034
Goteborg 6K..202
Halle 8J....182
Hamburg 7J..985
Hanover 8H..310
Harwich SE ....
Karlsruhe 9T..258
Kassel 9T...558
Kiel 7J 295
Kiev (Kief) 8R 626
Kishines 19Q 128
Konigsberg 7N 260
Kovno 7Q.....*
Kracow (Cracow) 9M..171
Leeds 6E....458
Leicester 7E..234
Leipsic 8J...630
Lemberg 9O..212
Liege 8G....165
Lille 8F....200
Lisbon 11A..489
Liverpool 7E..803
Lodz 8M....451
London (Greater) 7E...7.476
Lyons 10F...561
Madrid 11C..608
Magdeburg 8J 285
Mainz 8H...111
Malaga 12B..141
Manchester 7E 730
Mannheim 8H 229
Marseilles 14F 586
Middlesbrough 7E 131
Milan 10H...663
Minsk 6F...117
Moscow 6P..1.059
Munich 9L...550
Nancy 9G....113
Nantes 9D...183
Naples 11K..698
Newcastle 6E..274
Nice 155
Norwich 7F..120
Nottingham 7E 262
Novgorod 6Q..112
Nuremburg 9J 352
Odessa 10Q..631
Oporto 10A...203
Padua 10J...105
Palermo 12J..346
Paris 9F..2,906
Petrograd 5Q 2,319
Plymouth 8D..209
Posen 8L....156
Portsmouth 8E 247
Prague 9K...676
Przemysl 9N..
Rheims 8F...115
Riga 6O.....185
Rome 11J...590
Rostov 9U...205
Rotterdam 8G..209
Rouen 8E...123
St Petersburg 5F 167
Salonica 13O 150
Saratov 7V 235
Sheffield 7E 190
Smyrna 12B 164
Stockholm 5K .....
Strasburg 9H 509
The Hague 8F 358
Toulon 11F 105
Trebizond 13E 175
Trieste 10K..246
Turin 10G...452
Udine 10K....
Utrecht 8G...140
Valencia 11C..236
Venice 10J...168
Vienna 9L..1.841
Vilna 7O....205
Vitebsk 7Q...108
Warsaw 8N..931
Yaroslav 6T..119
Zurich 9H...207

*Less than 100,000


WESTERN BATTLE FRONT
Fortresses and Fortified Towns
Forts
Airship Bases
Wireless Stations
Railways
Highways
Canals
Forêts
Scale of Miles
0
10
20
30
40
NORTH SEA
LONDON
DOVER
FOLKESTONE
Strait of Dover
CALAIS
BOULOGNE
DUNKIRK
Bergues
Flanders
Nieuport
Furnes
Dixmude
OSTEND
BRUGES
Zeebrugge
Submarine Base
Flushing
Middelburg
WALCHEREN
Bergen op Zoom
ANTWERP
St Nicholas
GHENT
Termonde
MALINES
ALOST
BRUSSELS
Roulers
Poperinghe
YPRES
Courtrai
Audenarde
ST. OMER
Hazelbrouck
Tourcoing
ROUBAIX
LILLE
Aire
Enghien
Nivelles
TOURNAI
Bethune
Etaples
Montreuil
St Pol
Lens
DOUAI
Condé
MONS
VALENCIENNES
Charleroi
Thuin
ARRAS
MAUBEUGE
Philippeville
Cambrai
Le Cateau
Landrecies
Abbeville
Eu
Doullens
Péronne
Rocroi
AMIENS
ST QUENTIN
Vervins
Neufchâtel
Mezières
Roye
La Fère
Chaumont-Porcien
Omont
Noyon
Sissonne
Laon
Rethel
Beauvais
Clermont
Compiègne
Soissons
Neufchâtel
Vouziers
Juniville
Machault
REIMS
Mantes
Epernay
CHALONS
Meaux
St Denis
St Germain
PARIS
VERSAILLES
Dreux
Sezanne
Vitry
Melun
Provins
Arcis

M N O P Q R S T
INDEX
Town Key
Aincreville
Aisne 9H
Aix-la-Chapelle 4N
Ancre 7G
Antwerp 2K
Apremont 9L
Argonne Forest 10N
Armentieres ...6H
Artois .5G
Arras 6G
Audenarde .4I
Bailleul 4G
Bantheville 9L
Bapaume 6G
Belleau Wood.10H
Berzy 9H
Bethune 5G
Blank Monte ...9J
Bouresches ...10H
Breiulles 9M
Bruges 2H
Cambrai 6H
Cantigny 8G
Chalons 10K
Champagne 9K
Charleroi 5K
Charney 10G
Charpentry 9M
Chateau Thierry 10H
Chatel-Chehery 9M
Chatillon-sur-Bar 8L
Chaulnes 7G
Chavigny 9H
Chipilly Ridge .7G
Cierges 9I
Coblenz 5R
Cologne 3P
Compiégne 9G
Corcy 9H
Courtrai 4H
Craonne 9I
Dinant 6L
Dixmude 3D
Douai 5H
Dusseldorf 2P
Epieds 10I
Epernay 10J
Exermont 9L
Fere en Tardenois 9I
Fismes 9I
Fismets 9I
Fleville 9L
Ft. Douamont..9M
Ft. Rochambeau 5I
Ft. St. Hilaire.10K
Ft. Vaux
Fresnoy 7I
Ghent 3I
Grancourt 7H
Hamel 7H
Hazelbrouck ...4G
Hill 70 ....5G
Hill 60 ....4H
Hill 230 ....
Jaulgonne
Jugiviny 8H
La Fere 3D
Laon 8I
Lassigny 8G
Le Cateau 6I
Lens 5G
Lille 4H
Loos 5G
Louvain 4K
Luneville 11P
Marcoing ....
Marne ....
Maubeuge
Maurepas
Mayence (Mainz)
Metz
Meuse Hills ...8M
Mons 5J
Montfaucon ...9M
Montdidier 8G
Namur
Nancy
Neuf Chatelle ..8J
Neuve-Chapelle 5G
Nieuport 3G
Noyon ...
Ostend
Ourcq ......
Passchendaele
Patios
Pozieres 6G
Reims (Rheims).9J
Roubaix 4H
Roulers 3H
Roye
St. Gobain
St. Mihiel 10M
St. Quentin 7H
Sarrburg 11Q
Strassbourg
Thiacourt 10N
Tigny 9H
Toul 11M
Tourcoing
Tournay
Triacourt
Valenciennes ...5I
Vaux
Verdun
Vervins
Zeebrugge ...2H
DORTMUND
Oberhausen
ESSEN
Mulheim
DUISBURG
Wesel
Venlo
KREFELD
BARMEN
Schwelm
ELBERFELD
DUSSELDORF
COLOGNE
Hasselt
MAASTRICHT
Duren
AIX-LA-CHAPELLE
BONN
Tongres
Waremme
LIEGE
Euskirchen
Verviers
Ahrweiler
Huy
Malmedy
Neuwied
COBLENCE
Marche
FRANKFORT
Wiesbaden
Darmstadt
Kreuznach
Diekirch
Neufchateau
TREVES
LUXEMBURG
Arlon
Luxemburg
Birkenfeld
Saarburg
MANNHEIM
Montmedy
Longwy
KAISERSLAUTERN
Merzig
Thionville
Neunkirchen
Saarlouis
Neustadt
Speyer
Saarbrucken
Landau
Conflans
VERDUN
METZ
Saargemund
KARLSRUHE
Rastatt
Hagenau
Bar-le-Duc
Saarburg
TOUL
NANCY
Luneville
STRASSBURG
Molsheim
1 2 3 4 5 6 7 8 9 10 11

British Isles

Town Key Pop. Thous.
Aberdare 8E..50
Aberdeen 4E.158
Aldershot 8F..35
Athlone 6B....6
Balbriggan 6C 2
Bangor 7D.....3
Bantry 8A.....2
Bath 8E......68
Beaumaris 7D.2
Belfast 6C...385
Birkenhead 7E 145
Birmingham 7E 919
Bishop Stratford 8F.....8
Blackburn 6E 126
Bolton 6E....180
Boote 6E.....99
Bournemouth 9E 76
Bradford 6E..285
Bridgeport 9E..5
Brighton 8F..142
Bristol 8E...377
Canterbury 8G 23
Cardiff 8D ..200
Cardigan 7D...3
Carlisle 5E.. 52
Carmarthen 8D 10
Carnarvan 7D..9
Chatham 8G..42
Cheltenham 8E 48
Chelmsford 8G 18
Chester 7F ..40
Colchester 8G 43
Cork 8B.....76
Croydon 8F .190
Dartmouth 9D..7
Derby 7F....129
Devonport 9D.81
Dingwall 3D...2
Dorchester 9E..9
Dover 8G.....39
Dublin 7C...403
Dundee 4E..168
Dungarvan 7B..5
Duton 8F.......
Eastborne 8G.62
Edinburgh 5E 420
Elgin 4D......8
Ennis Killen 6B 5
Enniswortby 7C 5
Exeter 9D ...59
Exmouth 9E ..11
Falkirk 4D...33
Falmouth 9D.13
Folkstone 8G..37
Frazerburg 3E.10
Galway 6B....13
Gateshead 5F 124
Gillingham 8E 54
Glasgow 5D.1034
Gloucester 8E.51
Golspie 3E.....1
Great Yarmouth 7G...60
Greenock 5D..81
Greenwich 8F.95
Grimsby 6F...82
Halkirk 2E....2
Hanley 7E....66
Harwich 8G...13
Hastings 8G...66
Havenfordwest 8D.....5
Hereford 7E..22
Holyhead 7D..10
Iverness 3D...22
Ipswich 7G...79
Kenmore 8A...1
Kilkee 7A.....1
Kilkenny 7B ..10
Killarney 7A ..5
Kilrush 7A....4
Kilmarnock 5D.2
Kingstown 7C.17
Kinross 4E....2
Kingston 8F..38
Kingston Upon Hull 6F...287
Lanark 5E.....5
Lewes 8F.....10
Leeds 6F....458
Leicester 7F.234
Leith 4E.....80
Limerick 7B..38
Listowel 7A...35
Liverpool 6E.803
London 8F..7476
Ludlow 7E.....5
Macroom 8B...2
Mallow 7B....4
Malvern 7E...16
Manchester 6E 730
Merthyn 8E...80
Middleborough 5F 131
Montrose 4E..10
Neath 8D 17
Newark 7F....16
Newcastle 6C..2
Newcastle on Tyne 5F...274
Newport 8E...92
Newquay 9D...4
Newton Abbott 9D 13
New Windsor 8F 12
Northampton 7F 92
Norwich 7G..120
Nottingham 7F 262
Oldham 6E..145
Oxford 8F...57
Parsontown 7B 4
Pembroke 8D.15
Penzance 9C..13
Perth 4E ...35
Peterhead 3E.13
Plymouth 9D.209
Pontypridd 8E 43
Portadown 6C..8
Portsmouth 8F 247
Preston 6E..117
Queenstown 8B 9
Ramsey 6D....5
Ramsgate 8G..29
Rathdrum 7C..
Reading 8F...92
Redruth 9C...10
Reigate 8F...28
Rhondda 8D.152
Rotherham 6F 62
Rye 8G.......4
St. Albans 8F.18
Salisbury 8E..21
Scarborough 6F 46
Sheerness 8G..17
Sheffield 6F.490
Sherborn 8E...5
Skibbereen 8A...3
Southampton 8F 160
Southshields 5F 116
Stafford 7E...23
Southport 6E..76
Stockton on Tees 6F....64
Stoke 7E....240
Stonehaven 4E..4
Strabane 5C...5
Stromness 2E..1
Sunderland 5F 159
Swansea 8D.157
Swindon 8E...54
Tarbet 7A....
Taunton 8E..22
Teignmouth 9D 9
Templemore 7B 2
Tipperary 7B..6
Torquay 9D..38
Tralee 7A.....9
Trowbridge 8E 11
Truro 9D.......11
Tunbridge Wells 8G...35
[illegible] 8E.....
Tynemouth 5F 63
Walthamstow 8F 124
Warrington 6E 76
Waterford 7C.27
Waterville 8A...
Watford 8F...40
Westport 6A...4
Weymouth 9E.22
Whitby 6F.....11
Whitchurch 7E 5
Wicklow 7C...3
Winchester 8F 23
Worcester 7E.48
Worthing 8F.30
Yeovil 8E....12
York 6F.....84

AFRICA

Area sq. mi., 11,545,000
Pop., 128,067,232

COUNTRIES, STATES, ISLANDS, ETC.

Name	Key	Pop. Thous
Abyssinia	7E	8,000
Adrar	3C	12
Algeria	3B	5,563
Angola	4G	2,124
Ashanti	3E	420
Ascension Islands	2F	14
Bagirmi	5D	
Barca	5B	
Barotseland	6G	
Basutoland	6H	499
Bechuanaland	5H	152
Benguella	5G	
Bornu	5C	
	5I	2,781
Canary Islands	1B	506
Cape Colony		
Comoro Islands	8G	
Dahomey	3E	866
Damaraland	5H	
Darfur	5C	
East Africa Portuguese	7H	3,120
Egypt	6C	12,750
Egyptian Sudan	6D	
Erythrea	7D	405
Ferro	2C	
Fezzan	5C	
French Somali Coast	8D	208
French West Africa	3C	
Gambia	1D	138
Gando	3D	
Gazaland	7H	
Gold Coast	3E	2,029
Gomera	2C	
Guinea, French	2E	1,875
Guinea, Portuguese	2E	1,851
Gurara	3D	
Gurma	3D	
Hogar	3C	
Ivory Coast	2E	1,407
Kaarta	2D	
Kaffraria	6I	
Kanem	5D	
Kawar	5D	
Kharga	6C	
Kenia	7E	4,038
Kong	3E	
Congo, Belgian	6F	
Congo, French	5F	9,000
Kordofan	6D	
Lagos	3E	
Lanzarote	2C	
Liberia	2E	2,000
Libia	5B	1,000
Loanda	4F	
Lourenco Marquez	7H	
Madagascar	8G	3,512
Maderia	1B	
Malta	4B	228
Mashonaland	7G	
Massinia	3D	
Matabeleland	6G	
Mayotta Island	7G	97
Military Territories, French	4D	
Morocco	2B	6,000
Mossamedes	5G	
Mozambique	7G	
Namaqualand	5H	
Natal	6H	
Nigeria	4D	16,250
Nossi Be Island	8G	
Nubia	6C	
Nyassaland, Protectorate	7G	1,201
Orange Free State	6H	628
Palma	1C	
Pemba Island	7F	
Princess Island	4E	
Rhodesia	6G	1,745
Rio de Oro	2C	
Rio Muni	4E	
Sainte Marie Island	9G	
Sainte Helena Island	G2	3
Saint Thomas Island	3E	
Semmur	2C	
Senegal	2D	1,204
Sierra Leone	2E	75
Sokoto	4D	
Somali Coast	8E	300
Somaliland Italian	8E	650
Southern Nigeria	4E	7,750
Southwest Africa	5H	
Tanganyika T.	7F	10,032
Tasili	3C	
Teneriffe	1C	
Tibesti	5C	
Tidikelt	4C	
Transvaal	6H	2,085
Tuat	3C	
Tunis	4B	1,958
Uganda Protectorate	6E	3,071
United South Africa	5H	6,922
Wadai	5D	
Zanzibar Protectorate	7F	190
Zululand	7H	

CITIES

City	Key	Pop. Thous
Abeshr	5D	10
Alexandria	6B	411
Algiers	3B	206
Ankober	7E	
Bamako	7F	77
Benghazi	5B	35
Benguela	4G	3
Berbera	7D	30
Bloemfontein	6I	39
Bone	4B	41
Bougie	3B	19
Cairo	6B	790
Cape Coast Castle	3E	11
	5I	208
Cape Town		
Ceuta	2B	10
Constantine	3B	78
Dakar	1D	28
Damietta	6B	31
Dar es Salaam	7F	196
Durban	7H	140
East London	6I	31
Fez	2B	62
Freetown	2E	34
Graaf Reinet	5I	4
Grahamstown	6I	7
Harar	8E	50
Johannesburg	6H	281
Kano	4D	300
Khartum	6D	25
Kimberely	6H	33
King Williams Town	6I	5
Krugersdorp	6I	13
Lagos	3E	100
Lindi	8G	354
Lourenco Marques	6I	10
Mascara	3B	28
Mequinez	2B	30
Melilla	3B	12
Mogador	2B	20
Mombasa	7F	10
Mostaganem	3B	27
Mozambique	7G	7
Nairoba	7F	24
Pangani	7F	6
Philipveville	3B	33
Port Elizabeth	6I	15
Porto Novo	3H	20
Port Said	6B	91
Pretoria	6H	3
Rabat	2B	29
Setif	3B	30
Sidi Bel Abbes	3B	37
Tanga	6F	4
Tanta	6B	74
Timbuktu	3D	7
Tlemcen	3B	43
Ujiji	6F	175
Zanzibar, British	6F	35

† POP. SHOWN IN HUNDREDS. WHERE POPULATION IS NOT GIVEN, LATE FIGURES WERE NOT OBTAINABLE.

ASIA

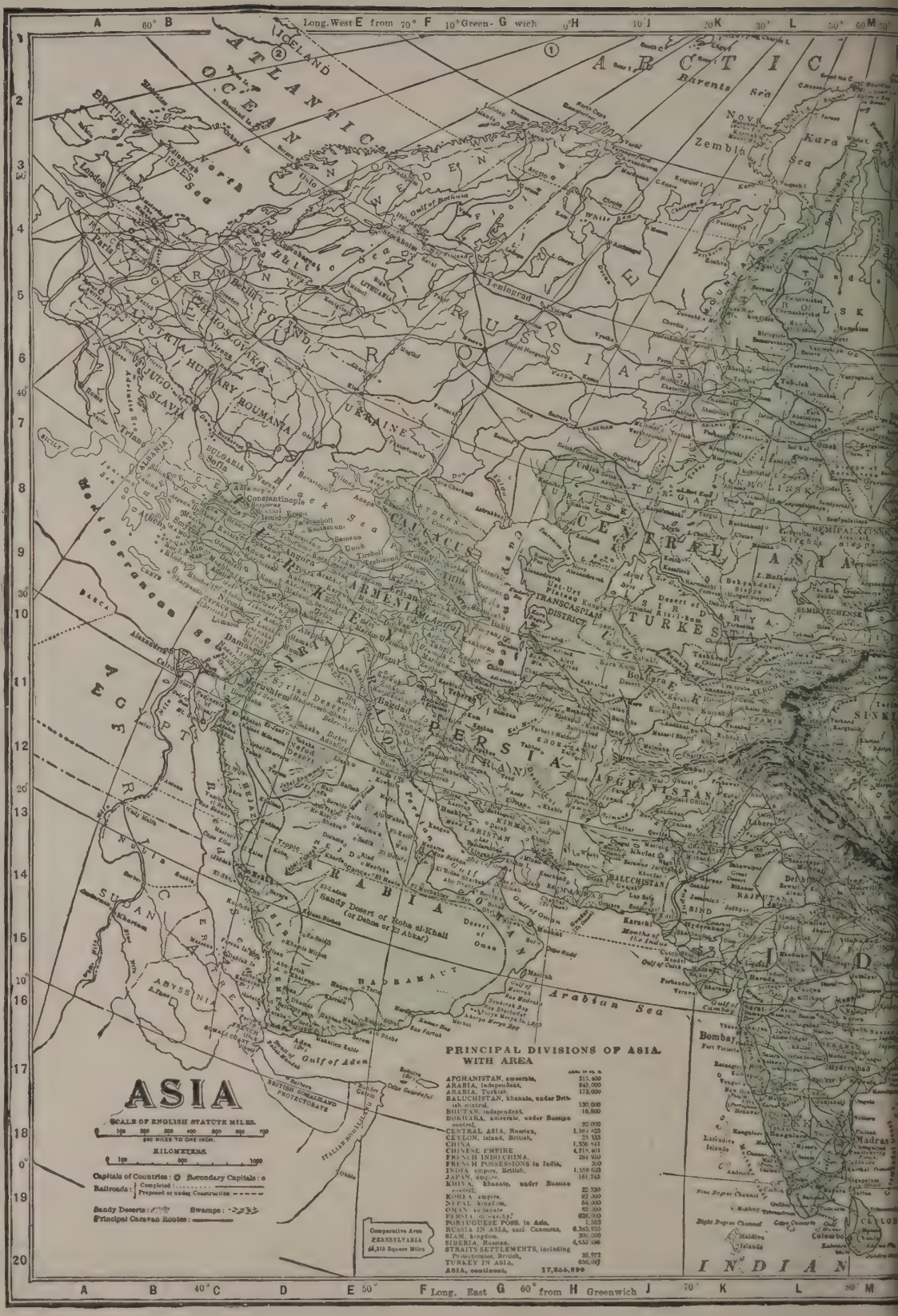
Key

Aden 16C
Afghanistan .12L
Akmolinsk ..8M
Amur Province 6V
Annam 17U
Andaman ..18Q
Arabia 14E
Bahrien Is..13F
Baluchistan..14K
Bennett Is...1S
Bering Is....3Z
Bhutan 14Q
Bilshnu (Sarkof) 2S
Bobol 17Y
Bokhara 11L
Bonin 1U
Borneo 20V
Bt. North Borneo ...19V
Brunei 19V
Burma 15R
Cambodia ..18T
Cebu 17Y
Celebes 17X
Ceylon 19M
China 13U
Chinese Empire 11S
Chusan Is..12W
CoastProvince.7W
Cochin China.18T
Cyprus 9C
Dekkan 18N
Dsungaria ..10P
Ferghana ...11M
Formosa ...14W
French Indo China 17T
Giloio 19Z
Hadramant ..15F
Haman Is..16U
Hindustan (India) ..15N
Hongkong ..15V
Indo China .17T
Irkutsk 8R
Japan 10Y
Kamtchataka 4Y
Khiva 10K
Kiaochow ...11V
Kuichu 11X
Kommander Is. 3Z
Kunashiri Is.7Y
Korea 10W
Kotelnoi Is...2S
Khorya Morya Is 16H
Kwangchau .16U
Laccadive Is..18L
Leyte Is....17Y
Luzon Is....16X
Malay Peninsula 19S
Maldire Is..19M
Manchuria ..8V
Masbate Is..17Y
Mindanao ...13Y
Mindoro ...17X
Mongolia ...10S
Negros Is...17Y
Nejed 13E
Nepal 10O
Nicobar 19Q
Oman 14H
Onnehotan ..5Y
Pallawan ..18W
Penay 17X
Pelew Is....17*
Penang Is...19S
Persia 12H
Philippine Is16W
Poillio Is...16X
Quelpart Is.11X
Sakhalm ...17X
Samar Is.....6Y
Samarcand ..11L
Sarawak ...19V
Semipalatinsk.8O
Semirechinsk 9O
Shikoku is..10Y
Siam 17S
Simusir 6Y
Skotra Is...17F
Straits Settlements 20P
Sulu Is....18X
Sumatra Is 20S
Syr Darla....9L
Thibet 12P
Toboisk 5M
Tomsk 7O
Tonkin 15P
Trans Caspian.9J
Turgai 7L
Turkestan (Turkey in Asia)10L
Uralsk 8J
Urupou Is...6Y
Wrangel Is..1V
Yakutsk 8P
Yenlseisk ...6P
Yezzo (Hokushiu) 7Y

Cities

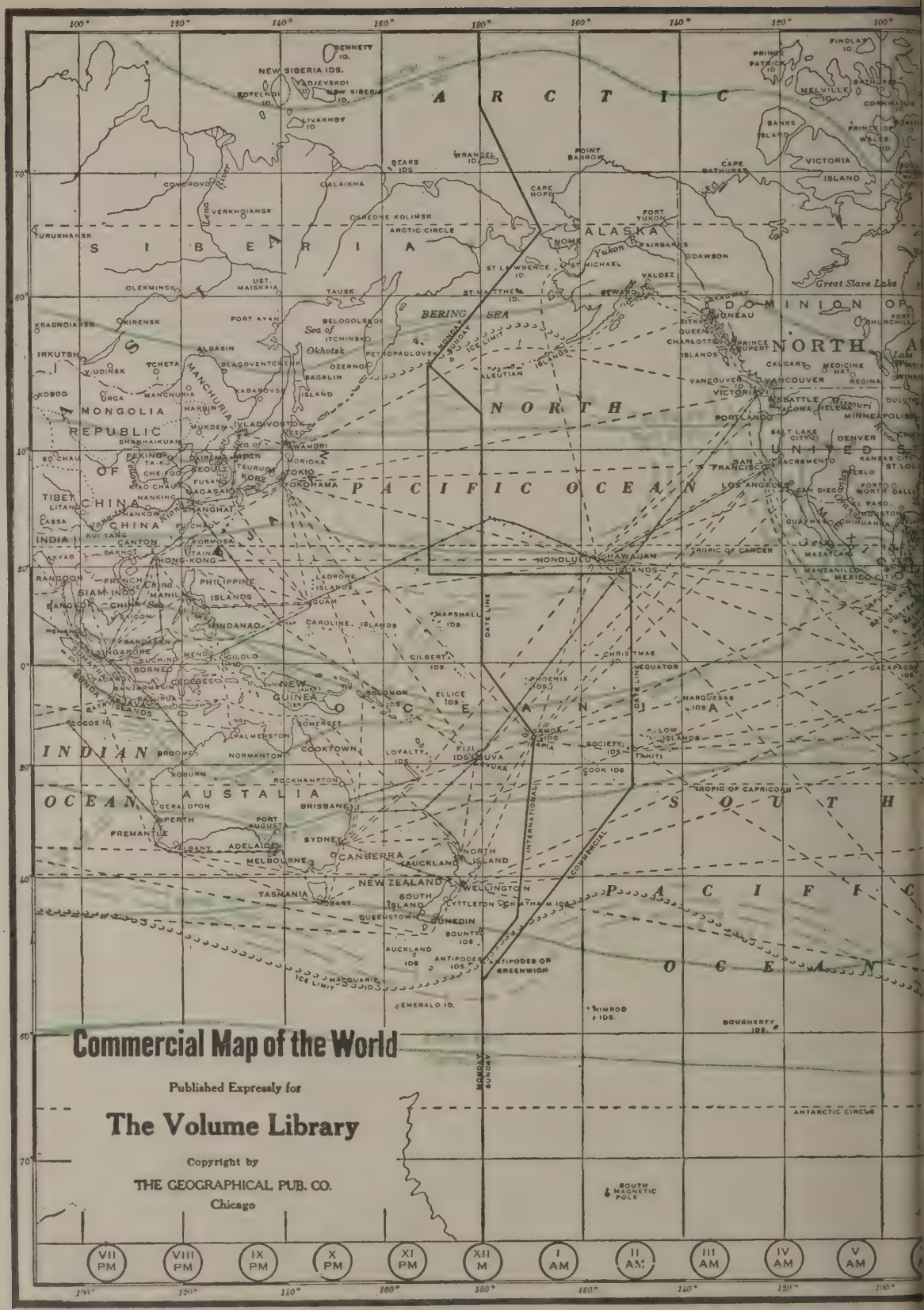
Key Pop.

Aden 16D....54
Agra 14N...185
Ahmabad 14O 274
Aleppo 10D..250
Allahibad 14O.155



CITIES

Amoy 14W.....400
Amristar 13M.160
Bagdad 11E...250
Baku 10H.. 250
Bangalore 18N.238
Bangkok 17S..628
Bareilly 14N...127
Baroda 15M.....94
Beirut 10D....180
Benares 14O...199
Bitlis 9E.......40
Bombay 16L..1,172
Brussa 8V.....110
Calcutta 15P.1.263
Canton 14V..1.367
Cawnpore 14N.213
Changchaun 14W 80
Changsha 13U1.271
Changte 13U..300
Chengtu 13T...450
Chinkiang 11V 477
Chungking 13T 1.011
Colombo 19N..244
Dacca 15P.....117
Damascus 10L 250
Delhi 14M.....303
Foochow 13W.1.491
Fukuoka 10Y...98
Haidrabad 17N 448
Hakodate 8Y...133
Hangschow 12W 729
Hankow 12U..289
Hanoi 15T......90
Hanyang 12V.400
Hiroshima 10X 176
Hongkong 14V.648
Howrah 15P. .179
Hue 16T.. ..60
Hukow 12W...300
Irkutsk 8R.....112
Ispahan 11H....80
Jabalpur 15N...90
Jaipur 14M....120
Jerusalem 11D..64
Kabul 12L.....150
Kaifong 11U 200
Kanazawa 9Y.158
Karachi 14K...215
Kiatingfu 13S.150
Kioto 9Y......591
Kirin 9W......100
Kobe 9Y.......608
Kokland 10M..112
Kukuhote 10T 200
Kwaihwacheng 10T .... .200
Kweiyang 14T.100
Lahore 9W....279
Liangchow 11S 200
Lucknow 14O..274
Madras 18N...522
Madura 19N...138
Mandalay 15R..147
Manila 16W...283
Medina 13D....10
Mecca 14D....70
Meerut 14N....122
Meshed 11J . 70
Mukden 9V....158
Nagasaki 11X 176
Nagoya 9Y ..420
Nagpur 15N .149
Nanking 12W 902
Ningpo 17W. [illegible]
Omsk 7N.. ..[illegible]
Osaka 9Y....1,[illegible]
Patnes 15O....136
Peking 10U..1,300
Poona 7M.....176
Port Arthur 10V . . .18
Rangoon 17R...339
Samarkand 10M ...80
Seoul 10W 247
Shanghai 11V.1,538
Siangtan 13U..300
Singapore 20T.423
Singan 12T...1,000
Sining 11T 150
Smyrna 8C .375
Srinigar 12N 141
Surat 16L.. 118
Tabriz 10F.....200
Taiyuen 11U...230
Tashkent 10M.188
Teheran 11H. 220
Tientsin 10U 858
Tiflis 6D 346
Tokio 9Y 2.173
Trebizond 9E ..55
[illegible] 10N 119
[illegible] 12T . . 150
Vladivostok 8W 108
Wei 10W......100
Wuchang 13V..500
Wuhu 12V.....235
Yangchau 13W 100
Yokohama 9Y.422



The International Date Line.—This line marks the change of day in circumnavigating the earth east or west. By common consent of the leading nations, it is placed in the Pacific; for a great part of its extent it coincides with the 180th meridian. When ships "cross the line," they add a day to their calendar if they are going west, and subtract a day if they are going east. Why? The date line is placed in the Pacific, far from most lands,

Approximate Length of Longest Day at Different Latitudes. North Latitude

	Days
90° (North Pole)	186
85°	161
80°	134
75°	103
70°	65

	Hrs.	Min.
66°33′	24	..
65°	21	9
60°	18	30
55°	17	7
50°	16	9
45°	15	26
40°	14	51
35°	14	22
30°	13	58
25°	13	34
20°	13	13
15°	12	53
10°	12	5
5°	12	17
0° (Equator)	12	..

South Latitude

0° (Equator)	12	..
5°	12	17
10°	12	35
15°	12	53
20°	13	13
25°	13	34
30°	13	58
35°	14	22
40°	14	51
45°	15	26
50°	16	9
55°	17	7
60°	18	30
65°	21	9
66°33′	24	..

	Days
70°	65
75°	103
80°	134
85°	161
90° (South Pole)	174

because the change is most conveniently made where traffic is not likely to be disturbed by a confusion of dates. As a matter of fact, the observance of the dateline is theoretical rather than actual, and sailing masters change time, not at the line, but most commonly at the nearest port of call. The line as drawn on the Flat-Globe represents the official interpretation of the United States Government at present.

OCEANIA

Area sq. mi., 4,215,000

Pop., 53,096,194

Admiralty Island 4D....
Archipelago of the Recherche 2G ....
Australia 3F 4,455
Austral Islands 12F ....
Avon Islands 6E ....
Baker Island 9C ....
Barren Island 5H ....
Bathurst Island 3E ....
Bismarck Archipelago 5D.188
Borneo 1C.1,625
Buccaneer Archipelago 2E ....
Caroline Islands 4B .68
Cato Island 6F..
Celebes 2D. 2,328
Chatham Islands 9H.†3
Christmas Island 11C...
Cook or Hervey Islands 10F..6
Cumberland Isles 5F......
Curtis Island 5F ....
Dampier Archipelago 1E..
D'Entrecasteaux Islands 5D...
Dirk Hartog Island 1F. ...
Dorre Island 1F..
Elice or Lagoon Islands 8D...
Fanning Island 10C....
Fiji Islands 8E 139
Friendly or Tong Islands 9E ....
Furneaux Group 5H ....
Gilbert Islands 8C 29
Great Barrier Island 8G ...
Great Sandy Island 5F ...
Groote Eylandt 4E ....
Guam 4B... 13
Hawaiian Islands 11A 255
Hervey or Cook Islands 10F...
Hinchinbrook Island 5E ...
Howland Island 9C ...
Hunter Islands 4H ....
Investigator Group 3G ...
Java 1D..35,017
Johnston Island 10B ....
Kangaroo Island 3G ...
King Island 4H ....
Lacerede Islands 2E...
Lagoon or Ellice Islands 8D .2
Lombok 1D.....
Louisiade Archipelago 5E..
Loyalty Islands 7E...
Maria Island 5H ....
Mariana Islands 4B ....
Marquesas Islands 13D.3
Marshall Islands 7B 15
Molucca Islands 3D 575
New Caledonia 6F 50
New Guinea 4D 271
New Hebrides 7E ....
New South Wales 5G 1,648
New-Zealand 8H ... 1,218
Norfolk Island 7F ....
North Island 8H 741
Northumberland Isles 5F......
Pelew Islands 4C ....
Philippine Islands 2B 10,350
Phoenix Islands 9C ....
Prince of Wales Island 4E ...
Queensland 3H 605
Resolution Island 7I.....
Samoa or Navigator Islands 9E 39
Sandalwood or Sumba Island 2D ....
Santa Cruz 6E
Society Islands 11E 13
Solomon Islands 6D 150
South Australia 3G 408
South Island 7H 177
Stewart Island 7I ....†3
Sumbawa 1D....
Tahiti 12E...11
Tasmania 5H.191
Timor 2D...377
Tonga or Friendly Islands 9E.23
Tutuila 9E.....
Union Islands 9D 1
Victoria 4G.1,315
Wake Island 7B ....
Wellesley Islands 4E...
Wessel Islands 4E ....
Western Australia 2F 282

CITIES

Town	Key	Pop. Thous.
Adelaide	3G	275
Argao	2B	35
Auckland	7H	157
Ballarat	4H	38
Barlie	2B	31
Batangas	2B	33
Bathurst	5G	9
Bauan	2B	39
Baybay	2B	22
Bendigo	4H	33
Boulder	1G	8
Brisbane	5F	209
Broken Hill	5G	22
Calbayog	2B	15
Capiz	2B	31
Cebu	2B	46
Charters Towers	5F	17
Christ Church	7H	105
Dunedin	7H	72
Fremantle	1G	25
Geelong	4H	36
Goulburn	5G	11
Gympie	5F	12
Hobart	5H	52
Ili-ilo	2B	48
Invercargill	7H	19
Ipswich	5F	25
Janiuay	2B	20
Laoag	2B	46
Launceston	5H	26
Lipa	2B	37
Maitland	5G	12
Manila	2B	283
Maryborough	5F	11
Melbourne	4H	784
Malolos	2B	20
Napier	7H	17
Newcastle	5G	62
Ormoc	2B	16
Palmerston	7H	16
Parramatta	5G	12
Perth	1G	155
Rockhampton	5F	20
Samarang	D	96
San Carlos	2B	27
Sibonga	2B	25
Sydney	5G	897
Tabaco	2B	21
Timaru	7H	15
Toowoomba	5F	21
Townsville	5F	13
Wanganui	7H	23
Wellington		

† POP. SHOWN IN HUNDREDS. WHERE POPULATION IS NOT GIVEN, LATE FIGURES WERE NOT OBTAINABLE.

BOOK VIII

DICTIONARY *of* BIOGRAPHY

Biographies in large type are those of the one hundred greatest men and women in history—so designated by a consensus of highest authorities.

Abbas I. (*ăb-băs'* or *ăb'băs*), **the Great**, shah or king of Persia, born in 1557, obtained the throne in 1586. He extended his rule beyond Persia proper, and at his death in 1628 his dominions stretched from the Tigris to the Indus. He is regarded by the Persians as their greatest sovereign.

Abbe (*ab'e*), **Cleveland,** meteorologist, was born in New York in 1838. He was graduated from College of the City of New York in 1857; Ph.D., 1891; LL.D., University of Michigan, 1888; in 1881 he became professor meteorologist U. S. Weather Bureau; professor meteorology, Columbia University in 1886. Was member National Academy of Sciences and many other scientific societies. Died, 1916.

Abbey, Edwin Austin, artist, was born in Philadelphia, Pa., in 1852, and began his art studies at the Philadelphia Academy of Fine Arts. He stands in the foremost rank of painters of historical and subject pictures. He acquired great fame as an illustrator of Shakespeare, whose plays have also supplied him with the subjects for some of his most successful pictures. Died, 1911.

Abbot, Ezra, American critic, was born in 1819. He contributed to periodicals, and also wrote several critical works in support of Unitarianism. Died, 1884.

Abbott, Jacob, author, was born at Hallowell, Me., in 1803, and was graduated from Bowdoin College in 1820. He studied theology at Andover, Mass. In 1838 he settled in Farmington, Me., where he died in 1879. He wrote there most of his books, which number in all more than two hundred. Among them are the *Rollo Books, Lucy Books, Jonas Books, Franconia Stories, Harper's Story Books, Marco Paul Series, Gay Family Series, and Juno Books.*

Abbott, John Stephen Cabot, a younger brother of Jacob Abbott, and author of many historical works, was born in Brunswick, Me., in 1805, and was graduated from Bowdoin College in 1825. He died in New Haven in 1877. Among his works are: *History of Napoleon Bonaparte; Napoleon at St. Helena; Life of Napoleon III.; History of the Civil War in America*, and *History of Frederick the Great.*

Abbott, Lyman, clergyman, author, editor, was born in Roxbury, Mass., in 1835; graduated from the University of New York in 1853; studied and practiced law; ordained Congregational minister in 1860. Edited Literary Record of *Harper's Magazine;* associate editor *The Christian Union* with Henry Ward Beecher, whom he succeeded as pastor of Plymouth church, Brooklyn, in 1888; resigned in 1898. Editor of *The Outlook;* author: *Jesus of Nazareth; Old Testament Shadows of New Testament Truths; A Study in Human Nature; In Aid of Faith; Life of Christ; Evolution of Christianity; The Theology of an Evolutionist; Henry Ward Beecher; Christian Ministry; Personality of God*, and *Industrial Problems.* Died 1922.

Abel (*ä'bel*)**, Niels Henrik,** noted Norwegian mathematician, was born at Findoe, Norway, in 1802, and died near Arenthal in 1829. His work on elliptic functions is particularly celebrated. His complete mathematical works were published in 1839.

Abelard (*ab'ē-lärd*), **Peter,** scholastic philosopher and theologian, the boldest thinker of the twelfth century, was born at Pallet, near Nantes, in 1079, and died in the Abbey of St. Marcel in 1142. The doctrines advanced by Abelard in his controversy with St. Bernard have a decidedly rationalistic tendency; and he and his predecessor, Erigena, may be looked upon as the first avowed representatives of that school.

Abercrombie (*ab'-ēr-krum-bi*), **James,** British general, was born in Scotland in 1706. He was commander-in-chief of the British forces in America in 1758. He died in 1781.

Abercromby, Sir Ralph, British general, born in Scotland in 1734. He served with much ability in Holland and in the West Indies, and in 1800 was chosen to command the forces to be sent against the French in Egypt, where he was killed in 1801.

About (*ä-bōō'*), **Edmond Francois Valentin,** French novelist and miscellaneous writer, born in 1828, died in 1885. He was educated at the Lycée Charlemagne and the Ecole-Normale, Paris; was sent at government expense to the French school at Athens; on his return to Paris, devoted himself to literature. He was latterly a member of the Academy.

Abraham, the progenitor of the Israelitish nation. He was a native of Chaldea, but migrated with his wife, Sarah, and his nephew, Lot, to Canaan, where he lived a nomadic life and worshiped the one God, Jehovah, in the midst of the polytheistic Canaanites. He died about 1800 B. C. Of his two sons, Isaac was the ancestor of the Israelites; and the Arabs claim to be descended from Ishmael.

Abruzzi (*ä-brōōt'sē*), **Duke of the,** prince of royal house of Italy, was born at Madrid, Spain, in 1873; scientist, explorer, aëronaut, sportsman, litterateur; traveled round world as a youth; ascended Mount St. Elias, Alaska, 1896; his Arctic expedition of 1899 penetrated nearest to north pole up to that time. In 1909 he ascended some of the highest peaks of the Himalayas.

Acton, Lord. See **Dalberg-Acton.**

Adams, Brooks, author, was born at Quincy, Mass., in 1848, son of the late Charles Francis Adams; graduated at Harvard in 1870; studied in Harvard law school one year; went as secretary to his father to Geneva, where the latter was arbitrator upon the Alabama claims under the treaty of Washington. Admitted to the bar; practiced law until 1881. Resumed law practice; lectured at Boston University school of law.

Adams, Charles Francis, statesman and economist, son of John Quincy Adams, was born in 1807; nominated by the Free Soil party for the office of vice-president in 1848; elected member of Congress 1858-60 by the Republicans; minister to England 1861-68; and one of the arbitrators of the Alabama claims, 1870. He was the Democratic candidate for governor of Massachusetts in 1876. He died in 1886.

Adams, Charles Francis Jr., historical writer, born in Boston, 1835; graduated at Harvard, 1856; admitted to the bar, 1858; served in union army through Civil War; brevetted brigadier-general, United States army, May, 1865. President Union Pacific railway, 1884-90; president Massachusetts Historical Society, 1895. Author: *Chapters on Erie and Other Essays; Railroads, Their Origin and Problems; Richard Henry Dana, a Biography* and other papers. Died, 1915.

Adams, Charles Kendall, educator, historian, was born at Derby, Vt., in 1835, and educated at the University of Michigan. From 1892 to 1901 was president of the University of Wisconsin. He was the author, among other writings of *Democracy and Monarchy in France; Manual of Historical Literature*, and of a monograph on *Christopher Columbus.* From 1892 to 1895 he acted as editor-in-chief of *Johnson's Universal Cyclopaedia.* Died in 1902.

Adams, George Burton, educator and historian, was born at Fairfield, Vt., in 1851. Educated at Beloit College, Yale, and the University of Leipzig. Professor of history at Yale, 1888-1925. Editor: Duruy's *Middle Ages;* Bemont and Monod's *Medieval Europe.* Author: *Civilization During the Middle Ages; The Growth of the French Nation; European History, Vol. II.*, in Hunt and Poole's *Political History of England.* Died 1925.

Adams, Henry, historian; born in Boston in 1838; graduated at Harvard, 1858; private secretary to his father, who was American minister at London, 1861-68; assistant professor of history at Harvard, 1870-77; editor *North American Review*, 1875-76. Author: *Essays in Anglo-Saxon Law; Historical Essays, Life of Albert Gallatin.* Died, 1919.

Adams, Henry Carter, professor of political economy and finance at the University of Michigan ; born in Davenport, Iowa, 1851; director Division Transportation, eleventh census; statistician Interstate Commerce Commission; president American Economic Association 1895-97. Author: *Outline of Lectures on Political Economy; State in Relation to Industrial Action*, etc. Died, 1921.

Adams, John, second president of the United States, was born at Quincy, Mass., in 1735, was graduated at Harvard in 1755, and was admitted to the bar in 1761. He was one of the delegates to the Continental Congress at Philadelphia, 1774. He was commissioner to the court of France, 1778. and was sent on an embassy to England, 1779. He was elected vice-president of the United States in 1789, and succeeded Washington as president in 1797. Died, 1826.

Adams, John Quincy, sixth president of the United States and son of the above, was born in Quincy, Mass., in 1767. When his father was elected president, the younger Adams was sent on an embassy to Berlin, and traveled through Silesia. On his return to America he was engaged as professor of rhetoric at Harvard University, and chosen United States senator for Massachusetts. When Monroe was elected president he recalled Adams from Europe, and made him secretary of state. On the retirement of Monroe from office Adams gained the presidency after a hard contest against Jackson, in 1825, and on the expiration of his term of office retired to Quincy, near Boston, but in 1830 was chosen as representative of his district. He died at Washington during the session of Congress 1848.

Adams, Maude, actress, was born at Salt Lake City in 1872; her family name was Kiskadden, but she adopted her mother's maiden name, Adams. She appeared on the stage in child's parts; went to school; starred as Lady Babbie in *The Little Minister*, 1897-98; as Juliet, in *Romeo and Juliet*, 1900; in *L'Aiglon*, 1900-01; in *Quality Street*, 1902; in *The Little Minister*, and *Hop o' My Thumb*, 1905; *Peter Pan*, 1906-07; *Joan of Arc*, 1909, etc.

Adams, Samuel, one of the American revolutionary leaders, was born in Boston, Mass., 1722. Adams was a member of the first Congress, and signed the Declaration of Independence in 1776; took an active part in framing the constitution of Massachusetts, and was for several years president of the senate of that state. Died, 1803.

Adams, William T. See **Optic, Oliver.**

Addams, Jane, social reformer, head resident of Hull House, Chicago, was born at Cedarville, Ill., in 1860; graduated from Rockford College, 1881; 1889 opened, with Miss Ellen Gates Starr, social settlement of Hull House; has been inspector of streets and alleys in neighborhood of Hull House, and has been a frequent writer and lecturer on social and political reform. Author: *Democracy and Social Ethics*, and *Newer Ideals of Peace.*

Addison, Joseph, English essayist, was born at Milston, England, in 1672, graduated at Oxford, and held for some years a fellowship at the university. Here some of his early writings brought him into notice and secured him a pension of $1,500 a year. At the death of King William his pension was stopped, and having no means of his own his prospects were gloomy indeed, until a lucky chance put him on his feet again. The ministry desired a poem written in praise of Marlborough, who had just won the battle of Blenheim. Addison wrote the poem, *The Campaign*, and was rewarded with the office of excise commissioner. In 1710 he began to bring out his famous essays. These he contributed to the *Tatler*, next to the *Spectator*, and afterwards to the *Guardian*, which he published in conjunction with his friend, Richard Steele. The most successful of these periodicals was the *Spectator.* It was a daily paper, but without any news. Addison died in 1719.

Ade (*ād*)**, George,** author and dramatist, was born at Kentland, Ind., 1866; graduated from Purdue University, 1887; in newspaper work in Lafayette, Ind., 1887-90; on *Chicago Record*, 1890-1900. Author: *Artie; Pink Marsh; Doc Horne; Fables in Slang;* Plays: *The Sultan of Sulu; Peggy From Paris; The County Chairman; The College Widow*, etc.

Adler, Cyrus, orientalist and archaeologist, was born at Van Buren, Ark., 1863; graduated from University of Pennsylvania, 1883; Ph.D., Johns Hopkins, 1887; librarian Smithsonian institution, 1892-1905, assistant secretary of same 1905-1908; He has written many articles on Semitic philology, Assyriology, Oriental archaeology, comparative religion, bibliography, American Jewish history, etc. Author: *Told in the Coffee House.*

Adler, Felix, educator, lecturer; born in Alzey, Germany, 1851. Studied under Hebrew rabbi; graduated at Columbia; studied at Berlin and Heidelberg; professor of Hebrew and Oriental literature at Cornell, 1874-76; established in 1876 New York Society for Ethical Culture, to which he gives regular Sunday discourses. Author: *Creed and Deed; The Moral Instruction of Children, etc.*

Adrian IV. (*ā'dri-an*), named Nicholas Breakspeare, the only English pope, was born about 1100. He was chosen abbot, then cardinal, and lastly pope in 1154. He was vigorous in maintaining his authority at Rome and throughout Europe. He died in Italy in 1159.

Ærenthal (*ā'ren-täl*), **Alois Leopold Baptist, Baron von,** Austro-Hungarian Minister for foreign affairs, was born in 1854. He was educated at Prague and Bonn Universities, and as a boy learned both Czech and German. He entered the diplomatic service in 1877, and served in Paris and St. Petersburg; minister to Roumania in

1895, and ambassador to Russia in 1899. In October, 1906, he was appointed to succeed Count Goluchowski. Died, 1912.

Æschines (*es'ki-nēz*), an Athenian orator, second only to Demosthenes, was born 389 B. C. He established a school of eloquence in Rhodes, and died at Samos, 314 B. C.

Aeschylus (*es'ki-lus*), the first in time of the three great tragic poets of Greece, born at Eleusis, in Attica, B. C. 525, died in Sicily 456 B. C. Before he gained distinction as a dramatist he had highly distinguished himself at the battle of Marathon (490), as he afterwards did at Artemisium, Salamis, and Plataea. He first gained the prize for tragedy in B. C. 484. *The Persians*, the earliest of his extant pieces, formed part of a trilogy which gained the prize in B. C. 472. In B. C. 468 he was defeated by Sophocles, and then is said to have gone to the court of Hiero, king of Syracuse. Altogether he is reputed to have composed seventy tragedies and gained thirteen triumphs. Only seven of his tragedies are extant: *The Persians, Seven Against Thebes, Suppliants, Prometheus, Agamemnon, Choephori*, and *Eumenides*, the last three forming a trilogy on the story of Orestes.

Aeschylus may be called the creator of Greek tragedy, both from the splendor of his dramatic writings, and from the scenic improvements and accessories he introduced. Till his time only one actor had appeared on the stage at a time, and by bringing on a second he was really the founder of dramatic dialogue. His style was grand, daring, and full of energy, though sometimes erring in excessive splendor of diction and imagery, if not indeed harsh or turgid. His plays have little or no plot, and his characters are drawn by a few powerful strokes.

References.—Plumptre's *Life of Æschylus;* English poetical translations of his plays by Blackie, Plumptre, Swanwick and Browning.

Æsop (*ē'sop*), celebrated fabulist, said to have been born in Phrygia about 620 B. C. Attached himself to the court of Croesus, King of Lydia. Sent by that monarch upon an embassy to Delphos, he so offended the inhabitants by the keenness of his sarcasms, that they hurled him from a rock into the sea. He died about 564 B. C.

Ætius (*ā-ē'shi-us*), Roman general, born about 396, in Moesia, in 433 became patrician, consul, and general-in-chief. His crowning victory was that at Chalons over Attila in 451; three years later the Emperor Valentinian III., jealous of his greatness, stabbed him to death with his own hand.

Agamemnon (*ag-ā-mem'non*), king of Mycenae and Argos, son of Atreus and Eriphyle, brother of Menelaus, and commander-in-chief of the Grecian army at the siege of Troy. Returning from Troy, Agamemnon was treacherously murdered by his wife, who, during his absence, had formed an attachment with Ægisthus, son of the noted Thyestes.

Agassiz (*ag'ā-sē*), **Alexander,** naturalist, born in Neufchatel, Switzerland, 1835; graduated at Harvard, 1855; Lawrence Scientific School, 1857; 1885-1910 engaged in zoölogical investigation. Appointed director Museum Comparative Zoölogy, Cambridge, 1902; appointed by Emperor William III. of Germany member Order of Merit, 1902; member of Academy of Science, Paris; president of National Academy of Science. Author: *Explorations of Lake Titicaca; List of the Echinoderms; Three Cruises of the Blake.* Died, 1910.

Agassiz, Louis Johann Rudolph, eminent naturalist, was born in Switzerland in 1807, the son of a Swiss Protestant clergyman. He studied medicine and graduated at Munich, but devoted himself principally to ichthyology, and was employed to classify and arrange the collection brought from Brazil by Martius and Spix. In 1846, he came to America, where he was well received, and in 1848 accepted the chair of zoölogy and geology at Harvard College. In 1865 he visited Brazil, and on his return placed the large collection he had made in the museum at Cambridge. He wrote *Glaciers, Outlines of Comparative Physiology, An Essay on Classification*, and numerous other valuable works, and was to the last a disbeliever in the Darwinian theory of evolution. Died, 1873.

Agesilaus (*ā-jes-i-lā'us*), king of Sparta from 397 B. C., was one of the most brilliant soldiers of antiquity. He was born in 444 B. C., and died in Egypt in 360 B. C.

Agricola (*ā-grik'ō-lā*), **Cnaeius Julius,** a Roman of the imperial times, distinguished not less by his great abilities as a statesman and a soldier than by the beauty of his private character; born at Forum Julii (now Frejus, in Provence, France) 37 A. D. He was the first Roman general who effectually subdued Britain, and the only one who displayed as much genius and success in training the inhabitants to the amenities of civilization as in breaking their rude force in war; died, 93.

Agrippa (*ā-grip'ā*), **Marcus Vipsanius,** a Roman citizen, who lived 63-12 B. C., and rose to an exalted position. Rome owed to him the restoration and construction of several aqueducts and of the Pantheon, besides other public works of ornament and utility.

Aguinaldo, Emilio, Filipino general, was born in the island of Luzon, 1870. He was educated at St. Thomas University in Manila. In the rebellion of 1896 against Spain he was an important though unsuccessful leader. When the Americans finally overcame the Spanish fleet in 1898, he organized another insurrection, this time for Philippine independence, making himself president of the government and assuming powers of dictator. He was several times defeated and fled to the mountains, where he was captured by General Funston. The next month, April, 1901, Aguinaldo took the oath of allegiance to the United States.

Ainsworth (*ānz'würth*), **William Harrison,** English novelist, was born at Manchester, England, in 1805, and educated at the grammar school. He had contributed some articles to magazines prior to 1822, and his earliest success was *Rookwood*, with its vivid description of Dick Turpin's ride to York. By 1881 he had published no fewer than thirty-nine novels. Seven of them were illustrated by Cruikshank. He died at Reigate in 1882.

Airy (*âr'i*), **George Biddell,** English mathematician, astronomer, physicist, and engineer, was born at Alnwick, England, in 1801; was graduated at Trinity College, Cambridge, in 1823; soon after published his *Mathematical Tracts on the Lunar and Planetary Theories*, the *Figures of the Earth*, and the *Undulatory Theory of Optics*. As astronomer-royal at Greenwich he introduced the systematic observation of the magnetic elements, and carried on investigations in the Lunar Theory, the magnetism of iron ships, the density of the earth, the length of the seconds-pendulum, and in a great variety of other subjects. After his retirement from the direction of the Greenwich Observatory, in 1881, he was continuously engaged upon his Numerical Lunar Theory. He died in 1892.

Akbar (*ăk'bĕr*), celebrated Mogul emperor, was born at Amarkote in Sindh in 1542. He encouraged commerce, and had the land carefully measured so that the taxes should be fair. His people were of different races and religions, but he was just and tolerant to all. Measures like these gained for him the title of "Guardian of Mankind," and caused him to be held up as a model to Indian princes of later times. He died in 1605.

Akenside (*ā'ken-sid*), **Mark,** an English poet, was born in 1721, died in 1770. He owes his position among the poets chiefly to his *Pleasure of the Imagination*, a poem which at once became famous.

Alarcon Y Mendoza (*ā-lär-kän' ē men-dō'thä*), **Don Juan Ruiz de,** one of the most distinguished dramatic poets of Spain, born in Mexico about the beginning of the seventeenth century. He went to Europe about 1622, and in 1628 published a volume containing eight comedies, and in 1634 another containing twelve. His *Tejador de Segovia*, (Weaver of Segovia), and *Las Paredse Oyen*, (Walls Have Ears), are still performed on the Spanish stage. He died in 1639.

Alaric I. (*al'ā-rik*), king of the Visigoths, was born about the middle of the fourth century. In 396 he ravaged Greece, from which he was driven by the Roman general, Stilicho, but made a masterly retreat to Illyria. In 400 he invaded Italy, but was defeated by Stilicho at Pollentia in 403. Alaric made a second invasion of Italy, during which he besieged Rome thrice. The first time 408, the city was saved by paying a heavy ransom; the second, 409, it capitulated. Alaric led a third siege, and the city was taken in 410, and sacked for six days, Alaric, however, doing everything in his power to restrain the violence of his followers.

Albani (*ăl-bä'nē*), **Madame** (nêe **Emma La Jeunesse**), vocalist, was born in 1851 at Chambly, Canada, and was trained in music by her father. At twelve she made her début at Albany, N. Y., whence she assumed the professional name of Albani. In 1878 she married Mr. Ernest Gye, eldest son of the director of the Royal Italian Opera, London, and has since resided in that city.

Albert, prince of Saxe-Coburg-Gotha and husband of the late Queen Victoria of England, was born near Coburg, Germany, in 1819. He married Victoria in 1840; soon after was made field-marshal in the British army, and in 1857 received the title of prince consort. He acquired great influence in public affairs as the prudent and trusted adviser of the queen, and became popular throughout England. He died in 1861.

Albert I, king of Belgium, was born in 1875. Carefully educated, he traveled widely, urged many reforms in the Belgian Congo. In 1900 married the Duchess Elizabeth of Bavaria. His heroic leadership in resisting the Germans of 1914 made him the idol of the Belgian people, and commanded the respect of the civilized world. Following the expulsion of the Germans, he and his queen reentered Brussels, and at once proclaimed an independent Belgium, based on universal suffrage and representative government.

Alberti (*ăl-ber'tē*), **Leon Battista,** an Italian architect, and writer on art and poetry, was born at Florence, Italy, in 1404; died at Rome in 1472. He was much employed by Pope Nicholas V. He completed the Pitti Palace at Florence, and designed the church of St. Frances at Rimini. His chief book, *De Re Ædificatovia*, is highly valued.

Albertus Magnus (*ăl-ber'tus măg'nus*), Count of Bollstadt, the *Doctor Universalis* of the schoolmen, was born at Lauingen, in Swabia, about 1193, studied at Padua, and, entering the newly founded Dominican order, taught in the schools of Hildesheim, Ratisbon, and Cologne. Of his works the most notable are the *Summa Theologiat* and the *Summa de Creaturis*. Albertus excelled all his contemporaries in the wideness of his learning, and in legend appears as a magician.

Albuquerque (*ăl-bō-kâr'kā*), **Affonso de,** an eminent Portuguese admiral, born in 1453, died in 1515. His career was extremely successful. He extended the Portuguese power over Malabar, Ceylon, the Sunda Islands, and the Peninsula of Malacca, and made the Portuguese name respected by all the nations and princes of India.

Alcæus (*al-sē'us*), of Mitylene, one of the greatest lyric poets of Greece, flourished about the end of the seventh or the beginning of the sixth century B. C. He was the inventor of the form of verse which after him is called the Alcaic, and which Horace, the happiest of his imitators, transplanted into the Latin language.

Alcibiades (*al-si-bī'ā-dēz*), Athenian general, was born at Athens 450 B. C. His handsome person, his distinguished parentage, and the high position of Pericles procured him a multitude of friends and admirers. Socrates was one of the former, and gained considerable influence over him. After a distinguished career in military life in Greece and Persia he was put to death 401 B. C.

Alcott, Louisa May, daughter of Amos Bronson Alcott, a famous American authoress, was born in Germantown, Pa., in 1832. Her first volume was *Flower Fables*, published in 1855. During the Civil War she was a volunteer nurse in the South, and wrote *Hospital Sketches* in 1863. *Little Women* was published in 1868, and was followed at short intervals by *Little Men, Jo's Boys*, etc. She died in 1888 at Boston, Mass.

Alcuin (*al'kwin*), or **Flaccus Albinus,** the most distinguished scholar of the eighth century, the confidant and adviser of Charlemagne, was born at York about 735. At his death in 804 he left, besides numerous theological writings, a number of elementary works on philosophy, mathematics, rhetoric, and philology; also poems and a great number of letters.

Alden, Henry Mills, author, classical scholar and editor, was born at Mount Tabor, near Danby, Vt., 1836; graduated from Williams College in 1857, Andover Theological Seminary in 1860. Managing editor *Harper's Weekly* 1863-69. Died, 1919.

Alden, John, one of the Pilgrims to Plymouth, Mass., was born in England in 1599, died at Duxbury, Mass., in 1687. He was one of the signers of the compact in the cabin of the *Mayflower*. Alden married Priscilla Mullens, to whom his first proposal was in behalf of Miles Standish, but Priscilla indicated her preference for Alden over the soldier. He was a magistrate for more than fifty years, and greatly assisted in the government of the infant colony.

Alderman, Edwin Anderson, educator, president of the University of Virginia since 1904, was born at Wilmington, N. C., in 1861; graduated from the University of North Carolina, 1882; D. C. L.; LL.D.; professor of English, State Normal College, 1892; professor pedagogy, University of North Carolina, 1892-96; president of same 1896-99; president Tulane University, 1899-1904. He is well known as a speaker and lecturer. Author, *Life of William Hooper, signer of the Declaration; School History of North Carolina.*

Aldrich, Nelson Wilmarth, former United States senator, was born at Foster, R. I., in 1841; received an academic education; president of the Providence common council, 1871-73; member of the Rhode Island general assembly 1875-76, elected to the House of Representatives of the Forty-sixth Congress and reëlected to the Forty-seventh Congress; elected, 1881, to the United States Senate to succeed Ambrose E. Burnside, and was reëlected 1886, in 1892, 1898 and 1905. For many years he was Republican leader of the Senate, and was co-author of the Payne-Aldrich Tariff bill. Died in 1916.

Aldrich, Thomas Bailey, poet and editor, was born in Portsmouth, N. H., 1836. While engaged in the office of a New York merchant he began to write verses, the success of which soon induced him to enter on a literary career. His first volume, miscellaneous poems, was published in 1855, and was called *The Bells;* afterward he published *Babie Bell*, several other volumes of poems, and *The Story of a Bad Boy*. He was on the editorial staff of the *Home Journal*, 1856-59, and *Every Saturday*. In 1881 he became editor of the *Atlantic Monthly*, but resigned in 1890. Died at Boston 1907.

Alexander the Great, or **Alexander III.,** of Macedon, was born in 356 B. C., son of

Philip. He was educated partly by Aristotle, and early gave proofs of skill and courage. A revolt of Thebes at the commencement of his reign was promptly quelled with great severity; then crossing the Hellespont, he marched against the Persians, whom he repeatedly defeated, conquering Phenicia and Egypt. After the final defeat of Darius at Gaugamela, and the capture of Babylon, Susa, and Persepolis, Alexander commenced the conquest of India, but after crossing the Indus and penetrating as far as the Ganges, he was compelled to return to Babylon, but paused at Susa to celebrate his marriage with the daughter of Darius. He died at Babylon, after a reign of about thirteen years; his body was embalmed and taken to Alexandria, which city had been founded by him and named in his honor. Died 323 B. C.

References.—Hogarth's *Philip and Alexander of Macedon;* Wheeler's *Alexander the Great;* M'Crindle's *The Invasion of India by Alexander the Great.* Dr. Budge has edited Syriac and Ethiopic *Lives* of Alexander.

Alexander I., emperor of Russia, 1801-25, was born at St. Petersburg in 1777. In 1793 he married Elizabeth, daughter of Karl Ludwig, crown prince of Baden, and, on the assassination of his father, Paul, in 1801, succeeded him on the throne. He encouraged education and science, and carried out many reforms. In 1805 he joined the coalition against Napoleon, and was present at the battle of Austerlitz. In 1808 he conquered Finland, and in 1806-12 waged a successful war against Turkey. He died at Taganrog, 1825.

Alexander II., emperor of Russia, 1855-81, was born in 1818. In 1841 married the Princess Marie, daughter of the Grand-duke of Hesse. He succeeded to the throne in 1855, and a year later the Crimean war was terminated by the peace of Paris. The grand achievement of his reign, which was in great measure his own deed, was the emancipation of the serfs—twenty-three million souls—in 1861. He resisted strenuously all foreign interference with Polish affairs during the insurrection of 1863, which was suppressed with great severity. During his reign, the Russian empire was widely extended in the Caucasus and in Central Asia. By his establishment of schools and internal improvements he did more to build up Russia than any emperor since Peter the Great. He was assassinated at St. Petersburg in 1881.

Alexander III., emperor of Russia, 1881-94, was born in 1845. He showed vigor in government and ability in repressing the Nihilists. The harsh laws against the Jews and the severe famine of 1892 are among the later events of his reign. In 1866 he married Princess Dagmar of Denmark, sister of the queen-dowager Alexandra of Great Britain. His son, Nicholas II., succeeded him when he died at Livadia, Crimea, in 1894.

Alexander, John White, American composer, was born in Allegheny City, 1856. He was an artist's apprentice on *Harper's Weekly* at eighteen, working with Abbey, Pennell, and Pyle. In 1877 he went to Munich where he studied and won numerous honors. His pictures, mainly portraits and figures, are exhibited in many galleries. He was president of the National Academy of Design from 1909 until his death in 1915.

Alexander, Nevski (*nef'ske*), Russian hero and saint, was born at Vladimir in 1219, the son of the grand duke Jaroslav of Novgorod. He received the surname of Nevski on account of the splendid victory over the Swedes which he achieved in 1240 on the Neva, in the province where Petrograd now stands. At the death of his father, in 1247, he became grand duke of Vladimir, when Pope Innocent IV. made a diplomatic attempt to reunite the Greek and Roman churches, and with this view sent an embassy to Alexander which proved ineffectual. He died in 1263 at Kassimcow.

Alexander Severus, Roman emperor, 222-235, born about 208, was the cousin, adopted son, and successor to Heliogabalus. Although a pagan he reverenced the doctrines of Christianity. During a campaign against the Germans on the Rhine, to defend the frontiers of the empire from their incursions, an insurrection broke out among his troops, headed by Maximin, in which he was murdered, 235.

Alexeieff (*ā-leks-ā'yef*), **Eugenii Ivanovitch,** Russian admiral, was born in 1844. He was educated in the naval school of Russia; chief of eastern fleet during Japanese-Chinese war, 1897. In 1898 he was made vice-admiral, and commander of Kwangtung province. In 1900-01 he was chief of the Russian Pacific squadron, but his conduct of affairs during the Russo-Japanese war led to his recall to Russia, 1904.

Alexius I. Comnenus (*ā-lek'si-us kom-nē'nus*), one of the ablest Byzantine emperors, was born at Constantinople, 1048, was the nephew of the emperor Isaac Comnenus, and in 1081 was elevated by his soldiers to the throne. Died in 1118.

Alfieri (*ăl-fi-ā'rē*), **Vittorio, Count,** Italian dramatic poet, was born in Piedmont in 1749. He began at a mature age to learn Latin, and also to study the Tuscan dialect, for which purpose he went to Tuscany. On his journey thither he made the acquaintance of the countess of Albany, to whom he became deeply attached and to whom he was privately married. He left twenty-one tragedies and six comedies, besides various odes and sonnets. Died in Florence, 1803.

Alfonso V., king of Aragon, Naples, and Sicily, was born in 1385. He received the surname of "the Magnanimous" because on his accession to the throne he destroyed a document containing the names of all the grandees who were hostile to him. He honorably distinguished himself by his patronage of letters; died at Naples in 1458.

Alfonso X., surnamed "the Astronomer," "the Philosopher," or "the Wise," king of Leon and Castile, was born 1226; succeeded his father, Ferdinand III., in 1252; died at Seville, 1284. He was the most learned prince of his time, and acquired lasting fame through the completion of the code of laws commenced by his father.

Alfonso XIII., king of Spain, is the son of the late King Alfonso XII. and Queen Marie Christina, a daughter of the late Karl Ferdinand, archduke of Austria. He was born after his father's death, in 1886, and his childhood was spent at Madrid and the Palace of Miramar, in San Sebastian. In Spain the sovereign comes of age at sixteen, and during the king's minority his mother reigned as queen regent. On May 17, 1902, the regency ceased, and Alfonso XIII. assumed his full powers. On May 31, 1906, he married Princess Ena of Battenberg.

Alfred the Great, the youngest son of Ethelwolf, king of the West Saxons, born 849. After the death of his brother, Alfred mounted the throne of England in 871, at a time when the kingdom was a prey to the invasion of the Danes, and to domestic dissensions. After several unfortunate actions with the Danes, Alfred concealed his misfortunes for a year under the dress of a peasant, till the success of one of his chiefs, Odun, earl of Devon, in defeating a body of Danes, drew him from his retirement. The Danes were completely defeated at Eddington, in 878. After the victory, Alfred behaved with great magnanimity to his foes, giving up the kingdom of the East Angles to those of the Danes who embraced Christianity. From that time, however, though the Danes occasionally repeated their depredations, the mind of Alfred was not shaken from its noble purpose of enlightening his subjects, and giving stability to their independence. He is said to have been engaged in 56 battles, by sea and land, although his valor as a warrior has excited less admiration than his wisdom as a legislator. He composed a body of statutes, instituted the trial by jury, and divided the kingdom into shires and tithings. He was so exact in his government that robbery was unheard of, and valuable goods might be left on the highway without danger. He founded, or, according to others, restored the University of Oxford, and filled the professional chairs with men of taste, genius, and erudition. He was himself a learned prince, and composed several works. To Alfred, also, England is indebted for the foundation of her naval establishments, and he was the first to send out ships to make the discovery of a northeast passage. In private life he was benevolent, pious, cheerful, and affable, and his deportment was both dignified and engaging. After a reign of over 28 years, he died, 901. He left by his queen, Elswitha, two sons and three daughters, and was succeeded by his second son, Edward, surnamed the Elder.

References.—The *Anglo-Saxon Chronicle* is the best authority on Alfred. There are *Lives* by Asser, Powell, Spelman, Bicknell, Reinhold Pauli and Thomas Hughes. See also Alfred's Laws in Thorpe's *Collection* and Turk's *Legal Code of Alfred the Great.*

Algardi (*ăl-gär'dē*), **Alessandro,** noted Italian sculptor, was born at Bologna, Italy, 1602. His chief work is a colossal relievo, in St. Peter's of *Pope Leo Restraining Attila From Marching on Rome.* Died at Rome in 1654.

Alger (*ăl'jĕr*), **Russell Alexander,** soldier, capitalist; born in Ohio, 1836. Taught school two winters; admitted to bar 1859; began practice in Cleveland; removed to Michigan 1860; began lumbering in a small way; enlisted 1861, and served in Civil War from captain to major-general of volunteers. In lumber business after war. Was governor of Michigan, 1885 and 1886; candidate for president in republican national convention, 1888; secretary of war, 1897-99, resigned; United States senator, 1902-7. Author: *The Spanish-American War.* Died, 1907.

Alison, Sir Archibald, lawyer and historian; was born at Kenley, England, 1792. He was admitted to the bar in 1814, occupied subsequently prominent legal positions, and was a writer on law, politics, and literature. His chief work, however, is *The History of Europe During the French Revolution,* which was exceedingly popular. He was created a baronet in 1852 and died near Glasgow, Scotland, 1867.

Allegri (*ăl-lā'grē*), **Gregorio,** musical composer, was born at Rome about 1584. He studied under Napani, and was a friend of Palestrini. He composed motets and sacred pieces; and was retained in the choir of the Sistine chapel, Rome, by Urban VIII., until his death, 1652.

Allen, Charles Grant Blairfindie, author and naturalist, born at Kingston, Canada, in 1848, graduated from Merton College, Oxford, in 1871. After four years at Queen's College, Jamaica, as professor of logic and principal, 1873-77, he returned to England, and, adopting a literary career, published *Physiological Æsthetics, Color Sense, Evolutionist at Large, Darwin,* and several clever novels—*Babylon; In all Shades; The Woman Who Did; An African Millionaire,* etc. He also wrote several books on travel. Died, 1899.

Allen, Ethan, soldier, was born at Litchfield, Conn., about 1737, and distinguished himself early in the Revolutionary War by the surprise and capture of Fort Ticonderoga in 1775. He next did good service in Montgomery's expedition to Canada, but was taken prisoner, and not exchanged until 1778. He was afterward a member of the Vermont legislature. He was author of a deistical work *Reason the Only Oracle of Man.* Died, 1789.

Allen, James Lane, author, born in Kentucky, 1849; graduate of Kentucky University; taught in Kentucky University; later professor of Latin and higher English, Bethany, West Virginia College; after 1886, he gave his entire attention to literature. Author: *Flute and Violin; The Blue Grass Region and Other Sketches of Kentucky; John Gray, The Kentucky Cardinal; Aftermath; A Summer in Arcady; The Choir Invisible; The Reign of Law, The Mettle of the Pasture,* etc. Died, 1925.

Allen, Viola, actress, born in New Orleans, La., 1867; was educated in Boston and at Wykham Hall, Toronto, and boarding school in New York. Made debut, Madison Square theater, New York, in *Esmeralda,* at age of fifteen; after few months joined John McCullough company, playing Virginia, Desdemona, Cordelia, etc. Subsequently played leading classical Shakespearean, and comedy rôles with Lawrence Barrett Tommaso Salvini, Joseph Jefferson, and William J. Florence. Leading lady at Boston Museum for a season; also at Empire theater in 1893, and four years following, creating and playing rôles in *Liberty Hall; Sowing the Wind; The Masqueraders; Under the Red Robe,* etc. Starred, 1898, as Gloria Quayle in *The Christian,* and in 1900 produced *In the Palace of the King;* and, in 1902, as Roma in *The Eternal City.* In 1903 began series of Shakespearean revivals, producing *Twelfth Night, A Winter's Tale, As You Like It.*

Allenby, Gen. Sir Edmund (Henry Hynman), (1861—), English General served in Bechuanaland expedition 1884-5, Zulu War, 1888, South African War, 1899-1902, and in the World War. British Armies under Allenby captured Jerusalem from the Turks, December 10, 1917. A decisive and crushing victory at Samaria, September 18-22, 1918, over 100,000 Turks.

Allison, William Boyd, lawyer, American legislator, was born in Ohio, 1829; educated at Western Reserve College and practiced law until 1857; emigrated to Iowa; served in the Civil War; was sent to Congress while that struggle was going on, and remained as representative and senator from that time, save in 1872-73. His influence was marked and salutary on the legislation of his day. Died, 1908.

Allston, Washington, American painter, was born in South Carolina, in 1779; graduated at Harvard in 1800, and went the next year to London to study art. In 1803 he went to Paris, and in 1805 to Rome, where he formed a close intimacy with Thorwalsden and Coleridge. Elected an A. R. A. in 1819, he had the year before returned finally to America, and fixed his residence at Cambridge, Mass., where he died in 1843.

Alma-Tadema (*ăl'mä-tä'de-mä*), **Sir Laurence,** painter of classical subjects, born in Dronryp, Friesland, in 1836; studied at the Royal Academy of Antwerp, and was afterwards pupil and assistant of Baron Henry Leys. He settled in England in 1873, where his pictures found a ready welcome. He was elected A. R. A. in 1879. Died, 1912.

Almqvist (*älm'kvist*), **Karl Jonas Ludvig,** Swedish author, was born at Stockholm in 1793, and died at Bremen in 1866. His romances as a whole, are considered the best in the Swedish language. *The Book of the Thorn-Rose* is regarded as the best.

Alstroemer (*ăl'strē-mĕr*), **Jonas,** Swedish industrial reformer, was born in 1685, and is noted for the great commercial improvements which he introduced into his native country. So extensive

and successful were the manufacturing and agricultural resources which he introduced, that the state ennobled him, made him chancellor of commerce, and erected a statue to his honor on the Stockholm Exchange. Died, 1761.

Alva, Fernando Alvarez, de Toledo, duke of, Spanish governor of the Netherlands under Philip II. of Spain, was born in 1508. Alva was recalled in 1573, but he was soon given the command of Portugal, which he quickly conquered. Though his pride and cruelty were excessive, he was undoubtedly one of the greatest generals of his age. Died, 1582.

Alvarado (*al-vä-rä'dō*), **Alonzo,** one of the Spanish conquerors of Mexico and Peru under Pizarro, was born at Burgos about 1490; he was defeated and made prisoner by the Incan leader, Almagro. He afterward joined De Castro, and was lieutenant-general of the armed force which suppressed the rebellion of Gonzalo Pizarro in 1548. Died, 1554.

Alvarado, Pedro d', Spanish cavalier, was born in Badajoz, 1485. He took part in the expedition and victories of Cortez, and was intrusted with the command of the city of Mexico, and afterward made governor of Guatemala and Honduras. He explored California, and was killed soon after his return in an expedition against Jalisco. Died, 1541.

Alverstone, First Baron, Sir Richard Everard Webster, Lord Chief Justice of England since 1900, was born in 1842. He was graduated at Trinity College, Cambridge, and holds the degrees M.A., LL. D., D. C. L.; Q. C., 1878; Attorney-general, 1885-86, 1886-92, and 1895-1900; M. P. Isle of Wight, 1885-1900; Master of the Rolls, 1900. He was knighted in 1885, and created a baronet and baron in 1900. Died, 1915.

Alzog (*äl'tsōg*), **Johann Baptist,** Roman Catholic historian, was born in Ohlan, Silesia, 1808. He was professor of church history in the University of Freiburg, and wrote a *Manual of General Church History*, which is known in many languages. He was also the author of an *Outline of Pathology*, and in 1869 was a member of the commission on dogma which prepared the work for the vatican council. Died at Freiburg, Baden, 1878.

Ambrose (*am'brōz*), **St.,** a doctor in the Latin Church of the fourth century, was born at Treves, Gaul, 340. Consecrated archbishop of Milan, 374. Ambrose was repeatedly, in the discharge of his duty to the Church, brought into direct conflict with the highest secular authority. To him we owe the noble hymn, *Te Deum Laudamus*. No father of the Church has a wider fame. Died at Milan in 397.

Amerigo Vespucci (*ä-mä-rē'gō ves-pōō'chē*). See **Vespucci.**

Ames (*āms*), **Fisher,** American lawyer and politician, was born at Dedham, Mass., 1758. He was graduated from Harvard in 1774; began the practice of law in 1781; sat in the Massachusetts convention, and was afterward a member of Congress, and famed for his eloquence. He retired from public life with Washington, and devoted himself to literary pursuits; was elected president of Harvard College in 1804, which he declined. Died, 1808.

Ames, James Barr, dean Harvard Law School, 1895-1910; born at Boston, Mass., 1846; graduate of Harvard, 1868; Harvard Law School, 1872; LL.D., University of the City of New York, University of Wisconsin, 1898; Harvard, 1904. Instructor in history, 1872-73; associate professor of law, 1873-77, became professor of law, 1877, Harvard. Compiled collections of cases on torts, pleading, bills and notes, partnership, trust suretyship, admiralty and equity jurisdiction; was author of numerous articles in *Harvard Law Review* and other law reviews. Died, 1910.

Ames, Joseph Sweetman, physicist, professor of physics and director Physical Laboratory Johns Hopkins, was born at Manchester, Vt., 1864; graduated from Johns Hopkins in 1886; Ph.D., 1890. Author: *Theory of Physics; Manual of Experiments in Physics; Elements of Physics; Free Expansion of Gases.*

Amherst (*am'erst*), **Jeffrey, Lord,** British general, was born at Riverhead, England, 1717. As major-general he served on the continent and in America, where he succeeded Abercrombie as commander-in-chief. Here he was remarkably successful and, after many victories, Montreal surrendered and Newfoundland was recovered from the French. He was raised to the peerage in 1776, and was appointed field marshal in 1796. Died, 1797.

Ami, Henry M., assistant palæontologist, Geological Survey of Canada, 1882, was born at Belle Riviere, near Montreal, 1858; graduated from McGill University, B. A., 1882; M.A., 1885; D.SC., Queen's, 1892; McGill, 1907.

Amundsen, Roald (1872-1928), Norwegian explorer, discoverer of the South Pole and first to fly over North Pole in a dirigible, was born at Borge, Norway, 1872. At twenty-five he went as mate on the Belgian Antarctic Expedition. He sailed on his own expedition in 1903 and in 1905 located the Northwest Passage and the North Magnetic Pole. On Dec. 14, 1911, he planted the flag of Norway at the South Pole. He reached the North Pole by dirigible, the *Norge*, in 1926. Flying to the relief of Nobile in 1928, Amundsen lost his life. Author, *The Northwest Passage; The South Pole: My Life as an Explorer.*

Amontons (*ä'mōn'tōn'*), **Guillaume,** French physicist, born in Paris, 1663. In France, is considered the inventor of the telegraph; and, almost at the same time with Halley in England, he found that the boiling point of water varies with the elevation. Died, 1705.

Ampere (*ăn'pâr*), **Andre Marie,** a distinguished mathematician and naturalist, was born at Lyons in 1775. In 1805, after he had been engaged for some time as private mathematical tutor at Lyons, he was called to Paris, where he distinguished himself as an able teacher in the polytechnic school and wrote his essay on the *Mathematical Theory of Chances.* Died, 1836.

Amurath (*ä-mōō-rät'*), or **Murad I.,** sultan of Turkey, was born about 1319. He succeeded his father, Orkhan, in 1360. He was the first to lead Turkish arms into Europe, and in 1361 took Adrianople. Urban V. preached a crusade against him, but the venture was disastrous to the Christians. He lost his life in the battle of Kossovo, 1389.

Amurath, or **Murad II.,** sultan of Turkey, was born about 1403. He succeeded Mohammed I. in 1422. He invaded Albania and the Peloponnesus, where George Castriot (*Scanderbeg*) defeated him; but retreated only to gain a great victory over his former adversary, Hunniades, at Kossovo, in 1448; in his reign poetry, jurisprudence, and theology began to flourish. Died of apoplexy at Adrianople, 1451.

Anacreon (*ä-nak'rē-ŏn*), celebrated Greek lyric poet, was born at Teos in Ionia, about 563 B. C. He was patronized by Polycrates, the tyrant of Samos, and Hipparchus, the tyrant of Athens. He died at Abdera, about 478 B. C., suffocated by a grape-stone while in the act of drinking. His poems are chiefly devoted to the praises of love, pleasure, and wine.

Anastasius I. (*an-as-tā'shi-us*), emperor of the East, was born 430 at Dyrrachium, in Epirus, and proclaimed emperor at the age of sixty. He suppressed the cruel and degrading spectacles where men fought with wild beasts, abolished the sale of offices, built a wall on the west side of Constantinople to defend it from the incursions of the barbarians. Died, 518.

Anaxagoras (*an-aks-ag'ō-rās*), Greek philosopher of the Ionian school, was born at Clazomenae about 500 B. C. He studied under Anaximenes, and, after traveling through all the known parts of the globe, in search of knowledge, established himself at Athens, where he opened the first school of philosophy. Pericles, Socrates, and Euripides were among his pupils. Died, 428 B. C.

Andersen, Hans Christian, novelist, poet, and writer of fairy tales, was born at Odense, in Funen, 1805. He completed his *Agnes and the Merman* in Switzerland; and one of his best works, *The Improvisatore*, a series of scenes depicted in a glowing style and full of poetic interest, was the fruit of a visit to Italy. In the end of 1840 he commenced a somewhat lengthened tour in Italy and the East, of which he gave an account in *A Poet's Bazar*, 1842. His works have all been translated into German and English. His *Dying Child* has been translated into the language of Greenland; and on his seventieth birthday he was presented with a book containing one of his tales in fifteen languages. He died in 1875.

Anderson, Mary. See **Navarro, Mary Anderson de**

Anderson, Rasmus Bjorn, author, diplomat; born at Albion, Wisconsin, of Norwegian parentage, 1846; graduate of Luther College, Decorah, Iowa, 1866; University of Wisconsin, 1869; LL.D., 1888; professor of Scandinavian languages and literature, 1875-83; United States minister to Denmark, 1885-89. Editor and publisher of *Amerika* since 1898. Author: *Norse Mythology; Viking Tales of the North; America Not Discovered by Columbus; The Younger Edda; First Chapter of Norwegian Immigration*, 1821-1840; also many translations of Norse books, and author of several works in Norwegian.

Anderson, Sherwood, Author of short stories, was born at Camden, Ohio, 1876. Of poor parents "always on the road," with small commercial ventures, he obtained what education he could at public schools and through his own reading. Today he is preeminent as a story teller in the realistic vein. In his *Winesburg, Ohio*, and *The Triumph of the Egg*, both very candid in their subjects and treatments, he displays masterly vision and force. Other works are *Windy McPherson's Son, Many Marriages, A Story Teller's Story*, and *Dark Laughter.*

Andrassy (*on'drä-shē*), **Count Gyula,** Hungarian statesman, was born 1823, of an ancient and noble family. In 1867, when the right of self-government was conceded to Hungary, he was appointed premier of the New Hungarian ministry. He was a member of the Presburg Diet in 1847-48; lord-lieutenant of the county of Zempton, and Hungarian ambassador to Constantinople. Died, 1890.

Andre (*ăn'drā* or *an'drē*), **John,** British soldier, born in London, England, 1751; served in the war with America, and rose to the rank of major. He conducted the negotiations with Benedict Arnold for the betrayal of West Point, but being discovered in disguise, was arrested and put to death as a spy. His remains lie in Westminster Abbey, where a cenotaph was erected to his memory. Executed, 1780.

Andrews, Elisha Benjamin, educator, author; born at Hinsdale, N. H., 1844; served private to second lieutenant of Union army in Civil War; graduate of Brown University, 1870; professor history and political economy, Brown University, 1882-88; professor political economy and finance, Cornell, 1888-89; president Brown University, 1889-98; superintendent schools, Chicago, 1898-1900; chancellor University of Nebraska, 1900-1909. Author: *Institutes of Constitutional History, English and American; Institutes of General History; Institutes of Economics;* etc. Died, 1917.

Andros (*an'drōs*), **Sir Edmund,** was born at London, England, in 1637; died, 1714. He was governor of the colony of New York for eight years, beginning in 1674. He was harsh and ruled without any regard to the wishes of the colonists.

Angelico (*ăn-jel'ē-kō*), **Fra,** the name by which we best know the great friar-painter, Guido di Pietri, whose monastic name was Giovanni. He was born in 1387 at Vecchio in Tuscany. His most important frescoes are those in the Florentine convent of San Marco (now a museum), at Orvieto, and in the Nicholas Chapel of the vatican. Of his easel pictures, the Louvre possesses a splendid example, *The Coronation of the Virgin*, and the London National Gallery a *Glory, or Christ.*

Angell (*ăn'jel*), **James Burrill,** educator, diplomat; born at Scituate, R. I., 1829; graduate of Brown University, 1849; professor modern languages and literature, Brown, 1853-60; editor *Providence Journal*, 1860-66; president of University of Vermont, 1866-71; president University of Michigan, 1871-1909; member Anglo-American International Commission on Canadian Fisheries, 1887; chairman Canadian-American Commission on Deep Waterways from Lakes to Sea, 1896; appointed minister to Turkey, 1897, but resigned May, 1898. President, University of Michigan, 1898-1909. Author: *Progress in International Law, The Higher Education*, etc. Died, 1916.

Angell, James Rowland, born Burlington, Vt., 1869, son of James Burrill Angell; graduate of University of Michigan, 1890; Harvard, A.M., 1892. Studied in Universities of Berlin, Halle, Leipzig and Vienna; famed as psychologist; author of textbook on psychology; dean University of Chicago, 1911-1918, and acting president, 1918-1919; member Adjutant General's staff on classification of personnel in Army, 1917-1918; president Carnegie Foundation. 1919-1921. President Yale University since 1921.

Angelo (*an'jē-lō*), **Michael de Buonarotti.** See Michelangelo.

Anglin (*an'glin*), **Margaret Mary,** actress, was born at Ottawa, Canada, 1876; educated at Loretto Abbey, Toronto, and Convent of the Sacred Heart, Montreal. Made professional début in *Shenandoah*, New York, 1894; leading woman with E. H. Sothern, 1897-98, Richard Mansfield, 1898-99, and in Empire Theatre Stock Co.; starred in *Zira*, 1905-06; with Henry Miller, in *The Great Divide*, 1906-07.

Anna Comnena (*kom-nē'nä*), a learned Byzantine princess, author of one of the most valuable works to be found in the collection of the Byzantine historians, was the daughter of the emperor Alexander I. (Comnenus), born 1083. She framed a conspiracy against the life of her brother then ruling as emperor in 1118. Her brother spared her life, but punished her by confiscation of her property, which, however, he soon after generously restored. Disappointed and ashamed, she withdrew from the court and sought enjoyment in literature. Died, 1148.

Anne of Cleves, the fourth wife of Henry VIII., to whom she was married in 1540, was born at Cleves, Germany, 1515. She was the daughter of John, third duke of Cleves. The match was projected by Cromwell, and was partly the cause of that minister's ruin. Henry put her aside, settled on her a liberal annuity, with which she was well satisfied, and she spent the remainder of her days in England, where she died in 1557.

Anne, Queen of England, was the second daughter of King James II., by his first wife, Anne Hyde, and was born in London, England, in 1664. Anne ascended the throne on March 8, 1702. During her reign, which was made illustrious by the military triumphs of the duke of Marlborough, Sir George Rooke and Sir Cloudesley Shovel conquered the fortress of Gibraltar, a possession which Spain has never been able to regain; and the legislative union of Scotland with England was effected. The glorious galaxy of writers, in almost every branch of learning, who flourished in her time, has caused it to be considered the Augustan age of British literature. She died in 1714.

Annunzio (*än-nōōn'tsē-ō*), **Gabriele d'.** See **D'Annunzuo, Gabriele.**

Anthony of Padua, St., born at Lisbon, 1195, was at first an Augustinian monk, but in 1220 he entered the Franciscan order, and became one of the most active propagators. He was canonized by Gregory IX. in the following year. According to legend, he preached to the fishes when

men refused to hear him; hence he is the patron of the lower animals, and is often represented as accompanied by a pig.

Anthony the Great, St., the founder of monastic institutions, was born 251 near Heraclea, in Upper Egypt. In 205, having sold all his property and given the proceeds to the poor, he withdrew into the desert whither a number of disciples were attracted by his reputation for sanctity; and thus was formed the first order of monks. Died, 356.

Antigonus (*an-tig'ō-nus*), **Cyclops,** or "one-eyed," a distinguished general of Alexander the Great, on whose death he became governor of Phrygia, Lycia, and Pamphylia; after defeating and slaying Eumenes, and waging other successful wars, he assumed the title of king. His ambitious schemes united his rivals, and he was slain in the battle of Ipsus. Died, 301 B.C.

Antiochus (*an-tī'ō-kŭs*) **III.,** surnamed **the Great,** was born about 238 B. C.; succeeded his father, Seleucus Callinicus, as king of Syria in 223 B. C., and was the most distinguished of the Seleucidae. He became involved in war with the Romans, who had conquered Macedonia, but declined to invade Italy at the instigation of Hannibal, who had come to his court of refuge. Peace was granted him only on condition of his yielding all his dominions east of Mount Taurus, and paying a heavy tribute. To raise the money, he attacked a rich temple in Elymais, when the people rose against him, and killed him in 187 B. C.

Antiochus IV., surnamed **Epiphanes,** became king of Syria in 175 B. C. He fought against Egypt and conquered a great part of it. He twice took Jerusalem; and, endeavoring there to establish the worship of Greek gods, excited the Jews to a successful insurrection under Mattathias and his heroic sons, the Maccabees. Died, 164 B. C.

Antipater (*an-tip'a-tĕr*). Of the many persons who bore this name in antiquity the most celebrated was one of the generals of King Philip of Macedon, born about 400 B. C. When Alexander led his troops into Asia he left Antipater, who, along with Parmenion, had endeavored to dissuade him from the expedition, as governor of Macedon. He died, 319 B. C.

Antoinette (*ăn-twŏ-net'*), **Marie.** See **Marie Antoinette, Josephe Jeanne.**

Antoninus (*an-tō-nī'us*), **Marcus Aurelius,** See **Marcus Aurelius Antoninus.**

Antoninus Pius (Titus Aurelius Fulvus), Roman emperor, was born 86 A. D. In 120 he was made consul; afterward was sent by Hadrian as proconsul into Asia, where the wisdom and gentleness of his rule won for him a higher reputation than had been enjoyed by any of his predecessors. In 138 he was adopted by the Emperor Hadrian, in consequence of merit alone, and came to the throne in the same year. He died at Lorium, Italy, in 161.

Antony, Mark, celebrated Roman general, was born at Rome in 83 B. C. He took part in Caesar's great victory of Pharsalia, and with him was made consul in 44 B. C. After Caesar was killed, Antony with Augustus and Lepidus, formed a government called the *triumvirate*, which defeated the republican army of Brutus and Cassius at Philippi. Some time after, Antony visited Greece and Asia and met Cleopatra. His love for her made him forget the provinces he was to govern. When at last he turned his attention to them, his rule was so despotic that Augustus sent a force against him and defeated him in the naval battle of Actium, during the progress of which he was deserted by the Egyptian fleet. He took his own life in 30 B. C.

Apelles (*ā-pel'lēz*), the most celebrated painter in ancient times, the son of Pythias, was probably born at Colophon, Asia Minor. He flourished in the latter part of the fourth century B. C., and he united the fine coloring of the Ionian, with the accurate drawing of the Sicyonic school.

Apollodorus (*ā-pol-ō-dō'rus*), a great architect of the second century, was born at Damascus. He worked at Rome for the Emperor Trajan, and built the Forum and Column which bear that monarch's name, but his greatest work was a huge bridge over the Danube at its confluence with the Alt. He was banished and put to death by Hadrian.

Apollonius (*ap-ol-lō'nī-us*), of Perga, in Asia Minor, called "The Great Geometer," lived in the second half of the third century, B. C. He is generally considered one of the founders of the mathematical sciences.

Apollonius, called the Rhodian (Apollonius Rhodius), was born in Alexandria 230 B. C. He presided over an academy at Rhodes, was an eminent rhetorician, and wrote a poem, in four books, on the expedition of the Argonauts, and other poems.

Apponyi, Count George, Hungarian statesman, was born 1808. He was a member of the Presburg Diet of 1843, and chancellor of Hungary in 1847, when he opposed the revolutionary movements then breaking out, and which caused his retirement. In 1859 he was made a member of the imperial council in Vienna, and was instrumental in bringing about the reconciliation between Austria and Hungary. He is classed among the ablest of European statesmen. Died, 1899.

Apulelus (*ap-ū-lē'yus*), a satirical writer of the second century, born at Numidia, Africa, about A.D. 125, studied at Carthage. He was so extremely popular that the senate of Carthage and other states erected statues in his honor.

Aquinas (*a-kwī'nas*), **St. Thomas** celebrated scholastic divine, born about 1227, died in 1274, was descended from the counts of Aquino, in the Kingdom of the Two Sicilies. He was educated at the Benedictine monastery at Monte Casino, and at the University of Naples, where he studied for six years. About the age of seventeen he entered a convent of Dominicians, much against the wishes of his family.

He attended the lectures of Albertus Magnus at Cologne, in whose company he visited Paris in 1245 or 1246. Here he became involved in the dispute between the university and the Begging Friars as to the liberty of teaching, advocating the rights claimed by the latter with great energy. In 1257 he received the degree of doctor from the Sorbonne, Paris, and began to lecture on theology, rapidly acquiring the highest reputation. In 1263 he is found at the Chapter of the Dominicans in London. In 1268 he was in Italy, lecturing in Rome, Bologna, and elsewhere. In 1271 he was again in Paris lecturing to the students; in 1272 professor at Naples. In 1263 he had been offered the archbishopric of Naples by Clement IV., but refused the offer. He died on his way to Lyons to attend a general council for the purpose of uniting the Greek and Latin churches.

He was called, after the fashion of the times the *angelic doctor*, and was canonized by John XXII. The most important of his numerous works, which were all written in Latin, is the *Summa Theologiae*, which, although only professing to treat of theology, is in reality a complete and systematic summary of the knowledge of the time. His disciples were known as *Thomists*.

References.—Vaughan's *Life of St. Thomas of Aquin;* Townsend's *Schoolmen of the Middle Ages;* and *Histories of Philosophy* by Erdmann and Ueberweg.

Arabi Ahmed (*ā-rā'bē*) ("Arabi Pasha"), leader of the military insurrection in Egypt in 1882, was born in Egypt about 1841. He proclaimed to his troops that he was inspired by the prophet to undertake a holy mission, the motto of which was, "Egypt for the Egyptians," and he thus became the leader of a great rebellion. After his defeat Arabi was banished to Ceylon, but was permitted to return in 1901.

Arago (*ar'ā-gō*), **Dominique,** celebrated French philosopher, was born at Estagel, France, 1786. In 1806 he was engaged with Biot in measuring an arc of meridian. His subsequent life was distinguished by an ardent and successful devotion to science. In 1818 appeared his *Recueil d' Observations géodésiques, astronomiques, et physiques.* He died in 1853.

Arbaces (*ar-bā'sēz*), one of the generals of Sardanapalus, and the founder in 876 B. C. of the Median empire. The dynasty of Arbaces lasted until 559 B. C., when Cyrus overthrew it.

Arbuthnot (*ar-buth'not* or *ar'buth-not*), **John,** British physician and wit, the much-loved friend of Swift and Pope, was born at Arbuthnot, Scotland, 1675. He studied at Aberdeen and University College, Oxford, but took his M.D. degree at St. Andrews, 1696. In 1705 he was appointed physician to the queen, and her death in 1714 was a severe blow to his prosperity. In 1715, along with Pope, he assisted Gay in *Three Hours After Marriage,* a farce. Utterly careless of literary fame, Arbuthnot was the chief, if not the sole author of the brilliant *Memoirs of Martinus Scriblerus,* first published in Pope's works. He wrote, also, the celebrated *History of John Bull.* Died, 1735.

Arc, Joan of. See **Joan of Arc.**

Archimedes (*ar-ki-mē'dēz*), the most celebrated mechanican of antiquity, was born in Syracuse, Sicily, about 287 B. C., and died 212 B. C. He is said to have visited Egypt in early life, and to have invented there several hydraulic machines, including the Archimedean screw, which he applied to drainage and irrigation. Vitruvius relates that he discovered the principle of specific gravity while pondering the means of detecting a supposed fraud in the debasement of a golden crown of King Hiero with silver, by observing that his body would displace its own bulk of water in a full bath tub, and ran home naked exclaiming, *Eureka, eureka.* "I have found it I have found it." His purely mathematical works show that he far excelled all who preceded him.

Argand (*ar'gănd'*, Eng. *ar'gand*), **Aime,** Swiss physician and chemist, was born in Geneva about the middle of the eighteenth century. He invented the "Argand lamp," which was brought out in England in 1782. Died in Switzerland in 1803.

Argyll (*ar-gil'*), **Archibald Campbell, Earl of,** was the descendant of Sir Colin Campbell of Lochow or Loch Awe, who was knighted in 1286. Archibald was born in 1598, and in 1619, his father having turned Catholic and quitted Scotland, became the sole potentate of all the broad lands of his line. In 1640 he marched with 4,000 men through Badenoch, Athole, Mar, and Angus, enforcing subjection to the Scottish parliament. Charles, on his visit to Scotland in 1641, created him marquis. After the defeat of Worcester he defended himself for nearly a year in his castle of Inverarary against Cromwell's troops; but in 1652 he submitted to the protector. At the restoration he was committed to the Tower, from there taken by sea to Leith in 1661, and beheaded. A gorgeous monument was erected to him in 1895 in St. Giles's cathedral.

Ariosto (*ā-rē-ōs'tō*), **Ludovico,** one of the greatest of Italian poets, born at Reggio, 1474, died at Ferrara, 1533. In 1503 he was introduced to the Cardinal Hippolytus d'Este, who employed him in many negotiations. Here he produced his poem *Orlando Furioso,* which was published in Farrara in 1516.

Aristarchus (*ar-is-tär'kus*) **of Samos,** an Alexandrian astronomer, flourished 280-264 B. C. He seems to have anticipated Copernicus, maintaining that the earth moves round the sun. He wrote a treatise on the magnitude and distance of the sun and moon.

Aristides (*ar-is-ti'dēz*), surnamed "the just," was the son of Lysimachus. He was one of the ten leaders of the Athenians against the Persians at the battle of Marathon, 490 B. C. In 477 B. C. he introduced a change of the constitution by which all citizens, without distinction of rank, were admitted to political offices. Died, 468 B. C.

Aristippus (*ar-is-tip'pus*), the founder of the Cyrenaic school of philosophy among the Greeks, was the son of Artiades, a wealthy gentleman of Cyrene, in Africa, and was born in that city about 425 B. C. He was a pupil of Socrates.

Aristophanes (*ar-is-tof'ā-nēz*), the most celebrated of the ancient Athenian writers of comedy, was contemporary with Socrates and Plato. He was born at Athens, probably about 448 B. C. He wrote, in all, fifty-four comedies, but only eleven have come down to us. *The Knights* and *The Clouds* are among his most admired pieces. Others are *The Wasps, The Birds,* and *The Frogs.* One of his finest plays, *The Clouds,* is a satire against Socrates. He died about 380 B. C.

Aristotle, (*ar'-is-tot'l*) celebrated Greek philosopher, born in Stagira, Macedonia, in 384, B.C. and died at Chalcis, Euboea, in 322 B.C. At 17 years of age he went to Athens, where he resided for 20 years. Plato, his teacher, called him the "intellect of his school." About 343 Philip of Macedon made him the teacher of his son Alexander. His influence on both was for many years great and salutary. Alexander after the conquest of Persia presented him with 800 talents. During his marches he sent him plants and animals, and other things unknown in Greece, for scientific examination. Aristotle returned to Athens about 335 B.C. and taught in the Lyceum, a gymnasium near the city. His school is called the Peripatetic, because he taught while walking up and down, or in shady walks. His friendly relations with Alexander were interrupted, yet the Athenians suspected him of partisanship for Macedon, accused him of impiety, and forced him to flee to Chalcis. The most important of his writings bear the titles *Organon* or *Logic, Rhetoric, Poetics, Ethics, Politics, History of Animals, Physics, Metaphysics, Psychology,* and *Meteorology.* His writings on mathematics, economy, and history are lost, as well as his letters, and a work called *Politiai,* on constitutions. Many books bearing his name are spurious. No other philosopher has exerted so large an influence on so many centuries and nations.

References.—Zeller's *Aristotle and the Earlier Peripatetics;* The chief English works are Grote's *Aristotle,* dealing with the life of Aristotle, the *Organon, De Anima* and *Metaphysics;* G. H. Lewes's *Aristotle; a Chapter from the History of Science,* dealing chiefly with the physics and biology; Sir Alexander Grant's edition of the *Nicomachean Ethics* and introduction to Newman's edition of the *Politics;* Butcher's *Aristotle's Theory of Poetry and Fine Art;* and Cope and Sandys' edition of the *Rhetoric.*

Arius (*ā'ri-us* or *ā-ri'us*), founder of Arianism, was born in Libya about 256 A. D., was trained in Antioch, and became a presbyter in Alexandria. Here about 318 he maintained, against his bishop, that the Son was not co-equal or co-eternal with the Father, but only the first and highest of all finite beings, created out of nothing by an act of God's free-will. He defended his views before the council of Nicaea, 325, but they were condemned. Died at Constantinople, 336.

Arkwright, Sir Richard, noted English inventor, was born 1732, and died 1792. Until the age of 28 he was a barber and afterward a dealer in hair, and in a dye of his own invention. In 1768 he produced the model of his famous cotton-spinning frame, by which thread could be spun of any required fineness and strength and with immense velocity. Need and Strutt (the latter the inventor of the stocking frame) took an interest in it, and a machine driven by a horse was soon in operation. The first patent was granted in 1769. In 1775 Arkwright obtained a new patent, which after litigation was confirmed in 1785. He encountered bitter hostility, especially from the manufacturers, who at one time refused to buy his yarns, and tried to ruin him by mischievous legislation; but he was indomitable, showed remarkable capacity for management, and accumulated a fortune of $2,500,000. He acquired the rudiments of learning after he was 50 years old, and was knighted in 1786, on presenting an address to the king. In 1787 he was high sheriff of Derbyshire.

References.—Lewis' *Heroes of Science;* Coleridge's *Biographia Borelis;* and the *Triumphs of Steam.*

Arliss, George, actor, born 1868, in London, England. First appeared on the London stage in 1887; made his American debut in Mrs. Patrick Campbell's company in 1901. He is especially noted for his sympathetic character portrayals of middle and old aged gentility in "Disraeli," "The Green Goddess" and "Old English," among others.

Arminius (*ăr-mĭnĭ-ŭs*), a German chieftain, prince of the Cherusci, was born about 18 B. C., and died by assassination in 21 A. D. He became a Roman citizen and served as a soldier in the Roman army. The majority of his life was devoted to the cause of German independence. He defeated the Roman Varrus, twice routed Germanicus, and finally drove the legions beyond the Rhine, thereby winning the title "German Liberator."

Arminius, Jacob, teacher of the system of Arminianism, born 1560, at Oudewater, a small town in Holland. He was ordained at Amsterdam in 1588, and soon became distinguished as a preacher. In 1589 he consented to answer a book which attacked the doctrine of Calvanism. Died, 1609.

Armour, John Ogden, capitalist, packer, was born in Milwaukee, 1863. President Armour & Company, Director C. M. & St. P. Ry.; I. C. Ry.; and National City Bank (New York). Died, 1927.

Armour, Philip D., merchant, capitalist, head for many years of the great firm of Armour & Company, pork packers and dealers in dressed meats and provisions, was born at Stockbridge, N. Y., 1832, and died at Chicago in 1901. His chief philanthropy was Armour Institute of Technology in Chicago, which was opened in 1893.

Armstrong, John, American soldier and writer, was born at Carlisle, Pa., 1758; died, 1843. He served in the revolutionary war, leaving the service with the rank of major. He wrote the *Newburgh Letters,* setting forth the hardships of the revolutionary soldiers in respect to pay. United States senator from New York, 1800-04; minister to France, 1804-10; brigadier-general in war of 1812; and secretary of war, 1813-14. He was charged with inefficiency in consequence of the capture of Washington, and resigned in September, 1814.

Armstrong, Sir William George, British inventor, was born in 1810 at Newcastle, England. In 1840 he produced much improved hydraulic engine, in 1842 an apparatus for producing electricity from steam, and in 1845 the hydraulic crane. Armstrong offered to his government all his inventions. He was knighted in 1859, and in 1887 was created Baron Armstrong; in 1894 he purchased Bamborough castle, to convert it into a retreat for cultured poverty. Died, 1900.

Arnauld I(*ăr'nō*), **Antoine,** known as "the great Arnauld," French philosopher and Jansenist theologian, was born at Paris in 1612. Entering the Sorbonne he became a pupil of Lescot, the confessor of Cardinal Richelieu, and afterward bishop of Chartres. His published works number 100. He died at Brussels in 1694.

Arndt (*ärnt*), **Ernst Moritz,** German poet and patriot, was born in the then Swedish island of Rügen, 1769. He received an excellent education at Jena, but in 1805, after traveling over a great part of Europe, he became professor of history at Griefswald. His *Geschichte der Leibeigenschaft in Pommern und Rügen* led to the abolition of serfdom; and in his *Geist der Zeit* he attacked Napoleon with such boldness that, after Jena, he had to take refuge in Stockholm. *Was ist des Deutschen Vaterland?* and others of his fiery songs, did not a little to rouse the spirit of Germany. Vigorous in mind and body, beloved and revered by the whole German people as "Father Arndt," he died at Bonn in 1860.

Arne (*ärn*), **Thomas Augustine,** composer, was born in London in 1710, and educated at Eton. He wrote his first opera, *Rosamond,* which was performed with great success in 1733. Next followed his comic operetta, *Tom Thumb;* and afterward his *Comus. Rule Britannia,* originally given in *The Masque of Alfred,* is his, as well as two oratorios and two operas, *Eliza* and *Artaxerxes.* He died in London in 1778.

Arnold, Benedict, an American general and traitor, was born in Connecticut, 1741. Joined Ethan Allen against Ticonderoga, and later succeeded Montgomery after the attack on Quebec, 1775, becoming a brigadier-general. Refused promotion by congress, and consented to remain in the army only at Washington's request. He secured command of West Point and entered into treasonable negotiations with Sir Henry Clinton for its betrayal. The capture of Major André exposed the plot, and Arnold fled at once. He became a brigadier-general in the British army and commanded several minor attacks. He was pensioned by the English government, but despised and neglected by the English people, except the royal family. Died in London, 1801.

Arnold, Bion Joseph, electrical engineer, inventor, was born at Casnovia, Mich., 1861; graduated from Hillsdale College, B. S., 1884, chief designer, Iowa iron works, Dubuque, Iowa; since 1893 independent consulting engineer. Designer and builder intramural railway, World's Columbian Exposition; consulting engineer Wisconsin state railway commission, 1905-07; devised plan for electrically operating trains of New York Central railroad in and out of New York, and member electric traction commissioners engaged in carrying on the work; consulting engineer for city of Chicago to revise street railway systems of city, 1902; chief engineer rebuilding Chicago traction system at cost of $40,000,000, 1907, and chairman of board of supervising engineers of the same.

Arnold, Sir Edwin, English author and journalist, was born in 1832; educated at King's College, London, and at Oxford; was appointed second master at King Edward VI's. school at Birmingham; resigned this for position of principal in the Sanskrit College of Poona, British India. In 1861 he became connected with the *London Telegraph;* noted as the author of several books, among them *Poets of Greece,* etc., and later his well-known poem, *The Light of Asia.* Died, 1904.

Arnold, Matthew, English poet and critic, eldest son of Dr. Arnold of Rugby, was born in Middlesex, England, 1822; was educated at Winchester, Rugby, and Balliol College, Oxford. He was elected fellow of Oriel College in 1845, and in 1851, after having been for some time private secretary to Lord Lansdowne, he was appointed lay inspector of schools under the committee of council on education. For ten years, 1857-67, he held the chair of poetry at Oxford. As a critic he holds a very high place. His later works were chiefly theological, being attempts to grapple with the supernatural aspects of Christianity from a rationalistic standpoint. Died, 1888.

Arnold, Sarah Louise, educator, born at North Abington, Mass., 1859; graduated State Normal School, Bridgewater, Mass., 1878; A.M., Tufts, 1902; taught in Massachusetts, Pennsylvania, Vermont, and New Hampshire; dean Simmons College since 1902.

Arnold, Thomas, educator and historian, was born in 1795, in the Isle of Wight, and educated at Winchester, and Corpus Christi College, Oxford; in 1815 he became Fellow of Oriel. After taking holy orders, he passed nine years at Laleham, near Staines, in literary occupations, and in preparing young men for the universities. Appointed head master of Rugby school in 1828, he raised that institution beyond all precedent, both by the remarkable success of his pupils and by the introduction of new branches of study into the Rugby course. The best known of Dr. Arnold's works are his edition of *Thucydides,* and his sermons delivered in the chapel of Rugby school. Died, 1842.

Arnold of Winkelried, a Swiss of Unterwalden, who, according to tradition, made a way for his comrades into the enemies' ranks at Sempach, in 1386, by grasping an armful of Austrain spearheads and plunging them into his own bosom.

Arrhenius (*ăr-rā'nĭ-ŭs*), **Svante August,** Swedish chemist, was born in 1859. At nineteen he received the degree of doctor of philosophy from the University of Upsala. His most important contributions are in physical chemistry, more particularly in the theory of solutions, although his study of comets has added greatly to our knowledge of that subject. Received Nobel prize of chemistry, 1903. Died, 1927.

Arrian (*ar'i-an*), or **Flavius Arrianus,** Greek historian, was born in Nicomedia, Bithynia, about 100 A. D. The emperor Hadrian made him a Roman citizen and governor of Cappadocia, in 136. When fifty years old he settled in his native city for the rest of his life. He died about 180.

Artaxerxes I. (*ăr-taks-ŭrk'sēz*), king of Persia, surnamed Longimanus, the second son of Xerxes, escaped from the conspiracy of Artaban and others, and ascended the throne in 465 B. C. His long reign, extending to 425, was marked by a decline of power. Died, 425 B. C.

Artaxerxes II., surnamed Mnemon, succeeded his father, Darius II., in 405 B. C. After gaining the victory over his brother, Cyrus, he became involved in a war with Sparta, which ended with the Antalcidean treaty of peace. Died, 361 B C.

Artaxerxes III., surnamed Ochus, was the son and successor of Artaxerxes II., and reigned in the true style of oriental despotism until 338 B. C. One of his most daring exploits took place in Egypt, where he caused the divine bull Apis to be slaughtered and cooked as ordinary beef. He was poisoned in 338 by his eunuch, Bagoas.

Artevelde (*ăr-te-vel'dē*), **Jacob Van,** popular Flemish leader of the fourteenth century, was a brewer in Ghent. His wealth, eloquence, and talents made him the most prominent man on the side of the citizens in their struggles against Count Louis of Flanders. His power was secure for ten years, but in 1335 he made a treaty with Edward III. of England, persuading him to assume the title of king of France. To strengthen this alliance, he tried to make Edward, the black prince, count of Flanders, when the people rose in rebellion and Artevelde was slain, 1345.

Arthur, Chester Alan, twenty-first president of the United States, son of a Baptist minister, was born in Franklin county, Vt., 1830; graduated from Union College in 1848; was admitted to the bar; appointed United States collector of the port of New York, 1871, served until 1878; was elected vice-president of the United States in 1880, and on the death of President Garfield, 1881, he became president. Died, 1886.

Arthur, Julia, actress, was born in Hamilton, Ontario, 1869, of Irish and Welsh parentage; real name, Ida Lewis; first New York success at Union Square theater in *The Black Masque;* London début, 1895, in Henry Irving's company, playing rôles next to Miss Terry. Married, 1898, Benjamin P. Cheney, Jr.

Asbury (*az'bĕr-i*), **Francis,** the first bishop of the Methodist Episcopal church ordained in America, was born in 1745. In 1765 he was appointed general assistant by John Wesley. He brought new life into the work, and at the outbreak of the revolution, when many other ministers returned to England, he kept on in his labors. At the end of the war it was decided to found an independent Methodist Episcopal church for America, and he was ordained in 1784 as bishop by his colleagues who had already been ordained by Wesley in England. For more than thirty years he worked earnestly and successfully, and the wonderful progress of Methodism in America, was largely due to his efforts and ability. He died in 1816.

Ascham (*as'kam*), **Roger,** English writer and classical scholar, was born in 1515 at Kirby Wiske, in Yorkshire. He wrote, in 1545, a treatise entitled *Toxophilus,* the pure English of which ranks it among the classical pieces of English literature. For this treatise, which was dedicated to Henry VIII., he was awarded a pension. In 1548 he became master of languages to Lady Elizabeth, afterward queen, and was subsequently appointed Latin secretary. Died, 1568.

Ashburton, Lord, Alexander Baring, English diplomat, was born in 1774, eldest son of the eminent merchant, Sir Francis Baring. Having been employed as special ambassador from England to the United States to settle the northeastern boundary question in August, 1842, he concluded the famous treaty called the Ashburton treaty, by which the frontier line was definitely settled. Died, 1848.

Ashhurst, John, Jr., American surgeon, educator, and author, was born at Philadelphia, Pa., 1839; acting assistant surgeon of United States army, 1862-65; professor of clinical surgery in University of Pennsylvania, elected in 1877. His two principal works are *Injuries to the Spine,* and *Principles and Practice of Surgery.* Died, 1900.

Ashmole, Elias, British antiquary, was born at Litchfield, England, 1617; held the appointment of Windsor herald, and published the *History of the Order of the Garter.* He left many works, and presented to the University of Oxford his valuable collection of coins, specimens, and manuscripts. Died, 1692.

Aspasia (*as-pā'shi-ă*), a beautiful Athenian woman, said to have been a native of Miletus in Asia Minor. Socrates is said to have been one of her admirers. In order to marry her, Pericles repudiated his wife. An affront offered to Aspasia is said to have caused the Peloponnesian war.

Asquith (*as'kwith*), **Rt. Hon. Herbert Henry,** prime minister of England, was born in 1852, and entered the British parliament in 1886. He was educated at Balliol College, Oxford, and was admitted to the bar, Lincoln's Inn, 1876, D. C. L., Oxford; LL.D., Edinburgh and Glasgow. On the defeat of the Rosebury ministry in 1895, he resumed practice at the bar. He was one of the most effective speakers on the liberal side during 1903 on the education question and the war commission's report, and during 1903, 1904, and 1905 in opposition to Chamberlain's fiscal policy, Chancellor of the exchequer, 1905. He became prime minister, 1908. Died, 1928.

Astor, John Jacob, American merchant, founder of the American fur company, was born near Heidelberg, Germany, 1763. After spending some years

in London he sailed to America in 1783, and soon invested his small capital in furs. By economy and industry he so increased his means that after six years he had acquired a fortune of $200,000. From this period, in spite of the war of 1812 and other temporary obstacles, his commercial connections extended over the entire globe, and his ships were found in every sea. He died in 1848, leaving property amounting to $20,000,000.

Astor, John Jacob, capitalist, great-grandson of John Jacob Astor, was born at Rhinebeck, N. Y., 1864; graduated at Harvard in 1888; traveled abroad, 1888-91; in 1897 he built the Astoria hotel, New York, adjoining the Waldorf hotel, which was built by William Waldorf Astor, his cousin, the two now forming one building under the name of Waldorf-Astoria hotel. Was colonel, staff of Governor Levi P. Morton, and, 1898, lieutenant-colonel of United States volunteers, in the Cuban war. Drowned at sea 1912.

Astor, William Waldorf, capitalist, author, was born in New York, 1848; son of John Jacob, second, and Charlotte Augusta (Gibbes) Astor; great-grandson of John Jacob, founder of the Astor fortune. Educated by private tutors, finishing in Europe; entered office of the Astor estate, 1871; succeeded his father, 1890, as head of the Astor family. Member of New York legislature, 1878-81; United States minister to Italy, 1882-85; removed to England. 1890; became owner *Pall Mall Gazette.* Died, 1919.

Athanasius (*ath-ā-nā'shi-us*), **Saint,** was born in Egypt about the year 296, entered the church at an early age, and was chosen bishop of Alexandria in 326. He is esteemed one of the most eminent among the ancient fathers of the church. He was a violent opponent of Arius; and his earnest advocacy of the Catholic faith, more particularly of the doctrine of the Trnity, subjected him to much persecution from the emperors Constantine and Julian, by both of whom he was several times exiled. Died in 373.

Athenagoras (*ath-ē-nag'ō-rās*), a Christian philosopher, born at Athens, who lived toward the close of the second century. His conversion to Christianity has been likened to that of St. Paul.

Atherton, Gertrude Franklin, novelist, was born at San Francisco, California, 1858, the daughter of Thomas L. Horn. She was educated at St. Mary's Hall, Benicia, California; Sayre Institute at Lexington, Kentucky; married George H. Bowen Atherton, deceased. Author: *The Doomswoman; Before the Gringo Came; A Whirl Asunder; Patience Sparhawk and Her Times,* etc.

Atticus (*at'i-kus*) **Herodes, Tiberius Claudius,** a rich Athenian, born about 104 A. D. He was educated by the best masters, devoting special attention to oratory, in which he greatly excelled. His fame rests mainly upon immense expenditures for public purposes. Died, 180 A. D.

Atticus, Titus Pomponius, born at Rome 109 B.C., was educated with Cicero and the younger Marius. In 85 B. C. he withdrew to Athens; and, after 65 B. C., when Sulla induced him to return to Rome, he still devoted himself chiefly to study and the pleasures of friendship. None of his own writings have been preserved, but we have 396 epistles addressed to him by Cicero. Died, 32 B. C.

Attila (*at'i-la*), king of the Huns, who lived in the fifth century. He styled himself "the scourge of God," and devastated Lombardy. The city of Venice was founded by those who fled before him. On his death, in 453, his body was buried in three coffins, made of gold, silver, and iron. The captives who dug his grave were put to death.

Atwood, George, British mathematician, was born, 1746; died in London, 1807. He was educated at Cambridge University, became tutor of Trinity College, Cambridge, and invented a machine to illustrate the relations of time, space, and velocity in the motion of a body falling under the action of gravity.

Auber (*ō'bār'*), **Daniel Francois Esprit,** French composer of operas, was born at Caen, in Normandy, 1782. His opera *Masaniello* is considered his best. Among his works are the well-known operas, *Fra Diavolo, Le Domino Noir, Manon Lescant,* etc. In 1842, after the death of Cherubini, he was appointed director of the conservatory of music, Paris. Died, 1871.

Aubigne (*ō-bēn'yā'*), **Jean Henri Merle d'.** See **Merle d'Aubigne.**

Audubon (*ā'doo-bon*), **John James,** celebrated American naturalist of French descent, was born near New Orleans, La., in 1780; from childhood devoted to natural history, but it was not until 1830 that the first of the four volumes of his great work, *The Birds of America,* appeared. This magnificent collection of plates, which was sold for $1,000 a copy, was quickly followed by explanatory letterpress under the title of *American Ornithological Biography.* Died in New York, 1851.

Auenbrugger von Auenbrug (*ou'en-broog-gĕr fŏn ou'en-brook*), **Leopold,** Austrian physician, was born in 1722. He originated the method of examining the lungs by percussion of the chest, and published the results of his investigations in a treatise which marks an epoch in the history of medicine. He died, 1809.

Auerbach (*ou'ĕr-bāk*), **Berthold,** German author, was born at Nordstetten in 1812. Having abandoned the study of Jewish theology, he devoted his attention to literature. His first publications were *Judaism and Modern Literature,* and a translation of the works of Spinoza. By some his *Auf der Hohe,* "On the Heights," is regarded as his best novel. *Das Landhaus am Rhein,* is known by the English title, *The Castle on the Rhine.* Died at Cannes, France, 1882.

Auersperg (*ou'-ĕrs-perk*), **von, Anton Alexander,** famous Austrian statesman and poet, whose pen-name was "Anastasius Grün"; was born at Laibach, Austria, in 1806. He was a member of the Frankfort parliament of 1848, and later of the Austrian Reicasrath. Died at Gratz, 1876.

Augereau (*ō-zh-rō'*), **Pierre Francois Charles,** duke of Castiglione, marshal and peer of France; one of the most brilliant and intrepid of that band of general officers whom Napoleon gathered around himself; was born in 1757. His services were so conspicuous that in less than three years he was made general of a division. In 1797 he was appointed to the command of the army of the Rhine; but after a few months the directory made him commander of the tenth division at Perpignan. In 1800 he received the command of the army in Holland, and was active in several engagements. In 1804 he was made a marshal and in the following year he commanded a division of the army which reduced the Vorarlberg. Died in La Houssaye, 1816.

Augustine (*ô'gus-tin*) **AureliusAugustinus, St.** a renowned father of the Christian church, was born at Tagaste, in Africa, in 354, his mother Monica being a christian, his father Patricius a pagan. His parents sent him to Carthage to complete his education, but he disappointed their expectations by his neglect of serious study and his devotion to pleasure. A lost book of Cicero's, called Hortensius, led him to the study of philosophy; but dissatisfied with this he went over to the Manichaeans. He was one of their disciples for nine years, but left them, went to Rome, and thence to Milan, where he became a teacher of rhetoric.

St. Ambrose, the bishop of Milan, converted him to the faith of his boyhood, and the reading of Paul's epistles wrought an entire change in his life and character. He retired into solitude, and prepared himself for baptism, which he received in his thirty-third year from the hands of Ambrose. Returning to Africa, he sold his estate and gave the proceeds to the poor, retaining only enough to support him. At the desire of the people of Hippo, Augustine became the assistant of the bishop of that town, preached with extraordinary success, and in 395 succeeded to the see. He entered into a warm controversy with Pelagius concerning the doctrines of free-will, grace, and predestination, and wrote treatises concerning them, but of his various works his *Confessions* is most secure of immortality. He died August 28, 430, while Hippo was besieged by the Vandals.

He was a man of great enthusiasm, self-devotion, zeal for truth, and powerful intellect, and though there have been fathers of the church more learned, none have wielded a more powerful influence. His writings are autobiographical, polemical, homiletic, exegetical. The greatest is the *City of God* (*De Civitate Dei*), a vindication of Christianity. His *Confessions* also gained wide fame.

References.—Schaff's *Nicene and Post-Nicene Fathers;* Milman's *Latin Christianity;* Mozley's *Augustinianism;* Cunningham's *St. Austin;* Harnack's *Hist. of Dogma;* and *Monasticism and Confessions of Augustine;* Hatzfeld's *St. Augustine;* Rainy's *Catholic Church;* Schaff's *Life and Labors of St. Augustine;* Baillie's *St. Augustine;* Maccabe's *St. Augustine and His Age.* For an unfavorable estimate, see Allen's *Continuity of Christian Thought.*

Augustus, Caius Julius Caesar Octavianus, Roman emperor, born 63 B. C., was the son of Caius Octavius and Accia, niece of Julius Caesar, by whom he was adopted when but four years of age. He was in Epirus when Julius Caesar was assassinated, but speedily returned to claim his inheritance. At the age of thirty-six he became emperor, with the title of Augustus. His reign was fortunate, good laws were framed in it, and the arts flourished under his protection. He died, 14 A. D.

Aurelianus (*ô-rē-li-ān'us*), **Claudius or Lucius Domitius,** emperor of Rome, was born in Pannonia, 212 A. D., the son of a peasant; entered the Roman army, his exploits in which attracted the notice of the emperors Valerian and Claudius, and on the death of the latter in 270 he was proclaimed emperor. The emperor's severity made him feared even by his friends, who, as they deemed in pure self-defense, conspired against him and put him to death, 275 A. D.

Aurungzebe (*ô-rung-zeb'*), emperor of India, known as the Great Mogul, was born in 1618. As emperor, his career was brilliant. His sons disturbed his latter days by attempting to depose him. He died in 1707.

Austen, Jane, English novelist; born in 1775, at Steventon, Hants, England, of which parish her father was rector. Her principal productions are *Pride and Prejudice; Sense and Sensibility; Emma; Mansfield Park; Northanger Abbey;* and *Persuasion.* They are distinguished for originality, naturalness, and fidelity of delineation, qualities in which the literature of her time was most deficient. She died at Winchester in 1817.

Austin, Alfred, English poet, novelist, and journalist; born at Headingley, near Leeds, 1835; took his degree at the University of London, 1853; admitted to the bar, 1857; published *The Season a Satire; The Human Tragedy; Interludes; Savonarola; English Lyrics,* and many other poems, plays, and political papers; made fifteenth poet laureate of England, 1896. Died, 1913.

Avebury (*ā'bĕr-i*), **Lord.** See **Lubbock, Sir John.**

Averroes (*ā-ver'ō-ēz*), originally Ibn Roshd, or, more fully, Mohammed-Ibn-Roshd, the most famous of Arabian philosophers, was born at Cordova, Spain, 1126. Died about 1198.

Avery, Elroy McKendree, author, historian, born at Erie, Monroe county, Mich., July 14, 1844; graduate of University of Michigan, Ph.B., 1871; served in Civil War; mustered out at close as sergeant-major of 11th Michigan volunteer cavalry. Member of many historical and economic societies. Author: *Elementary Physics; Elements of Natural Philosophy; Physical Technics; History of the United States;* etc.

Avicenna (*av-ē-sen'ā*), properly Ibn Sina or, more fully, Abu Ali Al-Hossein Ibn Abdallah Ibn Sina, a famous Arabian philosopher and physician, whose authority for many centuries passed as indisputable; born 980, at Charmatain, a village near Bokhara. Died, 1037.

Avogadro (*ā-vō-gā'drō*), **Amadeo,** Italian chemist and physicist, was born at Turin, Italy, 1776; died there, 1856. Professor of physics at Turin; formulated his celebrated law concerning the atomic theory in 1811.

Ayeshah (*ī'ē-shā* or *ā'ē-shā*), the favorite wife of Mohammed, was born at Medina in 610 or 611 A. D. She was only nine years of age when she married the prophet. In his last illness Mohammed, by his request, was carried to her house and expired in her arms. After the prophet's death Ayeshah took active part in the plot which deprived Caliph Othman of his power and life, and headed a force to resist the accession of Ali. Died, 678.

Babbitt, Isaac, American inventor, was born at Taunton, Mass., 1799. Being a goldsmith he became interested in the manufacture of alloys and in 1839 discovered the combination of copper, tin, and antimony known as Babbitt's Metal. In recognition of this service he was voted $20,000 by Congress. He died in 1862.

Baccio della Porta. See **Bartolommeo, Fra.**

Bach, Johann Sebastian, (*bāk*) in some respects the greatest musician that ever lived, son of Johann Ambrosius, was born 1685, and died July 30, 1750. He was treble singer in a choir at Luneburg until his voice changed, when he became a violinist of the court at Weimar. When twenty years old he was organist at Arnstadt, in 1708 became court organist at Weimar, and in 1714 concert master to the duke, with the additional duty of composing and conducting the vocal music of the ducal chapel. After a period of service as chapel master to the court at Kothen, the city authorities of Leipsiz elected him in 1723 musical director of the Thomas School, where he labored for the remainder of his life. Bach published few works, but left a great number in manuscripts. The Bach society at Leipzig was engaged from 1850 to 1900 in publishing a complete collection of his compositions, which embrace a great variety of church music, both vocal and instrumental, and many other works for the organ, harpsichord, orchestra, and every solo instrument in use a century ago. As a virtuoso upon keyed instruments he had no rival.

References.—The most complete edition of his works is that issued at Leipzig by the Bach Society, in 59 folio volumes. See his *Life* by Miss Kay Shuttleworth, and the greatest work on the subject, *J. S. Bach,* by J. A. P. Spitta.

Bach, Karl Philipp Emanuel, German composer, second son of Johann Sebastian, was born at Weimar, in 1714; died at Hamburg in 1788. He was probably the most highly gifted of eleven brothers, and his influence on the development of certain musical forms gives him a prominent place in the history of the art. His most ambitious composition is the oratorio *Israel in the Wilderness.*

Bache, Franklin, physician and chemist, was born at Philadelphia, Pa., 1792; he published *System of Medicine* in 1819; was professor of chemistry

in the Philadelphia College of Pharmacy, 1831; held same chair in Jefferson Medical College, Philadelphia, in 1841. Died, 1864.

Bacheller, Irving, novelist, was born at Pierpont, N. Y., 1859; graduated from St. Lawrence University, 1882, actively connected with press of New York for years; was one of the editors of the *New York World.* Author of *Eben Holden; The Handmade Gentleman;* etc.

Bacon, Augustus Octavius, lawyer, United States senator from Georgia; born in Bryan county, Georgia, 1839; graduate of University of Georgia, 1859; in law practice in Macon, Georgia, 1866-1914; delegate national democratic convention, 1884; presidential elector, 1868. Elected to the United States senate, 1895; reelected, 1901 and 1913. He was for many years a trustee of the University of Georgia, and one of the regents of the Smithsonian Institution. Died, 1914.

Bacon, Benjamin Wisner, biblical writer and critic; professor new testament criticism and exegesis in Yale University since 1896; was born at Litchfield, Conn., 1860; graduated from Yale, 1881; B. D., Yale, 1884. Director of the American School of Oriental Research in Jerusalem, Syria, 1905-06. Author: *The Genesis of Genesis; Triple Tradition of the Exodus; Introduction to Literature of the New Testament; The Sermon on the Mount.*

Bacon, Francis, Baron Verulam and Viscount St. Albans, English lawyer, statesman and philosopher, was born at York House, London, 1561. In 1576 he went to France with Sir Amyas Paulett, the English ambassador, and stayed there until his father's death in 1579 recalled him to England. Then he began to study law at Gray's Inn, and in 1584 started on a parliamentary career as member for Melcombe Regis, in Dorsetshire, and soon became distinguished in the House as an orator. The great blot in his career during the reign of Elizabeth was, according to Macaulay and others, his prosecution of his friend Essex, which they maintain was undertaken "voluntarily"; but for this there is no proof.

After the queen's death, in 1603, Bacon rapidly rose in fortune and favor. He was knighted in 1603, became solicitor-general in 1607, attorney-general in 1613, privy councillor in 1616, lord high chancellor and Baron Verulam in 1618, and Viscount St. Albans in 1620.

But his fall was as rapid as his rise. The Parliament of 1620 took up the question of the obnoxious patents consisting in alehouses and inns, and monopolies of gold and silver thread, in which both the king and Buckingham's family were interested. This led to their abolition, on the initiative of Bacon; and his enemies at once started a crusade against "the reformer of abuses." A committee was appointed to inquire into "the abuses of the courts of justice;" and though Bacon denied that he took "rewards to pervert justice," and maintained that he only "partook of the abuse of the times," he was condemned by his peers.

But the sentence on him was never carried into effect; his imprisonment lasted only four days; his huge fine of $200,000 was remitted; his pardon was passed under the great seal—delayed till 1623, because he refused to give up York House, the place of his birth, to Buckingham; a pension of $6,000 a year was granted to him; and he was summoned to resume his seat in the house of lords in 1624.

It was after he retired from political life that Bacon practically began his literary career as one of the world's great philosophers. Up to that time his only acknowledged works had been several editions of his *Essays*—rewritten and augmented on every occasion with infinite care—his *Advancement of Learning*, in 1605, and his *Novum Organum* in 1620. The last five years of his life were full of work. In March, 1622, he produced his *History of Henry VII.*; in November, 1622, his *Historia Ventorum;* in January, 1623, his *Historia Vitae et Mortis*; in October, 1623, his *magnum opus*, entitled *De Augmentis Scientiarum*, a Latin translation, with large additions, of *The Advancement of Learning;* in December, 1624, *his Apophthegms;* and in 1625 his *Translation of the Psalms.* His last work, *Sylva Sylvarum* (1627), was published posthumously along with the *New Atlantis.*

Bacon was great as a moralist, a historian, a writer on politics, and a rhetorician; but it is as the father of the inductive method in science, as the powerful exponent of the principle that facts must be observed and collected before theorizing, that he occupies the grand position he holds among the world's great. His moral character, however was not on a level with his intellectual, self aggrandizement being the main aim of his life

References.—The chief authority on his life and work is James Spedding, who edited *The Letters and Life of Bacon*, in 7 volumes, and his *Works*, also 7 volumes. His *Evenings with a Reviewer* is also worthy of perusal. See also Church's *Life of Bacon*, in the English "Men of Letters Series."

Bacon, Nathaniel, lawyer and member of Governor Berkeley's council in Virginia, leader of an alleged insurrection against the colonial government under pretense of resisting aggressions of the Indians, was born in England about 1642. Berkeley was forced to make many concessions to demands for better government; but he broke his promises, and a brief civil war followed, in which Jamestown was burned, 1676, and the governor took shelter in an English vessel. Died in Virginia, 1677.

Bacon, Roger, English scientist and publicist, was born about 1214. The most learned man of his day, he is reputed to have advocated the change since made in the calendar, to have invented gunpowder, and is known to have manufactured magnifying glasses. Died, 1294.

Baden-Powell (*bā'den-pō'el*, or *pou'el*), **Robert Stephenson Smyth,** British general and inspector-general of cavalry, was born 1857, and educated at Charterhouse, London. In 1876 he joined the 13th English hussars, and served as adjutant of that regiment in India, Afghanistan, and South Africa. In the Boer war he was given command of the 5th dragoon guards, and with a force of 1,200 men was besieged in Mafeking, which he held against the Boers from a few days following the outbreak of the war until May 18, 1900, the longest siege recorded in modern warfare; afterward organized the South African constabulary. He is the author of works on *Reconnoissance and Scouting, Vedette Duty, Cavalry Instruction, The Downfall of Prempeh, The Matabele Campaign,* and on *Pig-Sticking* or *Hog-Hunting.*

Baedeker (*bā'dē-ker*), **Karl,** German publisher at Coblentz, the originator of a series of admirable guide books, published since 1872 at Leipzig. Born, 1801; died, 1859.

Baekeland, Leo Henrik, chemist and inventor, was born at Ghent, Belgium, 1863. He studied at the University of Ghent, then won a traveling scholarship to Great Britain, Germany, and the United States. After teaching some years at Ghent and Bruges, he began the manufacture of photographic papers. He soon sold his invention to the Eastman Kodak Company and devoted himself to research. Among his discoverics are bakelite, a substitute for hard rubber, used especially in electrical apparatus, improvements in electric insulation, and synthetic varnishes. He was made president of the American Chemical Society in 1924.

Baer, George F., railway official, lawyer; born in Somerset county, Pa., 1842; educated at Franklin and Marshall College. Raised volunteer company in 1862; elected captain. Joined army of Potomac at second battle of Bull Run and took part in all engagements up to and including Chancellorsville, when he was detailed as adjutant-general, second brigade; counsel for Philadelphia & Reading, 1870, and later a director. For years confidential legal adviser in Pennsylvania of J. Pierpont Morgan; elected, 1901, president of Philadelphia & Reading railway company, Philadelphia & Reading Coal and Iron company, and Central Railroad company, of New Jersey. Died, 1906.

Baer, Karl Ernst von, Russian naturalist, founder of modern embryology, was born in Esthonia, Russia, 1792; died at Dorpat, 1876. He was educated in Germany and became a professor in the University at Königsberg, where, in 1828, he published *The Development of Animals*, a set of careful observations, and philosophical reflections that are most remarkable for clearness and thoroughness.

Baeyer (*bā'yĕr*), **Adolf,** German chemist, was born at Berlin, Prussia, 1835. In 1872 he became professor of chemistry at the University of Strassburg, and was Liebig's successor at Munich in 1875. He discovered cerulein, eosin, and indol, besides making other valuable contributions to the chemistry of dye-stuff. Died, 1917.

Bagehot (*bag'ut* or *baj'ut*), **Walter,** English economist and journalist, was born at Langport, Somerset, 1826. From a school at Bristol he passed in 1842 to University College, London, where he took his M.A. degree in 1848; in 1852 he was admitted to the bar, but joined his father as a banker and shipowner at Langport. His works include *The English Constitution; Physics and Politics; Lombard Street; Literary Studies; Economic Studies*, and *Biographical Studies.* Died, 1877.

Baggesen (*bag'ge-sen*), **Jens,** Danish poet and author, was born at Korsör, in the island of Zealand, 1764, and died at Hamburg, 1826. His German works fill 5 volumes; his Danish 12 volumes. Chief among them are his *Comic Tales, Labyrinthen*, and *Parthenais.*

Bailey, Edward Hodges, English sculptor, and member of the Royal Academy, was born in Bristol, 1788; died in London, 1867. The statue of Nelson in Trafalgar square, London, and the bas-reliefs on the south side of the marble arch in Hyde Park are both the work of Bailey.

Bailey, Joseph Weldon, lawyer, United States senator, 1901-13; born in Copiah, county, Miss., 1863; admitted to bar, 1883; presidential elector, 1884; removed to Texas, 1885, and began practice of law at Gainesville; presidential elector at large, 1888. He was chosen United States senator to succeed Hon. Horace Chilton in 1901; reelected in 1907. Died, 1929.

Bailey, Liberty Hyde, scientist, director of College of Agriculture at Cornell since 1903; born in South Haven, Mich., 1858; graduated at Michigan Agricultural College, M.S., 1882; LL.D.; assistant to Asa Gray, Harvard, 1882-83; professor of horticulture and landscape gardening at Michigan Agricultural College, 1883-88; professor of horticulture, Cornell, 1888-1903. Author: *Survival of the Unlike; Evolution of our Native Fruits; Lessons With Plants; Botany, an Elementary Text for Schools; Principles of Fruit Growing*, etc.

Baillie (*bā'li*), **Joanna,** Scotch poet and dramatist, was born in 1762, in Bothwell manse. In 1784 she went to reside in London, and in 1806 took up her residence at Hampstead, where she remained until her death in 1851. Her greatest achievement is undoubtedly the nine *Plays on the Passions.* Her *Family Legend*, produced at Edinburgh under Scott's auspices in 1810, was a great success.

Bain, Alexander, Scottish writer on mental philosophy, was born at Aberdeen, Scotland, in 1818. In 1860 he became professor of logic in the University of Aberdeen, and lord rector there. His chief works are: *The Senses and the Intellect; The Emotions and the Will; Logic; Mind and Body;* and *Education as a Science.* Died, 1903.

Bain, Robert Nisbet, assistant librarian British Museum, since 1883, was born at London in 1854; was educated privately. In business in London until 1883. He has published numerous translations from the Russian, Ruthenian, Roumanian, Hungarian, Swedish, Danish, and Finnish, chiefly fairy tales and novels.

Bainbridge, William, American naval officer, was born at Princeton, N. J., 1774, and died at Philadelphia, 1833. He was actively engaged in the Mediterranean in successive command of the frigates *George Washington, Essex*, and *Philadelphia*, was once captured by the French, and had to surrender his ship in the Tripolitan war. In the war of 1812 he captured the British frigate *Java*, for which congress voted him a gold medal. During the remaining months of the war he had charge of the Charlestown navy-yard.

Baird, Spenser Fullerton, American naturalist, was born at Reading, Pa., 1823. He was educated at Dickinson College, Carlisle, Pa., and was afterward professor of natural science in that institution. He wrote many papers on birds, reptiles, fishes, etc., and under his direction the national museum was begun in 1850. In connection with other editors, he published *The Birds of North America, The Mammals of North America*, and a *History of the Birds of North America*, in five volumes. He died, 1887.

Bajazet I. (*baj-a-zet'*), sultan of the Turks, was born in 1347. In 1389 he succeeded his father, Murad I., who fell in battle near Kossova, fighting against the Servians. In three years he conquered Bulgaria, a part of Servia, Macedonia, and Thessaly. From the rapidity with which these extraordinary conquests were effected he received the name of Ilderim, *i. e.*, lightning. Died, 1403.

Baker, Alfred, scientist, educator, professor of mathematics at the University of Toronto; was born at Toronto; graduated from the University of Toronto, B.A., with gold medal in mathematics. Elected by graduates a member of senate of University of Toronto, 1887-1906; retired from queen's own rifles, 1883, with rank of captain; F. R. S. Canada; and of the American mathematical society; president of the Ontario educational association, 1895; president of section III. royal society of Canada, 1905. Author of articles relating to quaternions, geometry of position, and foundations of geometry in the proceedings of the royal society of Canada; also elementary treatises on synthetic and analytical geometry.

Baker, James H., educator, was born at Harmony, Maine, 1848; educated at Bates College, Lewiston, Maine. President national council of education, 1892; president national association of state universities, 1907; became president of the U. of Colo. in 1892. Author of *Elementary Psychology; Education and Life*, and *American Problems.* Died, 1925.

Baker, Ray Stannard, author, was born at Lansing, Mich., 1870; graduated at Michigan Agricultural College, B.S., 1889; took partial law course and studies in literature at University of Michigan. Has traveled extensively. Member National Institute of Arts and Letters. Contributor of many articles and stories to American and English magazines. Was associate editor of *McClure's Magazine*, and of *American Magazine.*

Baker, Sir Samuel White, British African explorer, was born at London, 1821. He explored the western arm of the Nile and discovered the Albert Nyanza lake; organised an extensive agricultural

colony in Ceylon; He wrote *Eight Years' Wanderings in Ceylon; The Albert Nyanza; The Nile Tributaries; Ismailia*, etc. Died at Newton Abbot, England, 1893.

Balard, Antoine Jerome, French chemist, was born at Montpellier in 1802. He started out as a pharmacist, but soon became assistant professor at the faculty of sciences in his native town, then professor at the royal college. In 1826 he discovered in sea water the element bromine. This brought him great fame and a chair in the faculty of sciences in Paris. Later he was appointed to the College de France. He died in 1876.

Balboa, de, Vasco Nunez, Spanish conqueror, was born at Xeres de-Caballeros in 1475. After leading rather a dissolute life in his youth, he took part in the great mercantile expedition of Rodrigo de Bastidas to the new world. An insurrection which took place obtained for Balboa the supreme command in Darien, but he was soon succeeded by Pedrarias Davila, by means of the intrigues of the Spanish court, and in a subordinate situation Balboa made several successful expeditions. On September 25th of 1513 he obtained the first sight of the Pacific Ocean from a mountain-top in the isthmus of Panama. He took possession of it in the name of his sovereign. He was executed in 1517 on the charge of a contemplated revolt.

Baldung (*bäl'-doong*), **Hans,** called also Hans Grün, German painter and wood-engraver, contemporary of Albrecht Durer, was born in Gmund, Swabia, 1476, died at Strassburg, 1545. His masterpiece, a painting of the crucifixion, is in the cathedral of Freiburg; his wood-engravings are numerous.

Baldwin, James Mark, psychologist; born in Columbia, S. C., 1861; graduate of Princeton, 1884; A.M., 1887; Ph.D., 1889; Sc.D., Oxford University, England, 1900; professor psychology Princeton, 1893-1903; professor philosophy and psychology, Johns Hopkins, 1903-1909. Author: *Social and Ethical Interpretations in Mental Development; Story of the Mind; Fragments in Philosophy and Science; Development and Evolution.* Editor-in-chief: *Dictionary of Philosophy and Psychology.*

Baldwin, Simeon Eben, jurist, governor, was born at New Haven, Conn., 1840; graduated from Yale, 1861; studied law at Yale and Harvard law schools LL.D., Harvard, 1891; admitted to bar, 1863. Member faculty, Yale law school since 1869, and now professor of constitutional and private international law; associate justice, 1893-1906, chief-justice 1906-1910, supreme court of errors, Connecticut; governor, 1911-1915. Died, 1927.

Balfe (*balf*), **Michael William,** British composer, born at Dublin, Ireland, 1808. After singing at Paris in the Italian opera under Rossini, Balfe returned to Italy and produced in 1840 several operas. In 1835 he went to England as a vocalist composer, and after five years of successful composition he produced two operas in Paris. Died, 1870.

Balfour (*bal'foor*), **Arthur James,** British statesman and author, was born in Scotland in 1848; educated at Eton, and Trinity College, Cambridge; secretary for Scotland, with a seat in the cabinet, 1886;87; chief secretary for Ireland, 1887-91, and carried the crimes act through parliament; first lord of the treasury and leader of the house on the death of W. H. Smith, 1891, and again in 1895-1905. On the retirement of Lord Salisbury, in 1902, he became prime minister and lord privy seal, retaining the office of first lord of the treasury. When Chamberlain made his fiscal proposals, 1903, Balfour, holding that the country was not ripe for the taxation of food, committed himself and the government only to a policy of retaliation. At the end of 1905 he and his cabinet resigned. Author of *A Defense of Philosophic Doubt; Essays and Addresses; The Foundations of Belief, Being Notes Introductory to the Study of Theology.*

Balfour, Francis Maitland, British biologist, born at Edinburgh, 1851; educated at Trinity College, Cambridge. Between 1879 and 1882 he brought together all that was known about the development stages of animals in his *Comparative Embryology*, a work of the greatest value to students of embryology. In 1882 he and his single guide were killed on the Alps by slipping, while attempting to climb one of the spurs of Mont Blanc.

Ball, Sir Robert Stawell, British scientist, Lowndean professor of astronomy and geometry, Cambridge, director of the Cambridge observatory after 1892, was born in Dublin, Ireland, 1840; graduated from Trinity College, Dublin. Hon. M. A., Cambridge, 1892; LL.D., Dublin. Royal astronomer of Ireland, 1874-92. Author: *A Treatise on the Theory of Screws;* works on astronomy. Died, 1913.

Ballantine (*bal'lan-tin*), **William,** British lawyer, was born in London, 1812; admitted to the bar in 1834, and soon obtained a large practice, chiefly in criminal cases. He wrote *Experiences of a Barrister's Life*, and *Old World and the New.* Died, 1887.

Ballou (*bal-lōō'*), **Hosea,** American preacher and founder of the Universalists, was born in New Hampshire, 1771. He was self-educated; was expelled from his father's church on declaring his belief in the final salvation of all men. He started the *Universalist Magazine* in 1819, and in 1831, with his grandnephew, began the *Universalist Expositor*, a quarterly publication. Died, 1852.

Balmaceda (*bäl'mä-sä'thä*), **Jose Manuel,** Chilean statesman, was born in 1840; president of the republic of Chili 1886-91. In the civil war between the congressional party and himself, he was defeated, and committed suicide in 1891.

Baltimore (*bäl'ti-mōr*), **George Calvert, first Lord,** born at Kipling, in Yorkshire, about 1580, entered parliament in 1609, was knighted in 1617, and in 1619 became secretary of state. As early as 1621 he had despatched colonists to a small settlement in Newfoundland, and in 1627 he visited the place. The severe winter induced him to sail southward in search of a more genial country; but his attempts to settle in Virginia led to disputes, and he returned home to obtain a fresh charter. He died in 1632, and the patent was granted in June of the same year to his son, Cecil, second Lord Baltimore.

Balzac (*bäl'zäk*), **Honore de,** a celebrated French novelist, was born at Tours in 1799; died, 1850. Before completing his twenty-fourth year he had published a number of novels under various assumed names, but the success attending all was very indifferent; and it was not till 1829, by the publication of *Le Vernier Chouan*, a tale of La Vendée, and the first novel to which Balzac appended his name, that the attention of the public was diverted to the extraordinary genius of the author. A still greater popularity attended his *Physiologie de Mariage*, a work full of piquant and caustic observations on human nature. He wrote a large number of novels, all marked by a singular knowledge of human nature and distinct delineation of character, but apt to be marred by exaggeration.

Among his best-known works are: *Scenes de la Vie de Province; Scenes de la Vie Parisienne; Le Pere Goriot; Eugenie Grandet;* and *Le Medecin de Campagne.* The publication of this last, in 1835, led to a correspondence between Balzac and the Countess Eveline de Hanska, a Polish lady whom, after about fifteen years, he visited and married. A collected edition of his works under the title *La Comedie Humaine* began to appear in 1899. Numerous English translations have appeared, of which the best is the series by Miss Wormeley (1890-3), with a memoir of Balzac.

References.—Saintsbury's *French Novelists*, and Balzac's *Life*, written by his sister; Théophile Gauthier's *H. de Balzac;* Sainte-Beuce's *Contemporary Portraits;* Taine's *Essays;* and *Saltus's Balzac.*

Bancroft, George, American historian, was born in 1800, near Worcester, Mass.; graduated from Harvard College in 1817; proceeded in 1818 to Göttingen, where he studied history and philology. Subsequently he traveled through Germany and formed an acquaintance with Goethe and Schlosser. He soon became celebrated as a democratic politician, and was made collector of customs at Boston. When Polk was elected president, in 1845, he appointed Bancroft secretary of the navy. In the autumn of 1846 he was sent by Polk as ambassador to England, where he remained until 1849, carefully collecting materials for his *History of the United States.* He published the result of his labors in his *History of the Revolution in North America.* He had already published his *History of the Colonization of the United States of North America.* The whole of these writings are included in the author's *History of America*, a work of solid excellence, the tenth and last volume of which appeared in 1874. Died, 1891.

Bancroft, William Amos, railway president, was born at Groton, Mass., 1855; graduated from Harvard, 1878; studied at Harvard law school, 1879-81; overseer, Harvard, 1893; Massachusetts volunteer militia, 1875; private to major-general; appointed brigadier-general, United States volunteers, during war with Spain. Was President Boston Elevated Railway Company. Died, 1922.

Bandinelli (*bän'dē-nel'lē*), **Baccio,** Italian sculptor, was born 1488, at Florence, the son of a famous goldsmith. His talent secured him many patrons, and Pope Clement VII. bestowed on him an estate. He died in 1560.

Baner (*bä-nār'*), **Johan,** Swedish commander, of a distinguished family, born in 1595. He was so much addicted to literary studies that Gustavus Adolphus styled him his "learned general." He gained many victories; was revered for his humanity, and, having acquired a high reputation, died at Haldberstadt in 1641.

Bangs (*bangs*), **John Kendrick,** author, humorist, was born at Yonkers, N. Y., 1862; graduated from Columbia, 1883; studied law, 1883-84; associate editor *Life*, 1884-88; editor of *Literature*, 1898-99; *Harper's Weekly*, 1898-1900; *Metropolitan Magazine*, 1902-03; *Puck*, 1904-05. Vice-president Yonkers board of education, 1897; Author: *Roger Camerden; Katharine; The New Waggings of Old Tales; Three Weeks in Politics; The Idiot; A House Boat on the Styx; The Pursuit of the House Boat; Ghosts I Have Met; Cobwebs from a Library Corner; Mr. Munchausen; Olympian Nights;* also many stories contributed to syndicates and magazines. Died, 1922.

Banks, Sir Joseph, English naturalist, born, according to some accounts, at Beversby abbey, in Lincolnshire; according to others, in London, in 1743; died 1820. In 1766 he made a voyage to Newfoundland and Labrador, collecting plants; and from 1768-71 he sailed with Cook around the world in the capacity of naturalist. He wrote a work on the diseases of plants.

Banks, Thomas, the first eminent English sculptor, was born at Lambeth, England, 1735. The monuments of Sir Eyre Coote in Westminster abbey, and of Captains Burgess and Westcott in St. Paul's cathedral were among his last works. Died at London, 1805.

Barbarossa (*bär-bä-ros'ä*). See **Frederick I.**

Barbour (*bär'bēr*), **John,** father of Scottish poetry and history, was born about 1316; paid several visits to England and France; and was archdeacon of Aberdeen from 1357, or earlier, until his death in 1395. His national epic, *The Brus*, was first printed at Edinburgh in 1571.

Barclay de Tolly (*bär'klā dē tō'lē*), **Prince Michael,** one of the most distinguished Russian generals, was born in Livonia, 1761. In the year 1806, at Pultusk, as major-general he commanded Benningsen's advance guard. He lost an arm at the battle of Eylau. Although hated by the Russian national party, because regarded as a German, he was appointed minister of war by the emperor Alexander in 1810—an office which he held until 1813. He died in 1818.

Barham (*bär'am*), **Richard Harris,** English poet and humorist, was born at Canterbury, 1788; died in London, 1845. The *Ingoldsby Legends* constitute his chief claim to fame, and were first contributed to *Bentley's Miscellany.*

Baring-Gould (*bā'ring gōōld'* or *bär'ing*), **Sabine,** English clergyman and writer, was born at Exeter, England, 1834; graduated from Clare College, Cambridge; M.A., 1860; vicar, Dalton, Yorkshire, 1866; rector of East Mersea, Essex, 1871; succeeded to rectory of Lew-Trenchard on death of his uncle, 1881. His works cover a wide range of subjects, mythical, legendary, imaginative, historical, religious, and descriptive. Died, 1923.

Barker, George Fredcrick, physicist, professor of physics, University of Pennsylvania, 1872-1900, was born at Charlestown, Mass., 1835; graduated from Sheffield scientific school, Yale, 1858; M.D., Albany, 1863; LL.D., McGill University, Montreal, 1900; United States commissioner Paris electrical exhibition, 1881; received decoration commander legion of honor of France. Expert in poisons, criminal cases. Member National Academy of Sciences; president of the American association for the advancement of science, 1879; hon. member Royal Institution of Great Britain, 1899.

Barker, Harley Granville, English actor, dramatist and manager, was born in London, 1877. For many years he was associated with the Elizabethan Stage Society, acting and producing, and with Mrs. Patrick Campbell's company. From 1904 he managed the Court theatre and produced plays of his own and of Shaw, Galsworthy, Barrie, and other new dramatists. *Waste* and *The Madras House* are among his plays.

Barlow, Joel, American poet and politician was born at Connecticut in 1755. He served as a military chaplain during the war of independence. In 1787 he published a poem called *The Vision of Columbus* which in 1805 appeared anew in an enlarged form as *The Columbiad.* He was appointed ambassador to France in 1811; died, 1812, at Zarnawica, near Cracow, when on his way to a conference with the emperor Napoleon at Wilna.

Barnabas (*bär'na-bas*), **Saint,** a disciple of Jesus, whose name was Joses or Joseph, but received from the apostles the surname of Barnabas. He accompanied St. Paul on a religious mission to Antioch, and afterward visited Cyprus with St. Mark.

Barnard (*bär'närd*), **Edward Emerson,** scientist, professor of astronomy, University of Chicago, and astronomer Yerkes observatory; born at Nashville, Tenn., 1857; graduate of Vanderbilt University, 1887; astronomer Lick observatory, California, 1887-95. His principal discoveries are the fifth satellite of Jupiter and sixteen comets. Died, 1923.

Barnard, Frederick Augustus Porter, American mathematician, physicist, and educator, was born at Sheffield, Mass., 1809; graduated at Yale in 1828; professor, president, and chancellor, 1854-61, University of Mississippi. In 1864 was elected president of Columbia College, New York; resigned in 1888. Died, 1889.

Barnard, George Grey, American sculptor; born at Bellefonte, Pa., 1863; educated at Chicago Art Institute, and at Paris. His statue, the *Two Natures*, is in the Metropolitan Museum, New York, and his *God Pan* in Central park.

Barnard, John Gross, military engineer, was born at Sheffield, Mass., 1815, died 1882. He graduated at West Point 1833; served for seventeen years on the gulf coast, then in the war with Mexico. In the Civil War served at Bull Run, in

the army of the Potomac, as chief engineer of the defenses of Washington, and on General Grant's staff until Lee's surrender; received the rank of major-general in the United States army.

Barnby, Sir Joseph, English composer and organist; born at York, England, 1838; chorister in Yorkminster; organist St. Andrew's, Wells street, London, 1863-71; percentor and director of musical instruction in Eton College, 1875. His *Rebekah*, a sacred idyll, and *The Lord is King*, both with orchestra; numerous highly interesting "services" and anthems, such as *King All Glorious*, for the church, as well as several secular choruses and songs, have rendered him famous both in England and America. Knighted 1892. Died, 1896.

Barneveldt (*bär'nē-velt*), **John van Olden,** grand pensionary of Holland, was born in 1547. Chosen pensionary of Rotterdam in 1576. He was appointed grand pensionary of Holland, and, after a severe contest with the stadtholder Maurice of Nassau and his party, obtained from the Spaniards the recognition of the independence of Holland and in 1609 concluded a truce for twelve years. Arrested in 1618, he was tried by a special commission, and condemned to death; this sentence, both illegal and unjust, being confirmed by the synod of Dort, the venerable and patriotic statesman was beheaded, 1619.

Barnum, Phineas Taylor, American showman, was born in Bethel, Conn., 1810. At thirty-one he bought the American museum in New York, where he exhibited his famous dwarf General Tom Thumb. He eventually became proprietor of Barnum's Circus, an institution familiar to all Americans. He died in 1891.

Barr, Robert, novelist, editor of the *Idler*, was born at Glasgow, Scotland, 1850. He was educated at the Normal school, Toronto, Canada; school teacher in Canada until 1876. Founded the *Idler* magazine with Jerome K. Jerome in 1892, from the co-editorship of which he retired in 1895. Author: *In a Steamer Chair; The Face and the Mask; The Unchanging East; The Tempestuous Petticoat; A Rock in the Baltic.* Died, 1912.

Barras (*bà'rà'*), **Count Paul Francois Jean Nicolas,** French revolutionist, was born 1755, at Fos-Embroux in Var. An original member of the Jacobin club, he represented Var in the national convention, voted for the king's executon, and had a share in the Girondists' downfall. On subsequent occasions he acted with decision against both royalists and Jacobins; and in 1795, being appointed dictator, he called his young friend Bonaparte to his aid, who assured his own future with the historical "whiff of grape-shot." The directory being appointed, Barras was nominated one of the five members. Once more dictator 1797, he guided the state almost alone, until his covetousness and love of pleasure had rendered him so unpopular that Bonaparte, with Sieyes' help, overthrew him, 1799. In 1815 he returned, and purchased an estate near Paris with part of the great fortune acquired in the revolution. He died in 1829.

Barrett, John, diplomatist, was born at Grafton, Vt., 1866; graduated from Dartmouth College, 1889. Assistant editor of the *Statistician*, San Francisco; on editorial staff newspapers San Francisco, Tacoma, Seattle; associate editor of the *Telegram*, Portland, Ore., 1891-94; American minister to Siam, 1894-98, settling by arbitration claims involving $3,000,000. American plenipotentiary to the international conference American republics, Mexico, 1901-02. American minister to Argentina, 1903-04, to Panama, 1904-05, to Columbia, 1905-06; director international bureau of American republics since 1906.

Barrett, Lawrence, American actor, was born at Paterson, N. J., 1838; first appearance at Detroit, 1853; from 1864 until his death in 1891 continued as star actor and manager; from 1886 closely associated with Edwin Booth.

Barrett, Wilson, English actor and manager, was born in Essex, England, 1846; in 1879 became manager of the Court theater, London, and in 1881 of the Princess. *The Silver King; Claudian; Hamlet; Hoodman Blind*, and his own Christian melodrama, *The Sign of the Cross*, are among the best plays in which he acted. He died in 1904.

Barrie (*bar'i*), **James Matthew,** novelist, dramatist, was born at Kirriemuir, Scotland, 1860; educated at Edinburgh University, taking his M.A. degree in 1882. After a year and a half as a journalist in Nottingham, he settled in London, and became a regular contributor to the *St. James' Gazette, British Weekly, National Observer, Speaker*, etc. In *Auld Licht Idylls* he opened a new and rich vein, the humor and the pathos of his native village. *The Little Minister*, first novel, came out in *Good Words*, in 1891; it was dramatized in 1897; *Jane Annie* was written with Sir Conan Doyle. Other successful pieces have been *The Professor's Love Story*, his own setting of the *Little Minister; The Admirable Crichton; Little Mary; Peter Pan; Quality Street*, and *What Every Woman Knows.*

Barringer, Paul Brandon, educator, president Virginia Polytechnic Institute, was born at Concerd, N. C., 1857; attended University of Virginia, M.D., 1877; University of New York, LL.D., 1878; honorary LL.D., Davidson College, N. C. In 1888 became professor of physiology and materia medica, and 1896-1903, chairman of faculty, University of Virginia.

Barrows, David Prescott, born Chicago, 1873; graduate Pomona College, 1894; University of California, 1895; U. of Chicago, Ph.D., 1897. Supt. of schools, Manila, 1900 and Gen. Supt. of Education for Philippine Islands. 1903-1909. Dean U. of Cal., 1911-1919 and president, 1919-23. Major of Cavalry in National Army, 1917-1918; Lt. Col. Cavalry U. S. A., 1918; active duty in P. I. and Siberia, 1918.

Barrows, John Henry, educator, Presbyterian clergyman, president Oberlin College, Ohio, was born at Medina, Mich., 1847; graduated from Olivet College, Mich., 1867. During the World's Columbian Exposition he was chairman of the general committee on religious congresses. In 1896 he resigned his pastoral charge in Chicago and proceeded to India, to lecture on religious subjects, under the auspices of the Haskell endowment of the University of Chicago. On his return he became lecturer at the latter on comparative religions, and was also lecturer at the Union theological seminary, New York. In 1898 he became president of Oberlin College. Died, 1902.

Barrows, Samuel June, legislator, author, clergyman, was born at New York, 1345; graduated from Harvard divinity school, 1875; D.D., Howard University, Washington, D. C., 1897. Editor *Christian Register*, 1881-97; member of congress, tenth district, Massachusetts, 1897-99. President of international prison congress, 1905. Author: *Shayback's in Camp; Isles and Shrines of Greece;* etc. Died, 1909.

Barry, Sir Charles, English architect, designed the two houses of parliament, the Manchester Athenæum, and the grammar school of King Edward VI., at Birmingham. In London he also designed the Travelers' club and the Reformed club, both in Pall Mall, and the college of surgeons, Lincoln's Inn Fields; born at Westminster, 1795. Died at Clapham, 1860.

Barrymore, Ethel, actress, born at Philadelphia, Pa., 1879; daughter of late Maurice and Georgiana (Drew) Barrymore. Made début in John Drew's company, 1896; played *Priscilla* in *Secret Service*, London; later appeared in leading rôles with Henry Irving.

Barrymore, John (John Blythe), actor, born February 15, 1882, son of Maurice Barrymore (Herbert Blythe) and Georgiana (Drew). Married Katherine C. Harris. Debut at Cleveland's theatre, Chicago, October 31, 1903. First appearance in New York, December, 1903; also played in London.

Barrymore, Lionel, actor, son of the late Georgie (Drew) and Maurice Barrymore, made his first appearance on the stage in 1893 in *The Rivals.* In 1912, toured in vaudeville, in *The Still Voice.*

Barthelmess, Richard, moving picture actor, born in New York City. His first picture was "War Brides." His later appearances include "Broken Blossoms," "Tol'able David," "Classmates."

Bartholdi (*bär-tol'dē*), **Frederic Auguste,** sculptor, was born at Colmar, Alsace, of Italian ancestry on his father's side, in 1834. His best-known work is the colossal bronze "Liberty Enlightening the World," which was unveiled on Bedloe's island, New York harbor, in 1886. Died, 1904.

Bartlett, Paul Wayland, American sculptor; born at New Haven, Conn., 1865; studied at Boston under Fremiet and in Paris under Cavalier; produced statues as well as many other works in the art collections of Philadelphia, Boston, Chicago and Paris. Died, 1925.

Bartolommeo (*bär'tō-lōm-me-ō*), **Fra** (properly Baccio della Porta), one of the most distinguished masters of the Florentine school of painting, was born near Florence in 1475. His subjects are mostly all religious, and by far the greater part of his pictures belong to the later years of his life. He was a warm adherent of Savonarola, after whose tragical end he in 1500 assumed the Dominican habit. Bartolommeo died at Florence in 1517.

Barton, Clara, philanthropist, founder and organizer of national Red Cross Society in the United States, president 1881-1904; born in Oxford, Mass., 1821; graduate of Clinton liberal institution, New York. During Civil War did relief work on battlefields and organized search for missing men; laid out grounds for national cemetery, Andersonville, 1865; secured adoption of treaty of Geneva, 1882; first president American Red Cross; inaugurated American amendment of Red Cross, to provide for greater calamities of peace; distributed relief Johnstown flood, 1892; at request of president of United States carried relief to Cuba, 1898; did personal field work, Spanish-American war. Died, 1912.

Barye (*bà-rē*), **Antoine Louis,** French sculptor, born at Paris, in 1795. He was at first an engraver and metal-worker. His famous bronze of a lion struggling with a snake secured for him the cross of the legion of honor. He died at Paris in 1875.

Bascom, John, American educator, former president of the University of Wisconsin, was born at Genoa, N. Y., 1827; graduated in 1849 from Williams College, and six years later from Andover theological seminary; was for twenty years professor of rhetoric at Williams, and for thirteen years president of Wisconsin University. He retired from Wisconsin, 1887, and accepted the chair of political science at Williams, from which he resigned, 1901. Author: *Political Economy; Aesthetics; Philosophy of Rhetoric; Principles of Psychology; Philosophy of Religion; Comparative Psychology.* Died, 1911.

Bashford, James Whitford, bishop of Methodist Episcopal church since 1904; was born at Fayette, Wis., 1849; graduated from University of Wisconsin, 1873, A.M., 1876; pastor M. E. churches in Boston, Auburndale, Mass.; Portland, Maine; Buffalo, N. Y., 1875-89; president Ohio Wesleyan University, 1889-1904. Died, 1919.

Basil (*baz'il* or *bā'zil*), **Saint,** surnamed the Great, bishop of Cæsarea, where he was born about 329, is one of the most eminent of the Christian fathers. The attempts which St. Basil made to re-unite the two hostile churches of the East and West were unsuccessful. Died, 379.

Baskerville, Charles, chemist; born in Noxubee county, Miss., 1870; graduated from University of Virginia, 1890; professor of chemistry, college of the city of New York. Author: *School Chemistry; Key to School Chemistry; Radium and Its Applications in Medicine.* Died, 1922.

Baskerville, John, English printer and letter-founder, born, 1706, in Worcestershire; began about 1750 to make experiments in letter-founding, and succeeded in making types which have scarcely yet been excelled. Died, 1775.

Bassett, John Spencer, educator; born at Tarboro, N. C., 1867; graduated from Trinity College, N. C., 1888; Ph.D., Johns Hopkins, 1894; professor of history, Trinity College, N. C., 1893-1906, Smith College, Mass., since 1906. Author: *Constitutional Beginnings of North Carolina; Slavery in the State of North Carolina; The War of the Regulation.* Killed by a street car in 1928.

Bastable, C. F., economist, professor of political economy, Dublin University; professor of jurisprudence and international law, Dublin University, born at Charleville, County Cork, 1855; graduated from Trinity College, Dublin. George Rae lecturer, University College of North Wales, 1905. Author: *Theory of International Trade; Commerce of Nations; Public Finance;* contributor to *Encyclopædia Britannica; Harmsworth Encyclopædia.*

Bastian (*bäs'tē-an*), **Adolf,** German traveler and anthropologist, author of nearly sixty works, was born at Bremen, 1826. In 1866 he became professor of ethnology at Berlin and curator of the ethnological museum. Died, 1905.

Bastian (*bast'yan*), **Henry Charlton,** English physiologist, was born at Truro, Cornwall, 1837, and from a private school at Falmouth proceeded to University College, London, where he became professor of pathological anatomy, 1895, professor of the principles and practice of medicine. He is the champion of the doctrine of spontaneous generation. He has written *Evolution and the Origin of Life; The Brain as an Organ of Mind; Paralyses—Cerebral, Bulbar, and Spinal.*

Bates, Blanche, actress; born in Portland, Ore., 1873. First appearance on stage at Stockwell's theater, San Francisco, 1894; played leading parts in various comedies, 1896-98; appeared in Shakespearian rôles Augustin Daly's company, 1898; later starred in *The Great Ruby, Madame Butterfly*, and in *The Darling of the Gods.*

Bates, John Lewis, governor, lawyer; born at North Easton, Mass., 1859; graduated from Boston University, 1882, law department of same in 1885. Member Boston common council, 1891-1892; lieutenant-governor of Massachusetts, 1900-1-2; governor of Massachusetts, 1903-04; director United States trust company, president board of trustees, Boston University.

Bates, Katharine Lee, author, educator; born Falmouth, Mass., 1859; graduated Wellesley College, 1880; 1885-88 instructor English literature; 1888-91 associate professor, and in 1891 professor in charge, Wellesley College. Died, 1929.

Bauer (*bou'ĕr*), **Bruno,** German philosophical and historical writer, and biblical expositor of the Hegelian school, was born at Eisenberg, Germany, 1809, and died near Berlin, 1882. His writings embrace a number of critiques on the gospels and Pauline epistles; one on Strauss's *Life of Jesus.* On theological subjects Bauer has been called the "Voltaire of Germany."

Baumgarten (*boum'gär-ten*), **Alexander Gottlieb,** the founder of the science of æsthetics, or the philosophy of the beautiful, was born at Berlin, 1714, studied at Halle under Wolf, and was appointed professor of philosophy at Frankfort on-the-Oder, where he died, 1762.

Baumgartner (*boum'gert-ner*), **Karl Heinrich,** German physiologist, was born at Baden, 1798, and died at Baden-Baden, 1886. From 1824 to 1862 he was professor of clinical medicine at Freiburg.

Baur (*bour*), **Ferdinand Christian von,** German theologian, born 1792, at Schmiden, near Stuttgart, was the founder of the Tübingen school of theology. In 1826 he was called to the chair of protestant theology at Tübingen, which he held until his death in 1860.

Bax, Ernest Belfort, barrister-at-law, Middle Temple; author; born at Leamington, England, 1854; was educated privately in London and Ger-

many. In 1885 helped to start the socialist league in conjunction with the late William Morris, and for some time co-edited with him the weekly journal *Commonweal*. Author: *Jean-Paul Marat; Kant's Prolegomena; The Problem of Reality; Socialism, Its Growth and Outcome; The Peasants' War in Germany; Essays in Socialism, New and Old; The Roots of Reality.*

Bayard (*bā'yär'*), **Pierre Du Terrail Chevalier De,** French knight, was born near Grenoble, in 1475. He served under Charles VIII., in an expedition against Naples, and in the wars against the English and Spaniards he distinguished himself by his bravery and nobleness of character. He was killed in a battle at the river Sesia, Italy, in 1524. He is known as "the knight without fear and without reproach."

Bayard, Thomas Francis, American statesman, was born at Wilmington, Del., 1828. He was privately educated and began the practice of law in his native city in 1851; entered Cleveland's cabinet as secretary of state in the latter year. In 1893 was appointed ambassador to England, the first to hold that rank as a representative of the United States. Died, 1898.

Bayes, Nora, actress, exceedingly popular, was originally associated with Keith theatres. Formed a show of her own, 1917, selecting her songs from a repertoire of 144 songs, having committed the words and music to memory. Played leading parts in *Cohan Revue*, 1918. Died, 1928.

Bazaine (*bā'zen'*), **Francois Achille,** a marshal of France; born at Versailles, 1811; distinguished himself in Algiers, the Crimea, and Mexico. Died at Madrid, 1888.

Beach, Rex Ellingwood, author, playwright; born at Atwood, Mich., 1877; educated at Rollins College, Winter Park, Fla., 1891-96, Chicago College of Law, 1896-97. Author: *Pardners; The Spoilers; The Silver Horde;* etc.

Beaconsfield, Earl of. See **Disraeli, Benjamin.**

Beale (*bēl*), **Joseph Henry, Jr.,** lawyer, educator; born in Dorchester, Mass., 1861; graduated from Harvard, 1882, A.M., LL.B., 1887; LL.D. Practiced law, Boston, 1888-92; teacher of law, Harvard law school, assistant professor, 1892, became professor of law in 1897. Author: *Cases on Criminal Law; Cases on Damages; Cases on Carriers; Innkeepers;* etc.

Beatrice Portinari (*bē'a'trēs pôr'te-nä'rē*), Dante's poetical ideal, daughter of a Florentine noble, remarkably graceful and accomplished. Dante first saw her when she was but nine years old, and but seldom afterward; but in his vivid imagination she grew to be the personification of divine truth, and so appears in the *Divine Comedy*. In 1287 she married a citizen of Florence. Born in 1266; died, 1290.

Beattie (*bē'ti*), **James,** Scottish poet and writer on philosophy, born at Laurencekirk, Scotland, 1735; died, 1803. Professor of moral philosophy in Marischal College, Aberdeen, 1760-97. His fame now rests almost wholly on *The Minstrel*, a descriptive poem written in the Spenserian stanza.

Beatty, John W., director of fine arts, Carnegie Institute, Pittsburg, Pa., born at Pittsburg, 1851; student of Munich Academy of Fine Arts; A.M., Western University of Pennsylvania, 1900; member of many art societies. Died, 1924.

Beaufort (*bū'fert*), **Henry,** cardinal and bishop of Winchester, born about 1370; was half-brother to King Henry IV. He was educated in England and Germany, and in 1405 became bishop of Winchester. In 1431 he conducted the young king, Henry VI., to France, to be crowned in Paris as king of France and England. Died, 1447.

Beauharnais (*bō'är'ne'*), **Eugene de,** viceroy of Italy during the reign of Napoleon I., and afterward duke of Leuchtenberg, and prince of Eichstadt, born 1781, the son of the vicomte Beauharnais. After his mother's marriage with Bonaparte, he accompanied him in his campaigns in Italy and in the expedition to Egypt; and in 1805, after the erection of the imperial throne, he was made a prince of France and viceroy of Italy. The victory of Lützen was decided by his conduct in that battle. Died, 1824.

Beauharnais, Hortense Eugenie de, daughter of Josephine; born in 1783; was married against her will to Louis, brother of Napoleon Bonaparte, from whom she separated in 1810. Her son by him was the late Napoleon III. Died, 1837.

Beaumarchais (*bō'mär'she'*), **Pierre Augustin Caron de,** French dramatist and poet, was the son of a watchmaker named Caron, and was born at Paris, 1732; married a widow, Madame Franquet in 1757, and from a little property of hers took the aristocratic name of Beaumarchais. Meanwhile devoting himself to literature, he produced *Eugenie*, a drama in five acts; *Les Deux Amis, ou Le Negociant de Lyon; Le Barbier de Seville;* and *Le Mariage de Figaro*. He died in 1799.

Beaumont (*bō'mont*), **Francis,** English poet and dramatist, best known by his literary partnership with John Fletcher, was born at Grace Dieu Leicestershire, in 1586; died, 1616.

Beauregard (*bō'rē-gärd*), **Pierre Gustave Toutant,** general of the army of the Confederate States during the Civil War, was born near Orleans, La., 1818. At the secession of Louisiana he resigned his commission in the regular army; in 1861 he was appointed by the confederate government to the command at Charleston, S. C., where, on April 12-13th, he commenced the war by the bombardment of Fort Sumter; July 21st he won the battle of Bull Run; after the war he became a railroad president, and in 1878 adjutant general of Louisiana. Died, 1893.

Bebel (*bā'bel*), **Ferdinand August,** German social democrat, was born at Cologne, 1840, and in 1860 removed to Leipzig, where in 1864 he established himself as a master turner. He was an effective speaker and writer. Died, 1913.

Beccaria (*bek'kä-rē'ä*), **Cesare, Marchese, di,** Italian economist and jurist, was born at Milan, 1738. In 1764 he published anonymously his work on *Crimes and Punishments*, in which he argued against capital punishment and torture. He was among the first to advocate the beneficial influence of education in lessening crime. In 1768 he was appointed professor of political philosophy at Milan; in 1791 he was made a member of the board for the reform of the judicial code. He died, 1793.

Becher (*bek'ĕr*), **Johann Joachim,** German chemist, was born at Spires in 1635, and lived successively at Mainz, Vienna, Munich, Würzburg, Haarlem, London, where he died in 1682. His *Physica Subterranea* was the first attempt made to bring physics and chemistry into close relation. Died, 1682.

Beck, James M., lawyer, born at Philadelphia, Pa., 1861; graduate of Moravian college, Bethlehem, Pa., 1880. Was admitted to bar, 1884; United States attorney for eastern district of Pennsylvania, 1896-1900; assistant attorney-general of United States, 1900-1903. As master, appointed by United States court, sold, 1902, the *Philadelphia Record* for $3,000,000—highest price ever brought by an American newspaper at public sale. Member law firm of Shearman & Sterling, New York, 1903-1917; Beck, Crawford & Harris, New York, 1917-1921; Solicitor-General U. S. beginning 1921.

Becker, Wilhelm Adolf, German author and philologist, was born at Dresden in 1796, died, 1846. In 1840 he traveled through Italy; in 1837 was appointed professor of archæology at the University of Leipzig. His lively fancy, aided by a thorough knowledge of the classic languages, enabled him to make a novel use of antiquity. In his *Charikles* he ventured to reproduce the social life of old Greece; and in his *Gallus* to give sketches of the Augustan age at Rome.

Becket, Thomas a, celebrated English prelate, was born at London in 1118, studied at Oxford, Paris, and Bologna, and on his return home entered the church. Henry II. made him high chancellor and preceptor to Prince Henry in 1155, admitted him to the closest intimacy and confidence, and in 1162 raised him to the archbishopric of Canterbury. Becket now entirely gave up his courtier habits, assumed a rigid austerity of manner, and became a stubborn champion of the exorbitant privileges of the clergy. A violent contest ensued between the sovereign and the prelate, and the latter was at length obliged to fly from the kingdom. In 1170, however, he was restored, and he instantly recommenced his resistance to the monarch. He was murdered in Canterbury cathedral, 1170.

Beckford, William, an eccentric man of genius, was born at Fonthill, England, 1759. When he was about nine years of age his father died, and he inherited estates in Jamaica, and Fonthill, in Wiltshire. In 1784 he published *Vathek* in French. During all his life he was a hard-working student, but was of a most erratic disposition. Died, 1844.

Becquer (*bā-kār'*), **Gustavo Adolfo,** Spanish poet and novelist, was born at Seville, 1836. His weird and fantastic tales are written after the manner of Poe and Heine, and have proved very popular. He left three volumes of poems and legends, of which the best known is *Leyendas Espanolas*. Died at Madrid in 1870.

Becquerel (*bek'rel'*), **Antoine Cesar,** French physicist, born at Loiret, France, 1788. While studying the physical properties of yellow amber he had occasion to make experiments on the liberation of electricity by pressure; the result of his inquiries was the overthrow of Volta's theory of contact, and the construction by him of the first constant pile. He is, besides, one of the creators of electrochemistry, and invented a method of electrotyping. Died, 1878.

Beddoe, John, physician, anthropologist, born at Bewdley, England, 1826; was educated at Bridgnorth, University College, London, and Edinburgh University, graduating B.A., London, in 1851, and M.D., Edinburgh, in 1853. He served as a surgeon during the Crimean war, and afterward practiced at Clifton, 1857-91. He is the author of *Stature and Bulk of Man in the British Isles; The Races of Britain; Anthropological History of Europe; Color and Race, etc.*

Bede (*bēd*), or **Baeda** (*bē'dä*), surnamed "the venerable," English monk, scholar, and church historian, was born, 673, in the county of Durham, and died at Jarrow, at the monastery of St. Paul, in 735. He is said to have been the most learned Englishman of his day, and in the seclusion of his cell he wrote, besides his important *Ecclesiastical History of England*, which was translated from the Latin by King Alfred into Anglo-Saxon, a number of commentaries, homilies, hymns, and lives of the saints.

Bedford, John, Duke of, third son of Henry IV., was born in 1389. In 1414 his brother, Henry V., created him duke of Bedford; and during the war with France he was appointed lieutenant of the kingdom. After Henry's death in 1422, Bedford became guardian of the kingdom, and regent also of France; and, Charles VI. dying two months afterward, he had his nephew proclaimed king of France and England as Henry VI. In the wars with the dauphin which followed, Bedford displayed great generalship and defeated the French at Verneuil in 1424. The appearance of Joan of Arc was followed by disaster to his arms; and in 1435 a treaty was negotiated at Rouen between Charles VII. and the duke of Burgundy, which ruined English interests in France. Died, 1435.

Beebe, William, American scientist and author, was born in Brooklyn in 1877 and was educated at Columbia University. In 1899 he was appointed curator of birds by the New York Zoölogical Society, and later he was made honorary curator. He has conducted numerous expeditions for zoölogical studies in tropical waters. Author: *The Bird; Log of the Sun: Jungle Peace; Jungle Days; Galapagos*; and also many scientific papers.

Beecher, Catherine Esther, eldest child of Lyman Beecher, was born at East Hampton, L. I., 1800. She organized societies and schools for training teachers and sending them to new states and territories; also published a series of books. Died, 1878.

Beecher, Henry Ward, preacher, theologian, lecturer, orator, was born at Litchfield, Conn., 1813; graduated at Amherst college in 1834, studied theology under his father at Lane seminary, Cincinnati. After a pastorate of ten years in two churches in Indiana, he removed to Brooklyn and assumed charge of Plymouth church, "an organization of orthodox Congregational believers." He for many years drew one of the largest and most influential regular congregations in the United States, and his published sermons soon became a power in this and other countries. His reputation as a writer is second only to his celebrity as a preacher. For nearly twenty years he was editor of the New York *Independent*, and in 1870 he became editor of the *Christian Union*, also a religious weekly. His most important works are: *Lectures to Young Men, Industry and Idleness, Life Thoughts*, being selections from his extemporaneous sermons, revised by himself; *The Star Papers*, these last being composed of articles contributed to the New York *Independent*, and the *Life of Christ*. He also edited the *Plymouth Collection of Hymns*. Died at Brooklyn, N. Y., 1887.

Beecher, Lyman, preacher and theologian, was born at New Haven, Conn., 1775; graduated from Yale college, studied theology for a year, and began preaching at East Hampton, L. I. where he remained until 1810. He then went to Litchfield, Conn., where were born his two most famous children, Henry Ward and Harriet (Mrs. Stowe), though nearly all of his thirteen children are well known. He was one of the first pulpit orators of the time. After sixteen years he was called to Hanover Street church, Boston, and during his six years of hard work there engaged in a theological discussion with Dr. Channing. He spent twenty years at the head of Lane theological seminary, Cincinnati. Died at Brooklyn, N. Y., 1863.

Beerbohm, Max, English caricaturist and writer, was born in London in 1872. He was educated at Oxford, then became a contributor to the *Yellow Book* and critic on the *Saturday Review*. He is best known by his incisive caricatures of prominent men in society, *Caricatures of Twenty-five Gentlemen* (1896), *The Second Childhood of John Bull* (1901), *Fifty Caricatures* (1913), and others. Among his published writings are *Zuleika Dobson* (1911), *Seven Men* (1919), and *Even Now* (1920).

Beers (*berz*), **Henry Augustin,** author, professor of English literature at Yale; was born at Buffalo, N. Y., 1847; graduated from Yale, 1869. Author: *A Century of American Literature; Odds and Ends* (verse); *Nathaniel Parker Willis; The Thankless Muse* (verse); *From Chaucer to Tennyson; Initial Studies in American Letters; A Suburban Pastoral and Other Tales; The Ways of Yale; A History of English Romanticism in the Eighteenth Century; A History of English Romanticism in the Nineteenth Century; Points at Issue;* contributor to leading magazines.

Beethoven, van (*vän bā'tō-ven*), **Ludwig,** one of the greatest musical composers of modern times, was born at Bonn in 1770. His genius was very early displayed, and his musical education was begun by his father, and continued by the court organist who introduced him to the works of Sebastian Bach and Handel. He soon attempted com-

position, and showed wonderful facility in improvisation. About 1790, he settled at Vienna, where Mozart quickly recognized his marvelous powers. When about 40 years of age, he was attacked with deafness which became total, and lasted through life. He became, gradually, the victim of morbid irritability, and hopeless melancholy, ending in confirmed hypochondria, and, finally, dropsy and delirium. He continued to compose, however, long after he had ceased to hear himself play, and received homage and honors from all parts of Europe. Died, unmarried, at Vienna, in 1827. The works of Beethoven are very numerous, and in every variety of style—orchestral, chamber-music, pianoforte, and vocal music. Among the most celebrated are the opera of *Fidelio;* the oratorio of the *Mount of Olives;* the cantata *Adelaide; Sinfonia Eroica* (heroic symphony); *Sinfonia Pastorale*—(Pastoral symphony); *Concerto in C Minor; Sonata Pathetique;* and the *Sonata with Funeral March.* Vast power, intense passion, and infinite tenderness are manifested in all his compositions, which abound no less in sweetest melodies than in grand and complicated harmonies. A statue of Beethoven, by Hülmel, was erected at Bonn in 1845.

Begas (*bā'gās*), **Karl,** German painter, born at Hernsberg, near Aix-la-Chapelle, 1794; became a pupil of Gros at Paris in 1813; studied afterward at Rome, and was a member of the academy and court painter at Berlin from 1825 until his death in 1854. His pictures are partly biblical, partly romantic, and partly genre pieces. Of the first may be mentioned his *Baptism of Christ,* in the style of the old Florentines, which was placed in the garrison church at Potsdam, and his fine fresco of Christ and the four evangelists surrounded by a choir of angels in the church of Cracow. Specimens of the other classes are the *Lorelei, Girls Under the Oak Tree, The Vine Dressers,* etc. He is chiefly memorable as a master of light and shade.

Begas, Reinhold, German sculptor, was born in Berlin, 1831; son of Karl Begas. Educated under Rauch and Wichmann, 1846-51; studied in Italy, 1856-58. Principal works; statue of Borussia for hall of glory; Neptune fountain on Schlossplatz; statue of Alexander von Humboldt; statue of Schiller for Gendarmen market, all in Berlin; sarcophagus of Emperor Frederick III. in Friedenskirche, Potsdam, and sarcophagus of Empress Frederick; national monument to Emperor William; statue of Bismarck before the Reichstag Gebaüde; several statues in the Siegesalle, Berlin. He died in 1911.

Behaim (*bā'hīm*), or **Behem** (*bā'hem*), **Martin,** German navigator and geographer, was born at Nuremberg about 1459, died about 1506; probably a pupil of Regiomontanus; visited Portugal about 1480, and in 1484 was made geographer of an expedition for the exploration of western Africa; knighted by John II. of Portugal. In 1492 he made a terrestrial globe, a gift to his native city, where it is still preserved.

Behring, Emil Adolph von, German physician, was born at Hansdorf, 1854. He studied in Berlin, became a surgeon in the army for a time, then was appointed professor at the University of Halle, 1894. In 1895 he became director of the Institute of Hygiene at Marburg. He discovered diphtheria serum, for which he was awarded the Nobel prize, 1901. A later discovery was bovivaccine, which prevents tuberculosis in cattle. Died, 1917.

Bekker (*bek'ĕr*), **Immanuel,** German scholar and philologist, was born at Berlin, 1785; died there, 1871. He became professor of philology at Berlin, and edited critical editions of Plato, the Attic orators, Aristotle, Thucydides, Aristophanes, Herodotus, Livy, Tacitus, and other classic writers. His chief independent work was *Anecdota Graeca.*

Belasco (*bē-las'kō*), **David,** dramatic author, was born at San Francisco, 1862; educated at Lincoln college, California. Author (plays): *Zaza; The Heart of Maryland; The Wife; The Charity Ball; Lord Chumley; May Blossom; Men and Women; LaBelle Russe; The Girl I Left Behind Me; Valerie; Hearts of Oak; The Darling of the Gods; Du Barry; Sweet Kitty Belaire; Adrea.* Manager of Mrs. Leslie Carter, David Warfield, Blanche Bates, and Frances Starr.

Belisarius (*bel'i-sā'ri-us*), the great general of Justinian, was born in Illyria about 505. After commanding an expedition against the king of Persia about 530, he suppressed an insurrection at Constantinople, conquered Gelimer, king of the Vandals, and put an end to their dominion in Africa. In 535 he was sent to Italy to carry on war with the Goths, and took Rome in 536. He was afterward sent against the Persians and Huns, and in 563 was charged with conspiracy against Justinian, but was acquitted. That he was deprived of sight and reduced to beggary appears to be a fable of late invention. Died, 565.

Bell, Alexander Graham, scientist, inventor, born in Edinburgh, Scotland, 1847; educated at Edinburgh and in London University; LL.D., Ph. D.; invented telephone, for which patent was granted February 14, 1876; invented the graphophone, 1883. Regent Smithsonian institution. Officer French legion of honor. Member national academy of sciences and other scientific organizations. Author of many scientific and educational monographs. Died, 1922.

Bell, Alexander Melville, educator, was born in Edinburgh in 1819. He studied with his father, an authority on phonetics, and himself became a famous lecturer on elocution in the university of Edinburgh. He came to this country in 1870, teaching for ten years at Queen's University, Kingston, Ontario, then going to Washington, D. C. Here he developed his system of "visible speech" for the use of deaf mutes. Among his many books are *Letters and Sounds, Visible Speech, The Fundamentals of Elocution.* He died in 1905.

Bell, Sir Charles, British physician and anatomist, famous for his discoveries in the nervous system, was born at Edinburgh, Scotland, 1774. In 1807 he distinguished between the sensory and motor nerves in the brain. In 1812 he was appointed surgeon to the Middlesex hospital, which his clinical lectures raised to the highest repute. To study gunshot wounds, he went to Haslar hospital after Corunna in 1809, and after Waterloo took charge of a hospital at Brussels. Knighted in 1831, was appointed professor of surgery at University of Edinburgh in 1836; he died in 1842.

Bell, Henry, who introduced steam navigation into Europe, was born at Torphichen, Linlithgowshire, 1767. In 1812 he launched the *Comet* on the Clyde, the first steam vessel on European waters. The engine, at first of three horsepower, was afterward increased to six. He died at Helensburg, 1830.

Bell, James Franklin, army officer, was born at Shelbyville, Ky., 1856; graduated from United States military academy, 1878; served on plains in 7th United States cavalry, 1878-94; organized 36th infantry, United States volunteers, in Philippine Islands, 1899; appointed brigadier general of United States army, 1901; returned to United States in 1903; commandant of infantry and cavalry school, signal school and staff college to April, 1906; major-general, 1907. Died, 1919.

Bell, John, English sculptor, born in 1811, first exhibited in 1832, and has produced numerous admirable works in monumental, religious, and imaginative art. His last great work was the group *The United States Directing the Progress of America,* for the base of the Prince Consort memorial, in London. Died, 1895.

Bell, John, American politician, was born near Nashville, Tenn., 1797; was admitted to the bar, 1816; member of congress from Tennessee, 1827-41; nominated by the constitutional union party for president, 1860, and received the electoral vote of Tennessee, Kentucky, and Virginia. Died, 1869.

Bell, Robert, chief geologist geological survey of Canada; acting director, 1901-06; was born at Toronto, Ontario, 1841; was educated at McGill and Edinburgh Universities; D.Sc., McGill; LL. Queen's; F. R. S., 1897. Joined geological survey of Canada, 1857; made very extensive topographical and geological surveys in nearly all parts of the Dominion; was Canadian correspondent of the Royal Scottish Geographical Society from its foundation, and a member of many scientific societies; was a royal commissioner on the mineral resources of Ontario, 1888-89; professor of chemistry and natural science in Queen's University, Kingston, 1863-67. Died, 1917.

Bellamy (*bel'ămi*), **Edward,** American novelist and economist, born at Chicopee Falls, Mass., 1850. He was educated in Germany; admitted to the bar; was on the staff of the New York *Evening Post* in 1871-72; and on his return from the Sandwich Islands in 1877 founded the Springfield *News.* Author of *Looking Backward,* etc. Died, 1898.

Bellarmine (*bel'lär-mĭn* or *mēn*), **Robert,** celebrated Roman Catholic theologian; was born at Monte Pulciano, in Tuscany, 1542. He entered the order of Jesuits in 1560, and in his twenty-seventh year, when he went to Louvain as professor of theology, began that long controversy with *heretics,* which formed the main business of his life. In 1599 he was made a cardinal against his own inclination. Died, 1624.

Bellew (*bel'ū*), **Harold Kyrle-Money,** English actor; was born in Calcutta, 1857; made stage début at Theater Royal, Brighton; became leading man and star in London; came to United States as leading man in Wallack's theater, New York, October, 1885. Headed exploration expedition in northern Queensland, 1900-02, returning to stage at head of own company in United States, October, 1902. Died, 1911.

Bellini (*bel-lē'nē*), **Gentile,** Venetian painter, was born about 1427, died 1507. He was employed, with his brother, Giovanni, to decorate the great council-chamber of the Venetian senate-house.

Bellini, Giovanni, Venetian painter, brother to Gentile Bellini, and with him the founder of the Venetian school of painting, was born 1426; died 1516. His best works are altar pieces. Among his more famous pictures are his *Infant Jesus; Holy Virgin,* and *Christ and the Women of Samaria.*

Bellini, Vincenzo, Italian composer of operas, was born at Castania, in Sicily, in 1802. He was sent to the conservatoire of Naples, where he studied composition. He visited Paris and London, and died near Paris in 1835. Among his best works are *Norma, I Puritani,* and *La Sonnambula.*

Bellmann (*bel'măn*), **Karl Mikael,** Swedish poet, was born at Stockholm, 1740; became court-secretary in 1775, and died in 1795. His later and more brilliant pieces are chiefly bacchanalian, idyllic, or humorous songs, for which he also furnished original melodies. A monument was erected to his memory at Stockholm in 1829.

Belloc (*be-lok'*), **Hilaire, Joseph Peter,** English writer and politician, was born in 1870; graduated from Balliol College, Oxford, 1895. Author: *Verses and Sonnets; The Bad Child's Book of Beasts; More Beasts for Worse Children,* etc.

Bellows, Henry Whitney, Unitarian divine and writer, was born at Walpole, N. H., 1814; graduate of Harvard and of Cambridge divinity school; in 1838 became pastor of All Souls church, New York; was instrumental in establishing the *Christian Enquirer* in 1846. He did excellent service as presiding officer of the sanitary commission during the war of the rebellion. Died, 1882.

Bell-Smith, Frederic Marlett, artist; president of the Ontario society of artists; born at London, 1846; studied drawing at South Kensington, London; went to Canada, 1867; charter member society of Canadian artists, 1867; director Toronto art school, 1889-91; lecturer and writer on art subjects.

Belmont, August, banker, was born at New York, 1853; son of prominent banker of the same name; graduate of Harvard, 1874, and at once entered the bank; became head of August Belmont & Company, American representatives of European banking firm of Rothschilds. Died, 1919.

Belmont, August, American politician and financier was born at Alzey, Germany, 1816; representative of the Rothschilds in the United States; art collector and turfman; United States minister to the Netherlands, 1854-58. Died, 1890.

Belmont, Perry, lawyer; was born at New York, 1851; graduated from Harvard in 1872; studied civil law, University of Berlin; LL.D., Columbia Law School, 1876; practiced law until 1881; member of congress, 1880-87; chairman committee on foreign affairs, 1885-87; United States minister to Spain, 1887-88. Inspector general with rank of major, 1st division, 2d army corps, United States volunteers, 1898.

Belshazzar (*bel-shaz'ar*), the last king of Babylon of the Chaldæan dynasty, began to reign about 554 B. C. The hand-writing on the walls of his palace, its interpretation by Daniel, the taking of Babylon by Cyrus the Great, and Belshazzar's death in 538 B. C. are familiar to all Bible readers.

Bem (*bem*), **Joseph,** Polish general, born in Galicia in 1795; served in the French campaign against Russia; 1812; took part in the Polish insurrection of 1830; joined the Hungarian army in 1848, defeated the Austrians in several battles, and after the defeat of Temesvar took refuge in Turkey; became a Mohammedan, and was made a pasha. Died, 1850.

Bembo (*bem'bō*), **Pietro,** Italian scholar, was born at Venice, 1470, and died at Rome, 1547, having in 1513 been made secretary to Leo X., and in 1539 a cardinal by Paull II., who afterward appointed him to the diocesses of Gubbio and Bergamo.

Bemis, Edward Webster, educator, economist, was born at Springfield, Mass., 1860; graduated from Amherst, 1880; A. M., 1884; Ph. D., Johns Hopkins, 1885; professor of history and pohtical economy, Vanderbilt University, 1887-92; associate professor political economy, University of Chicago, 1892-95; now consulting engineer for cities, states and other public bodies upon public utilities of water, light, street railways and telephones.

Bendemann (*ben'dē-măn*), **Eduard,** German painter of the Düsseldorf school, was born at Berlin in 1811. From 1859 until 1867 he was director of the Düsseldorf Academy. He died in 1889.

Benedek (*bā'ne-dek*), **Ludwig von,** Austrian general, born at Odenburg, in Hungary, 1804. After having served with great distinction he obtained in 1866 the command of the Austrian army against Prussia, and lost the decisive battle of Sadowa on July 3d. Died, 1881.

Benedict, Saint, one of the originators of monastic institutions in the West, was born at Nursia, in Italy, 480. Early in life he retired into a desert and spent three years in a cavern. Being discovered, his sanctity drew to him such numbers of people that he founded twelve convents. In 529 he went to Monte Cassino, built a monastery on the site of the temple of Apollo, gave rise to the Benedictine order, and died in 543.

Benedict XIII., Pope, son of the duke of Gravina, a Neapolitan nobleman, was born in 1649, and was raised to the papal chair in 1724. He was pious, virtuous, and liberal. A fruitless attempt

which he made to reconcile the Roman, Greek, Lutheran, and Calvinist churches, bears testimony to his tolerant spirit. He died in 1730.

Benedict XIV., Prospero Lambertini, the most worthy to be remembered of all the pontiffs so named, was born at Bologna in 1675; began his pontificate with several wise and popular reforms; revived the Academy of Bologna; executed several public works in Rome; caused the best English and French books to be translated into Italian, and in various ways gave encouragement to literature and science. Died, 1758.

Benedict XV., Pope, was elected to the Holy See, September 3, 1914, as Cardinal Giacoma della Chiesa. He was of noble blood, and was born November 21, 1854, at Pegli, Italy, a son of the Marchese della Chiesa; ordained a priest, 1878; was secretary of the nunciature in Spain, 1883-1887; secretary to Cardinal Rampolla, 1887-1901; substitute secretary of state at the Vatican, Rome, 1901; adviser to the Holy Office and Archbishop of Bologna, 1907; and made Cardinal, 1914. He is described as a man of pronounced spiritual character, a firm opponent of modernism, quiet and reserved in manner, but the possessor of a very active mind. His first public utterance was an exhortation for the peace of the world. Died, 1922.

Benedict, Sir Julius, German composer, was born at Stuttgart, Wurtemberg, 1804, died at London, 1885. His operas include *The Gipsy's Warning; The Bride of Venice; The Crusaders; The Lily of Killarney.*

Bennett, Enoch Arnold, English author and journalist, born at North Staffordshire, 1867. Educated at Newcastle Middle School. Studied law, but in 1893 turned to journalism and editorial work. This he gave up in 1900 to devote himself to literature exclusively. The influence of environment and industrial association has attracted him in the majority of his best novels such as *The Old Wives Tale, Clayhanger* and *Mr. Prohack.* Life is grim in Mr. Bennett's eyes, but in the sadness of his vision his humor is rich and moves surely through the sombre lives of his characters.

Bennett, James Gordon, American journalist; was born in Scotland in 1795 and died in 1872. In 1819 emigrated to America, and became a journalist in New York. In 1835 he issued the first number of *The Herald,* a journal which, through his great ability and enterprise, soon commanded world-wide attention. The first speech ever reported in full by telegraph was sent to *The Herald.*

Bennett, James Gordon, journalist, capitalist, proprietor of *New York Herald;* was born in New York, 1841, son of journalist of same name, inherited *The Herald* and a large fortune in 1872; inaugurated publication in England of storm warnings transmitted from the United States; sent Henry M. Stanley to Africa to find Livingstone, 1874-77; prominent yachtsman. Died, 1918.

Benson, Edward White, English prelate and primate of all England, 1882-96, was born in 1829 and died in Flintshire, Wales, 1896; graduated at Trinity College, Cambridge; taught for a while at Rugby; in 1877 was consecrated bishop of Truro. In 1882, on the recommendation of Gladstone, the crown appointed him successor to Dr. Tait in the archbishopric of Canterbury. He held this high office in the church until his death.

Bentham, Jeremy, English writer on ethics and jurisprudence; born at London in 1748; admitted to the bar in 1772. In all his ethical and political writings the doctrine of utility is the leading and pervading principle; and his favorite vehicle for its expression is the phrase *the greatest happiness of the greatest number.* He died in 1832.

Benton, Thomas Hart, American statesman, born in North Carolina in 1782, commenced legal practice at Nashville, Tenn., in 1811, and settled at St. Louis, Mo., in 1815; was elected United States senator in 1820, when he became a prominent supporter of General Jackson. He held a seat in congress for a period of thirty years, during which he voted for the annexation of Texas, and against the doctrines of nullification and state rights. Died, 1858.

Beranger (*bā'rän'zhā*), **Pierre Jean de,** French lyric poet, born in Paris, 1780, was of humble parentage, and became apprenticed to a printer. In 1815 he began to bring out a collection of national and other songs. His poems contributed in no small degree to the revolution of 1830. In 1833 a fifth series of his lyrics appeared, and in 1848 he was elected to the assembly, but declined to serve. Died in 1857.

Beresford (*ber'es-fērd*), **Lord Charles William de la Poer,** British admiral, was born in Ireland, 1846; educated at Bayford school, Rev. Mr. Foster's, Stubbington, Fareham, Hants. Entered *Britannia* as cadet, 1859; rear-admiral, 1897; naval A. D. C. to the queen, 1896-97; M. P. Waterford, 1874-80; commanded *Condor,* bombardment Alexandria, 1882; in command of naval brigade at battles of Abu Klea, Abu Kru, and Metemmeh; a lord commissioner of the admiralty, 1886; visited China on a special mission, at request of associated chambers of commerce of Great Britain, 1898-99; rear-admiral, Mediterranean, 1900-02; commanded channel squadron, 1903-05; admiral, 1906. Author: *Life of Nelson and His Times.* Died, 1919.

Bergman (*berk'mān*), **Torbern Olof,** Swedish chemist and naturalist, was born at Katharinberg, Sweden, 1735; studied at Upsala, and in 1761 was appointed adjunct in mathematics and natural philosophy; professor of chemistry, 1766. Died, 1784.

Bergson, Henri Louis, French philosopher, was born in Paris, 1859. He was educated at the Lycee Corot and at the Ecole Normale. He was professor of philosophy for many years at lycees and from 1900 to 1921 at the College de France. Gifford lecturer in the meantime at Edinburgh. His most noted works are *Creative Evolution, Time and Free Will, Matter and Memory,* a pamphlet during the war *La Significance de la Guerre,* and *Mind-Energy.*

Beriot (*bā'rē-ō*), **Charles Auguste de,** Belgian composer and violinist, born in Louvain, 1802. In 1836 he became the husband of the famous singer, Malibran. In 1842 he was made professor in the Brussels conservatorie, but resigned ten years after in consequence of failing eyesight. Died, 1872.

Berkeley, George, British divine and philosopher, and bishop of Cloyne, was born in Ireland in 1685. On his return from a visit to America, he was raised to the episcopate. In philosophy he was an idealist, and his doctrines are the natural reaction against the prevalent materialism of his age. Died, 1753.

Berkeley, Sir William, governor of the colony of Virginia, was born at London, England, 1610. He was appointed governor of Virginia in 1641 but resigned in 1651, upon the accession of Cromwell. He was the author of *A Discourse and View of Virginia,* and a drama called *The Lost Lady.* Died, 1677.

Berlichingen (*ber'liĸ-ing-en*), **Gotz or Gottfried von,** German knight, was born in 1480. He took part in the war of the peasants against the nobles, and was sentenced by Maximilian I. to pay a heavy fine. Goethe made his achievements the subject of one of his dramas. He died in 1562.

Berlioz (*ber'lē-ōz*), **Hector,** French composer, was born at La Cote St. Andre, 1803, and died in 1869. His best productions are the symphonies *Harold* and *Romeo and Juliet.*

Bernadotte, Jean Baptiste. See **Charles XIV.**

Bernard (*ber'när'*), **Claude,** French physiologist, born near Villefranche, 1813; studied medicine at Paris, and in 1841 became assistant at the College de France to Magnedie, with whom he worked until his own appointment in 1854 to the chair of general physiology, and whom he succeeded in 1855 as professor of experimental physiology. He was elected to the academy in 1869, and died at Paris, 1878. His *Lecons de Physiologie Experimentale* is still a standard work.

Bernard (*bēr'närd* or *bēr-närd'*), **Saint,** of Clairvaux, was born of a noble family at Fountaines, near Dijon, in Burgundy, 1091; in 1113 entered the Cistercian monastery of Citeaux, and in 1115 became the first abbot of the newly-founded monastery of Clairvaux, in Champagne, where he died, 1153. He was canonised in 1174. His studious, ascetic life and stirring eloquence made him the oracle of Christendom. He was one of the greatest of the Latin hymn writers, many modern hymns being based on his *Jesu Dulcis Memoria.*

Bernardin de St. Pierre (*bār'nār'daN' dā saN' pyār'*), **Jacques Henri,** French writer, the admired author of *Paul and Virginia, Studies of Nature,* etc., was born at Havre in 1737. He was an engineer in Russia and France, 1767-1771, settling in Paris the latter year. He then became professor of morals at the normal school and a member of the institute. Died, 1814.

Bernhardt, Rosine Sarah, famous French tragic actress, widow of M. Jacques d'Amala, was born at Paris in 1844. Her parents were Jews, but she was educated in Grandchamp convent at Versailles. She made her first appearance on the stage in 1862, at the Théâtre Français. In 1867 her playing the part Marie de Neuberg in Victor Hugo's *Ruy Blas* made her famous. Died March 26, 1923.

Bernini (*ber-nē'nē*), **Giovanni Lorenzo,** known as the Cavaliere Bernini, was born in Naples in 1598. He was eminent as a painter, an architect, and a sculptor; and his merit entitled him to the rewards which he had the good fortune to receive from Louis XIV. He died in 1680.

Bernoulli (*ber-nōō'lē*), **Daniel,** Swiss mathematician and physicist, was born at Groningen in 1700, died at Basel in 1782. He was the son of John, and like his father devoted himself to medicine as well as to mathematics. At Basel he occupied in succession the chairs of anatomy and botany, and of experimental and speculative philosophy. He published various works between 1730 and 1756.

Bernoulli, James B., was born at Basel in 1654, where he also died, 1705. He devoted his life to the study of mathematics of which he became professor in the University of Basel. Among his triumphs are to be recorded his solution of Leibnitz's problem of the isochronous curve, and investigation of the properties of isoperimetrical figures.

Bernoulli, John B., brother of the preceding, was born at Basel, 1667. He and James were the first two foreigners honored by the Academy of Sciences at Paris. In 1694 he became a doctor of medicine, and soon after professor of mathematics at Groningen. His forte was pure mathematics, in which he had no superior in Europe in his day. He died in 1748.

Bert (*bār*), **Paul,** French physiologist and republican anti-religious statesman, was born at Auxerre, 1833, and died at Tongking, 1886. He was minister of public instruction in Gambetta's cabinet, 1881-82.

Berthelot (*ber'l'-lō'*), **Pierre Eugene Marcellin,** French chemist, was born at Paris, 1827, and in 1860 became professor of organic chemistry in the Ecole de Pharmacie: in 1865 in the College de France; in 1889 perpetual secretary of the Academie des Sciences. He did very important work in synthetic chemistry, and wrote a history of alchemy. He died in 1907.

Berthier (*ber'ty'ā*), **Louis Alexandre,** prince of Neuchatel and Wagram, and marshal of the French empire, was born at Versailles, 1753. He entered the army in 1770, and fought with LaFayette in the American revolutionary war. Berthier was Napoleon's proxy in the marriage of Maria Louisa, at Vienna, 1810. In the campaigns of 1812, 1813, and 1814 he was constantly by the emperor's side, and acted both as chief of staff and as quartermaster-general. Died, 1815.

Bertillon (*ber'tē'yoN'*), **Alphonse,** French anthropologist, head of indentification department in the perfecture of police of the Seine; born at Paris, 1853; founded his system of mensuration, known as the *Bertillon System,* in 1880. Author: *Ethnographie Moderne, les Races Sauvages; L'Anthropometire Judiciarie a Paris en* 1889. Died, 1914.

Berwick, James Fitzjames, Duke of, was born in 1670, at Moulins, France, and served with distinction in Hungary, Ireland, and Flanders. In four subsequent campaigns he successfully defended dauphine against the attempts of the duke of Savoy. His last service in the succession war was the reduction of Barcelona. Died, 1734.

Berzelius (*bēr-zē'li-us*), **Johan Jakob,** Swedish chemist, was born at Westerlosa, in East Gothland, Sweden, 1779; died, 1848. He was a baron and senator of the kingdom. He was the author of what is known as the dualistic (or binary) theory of the chemical constitution of compounds, and devised the form of symbolic notation now employed. His reputation was world-wide, and his accurate investigations exerted very great influence on the development of scientific chemistry.

Besant (*bez'ant* or *bes'ant*), **Annie,** president British theosophical society; author and lecturer on religious, philosophical, and scientific subjects; was born in London in 1847. Founded in 1898 the Central Hindu College at Benares; 1904, the Central Hindu Girls' School, Benares; 1907, the University of India. Author: *Re-incarnation; The Wisdom of the Upanishats,* etc.

Besant (*bē-sant'*), **Sir Walter,** English novelist, was born at Portsmouth, England, 1836. He studied at King's College, London, and at Christ's College, Cambridge. His first work, *Studies in French Poetry,* appeared in 1868. Sir Walter wrote *All Sorts and Conditions of Men; All in a Garden Fair; Dorothy Foster; Children of Gibeon; Armorel of Lyonesse; The Ivory Gate; Beyond the Dreams of Avarice; The Master Craftsman,* etc. Knighted in 1895, he died in 1901.

Bessel (*bes'el*), **Friedrich Wilhelm,** German astronomer, was born at Minden, Prussia, 1784, died at Königsberg, 1846. He attracted the attention of Olbers by his computation of the orbit of the comet of 1607 from observation which had just been discovered; appointed director of the new observatory at Königsberg, where the rest of his active life was passed. His investigations into the length of the seconds-pendulum and that of standards of length were of the highest importance.

Bessemer (*bes'ē-mēr*), **Sir Henry,** English engineer and inventor, born at Charlton, England, in 1813; of his many inventions the chief is the process named after him, of converting pig-iron into steel at once by blowing a blast of air through the iron while in fusion until everything extraneous is expelled, and only a definite quantity of carbon is left in combination. He was knighted in 1879, and died in 1898.

Bessey, Charles Edwin, scientist, was born on a farm in Milton, Ohio, 1845; graduate of Michigan Agricultural College, 1869; Ph. D., LL. D.; acting chancellor of University of Nebraska 1888-91 and 1899-1900. Botanical editor of *American Naturalist,* 1880-97, was appointed prof. of botany in U. of Neb. in 1884. Author: *The Essentials of Botany; Botany for High Schools and Colleges,* etc. Died, 1915.

Bethmann-Hollweg (*bāt'mān hol'vāk*), **Dr. Theobald von,** statesman, philosopher, imperial chancellor of the German empire, was born at Hohenfinnow, near Berlin, Prussia, in 1856; of Jewish lineage; educated at the University of Bonn; elected to the Reichstag in 1890; named imperial chancellor, in succession to Prince von Bulow, 1909. Died, 1921.

Beust (*boist*), **Friederick Ferdinand, Count,** German statesman, was born at Dresden in 1809. He

devoted himself to politics and was employed by his government in different services in Berlin, Paris, and London. He completely reorganized the Austrian empire, and the present constitution was his work. He was Austrian ambassador at London, 1871-78. He died in 1886.

Beveridge, Albert Jeremiah, lawyer, writer, United States senator from Indiana, 1889-1911. Born in 1862; graduated from De Pauw University, Indiana, 1885; read law in office of Senator McDonald, became managing clerk; admitted to bar and was associated with McDonald & Butler until he began practice for himself. Died, 1927.

Beza (*bē'zä*), **Theodore,** Genevese reformer, was born at Vezelay, Burgundy, 1519, and studied Greek and law at Orleans. In 1549-59 was Greek professor at Lausanne. In 1559 he was appointed a theological professor and president of the College at Geneva; on Calvin's death the care of the Genevese church fell upon his shouldrs. In 1574 he was sent by Conde on a mission to the court of the palatinate. He died in 1605.

Bichat (*bē'shä'*), **Marie Francois Xavier,** celebrated French physician and anatomist, was born at Thoirette (Jura), 1771. He devoted himself to anatomy, physiology, and surgery; and established with several of his friends *La Société Médicale d' Emulation*, through the medium of which he gave to the world many highly original and important memoirs, notably those on the tissues of the human body. He was nominated physician of the Hôtel-Dieu in 1799, and died in 1802, his premature death being hastened in great part by his incessant labors. His three great works are the *Traité des Membranes*, the *Recherches Physiologiques sur la Vie et la Mort*, and the *Traité d' Anatomié Générale.*

Biddle, A. J. Drexel, author, explorer, and lecturer, born at Philadelphia, Pa., 1874. He was educated at Heidelberg, Germany. Revived Philadelphia *Sunday Graphic* in 1895 and became its editor; head of publishing house of Drexel Biddle, in New York, Philadelphia, and San Francisco, 1895-1904. Author: *A Dual Rôle; All Around Athletics; The Flowers of Life; The Madeira Islands; The Land of the Wine.*

Biddle, John, the founder of English Unitarianism, born in 1615, at Wooton-under-Edge, in Gloucestershire. Twice during the commonwealth, he suffered for his creed, and even the protector himself, in order to save his life, was compelled to banish him to one of the Sicily isles. Died in jail, 1662.

Biddle, Nicholas, American commander, was born at Philadelphia, Pa., 1750, and took a conspicuous part in the revolutionary war. During the action of his ship, the *Randolph*, with the British ship, *Yarmouth*, in 1778, the former was blown up and he was killed.

Biela (*bē'lä*), **Wilhelm von,** German astronomer and military officer, was born near Stolberg, Germany, 1782. He is chiefly noted for his discovery, in 1826, of the comet named for him.

Bierce, Ambrose, author, journalist; born in Ohio in 1842; served as line officer during Civil War; brevetted major for distinguished services; went to California, 1866; went to London, 1872, contributing to *Fun* fables, purporting to be translations from Zambri, the Parsee, afterward published as *Cobwebs from an Empty Skull.* Author of numerous sketches, essays and studies. Died, 1914.

Bierstadt (*bēr'stät*), **Albert,** landscape painter; born near Düsseldorf, Germany, 1830. Came in infancy to New Bedford, Mass., and married; studied four years in Europe, 1853-57; made repeated visits to the West and to Europe; specialty was pictures of scenes in Rocky Mountains, Sierras, and Switzerland. Died, 1902.

Bigelow, John, author and diplomat, was born at Malden, N. Y., 1817; graduated from Union College, 1835; LL. D., Union and Racine College 1886; College of City of New York, 1889; admitted to bar; one of the editors *New York Evening Post* 1849-61; consul at Paris, France, 1861-64; secretary of state, New York, 1875-77. Author: *France and Hereditary Monarchy; Writings and Speeches of Samuel J. Tilden;* etc. Died, 1911.

Bigelow, Melville Madison, lawyer, author, dean Boston University law school; born at Eaton Rapids, Mich., 1846; graduated from University of Michigan, A. B., 1866, LL. B., Ph. D., LL. D., Northwestern University, 1896. Author: *The Law of Estoppel; Leading Cases in the Law of Torts; The Law of Bills, Notes and Cheques; The Law of Wills.*

Bigelow, Poultney, author, journalist; born in New York, 1855; graduate from Yale, 1879; Columbia law school, 1882; admitted to New York bar, 1882; was correspondent for *London Times* during Spanish-American war. Author: *The German Emperor and his Neighbors; Paddles and Politics Down the Danube; White Man's Africa; Children of the Nations.*

Billings, John Shaw, surgeon, librarian; was born in Switzerland county, Indiana, 1839; graduated from Miami University, 1857; M. D., LL. D.; D. C. L., Oxford, 1889; served in army as assistant surgeon and surgeon, reaching rank of lieutenant-colonel and deputy surgeon; later medical inspector army of Potomac; professor of hygiene, University of Pennsylvania, 1893-96; 1896 he became director New York public library, Astor, Lenox and Tilden foundations; chairman board Carnegie Institution, Washington. Author: *Principles of Ventilation and Heating; National Medical Dictionary;* and many other works. Died, 1913.

"Billings, Josh." See **Shaw, Henry W.**

Binet (*bē'ne'*), **Alfred,** French psychologist; born at Nice, France, 1857. He was one of the editors of *L'Année Psychologique*, and director of the psychological laboratory at the Sorbonne, Paris. His works include many themes in physiological psychology. Died, 1911.

Binns, Charles Fergus, educator and writer on ceramics, was born at Worcester, Eng., 1857; graduated King's Scholar, 1870; studied analytical chemistry, Birmingham, England, and decorative art, Worcester, 1872-5. Entered royal porcelain works, Worcester, England, 1872; superintendent successively chemical laboratory, department of painting, London depot of sales, department of clay working and pottery; principal technical school of science and art, Trenton, N. J., 1897-1900; director New York state college of clay working and ceramics beginning 1900. President American Ceramic society, 1901. Author: *Ceramic Technology; The Story of the Potter; The Potter's Craft,* etc.

Biot (*bē'ō'* or *b'yō'*), **Jean Baptiste,** French astronomer, optician, and natural philosopher, was born at Paris, 1774. He is especially celebrated for his researches in the circular polarization of light. Died, 1862.

Birrell (*bēr'el*), **Rt. Hon. Augustine,** chief secretary to the lord lieutenant of Ireland since 1907; M. P. North Bristol since 1906; was born near Liverpool, 1850; graduated at Cambridge, 1872; LL. D., St. Andrews; barrister, 1875; bencher Inner Temple, 1903; editor of *Boswell's Life of Johnson; Collected Essays; Miscellanies; William Hazlitt; In the Name of the Bodleian,* etc.

Bishop, Sir Henry Rowley, English composer, was born at London, 1786; early devoted himself to the composition of dramatic music, and in 1809 produced his *Circassian Bride*, which was a great success. In 1840 his last dramatic piece, *The Fortunate Isles*, was produced at Covent Garden in honor of the queen's wedding; in 1842 he was knighted; and in 1848 became professor of music at Oxford. Died, 1855.

Bismarck-Schonhausen (*bis'märk-shen'hou-zen*), **Otto Eduard Leopold, Prince,** born of a noble family, at Shonhausen, April 1, 1815; studied at Gottingen, Berlin, and Greifswald; entered the army and became lieutenant in the Landwehr. After a brief interval devoted to his estates and to the office of inspector of dikes, he became in 1846 a member of the provincial diet of Saxony, and in 1847 of the Prussian diet.

In 1851 he was appointed representative of Prussia in the diet of the German federation at Frankfort, where with brief interruptions he remained till 1859, exhibiting the highest ability in his efforts to checkmate Austria and place Prussia at the head of the German states. From 1859-62 he was ambassador at St. Petersburg, and in the latter year, after an embassy to Paris of five months' duration, became first minister of the Prussian crown.

The lower house persistently refusing to pass the bill for the reorganization of the army, Bismarck at once dissolved it (October, 1862), closing it for four successive sessions until the work of reorganization was complete. When popular feeling had reached its most strained point the Schleswig-Holstein question acted as a diversion, and Bismarck—by the skillful manner in which he added the duchies to Prussian territory, checkmated Austria, and excluded her from the new German confederation, in which Prussia held the first place—became the most popular man in Germany.

As chancellor and president of the federal council he secured the neutralization of Luxembourg in place of its cession by Holland to France; and though in 1868 he withdrew for a few months into private life, he resumed office before the close of the year. A struggle between Germany and France appearing to be sooner or later inevitable, Bismarck, having made full preparations, brought matters to a head on the question of the Hohenzollern candidature for the Spanish throne. Having carried the war to a successful issue, he became chancellor and prince of the new German empire. Subsequently, in 1872, he alienated the Roman Catholic party by promoting adverse legal measures and expelling the Jesuits. He then resigned his presidency for a year, though still continuing to advise the emperor. Towards the close of 1873 he returned to power retaining his position until, in March, 1890, he disagreed with the emperor and tendered his resignation. In 1878 he presided at the Berlin Congress, in 1880 at the Berlin Conference, and in 1884 at the Congo Conference. Two attempts were made to assassinate him—at Berlin in 1866, and at Kissingen in 1874. He died July 31, 1898.

References.—*A Historical Biography*, by G. Lowe; *Our Chancellor*, by Dr. M. Busch; *A Political Biography*, by L. Bamberger; *Bismarck's Love Letters*, and *Letters to his Wife and Others*, both of which have been translated; *Bismarck's Table Talk*, edited by C. Lowe; *Political Life, Labors, and Speeches*, by E. Hahn; *Bismarck: the Man and the Statesman*, translation under the supervision of A. J. Butler; Sybel's *The Founding of the German Empire;* and Munroe-Smith's *Bismarck and German Unity.*

Bispham (*bis'pam*), **David S.,** operatic baritone, was born at Philadelphia, Pa., 1857; educated at Haverford College, Pa.; made début as the Duc de Longueville in *The Basoche*, given by the Royal English Opera, 1891; then with the Royal Company, New York, singing principal rôles German, French, and Italian. Died, 1921.

Bispham, George Tucker, lawyer, author; born at Philadelphia, 1838; graduate of University of Pennsylvania, 1858; law department, same, 1862; admitted to bar, 1861; later admitted to bar of United States supreme court. Author: *Principles of Equity*, and other books on law. Died, 1906.

Bissell, George Edwin, sculptor; born at New Preston, Conn., 1839; educated at Northville, Conn.; academy; acting assistant paymaster, United States navy, 1863-65. In marble business with father and brother at Poughkeepsie, New York, 1866; began career as sculptor there; studied art, Paris, Rome, and Florence, 1875-76; had studio in Paris at different times, for about six years, between 1884-96.

Bitter, Karl Theodore Francis, sculptor, was born at Vienna, Austria, 1867; educated in gymnasium there; came to United States, 1889; won prize in competition for Astor memorial gates, Trinity church, New York. Director of sculpture at the Pan-American exposition, Buffalo, 1901; gold medal Pan-American exposition, 1901. Died, 1914.

Bizet (*bē'ze*), **Georges,** French composer, was born at Paris, 1838, died in 1875; studied at the conservatoire under Halevy, and in Italy. His best works are *Les Pecheurs de Perles, La Jolie Fille de Perth, L'Artésienne Djamileh*, the overture *Patrie*, and *Carmen.*

Bjornson (*by ẽrn'sun*), **Bjornstjerne,** Norwegian poet, novelist, dramatist, was born in Osterdalen in 1832. In early life a historical drama of his, called *Valborg*, was accepted by the royal theatre, but its author withdrew the piece. In 1856 the international students' reunion at Upsala stimulated him again to an effort to produce a national poetry, free from foreign influences. He began with *Synnöve Solbakken*, a story of peasant life, which was followed by *Arne* and many other pieces. *Marie Stuart* and *Sigurd Slembe* are both well-known plays, and he has written, besides his dramas, a series of folk plays, an epic, and much beautiful lyric poetry. Died, 1910.

Black, John Charles, lawyer, was born at Lexington, Miss., 1839; educated in common schools, Danville, Ill., and at Wabash College, Crawfordsville, Ind.; M.A.; LL. D.; private to colonel and brevet brigadier-general United States volunteers; commissioner pensions, United States, 1885-89; member of congress, 1893-95; United States attorney, 1895-99; commander-in-chief, G. A. R. 1903-04. Was president of United States civil service commission.

Black, Joseph, eminent British chemist, was born in 1728 at Bordeaux, France. Between 1759 and 1763 he evolved the theory of *latent heat* on which his scientific fame chiefly rests, and made other important discoveries. Died, 1799.

Blackie, John Stuart, Scotch philosopher, was born at Glasgow in 1809; studied to be a lawyer, but devoted himself largely to literary pursuits; was a zealous educational reformer; took an active interest in everything affecting the welfare and honor of Scotland; spoke much and wrote much in his day on manifold subjects. He died in 1895.

Blackmar, Frank Wilson, economist, sociologist, was born at West Springfield, Pa., 1854; graduated University of the Pacific, 1881; graduate student and fellow, Johns Hopkins, 1886-9; Ph. D., 1889. Professor history and sociology, 1889-99, of sociology and economics, 1899, dean of graduate school 1896-1922, University of Kansas. Author: *Federal and State Aid to Higher Education in the United States; Spanish Colonization; Spanish Institutions in the Southwest; The Study of History and Sociology; The Story of Human Progress; Economics; The Elements of Sociology; Economics for High Schools,* etc.

Blackmore, Richard Doddridge, British novelist, was born at Longworth, Berkshire, and educated at Exeter College, Oxford. He graduated in 1847, afterward studied law, was admitted to the bar at the Middle Temple in 1852, and practiced for a time as a conveyancer. *Poems by Melanter* was the first of several volumes of verse;

his first distinct success was *Lorna Doone, a Romance of Exmoor*, which reached many editions. He died in 1900.

Blackstone, Sir William, celebrated English jurist, was born at London, in 1723. He was a judge, a member of parliament, and author of the well-known *Commentaries on the Laws of Engand*. Subsequently, having married, he vacated his fellowship and was appointed principal of New-In hall. That office, with his Vinerian professorship, he resigned in 1766. In 1770 he became one of the judges of the common pleas. Died, 1780.

Blaine, James Gillespie, American statesman, was born at Brownsville, Pa., 1830. At seventeen he entered Washington College, Pa. In 1854 he went to Maine to engage in journalism. In 1862, he was elected to congress and remained there eighteen years. He was balloted on for the presidency at the convention of 1876, and received 351 votes out of a total of 754. He was then appointed United States senator to fill an unexpired term, and four years later was again a candidate for the presidency. President Garfield appointed him secretary of state, which office he held until after the death of the president. In 1889 he again became secretary of state, in the cabinet of President Harrison. He died in 1893.

Blake, Robert, English admiral, who, more than any other, contributed to render England mistress of the seas, was born at Bridgewater, in Somersetshire, 1599. In 1649, in conjunction with two other officers of equal rank, he was appointed "general of the sea." In 1652 he was made sole admiral of the fleet for nine months, and during that year he fought and won four engagements with Dutch fleets under Tromp, Ruyter, and DeWitt. In 1654 Blake was appointed by Cromwell to command an English fleet in The Mediterranean. In 1657 he defeated the Spaniards at Santa Cruz. Died, 1657.

Blake, William, English artist and poet, was born at London, 1757. After studying art for some years, he began to paint in water colors and to engrave illustrations for magazines. At the same time he wrote poetry which showed great power and beauty. *Poetical Sketches, Songs of Experience,* and *Songs of Innocence,* are among his best works. He died at London in 1827.

Blanc (*blăN*), **Jean Joseph Louis,** French historian and socialist writer, was born at Madrid, 1813, started as a journalist. Member of the chamber of deputies in 1871. Blanc wrote an elaborate and well-written history of the French revolution. Died at Cannes, 1882.

Blanche of Castile, queen of Louis VIII., of France and daughter of Alphonso IX., king of Castile, was born about 1186. After carrying on the government during the absence of her son, Louis IX., in the holy land, she died in 1252.

Blanqui (*blăN'kē'*), **Louis Auguste,** French socialist was born at Puget-Theniers, France, 1805, and made himself conspicuous by his passionate advocacy of the most extreme political opinions. He died in 1881, having spent thirty-seven years of his life in prison.

Blashfield, Edwin Howland, artist. Born in New York, 1848; educated in Boston latin school; studied at Paris, 1867, under Léon Bonnat, also, receiving advice from Gérome and Chapu; exhibited at Paris salon, yearly, 1874-79, 1881, 1891, 1892; also several years at Royal Academy, London; returned to United States in 1881; exhibited genre pictures, portraits, and decorations.

Blauvelt (*blo'velt'*), **Lillian Evans,** prima donna soprano; was born at Brooklyn, N. Y., 1873; educated in public schools; studied under M. Jacques Bouhy in New York and Paris. Sang in concerts in France and Belgium, later in Moscow, with philharmonic society; made début in opera at Théâtre de la Monnaie, Brussels, in *Mirelle;* received decoration of order of St. Cecilia at Rome, 1901 (only woman ever so honored).

Blavatsky (*blă-văts'ki*), **Madame Helena Petrovna** Russia theosophist, was born in Russi in 1831. She was of noble descent. She visited Thibet, where she claims she received the theosophical doctrines connected with her name. From 1873 to 1879 she was a resident of New York, became a naturalized American citizen, and founded the theosophical society. She died, 1891.

Blennerhassett (*blen'ĕr-has'et*), **Harman,** noted for his connection with Aaron Burr's conspiracy, was born in England about 1764; of Irish descent. When Burr was arrested and brought to trial, Blennerhassett was also arrested, but on the acquittal of Burr he was released. He died on the island of Guernsey in 1831.

Bliss, Cornelius Newton, merchant, politician, was born at Fall River, Mass., 1833. Was member Pan-American conference; was president protective tariff league; chairman New York republican state committee, 1887-88; declined to be a candidate for governor of New York, 1885 and 1891; secretary of the interior, in cabinet of President McKinley, 1897-99. Died, 1911.

Bliss, Gen. Tasker Howard (1853—), graduate U. S. Military Academy and U. S. Artillery School, has held many military commissions. Served in Philippines, 1905-9. Appointed Chief of Staff, and commissioned Major General, 1915. Rank of General, 1917. Member of Allied Conference and Supreme War Council, 1917.

Bloomfield, Maurice, philologist, professor Sanskrit and comparative philology Johns Hopkins; was born at Bielitz, Austria, 1855; S. C.; A. M.; Ph. D.; LL. D., Princeton, 1896. Edited for first time from original Sanskrit MSS. the *Sutra of Kaucika;* translated the *Atharva-Veda* in the sacred books of the East (edited by Max Müller); author of *The Atharva-Veda* and the *Gopatha Brahmana*. Died, 1928.

Bloomfield, Robert, English pastoral poet, was born in 1766, at Honington, Suffolk, where his father was a poor tailor. His chief works are *The Farmer's Boy* (composed in a London garret), *Rural Tales,* and *Wild Flowers*. Died, 1823.

Blouet (*blōō'ĕ'*), **Paul,** better known as "Max O'Rell," French author, writer, and lecturer, was born at Brittany, France, in 1848; was educated in Paris; was French master at St. Paul's school, 1876-84, and since 1887 lectured and acted in the United Kingdom, United States, and colonies. Author of *John Bull and His Island; A Frenchman in America.*

Blowitz (*blō'vits*), **Henri George Adolphe Opperde,** journalist, was born of Jewish ancestry at Blowitz, in Bohemia, 1825; during 1849-60 was a German teacher in various French schools. He was made officer of the legion of honor in 1878. Died, 1903.

Blucher (*blu'kĕr*), **Gebhard Lebrecht von,** Prussian field marshal and prince of Wahlstadt, was born at Rostock, Germany, 1742; first entered the Swedish, but soon passed to the Prussian army He went through the Polish campaign of 1772. In the Waterloo campaign he commanded the Prussian army in Belgium, and was severely defeated by Napoleon at Ligny. However, by out-manœuvring Grouchy, he was able to arrive at Waterloo in time to decide the victory for the allies and pursue the routed French army. He then retired from active service and died, 1819.

Blumenbach (*blōō'men-băk*), **Johann Friedrich,** German naturalist and ethnologist, was born at Gotha in 1752; became professor at Göttingen, an office he filled for nearly sixty years. His works gave a great impulse to scientific research in all directions, the chief of which were *Institutiones Physiologicae; Manual of Natural History; Manual of Comparative Anatomy and Physiology*. Died, 1840.

Blumenthal (*blōō'men-tăl*), **Leonhardt, Count von,** Prussian general, was born in 1810, died in 1900. He was chief of the general staff of the Prussian army in 1849; was chief of staff in the Franco-Prussian war; and became general field marshal in 1888.

Bluntschli (*blōōntsh'lē*), **Johann Kaspar,** jurist, economist, was born at Zurich in 1808; in 1833 became professor in its newly-founded university; in 1848 he went to Munich as professor of civil and international law; in 1861 removed to Heidelberg. He died at Karlsruhe in 1881.

Blythe, Samuel George, writer, journalist; was born at Geneseo, N. Y., 1868; educated at Geneseo state normal school; managing-editor of *Buffalo Express,* 1893-96; editor-in-chief of *Buffalo Enquirer* and *Courier,* 1897-98; chief Washington correspondent New York *World,* 1900-07; chairman standing committee of Washington correspondents, 1906-07. On staff of *Saturday Evening Post* since 1907.

Boabdil (*bō'ăb-dĭl'*), properly Abu-Abdallah, the last Moorish king of Granada, dethroned his father, Abu-el-Hasan in 1481, and two years later was defeated, and taken prisoner by the Castilians near Lucena. The spot from which he looked his last on Granada, after giving up to Ferdinand the keys of the city, still bears the name of *el ultimo sospiro del Moro,* "the last sigh of the Moor." He died in 1536.

Bobadilla (*bō-vă-dēl'yă*), **Francisco,** was sent in 500 by Ferdinand and Isabella to investigate the work of Columbus in Hispaniola. He put Columbus in chains and sent him to Spain. Bobadilla was drowned on the return voyage in 1502.

Boccaccio (*bō-kă'chō*), **Giovanni,** Italian raconteur, the author of the *Decameron,* was born probably in Paris in 1313. He styled himself *Da Certaldo,* from the Italian village from which his family sprang. In 1350 he formed an intimate friendship with Petrarch. It is said that he was the first Italian who ever procured from Greece a copy of the *Iliad* and the *Odyssey*. While in Naples, about 1334, he fell passionately in love with a young woman, called by him Fiammetta, who was generally supposed to be a daughter of King Robert. To gratify her he wrote *Il Filocopo* a prose-romance, and afterward, *La Tescide,* the first attempt at romantic epic poetry, of which Boccaccio may be considered the inventor. He composed his famous *Decameron* in Naples, to please Joanna, the daughter and successor of King Robert. Petrarch's death deeply affected him, and he died the year after, 1375.

Boecklin (*bŭk'lēn*), **Arnold,** Swiss painter of romantic subjects, was born at Basel, Switzerland, 1827. His principal pictures are the *Sea Idyl; A Nymph and Fauns,* and several landscapes. He was seen at his best at Munich. Died at Fiesole, Italy, 1901.

Bode (*bō'dĕ*), **Johann Elert,** German astronomer, was born at Hamburg, 1747; at the age of eighteen he calculated an eclipse of the sun. In 1776 he commenced the *Astronomical Year Book,* which is still continued. But his fame rests chiefly on the *Uranographia,* published in 1801, in which he gives observations on 17,240 stars, or 12,000 more than can be found in any previous charts. He died at Berlin in 1826.

Bodenstedt (*bō'den-shtet*), **Friedrich Martin von,** German poet, author, journalist, was born at Peine, Hanover, 1819, and died at Wiesbaden 1892, having lived at Moscow, traveled in the Crimea, Turkey, Greece, and Asia Minor, edited the *Weser Zeitung,* filled the chairs of Slav languages and Old English at Munich, and was director of the Meiningen court theater.

Bodin (*bō'dăN'*), **Jean,** French publicist and economist, was born at Angers in 1530, and died of the plague at Laon, 1596. According to Bodin's greatest work, *Les Six Livres de la Republique,* property and the family form the basis of society and a limited monarchy is the best possible form of government.

Bodley, Sir Thomas, the restorer of the library originally established at Oxford by Humphrey, duke of Gloucester, now called the Bodleian library, was born in 1545. On the accession of Elizabeth he completed his studies at Oxford, took the degree of M. A., and was afterward elected a proctor, devoting himself to the extension of the library. Died, 1613.

Boehm (*bēm*), **Sir Joseph Edgar,** Hungarian-English sculptor, was born at Vienna, 1834; educated 1848-51 in England, and finally settled there in 1862. In 1867 he executed a colossal statue of the queen; of his seated statue of Thomas Carlyle, enthusiastically praised by Ruskin, a replica was erected at Chelsea. Boehm became an A. R. A. in 1878, sculptor-in-ordinary to the queen in 1881, an R. A. in 1882, and a baronet in 1889. Died, 1890.

Boehm von Bawerk (*bēm fŏn bă'verk*), **Eugen,** Austrian political economist, was born at Brünn, Austria, 1851. Educated at the Universities in Vienna, Heidelberg, Leipzig, and Jena. In 1884 was appointed a professor at Innspruck. Died, 1914.

Boehme, Jakob, German theosophist and mystic, was born of poor parents at Altseidenberg near Görlitz in upper Lusatia, in 1575, and in boyhood herded cattle. About 1612 he published *Aurora,* containing revelations and meditations upon God, man, and nature, and showing a remarkable knowledge of scripture and of the writings of alchemists. He died at Görlitz in 1624.

Boerhaave, (Dutch, *bōōr'hă-ve*), (Eng., *bōr'hāv*), **Hermann,** the most celebrated physician of the eighteenth century, was born near Leyden, Holland, 1668. In 1689 he was made doctor of philosophy, and in 1690 began the study of medicine, reading carefully Hippocrates among the ancients, and Sydenham among the moderns. Peter the Great of Russia visited him at Leyden, and it is even said that a Chinese mandarin sent him a letter, addressed "Herr Boerhave, Celebrated Physician, Europe." His fame rests principally on his *Institutiones Medicae,* and *Aphorismi de Cognoscendis et Curandis Morbis.* Died at Leyden, 1738.

Boethius (*bō-ē'thi-us*), **Anicius Manlius Torquatus Severinus,** Roman philosopher, born about 475, was profoundly learned, and filled the highest offices under the government of Theodoric the Goth. Falsely accused of a treasonable correspondence with the court of Constantinople, he was executed in 524, after a long and rigorous imprisonment. His *Consolations of Philosophy,* written in prison, abounds in the loftiest sentiments, clothed in fascinating language.

Bogardus, James, American inventor, was born in Catskill, N. Y., 1800. Among his inventions are an 8-day clock, a dry gas meter, and an engraving machine for engine turning. His machine for making postage stamps received the prize offered by the British government in 1839. He died in 1874.

Boileau-Despreaux (*bwă'lō'dā'prā'ō'*), **Nicholas** French poet and critic, was born at Paris in 1636. He was a friend of Molière, LaFontaine, and Racine, and was pensioned by the king. He did much as a critic to purify and refine the French language, had a great influence on French literature. He was a member of the French Academy. He died at Paris in 1711.

Boito (*bō'ē-tō*), **Arrigo,** Italian composer and poet, was born in 1842 at Padua, and studied at the Milan conservatory. His first important work was the Wagnerian opera *Mefistofele,* which, at first an acknowledged failure, has since steadily grown in popularity. He wrote his own libretti and published several songs. Died, 1918.

Bok, Edward William (1863-1930), born in Holland. Came to United States at early age; educated in Brooklyn public schools. Editor, *The Ladies Home Journal* 1889-1919. Degree of LL.D. from Pope Pius, 1907. Built the Singing Tower at Lake Wales, Florida, as an expression of his thanks to the American Flag.

Boker (*bō'kĕr*), **George Henry,** American poet and dramatist, was born at Philadelphia in 1823, and died there in 1890. He wrote several plays, which were successful on the stage, among them

Calaynos, a tragedy, and *Francesca da Rimini*. In 1882 published a volume of verse, *The Book of the Dead*.

Boleyn (*bo͝ol'in*), **Anne,** queen of England and daughter of Sir Thomas Boleyn, subsequently earl of Wiltshire and Ormond; was born about 1507 and was brought up at the French court. She became maid of honor to Queen Catharine of England. King Henry VIII. was attracted by her beauty, had his marriage with Catharine declared void, and was married privately to Anne. She soon lost his favor, and on a charge of unfaithfulness was tried, condemned, and beheaded, 1536. She was the mother of Queen Elizabeth.

Bolingbroke (*bol'in-brook*), **Henry St. John Viscount,** English statesman, was born in 1678. Having studied at Oxford, he entered parliament in 1701, and in 1704 became secretary of war. He afterward became secretary of state for foreign affairs, and negotiated the treaty of Utrecht. On the accession of George I. he fled the country, and became secretary of state to the first pretender. He was attainted and his estate seized; but in 1723 he was permitted to return. His estates were restored, but he was not allowed to sit in parliament. He again withdrew to France in 1735, but returned to England on the death of his father, and died in 1751.

Bolivar (*bol'i-vär*), **Simon,** South American statesman, founder and first president of the republic of Columbia, known as "the liberator of South America." Born in Venezuela, 1783, he was educated in Madrid. When the revolt against the Spanish yoke broke out in Venezuela, he joined it. In 1822 Bolivar went to help the Peruvians in their struggle for liberty, and was given the chief command. After a long campaign he won the great battle of Ayacucho. Upper Peru was constituted a separate republic, with the title of Bolivia. Died, 1830.

Bonaparte, Charles Joseph, lawyer, ex-secretary of the navy, and ex-attorney general, United States, was born in Baltimore, 1851; graduate of Harvard in 1871; Harvard law school in 1874: chairman council of national civil service reform league; president of national municipal league; overseer, Harvard, 1891-1903; awarded Lætare medal by University of Notre Dame, 1903; was secretary of the navy, 1905-06; attorney general of United States, 1906-09. Died, 1921.

Bonaparte, Charles Lucien Jules Laurent, prince of Canino and Musignano, Lucien's eldest son, by his second marriage, was born at Paris in 1803. He acquired a considerable reputation as a naturalist, and especially as a writer on ornithology. Died, 1857.

Bonaparte, Jerome, youngest brother of Napoleon I., was born at Ajaccio in 1784. He served as naval lieutenant in the expedition to Hayti. He was employed by Napoleon in the liberation of Genoese prisoners who had been captured by the dey of Algiers. In the war with Prussia he commanded, in concert with General Vandamme, the 10th corps in Silesia, and in 1807 was made king of Westphalia. He was appointed governor of the Invalides in 1848, and in 1850 was made a French marshal. In 1852 provision was made by the French chambers, in default of issue of Napoleon III., by which the right of succession was confirmed to Jerome and his heirs. Died, 1860.

Bonaparte, Joseph, eldest brother of Napoleon I., was born at Corte, in Corsica, 1768, and was educated at Autun. In 1800, having proved his ability in several offices of state, he was chosen by the first consul as plenipotentiary to conclude a treaty of friendship with the United States. After the coronation of Napoleon, Joseph was made commander-in-chief of the army of Naples; in 1805, ruler of the Two Sicilies; and in 1806, king of Naples. In 1808 he was summarily transferred by his brother to the throne of Spain, and Murat took his place as king of Naples. After the battle of Waterloo he accompanied Napoleon to Rochfort, whence they intended to sail separately for the United States. He died in Florence in 1844.

Bonaparte, Josephine (wife of Napoleon I.). See **Josephine.**

Bonaparte, Louis, brother of Napoleon I., was born in 1778. After rising from honor to honor he was nominally made king of Holland, being little more than a governor subordinate to his brother. After the restoration of the house of Orange, Louis considered himself free from all responsibility, and returned to Paris, 1814. On the escape of his son, Louis Napoleon, from the prison of Ham, Louis was removed as an invalid to Livorno. Died, 1846.

Bonaparte, Lucien, brother of Napoleon, and prince of Vanino, was born in 1775; received his education in the College of Autun. Shortly before the 18th Brumaire he was elected president of the council of five hundred, and was the hero of that day. His opposition to Napoleon's progress toward monarchy involved the brothers in many quarrels. In 1810 he sailed for America, but fell into the hands of the English, was taken to England, and after a debate in parliament was declared a prisoner, but treated with distinction. After his brother's downfall he returned to Rome. Died, 1840.

Bonaparte, Napoleon. See **Napoleon I.**

Bonaparte Napoleon Eugene Louis Jean Joseph, son of Napoleon III. and of the empress Eugenie, born in 1856; was educated under his father's care at Paris and Versailles. On the abdication of Napoleon III., and on the declaration of a republic in France, the youth and his mother, the empress Eugenie, took refuge at Chiselhurst, England. When the Zulu war in South Africa commenced the young man volunteered his services to the British government, and was killed in 1879.

Bonaparte, Napoleon Joseph Charles Paul, nicknamed Plon-Plon, son of Jerome Bonaparte and Sophia Dorthea, was born in 1822; married, 1859, Princess Clothilde of Sardinia. By virtue of the decree of the French senate, 1852, Napoleon Joseph became in 1879, on the death of Prince Napoleon, son of the emperor, the representative of the Bonapartist claim to the French throne. Died, 1891.

Bonar (*bon'ar*), **Horatius,** hymn-writer, was born at Edinburgh in 1808; from the high school passed to the university, and became minister at Kelso Free Church, 1837-66, and then at Edinburgh. He edited the *Christian Treasury* and other magazines, and published some forty religious works, but is best known as the author of *Hymns of Faith and Hope*. He died in 1889.

Bonaventura (*bō'nȧ-ven-to͞o'rȧ*), **Saint,** cardinal, surnamed the "seraphic doctor," his real name John Fidenza, was born in Tuscany in 1221; entered Franciscan order; was a mystic in theology; ascribed knowledge of the truth to union with God, such as existed between man and his Maker prior to the fall. Died, 1274.

Bond, Carrie Jacobs, American song writer, was born in Wisconsin, 1862. She began publishing groups of songs in 1903 and soon won great popularity through the simplicity and humanness of her compositions. She is probably best known by her song "A Perfect Day."

Bond, Rt. Hon. Sir Robert, premier and colonial secretary of Newfoundland 1900-1909, was born in 1857; was educated for the bar but entered politics before being admitted; entered the legislature, 1882; appointed a delegate to British government by the government of Newfoundland on the French treaties question, 1890; appointed chairman of the deputation sent by the government to the "Ottawa conference," 1895; special delegate to conference on French treaties in Downing street, 1901; assisted in drafting regulations for carrying out Anglo-French convention, 1904; honorary LL.D., Edinburgh.

Bonet-Maury (*bō'nȧ' mō'rē'*), **Amy-Gaston,** theologian, author, educator, vice-dean of protestant school of divinity of Paris; was born 1842; educated Lycee Henry IV., Paris; Schools of Divinity, Geneva and Strassburg; he served as protestant minister at Beauvais, where he erected the first church, and at St. Denis; lecturer in church history at protestant school of divinity of Paris, 1879. French delegate at congress of health and education, London, 1884; the parliament of religions, Chicago, 1893; the congress of religious sciences at Stockholm, 1897; corresponding member of the Institut de France, 1908.

Bonheur (*bō'n ẽr'*), **Marie Rosalie** (more commonly called Rosa), French artist, was born in Bordeaux in 1822. Her first master was her own father. In 1841 she contributed for the first time two small pictures to the French exhibition, *Two Rabbits*, and *Goats and Sheep*. In 1853 her famous *Horse Fair* was the principal attraction of the Paris exhibition. From 1849 she directed the gratuitous school of design for young girls. During the siege of Paris, 1870-71, her studio and residence at Fontainebleau were spared and respected by special order of the crown prince of Prussia. Died, 1899.

Boniface (*bon'i-fās*), **Saint,** was born at Credition, in Devonshire, 680. He was one of the most noted saints of the Roman Catholic church, generally styled "the apostle of Germany." For many years he engaged with much success in preaching and establishing churches in Germany, but was finally killed in 755 by a mob of armed pagans at Dokkum, in West Friesland. He was appointed archbishop of Mainz by Pope Gregory II.

Boniface VIII., previously Benedetto Gaetano, was born about 1228, and elected pope in 1294. He failed in his attempts to assert a feudal superiority over Sicily, and to exercise his papal authority in the disputes between France and England, and died, 1303.

Bonnat (*bō'nȧ'*), **Leon Joseph Florentin,** French painter, was born at Bayonne, 1833, and studied at Madrid, in Paris, and in Italy. He became famous for religious pictures, and latterly is best known as a great portrait painter. Died, 1922.

Bonner, Edmund, English prelate, bishop of London, was born about 1500. The reputation he gained at Oxford by his knowledge of the canon law recommended him to the notice of Wolsey, who promoted him to several offices in the church. In 1540 he was made bishop of London. After the accession of Elizabeth he refused to take the oath of supremacy. He was accordingly deposed from his bishopric and shut up in the Marshalsea, where he died in 1569.

Bonnet (*bō'ne'*), **Charles,** French naturalist and philosopher, was born at Geneva, 1720. He published several works on psychology. His *Considérations sur les Corps Organisés* is devoted to an examination of the theories of generation. He was for some years a member of the council of his native city. Died, 1793.

Bonnivard, de (*dē bō'nē'vär'*), **Francois,** French historian and hero of Byron's *Prisoner of Chillon;* was born near Geneva, 1496; educated at Turin, and became piror of St. Victor, near Geneva, 1510, at the age of fourteen years. Having fallen into the hands of robbers, who delivered him into the power of the duke of Savoy, he was imprisoned in 1530 in the castle of Chillon. The Genevese, aided by the Bernese, effected his liberation in 1536. He died about 1570.

Boone, Daniel, American hunter and pioneer, was born in Bucks county, Penn., 1735. The boy had but little education, but he knew the woods and Indian life. When thirty-four years old he went with five others into the wilds of Kentucky. He built a fort on the Kentucky river which he named Boonesborough. The Indians attacked the fort several times, but were driven off. He continued to live there until 1792, then went to Missouri, where he died in 1820.

Booth, Ballington, general-in-chief and president Volunteers of America, was born at Brighouse, England, 1859; son of Rev. William and Catherine Ballington. Commander Salvation Army, Australia, 1885-87; United States, 1887-96; founded, 1896, the Volunteers of America. Ordained presbyter, Chicago, 1896. Writer, public speaker, philanthropist.

Booth, Edwin Thomas, American actor, son of Junius Brutus Booth, was born in Baltimore, Md., 1833, appeared first on the stage in 1849, in *Richard III.* He speedily rose in his profession, visited England and the continent of Europe in 1861, 1881, and 1883, and met with enthusiastic receptions. He opened Booth's theater in New York, 1869, and did more than any other individual to keep the tone of dramatic art up to a moral and literary standard. Died, 1893.

Booth, Junius Brutus, actor, was born in England in 1796; first appeared on the stage in 1813, in the *Honeymoon*, and within four years became famous in London as *Richard III.* His American career was a triumph. He died in 1852.

Booth, Maud Ballington (née Charlesworth) wife of Ballington Booth, general-in-chief, Volunteers of America. Author: *After Prison—What? The Curse of Septic Soul Treatment; Twilight Fairy Tales.*

Booth-Tucker, Frederic St. George de Lautour, commander of Salvation Army in the United States; was born at Monghyr, Bengal, India, 1853; inaugurated Salvation Army work in India, 1882; had charge there until 1891; secretary for international work, Salvation Army, London, 1891-96; March, 1896-1904, in charge of United States; married in 1888 Emma Moss, daughter of General William Booth, of Salvation Army. Adopted name of Booth-Tucker. Author: *The Life of Catherine Booth; Life of General William Booth* and *In Darkest India*. Died, 1929.

Booth, William, general and commander-in-chief of Salvation Army; was born in Nottingham, England, 1829; became a minister of the Methodist New Connection in 1852; in 1865 organized the Christian mission in the densely populated east end of London. Out of this grew the Salvation Army, whose ramifications spread throughout the world. He is the author of *Orders and Regulations for Officers and Soldiers; Letters to My Soldiers.* Publications: newspapers entitled *War Cry, Young Soldier, Social Gazette*, etc. Died, 1912.

Bopp (*bop*) **Franz,** celebrated German philologist and Sanskrit scholar; was born at Mains, 1791; was professor of oriental literature and general philology at Berlin. He was in 1842 made a knight of the newly erected French *Ordre du Mérite*, and in 1857 foreign associate of the French institute. Died, 1867.

Borah, William Edgar, lawyer, United States senator, was born in 1865, in Wayne county, Ill.; educated at the Southern Illinois academy, and at the Kansas State University, Lawrence; was admitted to practice law in 1890 at Lyons, Kan.; and devoted his entire time since then exclusively to practice of the law, until elected to the United States senate in 1907.

Borden, Sir Frederick William, Canadian National Statesman; M. P.; was born in 1847; King's College, Windsor, Nova Scotia, B.A.; Harvard, M.D.; appointed assistant surgeon 68th battalion King's county militia, 1869; surgeon lieutenant-colonel and hon. colonel of Canadian army medical corps; first elected to house of commons, 1874. Died, 1917.

Borden, Robert Laird, lawyer, premier, was born at Grand Pré, Nova Scotia, 1854; educated at Acacia Villa Academy, Horton. Began the study of law, 1874; admitted to bar, 1878; Q. C., 1891; president of Nova Scotia barristers' society, 1893-1904; hon. D. C. L., LL. D., 1905; member for the city and county of Halifax, 1896-1900; in 1901, upon the resignation of Sir Charles Tupper, elected leader of conservative party in the Dominion house of commons; premier, 1911-20.

Borden, William Cline, surgeon, educator; was born at Watertown, N. Y., 1858; graduated medical department Columbian University, Washington, 1883; appointed assistant surgeon, U. S. A. 1883; major and brigade surgeon, 1898; during Spanish-

American war commanded United States army general hospital, Key West, Fla.; dean medical department, George Washington University. Author: *Use of the Röntgen Ray by the Medical Department of the United States in the War with Spain.*

Borgia (*bôr'jä*), **Caesare,** Italian master of statecraft of great but evil fame, was born in 1476, the fourth son of Pope Alexander VI., by Rosa Vanozza. He compassed the death of his brother, Giovanni, who was the duke of Candia, in order to gain complete ascendency in the papal government; and in 1498, having been sent as nuncio to Louis XII. of France, he was created duke of Valentinois and married the daughter of Jean d'Albret, king of Navarre. He was sent in 1504 a prisoner to Spain by Pope Julius II., but escaped and joined the king of Navarre's army against Castile. In this campaign he was killed in 1507.

Borgia, Lucrezia, sister of the preceding, and like him the possessor of an infamous reputation, was born in 1480. Her father compelled her twice to marriage and divorce before she became the wife of the duke of Bisceglia. After her third husband had been murdered by Cæsare Borgia, she married Alfonso of Este, and passed her life in the court of Ferrara, cultivating literature and art. Died, 1523.

Borglum, John Gutzon de la Mothe ("Gutzon, Borglum"), sculptor, painter, born in Idaho, 1867; studied art in San Francisco; went to Paris, 1890. Exhibited as painter and sculptor in Paris salon; settled in New York since 1902. Exhibited in London and Paris, 1896-1901.

Borglum, Solon Hannibal, sculptor, was born at Ogden, Utah, 1868; pupil in Cincinnati art school and under Louis Rebisso and Fremiet, Paris; honorable mention, Paris salon, 1899; silver medal, Exposition Universelle, Paris, 1900; silver medal, Buffalo exposition, 1901; gold medal, St. Louis exposition, 1904; member national sculpture society. Died, 1922.

Borodin, Alexander Porfyrievich, composer, was born in St. Petersburg, 1834. He was educated for the medical profession and was all his life intensely active in this field, writing several books on chemistry, lecturing, and promoting schools of medicine for women. But he is most known as a composer of music. His symphony *In the Steppes* (1880) and his *Prince Igor* (completed after his death by Rimsky-Korsakov and Glazounov) are probably his best works. He died in 1887.

Borromeo (*bôr'rō-me'ō*), **Carlo, Count,** cardinal and archbishop of the Roman Catholic church, who exercised great influence during the pontificate of Pope Pius IV., was born at the castle of Arona, on the Lago Maggiore, northern Italy, 1538. Many supposed miracles at his tomb led to his being canonized thirty years after his death. Several memoirs of him have been published. Died, 1584.

Borrow, George, English author and traveler, was born in Norfolk in 1803. He made the gypsies one of the principal subjects of his study. His first important work was *The Zincali, or An Account of the Gypsies in Spain.* Died, 1881.

Bosanquet (*bō'sąN'kā'*), **Bernard,** educator, formerly fellow of University College, Oxford; M.A.; LL.D.; born at Alnwick, England, 1848; Balliol College, Oxford, 1871-81; professor of moral philosophy, St. Andrews, 1903-08. Author: *Logic, or Morphology of Knowledge; History of Æsthetics; Philosophical Theory of the State,* etc. Died, 1923.

Boscawen (*bos'kä-wen*), **Edward,** the admiral "Old Dreadnought," was born in Cornwall, England, 1711, the son of Viscount Falmouth. In 1755 he intercepted the French fleet off Newfoundland, capturing two 64-gun ships and 1,500 men. Boscawen crowned a long and victorious career by his signal victory over the French Toulon fleet in Lagos Bay, 1759. He received the thanks of parliament, a pension of 3,000 pounds a year, a seat in the privy council, and the command of the marines. He died at his Surrey seat, Hatchlands Park, 1761.

Bossuet (*bō'sü'e'*), **Jacques Benigne,** a distinguished orator and prelate of the Roman Catholic church, was born in Dijon, France, 1627. He was the author of several controversial works, all in defense of the Roman Catholic doctrines; but his fame rests chiefly on his *Sermons.* Died, 1704.

Boswell, James, the biographer of Johnson, was born in Edinburgh, 1740. He fell in with Johnson on a visit to London in 1763, and conceived for him the most devoted regard; made a tour with him to the Hebrides in 1773, the *Journal* of which he afterward published; settled in London, and was called to the English bar; succeeded, in 1782, to his father's estate, Auchinleck, in Ayrshire, with an income of 1,600 pounds a year. Boswell's *Life* appeared five years after Johnson's death. He died in 1795.

Bosworth, Joseph, Anglo-Saxon scholar, was born at Derbyshire in 1789, and died at Oxford in 1876, having been professor of Anglo-Saxon there from 1858. His chief works were *Elements of Anglo-Saxon Grammar* and *An Anglo-Saxon Dictionary.*

Botha (*bō'tä*), **Rt. Hon. Louis,** Boer soldier, statesmen, born in 1863 at Greytown in Natal, was a member of the Transvaal Volksraad, succeeded Joubert as commander-in-chief of the Boer forces during the war, and in 1907 became prime minister of the Transvaal colony under the new constitution. Died, 1919.

Botta (*bōt'tä*), **Carlo Giuseppe Guglielmo,** Italian historian, was born in 1766; studied medicine, and was imprisoned in 1792 as a revolutionary. He wrote *The History of Italy Between* 1789 *and* 1814, and a *History of the American War of Independence.* Died, 1837.

Botta, Paul Emile, French archæologist and traveler, son of preceding, was born in 1802. In 1830 he went to Egypt, where he entered into the service of Mehemet Ali as a physician. From Alexandria he was sent as consular agent to Mosul, where he commenced a series of discoveries which form an epoch in archæological science. He returned to France in 1868, and died at Acheres in 1870.

Botticelli (*bot'tē-chel'lē*), **Alessandro,** Italian painter, was born in 1437. In response to the invitation of Pope Sixtus IV., he went to Rome and executed some paintings for the chapel of the vatican. On returning to Florence he became a devoted follower of Savonarola. Died, 1515.

Bougainville (*bōō'gaN'vēl'*), **Louis Antoine de,** French navigator, was born in Paris, 1729. In 1754 he went as secretary of the French embassy to London. He took a voyage round the world with a frigate and a St. Malo transport, the first the French ever accomplished, which he described in his *Voyage Autour du Monde.* Died 1814.

Boughton (*bō'tun*), **George Henry,** artist, was born in England, 1834, and brought to the United States when three years old. He studied in New York, Paris, and London, and was a member of the National Academy of New York, and an associate of the Royal Academy after 1879. Died, 1905.

Bouguereau (*bōō'gē-rō'*), **William Adolphe,** French painter, was born at La Rochelle in 1825. In 1850 he gained the prix de Rome, and went to Italy to study. From that time his reputation was made. He painted some portraits, but his subjects are chiefly ideal, idyllic, and religious. He was made a member of the institute in 1876. Died, 1905.

Bouillon (*bōō'yôN'*), **Godfrey de,** duke of lower Lorraine; was born about 1061. He gained distinction in the armies of the emperor Heinrich IV., and was the great leader of the first crusade, and was unanimously proclaimed king of Jerusalem on its capture in 1099, but declined the title. He died in 1100, and was buried on Mount Calvary. His virtues are extolled in Tasso's *Jerusalem Delivered.*

Boulanger (*bōō'ląN'zhā'*), **George Ernest Jean Marie,** French general and politician, was born in 1837; made colonel during the siege of Paris, general of brigade in 1880, and minister of war in 1886. A threat of prosecution drove him into exile, and he committed suicide at Brussels, in 1891.

Boulger (*bōl'jer*), **Demetrius Charles,** British historian and writer, was born in London 1853; educated at Kensington grammar school and private tuition. Has contributed to all the leading journals on questions connected with the Indian empire, China, Egypt, and Turkey since 1876; has also closely studied military questions, especially those connected with the French frontiers and the position of Belgium.

Boulton (*bōl'tun*), **Matthew,** English mechanician, born in 1728 at Birmingham. He founded the famous Soho iron and steel plant near Birmingham. Died, 1809.

Bourbaki (*bōōr'bä'kē'*), **Charles Denis Sauter,** French general, born at Pau, 1816, fought in the Crimea and Italy. In 1870 he commanded the imperial guard at Metz; and under Gambetta organized the army of the North and commanded the army of the Loire. He retired in 1881 and died in 1897.

Bourbon (*bōōr'bôN'*), **Charles,** French general known as "the constable de Bourbon," was born 1490; for his bravery at the battle of Marignano in 1515 he was made constable of France. With George of Frundsberg he led the mixed army of Spanish and German mercenaries that stormed and plundered Rome in 1527. Bourbon was struck down in the fierce struggle by a bullet, said to have been fired by Benvenuto Cellini.

Bourdaloue (*bōōr'dä'lōō'*), **Louis,** great French preacher, was born at Bourges, 1632, where, after being educated by the Jesuits for the church, he lectured in the academy for some time on humanity, theological ethics, etc. His sermons, based chiefly on the texts of Isaiah, St. Paul, and St. Augustine, were marked by profound moral earnestness and great logical power. His later years were spent in the preaching and practice of charity. He died at Paris in 1704.

Bourget (*bōōr'zhe'*), **Paul,** French poet, critic, and novelist, member of the French academy, was born at Amiens, 1852. He wrote many eminently realistic and analytical books, chiefly studies of the scientific and pessimistic tendencies of the age. Among them are: *Cosmopolis; Pastels of Men; Impressions of America.*

Bourinot (*bōō'ri-nō'*), **Sir John George,** Canadian author and parliamentarian, was born at Sydney, Nova Scotia, in 1837; educated at Trinity College, Toronto; established the Halifax *Reporter,* and in 1880 became clerk of the Dominion house of commons. Among his works are *How Canada Is Governed; Constitutional History of Canada; Parliamentary Practice and Procedure.* Died, 1902.

Boutell, Henry Sherman, lawyer, was born at Boston, Mass., 1856; moved with parents to Chicago in 1863; graduated from Northwestern University, 1874, and from Harvard University, 1876; admitted to the bar in Illinois, 1879, and the supreme court of the United States, 1886; was member of the board of trustees of Northwestern University, and in 1904 received the degree of LL.D. Served in Congress 1898-1911. Died, 1926.

Boutwell, George Sewall, legislator, political reformer, was born at Brookline, Mass., 1818; was self-instructed after a common school course. He began the study of law at eighteen, but never practiced. He was governor of Massachusetts 1852-53; member of congress 1863-69; secretary of the treasury 1869-73; and United States senator from Massachusetts 1873-77. Died at Groton, Mass., 1905.

Bowditch (*bou'dich*), **Charles Pickering,** trustee, archæological student; born at Boston, Mass., 1842; graduated at Harvard in 1863. Served in Civil War 1863-64; member of many archæological, historical, and other learned societies.

Bowditch, Henry Pickering, physiologist; born at Boston, 1840; graduated from Harvard, 1861; Harvard Medical School, 1868; D.Sc., 1898; LL.D.; studied physiology in France and Germany, 1868-71; assistant professor, 1871-76, and 1876-1906, professor physiology at Harvard Medical school. Died, 1911.

Bowditch, Nathaniel, American astronomer, was born in 1773 at Salem, Mass. He showed at a very early age a great inclination for mathematics, in which he attained great proficiency, without ever attending a university. His work, *The New American Practical Navigator,* was received with great favor. He was later chosen professor of mathematics and astronomy in Harvard College. He died in 1838.

Bowell (*bou'el*), **Hon. Sir Mackenzie,** Canadian statesman; premier of Canadian parliament, 1894-95; was born at Rickinghall, Suffolk, 1823; removed to Canada, 1833. Entered Canadian parliament, 1867; minister of customs, 1878-91; minister of militia and defense, 1891; of trade and commerce, 1892-94; president of privy council, 1895-96; elected to the senate, 1892.

Bowen, Francis, writer of political economy and philosophy, was born in Massachusetts in 1811; graduate of Harvard and later instructor there in political economy and intellectual philosophy. In 1843 he became editor of the *North American Review.* In 1854 he succeeded Dr. Walker in the Alford professorship of natural religion, moral philosophy, and civil polity. Died, 1890.

Bowles (*bōlz*), **Samuel,** journalist, for more than thirty years editor of the *Springfield Republican,* was born at Springfield, Mass., 1826; died, 1878. He traveled widely over the United States and was always warmly interested in political affairs, though never holding office. He was an accomplished and fascinating conversationalist, cosmopolitan in taste, and liberal in opinion.

Bowne (*boun*), **Borden Parker,** educator, writer on philosophy; was born at Leonardville, N. J., 1847; A.B., 1871, A.M., 1876; LL.D., Ohio Wesleyan, 1881; assistant professor of modern languages College of the City of New York, 1875-76. Author *The Philosophy of Herbert Spencer; Studies in Theism; Metaphysics; Introduction to Psychological Theory; The Christian Life; The Atonement.* Died, 1910.

Boyle, Robert, physicist, was born at Lismore castle, Ireland, 1626. Settling at Oxford in 1654, he experimented in pneumatics, and improved the air-pump. As a director of the East India company he worked for the propagation of Christianity in the East. He discovered "Mariotte's law" seven years before Mariotte. Died, 1691.

Bozzaris (*bōt'sä-rēs*) (often, *bō-zar'is*), **Marcos,** Greek patriot who distinguished himself in the early part of the struggle for Greek independence, was born at Suli, in the mountains of Epirus, toward the close of the eighteenth century. He died in battle while successfully leading a body of 1,200 men against the Turco-Albanian army, 4,000 strong, in 1823.

Bracton, Henry de, British ecclesiastic and jurist, was a "justice itinerant"; in 1264 became archdeacon of Barnstaple and chancellor of Exeter Cathedral; Died in 1268. His *De Legibus et Consuetudinibus Angliæ* was the earliest attempt at a systematic treatment of the body of English law.

Braddock, Edward, British major-general, was born in 1695; commander against the French in America in 1755; with a force of 2,000 British regulars and provincials, he moved forward to invest Fort du Quesne, now Pittsburg, Pa.; his troops fell into an ambuscade of Indians, while they were attacked in the front by the French, and half of them slain, among the mortally wounded being Braddock.

Bradford, William, one of the pilgrims, and second governor of Plymouth colony was born in England in 1590, died at Plymouth, Mass., 1657. He sailed from Leyden, Holland, in the Mayflower. One of

his first acts, as the successor of Governor Carver, was to confirm the treaty with Massasoit, just in time to suppress a dangerous Indian conspiracy. He was governor for thirty-one years. He was author of *History of Plymouth Colony from 1602 to 1647.*

Bradlaugh (*brad'lô*), **Charles,** English politician, was born in London in 1833; in 1853 he entered a solicitor's office. His lectures in the hall of science, London, on social, political, and religious questions, were very popular. In 1872 he published his *Impeachment of the House of Brunswick.* In 1880 he was returned to parliament for Northampton, but refusing to take the oath, he was not allowed to take his seat until after the general election of 1885. Died, 1891.

Bradley, James, distinguished astronomer, was born in Gloucester, England, in 1693; in 1727 he published his theory of the aberration of the fixed stars, containing the important discovery of the aberration of light. His next discovery was that the inclination of the earth's axis to the ecliptic is not constant. Latterly he became astronomer-royal at Greenwich, and laid the foundations of modern astronomy. He died in 1762.

Brady, Alice (1895——), motion picture actress, educated in a New Jersey Convent, studied opera in Boston. She joined a musical comedy, encountering opposition from her father, William A. Brady, the director. Later he placed her in *Little Women*, her success being instantaneous. Her versatility and dramatic power are well shown in *Red Head*, and *The Fear Market.*

Bragg, Braxton, American general, born in Warren county, N. C., 1817, served with distinction under General Taylor in the Mexican war, and retired to private life in 1859. He became a brigadier-general in the confederate army in 1861, and succeeded General Beauregard in command of the army in Mississippi, with the rank of general, May, 1862. Died, 1876.

Brahe (*brä;* Dan. *brä'e*), **Tycho,** Danish astronomer, was born at Knudsthorp, 1546; studied at Copenhagen. The great merit of Brahe as an astronomer lies in the rare industry and assiduity with which he observed and recorded the position of stars and planets, and it was partly due to these observations that Kepler was led to the conception of his three famous laws. Died, 1601.

Brahms (*brämz*), **Johannes,** German musical composer, was born at Hamburg, 1833. Schumann early expressed the highest opinion of Brahms' genius, but for many years he was not appreciated in Germany. In 1861 he went to Vienna, where he acquired a high reputation, and held several important musical posts. Died, 1897.

Braille, Louis, French teacher of the blind, was born at Coupvray, 1809. He became blind at an early age but attained proficiency in music and was organist in a Paris church. In 1828 he began teaching the blind and eventually devised a system of point writing for literature and music known as the Braille system, now used extensively for the instruction of the blind throughout the world. He died in 1852.

Bramante (*brä-män'tä*), the assumed name of Donato Lazzari, celebrated Italian architect, born near Urbino in 1444. He was employed at Rome by Popes Alexander VI. and Julius II., for the latter of whom he planned, and partly executed, the buildings connecting the Belvedere and the Vatican, and subsequently designed the great church of St. Peter's, completed by Michaelangelo. Died, 1514.

Brande (*brand*), **William Thomas,** English chemist, born at London, 1788, died in 1866, having become an F. R. S. in 1809, professor of chemistry to the Apothecaries' company in 1812, Davy's successor at the Royal Institution in 1813, and head of the coinage department of the mint in 1854.

Brandeis, Louis Dembitz, born 1856 in Louisville, Ky., American jurist. In 1877 was graduated from Harvard Law School and in 1916 was appointed associate justice of the United States Supreme Court.

Brandes (*brän'des*), **George,** literary critic, was born of Jewish parentage, 1842, in Copenhagen, where he graduated at the university in 1864. Among his works are *French Romanticism; Impressions of Poland and Russia;* and *Main Currents of Nineteenth-century Literature,* etc. Died, 1927.

Brandl, Alois, professor of English philology in the University of Berlin since 1895; born at Innsbruck Tyrol, 1855; educated at Innsbruck; Ph.D.; LL.D.; extraordinary professor in the German University of Prague, 1884-88; ordinary professor in the University of Göttingen, 1888-92; of Strassburg, 1892-95; member of Berlin Akademie, 1904. Author of *Middle English Literature, Shakespeare, Schlegel-Tieck's Shakespeare,* etc.

Brant, Joseph, Indian chief of the Mohawk nation, was born in Ohio about 1742; held a commission in the British service, and fought against the American colonists in the revolution. He died in 1807.

Branting, Karl Hjalmar, Swedish statesman, was born at Stockholm, 1860. He was educated at Upsala University, then turned to journalism and became active in politics. He was elected to the Riksdag in 1896, was prime minister in 1920, was chairman of the Stockholm convention of Socialists for promoting peace, 1917, and attended as delegate from Sweden the meeting of the League of Nations at Geneva, 1920. He received the Nobel Peace Prize in 1921. Died, 1925.

Brassey, Thomas, English engineer and railroad contractor, was born in 1805 at Brerton, Cheshire, England; died in 1870. After building part of the Grand Junction and the London and Southampton railroads, he contracted, 1840, in partnership with another, to build the railroad from Paris to Rouen. In partnership with Betts and Peto he undertook the Grand Trunk of Canada, 1,100 miles in length, including the great bridge at Montreal.

Brassey, Thomas, Lord, English political economist and authority on seamanship, was born at Stafford in 1836, son of Thomas Brassey, the great contractor; educated at Rugby and at Oxford; was civil lord of the admiralty 1880-84; secretary to the admiralty 1884-85; governor of Victoria, Australia, 1895-1900. He was an enthusiastic yachtsman, interested in the British seamen, a writer on the British navy, and in 1893-95 was president Institute of Naval Architects. Died, 1918.

Bray, Frank Chapin, editor, born at Salineville, Ohio, 1866; graduated at Wesleyan University, Conn., 1890; apprenticed to printer's trade, 1878; editor: *Topics of the Day* department of the *Literary Digest,* New York, 1894-99; editor *The Chautauquan* 1899; 1902, editor-in-chief; 1906-1914, editor-manager *Chautauqua Press* and other publications.

Brazza (*brät'sä*), **Pierre Savorgnan de,** explorer, was born of Italian descent at Rio de Janeiro in 1852. In 1878 the French government gave him 100,000 francs for exploring the country north of the Congo, where he secured vast grants of land for France, and founded several stations; by 1886 he had established twenty-six stations. He continued to explore until 1897, being in 1888-97 governor of French Congo. He died in 1905.

Breckinridge, John Cabell, American politician, was born in Kentucky in 1821; entered congress in 1851, and in 1856 was elected vice-president under Buchanan. He became United States senator in 1861, was given a command in the confederate army, and rose to the rank of major-general Died, 1875.

Bremer (*brē'mĕr*), **Frederika,** Swedish novelist, was born in Finland in 1801, but was brought up near Stockholm, Sweden. Her first important novel *The Neighbors,* gave her a wide fame. She has been called the "Jane Austen" of Sweden. Among her best books are *The Diary, The President's Daughter,* and *Brothers and Sisters.* Died, 1865.

Brent, Charles Henry, Protestant Episcopal bishop of the Phillipines, was born at Newcastle, Ontario, 1862; graduated from University Trinity College, Toronto, 1884, A.M., 1889, D.D., 1901; associate rector St. Stephen's, Boston, 1891-1901. On editorial staff *The Churchman,* 1879-1900; William Belden Noble, lecturer, Harvard, 1907. Author: *With God in the World.* Died, 1929.

Breton (*brē'tôn'*), **Jules Adolphe,** French painter, distinguished as the artist of rural life, was born in 1827; died, 1906. His reputation greatly increased after the extraordinary sale of one of his pictures, *The First Communion.*

Breton de los Herreros (*brä-tôn' dā lōs er-rā'rōs*), **Don Manuel,** the most popular of modern Spanish poets, born 1796 at Quel, in the province of Logrono. In 1824 a comedy entitled *A la Vejez Viruelas,* was staged with great success. Henceforward he furnished theatrical managers with over 150 pieces, most of which have been highly popular. Died, 1873.

Brewer, David Josiah, jurist, associate justice of the United States supreme court, was born at Smyrna, Asia Minor, 1837; was graduated from Yale College in 1856 and from the Albany Law School in 1858; in 1861 was appointed United States commissioner; during 1863 and 1864 was judge of the probate and criminal courts of Leavenworth county; in 1870 was elected a justice of the supreme court of Kansas, and reëlected in 1876 and 1882; in 1884 was appointed judge of the supreme court of the United States in 1889; president of the Venezuelan boundary commission, appointed by President Cleveland; president international congress of lawyers and jurists, St. Louis, 1904. Author: *The Pew to the Pulpit; The Twentieth Century from Another View Point; American Citizenship; The United States a Christian Nation.* Died, 1910.

Brewer, William Henry, scientist, professor of agriculture, Sheffield Scientific School, Yale, 1864-1903; born at Poughkeepsie, N. Y., 1828; graduated at Yale Scientific School, 1852; first assistant on geological survey of California, 1860-64; president Arctic club of America; United States forestry commission, 1896; scientific survey of the Philippine Islands, 1903, etc. Died, 1910.

Brewster, Sir David, British natural philosopher, born at Jedburgh, Scotland, 1781. He was educated for the church of Scotland, but undertook the editorship of the *Edinburgh Encyclopædia.* In 1819 the Royal Society awarded him the Rumford gold and silver medals for his discoveries on the polarization of light; in 1832 he was knighted, and had a pension conferred upon him; in 1849 he was elected one of the eight foreign associates of the French institute, the highest scientific distinction in Europe. In 1859 he was chosen vice-chancellor of Edinburgh University. Died, 1868.

Brian, Boroihme (*bri'an bō-roim'*), or **Brian Boru** (*bō-rōō'*), king of Ireland, was born 926; ascended the throne in 978. Some time afterward he became supreme ruler of Ireland. He defeated the Danes in upward of twenty pitched battles. In the battle of Clontarf, 1014, in which he was killed, he gained a signal victory over a united army of revolted natives and Danes.

Briand, Aristide, French statesman, was born at Nantes, 1862. Through his writings in socialist journals, he was elected to the Chamber of Deputies in 1902. He rose rapidly into the ranks of influence, was instrumental in bringing about equanimity in the separation of Church and State (1905), became Minister of Public Instruction, Minister of Justice, then Prime Minister in 1909. His greatest work for France was in mobilizing the railway strikers in 1910 and during the war. When he was elected prime minister in 1921 it was for the seventh time. In that year he was spokesman for France at the disarmament conference at Washington.

Bridgewater, Duke of (Francis Egerton), styled the "father of British inland navigation," was born in 1736, died in 1803. In 1758-60 he obtained acts of parliament for making a navigable canal from Worsley to Salford, Lancashire. He was also a liberal promoter of the grand trunk navigation; and the impulse he thus gave to the internal navigation of England led to the extension of the canal system throughout the kingdom.

Bridgman, Frederick Arthur, artist; was born at Tuskegee, Ala., 1847; apprentice in engraving department American bank note company, New York, 1864-65; knight Legion of Honor, 1878; officer Order of St. Michael of Bavaria. Author: *Winters in Algeria; Anarchy in Art; The Idol and the Ideal.* Died, 1928.

Briggs, Charles Augustus, clergyman, theologian, was born in New York in 1841; studied in University of Virginia, 1857-60; Union theological seminary, 1861-63. Editor *Presbyterian Review,* 1880-90; was tried for heresy and acquitted by presbytery of New York, 1892, but suspended by general assembly, 1893; ordained priest by Protestant Episcopal bishop of New York, 1899. Author: *Biblical Study; American Presbyterianism; Messianic Prophecy; Whither,* etc. Died, 1913.

Briggs, Le Baron Russell, educator; was born at Salem, Mass., 1855; graduated from Harvard, 1875; A. M., 1882; hon. LL.D., Harvard, 1900; Western Reserve, 1906; assistant professor English, 1885-90, professor English since 1890, dean of college, 1891-1902, dean faculty of arts and sciences. Boylston professor rhetoric and oratory since 1904, Harvard; president Radcliffe College, 1903-1923. Has edited and annotated a number of English classics.

Bright, John, eminent orator and radical statesman, was born of Quaker parentage, 1811; entered parliament for Durham, being afterward returned from Manchester, and losing that seat through his opposition to the Crimean war. He joined Gladstone's government which disestablished the Irish church, but opposed his home rule policy in 1886, Died, 1889.

Bright, Richard, English physician, was born 1789, died 1858; educated at Edinburgh; practiced with great success in London. His specialty was morbid anatomy and the connection between morbid symptoms and alterations of structure of the internal organs. His publications on this topic were made in 1836-40.

Brinton, Daniel Garrison, American ethnologist, was born at Thornbury, Pa., 1837, and died at Atlantic City, N. J., 1899. He graduated from Yale in 1858, and from Jefferson Medical College in 1861. In 1865 he settled in Philadelphia. There he undertook for a time the professorship of ethnology in the Academy of Natural Sciences and in 1886 was professor of American linguistics in the University of Pennsylvania.

Brisbane, Arthur, editor and writer on present day topics; was born at Buffalo, N. Y., 1864; educated American public schools, and five years in France and Germany. Began newspaper work in 1883; seven years on New York *World* as managing editor of different editions; editor New York *Evening Journal,* 1897-1921.

Bristol, Frank Milton, Methodist Episcopal bishop; was born in Orleans county, N. Y.; graduated Northwestern University, Ph.B., 1877; A.M.; D.D.; five times member general conference Methodist Episcopal church, and in 1908 elected bishop. Author: *Providential Epochs; The Ministry of Art,* etc.

Bristow, Joseph Little, journalist, United States senator, was born in Wolfe county, Ky., 1861; graduated from Baker University, Kansas, 1886; private secretary to Governor Morrill (Kansas), 1895-97; fourth assistant postmaster-general, 1897-1905; had charge of investigation of Cuban postal frauds and reorganization of Cuban postal service, 1900. Appointed by the president special Panama railroad commissioner, 1905; elected United States senator for the term 1909-15.

Brock, Sir Isaac, British officer, was born in Guernsey in 1769. In the war of 1812, when an American army, under General Hull, invaded Canada, the Americans surrendered without striking a blow. He was killed in the battle of Queenstown, Canada, 1812.

Brockhaus (*brok'hous*), **Friedrich Arnold,** founder of the famous publishing firm of Brockhaus in

Leipzig, and original publisher of the *Conversations-Lexikon*, was born at Dortmund in 1772; from 1811 to 1817 he carried on business in Altenburg, and finally moved to Leipzig, where he died, 1823.

Brodeur, Hon. Louis Philippe, Canadian statesman, minister of marine and fisheries in the Dominion government 1906-1911, was born at Beloeil, in the province of Quebec, 1862; educated at the college of St. Hyacinth; LL.D.; K.C., 1899; deputy-speaker of the house of commons, 1896-1900; speaker, 1900-04; minister of inland revenue, 1904-06; member of the imperial conference; one of the ministers who negotiated the Franco-Canadian treaty of 1907.

Bronte (*bron'te*), **Charlotte,** English authoress, was born at Thornton, 1816, died, 1855. After some experience as a governess she engaged with her sisters in the writing of novels, and in 1846 published with them a small volume of poems. In 1847 she published the well-known story, *Jane Eyre*. Her second story, *Shirley*, was published in 1849, and her third and last, *Villette*, in 1853. In 1854 she married Rev. Mr. Nicholls, but soon after her marriage died of consumption.

Brooke, Rupert, poet, born at Rugby, England, in 1887. He was educated at Rubgy and Kings College, Cambridge. At the beginning of the World War he enlisted in the British army. He died in 1915 on a hospital ship at Lemnos. His first volume of poems apeared in 1911. A second, called *1914 and Other Poems*, was published in 1915, shortly after his death. Many of the sonnets from this volume portray the unselfish exaltation which possessed so many young men at the beginning of the war.

Brooke, Stopford Augustus, British Unitarian preacher and man of letters, was born near Dublin 1832; educated at Trinity College and received degrees M.A. and LL.D. In 1872 appointed chaplain in ordinary to the queen. He published *Life and Letters of Frederick W. Robertson; Theology in the English Poets; History of English Literature; Study of Tennyson;* etc. Died in 1916.

Brooks, Phillips, preacher and orator, was born at Boston, Mass., 1835; graduate of Harvard, 1855; 1870-91 rector of Trinity church, Boston; from 1891 to 1893, bishop of Massachusetts. His freedom from the ordinary sectarian trammels, his liberal views of doctrine, with his profound convictions as to vital Christian truths, and his deeply spiritual, yet intensely practical preaching, gave him great popular power. He died in 1893.

Brougham (*brōō'am* or *brōōm*), **Henry Peter,** Lord Brougham and Vaux, British jurist, philosopher, and statesman, was born at Edinburgh, 1779. In 1808 he joined the English bar, and speedily acquired high reputation as an advocate. In 1810 he entered parliament, where he became a chief of the liberal party. In 1830 he became the acknowledged champion of parliamentary reform, was called to the house of peers, and appointed lord high chancellor of England, which office he resigned in 1834. He devoted the remainder of his life almost exclusively to science and literature at his chateau at Cannes, France. Died, 1868.

Brown, Calvin Smith, university professor, was born in Tennessee, 1866; graduated at Vanderbilt, 1888; D.Sc., 1892; studied at the Universities of Paris and Leipzig, 1894-5; Ph.D., University of Colorado, 1899; traveled in Spain, Italy, Greece, 1903-04. Professor of English, comparative literature, modern languages, Vanderbilt University, University of Colorado, and University of Missouri, 1889-1905; professor Romance language, 1905-9, acting professor German language and literature, 1908, professor since 1909, University of Mississippi. Editor: Tennyson's *Enoch Arden* and the two *Locksley Hall* poems; *The Later English Drama*, etc.

Brown, Charles Brockden, early American novelist, was born at Philadelphia, Pa., 1771, and died there in 1810. His two best known stories are *Wieland, or the Transformation*, and *Arthur Mervyn*.

Brown, Elmer Ellsworth, educator, chancellor of New York University since 1911; was born at Kiantone, Chautauqua county, N. Y., 1861; graduated from the Illinois State Normal University, 1881; University of Michigan, 1889; Ph.D.; associate professor, University of California, 1892-93; professor same, 1893-1906; U. S. commissioner of education, 1906-1911; chancellor N. Y. Univ., 1911—.

Brown, Francis, educator, was born in 1849; was appointed Davenport professor of Hebrew and the cognate languages, Union theological seminary, New York, in 1890; president of the faculty, Union theological seminary, 1908. Author of *Assyriology: Its Use and Abuse;* also many articles and reviews. Died, 1916.

Brown, Henry Billings, jurist, associate justice of the United States supreme court, 1891-1906; born at South Lee, Mass., 1836; graduate of Yale, 1856; LL.D., Yale, 1891; United States judge for eastern district of Michigan, 1875-90; resigned from United States supreme court bench, 1906. Died, 1913.

Brown, Henry Kirke, American sculptor and painter of great versatility; author of the colossal statue of General Washington in Union square, New York; *The Angel of the Resurrection*, in Greenwood cemetery, Brooklyn. He was born in 1814. Died, 1886.

Brown, John, leader of the Harper's Ferry insurrection, 1859, designed to incite the slaves of the southern states to rebellion; was born at Torrington, Conn., in 1800. In 1854 he went to Kansas. After the slavery agitation in that state was settled by a general vote, he traveled through the southern and eastern states, declaiming against slavery, and endeavoring to organize an armed attack upon it. In 1859, at the head of seventeen white men and five blacks, he commenced active hostilities by a descent upon Harper's Ferry. Instead of retreating to the mountains with arms and hostages, as his original design had been, Brown lingered in the town until evening, by which time 1,500 militiamen had arrived. He was captured, tried for treason, and executed in 1859.

Brown, Norris, lawyer, United States senator, was born in 1863, at Maquoketa, Iowa; graduated from Iowa State University, 1883, and two years later received the degree of M.A.; admitted to practice law in Iowa, 1883; moved to Kearney, Neb., 1888; attorney-general, 1904-06; was elected to the United States senate for the term 1907-13.

Browne, Charles Farrar, American humorist and satirist, known by the pseudonym of "Artemus Ward," was born at Waterford, Maine, 1834. He traveled over America lecturing, carrying with him a whimsical panorama as affording texts for his numerous jokes, which he took with him to London, and exhibited. He died in England in 1867.

Browne, Sir Thomas, English physician and author, was born at London in 1605. During the civil wars and the protectorate he remained in learned seclusion, indifferent to either party. He was knighted in 1671, and died on his birthday in 1682. His chief works are *Religio Medici;* and *Pseudodoxia Epidemica*.

Browning, Elizabeth Barrett, English poetess, was born at London in 1806; died at Florence, Italy, 1861. In 1846 she married Robert Browning. In 1850 Mrs. Browning published her collected works, together with several new poems. *Aurora Leigh*, her longest production, was published in 1856. *Poems Before the Congress* appeared in 1860.

Browning, John M., American inventor, was born at Ogden, Utah, 1854. His father was a gunsmith. He designed his first patented gun in 1879, then devoted himself to designing sporting rifles and automatic pistols for the Remington, Winchester and Colt companies for large royalties. He received high honors for his pistols and the Browning machine gun used during the World War. Died, 1926.

Browning, Oscar, English historian and critic, was born at London, 1837; educated at Eton, and King's College, Cambridge; master at Eton, 1860-75; college and university work at Cambridge from 1876. Died, 1923.

Browning, Robert, British poet, born at Camberwell, May 7, 1812; died Dec. 12, 1889. After completing his education at University College, London, he went to Italy, where he made diligent study of its mediæval history and the life of the people. In 1846 he married Elizabeth Barrett, and resided chiefly in Italy, making occasional visits to England.

His first poem, *Pauline*, was published in 1833; followed by *Paracelsus* in 1835; *Strafford, a Tragedy* (1837), produced at Covent Garden, Macready and Helen Faucit playing the chief parts. *Sordello* appeared in 1840, followed by the series called *Bells and Pomegranates*, including the three plays *Pippa Passes, King Victor and King Charles*, and *Colombe's Birthday;* four tragedies: *The Return of the Druses, A Blot on the Scutcheon, Luria*, and *A Soul's Tragedy;* and a number of dramatic lyrics, among them the well-known *Pied Piper Of Hamelin*, and *How they Brought the Good News from Ghent to Aix* (1841-46). Between 1846 and 1868 appeared *Men and Women; Christmas Eve and Easter Day; Dramatis Personæ*, and some shorter poems. *The Ring and the Book* (1869), his longest poem, was followed by *Balaustion's Adventure;* and *Prince Hohenstiel-Schwangau* (1871); *Fifine at the Fair* (1872); *Red Cotton Nightcap Country* (1873); *Aristophanes' Apology; Inn Album* (1875); *Dramatic Idylls; People of Importance in Their Day* (1887); and *Asolando* (1889). He received the degree of D.C.L. from Oxford in 1882.

A Browning Society for the study of his works was formed in 1881, under whose auspices several of his dramas have been performed. His poems are often difficult to understand from the quick transitions of thought, and they are not infrequently rugged and harsh in expression, yet they are among the chief poetic utterances of last century.

References.—*Life of Robert Browning*, by William Sharp; *Life and Letters*, by Mrs. Sutherland Orr; *Robert Browning*, by Edmund Gosse; Molineux's *Browning Phrase-Book*.

Brown-Sequard (*sē'kär*), **Edouard,** physiologist, was born at Port Louis, Mauritius, 1818. In 1864 he became professor of physiology at Harvard; in 1873 became a medical practitioner in New York, and in 1878 succeeded Claude Bernard as professor of experimental medicine at the College de France. He published lectures on *Physiology and Pathology of the Nervous System*. He died in Paris in 1894.

Brubacher, Abram Royer, American educator, was born at Lebanon, Pa., in 1870. He was educated at Yale University, receiving the degree of Ph.D. in 1902. From 1903-14 he was Superintendent of Schools in Schenectady, N. Y., resigning to become President of State College for Teachers at Albany, N. Y., which position he holds at the present time. He was president of the N. Y. State Teachers Association in 1913-14. Besides various educational articles in magazines he is author of several English textbooks, of a general text in Education, advisory editor of the Volume Library.

Bruce, Robert, king of Scotland, born 1274, did homage for a time to Edward, but joined the national party; stabbed Comyn in a quarrel at Dumfries, 1306, and was that same year crowned king at Scone. In 1328, fourteen years after the great victory of Bannockburn, the independence of Scotland was acknowledged as well as Bruce's right to the crown. He died in 1329, in the thirty-third year of his reign.

Brugsch (*brookʂh*), **Heinrich Karl,** German Egyptologist, Prussian consul to Cairo, was born in 1827. He organized the first Egyptian University, was an eminent authority on Egyptian archæology, and wrote numerous works covering many phases of that subject. Died, 1894.

Brummel, George Bryan, "Beau Brummel," was born at London in 1778; in his day the prince of dandies, was patronized by the Prince of Wales (afterward George IV.); quarreled with the prince; fled from his creditors to Calais, where, reduced to destitution, he lived some years. He settled at length in Caen, where he died insane in 1840.

Brunelleschi (*brōō'nel-les'kē*), **Filippo,** Italian architect, was born at Florence in 1377, is reckoned the first who established on a sound basis the theory of perspective. Brunelleschi's dome in the cathedral at Florence, measured diametrically, is the largest in the world, and served as a model to Michaelangelo for that of St. Peter's. Died, 1446.

Brunhilde (*brün'hēld'*) (Brunehaut), daughter of the Visigothic king, Athanagild; married King Sigebert of Austrasia in 561, and was afterward regent for her two grandsons, Theodebert II., king of Austrasia, and Theodoric II., king of Burgundy. Died, 613.

Bruno (*brōō'nō*), **Giordano,** a restless speculative thinker, was born at Nola, near Naples, in 1548, was trained a Dominican, but, doubting the dogmas, fled to Geneva, whence Calvinist suspicion of his scepticism drove him to Paris, where he lectured; in 1592 in Venice he was arrested by the officers of the inquisition and conveyed to Rome in 1593. There, in 1600, he was burned as an obstinate heretic.

Bruno, Saint, founder of the Carthusian order, was born at Cologne about 1040; became rector of the cathedral school at Rheims, but, oppressed by the wickedness of his time, withdrew in 1084 to the wild mountain of Chartreuse, near Grenoble. Here with six friends he founded the austere Carthusians. In 1094 he established a second Carthusian monastery at Della Torre in Calabria, where he died, 1101.

Brutus, Lucius Junius, figures in the history of early Rome as the hero who overturned the monarchial, and established the republican form of government. That his character as a stern old Roman hero might be complete, the legend adds that he sacrificed to the new republic his own sons, detected in a conspiracy to restore the monarchy. He fell in mortal combat against the Tarquins about 507.

Brutus, Marcus Junius, was born in 85 B. C., and died 42 B. C. He joined Pompey in his war against Cæsar; but after Pompey's defeat he was kindly treated by Cæsar, and made governor of Cisalpine Gaul. In 44 B. C., in his eagerness to preserve the liberty of the republic against Cæsar's apparent purpose of being made emperor, he was persuaded by Caius Cassius to join a conspiracy, and helped in Cæsar's assassination, although the latter had given him many honors and promised him others. Soon after, he and Cassius were defeated at Philippi by Antony and Octavius. Feeling that their cause was lost, Brutus at once flung himself upon his sword and died.

Bryan, William Jennings, editor, orator, and publicist; born in Salem, Ill., 1860; graduate of Illinois College, Jacksonville, 1881; Union College of Law, Chicago, 1883; member of congress, 1891-95; delegate to national democratic convention, 1896; wrote the "Silver plank" in its platform, made a notable speech, and was nominated for president of United States; received 176 electoral votes against 271 for William McKinley. Nominated for president in 1900 by democratic populist and silver republican conventions; again defeated by McKinley; later he established a weekly political magazine, *The Commoner*. Nominated for president in 1908, but defeated by W. H. Taft. Appointed Secretary of State by President Wilson, 1913. Resigned in 1915, after outbreak of World war. Died, 1925.

Bryan, William Lowe, educator; born near Bloomington, Ind., 1860; graduated from Indiana University, 1884; Ph.D.; LL.D.; vice-president 1893-1902, president since 1902, Indiana University. President American psychological association, 1903. Author: *Plato the Teacher*, edited with notes and introduction; *The Republic of Plato, with Studies for Teachers;* and many contributions on psychological subjects in current periodicals.

Bryant, William Cullen, poet and journalist, born at Cummington, Hampshire county, Mass., 1794; at eighteen he composed his *Thanatopsis*. He established *The New York Review*, to which he contributed many of his best poems. In 1826 he became principal editor of *The Evening Post*. The first collected edition of his poems appeared in 1832. In 1842 he published *The Fountain, and Other Poems*. In 1858 appeared a new edition of his poetical works, and in 1869 a metrical translation of the *Iliad*, followed in 1871 by that of the *Odyssey*. He afterward collaborated in writing the *History of the United States*. Died, 1878.

Bryce (*bris*), **Rt. Hon. James,** British historian, diplomat, statesman, was born at Belfast, Ireland, in 1838; educated at Glasgow University and Trinity College, Oxford; D.C.L., LL.D., F.R.S. He was admitted to Lincoln's Inn, 1867; became regius professor of civil law at Oxford University, 1870-93; under-secretary for foreign affairs for five months in 1886; chancellor of the duchy of Lancaster, 1892-94; president of the Board of Trade, 1894-95; chief secretary for Ireland, 1905-07. He was appointed ambassador to the United States, 1906. He took a deep interest in the condition of the eastern Christians and their emancipation from Turkish misrule. He strongly opposed the war in South Africa, and the education act of 1902. Author of *The American Commonwealth*. Died, 1921.

Buchanan (*bu-kan'an* or *bu-kan'an*), **James,** fifteenth president of the United States, was born in Pennsylvania, 1791; admitted to the bar, 1812; member of congress, 1821-31; minister to Russia, 1832-34; United States senator, 1834-35; secretary of state, 1845-49; minister to England, 1853-56; president, 1857-61. He spent the remainder of his life at his home in Lancaster, Pa. He died in 1868.

Buck, Dudley, organist, composer; born Hartford, Conn., 1839; studied at Trinity College, then Leipzig conservatory of music, and at Dresden and Paris; was organist Holy Trinity church, Brooklyn, and director and organist Apollo club, twenty-five years; retired, 1903. Among his compositions are the *Centennial Cantata; Golden Legend; Voyage of Columbus*, and *Light of Asia*. Died, 1909.

Buckingham (*buk'ing-am*), **George Villiers, Duke of,** the favorite of James I. and Charles I. of England, born at Brookesley, Leicestershire, 1592. On the accession of Charles I., in 1625, Buckingham maintained his ascendency at court, but after the ill-fated expedition against Cadiz he became odious to the nation. He was assassinated by a discontented officer named Felton, 1628.

Buckle, Henry Thomas, English historian, was born at Lee, Kent, 1821, the son of a London shipowner. In 1840 he found himself master of 1,500 pounds a year; by 1850 he knew eighteen foreign languages, and had amassed a library of 22,000 volumes, chosen mostly to help him in a *magnum opus*, of which all that was ever published was but a fragment: *An Introduction to the History of Civilization in England*. In 1862, after six months' wandering in Egypt and Palestine, he died of typhoid fever at Damascus.

Buckley, James Monroe, clergyman, editor *New York Christian Advocate*, born in Rahway, N. J., 1836; educated at Wesleyan University; M.A., D.D.; LL.D.; pastor in vicinity of New York until 1880. Died in 1920.

Budde (*bōōd'de*), **Karl,** theologian, professor of old testament theology, University of Marburg; born Bensberg, near Cologne, 1850; educated at Bensberg at Essen gymnasium in the Universities of Bonn, Berlin, Utrecht; passed the two examinations for church service at Coblenz in 1871 and 1874; professor extraordinarius in 1879 at Bonn; was promoted 1889 to the professorship at Strassburg; accepted a call to Marburg in 1900.

Buddha (*bood'ha*), ("the Wise" or the "Enlightened"), the sacred name of the founder of Buddhism, an Indian sage who appears to have lived in the 5th century B.C. His personal name was Siddhartha, and his family name Gautama; and he is often called also Sakyamuni (from *Sakya*, the name of his tribe, and *muni*, a Sanskrit word meaning a sage). His father was king of Kapilavastu, a few days' journey north of Benares.

Siddhartha, filled with a deep compassion for the human race, left his father's court, and lived for years in solitude till he had penetrated the mysteries of life, and become the Buddha. He then began to teach his new faith, in opposition to the prevailing Brahmanism, commencing at Benares. Among his earliest converts were the monarchs of Maghada and Kosala, in whose kingdoms he chiefly passed the latter portion of his life, respected, honored, and protected. Buddha did not leave his doctrines in writing; he declared them orally, and they were carefully treasured up by his disciples, and written down after his death. The determination of the canon of the Buddhist scriptures as we now possess them was the work of three successive councils, and was finished two centuries at least before Christ.

References.—Rhys David's *Buddhism;* Lillie's *Buddha and Buddhism*.

Budge, Ernest A. Wallis, English archæologist, keeper of Egyptian and Assyrian antiquities, British museum, was born in Cornwall, 1857; educated at Christ's College, Cambridge. Has conducted excavations at Aswan in Egypt, at Gebel Barkal, on the island of Meroe, and at Semna in the Sudan, and at Ninevah and Der.

Buffalo Bill—See **Cody, W. F.**

Buffon (*bū'fŏn'*), **Georges Louis Leclerc, Count de,** French naturalist, was born 1707, died 1788. He was educated for the law; but, after traveling for a time devoted himself to science. In 1739 he was elected a member of the academy of sciences, and appointed director of the royal garden. He was one of the pioneers of the modern doctrine of evolution.

Bulfinch, Charles, American architect, was born in Boston, Mass., 1763. His chief works are the Massachusetts state house, at Boston; McLean hospital, Somerville; Massachusetts general hospital, Boston; and the west porticos of the capitol at Washington. He died, 1844.

Bull, Ole Bornemann, famous violinist; born in Bergen, in Norway, 1810; he secured great triumphs both throughout Europe and in America by his wonderful playing. He afterward settled down at Cambridge, Mass., and had also a summer residence in Norway, where he died in 1880.

Buller (*bool'lĕr*), **Sir Redvers,** British general, was born in England in 1839, and as an officer of the 60th rifles saw much service in the China expedition of 1860. In the Boer war, 1899-1901, he had chief command of the first army corps sent from England to South Africa. He was successively adjutant-general, lieutenant-general, and commander-in-chief of the British forces. Retired, 1901. Died, 1908.

Bülow (*bū'lō*), **Prince Bernhard von,** German statesman, chancellor of the empire, 1900-09, was born at Klein-Flottbeck in 1849. At the conclusion of the Russo-Turkish war he was appointed one of the secretaries of the Berlin congress, and after more diplomatic service in Paris and St. Petersburg, he was appointed minister to Roumania, 1888, and ambassador to Italy, 1893. In 1899 he concluded the treaty with Spain, whereby the Caroline, Marianne, and Pelew islands were ceded to Germany, and upon this achievement he was created Count Bülow. In 1900, on the resignation of Prince Hohenlohe, he succeeded him as chancellor of the German empire, prime minister and minister of foreign affairs of Prussia, and, on June 6, 1905, he was raised to the dignity of prince. He resigned the chancellorship in 1909, and was succeeded by Dr. Bethmann-Hollweg.

Bülow, Friedrich Wilhelm, Baron von, Prussian general, was born at Falkenberg, 1755, died at Königsberg, 1816. His victories over Oudinot and Ney at Grossbeeren and Dennewitz saved Berlin; he acted a conspicuous part in the battle of Leipzig, and, by taking possession of Montmartre finished the campaign of 1814. In 1815 he joined Blücher by forced marches, and headed the column that first came to Wellington's aid at Waterloo.

Bulwer (*bool'wĕr*), **Edward George Earle Lytton.** See **Lytton, Lord.**

Bulwer, Sir Henry Lytton Earle, famous English diplomatist and author, an elder brother of Lord Lytton, usually known as Sir Henry Bulwer, was born 1804. In 1843 he was made minister plenipotentiary to the court of Madrid, and concluded the peace between Spain and Morocco in the following year. In 1849 he came to Washington, where he evinced equal art in concluding the Clayton-Bulwer treaty; died 1872. Among his works were *An Autumn in Greece; France, Social, Literary, and Political; Life of Byron* and *Historical Characters*.

Bunsen (*boon'sen*), **Baron, Christian Karl Josias,** German statesman and scholar, born, 1791, at Korbach, in the principality of Waldeck, died at Bonn, 1860. He is known in literature by his *Constitution of the Church of the Future; Christianity and Mankind; God in History*, and many other works.

Bunsen, Robert Wilhelm, German chemist, was born at Göttingen, 1811. He was the first to produce magnesium in large quantities, and in 1860 invented the magnesium light. His greatest discovery was that of spectrum analysis, made in conjunction with Kirchhoff. Bunsen will always be remembered by physicists and chemists from their constant use of the photo-meter and gas-burner, which are such useful adjuncts to laboratory apparatus, and which bear the "Bunsen burner" name. Died, 1899.

Bunyan, John, English writer, was born at Elstow, near Bedford, in 1628. After a short service in the Parliamentary army, he married at the age of nineteen. His marriage was followed by his conversion, or religious "awakening." In 1655 he became a member of the Baptist congregation at Bedford, and, subsequently, its pastor. After the restoration, he was convicted under the act against conventicles, 1660, and thrown into Bedford jail, where he remained for upward of eleven years, supporting his family by making tagged laces, and writing *The Pilgrim's Progress;* he was released from prison, 1672, becoming again pastor of the Bedford congregation. This position he held till his death, which took place, 1688. Of Bunyan's other works, the chief are his *Grace Abounding to the Chief of Sinners*, an autobiography, and the *Holy War*.

Burbank, Luther, naturalist, horticulturist; born in Lancaster, Mass., 1849. Moved to Santa Rosa, Cal., 1875; conducted Burbank's experiment farms. Was special lecturer on evolution at Leland Stanford Jr. University. Died, 1926.

Burdette (*bûr-det'*), **Robert Jones,** American journalist, humorist, and lecturer, was born in Pennsylvania in 1844. Served with the 47th Illinois volunteers as a private, in the Civil War. His humorous sketches won him an audience far and wide. He began to lecture in 1876, and was licensed a minister of the Baptist church, 1887; held a pastorate at Los Angeles until 1909, when he was incapacitated by an accident. He was the author of *Hawkeyetems; Chimes from a Jester's Bells; Smiles Yoked with Sighs;* etc. Died, 1914.

Burdick, Francis Marion, lawyer, educator, Dwight professor law, Columbia University, 1891-1920; born at De Ruyter, N. Y., 1845; graduated from Hamilton College, 1869; LL.D.; professor law and history, Hamilton College, 1882-87; professor law, Cornell University School of Law, 1887-91. Mayor of Utica, 1882-83. Author: *The Essentials of Business Law; Cases on Torts; Cases on Sales; Law of Sales;* etc. Died, 1920.

Burgess, Frank Gelett, writer, illustrator; born Boston, 1866; graduated at Massachusetts Institute of Technology, B.S., 1887; draughtsman with Southern Pacific railway, 1887-90; instructor topographical drawing, University of California, 1891-94; designer, 1894-95; writer for various magazines in New York, 1897-98; removed to London, 1898, to San Francisco, 1900, to Boston, 1904; now lives in New York. Author: *Vivette; The Lively City Ligg; Goops and How to Be Them; A Gage of Youth; Burgess Nonsense Book*.

Burgess, John William, educator; born in Connersville, Tenn., 1844; attended Cumberland University, Lebanon, Tenn.; graduate of Amherst, 1867. Admitted to bar, Springfield, Mass., 1869; professor political science and constitutional law 1876-1912; dean faculty of political science 1890-1912, Columbia University; Roosevelt professor of American history and institutions, University of Berlin, 1906-07. Author: *Political Science and Comparative Constitutional Law; The Middle Period; The Civil War and the Constitution; Reconstruction and the Constitution*.

Burgoyne (*bûr-goin'*), **John,** British general, was born 1722; entered early into the army; and in 1762 displayed much talent and enterprise in command of a party of the British troops in Portugal. In the American war, he led the army which was to penetrate from Canada into the revolting provinces. At first, he was successful; but was ultimately compelled to surrender at Saratoga, 1777. He died in 1792.

Burke, Edmund, British statesman and orator, was born at Dublin, about 1729; graduated at Trinity College, Dublin. Going to London, he attracted attention by his essays on the *Sublime and Beautiful*, and devoted himself to literature. In 1766, entering parliament, his speeches on American affairs created a great sensation in the house of commons. Returned for Malton, he produced in 1780 his great plan of economical reform; and in 1782 he became paymaster under Lord Rockingham's government. He again took office in the duke of Portland's coalition ministry, when he made his famous speech on the India bill. In the impeachment of Warren Hastings, Burke played a leading part, his opening speech extending over four days. In 1794 he retired from parliamentary life, though he continued to produce his pamphlets on political affairs. His other chief works are *A Vindication of Natural Society; Reflections on the Revolution in France;* and some *Letters*. Died at Beaconsfield, England, 1797.

Burleigh (*bĕr'li*), **William Cecil, Lord.** See **Cecil, William, Lord Burleigh.**

Burleson, Albert Sydney, lawyer, postmaster-general, was born 1863, at San Marcos, Texas; was educated at agricultural and mechanical college of Texas; admitted to the bar in 1884; appointed by the governor of Texas attorney of the twenty-sixth judicial district in 1891; elected to said office 1892-96; elected to the fifty-sixth, fifty-seventh, fifty-eighth, fifty-ninth, sixtieth, sixty-first and sixty-second congresses.

Burlingame, Anson, American diplomatist; born in Chenango county, N. Y., 1820. He was elected member of congress in 1854-56-58. In 1861 he was sent as minister to China, and in 1868 he visited this country at the head of a Chinese embassy, and concluded a liberal treaty between the United States and China, which was promptly ratified by the Chinese government. Died, 1870.

Burne-Jones, Sir Edward, English painter, was born of Welsh ancestry at Birmingham, England, 1833. He was educated at Exeter College, Oxford, where William Morris, the poet, was his friend. About 1870 he began to be known as an oil painter, and his works henceforth are inspired by the earlier art of the Italian renaissance, and show more of grace and less of emphasis than his former paintings. Among his pictures are *The Days of Creation; The Beguiling of Merlin; The Mirror of Venus.* He furnished striking designs for stained glass at Christ Church, Oxford. He became D. C. L. 1881, A. R. A. 1885 (resigned 1893), and a baronet 1894. He died, 1898.

Burnett (*bûr-net'*), **Frances Hodgson,** author, playwright; born (Frances Eliza Hodgson), Manchester, England, 1849; began writing for magazine 1867; married Dr. L. M. Burnett, 1873; settled in Washington, 1875. Author (novels): *That Lass o'Lowrie's; Dolly, a Love Story; Kathleen; Surly Tim and Other Stories; A Little Princess.* Plays: *Little Lord Fauntleroy; Phyllis; The Snowman's Daughter; Esmeralda; The First Gentleman of Europe; Nixie; A Lady of Quality; The Shuttle;* etc. Died, 1924.

Burnham, Daniel Hudson, architect; born Henderson, N. Y., 1846; removed to Chicago, 1856; educated there and in Massachusetts; A.M., Sc.D. Architect Field's retail store and many other buildings in Chicago and elsewhere, including the Mills building, San Francisco; Ellicott Square, Buffalo; Society for Savings, and First, Third, and Fourth National Banks, Cleveland; chief architect and director of works, World's Columbian Exposition, 1890-93; chairman commissions for beautifying Washington and Cleveland, Ohio. Died, 1912.

Burns, Robert, Scottish poet, was born at Alloway, near Ayr, Scotland, 1759; died at Dumfries, 1796. He was the son of a small farmer, and was brought up amidst indigence and adversity. He received, however, the advantages of a common school education, though his chief advances in general knowledge he owed to the books he read, among which were *The Spectator,* the works of Pope, and the poems of Allan Ramsay. When sixteen years of age he fell in love, and his feelings, as he tells us, at once burst into song. His first volume of poetry was issued in 1786, from Kilmarnock, and at once became popular. The success of this volume, which was speedily republished in Edinburgh, induced him to take the farm of Ellisland, near Dumfries, where he married his "bonny Jean"; he removed to Dumfries in 1791 and, having been appointed to a position as exciseman, which had been obtained for him by a friend and an admirer of his genius, he subsisted entirely upon his income from that office, which yielded only about $350 a year. In 1792 he wrote about a hundred songs, as accompaniments to the melodies of Scotland; intemperance gradually gained upon him, while want threatened him; and, in his thirty-seventh year, he sank into an untimely grave.

Burnside, Ambrose Everett, American general, born at Liberty, Indiana, 1824; graduated at West Point in 1847. He commanded a brigade at Bull Run, and in February, 1862, captured Roanoke island. He commanded the Army of the Potomac, Nov. 1862-Feb. 1863, and was defeated at Fredericksburg, 1862. In 1863 he successfully held Knoxville, and in 1864 led a corps under Grant through the battles of the Wilderness and Cold Harbor. Resigning in April, 1865, he was elected governor of Rhode Island (1866-68), and United States senator in 1875 and 1881. He died at Bristol, R. I., 1881.

Burr, Aaron, American statesman, was born 1756, died, 1836; he was a lieutenant-colonel in the revolutionary war; attorney-general of New York 1789; United States senator, 1791-97; mortally wounded Alexander Hamilton in a duel 1804; vice president of the United States 1801-05; tried on a charge of treason, 1807, but acquitted.

Burr, George Lincoln, educator, librarian; born Oramel, N. Y., 1857; graduated from Cornell, 1881; student Leipzig, Paris and Zürich; LL.D.; Litt.D. Librarian the President White library since 1878; member Cornell faculty. Writer on history of superstition and persecution.

Burr, William Hubert, engineer, professor civil engineering, Columbia University since 1893; born Watertown, Conn., 1851; graduated Rensselaer Polytechnic Institute, C. E., 1872; professor engineering, Harvard, 1892-93; consulting engineer to department of public works, 1893-95, of parks, 1895-97, of docks, 1895-97, and now department of bridges, and board of water supply, New York. Appointed, 1899, by President McKinley, member isthmian canal commission. Appointed, 1904, by President Roosevelt, member isthmian canal commission; consulting engineer to board of water supply, New York. Awarded first place in national competition, 1900, for proposed memorial bridge across Potomac at Washington.

Burritt, Elihu, "the learned blacksmith," was born at New Britain, Conn., 1810. He worked as a blacksmith in his native place and at Worcester, Mass., but devoted all his leisure to mathematics and languages—Latin, Greek, Hebrew, Arabic, and most of the modern European languages. He took a prominent part in advocating an ocean penny-postage. For many years he lived in England, in 1865-70 as United States consul at Birmingham. He died at New Britain, Conn., 1879.

Burroughs (*bûr'ōz*), **John,** essayist, naturalist; born Roxbury, N. Y., 1837; received an academic education, and taught school about eight years; treasury clerk, 1864-73; national bank examiner, 1873-74; From 1874 till his death he lived on a farm, devoting his time to literature and fruit culture. Author: *Notes on Walt Whitman as Poet and Person; Locusts and Wild Honey; Fresh Fields; Riverby; The Light of Day; Squirrels and Other Fur Bearers; Far and Near; Ways of Nature.* Died, 1921.

Burton, Ernest de Witt, theologian, critic; professor of new testament interpretation, University of Chicago, born Granville, Ohio, 1856; University of Leipzig, 1887; served many years as associate editor or editor of the *Biblical World;* editor (with others) of the *American Journal of Theology.* Author: *Constructive Studies in the Life of Christ* (with S. Mathews); *A Short Introduction to the Gospels;* etc. Died, 1925.

Burton, Sir Richard Francis, English traveler, was born 1821, at Barham House, Hertfordshire, and educated in France and England. After visiting Somaliland and service in the Crimea, he in 1856 set out with Speke on the journey which led to the discovery of Lake Tanganyika, 1858, and afterward traveled in America. He was subsequently consul at Santos in Brazil, at Damascus, and at Trieste. In 1876-78 he visited Midian, and in 1882 Guinea; and he was knighted in 1886. He died at Trieste, 1890.

Burton, Theodore Elijah, U. S. Senator, lawyer; born in Jefferson, Ohio, 1851; graduate of Oberlin College, 1872; admitted to bar, 1875; since then in practice at Cleveland; member congress, 1889-91, and 1895-1909; United States senator, 1909-15. Author: *Financial Crises and Periods of Industrial and Commercial Depression,* and *Life of John Sherman.* Died, 1929

Bury (*ber'i*), **John B.,** British historian; regius professor of modern history, Cambridge University since 1902; was born 1861; graduate Trinity College, Dublin; M.A., Litt.D.; LL.D.; professor of modern history in Dublin University, 1893-1902; regius professor of Greek, 1898. Author: *History of the Later Roman Empire from Arcadius to Irene; Student's History of the Roman Empire from Augustus to Marcus Aurelius;* etc.

Butler, Benjamin Franklin, American politician, and general, was born in New Hampshire, 1818, studied law and settled in Massachusetts, where he became recognized as the leading democrat of New England. He promptly entered the service at the outbreak of the Civil War, and had command of the departments of the gulf and of the south Atlantic, acquiring no military fame but great notoriety for his arbitrary civil regulations; governor of Massachusetts, 1882. Died, 1893.

Butler, Joseph, eminent English divine, was born 1692 at Wantage, in Berkshire; died 1752. In 1718 he was appointed preacher at the Rolls chapel, where he preached those remarkable sermons which he published in 1726. His great work, the *Analogy,* of which the germs were contained in his three sermons, was published in 1736.

Butler, Nicholas Murray, educator; born Elizabeth, N. J., 1862; graduated, Columbia, 1882, Ph.D., 1884; student at Berlin and Paris, 1884-85; LL.D.; Litt.D.; dean faculty of philosophy, Columbia University, 1890, professor philosophy and education, and president since 1902. Editor of the *Educational Review;* the *Great Educators Series;* the *Teachers' Professional Library,* etc.

Butler, Samuel, English satirist, was born at Strensham, England, 1612. The experiences of this time furnished him with the material for his famous work, *Hudibras,* the first part of which appeared in 1663, and achieved the widest popularity. Died, 1680.

Butler, Samuel, an English writer, born, 1835, at Nottingham. Educated at Oxford; did work among the London poor for several years. In 1859, he left England to raise sheep in New Zealand. On his return to England in 1864, he painted a number of pictures which were exhibited in the Royal Academy; but letters finally claimed his devotion. His best known book is *The Way of All Flesh.*

Byrd, Richard Evelyn, American aviator, naval officer (ret.), was born at Winchester, Virginia, in 1888. He was educated at Shenandoah Valley Military Institute, Virginia Military Academy, University of Virginia, and graduated at the U. S. Naval Academy in 1912. At the age of twelve he made a trip around the world alone. He was the commander of the aviation unit of the Macmillan Polar Expedition of 1925. In 1926 he made, with Floyd Bennett, the first flight to the North Pole. He was advanced through grades to the rank of lieutenant commander after the polar flight. In 1927, with three companions, he made a 4,200 mile transatlantic flight to France. With the most complete equipment ever assembled for such a purpose, Byrd left in 1928 for an extensive trip of exploration of the South Pole areas. He discovered and mapped many new sections.

Byron, Lord, George Gordon, English poet, was born in London in 1788. He attended Trinity College, Cambridge. The criticism of his first work, *Hours of Idleness,* stung him into writing *English Bards and Scotch Reviewers;* in 1812 he published the first two cantos of *Childe Harold,* with immense success. Six months' stay at Geneva produced the third canto of *Childe Harold* and *The Prisoner of Chillon. Manfred* and *The Lament of Tasso* were written in 1817. The next year he was at Venice, and finished *Childe Harold* there. During the next three years he produced the first five cantos of *Don Juan,* and a number of dramas of various merit. In 1822 he removed to Pisa, and worked there at *Don Juan,* which poem, with the exception of *The Vision of Judgment,* occupied his pen almost up to the close of his life. In the summer of 1823 he sailed for Greece, to aid the struggle for independence with his influence and money. He arrived at Missolonghi on the 4th of January, 1824. On the 9th of April he was overtaken by a shower while on horseback, and fever and rheumatism followed. After twenty-four hours' insensibility, he expired on the evening of the 10th of April, 1824. His body was conveyed to England; and, denied a resting-place in Westminster abbey, was interred in Hucknall-Torkard churchyard near Nottingham.

Bystrom (*boo'strēm*), **Johan Niklas,** a Swedish sculptor, born at Filipstad, in the province of Wermeland, 1873, worked three years under Sergell of Stockholm, applying himself chiefly to the study of the antique, and gained the academy's prize in 1809. He proceeded to Rome the following year, whence he soon sent home his *Drunken and Reposing Bacchante.* He returned to Stockholm in 1815, and exhibited his colossal statue of the prince-royal. He died at Rome, 1848.

Cabanis (*ká'bá'nēs'*), **Pierre Jean Georges,** physician and philosophical writer, born at Cosnac, France, 1757. He furnished Mirabeau with material for his speeches on public education; and Mirabeau died in his arms. Cabanis did near Meulan, 1808. His chief work is his once-famous *Rapports du Physique et du Moral de l' Homme.*

Cabell, James, author of novels and tales, born at Richmond, Va., 1879. While he was instructor of French and Greek at William and Mary College he started his preparation for authorship, especially in genealogy of the South, conducting genealogical research work for the Virginia Society of Colonial Wars, 1916, and the Virginia Society of the Sons of the American Revolution. Opposed in thought and feeling to the impressionistic and realistic attitudes in contemporary letters, Mr. Cabel cultivated a highly classical and exquisite style. His fiction consists of the biography of a legendary hero, traced through his various descendants to contemporary Virginia. The portions dealing with mythological characters, including *Figures of Earth, Jergen, The High Place, The Silver Stallion,* and two philosophical essays, *Beyond Life and Straws and Prayerbooks* are the better known. He is a master of delicate, graceful and subtle language.

Cabet (*ká'bá'*), **Etienne,** French communist, was born at Dijon, 1788, and died at St. Louis, Mo., 1856, having gone out to Texas in 1848 to found an "Icarian community," so named after his *Voyage en Icarie,* a "philosophical and social romance," describing a communistic Utopia.

Cable, George Washington, author, was born in New Orleans, 1844; educated in public schools; M.A., Litt.D., Yale, Bowdoin; served fourth Mississippi cavalry, Confederate States army, 1863-65; devoted to literature. Author: *Old Creole Days; The Grandissimes; Madame Delphine; The Creoles of Louisiana; Dr. Sevier; The Silent South;* etc. Died, 1925.

Cabot (*kab'ut*), **George,** American shipmaster, afterward merchant, was born 1751, died 1823. He was a member of the Massachusetts state constitutional convention, and of that which ratified the federal constitution; U. S. senator 1790-96.

Cabot, John, born 1450 (?); **Cabot, Sebastian,** born 1474, two Venetians, father and son, were both celebrated navigators and discoverers. John probably died 1498; Sebastian died 1557.

Caedmon (*kad'mun*), the father of English song, was the first Anglo-Saxon who composed in his own language works which are still existant. The date of his birth is unknown, but his death occurred about 680 A. D. He was originally a cowherd, attached to the monastery of Whitby, and according to a legend was commanded in a dream to sing "*The Beginning of Created Things.*"

Caesalpinus (*sez'al-pi'nus*), **Andreas,** Italian physiologist; born at Arezzo 1519; was professor of medicine and botany at Pisa, physician to Pope Clement VIII., and published several medical works. He developed several new ideas on the circulation of the blood which are now well recognized. Died, 1603.

Caesar, Caius Julius, a great Roman general, statesman, and historian, was born B.C. 100, died B.C. 44. He was the son of the praetor Caius Julius Caesar, and of Aurelia, a daughter of Aurelius Cotta. At the age of sixteen he lost his father, and shortly after he married Cornelia, the daughter of Lucius Cinna, the friend of Marius. This connection gave great offence to Sulla, the dictator, who proscribed him for refusing to put away his wife.

His friends obtained his pardon with difficulty, and Caesar withdrew from Rome, and went to Asia, serving his first campaign under M. Minucius Thermus, the praetor in Asia.

On the death of Sulla, Caesar returned to Rome, where he distinguished himself as an orator. He afterwards visited Rhodes, when he was taken by pirates, and compelled to pay fifty talents for his release. To revenge himself, he fitted out some vessels at Miletus, overtook the pirates, made the greater number of them prisoners, and had them crucified before Pergamus. He then returned to Rome, where his eloquence and liberality made him very popular. He was pontifex maximus in 63 B. C., praetor in 62 B. C., and governor of Spain in 61 B. C. On his return to Rome, having united with Pompey and Crassus in the memorable "first triumvirate," he became consul, and then obtained the government of Gaul with the command of four legions.

His military career was rapid and brilliant. He compelled the Helvetii, who had invaded Gaul, to retreat to their native country, subdued Ariovistus, who at the head of a German tribe had attempted to settle in the country of the Aedui, and conquered the Belgae. In nine years he reduced all Gaul, crossed the Rhine twice (B. C. 55 and 53), and twice passed over to Britain, defeated the gallant natives of this island in several battles, and compelled them to give him hostages. The senate had continued his rule in Gaul for another period of five years, while Pompey was to have the command of Spain, and Crassus that of Syria, Egypt and Macedonia for five years.

The death of Crassus in his campaign against the Parthians dissolved the triumvirate; and about the same time the friendship between Caesar and Pompey cooled. The senate, influenced by Pompey, ordered that Caesar should resign his offices and command within a certain time, or be proclaimed an enemy to the state, and appointed Pompey general of the army of the Republic. Upon this Caesar urged his soldiers to defend the honor of their leader, passed the Rubicon (49 B. C.), and made himself master of Italy without striking a blow, Pompey retiring into Greece. Caesar then levied an army with the treasures of the state, and hastened into Spain, which he reduced to submission without coming to a pitched battle with Pompey's generals. He next conquered Massilia (now Marseilles), and returned to Rome, where he was appointed dictator. He then followed Pompey into Greece, and defeated him at Pharsalia, from which Pompey escaped, only to be assassinated in Egypt.

In Rome the senate and the people strove eagerly to gain the favor of the victor. They appointed him consul for five years, dictator for a year, and tribune of the people for life. When his dictatorship had expired he caused himself to be chosen consul again, and without changing the ancient forms of government ruled with almost unlimited power. In 46 B. C. he crossed to Africa, defeated the Pompeians, Scipio and Cato, at Thapsus, and returning to Rome he was received with the most striking marks of honor. The term of his dictatorship was prolonged to ten years, the office of censor conferred on him alone; his person was declared inviolable, and his statue placed beside that of Jupiter in the capitol.

He soon after was honored with four several triumphs, made perpetual dictator, and received the title of *imperator* with full powers of sovereignty. In February, 44, B. C. he declined the diadem which Antony publicly offered him, and next morning his statues were decked with diadems. His glory, however, was short-lived, for a conspiracy was set on foot by his enemy Cassius, and joined by many of his own friends, including M. Brutus; and, notwithstanding dark hints had been given to him of his danger, he attended a meeting of the senate on 15th (ides) March, 44 B. C., and fell beneath the daggers of the conspirators.

Caesar was undoubtedly the foremost man of his time, being great as a statesman, a general, an orator, a historian, and an architect and engineer, and his assassination was brought about more by jealousy and envy than by real patriotism.

References.—Mommsen's *History of Rome;* S. J. Delorme's *Caesar and his Contemporaries,* Napoleon III.'s Froude's, and Fowler's *Lives of Caesar;* Baring-Gould's *Tragedy of the Caesars;* and Holmes' *Caesar's Conquest of Gaul.*

Cagliari (*kăl'yā-rē*), **Paolo Veronese,** an Italian painter of great eminence, was born at Verona in 1532. The church of San Sebastiano, in Venice, contains many of his productions, which are reckoned the most important of his earlier period—*i. e.,* the period before he visited Rome, when he first became acquainted with the masterpieces of Raphael and Michelangelo. He died in 1588. The most celebrated of his productions are the *Marriage Feast at Cana of Galilee,* and the *Presentation of the Family of Darius to Alexander.*

Caine, Thomas Henry Hall, British novelist and dramatist; born in 1853, of Manx and Cumberland parentage; was educated at schools in Isle of Man and Liverpool; became a journalist, and was for six years an editorial writer on Liverpool *Mercury.* His first novel was the *Shadow of a Crime;* his success came with *The Deemster; The Manxman; The Christian; The Eternal City.* Published in 1908 *My Story,* an autobiographical narrative of the earlier years of his literary life. He is justice of the peace in the Isle of Man, where, in 1901, he was returned by a large majority to the house of keys for Ramsey.

Caird (*kārd*), **Edward,** Scottish philosopher, was born at Greenock, Scotland, 1835; educated at Glasgow University; Balliol College, Oxford; LL.D.; D.C.L.; fellow and tutor of Merton College, Oxford, 1864-66; professor of moral philosophy, Glasgow University, 1866-93; master of Balliol College, Oxford, 1893-1907. Author: *Philosophy of Kant; Hegel,* in Blackwood's series; *Critical Philosophy of Emmanuel Kant.* Died 1908.

Caird, John, Scottish preacher, born at Greenock, in 1820; studied at Glasgow, and became minister (1845). He received the degree of D.D. in 1860, was appointed professor of divinity in 1862, and was principal of Glasgow University, 1873-98. He published a volume of *Sermons; Spinoza;* etc. He died, 1898.

Cairnes (*kārnz*), **John Elliot,** British economist, was born at Castle Bellingham, Ireland, 1823, studied at Trinity College, Dublin, where he graduated B.A. in 1848. An accident in the hunting-field in 1860 led to a breakdown in health; and, having resigned his chair in 1872, he died at Blackheath, 1875. Cairnes may be regarded as a disciple of Mill, though differing from him on many points.

Caius Gracchus (*kā'yus grak'us*). See **Gracchus.**

Cajetan (*kaj'ē-tan*), **Cardinal,** properly Jacopo Thomas de Vio, born at Gaeta, Italy, 1469; in 1508 became general of the Dominicans, in 1517 cardinal, in 1519 bishop of Gaeta, and in 1523 legate to Hungary. He died at Rome, 1534.

Calderon (*kăl'dĕr-on*) **de la Barca, Pedro,** Spanish dramatist, and one of the greatest of all time, was born at Madrid in 1600, and was educated at the University of Salamanca. He entered the army and served several campaigns in Italy and in Flanders, gaining a knowledge of men and things which he afterward made use of in his plays. He became a priest and royal chaplain, and died in 1681, still working at his literary labors. In later life he wrote many religious plays.

Calderon, Ignacio, diplomat; was born at La Paz, Bolivia, 1848; graduate University of La Paz; secretary of Bolivian legation at Rome, 1868-70. Traveled through United States, and for a time acted as consul-general of Bolivia at New York; returned to Bolivia, 1886, to manage affairs of large importing and exporting company; minister from Bolivia to United States 1904-1920.

Calderwood (*kăl'dĕr-wood*), **Henry,** British philosopher and educator, was born at Peebles in 1830; from 1856 to 1868 was minister of Greyfriars, Glasgow, and then became professor of moral philosophy at Edinburgh. He died in Edinburgh, 1897.

Calhoun, John Caldwell (1782-1850), American statesman, was born in South Carolina and educated at Yale. He became a successful lawyer. He served in congress, was in Monroe's cabinet, and was vice president under John Q. Adams and then under Jackson. In 1829 he declared that a state could nullify unconstitutional laws. In 1832 he resigned the vice presidency and entered the senate to become a champion of states' rights.

Caligula (*ka-ligu-la*), **Caius Caesar Augustus Germanicus** Roman emperor, 37-41 A. D., the youngest son of Germinicus (nephew of Tiberius) by Agrippina, was born 12 A. D., at Antium. On the death of Tiberius, 37 A. D., became coheir along with the grandson of Tiberius, but the senate and the people allowed Caligula supreme and sole authority; he was a spendthrift and barbarously cruel. Died, 41 A. D.

Calles, Plutarco Elias, Mexican statesman, was born in Guaymas in the State of Sonora, in 1877. His education was limited but he engaged for seventeen years in school work as a teacher and superintendent. He then turned to farming. In 1917 he was elected governor of Sonora. He served in Carranza's cabinet, and headed the cabinet under Obregon. In 1924 he was elected President of Mexico.

Callicrates, a Greek architect, who lived at Athens in the eighty-fourth Olympiad, was, in conjunction with Ictinus, the artist who constructed the famous Parthenon, the sculptures and decorations of which were the work of Phidias.

Callimachus (*l.a-lim'a-kus*), a native of Corinth, flourished about the year B. C. 540, and was celebrated as an architect, sculptor, and painter. To him is ascribed the invention of the Corinthian order.

Calvert, George, Lord Baltimore. See **Baltimore, George Calvert.**

Calvin, John, reformer and Protestant theological writer, born at Noyon, in Picardy, 1509, died at Geneva, 1564. His father, Gerard Calvin or Cauvin, *procureur-fiscal* and diocesan secretary, dedicated him early to the church, and he was presented with a benefice at the age of twelve. The income derived from this nominal office enabled him to proceed to Paris and enter on a course of regular study. He soon became dissatisfied with the teaching of the Roman Catholic Church; in consequence he gave up his cure, and took to the study of the law in Orleans.

In 1532 he returned to Paris a decided convert to the reformed faith, and was soon compelled to fly, when, after various wanderings, he found a protector in Margaret of Navarre. In 1534 he returned to Paris; but, finding that the persecution against those who were inclined to the doctrines of the reformers was still raging, he retired to Basel in the autumn of the same year. At Basel he published his great work, *The Institutes of the Christian Religion,* 1536.

Having gone to Italy, after a short stay at Ferrara he went to Geneva, where reform had just been established. In 1538, in company with Farel, he was expelled from Geneva in consequence of the reign of extreme strictness they had introduced, when he went first to Berne and then to Strasburg. Here he married a widow, Idelette de Burie, and had one son, who died early.

In 1541 his friends in Geneva succeeded in effecting his recall, when he laid before the council the draft of his ordinances respecting church discipline, which were immediately accepted and published. His college of pastors and doctors and his consistorial court of discipline formed a theocracy, with himself at the head of it, which aimed virtually at the management of all municipal matters and the control of the social and individual life of the people. Michael Servetus, passing through Geneva in 1553, was arrested, and through Calvin's instrumentality was burned alive because he had attacked the mystery of the Trinity in a book which was neither written nor printed at Geneva. This has been regarded as the great blot on Calvin's career, though approved of by many others of the reformers. His energy and industry were enormous; he preached almost daily, delivered theological lectures three times a week, attended all deliberations of the consistory, all sittings of the association of ministers, and was the soul of all the councils.

Up to 1561 the Lutherans and the Calvinists were as one, but in that year the latter expressly rejected the tenth article of the Confession of Augsburg, besides some others, and hence arose the name of *Calvinists.* Calvin retained his personal influence to the last; but a year or two before his death his health had broken down. As a theologian Calvin was equal to any of his contemporaries in profound knowledge, acuteness of mind, and in the art of making good a point in question. As an author he merits great praise. His Latin works are written with much method, dignity, and correctness. He was also a jurist and an able politician.

References.—*Henry's Life and Times of Calvin;* and other *Lives* by Bolsec, Masson, Fischer, Doumergue, John Scott, T. H. Dyer, and Bungener. See also Schaff's *History of the Christian Church.*

Cambaceres (*kăn'bă'sā'res'*), **Jean Jacques,** duke of Parma, French statesman and jurist, was born in Montpelier in 1753. He was brought up to the legal profession, and became president of the French convention in 1792. He was afterward president of the committee of public safety, and of the council of five hundred. When Napoleon Bonaparte was named first, Cambaceres was made second consul. He left France when the Bourbons

were a second time restored, but was permitted to return. Died, 1824.

Cambyses (*kam'bi'sēz*), second king of the Medes and Persians, succeeded his father, Cyrus, in 529 B. C. He put his brother Smerdis to death, and in 527 B. C. or 525 B. C. invaded and conquered Egypt. Died, 522. B. C.

Cameron (*kam'ĕr-un*), **Simon,** American politician; born Lancaster county, Pa., 1799; learned printing and became editor of a democratic paper at Harrisburg, Pa.; elected United States senator 1845, and again 1856; secretary of war under Lincoln, 1861-62; again United States senator 1866-77 when he resigned, and was succeeded by his son. Died, 1889.

Camillus (*kă-mĭl'us*), **Marcus Furius,** a famous patrician of early Rome; took Veii, a rival town, after a ten years' siege; was five times elected dictator, and gained a succession of victories over rival Italian tribes; died in 365 B. C., lamented by the whole nation, and remembered for generations after as one of the noblest heroic figures in Roman history.

Camoens (*kam'ō-ens*), **Luiz de,** the epic poet of Portugal, born 1524 at Lisbon, and studied the ancient classics at Coimbra; he was banished, 1556, to Macao, where he lived several years, and was engaged in writing his principal *Os Lusiadas* till recalled. He dedicated *The Lusiad* to the young king, Sebastian, who granted him a small pension (about $20); died in poverty and obscurity in the hospital at Lisbon, 1597.

Camp, Walter, athletic director and writer, was born at New Haven, Conn., 1859. He was graduated from Yale in 1880. He is considered the originator of modern American football, starting the rivalry with Harvard and improving rules. During the war he had direction of training camp athletics, out of which grew the famous Daily Dozen. He wrote much concerning sports. Died, 1925.

Campbell, Alexander, American theologian, was born at Shane's castle, Ireland, 1788. Attended Glasgow University; came to the United States, and served as pastor of a Presbyterian church in Washington county, Pa.; later became a Baptist. His followers are also known as "Christians," "Church of Christ," and "Campbellites." He died, 1866.

Campbell, Archibald. See **Argyll.**

Campbell, Hon. Archibald, Canadian capitalist, was born at Ridgetown, Ontario, 1846; educated at high school and collegiate institution of the county; elected member of parliament for West York, 1901 and 1904; chairman of the railway and transportation committee; elected to Dominion senate, 1907.

Campbell, Sir Colin, Lord Clyde, British general, was born in Glasgow, 1792. In 1808 he entered the army as an ensign. He distinguished himself greatly in the wars in the Peninsula, the United States, China, India, and the Crimean war. He reached the summit of his fame in 1857, when, as commander of the forces in India, he finally crushed the Sepoy mutiny and saved the English empire in India. He returned from India to England in 1860 and died 1863.

Campbell, Mrs. Patrick (Beatrice Stella Tanner), actress; born, Forest House, Kensington Gardens; married Patrick Campbell (killed in South Africa, 1900), 1884. Joined dramatic club "Anomalies," West Norwood, 1886-87; toured with Green's company, 1888; Ben Greet's company 1890-91; played engagements at the Adelphi St. James'; Haymarket; Garrick; Lyceum and other London theaters. She also made several visits to the United States.

Campbell, Thomas, a distinguished British poet, born in Glasgow, 1777. He wrote *The Pleasures of Hope.* The poem was published in 1799, and went through four editions in a twelvemonth. He died at Boulogne in 1844, and was buried in Westminster abbey.

Campbell-Bannerman, Rt. Hon. Sir Henry, late prime minister of Great Britain, was born in 1836. Educated at Glasgow University and Trinity College, Cambridge, B.A., 1858; M.A., 1861; secretary admiralty, 1882-84; secretary for war, 1886 and 1892-95; chosen leader of the liberal opposition in succession to Sir William Harcourt, February, 1899. On the resignation of the Balfour administration in December, 1905, he was summoned by the king and formed a liberal cabinet, himself becoming first lord of the treasury and prime minister; the general election which followed gave him a tremendous majority. Died in office, 1908.

Canisius (*kă-nē'sē-us*), **Petrus,** Dutch Jesuit missionary and scholar, was born at Nimeguen, Netherlands, 1521. He was the first provincial of the Jesuits in Germany, distinguished himself at the council of Trent, 1545, and was appointed court preacher to Ferdinand I. He wrote *Summa Doctrinae Christianae.* Died, 1597.

Canning, George, British statesman and orator, born in London, 1770. In 1796 he was appointed an under-secretary of state. In 1801 Pitt resigned office, and Canning joined the opposition against the Addington ministry. When the Portland ministry was formed, in 1807, Canning was appointed minister of foreign affairs. He arranged the relations of Brazil and Portugal; drew the French cabinet into agreement with the British respecting Spanish-American affairs; was the first to recognize the free states of Spanish America; contended earnestly for Catholic emancipation, and prepared the way for the repeal of the corn laws. Died, 1827.

Cannon, Joseph G., lawyer, ex-speaker the United States house of representatives; born in Guilford, N. C., 1836; admitted to Illinois bar; state's attorney, Vermilion county, Ill., 1861-68; member of congress, 1873-91, and again in 1893-1903, twelfth Illinois district, and in 1903-13, eighteenth district; chairman of committee on appropriations, 55th, 56th, and 57th congresses; speaker of 58th, 59th, 60th, and 61st congresses. Died, 1926.

Canova (*kă-nō'vă*), **Antonio,** Italian sculptor, was born, 1757, at the Venetian village of Possagno, and studied at Venice and Rome. His *Theseus,* 1782, was greeted as well worthy to vie with classic art, and he was regarded as the founder of a new school. In 1802 he was appointed by Pius VII. curator of works of art, and was called to Paris to model a colossal statue of Napoleon. Created marquis of Ischia. He died in Venice, 1822.

Canovas del Castillo (*kă'nō-vās del kās-tēl'yō*), **Antonio,** Spanish conservative statesman and historian, born at Malaga, 1826, became a member of the cortes in 1854, and was premier 1875-81, 1884-85, 1890-92, and from 1895 till the 8th of August, 1897, when, at the bath of Santa Aguida, Vittoria, he was shot by an anarchist in the presence of his wife.

Canrobert (*kăn'rō-bār'*), **Francois Certain,** marshal of France, born 1809. After many years of effective service in the East, in the Crimea, and in Italy, when war was declared by France against Prussia, in 1870, he was one of the generals in command at Wœrth, where the French were defeated; senator 1876. Died, 1895.

Canterbury, Archbishop of. See **Davidson, Rev. Randall Thomas.**

Cantu (*kăn-tōō'*), **Cesare,** modern Italian author, was born, 1805, at Brescia, in northern Italy, and was educated at Sondrio, where he was appointed professor of *belles-lettres.* His great work is the *Storia Universale* (35 vols., 1837-1842). Died, 1895.

Canute (*kă-nūt'*), or **Cnut** (*k'nōōt*), a king of England who succeeded to the rulership of the Danes in the north of England on the death of his father, Swcin or Sweyn, was born 995. The sudden deccase or assassination of Edmund made Canute sole ruler in 1017, and he continued to reign until his death in 1035.

Capet (*kă'pet*), **Hugh.** See **Hugh Capet.**

Capo D'Istria (*kă'pō dēs'trē-ă*), **John, Count of,** a Greek, who gained distinction as a diplomat, was born at Corfu in 1776; in 1813, in consideration of his meritorious labors, the emperor Alexander made him minister for foreign affairs. In 1827 he was made president of the new Greek government, where he fell by the hand of an assassin in 1831.

Caprivi (*kă-prē'vē*), **Count Georg Leo von,** German general, statesman, and chancellor, was born in 1831, and died in 1899. In 1883 he was given command of the 30th division of the imperial army at Metz; was subsequently given command of the 10th or Hanoverian army corps, the finest in the German army. In 1890 Emperor William made him chancellor. In 1894 he resigned office, and retired.

Caracalla (*kar'ă-kal'ă*) (properly Marcus Aurelius Antoninus Bassianus), Roman emperor, the son of the emperor Septimius Severus, born at Lyons, 188 A. D. After his father's death, 211 A. D., he ascended the throne as co-regent with his brother, Publius Septimius Antoninus Geta, whom he afterward caused to be murdered. In his famous constitution he bestowed Roman citizenship on all his free subjects not citizens—but simply in order to levy a greater amount of taxes on releases and heritages, which were paid only by citizens. He was assassinated, at the instigation of Macrinus, prefect of the prætorians, by one of his veterans named Martialis, 217 A. D.

Caracci (*kă-ra'chē*), or **Carracci, Agostino,** Italian painter, was born in Bologna in 1558, became a disciple of his cousin Ludovico. He dabbled in poetry and literature, and was a really great engraver on copper. His brother's jealousy is said to have driven him from Rome (where they did the frescoes in the Farnese palace) to Parma, where he died, 1602.

Caracci, Annibale, was born in Bologna in 1560, died, 1609; rapidly became a great painter under his cousin, and soon outstripped both him and his brother. The influence of Correggio and of Raphael largely molded his style. He was buried close to Raphael in the Pantheon.

Caracci, Ludovico, Italian painter, the son of a butcher, was born at Bologna in 1555, died, 1619, studied at Venice and Parma, and, with his two cousins, established in Bologna an "eclectic" school of painting.

Cardan (*kär'dan*), **Jerome,** Italian mathematician, naturalist, physician, and philosopher, was born at Pavia, 1501; graduated in medicine at Padua; and was professor of mathematics at Milan. He subsequently practiced medicine and gradually gained a high reputation. He died in Rome, 1576, a few weeks after finishing his candid autobiography, *De Propria Vita.*

Cardigan (*kär'di-gan*), **James Thomas Brudenell, Earl of,** was born 1797; died 1868; sat in the house of commons from 1818 to 1837, when he succeeded his father as seventh earl. He entered the army in 1824. From 1836 to 1847 he commanded the 11th hussars, on which he spent $50,000 a year, and which he made the crack regiment in the service. He commanded a cavalry brigade under Lord Lucan in the Crimea, and led the "Six Hundred" at Balaclava. He was inspector-general of cavalry 1855-60.

Carducci (*kär-dōōt'chē*), **Giosue,** Italian poet, was born, a physician's son, at Valdicastello, in the province of Pisa, in 1836, and died in 1907. In 1860 he became professor of Italian literature at Bologna, in 1876 was returned to the Italian parliament as a republican, and in 1890 was nominated a senator.

Carew, Mrs. James. See **Terry, Ellen.**

Carey (*kā'rē*), **Henry Charles,** political economist was born at Philadelphia, 1793. In 1836 he published an essay on the *Rate of Wages,* which was expanded into the *Principles of Political Economy.* In 1838 he published *The Credit System of France, Great Britain, and the United States;* and in 1848 *The Past, the Present, and the Future.* He was originally a free-trader, but was later recognized as the head of a new school of political economy. Died, 1879.

Carey, James F., socialist leader; born Haverhill, Mass., 1867; learned shoemaking trade; joined international boot and shoemakers' union; one of three leaders in unemployed agitation on Boston common, 1894; president Haverhill common council; member Massachusetts house of representatives; elected 1898, 1899, 1900, 1901, 1902; last four elections over combination of democratic and republican parties.

Carnart, Henry Smith, scientist, professor physics, University of Michigan, since 1886; born at Coeymans, N. Y., 1844; graduated from Wesleyan University, 1839; LL.D. Professor of physics and chemistry, Northwestern University, 1872-86; vice-president of St. Louis international electrical congress, and one of official delegates for the United States, 1904; accompanied the British association for the advancement of science to South Africa as a guest, 1905. Author: *Primary Batteries; Elements of Physics; University Physics; Electrical Measurements.* Died, 1920.

Carleton (*kär'l'tun*), **Will,** author, lecturer; born at Hudson, Mich., 1845; graduated at Hillsdale College, B. S., 1869; A.M.; Litt.D.; became known as a poet, and lectured and gave author's readings through the United States, Great Britain and continental Europe. Author: *Farm Ballads; Rhymes of Our Planet; Songs of Two Centuries,* etc. Died, 1912.

Carlisle (*kär-lĭl'*), **John Griffin,** lawyer; born in Campbell county, Kentucky, 1835; common school education; admitted to Kentucky bar, 1858; lieutenant-governor of Kentucky, 1871-75; member of congress, 1877-89 (speaker, 1883-89); United States senator from Kentucky, 1890-93; secretary of treasury of United States, 1893-97; vice-president of anti-imperialist league. Died, 1910.

Carlyle, Thomas, English essayist, biographer, and historian, and one of the most remarkable writers of his age, was born in Scotland, 1795. He was educated at Edinburgh University, and commenced his literary career in 1823, by contributions of able essays to the *Edinburgh Encyclopedia* and the *Edinburgh Review.* Next followed his translations of Goethe's *Wilhelm Meister,* a work which showed a bent of reading destined to influence materially his future career. Succeeding these appeared his *Life of Schiller.* Between 1830 and 1833, Carlyle wrote his *Sartor Resartus,* and in 1837 he published *The French Revolution,* a history abounding in vivid and graphic descriptions. *Chartism,* and 5 volumes of his *Essays,* appeared in 1839, and in the next year he delivered a series of lectures on *Hero-Worship,* which were afterwards published in a collected form. His *Past and Present* was given to the world in 1843, and in 1850 the *Latter-Day Pamphlets,* essays suggested by the revolutionary convulsions of 1848. Carlyle's *Life of John Sterling* has been described as "one of the finest biographies ever written. In 1845 appeared his great work entitled *Oliver Cromwell's Letters and Speeches, with Elucidations,* which gave him a place among historians. In 1860-4 Carlyle brought out his *Life of Frederick the Great.* In 1865 he was elected Lord Rector of Edinburgh University.

Carlyle's leading characteristic is a rugged earnestness of expression, and a range of thought widened and deepened by his profound acquaintance with the writings of great German thinkers. He died at London, February 5, 1881.

References.—Froude's *Thomas Carlyle: a History of the First Forty Years of his Life,* and his

Thomas Carlyle: a History of his Life in London; also *Carlyle's Reminiscences*, edited by Froude and by Professor Norton. Of other books dealing with Carlyle's life, we may mention Conway's *Thomas Carlyle;* Shepherd's *Memoirs of the Life and Writings of Thomas Carlyle*, and *The Bibliography of Carlyle;* Wyllie's *Thomas Carlyle, the Man and his Books;* Masson's *Carlyle Personally and in his Works;* Larkin's *Carlyle and the Open Secret of his Life;* and *Lives* by R. Garnett, Hood, Nicoll, and Wilson's *Froude and Carlyle.*

Carman (*kär'man*), **William Bliss,** journalist, poet, was born at Fredericton, New Brunswick, Canada, 1861. Graduate of University of New Brunswick, B.A., 1881. Author: *Low Tide on Grand Pré; Songs from Vagabondia* (with Richard Hovey); *More Songs from Vagabondia* (with Richard Hovey); *By the Aurelian Wall; Last Songs from Vagabondia; Christmas Eve at St. Kavin's.* Died, 1929.

Carnarvon (*kär-när'vun*), **Earl of** (Henry Howard Molyneux Herbert), was born in London, Eng., 1831; was appointed governor of Carnarvon castle in 1854. He was the author of the British North America act, passed by both houses of parliament in 1867, whereby the Dominion of Canada was formed. Died, 1890.

Carnegie (*kär-neg'i*), **Andrew,** capitalist, manufacturer, philanthropist, author; born in Dunfermline, Fifeshire, Scotland, 1837; came with family to United States, 1848, settling in Pittsburg; learned telegraphy, entered employ of Pennsylvania railroad, and became telegraph operator, advancing by promotions until he became superintendent of Pittsburg division of Pennsylvania system; joined Woodruff, inventor of the sleeping car, in organizing Woodruff sleeping car company, gaining through it nucleus of his fortune; during Civil War served as superintendent of military railways and government telegraph lines in the east. After the war he developed iron works of various kinds and established, at Pittsburg, Keystone bridge works and Union iron works. Introduced into this country Bessemer process of making steel, 1868; interests were consolidated, 1899, in the Carnegie steel company, which, in 1901, was merged in the United States steel corporation, when he retired from business; married, 1887, Louise Whitfield, of New York. Gave libraries to many towns and cities in the United States and Great Britain, and large sums in other benefactions; total benefactions exceeding $75,000,000, including over $40,000,000 for nearly 1,500 municipal library buildings, and $10,000,000 for college professors' pension fund in United States, Canada, and Newfoundland. Lord rector of St. Andrew's University, 1903; LL.D., 1905. Died, 1919.

Carnot (*kär'nō'*), **Lazare Nicolas Marguerite,** was born in 1753 at Nolay, Burgundy, France. In 1791 he became a member of the legislative assembly, and in the convention voted for the death of Louis XVI. In 1797, having opposed the extreme measures of Barras, his colleague in the directory, Carnot, as a suspected royalist, was sentenced to deportation. He escaped into Germany, where he wrote his defense, which conduced to the overthrow of his colleagues in 1799. On his return to Paris he was made minister of war, 1800. Died, 1823.

Carnot, Nicholas Leonard Sadi, son of Nicolas, founder of thermo-dynamics, was born at Paris, 1796, died, 1832; in his *Reflexions sur la Puissance du Feu,* he enunciates the principle of reversibility, considered the most important contribution to physical science since the time of Newton.

Carnot, Marie Francois Sadi, French statesman, was born at Limoges, France, 1837. He was elected a member of the assembly in 1871, was twice a cabinet officer, and upon the resignation of President Grévy was chosen president of the French republic, 1887. He was assassinated by an anarchist, 1894.

Carpaccio (*kär-pät'chō*), **Vittore,** an early Venetian painter, was born in Istria, about 1450, and was influenced by the Vivarini and Gentile Bellini. In 1510 he executed for San Giobbe his masterpiece, the *Presentation in the Temple,* now in the Academia. Died about 1522.

Carpeaux (*kär'pō'*), **Jean Baptiste,** sculptor, was born at Valenciennes, 1827, in 1854 obtained the *Prix de Rome,* and died near Paris, 1875.

Carpenter, Frank George, journalist, traveler, author; born in Mansfield, Ohio, 1855; graduate of Wooster University, 1877. Began newspaper work as legislative correspondent for Cleveland *Leader,* at Columbus, 1879; newspaper tour to Mexico, 1891; to Russia, Germany, and England, 1892; to China, Japan, and Korea, 1894; spent 1900 in Philippines, China, Java, Australia and New Zealand. Author: *Carpenter's Geographical Readers—Asia, North America, South America. Europe, Australia, Our Colonies and Other Islands of the Seas, Africa;* etc. Died, 1924.

Carpenter, J. Estlin, theological writer, principal of Manchester College, Oxford; born 1844; second son of Wm. B. Carpenter, C.B., M.D., F.R.S., etc.; educated at University College school, London; University and Manchester New Colleges. M.A.; Litt.D.; D.D.; lecturer in Manchester College, London, and Oxford, 1875-1906; joint-editor with Professor Rhys Davids of the *Dîgha Nikaya,* and the *Sumangala Vilasini;* joint-author with Rev. P. H. Wicksteed of *Studies in Theology;* and other works.

Carpenter, William Benjamin, one of the most distinguished physiologists and writers on physiology of modern times; was born at Exeter, 1813, died at London, 1885. Graduate of Edinburgh University; M.D., LL.D., F.R.S. He took a chief part in the government expeditions which were sent out in 1868-69-70 for deep sea exploration in the north Atlantic.

Carpenter, Rt. Rev. William Boyd, bishop of Ripon, born at Liverpool, 1841; educated at Royal Institution school, Liverpool; St. Catharine's College, Cambridge; D.D., D.C.L.; vicar of St. James', Holloway, 1870-79; vicar of Christ church, Lancaster Gate, 1879-84; canon of Windsor; 1882-84; hon. chaplain to the queen, 1879-83; chaplain-in-ordinary, 1883-84. Author: *Commentary on Revelation; Thoughts on Prayer; Lecture on Preaching; Christian Reunion; Introduction to Study of the Bible; Witness to the Influence of Christ.*

Carranza, Venustiano; Mexican general and political leader, born in Coahuila, 1859. Educated for the law, but on account of defective eyes, took up farming. Joined Madero revolt against Diaz in 1910 and was appointed governor of his native state. Became leader of one of the Mexican factions. In 1915, recognized by United States as first chief of the Mexican de facto government. Died, 1920.

Carrel, Alexis, American surgeon and biologist, was born at Sainte-Foy-les-Lyons, France, in 1873. He studied medicine at Lyons and for several years was connected with French hospitals. In 1905 he came to this country and conducted laboratories at McGill University and at University of Chicago, then joined the Rockefeller Institute for medical research, New York city. His investigations in experimental surgery have proved the possibility of suturing (joining together by stitches) blood vessels and of transplanting whole organs and limbs from one person to another, for which he was awarded the Nobel Prize in 1912. His work during the World War was very outstanding. Among his publications are *The Preservation of Tissues, The Transplantation of Limbs, The Transplantation of Veins and Organs.*

Carroll, Charles, of Carrollton, American patriot, born at Annapolis, Md., 1737. He was elected a member of congress, 1776, and was among the first signers of the declaration of independence. He outlived all the other signers of the declaration of independence, and died in 1832 when ninety-five years old.

Carroll, Lewis, the pseudonym of Rev. Charles Lutwidge Dodgson, English humorist and author, born about 1833; graduate of Christ Church, Oxford, 1854; took orders in the church, 1861; lecturer at Oxford, 1855-81; wrote *Alice in Wonderland; Through the Looking-glass.* Died, 1898.

Carson, Christopher, popularly known as Kit Carson, an American frontiersman, born in Kentucky in 1809. During the Civil War he rendered important services in the territories, and was brevetted brigadier-general. Died in Colorado, 1868.

Carson, Rt. Hon. Sir Edward Henry, British lawyer, statesman; M. P. for Dublin University 1892-1918; Q. C., English bar, 1894; was born 1854; educated at Portarlington school; Trinity College, Dublin, M.A., LL.D. Solicitor-general for Ireland, 1892; solicitor-general of Great Britain, 1900-06.

Carson, Hampton Lawrence, lawyer, author; born at Philadelphia, 1852; graduate of University of Pennsylvania, 1871; A.M., LL.B., LL.D.; admitted to bar, 1874. Professor of law, University of Pennsylvania; attorney-general, Pennsylvania, 1903. Died, 1929.

Carson, Howard Adams, civil engineer; born at Westfield, Mass., 1842; B.S.; A.M., Harvard; principal superintendent of construction of Boston main drainage, 1878; chief engineer of Boston transit commission, 1894-1909, building the Boston subway, etc.

Cartier (*kär'tyā*), **Sir George Etienne,** Canadian statesman, born at St. Antoine, Canada, in 1814. In 1857 he became leader of the lower Canada section of the government, and in 1858, premier; and he held a cabinet office for several years afterward. Died at London, 1873.

Cartier, Jacques, French explorer, was born 1494. Employed by Francis I. to make explorations on the North American coast, in three successive expeditions, 1534-50; he completed the discovery and colonization of Canada. Died about 1557.

Cartwright, Edmund, inventor of the power-loom, was born at Marnham, England, 1743. A visit in 1784 to Arkwright's cotton-spinning mills resulted in his power-loom. Cartwright also took out patents for combing wool and various other inventions; he even joined Robert Fulton in his efforts toward steam navigation. He died at Hastings, in 1823.

Cartwright, Rt. Hon. Sir Richard John, Canadian statesman; minister of trade and commerce for Canada and member of parliament for South Oxford, 1896; born Kingston, Ontario, 1835; elected to parliament, 1863; finance minister, 1873-78; chief financial critic, and one of the leaders of the opposition in parliament 1879-96; acting premier and leader in the house of commons 1897; proposed a joint commission, and represented Canada on the Anglo-American joint high commission when it sat at Quebec in the summer of 1898, and Washington in the winter of 1898-99; acting premier during Sir Wilfrid Laurier's absence at colonial conference, 1907. Died, 1912.

Carus (*kā'rŏŏs*), **Paul,** philosophical writer, editor of *The Open Court* and *The Monist;* born at Illsenburg, Germany, 1852; graduate of University of Tübingen, Ph.D., 1876. Author: *The Ethical Problem; Fundamental Problems; The Soul of Man; Primer of Philosophy, etc.* Died, 1919.

Caruso (*Kah-roo-zo*), **Enrico,** the greatest operatic tenor, was born in 1873 in Naples. He made his debut in 1894 in Naples in "*L'amico Francisco.*" His success was immediate, and he sang in all the greatest operas. Died August 2, 1921.

Carver, John, the first governor of Plymouth colony, was born in England about 1575. He was one of the Pilgrims who came over in the *Mayflower,* and was chosen governor soon after landing. He assisted in settling his people in their new homes, but died within four months, in April, 1621.

Cary, Alice, American poet and prose writer, born 1820; commenced writing at eighteen. In connection with her sister Phoebe, born, 1824, she published her first volume in 1850, and from that time till her death continued to pour forth stories, poems, etc. Died, 1871.

Cary, Henry Francis, translator of Dante, was born at Gibraltar, 1772. He was educated at Rugby, Sutton, Coldfield, and Birmingham; in 1790 entered Christ Church, Oxford, and in 1796 took holy orders. In 1805 he published a translation of the *Inferno,* in 1814 of the whole *Divina Commedia.* Assistant librarian in the British museum 1826-37. He died in 1844, and was buried in Westminster abbey beside Samuel Johnson.

Cary, Phoebe, American poet, sister of Alice Cary, born near Cincinnati, 1824. She wrote about a third of the *Poems of Alice and Phoebe Cary,* and other poems. Her death quickly followed that of her sister in 1871.

Casablanca (*kä'zä-byäng'kä*), **Louis,** French naval officer, born in Bastia about 1755; in 1798 was captain of the flagship *L'Orient* in the expedition to Egypt. He was mortally wounded at the battle of the Nile, August 1, 1798.

Casaubon (*kä-sō'bun*, Fr. *käzō-bôN'*), **Isaac,** scholar and critic, born 1559 at Geneva, where, in 1582 he was appointed professor of the Greek language. Subsequently he held professorships at Montpelier, 1596, and at Paris, 1598. King James appointed him prebendary of Canterbury and Westminster. Died in London, 1614.

Casimir-Perier (*kä'zē'mēr'-pā'ryā'*), **Jean Paul Pierre,** French statesman, was born at Paris, 1847; served with distinction at the siege of Paris, 1871; entered the legislative chamber, 1874, and served both as vice president and president of that body; became premier of France, 1893, and president in 1894; resigned, 1895. Died, 1907.

Cassini (*käs-sē'nē*), **Giovanni Domenico,** Italian astronomer and savant, born at Perinaldo, near Nice, 1625; died 1712. In 1650 he was appointed to the astronomical chair in the University of Bologna. His first work related to the comet of 1652.

Cassini, Jacques, son of the preceding, born at Paris, 1677. In 1694 he was elected a member of the academy of sciences. On the death of his father he succeeded to the charge of the observatory at Paris, and died 1756. As an observer Cassini was eminently successful.

Cassius (*kash'i-us*), or in full, **Caius Cassius Longinus,** Roman general and politician, was quæstor to Crassus in the Parthian war, 54 B. C. After Pharsalia he was taken prisoner and pardoned by Cæsar. In 44 B. C. as prætor he attached to himself the aristocrats who resented Cæsar's supremacy, and won over Brutus; and in the same year Cæsar was murdered. Cassius fled to the East, united his forces with those of Brutus, and at Philippi, being routed, compelled his freedman Pindarus to kill him, 42 B. C.

Casson, Herbert Newton, editor, socialistic writer, born at Ontario, Canada, 1869; graduate of Victoria College; in 1893 went to Boston and with Morrison I. Swift organized the unemployed, and at head of 10,000 men marched to state house demanding relief.

Castle, Irene, dancer, movie actress, established a dancing school with her husband, Vernon Castle, which set the pace for dancing over all America. After her husband's death she retired for a time. Later she married Capt. Treman. Divorced. Married Frederic McLaughlin, 1924.

Castlereagh (*kăs'l-rā'*, *kăs'l-rā*), **Robert Stewart, Lord,** British statesman, eldest son of the marquis of Londonderry; was born in 1769; president of the board of control in 1802; and secretary of war in 1805. During Lord Liverpool's administration, Lord Castlereagh again became a member of the government as foreign secretary, and concluded the treaty of Paris in 1814. He remained in office the remainder of his life, which was closed by suicide in 1822.

Catharine I., empress of Russia; born about 1685; was the outcast infant of a Livonian peasant girl, and became nurse in the family of the Protestant minister of Marienburg. In 1701 she married a Swedish dragoon, who soon afterward went with his regiment to Riga, and never returned.

After the capture of Marienburg by the Russians, Catharine became the mistress first to General Bauer, with whom she lived at Moscow, secondly Prince Menschikoff, and, finally, of Peter the Great, who married her privately near Warsaw in 1711, and publicly the next year at St. Petersburg. Shen then embraced the Greek religion, and took the name of Catharine. On the death of Peter in 1725, she was proclaimed czarina. Her death was the result of intemperance. Died, 1727.

Catharine II., empress of Russia; born in 1729. As empress she seized the Crimea, and took part in the dismemberment of Poland. She promoted the welfare of Russia by encouraging literature and commerce, but her reign was sullied by disgraceful amours. Died, 1796.

Catharine, Saint, of Siena, is a saint belonging to the fourteenth century, born about 1347. .She was said to have been favored with extraordinary revelations, and the wounds of Christ were believed to have been impressed upon her body. Died, 1380.

Catharine of Aragon, queen of England; wife of Henry VIII.; born in 1485; daughter of Ferdinand of Aragon and Isabella of Castile. She was beautiful and virtuous, yet the king in 1527 sought a divorce on the ground that the marriage was uncanonical. After much temporizing on the part of the pope, the marriage was in 1533 pronounced invalid by Cranmer, archbishop of Canterbury, and his sentence was ratified by act of parliament. Died, 1536.

Catharine de Medici (*dā-mā'dē-chē*), born in 1519; great granddaughter of Lorenzo the Magnificent, niece of Pope Clement VII., and queen to Henry II. of France, acted as regent during the minority of her second son, Charles IX. She instigated the massacre of St. Bartholomew. Died, 1589.

Catiline (*kat'i-lin*), **Lucius Sergius,** Roman politician, born about the year 108 B. C.; died, 62 B. C. In the year 68 B. C. he was elected praetor; in 67 B. C. governor of Africa; and in 66 B. C. he desired to stand for the consulship, but was disqualified on account of the accusations brought against him of maladministration in his province. His political conspiracies were frustrated by Cicero, and he fled from Rome and took refuge with Manlius, who was in command of the army in Etruria. In 62 B. C. the army of the senate encountered that of Catiline near Pistoia, and after a desperate battle he was defeated and slain.

Catlin, George, ethnologist, was born at Wilkesbarre, Pa., 1796; studied law, but soon turned to drawing and painting. During 1832-40 he was studying the Indians of the far west; traveled, 1352-57, in South and Central America; and again lived in Europe until 1871. He died at Jersey City, 1872. His works include *Manners of the North American Indians, The North American Portfolio,* and *Last Rambles in the Rocky Mountains.*

Cato, Marcus Porcius, surnamed Censorius and Sapiens, afterward known as Cato Priscus or Cato Major—to distinguish him from Cato of Utica—born at Tusculum in 234 B. C. In 184 B. C. he was elected censor, and discharged so rigorously the duties of his office that the epithet *Censorius,* formerly applied to all persons in the same station, was made his permanent surname. He repaired the water courses, paved the reservoirs, cleansed the drains, raised the rents paid by the publicans for the farming of the taxes. In the year 175 B. C. he was sent to Carthage to negotiate on the differences between the Carthaginians and the Numidian king, Masinissa; but having been offended by the Carthaginians he returned to Rome, where, ever afterward, he described Carthage as the most formidable rival of the empire, and concluded all his addresses in the senate house with the well-known words: "*Ceterum censeo, Carthaginem esse delendam.* (For the rest, I vote that Carthage must be destroyed.)" Cato died 149 B. C.

Cato, Marcus Porcius, named Cato the "younger," or Cato Uticensis, born 95 B. C. From Macedonia, where he was military tribune in 67 B. C. He quitted the quaestorship at the appointed time amid general applause. In 63 B. C. he was elected tribune, and also delivered his famous speech on the Catiline conspiracy, in which he denounced Cæsar as an accomplice of that political desperado, and determined the sentence of the senate. Died 46 B. C.

Catt, Carrie Chapman, suffragist, president international woman suffrage alliance; born Ripon, Wis., 1859; educated at State Industrial College of Iowa. State lecturer and organizer Iowa woman suffrage association, 1890-92; since then in service of national American woman suffrage association and international alliance.

Cattell (*ka-tel'*), **James McKeen,** educator, psychologist, professor of psychology, Columbia, 1891-1917; born Easton, Pa., 1860; graduate of Lafayette College, 1880, A.M., Ph.D.; professor psychology, University of Pennsylvania, 1888-91. President Psychol. Corpn. since 1921. Editor of *Science, The Popular Science Monthly,* and *Library of Philosophy, Psychology.*

Catullus (*kā-tul'us*), **Caius Valerius,** celebrated Roman lyric and elegiac poet, is supposed to have been born at Verona, Italy, B. C. 87, and to have died about B. C. 54; in the civic strife of the time he sided with the senate, and opposed to the length of directing against him a coarse lampoon.

Cavell, Edith, English nurse, was born in Norfolkshire, 1866. In 1907 she established a training school for nurses in Brussels. In August, 1915, she was suddenly arrested by the German governor, charged with having aided English and Belgian young men to escape. Found guilty in a German military court, she was secretly condemned and shot at 2 a.m., October 12, 1915.

Cavendish (*kav'en-dish*), **Henry,** English chemist and physicist, was born at Nice, France, 1731; died 1810. His most important work included the discovery of the composition of water, the composition of nitric acid, and the determination of the mean density of the earth.

Cavour (*kä'-vōōr'*), **Count Camilla Benso di,** distinguished Italian statesman of the nineteenth century; was born at Turin, 1810. He was educated for a military career, but his liberal tendencies being likely to prove an insuperable barrier to his promotion, retired during the stirring events of 1830-31, and devoted himself to agriculture, in which he introduced great improvements. In conjunction with Count Cesare Balbo, he, in 1847, established a political daily journal, in which he advocated the interests of the middle classes. On his suggestion the king was petitioned for a constitution, which was granted in February, 1848. As a member of the chamber of deputies, during the stormy period which succeeded Charles Albert's declaratior of war against Austria, Cavour strenuously opposed the ultrademocrats. In the Marquis d'Azeglio's ministry, formed soon after the fatal battle of Novara, Cavour was successively minister of agriculture and commerce, minister of marine, and minister of finance; and in 1852 he was appointed to succeed d'Azeglio as premier. From this time until his resignation in 1859, in consequence of the conclusion of the peace of Villafranca, Cavour was the originator as well as the director of the Sardinian policy. The dispatches, which Cavour penned in reply to those of Austria prior to the outbreak of the Italian war are masterpieces of astute diplomacy. In 1860 he was again called upon to preside over the Sardinian government, the duties of foreign minister likewise devolving upon him, and temporarily those of the minister of the interior also. He continued to direct the Sardinian policy until his death, 1861.

Caxton, William, the founder of English printing, was born in 1422. During a residence in Flanders he acquired the new typographic art, and on his return set up a press in the almonry. Westminster, where he brought out the first printed book seen in England, the *History of Troy.* Died, 1491.

Cayley (*kā'li*), **Arthur,** English mathematician, was born at Richmond, Surrey, 1821. He was educated at King's College, London, and Trinity College, Cambridge. He was admitted to the bar at Lincoln's Inn in 1849, and established a practice as a conveyancer. He was president of the royal astronomical society, 1872-73, and of the British association in 1883. His chief book is an *Elementary Treatise on Elliptic Functions*; a ten volume edition of his *Mathematical Papers* was begun in 1889. He died at Cambridge, 1895.

Cecil (*ses'il* or *sis'il*), **William,** Lord Burleigh, English statesman, was born at Bourne, Lincolnshire, 1520. Entering Gray's Inn at the age of twenty-one devoted himself to the study of law. In 1547 Henry VIII. appointed him master of requests, and in the following year his talents procured for him the office of secretary of state. Elizabeth created him Baron Burleigh in 1571, and conferred on him the order of the Garter, when he was also made lord high treasurer. Died, 1598.

Cecilia (*sē-sil'i-ä*), **Saint,** a Roman lady of high descent, of the second or third century, who suffered martyrdom for her faith. From her skill in singing she is chosen the patroness of musicians, and especially of sacred music.

Cellini (*chel-lē'nē*), **Benvenuto,** Italian gold worker, sculptor, founder, and medailleur, was born at Florence in 1500, and first displayed skill as a chaser and gold-worker. At an early period he went to Rome, where he was employed by many distinguished patrons of art. He accompanied Cardinal Ferrara to France, and entered the service of Francis I. He executed several fine works in metal and marble—among them the celebrated bronze group of "Perseus with the Head of Medusa," now in the market-place in Florence. Died in 1570 or 1572.

Celsius (*sel'si-us*), **Anders,** Swedish astronomer, the constructor in 1742 of the centigrade thermometer, was born at Upsala, 1701. He was the grandson of Magnus Celsius, astronomer and decipherer of the Helsing runes, and nephew of Olof Celsius, professor of theology. He became in 1730 professor of astronomy at Upsala, where in 1740 a splendid observatory was erected for him. Died, 1744.

Celsus (*sel'sus*), an Epicurean philosopher, but tinged with Platonism, lived in the second century after Christ, and wrote, after 150 A. D., the *Logos Alethes.* He reproached Christians with their party divisions and ever-varying opinions and charged them with having wilfully altered their sacred writings.

Cenci (*chen'chē*), **Beatrice,** a noble Roman lady, whose tragic fate has served as the theme of one of Shelley's best tragedies, lived in the sixteenth century. The fine portrait of Beatrice, by Guido Reni, in the Barberini gallery, Rome, is well known. Died, 1599.

Cervantes Saavedra, Miguel de (Sp. *thāir-vän'tace sä-vä'thra*), Spanish author, was born at Alcala de Henares, 1547, died, 1616. In 1571 he joined the armament commanded by Don John of Austria against the Turks. In the battle of Lepanto (1571) he received a wound, which deprived him of the use of his left hand and arm; but he remained in active service till 1575, when, on his way from Italy to Spain, he was captured by Algerino corsairs. In 1580 his relatives and friends purchased his freedom. He returned to Madrid in his 34th year, when his literary career properly began.

He produced here his pastoral romance, *Galatea,* and several plays for the stage. From 1598 to 1603 all trace of him is lost, but he is supposed to have spent the interval in La Mancha, where he is said to have begun *Don Quixote* in prison. The first part was published at Madrid in 1605. In this work Cervantes hit the vulnerable point of his age, and gave the finishing stroke to the mummeries of knight-errantry. After his return to Madrid, while the publication of the first part of *Don Quixote* and its unprecedented success drew upon him the hostilities of those who resented the satire of his novel, he published his *Novelas ejemplares,* most of which had been written earlier. In 1614 he published the *Viaje al Parnaso.*

The second part of *Don Quixote* appeared in the beginning of 1615, and was received with the same enthusiasm which had greeted the first part. He had been living in great poverty, which the sale of this work relieved. But his health began to fail, and he had a presentiment of his death, indicated in the preface of his *Perseles y Sigismunda,* a serious romance which he prepared for the press at the beginning of 1616, though it was not published until 1617 by his widow. On April 19 he dictated to his wife a letter addressed to his friend Lemos, to whom he dedicated the work. Four days afterward he died, on the same day with Shakespeare.

References.—The best Spanish biography of Cervantes is that by Fernandez de Navarrete See also his *Life* by Roscoe, Kelly, and Watt.

Cesnola (*chās-nō'lä*), **Count Luigi Palma de,** archaeologist, was born near Turin, 1832. He served with the Sardinian contingent in the Crimean war, went to New York in 1860, and fought in the Civil War. Appointed American consul at Cyprus in 1865, he commenced a series of excavations; his splendid collection of statues, lamps, vases, inscriptions, etc., was purchased by the Metropolitan museum, New York, in 1873, of which he became director in 1879. He wrote *Cyprus, Its Ancient Cities, Tombs, and Temples.* Died, 1904.

Chadwick, George W., composer, born in Lowell, Mass., 1854. Director of the New England Conservatory of Music. He has composed several symphonies and overtures, including "*Rip Van Winkle,*" "*Thalia,*" "*Adonais,*" an opera "*Judith,*" and minor works.

Chaffee (*chaf'ē*), **Adna Romanza,** American general; born in Orwell, Ohio, 1842; educated in public schools. Entered army, 1861, and served throughout the Civil War; commanded brigade, Santiago campaign, 1898; promoted major-general, United States volunteers, 1898. Honorably discharged as major-general, 1899. Appointed brigadier-general of the United States volunteers, 1900. Assigned to the command of United States forces for the relief of United States legation, Pekin, 1900; arrived at Pekin, China, August 14, 1900; promoted to major-general of the United States army, 1901. Detailed to general staff corps, 1903, and assigned to duty as assistant to chief of staff, Washington; promoted to lieutenant-general of United States army, 1904, and chief of staff until his retirement in 1906. Died, 1914.

Chaliapin, Feodor, basso, born in Kazan, Russia, 1873. After appearances in Petrograd, Paris and Italy he finally came to New York and joined the Metropolitan Opera Company in 1906.

Chalmers (*chä'mērz, chō'mērz*), **Thomas,** Scottish divine, was born in Fife, 1780; educated at St. Andrews, and ordained to preach at nineteen. He was subsequently professor of moral philosophy at St. Andrews, 1823, and of theology at Edinburgh, 1828. Died, 1847.

Chamberlain (*chām'bēr-lin*), **George Earle,** lawyer, United States senator; born near Natchez, Miss., 1854; graduate of Washington and Lee University, B.A., LL.B., 1876. Attorney-general

Oregon, 1891. Elected governor of Oregon for terms, 1903-07, 1907-11; elected United States senator for the terms 1909-15, 1915-21. Died, 1928.

Chamberlain, Rt. Hon. Joseph, British statesman, was born in London, 1836; educated in private school and University college, London; LL.D., D. C.L. On the death of his father he retired from the firm, in order to devote all his energies to public life. In 1876 he entered parliament and took his seat with the radicals; president of board of trade, with cabinet rank, 1880-85; president of local government board in 1885, until his divergence of views on the Irish policy of Gladstone caused his resignation, 1886; in 1895 took office under Lord Salisbury as colonial secretary. The negotiations with the Transvaal, which ended in war, occupied him fully during 1899, and his South African policy was one of the main controversial features of the general election of 1900 and during 1901. In 1902 he visited South Africa, and on his return received an address from the lord mayor and corporation of London, 1903. In 1903 he launched, at Birmingham, his scheme for the revision of the fiscal policy of the country and the adoption of a policy of preferential tariffs. His seventieth birthday and completion of thirty years' service as member of parliament for Birmingham were celebrated 1906. Died, 1914.

Chamberlin, Clarence Duncan, was born in Denison, Iowa, 1894. Studied engineering at Iowa State College. Joined the United States Signal Corps during World War and was commissioned in aviation. Gained his reputation while "barnstorming." Married Miss Wilda Bogert of Independence, Iowa. On Sunday, June 5th, 1927, he took off with Charles A. Levine as passenger in his plane "Columbia," landing at Eisleben, Germany, after 46½ hours of trans-Atlantic flying.

Chambers, Robert, Scottish publisher, was born in Peebles, 1802, began business as bookseller in Edinburgh in 1818 and gave his leisure to literary composition. In 1844 he published anonymously the *Vestiges of Creation*, which prepared the way for Darwin's *Origin of Species*. He received the degree of LL.D. from St. Andrews in 1863. The labor of preparing the *Book of Days* broke his health, and he died at St. Andrews, 1871.

Chambers, Robert William, author, artist; born in Brooklyn, 1856; educated at Julian's academy, Paris, 1886-93. First exhibited in salon, 1889; illustrations for *Life, Truth, Vogue*, etc. Author: *In the Quarter*; *The King in Yellow*; *The Red Republic*; *A King and a Few Dukes*; *The Maker of Moons*; *With the Band*.

Chambers, William, Scottish publisher, was born at Peebles in 1800. In 1814 he was apprenticed to a bookseller in Edinburgh, and 1819 started business for himself, to book-selling afterward adding printing; in 1832 he started *Chambers' Edinburgh Journal*, and soon thereafter he united with Robert in founding the business of W. & R. Chambers, the best known of whose many publications are, besides the *Journal* and a numerous series of educational works, a *Miscellany*, *Papers for the People*, the *Cyclopædia of English Literature* (2 vols.), and *Chambers' Encyclopaedia* (10 vols.). He died in 1883, having shortly before received the offer of a baronetcy. He was made LL. D. of Edinburgh in 1872.

Chamisso (*shä-mē'sō*; French, *shá'mē'sō'*), **Adelbert von,** German lyric poet, born in 1781 at the castle of Boncourt, in Champagne, France. As early as 1804-06, he, together with Varnhagen von Ense, published a *Musen Almanach*. In 1813 he wrote his original and amusing fiction called *Peter Schlemihl*. Died, 1838.

Champlain (*sham'plān'*; French, *shaN'plăN'*), **Samuel de,** a French naval officer and explorer, of the seventeenth century. During the reign of Henry IV., of France, he visited many parts of America; discovered Lake Champlain, and formed the first French establishments at Quebec and Montreal. He was made governor of Quebec, from which he was driven by the English, in 1631. When peace was restored, he was reinstated. Died in 1635.

Champney, James Wells, an American painter and illustrator, born in Boston, Mass., 1843; studied at Paris, Antwerp, and Rome. He was especially distinguished as an illustrator and genre painter; elected an A. N. A. in 1882. Died, 1903.

Champollion (*shăN'pōl'yōN'*), **Jean Francois,** Egyptologist and discoverer, was born at Figeac, France, 1790; died in Paris, 1832. He was professor of history in the Lyceum of Grenoble, and afterward professor of Egyptian antiquities in the college of France, Paris.

Channing, Edward, historian; born in Dorchester, Mass., 1856; graduate of Harvard, 1878; Ph.D. 1880; instructor, 1883; now professor of history at Harvard. Author: *The United States*, 1756-1865; *A Student's History of the United States*; *Town and County Government*.

Channing, William Ellery, founder of American Unitarianism, was born in Newport, R. I., 1780; graduated from Harvard in 1798. He was termed the "apostle of Unitarianism." In 1821 he received the title of D.D. from Harvard, on account of the tractate on the *Evidences of Christianity*, his *Address on War*, and his *Sermons*. In 1822 he visited Europe, and made the acquaintance of great authors, notably Wordsworth and Coleridge. Coleridge said of him: "He has the love and the wisdom of love." He wrote essays and treatises, characterized by vigor, eloquence, taste, and a lofty tone of moral earnestness. Died, 1842.

Chaplin, Chas. Spencer, comedian, born near London, England, 1888. Mainly self educated; identified with theatres since seven years old; employed in vaudeville theatres, London; made screen debut, 1914, Keystone Film Co., Essanay, 1915, Mutual, 1916; signed with First Nat. Exhibitors' Circuit to make eight two-reel pictures for $1,000,000, 1917; directing his own productions since.

Chapman, Frank Michler, ornithologist; born in Englewood, N. J., 1864; academic education. Associate curator ornithology and mammalogy, American museum natural history since 1887. President Linnæan society New York, 1908; curator of ornithology since 1908.

Chapman, George, English poet, born 1559, died 1634. He published a translation of the *Iliad* in English ballad measure, and afterward translated the *Odyssey*, the Homeric hymns, and portions of Ovid, Terence, Musæus, and Petrarch, and wrote many plays.

Charcot (*shär'kō'*), **Jean Martin,** pathologist, was born at Paris, 1825, studied medicine at Paris, where he became a professor, doctor at the Salpetriere hospital, and a member of the institute. He contributed much to our knowledge of chronic and nervous diseases, and made hypnotism a scientific study. Died, 1893.

Charlemagne, or **Charles the Great,** emperor of the West and king of France, was born 742, and died, in Aix-la-Chapelle, 814. He was the second son of Pepin the Short, and the Frankish kingdom reverted to him and his brother Carloman on his father's demise, in 768. Carloman died three years later, and Charles secured the undivided sovereignty. Master of Gaul and western Germany, he now entered upon a wide career of conquest.

Incensed at the Lombard king Desiderius, and urged by Pope Adrian I., he crossed the Alps in 773, reduced Pavia, and secured the iron crown of Lombardy. Desiderius was exiled to the monastery of Corbie. A rebellion was put down, and Charlemagne appointed his second son, Pepin, to rule the country (776). The most terrific of his wars, that against the Saxons, had begun in 772, and with some intervals raged till 804. Invasions were repeated, new risings crushed, the greatest severities, as the slaughter of 4,000 prisoners at one time, were adopted, and Christianity was forced upon the people. Wittikind, the heroic leader of the Saxons, was finally compelled to surrender in 785, and was baptized, but it was only after fresh struggles that the nation was completely subdued.

In 778 Charlemagne crossed the Pyrenees to make war upon the Moors. The country as far as the Ebro was taken, but on his return his rear guard was destroyed by the Basques at Roncesvalles; the famous Roland being among the slain. The design of Duke Thassilo of Bavaria to unite the enemies of Charlemagne against him failed, and that country was placed under Frankish governors. War was waged against the Slavic tribes on the Baltic, and the subjection of the Avars was completed in 796. The territories of Charlemagne now extended from the Ebro to the Eider and Volturno, and from the Atlantic to the Oder and Thesis, and his aim of restoring the western Roman empire was achieved. On Christmas, 800, he was crowned at Rome by Pope Leo III., and henceforth styled himself emperor of the West, impressing Christian and Mussulman princes with his power.

He sought to establish a regular administration in his motley empire. Projected laws were submitted to great national assemblies, and the edicts known as capitularies evince his wisdom. The whole dominion was divided into counties, governed by earls, who were placed under imperial delegates. He increased the power of the clergy, but kept them under his control. He encouraged trade and industry, and established a uniform currency. Illustrious men, whose leading spirit seems to have been Alcuin, were invited from all countries to diffuse learning in his empire. Charlemagne himself was a diligent scholar and a patron of art. His favorite residence was Aix-la-Chapelle. His habits were active, frugal, and temperate. The only son who survived him was his successor, Louis le Débonnaire. The great emperor and his twelve legendary peers became the heroes of chivalric romance.

References.—His *Life* by Eginhard, Eng. trans. by Glaister; *Charles the Great*, by Mombert; Mullinger's *The Schools of Charles the Great*; Wells' *The Age of Charlemagne*; and Davis' *Charlemagne* in Heroes of the Nation series.

Charles I., king of England, second son of James I., was born in 1600, proclaimed king on the death of his father in 1625, and married to Henrietta Maria of France, daughter of Henry IV., in the May following. His reign is chiefly celebrated for the great civil war between the king and the parliament which began in 1641, and ended in the capture of the monarch, who was brought to trial in January, 1648, before a high court of justice, as a traitor to the country. Sentence of death being passed upon him, he was, on January 30, 1649, beheaded on a scaffold erected in the street near the windows of the banqueting house at Whitehall.

Charles II., king of England, son of Charles I., born in St. James palace, London, in 1630; was at The Hague, in Holland, when his father was beheaded. He assumed the royal title, and was proclaimed king by the Scots; landed in Scotland, and was crowned at Scone. Marching into England, he was defeated by Cromwell at Worcester, September 3, 1651, and fled to France. By the policy of General Monk, after Cromwell's death, he was restored to his crown and kingdom in 1660, an event known as the restoration. Died, 1665.

Charles V., surnamed "the wise," king of France 1364-80, was the son of King John II., and was born 1337. His father being made prisoner by the English at the battle of Poitiers, on September 19, 1356, he assumed the regency. His father died April 8, 1364, and Charles ascended the throne. Died, 1380.

Charles VI., "the mad," or the "beloved," born 1368, died October 21, 1422. He succeeded his father Charles V. in 1380, and France was under the oppressive rule of his uncles until he dismissed them in 1388. He reigned wisely till 1392, when his weak mind became deranged. Henry V. of England invaded the distracted land and won a great victory at Agincourt in 1415. Charles died, leaving most of France in English hands. His son by Isabella of Bavaria, Charles VII., succeeded him.

Charles VII., "the victorious," born 1403, died 1461. He was the fifth son of Charles VI. and Isabella, and became by the death of his brothers heir apparent in 1416. On the death of Charles VI. in 1422 Henry VI. of England was proclaimed king of France at St. Denis, and his authority was generally recognized. By 1453 the English had lost all but Calais. Charles' last years were embittered by his son Louis XI., who succeeded him.

Charles IX., king of France, second son of Henry II. and Catharine de' Medici, born 1550, died 1574. He succeeded his brother Francis II. in 1560, under the regency of his mother. Intervals of war and peace ensued. The battles of Jarnac and Moncontour were fought in 1569, after which an apparent reconciliation was effected, succeeded in 1572 by the massacre of St. Bartholomew. Charles manifested deep remorse, and died after terrible sufferings.

Charles X., king of France, the grandson of Louis XV., was born, 1757. He received the title Comte d'Artois, and in 1773 married Maria Theresa of Savoy. After the fall of the Bastille, in 1789, he headed the first emigration of nobles and took the lead in the attempts made to restore the monarchy. Under Louis XVIII., Artois headed the royalist party, and by the death of that monarch became king, under the title of Charles X. Charles was driven from the capital, and Louis Philippe declared king. Charles lived the remainder of his life in exile. He died at Görz, Austria, 1836.

Charles V. emperor of Germany, was born at Ghent, 1500, son of Philip, archduke of Austria, and of Johanna, daughter of Ferdinand and Isabella of Spain. He became in 1516, ruler of Spain, the Netherlands, Sicily, Naples, and the New World; and on the death of his grandfather, in 1519, added Austria to his dominions. His grandfather, Maximilian, had endeavored to secure for him also the succession to the imperial throne; but the electors were by no means anxious further to aggrandize his power, and at first rather favored the claims of the rival candidate, Francis I. of France. By dexterous policy, however, the honor was secured for the young Charles, who was crowned at Aix-la-Chapelle in 1520; and thus began that rivalry between Charles and Francis which is one of the determining factors of European history.

The war was waged in all quarters, but in Italy alone was it decisive; and the French were driven from the duchy of Milan in 1521,

and out of Italy altogether in 1522. The discomfiture of the French king was increased by the treachery of the Constable of Bourbon, who openly joined the side of Charles. Francis again invaded Italy and occupied Milan; but he was defeated and made captive at Pavia (Feb., 1525), and forced to sign the treaty of Madrid (1526), by which he resigned all his pretensions, and agreed to coöperate with Charles in suppressing heresy. But the terms were too humiliating, and war again broke out. Threatened by the Turks on his eastern frontier, and annoyed by the spread of heresy in Germany, Charles agreed to the peace of Cambrai (1529), which, however, left him master of Italy.

Hitherto Spain had been the residence and headquarters of Charles, but Germany now demanded his presence. The Diet of Worms in 1521 had settled nothing, save to show Charles as a faithful supporter of the papacy. He had issued an edict against Luther; but the only result was to organize German national sentiment against the emperor. Social and political disturbances, however, such as the Anabaptist movement and the Peasants' War, strengthened the hands of Charles, and at the Diet of Augsburg (1530) he renewed the Edict of Worms, and was met by the formation of the Schmalkaldic league of Protestant princes.

A threatened invasion by the Turks prevented Charles from taking immediate action, and, to secure the coöperation of the Protestants against the Turks, he was forced to make concessions (1532). But his policy was not changed; and although he was year after year diverted from his purpose—first by renewed war with Francis, which did not end till a joint invasion of rance by Henry VIII. of England and Charles forced Francis to sign a most unfavorable peace at Crespy (1544), and again by campaigns undertaken against the pirates of Tunis (1536) and Algiers (1541)—he never quite lost sight of it. The death of his rival, Francis I., in 1547, at last left him free; and the chief interest of the remaining years of his reign lies in his German dominions.

The two chief objects of his policy did not always harmonize, and his ultimate failure to secure either of them was, in part at least, due to this conflict between them. He wished to secure the reversion of the imperial throne for his son Philip; but in this he was disappointed, through the instance of his brother, Ferdinand of Austria, who claimed the empire for himself. The other object was to stamp out heresy, and restore Germany unbroken to the papacy.

Charles at first easily broke the power of the Protestant princes, and also made prisoners of their leaders; but the harsh manner in which an unsatisfactory compromise called the Augsburg Interim (1548) was enforced created discontent, and Charles found himself faced by the formidable opposition headed by Maurice of Saxony. At one time Charles almost fell into the hands of Maurice, and was driven a wanderer from Germany. He was forced to agree to the treaty of Passau (1552), and to the peace of Augsburg in 1555, which acknowledged the existing conditions, and established Protestantism over a great part of Germany.

The peace of Augsburg was the culmination of his reign. In 1556, disappointed in his ambitions and broken in health, he abdicated in favor of his son Philip, and retired to the monastery of San Yuste, near Plasencia, in Spain, where he died, 1558.

References.—Robertson's *Life of Charles V.*; Stirling-Maxwell's *Cloister Life of Charles V.*; Vehe's *Court of Austria.*

Charles X., king of Sweden, the son of the count Palatine, was born at Nyköping, 1622. He took part in the Thirty Years' war, and on the abdication of his cousin, Queen Christina, 1654, succeeded to the throne of a kingdom impoverished by her extravagance. In 1659 he was driven from an attack on Copenhagen by help of the Brandenburgers and the Dutch; and he died suddenly at Gothenburg, 1660.

Charles XII., king of Sweden, son of Charles XI., and a warlike prince, was born 1682. He ascended the throne at the age of fifteen. He had to cope with Denmark, Russia, and Poland combined against him; he foiled the Danes at Copenhagen, the Russians at Narva, and Augustus II. of Poland at Riga. Charles XII. was the last of the Swedish kings. Born in 1682, and died in 1718.

Charles the Bold, duke of Burgundy, son of Philip the Good, born, 1433, died, 1477. He fought at Gavre in his father's ranks in 1452, engaged in the "war of the public weal" in France, forcing Louis XI. to yield to the demands of the confederates, and after humbling Liege in 1466 and destroying Dinant, he succeeded Philip, in June, 1467, as duke of Burgundy. In 1472 Gelderland, his fifth duchy, was acquired. In 1476 he invaded Switzerland, but his forces were overwhelmed at Granson and at Morat, and he lost Lorraine. He attempted to recover it, and besieged Nancy. Here on January 5, 1477, Renè, duke of Lorraine, vanquished his army, Charles falling in the fight.

Charles Martel, duke of Austrasia, was born about A. D. 689; died, 741. He was the natural son of Pepin d'Heristal, and succeeded his father in the dukedom in 715. As mayor of the palace he possessed the whole regal power, which he administered with great success, and gained many victories the principal of which was over the Saracens in 732. It was in consequence of this victory that he was called *Martel*, or "the hammer." On the death of Thierry in 737, he omitted to declare a successor to the throne and continued to administer affairs with the title of duke of the Franks. At his death he divided his dominions between his sons Carloman and Pepin. The latter became the first king of France of the Carlovingian race; name was taken from the founder, Charles Martel.

Charlevoix (*shär'lĕ-wŏ'*), **Pierre Francois Xavier de,** a noted French traveler and historian, born at St. Quentin, 1682. He became a member of the society of Jesuits when only sixteen years old. In 1720 he visited Canada, went up the St. Lawrence river and through the great lakes, and reaching the Mississippi through the Illinois river, sailed down to New Orleans, went from there to Santo Domingo, and thence to France, which he reached after an absence of two years. Died, 1761.

Charlton, John, English artist, was born at Bamborough Northumberland, 1849; studied at Newcastle school of arts and South Kensington; exhibited at royal academy, 1870, and regularly after that time.

Charron (*shà'rôN'*), **Pierre,** philosopher and theologian, born at Paris, 1541. After being admitted to the bar he took orders, and became a leader of the modern Catholics. He was a friend of Montaigne, from whose essays he borrowed freely. Died, 1603.

Chase, Salmon Portland, American jurist and statesman, was born in New Hampshire in 1808. He was sent to the house of representatives and to the United States senate from Ohio, and was elected governor of that state. Appointed secretary of the treasury by President Lincoln, at the outbreak of the Civil War, he conducted the finances with rare skill and success. Appointed chief-justice of the supreme court in 1864, he held this office at his death, in 1873.

Chase, Harry Woodburn, educator, was born in Groveland, Mass., 1883; received A.B. and A.M. degrees at Dartmouth; Ph.D. at Clark university, 1910; president of University of North Carolina, 1920-1930; president of National Association of State Universities, 1929; elected president of University of Illinois, 1930.

Chase, Susan Frances, educator, author, lecturer, was born in Shanghai, China; graduated from University of Wisconsin, 1895; Ph.D., University of Buffalo, 1898; taught at University of West Virginia; was instructor at University of Buffalo. Died, 1927.

Chase, William Merritt, American artist; was born at Franklin, Ind., 1849; early studied under B.F. Hayes in Indianapolis, J. O. Eaton, New York, A. Wagner and Piloty, Munich. Established studio in New York. Died, 1916.

Chateaubriand (*shà' tō' brē' ăn'*), **Vicomte de Francois Auguste,** 1768-1848, French author, was born at St. Malo. At the flight of Louis XVI. he endeavored to stem the revolutionary tide, but failing, retired to England. In 1815 he was created a peer of France, was ambassador at London in 1822, and minister of foreign affairs, 1823-24.

Chatfield-Taylor, Hobart Chatfield, author, was born at Chicago, 1865; graduate Cornell, 1886. Editor: *America*, 1888-90; consul of Spain at Chicago, 1892-94; chevalier of the legion of honor and officer de l'Instruction Publique, France; chevalier of the order of Isabella, the Catholic, Spain; chevalier of the order of St. James, Portugal, etc. Author: *With Edge Tools; An American Peeress, Two Women and a Fool*, etc.

Chatterton, Thomas (1752-1770), English poet, began writing poetry when he was only 15, publishing several fine poems, showing brilliant imagination, invention, and fertility, under the name of Rowley. He went to London in 1769, but misfortune and starvation drove him to suicide by poison the following year.

Chatrian, Alexandre. See **Erckmann-Chatrian.**

Chaucer (*chô'sĕr*), **Geoffrey,** the "father of English poetry," was born about 1340. At one period he seems to have turned his attention to law, and to have become a member of the Inner Temple. In 1359 he served under Edward III. in his French campaign, and was made prisoner. The date of his return from captivity and of his subsequent marriage cannot now be ascertained. After his marriage he began to mix in public affairs. He was sent on an embassy to Genoa in 1372, and on his return was appointed comptroller of the customs for wools, and in the same year the king granted him a pitcher of wine daily for life. In 1377 he proceeded to Flanders in the retinue of Sir Thomas Percy, afterward earl of Worcester; and for several years thereafter he was employed in embassies and other business connected with the public service. He died at London in 1400 and was buried in Westminster abbey. His poems include *The Romaunt of the Rose; The Canterbury Tales; The Book of the Duchess; The House of Fame*, and *The Legend of Good Women.*

Cheops (*kē'ops*), or **Khufu,** a king of Egypt of the fourth dynasty. He built the great pyramid. He changed that government into a despotic tyranny which had previously been a limited monarchy, and died after reigning fifty-six years, hated by his people. According to Lepsius he lived about 2800-2700 B. C.

Cherubini (*kā'r ōō-bē'ne*), **Maria Luigi Carlo Zenobi Salvatore,** Italian composer, was born at Florence in 1760. He was naturalized in France, and settled in Paris, the scene of his greatest triumphs, where he composed operas, of which the chief were *Iphigenia in Aulis*, and *Les deux Journees*, or *The Water Carrier*, his masterpiece. Died, 1842.

Chesterfield, Philip Dormer Stanhope, Earl of, English politician, writer, and a man of fashion, was born in 1694, and educated at Cambridge. He was distinguished at the court of George II., and was sent as ambassador extraordinary to Holland in 1728. He was made a knight of the Garter in 1730. In 1745 he was appointed lord-lieutenant of Ireland, and afterward became secretary of state. He is now more known by his *Advice to His Son* than by his public services. Died, 1773.

Chesterton, Gilbert Keith, English journalist and author; born at Campden Hill, Kensington, 1874; educated at St. Paul's school; attended classes at Slade school; began reviewing art books for the *Bookman*, and then for the *Speaker;* since then has contributed to *Daily News, Literature, Pall Mall Magazine, Echo, World, Clarion*, etc.

Chevalier (*shĕ-vă'lyā'*), **Michel,** French economist, was born at Limoges, 1806, and trained as an engineer. He was sent by Thiers to inquire into water and railway communication in the United States; was made a councillor of state in 1838; and in 1840 professor of political economy in the Collège de France. As a freetrader he aided Cobden in carrying into effect in 1860 the commercial treaty between France and England, becoming a senator and grand officer of the legion of honor. He died at Montpelier, 1879.

Chevreul (*shĕ-vrûl'*), **Michel Eugene,** French chemist, born at Angers, 1786, studied chemistry at the Collège de France in Paris. In 1826 he entered the academy of sciences, and in 1830 became director of the museum of natural history. Died in 1889, his hundredth birthday having been celebrated three years before with great enthusiasm.

Cheyne (*chā'nē*), **Thomas Kelly,** biblical scholar, joint-editor of the *Encyclopaedia Biblica*, and author of *Critica Biblica*, was born in London, 1841. Educated at Merchant Taylors school and Worcester college, Oxford, he became fellow of Balliol college in 1869; D.D. Litt.D. A member of the Old Testament Revision company, he contributed much to magazines and reviews. His chief books were *The Prophecies of Isaiah; Exposition of Jeremiah and Lamentations; The Book of Psalms*, etc. Died, 1915.

Cheyney, Edward Potts, educator, author; born at Wallingford, Pa., 1861; graduate of University of Pennsylvania, 1883; professor European history, University of Pennsylvania. Author: *Social Changes in England in the Sixteenth Century; Social and Industrial History of England.*

Childs, George William, publisher and philanthropist, was born in Baltimore, 1829, became clerk in a book store in Philadelphia, and by 1850 was head of a publishing firm. Proprietor from 1864 of the Philadelphia *Public Ledger*. He died, 1894.

Chittenden (*chit'en-den*), **Russell Henry,** scientist, chemist, director Sheffield school, Yale, 1898-1922; born at New Haven, Conn., 1856; graduate Yale, Ph.B, Ph.D., LL.D., Sc.D. Professor physiological chemistry, Yale. Member national academy sciences; president American physiological society, 1895-1904. Author: *Digestive Proteolysis; Studies in Physiological Chemistry*, 4 vols.; *Physiological Economy in Nutrition; The Nutrition of Man.*

Chitty (*chit'tĭ*), **Joseph,** English lawyer and legal writer; born 1776, died at London, 1841. His chief works are, *Treatise on the Parties to Actions and to Pleadings and Synopsis of Practice in the King's Bench and Common Pleas.*

Choate (*chōt*), **Joseph Hodges,** lawyer, diplomat, ambassador of United States to England, 1899-1905; born in Salem, Mass., 1832; graduate of Harvard and Harvard law school, 1852; LL.D., D.C.L.; one of the committee of seventy which broke up the Tweed ring, 1871; governor of New York hospital, 1877 (chairman of committee of elections). Author of *Addresses on Abraham Lincoln, Admiral Farragut*, etc. Bencher of the Inner Temple, England, 1905. Died, 1917.

Choate, Rufus, American lawyer, statesman, and orator, was born at Essex, Mass., in 1790. After graduating at Dartmouth college, he entered upon the study of law at Cambridge and in Washington. He was elected to the senate in 1841. After the death of Daniel Webster, Choate became the recognized leader of the Massachusetts bar. His foresight led him to anticipate the Civil War and to do more than was by some considered wise to conciliate the south. Died at Halifax, Nova Scotia, 1859.

Choiseul (*shwä-zül'*), **Stephen Francis, Duke of,** French statesman and diplomat, was born in 1719. He became prime minister of France, through the influence of Madame de Pompadour. In 1761 he negotiated the secret treaty with the king of Spain, known as the "family compact." In 1770 he was dismissed from office, and exiled to one of his estates. He died in 1785.

Chopin (*shō-pan'*), **Frederic Francois,** Polish pianist and composer, was born, 1810. His waltzes, mazurkas, and other compositions are peculiar in melody, rhythm, and harmony, and have a great charm. He was one of the first pianists. He spent most of his life in Paris, where he died, 1849.

Chosroes (*kos'rō-ēz*), or **Khosru I.,** king of Persia from A. D. 531 to 579. His reign was marked by great victories in war and wise conduct in peace. He enlarged his kingdom, and made his subjects love him by ruling justly and kindly. He lived to be eighty years old, and the forty-eight years of his reign have been called the golden age of Persia.

Chosroes II., king of Persia, grandson of Chosroes I., came to the throne in 591. He also was a great conqueror, but cared more for his own glory than for the good of the people. At last his subjects, led by his own son, rebelled against him, and put him to death, 628, after he had been king for thirty-seven years.

Christian II., king of Denmark and Norway, was born 1481, died 1559. In 1513 he succeeded his father John. He proceeded to subdue Sweden, where he expected aid from the treason of Gustavus Trolle. He was at first unsuccessful, but made a formidable invasion in 1520. Stockholm and Calmar held out, but both were soon reduced. Christian was crowned, and a fearful series of executions ensued. Sweden found a deliverer in Gustavus Vasa, while the Danes rose against Christian and gave their throne to Frederick, duke of Holstein. He attempted to recover his throne, and in 1531 was acknowledged king in Norway. He was soon forced to surrender to the Danes, and was imprisoned for the rest of his life.

Christian IV., king of Denmark and Norway and duke of Schleswig-Holstein, born in Zealand, 1577 and elected successor to the throne in 1580. He assumed the scepter in 1593. From 1610 he carried on a successful war, known as the Kalmarian war, against Charles IX. of Sweden, and his successor, Gustavus Adolphus, which ended in an advantageous peace in 1613. Died, 1648.

Christian IX., king of Denmark, 1863-1906, was born near Schleswig, 1818, died at Copenhagen, 1906. In 1864 he prosecuted a war against Austria, Prussia, and other German states, over the ownership of Schleswig and Holstein, which terminated against him. He was the father of Frederick VIII., Queen Alexandra of England, George I., king of Greece, and Dagmar, dowager empress of Russia.

Christie, James Elder, British artist; born Gardbridge, Fifeshire, 1847; educated at Paisley school of art, South Kensington art shcool, and at the Royal academy. Went to London, 1874; gold medal at South Kensington, 1875; gold medal at Royal academy, 1877, for historical painting. Chief pictures: *Tam o'Shanter; A Rose Among Thorns; Pied Piper of Hamelin; The May Queen;* etc.

Christina (*kris-tē'nä*), **Queen of Sweden,** born in 1626; succeeded her father, Gustavus Adolphus, in 1632. After her ccronation in 1650, she fell under the influence of favorites, and ceased to interest herself in state affairs. She resigned the crown to her cousin, Charles Gustavus, in 1654, was baptized by the pope, and lived for some time at Paris. She died at Rome in 1689.

Christy, Howard Chandler, illustrator, writer; born in Morgan county, Ohio, 1873; educated at Duncan's Falls, Ohio; went East in 1893; then on New York illustrated periodicals; went to Cuba with second United States regulars and "rough riders"; saw the fighting before Santiago; his letters and illustrations published in *Scribner's Magazine; Harper's Magazine; Collier's Weekly,* and by R. H. Russell, publisher.

Chrysostom (*kris'os-tum* or *kris-os'tum*), **St. John,** one of the Greek fathers, born about 347. In 397 was made bishop of Constantinople. He was renowned for his eloquence and almsgiving. He was soon afterward deposed and conveyed to the Taurus mountains, whence he was ordered to proceed to Pityus, on the Euxine, but died on the journey at Comana in 407.

Church, Alfred John, English clergyman and writer, was born 1829; educated at King's college, London; Lincoln college, Oxford; professor of Latin in University college, London, 1880-88; rector of Ashley, Tetbury, Gloucestershire, 1892-97. Author: *Stories From Homer, Vergil, Greek Tragedians, Livy, Herodotus,* etc. Died, 1912.

Church, Frederick Edwin, American landscape painter, was born at Hartford, Conn., 1826. He first painted scenes from the Catskill mountains. He then traveled in South America, and painted. His *Tropical Scenery* and *View of Niagara Falls From the Canadian Shore* are among his best works. Died at New York, 1900.

Church, Richard William, English clergyman and writer, dean of St. Paul's, was born at Lisbon, 1815. He graduated from Wadham College, Oxford, in 1836, in 1838 was elected a fellow of Oriel, and in 1871 dean of St. Paul's. He died, 1890. Among his works, besides several volumes of sermons were *Essays and Reviews; Life of St. Anselm; The Beginning of the Middle Ages; Dante, an Essay; Spenser; Bacon,* etc.

Churchill, John. See **Marlborough, Duke of.**

Churchill, Winston, American novelist and writer; born at St. Louis, Mo., 1871; graduated, 1894, from the United States naval academy. An editor of the *Army and Navy Journal* of New York, 1894; managing editor of *Cosmopolitan Magazine,* 1895. Author: *The Celebrity; Richard Carvel; The Crisis; The Crossing; Coniston; Mr. Crewes' Career.*

Churchill, Rt. Hon. Winston Leonard Spencer, British statesman, author; was born, 1874; educated at Harrow and Sandhurst. Entered army, 1895, and served with Spanish forces in Cuba, and in South Africa, 1899-1900; member of parliament for Oldham, 1900-1906; for Manchester, 1906-1908. Author: *The Story of the Malakand Field Force; The River War; Savrola; London to Ladysmith via Pretoria; Ian Hamilton's March; Lord Randolph Churchill; My African Journey.*

Cibber (*sib'ĕr*), **Colley,** actor, manager, and dramatist, was born in London, 1671. He was educated at Grantham, and in 1690 joined the Theatre Royal in Drury Lane, where he remained, with short intervals, during his whole theatrical career of forty-three years. In 1696 his first comedy, *Love's Last Shift,* was produced, the author playing Sir Novelty Fashion; it established his fame both as dramatist and actor. Poet laureate from 1730. He died suddenly, 1757.

Cicero, Marcus Tullius, Roman orator and statesman, was born in Arpinum in 106 B. C.; studied rhetoric under Milo and others; commenced pleading at the age of twenty-six, and offending Sulla by his successful defense of Roscius Amerinus, retired to Athens, where he studied under Antiochus; went as quaestor to Sicily in 76 B.C., and on his return impeached Verres, a former governor; was aedile in 69 B.C., praetor in 66 B.C., and, in 64 B.C., was elected consul in opposition to Catiline. His vigor in putting down the conspiracy of the latter gained for him the title of "Father of His Country." The measures passed by his enemy, the tribune Clodius, obliged him to withdraw to Greece. After about sixteen months, he was recalled by the senate, and, in 52 B. C., went as governor to Cilicia. He sided with the senate and afterward with Pompey against Caesar, but submitted to the latter after Pharsalia, and retiring to his Tusculan villa, wrote his *De Natura Deorum,* and other philosophical works. His defense of Caesar's murderers and the "philippic" orations directed against Marcus Antonius led to his proscription on the formation of the second triumvirate. He was murdered by Antonius' emissaries in 43 B. C.

Cid Compeador (*thĕth kăm-pā-ā-thōr'*), **Ruy,** or Rodrigo Dias de Bivar, hero of Spanish fiction, aided Sancho of Castile against his brother, Alfonso, king of Aragon, but on the death of Sancho acknowledged Alfonso as king of Castile. He lost the favor of Alfonso, and retired from his court, but obtained some aid from him in capturing the city of Valencia from the Moors, which he ruled till his death.

Cimabue (*chē-mā-bōō'ā*), **Giovanni,** Italian artist, one of the restorers of the art of painting in Italy, which had fallen into neglect during the barbarism of the dark ages; born at Florence in 1240; died about 1300. The exhibition of his table of *The Virgin* for the Rucellai chapel in Santa Maria Novella was the occasion of a public festival. Except the *Madonna,* little of his work remains.

Cimon (*si'mon*), Athenian commander, was the son of Miltiades, the conqueror at Marathon. With his patron Aristides, he was placed over the Athenian contingent to the allied fleet, which, under Pausanias, continued the war against Persia, 477 B. C. His greatest exploit was his encounter with a Persian fleet at the river Eurymedon, 466 B. C., when he destroyed or captured 300 out of 350 ships, and defeated the land forces on the same day. He likewise drove the Persians from Thrace, Caria and Lycia; and expended much of the money which he had obtained by the recovery of his patrimony in Thrace upon the improvement of Athens. At Athens he was opposed by the democracy, headed by Pericles, who procured his ostracism. He was recalled in 454 B. C., and was instrumental in obtaining a five years' armistice with Sparta. He died in 449 B. C. at the siege of a Cyprian town.

Cincinnatus (*sin-si-nā'tus*), **Lucius Quinctius,** a Roman consul, regarded by the later Romans as the model of antique virtue, born about 530 B. C. About 460 B. C. he was chosen consul, and two years later was made dictator. When the messengers from Rome arrived to tell him of his new dignity they found him plowing on his small farm. After a dictatorship of sixteen days he returned to his country life. He was again, when eighty years old, made dictator; died about 430 B. C.

Cinna, Lucius Cornellus, Roman patrician who supported Marius; Sulla, after driving Marius from Rome, and before setting out against Mithridates, allowed Cinna to be elected consul on his swearing not to disturb the existing constitution. No sooner, however, had he entered on office, 87 B. C., than he impeached Sulla, and agitated for Marius' recall. Cinna and Marius next declared themselves consuls after a cruel massacre of the Roman citizens. Marius died a few days later; and Cinna in 84 B. C. prepared to meet Sulla, but was slain by his own disaffected troops at Brundisium. During his fourth consulate his daughter Cornelia was married to Julius Cæsar.

Clapp, Moses Edwin, lawyer, United States senator, was born in Delphi, Ind., 1851; his parents removed to Hudson, Wis., in 1857; after obtaining a common school education, graduated from the Wisconsin law school in 1873; in 1878 was elected county attorney at St. Croix county, Wisconsin; in 1881 moved to Fergus Falls, Minn., and resided there until 1891; was elected attorney-general of Minnesota in 1887, 1889, and 1891, and removed to St. Paul and made that his permanent home in 1891; was elected to the United States senate in 1901 and 1911. Died, 1929.

Clarendon (*klar'en-don*), **Edward Hyde, Earl of,** English historian and statesman, was born, 1608 at Dinton, England. He sat in the short Parliament and in the long Parliament on the popular side, but during the civil war became a devoted royalist; was from 1641 one of the chief advisers of the king; on the failure of the royal cause, took refuge first in Jersey, and then in Holland with the prince of Wales; contributed to the restoration; came back with Charles, and became lord chancellor; fell into disfavor, and quitted England in 1667. He wrote, among other works, a *History of the Great Rebellion,* dignifiedly written, though often carelessly, but full of graphic touches and characterizations, especially of contemporaries. Died at Rome, 1674.

Clark, Alvan, American optician, engraver, and manufacturer of telescopes, was born at Ashfield, Mass., 1808, and died at Cambridge, Mass., 1887. Early in life he was a portrait painter; but in 1845 he turned his attention to the making of achromatic lenses and the manufacture of telescopes. Associated with his sons, he constructed object-glasses for universities, for the naval observatory at Washington, Lick observatory in California, the imperial observatory at Pulkowa, Russia.

Clark, Sir Andrew, British physician, was born at Wolfhill, near Coupar-Angus, Scotland, 1826; educated at Aberdeen and Edinburgh. In 1854 he settled in London, where he acquired a high reputation for his skill in the treatment of diseases affecting the respiratory, renal, and digestive organs. Among his patients were George Eliot and Gladstone. Created a baronet in 1883, he died 1893. He published several medical works.

Clark, Champ, congressman, lawyer; born in Anderson county, Kentucky, 1850; educated in common schools, Kentucky University, Bethany college, and Cincinnati law school; president Marshall college, West Virginia, 1873-74; admitted to the bar, 1875; city attorney of Louisiana, Mo., and later of Bowling Green, Mo.; prosecuting attorney of Pike county; presidential elector; member Congress, ninth Missouri district, 1893-95, and again after 1897; chairman Democratic national convention, St. Louis, 1904. In 1911 he was elected by his party speaker of the United States House of Representatives. Died, 1920.

Clark, Charles Edgar, naval officer; born Bradford, Vt., 1843; appointed to United States naval academy from Vermont, 1860, graduated, 1863, LL.D., University of Pennsylvania, 1905; commander battleship *Oregon* during the cruise from San Francisco to Key West and in the battle of Santiago, July 3, 1898. He was promoted rear admiral, 1902; retired, 1905. Died, 1922.

Clark, Charles Upson, born Springfield, Mass., 1875. Graduate, Yale University, B.A., 1897, Ph.D., 1903. Director, School of Classical Studies of American Academy in Rome, 1916-1919. Author: *Greater Roumania.* Lecturer and publicist.

Clark, Clarence Don, lawyer, United States senator, was born at Sandy Creek, Oswego county, N. Y., 1851; educated at Iowa State University; admitted to the bar in 1874; practiced law in Iowa until 1881; moved to Evanston, Wyo., was prosecuting attorney for Uinta county four years; upon the admission of Wyoming as a state was elected to the fifty-first and fifty-second Congresses; was defeated for reelection to the fifty-third Congress by a fusion of Democrats and Populists; was elected to the United States Senate, 1895-1917.

Clark, Edwin Charles, English lawyer, regius professor of civil law, Cambridge, was born 1835; graduated at Trinity College, Cambridge, and was formerly scholar and fellow of Trinity; now professorial fellow at St. John's LL.D., F.S.A. Practiced for a short time as a conveyancer in London. Author: *Early Roman Law; Regal Period, Analysis of Criminal Liability; Practical Jurisprudence; A Comment on Austin; Cambridge Legal Studies; History of Roman Private Law.*

Clark, Francis Edward, founder united society of Christian Endeavor; born of New England parentage, Aylmer, P. Q., 1851; graduate of Dartmouth College, 1873; studied theology three years at Andover; became pastor Williston church, Portland, Me., which from a small mission he built up to a large Congregational church; founded, February, 1881, the society of Christian Endeavor, which was extended throughout the world; pastor Phillips church, South Boston, 1883-87; since then has devoted his time to the Christian Endeavor work as president of United Society of Christian Endeavor, president of World's Christian Endeavor Union, and editor of *The Christian Endeavor World.* Died, 1927.

Clark, Sir James, British physician, born at Cullen, Banffsnire, 1788, took his M.A. at Aberdeen. Settled in London in 1826. Physician to the Duchess of Kent until 1837, after which he was appointed physician in ordinary to Queen Victoria. Died, 1870.

Clark, Lindley D., editor United States bureau of labor, was born near Carthage, Ind., 1862; graduated from Earlham college, 1886; LL.B., LL.M., Columbian University. Author of *Legal Status of Organized Labor in the United States; Law of the Employment of Labor in the United States;* Summary of Labor Legislation, 1905-10; and has edited and compiled many reports and bulletins relating to labor.

Clark, Marguerite, actress, born Cincinnati, Ohio, educated at Ursuline Convent, Ohio. Debut in Baltimore, under management of Milton Aborn, 1900; featured with De Wolf Hopper Co., and Famous Players, loaned by latter to Lasky Co. Address: 50 Central Park W., New York, N. Y.

Clark, Thomas Arkle, university dean, was born at Minonk, Ill., 1862; graduated at the University of Illinois; 1890; graduate student, University of Chicago, 1894, Harvard, 1898-9. Instructor of English and Latin, University of Illinois Academy, 1891-3, instructor English, 1893-5, assistant professor rhetoric, 1895-9, professor rhetoric, 1899, acting dean, college literature and arts, 1900-1, dean undergraduates, 1901, dean of men since 1909, University of Illinois. Author: *English Composition in State Course of Study; English Composition in the Grades; Great American Authors; Great English Authors;* etc.

Clark, or Clarke, William, American explorer; born in Virginia, 1770, died at St. Louis, Mo., 1838. In 1804-06, in company with Lewis, he started on an exploring expedition from St. Louis to the mouth of the Columbia river; governor of Missouri territory 1813-21; superintendent of Indian affairs 1821 till his death.

Clark, William Andrews, capitalist, ex-United States senator; born near Connellsville, Pa., 1839; studied law at Mt. Pleasant, Ia., University; taught school, Missouri, 1859-60; went to Colorado, 1862; to Montana, 1863; afterwards merchant-banker, mine-owner, manufacturer, having large interests. President United Verde Copper Company of Arizona. President constitutional conventions, 1884 and 1889; commissioner from Montana to New Orleans Exposition 1884; Democrat candidate for delegate in Congress, 1888 (defeated); nominated by Democrats for United States senator, 1890, and claimed election, but was denied seat; elected to United States senate by legislature for term 1901-07. Died, 1925.

Clark, William Robinson, educator, religious writer; professor of philosophy, Trinity college, Toronto, after 1882; born at Inverurie, Scotland, 1829. Ordained priest, 1858; curate of St. Matthias,' Birmingham, 1857; LL.D., Hobart College, 1888; D.C.L., 1891; F.R.S., 1891; Slocum lecturer in the University of Michigan, 1899; president of the royal society of Canada, 1900; D.D., Queen's University, Canada, 1902. Author: *The Redeemer; The Comforter; The Four Temperaments; Witnesses to Christ.* Died, 1912.

Clarke, Adam, British Wesleyan divine and author, was born near Portrush, Ireland, 1762. From 1782 he preached in places as widely different as the Channel islands and Shetland, but after 1805 lived mostly in London. He died, 1832.

Clarke, Charles Cowden, English writer and critic, was born in 1787, at Enfield, Middlesex. He early imbibed a passion for the theater, and made frequent visits to London, where he formed the friendship of Leigh Hunt, Shelley, Hazlitt, Charles and Mary Lamb. On his father's death in 1820, he became a bookseller in London. In 1834 Clarke entered on that twenty years' course of public lectures on Shakespeare and other dramatists and poets which brought him so much celebrity and profit. In 1856 he went to live at Nice, but removed in 1861 to Genoa, where he died, 1877.

Clarke, Frank Wigglesworth, chemist; born at Boston, 1847; graduate of Lawrence scientific school, Harvard, 1867; D.Sc.; LL.D.; chief chemist of United States geological survey and honorary curator of minerals in United States national museum, since 1883. Member of numerous scientific bodies; chairman international committee on atomic weights; chevalier de la legion d'honneur. Author: *Weights, Measures and Money of All Nations; Elements of Chemistry;* etc.

Clarke, James Freeman, American theologian and writer, was born at Hanover, N. H., 1810; graduated at Harvard, 1829; Cambridge divinity school, 1833; lecturer on ethnic religions, 1876-77. He wrote: *The Ten Great Religions,* his greatest work *Orthodoxy; Steps of Belief.* etc. Died at Jamaica Plain, Mass., 1888.

Clarke, James P., lawyer, United States senator, was born in Yazoo City, Miss., 1854; studied law at the University of Virginia, graduating in 1878; began the practice of his profession at Helena, Ark., in 1879; was elected attorney-general of Arkansas in 1892, but declined a renomination and was elected governor in 1894. At the close of his service as governor he moved to Little Rock and resumed the practice of law. Was elected United States senator 1903 and 1909.

Clarke, Samuel, English philosopher and theologian, was born at Norwich, 1675, and educated at Cambridge. He was for some time chaplain to the bishop of Norwich, a promoter of science; he afterward became chaplain to Queen Anne, and in 1709 rector of St. James. He died, 1729.

Claude (*klōd*) **of Lorraine,** or Claud Gelee, French landscape painter, born at Chamagne, in Lorraine, A. D. 1600; died in Rome, 1682. At the age of twelve, being left an orphan, he found a home with an elder brother, who was a carver in wood at Freiburg, and there showed some signs of genius. He made a tour in Italy, France, and Germany; in 1627, he returned to Rome, where he speedily made himself famous.

Claudianus (*klô-di-ā'nus*), **Claudius,** the last of the great Latin poets, came from Alexandria to Rome in 395 A. D., and obtained patrician dignity by favor of Stilicho, whose fall, 408, he seems not to have long survived. We have two epic poems by him, *Raptus Proserpinae* and the fragmentary *Gigantomachia,* besides panegyrics on Honorius and Stilicho, *Edyttia, Epigrammata,* etc.

Claudius (*klâ'di-us*), **Marcus Aurelius Claudius Gothicus,** Roman emperor, born in Illyria in A. D. 214. He was of a poor family, but won fame as a soldier, and when the emperor Gallienus was murdered the soldiers made him emperor. He died in 270 from a pestilence.

Claudius, Tibrius Drusus Nero Germanicus, Roman emperor, born at Lugdunum (Lyons), 10 B. C. When Caligula was killed (A. D. 41), he was made emperor by the soldiers. This was the first time that an emperor was chosen by the army. The conquest of Britain was begun by him, and it would probably have been a Roman province had not Claudius been recalled to Rome; from his conquests in Germany he took the title of Germanicus. He was poisoned by his wife Agrippina, who wanted the empire for her son Nero, in A. D. 54.

Clausius (*klô'si-us*), **Rudolf Julius Emanuel,** German physicist, was born at Köslin, Pomerania, 1822. He was educated at Berlin, and held professorships of physics at Zürich, Würzburg, and Bonn. He discovered the principle of virial in mathematical physics and published a number of books on physical subjects. Died at Bonn, 1888.

Claxton, Kate (Mrs. Charles A. Stevenson), actress; born New York, 1850; first professional engagement with Miss Lotta, Chicago, 1870. Created part of Louise in *The Two Orphans.* First starring tour, 1876. Died, 1924.

Claxton, Philander Priestley, educator, U. S. commissioner of education, was born in Bedford county, Tenn., in 1862; graduated from University of Tennessee, 1882; later studied at Johns Hopkins University, and in Germany. Editor: *North Carolina Journal of Education,* 1897-1901, and *Atlantic Educational Journal,* 1901-3. U. S. commissioner of education, 1911-1921. Provost, University of Alabama, 1921-23. Superintendent of schools, Tulsa, Oklahoma, since 1923.

Clay, Henry, American statesman, born 1777 in Virginia; was admitted to the bar 1797, and began his career at Lexington, Ky. In 1806 was elected to congress, and again in 1809 was chosen senator. In 1811 he was sent to the house of representatives, where he was immediately elected speaker. Clay is best known as the author of the famous Missouri compromise, and of the compromise of 1850, known as Clay's "omnibus" measure. In 1824 he was an unsuccessful candidate for president, but was made secretary of state by J. Q. Adams the successful candidate. He was then returned to the United States senate, in which he played a leading part for many years ensuing, especially in the tariff compromise of 1833. Clay was again a candidate for president before the first whig national convention in 1839, but Harrison was nominated and elected. He had in 1842 bidden farewell to the senate, but was persuaded to return to it after 1844, and took a leading part in effecting the slavery compromise of 1850. He returned to Washington from Kentucky for the last time near the close of 1851, and was soon prostrated by disease, under which he gradually sank; he was a gallant party chief, an eloquent orator and a skillful legislator. Died, 1852.

Clayton, John Middleton, American statesman and diplomat, born in Delaware, 1796; graduated from Yale, 1815, and became a noted lawyer. He was United States senator, 1829-37, 1845-49, and 1851-56. During 1849-50 he was secretary of state under President Taylor and negotiated with the British government the historic Clayton-Bulwer treaty. Died, 1856.

Clemenceau (*klā'mān'sō*), **George Benjamin Eugene,** prime minister and minister of interior, France, 1906-09, was born Chateau de l'Aubraie, Feole, Vendee, 1841. Educated at Nantes, and settled in Paris, 1860; resided in United States 1865-69; founded *La Justice,* 1888-1900; *Le Bloc* 1900-02; *L'Aurore,* 1903-07. Resigned as premier, 1909, and was succeeded by M. Briand. Author: *De la Generation des Elements Anatomiques; Le Voile du Bonheur;* etc. Died, 1929.

Clemens, Samuel Langhorne ("Mark Twain"); author, lecturer; born at Florida, Mo., 1835; educated at common schools, Hannibal, Mo., M.A., L.H.D., LL.D., Litt.D., Oxford; apprenticed to printer at twelve; became, 1861, private secretary to his brother when latter was appointed territorial secretary, Nevada. City editor of *Virginia City* (Nev.) *Enterprise,* 1862; founded, 1884, publishing house of C. L. Webster & Co., failure of which involved him in heavy losses; later paid its debts by proceeds of lectures and books. Author: *The Innocents Abroad; Roughing It; Adventures of Tom Sawyer; A Tramp Abroad; Life on the Mississippi; The Adventures of Huckleberry Finn; A Yankee at the Court of King Arthur; Puddinhead Wilson; Tom Sawyer Abroad; Christian Science; Autobiography of Mark Twain,* etc. Died, 1910.

Clement XIV., Giovanni Vincenzo Antonio Ganganelli, born, 1705, at St. Arcangelo, near Rimini; died 1774. At the age of eighteen he entered the order of Minorites, and studied philosophy and theology, which he then successfully taught. On the death of Clement XIII. he succeeded to the papal chair, 1769. Clement XIV. was remarkable for liberality of mind, address as a statesman, sound learning, and mildness of character.

Cleomenes III. (*klē-om'ē-nēz*), king of Sparta, reigned 236-220 B. C. He reestablished the institutions of Lycurgus, and made a new distribution of the lands, relinquishing his own property. Died in Egypt.

Cleopatra (*klē'ō-pā'tra*), queen of Egypt; born in 69 B. C.; celebrated for her beauty, was the daughter of Ptolemy Auletes, by whose will she was left joint sovereign with her brother Ptolemy, 51 B.C.; in 41 B.C. she captivated Mark Antony, who rejected Octavia for her sake. A quarrel with Octavius ensued; the fleet of Antony and Cleopatra was defeated at Actium, and they fled together to Egypt, where they both ended their lives by committing suicide in the year 30 B. C.

Cleveland, Frances Folsom, born at Buffalo, N. Y., 1864; daughter of Oscar and Emma C. (Harmon) Folsom. Graduated from Wells college, Aurora, Cayuga county, N. Y., 1885; married President Cleveland, in the White House, June 6, 1886. Married Thomas J. Preston, Jr., Feb. 10, 1913.

Cleveland, Stephen Grover, president of the United States, 1885-89, and 1893-97, was born in Caldwell, Essex county, N. J., 1837, academic education; LL.D., Princeton, 1897. Went to Buffalo, 1855 and was admitted to bar, 1859; sheriff Erie county, 1870-73; in 1881 was elected mayor of Buffalo; in 1884 was elected president of United States as democrat, over James G. Blaine, republican, by majority of thirty-seven electoral votes; in 1888 again democratic nominee, but defeated by Benjamin Harrison; returned to law practice, locating in New York; in 1892 again elected president as democrat, defeating President Harrison. He took up his residence, after his second retirement from the White House, at Princeton, N. J., where he died, 1908.

Clews, Henry, banker; born in Staffordshire, England; intended for the ministry, but left school at fifteen to enter mercantile life in New York, whither his father had taken him for a visit; at outbreak of the Civil War invited by secretary of treasury to become agent to sell government bonds. Many years treasurer American geographical society; connected with many city institutions and financial corporations. Author: *Twenty-eight Years in Wall Street; The Wall Street Point of View,* etc. Died, 1923.

Clifford, William Kingdon, English mathematician and philosopher, was born in 1845; was educated at Cambridge; appointed professor of applied mathematics at University College, London, in 1871. Died, 1879.

Clifford, Mrs. W. K. (Lucy Lane), daughter of late John Lane; married, 1875, W. K. Clifford, F. R. S. Author: *Mrs. Keith's Crime; Love Letters of a Worldly Woman; Mere Stories; A Woman Alone; Woodside Farm.* Died, 1929.

Clinton, De Witt, American statesman, was born at Little Britain, N. Y., 1769. He graduated at Columbia College, and after studying law entered the lower house of the New York legislature, in 1797. He was chosen United States senator in 1802. He was elected governor of New York three times. His greatest service to the state was

in urging the construction of the Erie canal. He died at Albany, N. Y., 1828.

Clinton, George, American commander and statesman, born in 1739. He served in early life under General Amherst against the French, and afterward studied law. During the struggle for independence he sat in the colonial congress, and was made a brigadier-general. Died, 1812.

Clinton, Sir Henry, an English general, was born about 1738; entered the British army, 1751, and succeeded Sir William Howe as commander-in-chief in America. After his return to England he was appointed governor of Limerick, and subsequently of Gibraltar, where he died in 1795.

Clive (*klīv*), **Kitty,** British actress, was born in London in 1711. She came out at Drury Lane about 1728, and continued to play chiefly at that theater till 1769, when she quitted the stage, and retired to Twickenham. She died at Little Strawberry Hill, 1785.

Clive, Robert, Lord, English statesman and soldier, was born at Styche, near Market Drayton, in Shropshire, 1725; died in London, 1774. He went to India in 1744 as a writer under the East India company, but three years later relinquished the civil for the military service, in which he greatly distinguished himself. Scarcely had he arrived when the nabob of Bengal captured Calcutta, destroyed the British factories near that city, and threw 146 of his prisoners into the memorable "black hole of Calcutta." The victory of Plassy, 1757, was Clive's retaliation for these wrongs. His last years were embittered by the attacks of his enemies, and by charges of malversation and abuse of power; but the house of commons rejected a motion against him, and declared that "he had rendered great and meritorious services to his country."

Clodd (*klod*), **Edward,** English scientist and writer, secretary, London joint-stock bank, limited, since 1872; born in Margate, 1840. Educated at Aldeburgh grammar school. Entered commercial life, 1855; clerk in London joint-stock bank, limited, 1862.

Clodius (*klō'di-us*), **Publius,** a famous Roman tribune, who committed sacrilege and was tried for the offense, but acquitted through bribery. He persecuted Cicero, who had become his enemy by testifying against him, and was killed in an encounter with Milo, 52 B. C.

Clough (*kluf*), **Arthur Hugh,** English poet, was born at Liverpool, 1819. In 1837 he entered Balliol College, Oxford; in 1842 he was elected a fellow of Oriel. In 1898 he published the *Bothie of Toberna-Vuolich*, a "long vacation pastoral" in hexameter verse. He traveled in France and Italy, part of the time with Emerson, and was appointed on his return in 1849, warden of University Hall, London. Died at Florence, Italy, 1861.

Clovis I. (*klō'vis*), son of Childeric I., was born about 465, and is regarded as the real founder of the French monarchy. He succeeded Childeric in 481. Having conquered Alaric, king of the Visigoths, in 507, he gained most of the south provinces, but was himself overthrown near Arles, by Theodoric, in 509. Died, 511.

Cobb, Irving Shrewsbury, author-journalist, born at Paducah, Kentucky, in 1876, became newspaper reporter at 17, and editor at 19, staff correspondent *Louisville Evening Post, Paducah News, New York Evening Sun and New York Evening World,* and represented *Saturday Evening Post* as war correspondent in Europe, 1914-15. Author, *Funabashi, Mr. Busybody, Roughing It de Luxe, Europe Revises Paths Of Honor,* etc.

Cobbe (*Kob*), **Frances Power,** 1822-1904, was born at Newbridge, Ireland. She was a theist, a supporter of women's rights, and a vivisectionist.

Cobbett (*Kob'et*), **William,** 1762-1835, British politician and writer, born at Farnham, Sussex. He was imprisoned for libel against the government. Published the *Register,* and wrote numerous books, among which were *Grammar, Cottage Economy,* and *Advice to Young Men.*

Coburn, Foster Dwight, secretary of Kansas department of agriculture, was born in Jefferson county, Wis., 1846; served in the Civil war in the 135th and later in the 62d Illinois Infantry; removed to Kansas, 1867, and became a farmer and stockman; secretary of Kansas department agriculture, 1882 and 1894-1914. Was editor of the *Kansas City Live Stock Indicator* nearly six years; has been a regent of the state agricultural college three times and president and vice president of its board of regents; chief of department of live stock, St. Louis exposition, 1904. Appointed United States senator from Kansas, June 4, 1906, but declined. Died, 1924.

Cochrane (*kok'ran*), **Thomas** (tenth earl of Dundonald). See **Dundonald.**

Cockburn (*kō'burn*), **Sir Alexander,** British jurist, was born in 1802; in 1822 entered Trinity Hall, Cambridge; in 1829 was admitted to the bar, and soon became distinguished as a pleader before parliamentary committees; in 1851 attorney-general, in 1856 chief justice of the common pleas, in 1858 a baronet, and in 1859 lord chief justice. He died, 1880.

Cockburn, Sir George, 1772-1853; English naval officer whose operations against Martinique secured that island to Great Britain. His last noteworthy sea employment was to convey Napoleon to St. Helena.

Cockran, William Bourke, lawyer, orator; born in Ireland, 1854; educated in Ireland and France; came to the United States, 1871; member of congress, 1887-89, and 1891-95, as democrat. Was again elected to congress, February 23, 1904, at a special election to fill a vacancy caused by the resignation of George B. McClellan; reëlected, 1904 and 1906. Died, 1923.

Cody, Col. Wm. F. (Buffalo Bill), was a scout and showman of international fame, born, 1846. He was known as "Buffalo Bill," a sobriquet given him after having killed 4,280 buffalo in eighteen months to fill contracts for construction gangs of Kansas Pacific Railway. He was a government scout and guide against Sioux and Cheyenne Indians, 1868-72. Member of Nebraskan Legislature, 1872. General of Nebraskan National Guard, 1890-1, and held many other offices of responsibility. For over thirty years he was manager of the "Wild West Show," and traveled with it through several countries. Buried on mountain near Denver. Died, 1917.

Cohan, George Michael, American comedian and playwright, was born in Rhode Island, 1878. While still a child he appeared in numerous plays and soon became popular on the vaudeville stage. Later he wrote, produced, and acted in many plays and musical comedies and wrote popular songs. Among his plays are *Get-Rich-Quick Wallingford, Seven Keys to Baldpate,* and *The Miracle Man.*

Cohen, Solomon Solis, physician; born in Philadelphia, 1857; graduate of Philadelphia Central high school, 1872, A.M., 1877; lecturer on clinical medicine, Jefferson medical college, 1888-1902; professor of clinical medicine, Jefferson medical college, since 1902. Author: *Therapeutics of Tuberculosis, Essentials of Diagnosis.*

Coke (*kōōk* or *kōk*), **Sir Edward,** English jurist and law writer, was born 1552; educated at Norwich grammar school and Cambridge; admitted to the bar in 1578; became solicitor-general in 1592, and attorney-general in 1594. He showed much harshness in his prosecution of Essex, Raleigh, and others; but his loyalty gained him the chief-justiceship of the common pleas, in 1606. The remainder of his life was spent in compiling his *Commentaries upon Littleton.* Died, 1634.

Colbert (*kōl'bâr'*), **Jean Baptiste,** a distinguished French statesman, minister of finance in the reign of Louis XIV.; was born at Rheims, France, 1619. To him the kingdom was indebted for the enlargement of its navy, for the acquisition of many of its foreign possessions, and for a large number of internal improvements. The gardens of the Tuilleries, the Hotel des Invalides and the facade of the Louvre were all the work of Colbert. Died, 1683.

Colby, Frank Moore, editor and educator, born at Washington, 1865; graduated from Columbia, 1888, M.A., 1839; lecturer of history, Columbia, 1891-95; instructor of history and economics at Barnard College, 1891-95; professor of economics, New York University, 1895-1900; resigned to become editorial writer *Commercial Advertiser,* 1900-02. American editor *Nelson's Encyclopædia,* 1905-06. Died, 1925.

Cole, Thomas, artist, was born at Bolton, England, 1801, and came to America in 1819, where he became one of the known landscape painters. In 1830 two of his pictures appeared in the Royal Academy, and he afterward made sketching tours through England, France, and Italy; but all his best landscapes were American. Died at Catskill, N. Y., 1848.

Cole, Timothy, wood engraver, was born at London, England, 1852, and came to the United States, 1857; entered employment of *Scribner's Magazine,* 1875. Received diploma, Chicago exposition, 1893; first-class gold medal, Paris exposition, 1900; grand prix, St. Louis Exposition, 1904. Honorary member society of sculptors, painters, and engravers, London.

Colebrooke (*kōl'brōōk* or *kōōl'brōōk*), **Henry Thomas,** British orientalist, was born in London, 1765. He was a director of the Bengal Asiatic society, and made translations from the Sanskrit works on Hindu law, algebra, arithmetic, and mensuration, which were important contributions to the history of mathematics. Died, 1837.

Colenso (*kō-len'sō*), **John William,** English divine, was born 1814. In 1846 he was appointed rector of Forncett St. Mary, in the county of Norfolk, England, and 1854 first bishop of Natal, South Africa. Died, 1883.

Coler, Bird Sim, politician, financier, ex-comptroller of New York, born at Champaign, Ill., 1867; educated at polytechnic institute and Andover academy. Entered his father's banking house as clerk and later became partner of the firm of W. N. Coler & Co. Democratic candidate for governor of New York, 1902. Author: *Municipal Government as Illustrated by the Charter; Municipal Government and Tunnels and Bridges,* etc.

Coleridge (*kōl'rij*), **Hartley,** eldest son of Samuel Taylor Coleridge, born at Clevedon, near Bristol, 1796. In 1815 he was entered a scholar of Merton College, Oxford. He afterward attempted a private school at Ambleside, but failed. Near this little town he resided till he died, 1849.

Coleridge, Samuel Taylor, British poet, essayist, and dramatist, was born at Bristol in 1772. He was sent to Christ's hospital, and subsequently studied at Cambridge, where, in 1792, he obtained the prize for the best Greek ode. His *Sibylline Leaves* and *Biographia Literaria* found many admirers, and several of his poems have been given very high praise, particularly the *Ancient Mariner.* Among his other works are: *Remorse, a Tragedy, Christabee, Aids to Reflection,* etc. Died, 1834.

Colfax (*kōl'faks*), **Schuyler,** American statesman, vice-president of the United States, was born in New York, 1823. Elected to Congress by the newly formed republican party, in 1854; he remained a member until 1869 and was three times speaker. He died, 1885.

Coligny (*kō'lēn'-yē'* or *kōlēn'yē*), **Gaspard de Chatillon, Sire de,** French admiral and general of eminence, born at Chatillon-sur-Loing, 1517. Introduced at court, he served under Francis I. in Italy. Killed in the massacre of St. Bartholomew, 1572.

Collier (*kol'yēr*), **Jeremy,** English clergyman and controversialist, was born at Stow cum Quy, Cambridgeshire, 1650. In 1697 he published his *Short View of the Immortality of the English Stage,* which fell like a thunderbolt among the wits. Consecrated bishop in 1713. Died, 1726.

Collier, Peter Fenelon, publisher, was born at Carlow, Ireland, 1849; educated at Mt. St. Mary's college, Cincinnati. Founder and publisher of *Collier's Weekly* and head of P. F. Collier & Son, publishers. Died, 1909.

Collingwood, Cuthbert, Lord, English admiral, was born at Newcastle-upon-Tyne, 1750. He entered the navy at eleven, and from 1778 his career was closely connected with that of Nelson, whom he followed up the ladder of promotion, step by step. A peerage was his reward. He died at sea, 1810, and was buried beside Nelson, in St. Paul's.

Collins, William Wilkie, English novelist, was born in London, 1824. He was educated at a private school. From 1848 he made literature his profession. His first novel was printed in 1850. Died, 1889.

Collyer (*kol'yēr*), **Robert,** Unitarian clergyman; born Keighly, Yorkshire, England, 1823; learned the blacksmith trade, which he followed after coming to the United States, 1850. Was Methodist local preacher, but became a Unitarian in 1859; became Unitarian missionary in Chicago; founded and was pastor Unity Church there 1860-89; subsequently pastor of the Church of the Messiah, New York. Died, 1912.

Colonna (*kō-lōn'nā*), **Vittoria,** the most celebrated poetess of Italy, was born in the year 1490. When four years old she was betrothed to a boy of the same age, Fernando d'Avalos, son of the Marchese de Pescara. At seventeen they were married. After her husband's death in the battle of Pavia, 1525, she found her chief consolation in solitude and in the cultivation of her poetical genius. Died in Rome, 1547.

Colquhoun (*kō-hōōn'*), **Archibald Ross,** journalist, descriptive writer, born off cape of Good Hope, 1848, of Scotch parentage. Explored from Canton to Chamo to trace best route for connecting Burmah and China by railway, 1881-82; London correspondent Franco-Chinese war and whole far East, 1883-84; traveled extensively, and been London *Times* correspondent in various parts of the world. Died, 1915.

Colt, Samuel, American inventor, born in Hartford, Conn., 1814. He early conceived the idea of revolving fire-arms, and in 1835, took out a patent for the weapon since known the world over as "Colt's revolver." In 1848 he established a company for the working out of his patent, and built at Hartford one of the most extensive armories in the world. Died, 1862.

Columbus, Christopher, the discoverer of the New World called America, was born in the neighborhood of Genoa, 1446, and went to sea at the age of fourteen. The Mediterranean was the chief scene of his early activity. The turning-point of his life came in 1470, when he was wrecked during a sea-fight with some Venetian galleys off the coast of Portugal. He settled at Lisbon, and during the next few years made many voyages to Madeira and the Azores, and in 1477 one to Iceland.

Gradually there grew up in his mind the conviction that it was possible to reach India by sailing westward. This idea seems to have taken shape as early as 1474. After making a vain appeal to the senate of his native state, Genoa, he turned to the king of Portugal, but without result; then to Henry VII. of England, and to the dukes of Medina Sidonia and Medina Celi, who advised him to appeal to Isabella of Castile. But it was not till after seven years of heart-breaking delays that Columbus's proposals were accepted by the Spanish monarchs.

On August 3, 1492, he set sail with one small ship, the *Santa Maria,* and two caravels, the *Pinta* and the *Nina,* the whole expedition including only 120 men. His real voy-

age of discovery began when he sailed westward from the Canary Islands on September 6. His men were not inspired by his hope, and throughout the voyage he had to plead with and cajole them to proceed—a variation of the magnetic needle having reduced them almost to a state of terror. On October 12 land was sighted—an island in the Bahamas, probably what is now known as Watling I., but named by Columbus San Salvador. He discovered Cuba and Haiti (which he called Hispaniola), and set sail for Europe in the two caravels, his ship having been wrecked. After a stormy voyage, in which the two caravels were separated, he cast anchor at Palos, March 15, 1493.

He set out again on September 25 with a much larger squadron, and reached Dominica, an island of the West Indies, on November, 3. He returned from his second voyage in 1496, and set out on his third, which resulted in the discovery of the mainland of South America (1498), and from which he returned in irons by the authority of a newly-appointed royal governor. But the king and queen speedily restored Columbus to favor.

In 1502 he set out on his last voyage (1502-04), during which he explored the south shore of the Gulf of Mexico. After his return to Spain, he died at Valladolid, May 20, 1506. There he was buried, but his bones were removed first to Seville, then to Santo Domingo, in Hispaniola, and, although this is disputed by Santo Domingo, to the cathedral in Havana (1796), and again, after the Spanish-American war of 1898-9, back to Seville.

References.—*Lives of Columbus* by Irving, Phelps, and Winsor's *Narrative and Critical Hist. of America*. The great critical study of Columbus' life and family is by Harrisse. The standard English edition of his *Letters* is Major's translation. See also the *Letters* ed. by Ford. Among the best of the shorter biographies are those of Markham and Adams.

Columella, Lucius Junius Moderatus, the most learned of Roman writers on practical agriculture, born at Cadiz in Spain, and flourished in the earlier part of the first century of the Christian era.

Combe (*kōōm* or *kōm*), **George,** British phrenologist and moral philosopher, born in Edinburg, 1788. Investigation convinced him that phrenology was based on fact. The result was his *Essays on Phrenology*, 1819. Died, 1858.

Comenius (*kō-mā'nē-oos* or *kō-mē'ni-us*), or **Komenski, John Amos,** educational reformer, was born in 1592, in Moravia. He studied at Herborn and then at Heidelberg, became rector of the Moravian school of Prerau, 1614-16. Settling at Lissa in Poland, 1628, he here worked out his new theory of education, wrote his *Didactica Magna*, and was chosen bishop of the Moravian brethren in 1632. Finally, he settled in Amsterdam, and died at Naarden, 1671.

Commons, John Rogers, edueator, economist; born in Drake county, Ohio, 1862; graduated from Oberlin, 1888, A.M., 1890; student Johns Hopkins, 1888-90. Professor of political economy, University of Wisconsin since 1904. Author: *The Distribution of Wealth; Social Reform and the Church*, etc.

Comnena, Anna. See **Anna Comnena.**

Comstock (*kum'stok*), **Anthony,** moral reformer, secretary and special agent of New York society for suppression of vice, was born in New Canaan, Conn., 1844. His brother Samuel having been killed at Gettysburg, he volunteered to fill his place in regiment, enlisting in the 17th Connecticut volunteer infantry, December, 1863; mustered out, July, 1865. Appointed Post Office Inspector of New York, 1873. Died, 1915.

Comstock, John Henry, scientist, professor of entomology, Cornell, born at Janesville, Wis., 1849; graduated, B.S., Cornell, 1874; instructor and professor there, except 1879-81, when he was United States entomologist at Washington.

Comte (*kōnt*), **Auguste,** French philosopher, founder of the "positive philosophy," born at Montpelier, France, 1798. He studied at Paris, and attracted the attention of his companions by the boldness and novelty of his speculations. In 1832 was appointed professor of mathematics at the Ecolé Polytechnique, which situation he was forced to resign in 1852, on account of differences with his colleagues. Died, 1857.

Conant (*kō'nant*), **Charles Arthur,** author, banker, born at Winchester, Mass., 1861; Washington correspondent of *New York Journal of Commerce*, 1889-1901; special commissioner of war department in Philippines, 1901; member of commission on international exchanges of United States, 1903; Treasurer of Morton trust company, 1902-06. Author: *A History of Modern Banks of Issue; The United States in the Orient*, etc.

Conaty (*kon'ā-ti*), **Rt. Rev. Thomas James,** Roman Catholic prelate, bishop of Los Angeles; born in Ireland, 1847; educated at Montreal college, 1863-67; Montreal theological school, 1872; ordained priest, 1872; J.C.D., D.D., selected by American Catholic bishops, trustees of university, to succeed Bishop Keane as rector Catholic university, Washington, 1896, and appointed to position by Pope Leo XIII., who also conferred upon him, 1897, the title of domestic prelate and nominated him titular bishop of Samos, 1901; appointed to see of Monterey and Los Angeles, Calif., 1903. Died, 1915.

Conde (*kon'-dā'*), **Prince de, Louis I. de Bourbon,** younger brother of Antony of Bourbon, king of Navarre, was born 1530. During the wars between Henry II. and Spain, he distinguished himself at the siege of Metz, the battle of St. Quentin, and the capture of Calais from the English. In the second Huguenot war, 1567-69, Condè had coins struck with the inscription: "Louis XIII., first Christian king of France"; but at Jarnac, 1569, he was defeated, taken prisoner and shot.

Conde, Prince de, Louis II. of Bourbon, commonly termed "the great Condè," was born 1621. By the death of his father, 1646, he became head of his family, and, next to the duke of Orleans, the highest personage in the state. The war having been renewed by Spain, 1673, he again commanded the French in the Netherlands, and soon after retired to Chantilly, where he enjoyed the society of such men as Molière, Boileau, and La Bruyère. Died, 1686.

Condillac (*kon'dē-yāk'*), **Etienne Bonnot de Mably de,** French philosopher, the founder of sensationalism, was born of a noble family at Grenoble, 1715. He was chosen a member of the French academy of sciences in 1758. He died on his estate of Flux, near Beaugency, in 1780. He based all knowledge on the senses.

Condorcet (*kon'dor'se'*), **Jean Marie Antoine Nicholas Caritat, Marquis de,** French philosopher and mathematician, was born in 1743. He first gained celebrity by his successful labors as a mathematician. His treatise on integral calculus, written when he was but twenty-two years of age, was eminently successful. He was outlawed in 1793, and shortly after was taken prisoner, when he poisoned himself, in 1794.

Confucius, the Latinized name of the Chinese philosopher Kung-fu-tse (Reverend Master Kung), was born (according to the best Chinese authorities) in 551 B. C., in the kingdom of Loo, now part of the province of Shantung, died 479 B.C. He set himself up as a teacher at the age of 30. His fame soon spread, and in order to propagate his doctrines he visited neighboring countries, preaching and teaching, and returning about 506 B.C. He left a grandson, Tse-tse, and in A. D. 1671 there were 11,000 male descendants bearing the name of the philosopher most of them of the 74th generation. These descendants constitute a distinct class in Chinese society.

No founder of any religion can boast of success greater than that of Confucius: but he was not the originator of a religious creed. While striving to introduce a ritual more minute than that of Moses, he rejected divine revelation, and erected a structure of moral philosophy founded upon the wants and tendencies of human nature. The books containing his doctrines, partly written by himself, partly by his disciples, bear almost the same relation to the Chinese world as the Bible does to the Christian. Confucius also collected the poems, folk-lore, annals, songs, and rites then in vogue in various parts of the empire. Editing and pruning these, he produced what are still known as the "classics"—*i. e.*, the *Book of History* (or Tradition), the *Book of Odes*, the *Book of Changes* (or Oracles), the *Book of Rites*, and so on.

References.—*Life and Labors of Confucius*, by E. H. Parker. Various works of Confucius are translated into English by Legge in *Sacred Book of the East;* compare also his *Chinese Classics.*

Congreve (*kong'grēv*), **William,** English dramatist, was born near Leeds, 1670. His first piece, written at the age of seventeen, was a romance entitled *Incognito, or Love and Duty Reconciled.* In 1693 he wrote his first comedy, *The Old Bachelor.* This brought him not only great reputation, but also the substantial benefit of a commissionership in the hackney-coach office. Died, 1729.

Conkling (*kongk'ling*), **Roscoe,** American politician, was born at Albany, N. Y., 1829. In 1846 he removed to Utica, N. Y., where he became district attorney, and was mayor in 1858. In the latter year he was elected to congress, and in 1879 became a member of the United States senate. In 1881 he resigned his seat in the senate owing to Garfield's assumption of the control over appointments in his native state. Died at New York, 1888.

Conn, Herbert William, biologist, was born at Fitchburg, Mass., 1859; graduated from Boston University, 1881; Ph.D., Johns Hopkins, 1884; instructor biology, 1884-6, assistant professor, 1886-8, appointed professor in 1889, Wesleyan University. Director Cold Spring Harbor biology laboratory, 1889-97; bacteriologist, Storrs experiment station, from 1890; he was made director laboratory of Connecticut state board of health in 1905; lecturer, Trinity College, 1887-9. Specialist on the bacteriology of dairy products. Author: *Evolution of To-Day; The Living World; The Story of Germ Life; The Story of the Living Machine; The Method of Evolution; Agricultural Bacteriology; Bacteria in Milk and Its Products; An Elementary Physiology and Hygiene for Use in Schools;* and over one hundred scientific memoirs. Died, 1917.

"Connor, Ralph." See **Gordon, Charles W.**

Conrad I. (*kon'rad*), was chosen king of Germany in 911, and was the first of the elected rulers of Germany. His short reign was spent in putting down his nobles, who were always rebelling against him. Conrad died, 918.

Conrad II., king of Germany and Roman emperor, was the son of Henry, duke of Franconia, and succeeded Henry II., the last of the Saxon emperors, in 1024. Conrad died at Utrecht, 1039, and was succeeded by his son Henry III.

Conrad III., the first Hohenstaufen king of the Germans, was born 1093, son of Frederick of Swabia. While under twenty, he had bravely supported Henry V., who in return granted him the duchy of Franconia. He unsuccessfully contested the crown of Italy with the emperor Lothair of Saxony. When St. Bernard of Clairvaux preached a crusade, Conrad set out for Palestine with a large army, 1147. An attempt by the duke of Bavaria to regain his dukedom was defeated by the nephew of Conrad. Conrad's health had broken during the crusade, and he died at Bamberg, 1152.

Conrad, Joseph, English novelist, was born in Poland (Joseph Conrad Korzeniowski), 1856. Upon the death of his father, though very young, he left home and entered the French merchant marine. Later he joined an English ship as mate and sailed for the East. Until then, at twenty, he had not known the English language, of which he was to become a master. His voyages are recorded with vividness and force and are filled with the atmosphere of the tropics and the orient and the effect of these places on Europeans who touch them. Among his works are *Almayer's Folly, The Nigger of the Narcissus, Lord Jim, Typhoon, Rescue.* He died in 1924.

Conscience (*kōn'syăns'*), **Hendrik,** Flemish novelist, was born at Antwerp, 1812, and died at Brussels, 1883. His *Phantasy*, a fine collection of tales and his most popular romance, *De Leeuw van Vlaenderen*, early made his name known.

Considerant (*kōn'sē'dā'răn'*), **Victor-Prosper,** French socialist, was born at Salins, France, 1808; he entered the army, which, however, he soon left to promulgate Fourier's doctrines. On the death of his master, Considerant became head of his school and edited the *Phalange.* In 1849 he was accused of high treason, and fled from France. In Texas he founded a community, *La Réunion*, which flourished for a time. He returned to France in 1869, and died, 1893.

Constable (*kun'stă-b'l*), **John,** landscape painter, born in East Bergholt, Suffolk, England, 1776, died suddenly, 1837. The national gallery has his best pictures, *The Cornfield, The Valley Farm*, and *The Haywain.*

Constans (*kon'stanz*), **Flavius Julius,** emperor of Rome, was born about A. D. 320. He was the youngest son of Constantine the Great, on whose death, 337, he received as his share of the empire Western Illyricum, Italy, and Africa. He was a weak and cruel ruler, and at last Magnentius, his general in Gaul, sent some conspirators to kill him A. D. 350.

Constant de Rebecque (*kōN'stăN' dē rē-bek'*), **Henry Benjamin,** author and politician, was born at Lausanne, Switzerland, 1767. Educated at Oxford, Erlangen, and Edinburgh, he in 1795 settled in Paris as a publicist and after the second restoration of the Bourbons wrote and spoke in favor of constitutional freedom. He died, 1830.

Constantine I. (*kon'stan-tin*), called the Great; born in 272, at Moesia. On the death of his father at York, where he accompanied him, Constantine was proclaimed emperor by the troops; he was acknowledged emperor by the senate in 312, and thereafter an edict was issued named of Milan, granting toleration to the Christians. He had still to extend his empire over the East, and having done so by the removal of Licinius, he transferred the seat of his empire to Byzantium, which was thereafter called Constantinople, i. e., Constantine's city. Constantine was baptized in 337 as a Christian, after having three years before proclaimed Christianity the state religion. Died, 337.

Constantine XIII., Palaeologus, the last emperor of the East, born in 1394. The Turkish sultan, Mohammed II., determined to take Constantinople and laid siege to it with a great army, 1453. Constantine, who had only about 9,000 soldiers, resisted bravely for nearly two months, but at

last the Turks battered down part of the walls and the emperor and his little band of nobles were all slain.

Constantius I., called Chlorus, a Roman emperor, father of Constantine the Great, born about A. D. 250. He died at York, England, 306.

Constantius II., a Roman emperor, second son of Constantine the Great, born 317. His cousin Julian won so many victories that the army proclaimed him emperor, and Constantius marched against him, but died on the way, 361. He was succeeded by Julian.

Conway, Sir William Martin, English traveler, art critic, and geographer, born at Rochester, England, 1856; was educated at Trinity College, Cambridge. University extension lecturer, 1882-85; professor of art, University College, Liverpool, 1885-88; president of the Alpine club, 1902-04. Author: *Woodcutters of the Netherlands in the fifteenth century; Early Flemish Artists; Literary Remains of Albrecht Dürer; No Man's Land* (history of Spitsbergen); etc.

Conwell, Russell Herman, lecturer, educator, Baptist clergyman; born at Worthington, Mass., 1842; captain of infantry, 1862-65, in Union army; promoted to lieutenant-colonel, 1865; foreign correspondent *New York Tribune* and *Boston Traveler*, 1868-70, president of Temple College. Died, 1925.

Cook, Albert Stanburrough, educator; born at Montville, N. J., 1853; graduated at Rutgers college, 1872; M.S., M.A., L.H.D., LL.D., associate in English, Johns Hopkins, 1879-81; professor of English, university of California, 1882-89; professor of English language and literature, Yale, 1889-1921; Co-editor of *Journal of English and Germanic Philology*, 1897-1905.

Cook, Captain James, a celebrated English navigator, best known through his *Voyages Round the World;* born in Marton, in North Riding, Yorkshire, 1728. After his death, at Hawaii, one of the Sandwich islands, 1779, many honors were paid to his memory, both in his own and in foreign countries.

Cooke, Josiah Parsons, American chemist, was born at Boston, Mass., 1827, and was professor of chemistry at Harvard from 1850. His chief works are *Elements of Chemical Physics, Principles of Chemical Philosophy, The New Chemistry, etc.* Died at Newport, R. I., 1894.

Cooke, Sir William Fothergill, British electrician, born at Ealing, England, 1806; was educated at Durham and Edinburgh. In 1867 Cooke received the Albert gold medal; Cooke was knighted in 1869. He died, 1879.

Cooley, Thomas McIntyre, American jurist, was born at Attica, N. Y., 1624, was admitted to the bar 1846, and became professor of law at the university of Michigan, 1859; was associate justice Michigan supreme court 1864-68, and chief-justice 1868-85. He died, 1898.

Coolidge, Archibald Cary, instructor in history, Harvard, 1893-99, professor since 1904, born at Boston, 1866; graduated from Harvard university, 1887. With Taft party to Philippine islands, 1905-06; Harvard lecturer at the Sorbonne and other French universities, 1906-07. Has contributed to *American Historical Review*, the New York *Nation*, etc. Died, 1928.

Coolidge, Calvin (1872——), lawyer, graduated Amherst. Member Mass. Legislature. Lieut.-Governor and Governor of Mass. Re-elected Governor on the issue of law and order as exemplified in his handling of the Boston police strike. Vice-President, 1920. Became President, August 3, 1923, on death of President Harding. Took oath of office in home of his father at Plymouth, Vermont, and announced intention of continuing his predecessor's policies. Took up the coal strike and settled it by using all existing agencies. Elected president, 1924.

Cooper, Anthony Ashley. See **Shaftesbury.**

Cooper, James Fenimore, famous American novelist, was born in Burlington, N. J., 1789. After six years' experience of naval life, he retired from the sea in 1810, and took up his residence at Cooperstown, Otsego county, N. Y. In 1821 appeared his first work, *Precaution*. In quick succession followed *The Spy*, a tale which at once secured for him a place in the first rank of novelists; his sea stories, his famous "Leather Stocking series" of Indian life and adventure. After passing some years in Europe, died at Cooperstown, in 1851.

Cooper, Peter, American inventor, manufacturer, and philanthropist, was born in New York, 1791. His first invention was an improvement in a machine for shearing cloth. In 1830 he erected iron works in Canton, near Baltimore, and here constructed after his own designs the first locomotive engine ever made in this country. But the work of his life was the founding of an institution for instruction of the industrial classes—the Cooper Union, New York, whose corner stone he laid in 1854. In 1876 the independent party nominated him for president of the United States, and he received nearly 100,000 votes. Died, 1883.

Cooper, Sir Astley Paston, a celebrated English surgeon, was born in Brooke, Norfolk, 1768; studied under Henry Cline, surgeon to St. Thomas' hospital, London, and was appointed demonstrator of anatomy there, 1789. In 1822 he was elected one of the court of examiners of the college of surgeons, and in 1827, president. He was a D.C.L. of Oxford, and an LL.D., of Edinburgh. He died 1841.

Copernicus or **Koppernik, Nicholas,** astronomer, born at Thorn, then in Poland, 1473, his family being supposed to have come originally from Westphalia. Having studied medicine and theology at Cracow, and law at Bologna, he was made a canon of Frauenburg in 1497. In 1500 he went to Rome, where he taught mathematics and astronomy. He studied medicine at Padua, and in 1505 finally left Italy for Prussia to carry out the work of his life.

Doubting that the motions of the heavenly bodies could be so confused and so complicated as the Ptolemaic system made them, he was induced to consider the simpler hypothesis that the sun was the centre round which earth and the other planets revolve. Besides this fundamental truth Copernicus anticipated many other of the principal facts of astronomical science, such as the motion of the earth round its axis, the immense distance of the stars which made their apparent position the same from any part of the earth's orbit, etc. His general theory also enabled him to explain for the first time many of the important phenomena of nature, such as the variations of the seasons and the precession of the equinoxes.

The great work in which Copernicus explained his theory, *De Orbium coelestium Revolutionibus* (On the Revolutions of the Celestial orbs), was completed in 1530, and published at Nuremberg in 1543. He died at Frauenburg, 1543.

References.—*Life and Works of Copernicus*, by Leopold Prowe; *Popular History of Astronomy*, by A. M. Clarke; and *Lives* of the astronomer by Gassendi, Von Hipler, and Polkowski.

Copley (*kop'li*), **John Singleton,** American painter, was born at Boston, Mass., 1737. Washington sat to him in 1755, and later, in London, he painted George III. and his queen. Here also he became the friend of such men as West and Reynolds. He died at London, 1815.

Coppee (*kō'pā'*), **Francois,** French poet, was born in Paris, 1842. For three years a war office clerk, he early gave himself to poetry, and with *Le Reliquaire* and *Les Inimites*, gained the front rank of the "Parnassiens." Dramatic critic for some years to *La Patrie*, Coppée entered the academy in 1884. Died, 1908.

Coquelin (*kōk'laN*), **Benoit Constant,** French actor, born at Boulogne, 1841, was admitted to the conservatory in 1859, and having gained the second prize for comedy, made his début at the Théatre Français, 1860. For a quarter of a century he played here with unbroken success, both in classical pieces and in rôles created by himself in the broader aspects of comedy standing without a rival. Died, 1909.

Corbin, John, novelist, dramatic critic, born at Chicago, 1870, graduated at Harvard, 1892, A.M., 1893; Balliol college, Oxford, 1894-95; dramatic critic, *New York Times*, 1902; dramatic critic *New York Sun*, 1905-07; literary manager, New theater, New York, 1908. Author: *An American at Oxford; A New Portrait of Shakespeare.*

Corday d'Armans (*kōr'de'dar'maN'*, or *môN'*), **Charlotte Marie,** French heroine, was born in 1768, at St. Saturnin, Normandy, of a noble Norman family; sympathized with the ideas of the French revolution; visited Paris in July, 1793, with the purpose of assassinating Marat and Robespierre; she interviewed the former while in his bath, and stabbed him with a knife; was immediately apprehended and executed four days afterward.

Corey, William Ellis, capitalist, steel manufacturer, was born in Pennsylvania, 1866. At sixteen entered chemical laboratory of Edgar Thomson steel works; invented Carnegie reforged armor. Succeeded Charles M. Schwab, and has been president of Carnegie steel company, National steel company, and American steel hoop company; president of United States steel corporation until 1911.

Corneille (*kōr'nāl'*), **Pierre,** creator of French tragedy, born 1606, at Rouen. He studied for the legal profession, but a love adventure, in which he became the rival of a friend, first prompted him to write verses. In 1635 appeared his *Médée*, a declamatory drama, written in imitation of Seneca. Cardinal Richelieu, who aspired to be patron of the stage, wished to number Corneille among his retainers, but Corneille was so audacious as to alter the plan of a comedy, and thus lost the cardinal's favor. He now returned to his native place, where M. Chalon, suggested that he should turn his attention to tragedy. The result was *The Cid*, 1636, which was received with enthusiastic applause. He died, 1684.

Cornelia (*kor-nā'li-*), the daughter of Scipio Africanus, was the wife of Tiberius Sempronius Gracchus, who was consul, 177 B. C.

Cornelius, von (*fŏn kōr-nā'lē-oos*), **Peter,** German painter, was born at Düsseldorf, 1787, and studied under Langer in the academy of his native town. His chief works are frescoes in the Glyptothek and Ludwigskirche, in Münich. Died, 1867.

Cornell, Ezra, American philanthropist, was born 1807, at Westchester Landing, N. Y., died, 1874, at Ithaca, N. Y. He began life as a mechanic and miller at Ithaca, N. Y. In 1865 he founded Cornell University at Ithaca, with an endowment of $500,000, to which he subsequently added nearly $400,000. He also established the Cornell library at Ithaca, at a cost of $100,000.

Corning, James Leonard, physician; born at Stamford, Conn., 1855; educated at Heidelberg and Würsburg; M.D., LL.D. Specially distinguished as neurologist; discoverer of spinal anæsthesia, 1885; member of many medical and scientific societies. Author: *Carotid Compression; Brain Rest; Brain Exhaustion; Local Anæsthesia*, etc.

Cornwall, Barry. See **Proctor.** Died, 1923.

Cornwallis, Charles, Marquis, English statesman and general, was born 1738. He entered the British army 1756; entered the house of commons 1760, and the house of lords 1763. In 1780 he defeated General Gates at Camden, won the battle of Guilford court house, 1781, and surrendered to Washington at Yorktown, October 19, 1781. Appointed, in 1805, governor-general of India, a second time. He died 1805 at Ghazipur, in the province of Benares, while on his way to assume the command of the troops.

Corot (*ō'rō'*), **Jean Baptiste Camille,** French painter, pupil of Michallon and Bertin, and founder of the impressionist school; was born in Paris, 1796. As a landscape painter he ranks among the first in the world. He died at Paris, 1875.

Correggio (*kōr-red'jō*), **Antonio Allegri,** celebrated Italian painter, called Correggio from the place of his birth, a small town near Modena, now called Reggio; was born 1493. He was the founder, or rather his imitators for him, of what is called by some the Lombard, by others the Parma school of painting. Died, 1534.

Correlli (*kō-rel'i*), **Marie,** English novelist; of mingled Italian and Scotch parentage and connections; sent to France and educated in a convent. Her first book, *A Romance of Two Worlds*, was an instant success, and from that time she devoted herself entirely to literature. She persuaded Edward Morris, of Chicago, to purchase Harvard House, Stratford-on-Avon and to present it to Harvard University, to which it now belongs. Died, 1924.

Cortelyou, George Bruce, public official, financier, was born in the city of New York, 1862; law schools of the Georgetown and Columbian (George Washington) Universities; LL.D. In 1895, was appointed stenographer to President Cleveland; 1896, executive clerk; 1898, assistant secretary to President McKinley; 1900, secretary to the president, and 1901, reappointed by President Roosevelt; was appointed secretary of the newly established department of commerce and labor, 1903. He entered the new cabinet, 1905, as postmaster-general, and 1907 was appointed secretary of the treasury. In 1909 he became president of the New York gas company.

Cortes, or **Cortez** (*kōr'tez*), **Fernando,** a Spanish adventurer; born in Medellin in Estremadura in 1485; he went early in the sixteenth century with Valasquez, to Cuba, and subsequently obtained the command of the expedition sent against Mexico. He advanced to Mexico, where he was at first received with friendly demonstrations; but on his seizing Montezuma, the Mexican king, whom he subsequently put to death by fire, a struggle ensued, in which many thousands of lives were lost. He eventually succeeded in putting down all opposition, and in overrunning Mexico. He was rewarded with the title of marquis, and a grant of land; but later, on his return to Spain, he found himself very much neglected. He died near Seville in 1547.

Corvinus, Matthias. See **Matthias Corvinus.**

Corwin, Thomas, lawyer and orator, was born in Bourbon county, Kentucky, 1794; removed to Ohio in early youth; was admitted to the bar, 1818; was elected a member of congress in 1830, in 1840 governor of Ohio; elected to the senate of the United States in 1845, and appointed secretary of the treasury by President Fillmore in 1850. Died in Washington, D. C., 1865.

Coue, Emile, French psychotherapist, was born at Troyes and educated at Nancy. He was a druggist and physician for many years, then retired to give all his time to his theory of cure by autosuggestion, of which the famous "Day by day, in every way, I am getting better and better" is the most characteristic note. Died in 1926.

Coues (*kouz*), **Elliott,** American ornithologist, was born at Portsmouth, N. H., 1842, and graduated at Columbian University, 1861; M. D., Columbian. His chief works are: *Key to North American Birds Field Ornithology, Dictionary of North American Birds*, etc. Died, 1899.

Coulanges (*kōō'lŭNzh'*), **Fustel de.** See **Fustel de Coulanges.**

Coulter (*kōl'tĕr*), **John Merle,** botanist, head professor of botany, University of Chicago since 1896; born at Ningpo, China, 1851; graduated at Hanover College, Indiana, 1870; Ph.D., University, of Indiana; president of Lake Forest Uni-

versity, 1893-96. Author: *Manual of Rocky Mountain Botany; Manual of Texan Botany; Morphology of Angiosperms*, etc. Died, 1929.

Courbet (*kōōr'bĕ'*), **Gustave,** French painter, was born at Ornans, Franche-Comte, 1819. In 1839 he was sent by his father to study law in Paris, but the bent of his nature was toward art. In 1841 he took to landscape work, painting in the forest of Fontainebleau. In 1844 he began to exhibit at the salon; and his works created a great sensation in 1850; he retired to Tour-de-Pelits, near Vevay, in Switzerland, where he died, 1877.

Courtois, Bernard, French chemist, was born at Lyon, 1777. He is especially noted for having discovered the element iodine in 1812, by leaching the ashes of burnt seaweed. He did not make his discovery known until a year later, when the Institute named it iodine for its color. He was forgotten for a long period, until in 1832 the Academy of Sciences awarded him 6,000 francs, in appreciation of his services to medicine. He died in 1838.

Cousin (*kōō'zaN'*), **Victor,** French philosopher, was born in Paris, 1792; died at Cannes, 1867. After a literary career extending over many years, he was made, in 1830, under the ministry of M. Guizot, a member of the council of public instruction in France. He published a translation of *Plato*, in thirteen volumes, and a *Course of the History of Philosophy*, in five volumes, which was his largest original work. His last years were spent in retirement in the Sorbonne.

Couture (*kōō'tür'*), **Thomas,** French painter, pupil of Delaroche, was born in 1815. His chief work is *Les Romains de la Decadance*. Died near Paris, 1879.

Coverdale (*kuv'ĕr-dāl*), **Miles,** translator of the English Bible, was born in Yorkshire, 1488; died in London, 1569. He was a monk of Norwich, but early devoted himself to the work of the reformation. The *Psalms* of Coverdale and Tyndale's translation are still used in the services of the church of England.

Cowley, Abraham, in his own day considered the greatest of English poets, was born in London, 1618. From Westminster school he proceeded in 1637 to Trinity College, Cambridge, and while there wrote, among many other pieces, a large portion of his epic, the *Davideis*, its hero King David. On Cromwell's death he went to Paris, and returned to England at the restoration. He died at Chertsey, 1667, and was buried in Westminster abbey.

Cowper, William, English poet, was born, 1731; died 1800. He was admitted to the bar in 1754, but did not practice. He passed many years at Olney, Buckinghamshire, in the society of Mrs. Unwin, Lady Austen, and the Rev. John Newton, engaged in religious exercises and charities. Lady Austen turned his attention to poetry, and after contributing sixty-eight pieces to the *Olney Hymns*, he published in 1782 his first volume. The ballad of *John Gilpin* gave him a wide renown. In 1799 he revised his *Homer*, and wrote his last poem, *The Castaway*.

Cox, David, noted landscape painter, was born at Deritend, a suburb of Birmingham, England, 1783. He studied in London with John Varley. From 1827 till 1841 London was his headquarters, but in 1841 settled at Harborne, near Birmingham, where he died, 1859.

Cox, Sir George William, English writer, mythologist, was born 1827, educated at Rugby school and Trinity College, Oxford. In 1877 he succeeded to his uncle's baronetcy. Among his works are *Times of Ancient Greece; Aryan Mythology; History of Greece;* etc. Died, 1902.

Cox, James M., journalist and politician, was born at Jacksonburg, Ohio, 1870. In early days was newspaper reporter and country school teacher, bought Dayton Daily News and Springfield Press. Congressman 1909-13, three times governor of Ohio. Democratic nominee for President, 1920.

Cox, Kenyon, painter; born in Warren, Ohio, 1856; studied in Cincinnati and Philadelphia; in Paris under Carolus Duran and Gerome, 1877-82; returned to New York. Has contributed to leading magazines on art subjects. Author: *Mixed Beasts, Old Masters and New*. Died, 1919.

Cox, Palmer, artist; born in Granby, Quebec, Canada, 1840; graduate of Granby Academy; lived in San Francisco, 1863-75. He specialized in original humorous pictures illustrating his own books. Author: *The Brownies at Home*. Died, 1924.

Cox, Samuel Sullivan, American politician and diplomat, was born in Ohio in 1824, and died in New York, 1889. Graduate of Brown University; 1856-62 represented an Ohio district in congress. In 1866 he moved to New York, and was returned to congress almost continuously from 1868, except while he was minister to Turkey, 1885-86. The present arrangements for taking the national census were largely of his conception.

Coxe (*Koks*), **Arthur Cleveland,** 1818-1896, an American Episcopal bishop, born at Mendham, New Jersey. He became rector of Grace Church in New York City, 1859, and bishop of Western New York in 1865.

Crabbe (*krab*), **George,** English poet, born 1754, died 1832. He was a surgeon, but abandoned his profession for literary adventure, and went to London in 1780. He was ordained a priest in 1782, and became chaplain to the duke of Rutland at Belvoir castle. In 1783 he published *The Village*, and in 1807 *The Parish Register*, his best works.

Craddock, Charles Egbert. See **Murfree, Mary Noailles.**

Craigie (*krāg'ĭ*), **Mrs. Pearl Mary Theresa.** See **Hobbes, John Oliver.**

Craik (*krāk*), **Mrs. Dinah Maria.** See **Mulock.**

Craik, George Lillie, Scottish writer and educator, born at Kennoway, Fife, 1798; studied for the church at St. Andrews, but settled in London in 1826. In 1849 he became professor of history and English literature in Queen's College, Belfast. Died at Belfast, 1866.

Cranach (*krä'näK*), **Lucas,** German painter, was born near Bamberg, Germany, 1472. In 1520 he bought an apothecary's business at Wittenberg, where he was also a book-seller and paper-maker, became councilor and chamberlain, and was twice chosen burgomaster of the town. He was an intimate friend of Luther, whose picture he several times painted. Cranach died at Weimar, 1553.

Cranch (*kränch*), **Christopher Pearse,** American painter, was born at Alexandria, Va., 1813; studied in France and Italy in 1846-63; returned to New York and became a member of the National Academy in 1864. Died, 1892.

Crane, Walter, English painter, decorator, designer, book-illustrator, writer, lecturer, socialist, born at Liverpool, 1845. Apprenticed to W. J. Linton; first illustrated book, *The New Forest*, 1863; principal of the Royal College of Art, South Kensington, 1898-99; awarded Albert gold medal, society of arts, 1904. Publications: *Baby's Opera; Baby's Bouquet; Mrs. Mundi; Pan-Pipes;* illustrations to Shakespeare's *Tempest, Two Gentlemen of Verona, Merry Wives of Windsor; Decorative Illustration of Books;* Spencer's *Faerie Queen;* etc. Died, 1915.

Crane, William H., actor; born at Leicester, Mass., 1845, debut Utica, N. Y., 1863; appeared with Stuart Robson, Park theater, New York, in *Our Boarding House*, 1877, followed by numerous successes, including the two Dromios in Shakespeare's *Comedy of Errors*, ending with *The Henrietta*. Died, 1928.

Crane, Winthrop Murray, manufacturer, United States senator, was born at Dalton, Mass., 1853; A.M., Williams, 1897. Lieutenant-governor of Massachusetts, 1897-99; governor of Massachusetts 1900-02; United States senator from Massachusetts, appointed by governor, 1904; elected, 1905, to fill term expiring 1907, and reëlected that year for the term 1907-13. Died, 1920.

Cranmer, Thomas, archbishop of Canterbury, was born 1489, and educated at Cambridge University. He obtained the favor of Henry VIII. by furthering his divorce from Catharine of Aragon, and was appointed primate in 1533. He favored the reformed doctrines during the reign of Henry VIII., and in that of Edward VI. Protestanism was thoroughly established, and the *Book of Common Prayer* compiled, 1549, under his guidance. He was committed to the Tower on the accession of Mary, condemned at Oxford for heresy in 1554, and, after two years' imprisonment, burned there, openly rejecting the recantation of Protestantism which he had been induced to sign. Died, 1556.

Crassus (*kras'us*), **Lucius Licinius,** Roman orator and statesman, was born 140 B. C. He was consul in 95 B. C. and censor in 92 B. C. Died 91 B. C.

Crassus, Marcus Licinius, Roman general and statesman, was born about 105 B. C. Plutarch estimates the wealth of Crassus at more than 7,000 talents, and Pliny states that the lands of Crassus were worth 8,000 talents. About 60 B. C. Cæsar, Pompey, and Crassus became members of the first triumvirate. Killed 53 B. C.

Crawford, Francis Marion, American novelist, was born at Bagni di Lucca, Italy, 1854. From 1881 to 1883 he was in America, and subsequently resided at Sorrento, Italy. He published over forty novels, including *Mr. Isaacs; An American Politician; Zoroaster; Saracinesca; With the Immortals; The Rulers of the South* (hist.); *Marietta, a Maid of Venice; Cecilia, a Story of Modern Rome; The Heart of Rome; A Lady of Rome;* and the play, *Francesca da Rimini*, produced by Sarah Bernhardt in Paris, 1902. Died, 1909.

Crawford, Thomas, American sculptor, was born in New York in 1814. His principal works are the bronze statue of Beethoven, executed for the Boston music hall the colossal equestrian statue of Washington at the capitol, Richmond, and the marble and bronze statuary for the capitol, Washington. Died in London in 1857.

Crawford, William Harris, American statesman, born in Virginia, 1772. In 1783 he settled in Columbia county, Georgia, was admitted to the bar 1798, and began his practice in Lexington. He was elected to the state senate in 1802, and to the United States senate to fill a vacancy in 1807, reëlected for a full term 1811, and was chosen president of the senate pro tem. 1812. He received the nomination for president, 1824, and in the election had forty-one electoral votes. He died in 1834.

Creasy (*krē'sĭ*), **Sir Edward Shepherd,** English historian, born at Bexley, Kent, in 1812; from Eton passed to King's College, Cambridge, and in 1834 was elected a fellow; in 1840 was appointed professor of history at London University, in 1860 chief-justice of Ceylon, and knighted; died at Hampton Wick, 1878. He was author of *The Fifteen Decisive Battles of the World, Invasions of England, History of the Ottoman Turks*, etc.

Creel, Enrique C., Mexican diplomatist and statesman, was born at Chihuahua, Mexico, 1854; member of Mexican national congress, 1898-1904; speaker of house, 1892; governor of state of Chihuahua, 1903-06; ambassador extraordinary and minister plenipotentiary of Mexico to United States, 1906-09.

Creelman, James, author, journalist; associate editor of *Pearson's Magazine*, was born at Montreal, 1859. Editorial writer and correspondent *New York Herald*, 1877-89; was aide on General Lawton's staff, Philippines, captured Spanish flag, and was shot after he received surrender of Spanish commandant at El Caney, 1898. Author: *On the Great Highway, Eagle Blood*, etc. Died, 1915.

Creighton (*krī'tun*), **James Edwin,** educator, professor of logic and metaphysics, Cornell, was born at Pictou, Nova Scotia, 1861; Ph.D., Cornell, 1892; LL.D., Queen's University. Editor of *Philosophical Review;* American editor of *Kant Studien*. Author: *An Introductory Logic*. Died, 1924.

Creighton, Mandell, English historian, born at Carlisle, 1843; graduated at Merton College, Oxford, and was elected a fellow in 1866. He became vicar of Embleton, Northumberland, in 1875, first professor of ecclesiastical history at Cambridge in 1884, bishop of Peterborough in 1891, and of London, 1896. Died, 1901.

Crillon (*krē'yôN'*), **Louis des Balbes de Berton de,** French soldier, surnamed "le brave," was born at Murs in Provence, 1541. Wounded at Lepanto, 1571, he was yet sent to carry the news of the victory to the pope and the French king. He abhorred the massacre of St. Bartholomew, but took part in the siege of La Rochelle in 1573. When the peace with Savoy was concluded, Crillon retired to Avignon, and ended his days in the exercise of piety and penance. Died, 1615.

Crispi (*krēs'pē*), **Francesco,** Italian statesman, was born at Ribera in Sicily, 1819; was admitted to the bar at Palermo, but, joining the revolutionary movement of 1848, had to flee to France; in 1894 became premier of Italy. In 1895 strenuous efforts were made to discredit him by connecting him with a series of bank scandals; in 1896 the Abyssinian disaster of Adowa compelled his resignation. Died, 1901.

Critias (*krish'ĭ-as*), a pupil of Socrates, but a hearer rather than a doer of his word. He had a high reputation as an orator, and also wrote poetry.

Crittenden (*krit''n-den*), **John Jordan,** American statesman, born in Kentucky in 1786. After having studied and engaged in the practice of the law, he, in 1816, became a member of the Kentucky house of representatives, and was elected to the United States senate in 1817, 1835, and 1855. In 1841 he became attorney-general in President Harrison's administration; and in 1848 was elected governor of Kentucky. He opposed the secession movement in 1860-61. Died, 1863.

Crocker, Francis, Bacon, electrician, physicist, professor of electrical engineering, Columbia, since 1889; born at New York, 1861; graduated at Columbia, M.E., 1882; Ph.D., 1895. President American Institute of Electrical Engineers, 1897-98. Died in 1921.

Crockett, David, American pioneer and politician, was born in Tennessee, 1786. He was chiefly noted for his adventures and eccentric habits, and was a member of congress from 1827 to 1831, and from 1833 to 1835. He joined the Texans in their revolt against Mexico, was taken prisoner at Ft. Alamo in 1836, and was killed in that celebrated massacre.

Crockett, Samuel Rutherford, British novelist; born in Duchrae, Galloway, 1860. Educated at Edinburgh, Heidelberg, and New College, Oxford. Entered Free church of Scotland, 1886; minister of Penicuik for some years, then became a writer and journalist. Died, 1914.

Croesus (*krē'sus*), last of the kings of Lydia, in the sixth century B. C.; celebrated for his wealth, so that his name became a synonym for a man overwhelmed by the favors of fortune.

Crofts, Ernest, British painter, keeper of the Royal Academy; born in Yorkshire, 1847; educated at Rugby and Berlin. Studied art at London and Dusseldorf. Pupil of A. B. Clay and Professor Hunten. Died, 1911.

Cromer (*krō'mĕr*), **Evelyn Baring, first Earl,** British statesman, and diplomat, was born at Cromerhall, Norfolk, 1841. Educated at ordnance school, Carshalton; Royal Military Academy, Woolwich. Hon. D.C.L., Oxford; LL.D., Cambridge; financial member of council of governor general of India, 1880; financial assistant at conference in London on Egyptian finance, 1884; agent and consul-general in Egypt, 1883-1907. Author *The War Game*, and other military works; *Modern Egypt* (2 volumes); etc. Died, 1917.

Crompton, Samuel, inventor of the spinning-mule, born near Bolton, England, 1753; for five years he worked at his project, and at last sold it for 60 pounds. It revolutionised the manufacture of British muslin, and brought wealth to all save

the inventor, who died in comparative poverty, 1827.

Cromwell, Oliver, the great Protector, born at Huntington, in 1599, of Welsh descent—one of his ancestors, called Williams, having adopted the surname of his patron, Thomas Cromwell, whose agent he was in the suppression of the monasteries. Early experiencing a "saving change," he emerged from his period of gloom and anxiety a stern and convinced Puritan and Calvinist, and a determined foe of Laud's absolutist pretensions in church and state. He sat as a member for Huntington in the Parliament of 1628. When the Scottish revolt compelled Charles to summon the Short Parliament (1640), Cromwell sat for Cambridge; and again in the Long Parliament as an active supporter of the popular and Puritan cause. He was never a parliamentarian in the ordinary sense of the word.

When the English Civil War began, his opportunity came. He fought at Edgehill (1642), and there perceived the weakness of the parliamentary levies against the spirit and dash of the royalist cavaliers. He saw that a counter-motive was required to meet the gallant traditions inspiring the king's soldiers, and this he found in the stern godliness of the English yeoman. He organized his famous cavalry regiments from this class, and at Marston Moor (1644) demonstrated the superiority of his troops, and stood forth as the greatest English military leader of the time—a fact which he showed again at Newbury (1644), Naseby (1645), Preston (1648), Dunbar (1650), Worcester (1651)—though the Scots, general Leslie excelled him in strategy.

Cromwell attached himself early to the extreme and independent party in the army and the state, and was their representative in their struggles with the Presbyterian Parliament, which, after Naseby, wished to disband the army. It is probable that Cromwell was moulded by circumstances rather than that he was himself the moulder of them. The execution of the king shocked all the moderate men; and after Cromwell's return from a ruthless expedition against the royalists in Ireland, he was summoned to Scotland, where Charles II. had been declared king by the whole nation. The "crowning mercy" at Worcester (1651) followed his victory over the Scots at Dunbar, and the three kingdoms were at his feet.

His first troubles were with Parliament. The "Rump," the remnant of the Long Parliament, being recalcitrant and determined to prolong its own existence, Cromwell summarily dissolved it. In September, 1656, he called a new parliament, which undertook the revival of the constitution and offered Cromwell the title of king. On his refusal he was again installed as Lord-protector, but with his powers now legally defined. Early in the following year, however, he peremptorily dissolved the house, which had rejected the authority of the second chamber. Abroad his influence still increased, reaching its full height after the victory of Dunkirk in June, 1658.

But his masterly administration was not effected without severe strain, and upon the death of his favorite daughter, Elizabeth Claypole, in the beginning of August, 1658, his health began to fail him. Towards the end of the month he was confined to his room from a tertian fever, and on Sept. 3, 1658, died at Whitehall, in the sixtieth year of his age. He was buried in King Henry VII.'s Chapel, in Westminster Abbey, but after the Restoration his body was taken up and hanged at Tyburn, the head being fixed on a pole at Westminster Abbey, and the remains buried under the gallows.

Great as a general, Cromwell was still greater as a civil ruler. He lived in a simple and retired way, like a private man, and was abstemious, temperate, indefatigably industrious, and exact in his official duties. He possessed extraordinary penetration and knowledge of human nature; and devised the boldest plans with a quickness equaled only by the decision with which he executed them. No obstacle deterred him: and he was never at a loss for expedients. Cool and reserved, he patiently waited for the favorable moment, and never failed to make use of it. In his religious views he was a tolerant Calvinist.

References.—Carlyle's *Cromwell's Letters and Speeches;* Harrison's *Cromwell;* Morley's *Cromwell;* Gardiner's *History of the Great Civil War;* and *History of the Commonwealth and Protectorate; Cromwell's Army,* and Roosevelt's *Oliver Cromwell.*

Cromwell, Richard, born in 1626, was the third son of Oliver, but by the deaths of two elder brothers, Robert and Oliver, became his father's heir. When the protector had been empowered to nominate his successor, an effort was made to train Richard to the work of government, but in vain. Scarcely had he entered on the protectorship when the forces of anarchy, both parliamentary and military, broke loose; finding himself unable to restrain them, and deep in debt, he abdicated in 1659.

Cromwell, Thomas, earl of Essex, English statesman, born about 1485. He was in the service of Wolsey for several years before the cardinal's ruin in 1529, and remained his steady friend in adversity. His fidelity to his patron and his talents commended him to Henry VIII., who appointed him his secretary and spokesman in the house of commons. This made him the leader of the English reformation. He was created earl of Essex, received valuable estates from the spoils of the monasteries, and was the king's most powerful subject. But he had enemies on all sides, and, having lost the king's favor by his promotion of the marriage with Anne of Cleves, with whom Henry was disgusted, he was beheaded in 1540.

Cromwell, William Nelson, born 1854, lawyer; now senior member of law firm of Sullivan & Cromwell; officer, director, or counsel of more than twenty of the largest corporations in the United States, including United States Steel Corporation. He perfected the details of the transfer of Panama canal to United States government.

Cronje (*krōn'ye*), **Pietrus Arnoldus,** Boer general, was born, 1835, of Huguenot descent; commanded the western army of the South African republics; frustrated the Jameson raid at Krugersdorp, 1895. Surrendered at Paardeberg to Field Marshal Lord Roberts, 1900; member of the executive council of the Transvaal republic; chief native commissioner. Died, 1911.

Crookes (*krooks*), **Sir William,** British chemist and physicist; proprietor and editor of *Chemical News;* president of the British association for the advancement of science, 1898; editor of *Quarterly Journal of Science;* born in 1832. Discoverer of thallium, a new element, 1861, radiant matter, 1879; radiant matter spectroscopy, 1881; new elements in gadolinite, etc., 1886. Died, 1919.

Crosby, Howard, American clergyman and scholar, was born at New York, 1826; graduate of the University of New York, 1844; professor of Greek there, 1851-59, and at Rutgers College, New Jersey, 1859-63; chancellor of the University of New York, 1870-81. In 1877 he was the leading organizer of the society for the prevention of crime, and its first president. Died, 1891.

Crothers (*kruth'ẽrz*), **Samuel McChord,** Unitarian clergyman, author, was born at Oswego, Ill., 1857; graduated at Princeton, 1874; studied theology at Union Theological Seminary; D.D.; Litt.D.; since 1894 at First Parish, Unitarian church, Cambridge, Mass.; preacher to Harvard University. Author: *The Gentle Reader; The Understanding Heart; The Pardoner's Wallet; The Endless Life.*

Crozier, William, army officer, was born at Carrollton, Ohio, 1855; graduated from United States Military Academy, 1876. Began his service in the United States army as an artillery officer, 1876; brigadier-general and chief of ordnance of United States army since 1901. With General Buffington invented the Buffington-Crozier disappearing gun carriage; invented the wire gun.

Cruikshank (*krook'shangk*), **George,** English artist, was born in London, 1792. His father and elder brother were both caricaturists. Like Hogarth, he was a moralist as well as an artist, and as a total abstainer he consecrated his art at length to dramatize the fearful downward career of the drunkard. He died, 1878.

Crumpacker, Edgar Dean, lawyer, congressman, was born in Laporte county, Indiana; was admitted to the bar in 1876, practiced law at Valparaiso, Ind.; was member of the lower house of Congress, 10th Indiana district.

Cruttwell, Charles Thomas, English clergyman and scholar, rector of Ewelme, Oxfordshire, canon of Peterborough cathedral; born in London, 1847; graduate of St. John's College, Oxford. Ordained to the ministry, 1875; dean of Gartree, diocese of Peterborough, 1892-1901; preacher to the University of Oxford, 1896-98 and 1903-05; proctor in convocation for the clergy of Peterborough diocese, 1900-06.

Cujas (*kū'-zhäs'*), **Jacques,** eminent French jurist, born in 1520, studied under Arnaud Ferrier at the University of Toulouse; became professor of the Roman law at Bourges and Valence. Among his numerous works are *Commentaries on Justinian's Institutes,* and on the *Pandects and Decretals.* Cujas has been styled by Hallam the greatest of all civil lawyers. Died at Bourges, 1590.

Culberson, Charles A., lawyer, United States senator, was born in Dadeville, Ala., 1855; studied law under his father and at the University of Virginia in 1876-77; elected attorney-general of Texas in 1890 and 1892; elected governor of Texas in 1894 and 1896; chosen United States senator, 1899, 1905 and 1911. Died, 1925.

Cullom, Shelby Moore, lawyer, United States senator, born in Kentucky in 1829, studied law, 1853, was admitted to the bar, and began to practice law at Springfield, Ill; was governor of Illinois in 1877-83; elected United States senator in 1883; and reëlected in 1888, 1894, 1899, 1905. He retired, 1911. Died, 1914.

Cummins, Albert Baird, lawyer, United States senator, was born near Carmichaels, Pa., 1850; LL.D.; Waynesburg Coll., 1903; studied law in office of McClellan & Hodges, Chicago. Admitted to Illinois bar, 1874; member of Iowa legislature, 1888; governor of Iowa, 1902-04, 1904-06, 1906-08; elected 1908 to United States senate to serve out term of Hon. W. B. Allison, deceased; reelected 1909 for the term 1909-15. Died, 1926.

Cunard (*kū-närd'*), **Sir Samuel,** civil engineer, founder of the Cunard steamship line, was born at Halifax, Nova Scotia, 1787; succeeded early as a merchant and shipowner, and removed to England in 1838; joined with George Burns, Glasgow, and David M'Iver, Liverpool, in founding, 1839, the Royal Mail Steam Packet Company, and obtained a contract for the mail service between Liverpool and Halifax, Boston, and Quebec. The first passage, 1840, was the *Britannia's* in fourteen days eight hours. Iron steamers were introduced in 1855, and paddle-wheels gave way entirely to the screw after 1862. Since then the Cunard line has been known as one of the leaders in transatlantic travel. Died, 1865.

Cunningham, Daniel John, British physician, scientist, professor of anatomy in the University of Edinburgh since 1903, and dean of the medical faculty; born at Crieff, Scotland, 1850. M.D., D.Sc., D.C.L., LL.D., F.R.S.; was examiner on anatomy in the Universities of Edinburgh, London, Cambridge, Oxford, and Victoria. Author: *Manual of Practical Anatomy; The Microcephalic Brain; The Anatomy of Hernia.*

Cunningham, William, English clergyman, educator, archdeacon of Ely, was born at Edinburgh, 1849; lecturer on economic history, Harvard University, 1899; chaplain of Trinity College, 1880-91; Hulsean lecturer, 1885; vicar of Great St. Mary's Cambridge, 1887-1908. Author: *Growth of English Industry and Commerce* (2 vols.); *Outlines of English Industrial History; Cure of Souls,* etc.

Curie (*kūrē'*), **Madame,** nee Marie Sklodowska, Polish chemist and physicist, was born at Warsaw, Russia, 1867; educated at Warsaw, and at the Sorbonne, Paris; Sc.D., Paris; she discovered the element polonium, and with her husband, Pierre Curie, the element radium.

Curie, Pierre, French chemist, was born in Paris, 1859. Educated at the Sorbonne, he became professor of physics and chemistry at Paris, 1895, and at the Sorbonne, 1900. In conjunction with his wife he discovered the element radium; member of the French Academy of Sciences, 1905. He was killed by an accident, 1906.

Curran, Henry H., born 1877, graduate Yale University, 1898; journalist; president borough of Manhattan, 1917-1921; candidate Mayor of Greater New York, 1921.

Curran (*kur'an*), **John Philpot,** Irish legal and parliamentary orator, was born in County Cork, Ireland, 1750. He was educated at Trinity College, Dublin, and in 1773 went to London, and entered the Middle Temple. In 1782 he obtained a seat in the Irish parliament as member for Kilbeggan. Died, 1817.

Curtin, Jeremiah, American author, ethnologist, and linguist, was born at Milwaukee, Wis., 1840; graduated from Harvard, 1863; was secretary of legation at St. Petersburg, 1864-70; connected with the United States bureau of ethnology, 1883-91. Died, 1906.

Curtis, Benjamin Robbins, American jurist, born in Massachusetts, 1809; graduated at Harvard. On the impeachment of Andrew Johnson, he appeared as one of the counsel for the defendant. Died at Newport, R. I., 1874.

Curtis, Charles, lawyer, United States senator, was born at Topeka, Kan., 1860; member of congress from Kansas, 1893-1907; U. S. senator 1907-13, 1915-27. Vice president, 1929——.

Curtis, Cyrus H. K., publisher, was born in 1850, and was educated in the public schools of New England. He is now the head of the Curtis publishing company, publishers of the *Ladies' Home Journal* and the *Saturday Evening Post.*

Curtis, George Ticknor, American lawyer and writer, was born in Massachusetts, 1812, graduated at Harvard, and began law practice in Boston, afterward removing to New York. He was several times in the Massachusetts legislature, and was for a time United States commissioner. Among his many books are *Rights and Duties of Merchant Seamen; Treatise on the Law of Copyright.* Died, 1894.

Curtis, George William, American journalist, author, publicist, was born at Providence, R. I., 1824. He commenced the *Editor's Easy Chair* papers in *Harper's Monthly* in 1853, and became editor of *Harper's Weekly* on its establishment in 1857. He died at New York. 1892. He wrote *Lotus-Eating; Potiphar Papers; Prue and I; Trumps;* etc.

Curtis, William Eleroy, journalist, born in Akron, Ohio, 1850; graduate of Western Reserve College, 1871; *Chicago Record-Herald*, 1901-1911; commissioner of Columbian exposition to Madrid, and special envoy to the queen regent of Spain and Pope Leo XIII., 1892. Author: *The Life of Zachariah Chandler; Egypt, Burma, and the British East Indies;* etc. Died, 1911.

Curtiss, Glen Hammond, aviator and inventor, was born at Hammondsport, N. Y., 1876. He won many prizes, both in France and The United States, for aerial flights. President Curtiss Engineering Company; Director Curtiss Airplane & Motor Corp. Invented hydroplane and biplane. Author (with Augustus Post) of the *Curtiss Aviation Book*, and articles in popular and technical magazines in Great Britain and the United States.

Curwood, James Oliver, American writer, was born at Owosso, Michigan, 1878. After graduation from the University of Michigan, he did newspaper work for several years. Later he was employed by the Canadian government to write up his travels in the "frozen north." These journeys gave him material for his books, which include *The Danger Trail, Kazan, The Alaskan.* Died, 1927.

Curzon (*kûr'zon*) **of Kedleston, first Baron, George Nathanial,** English statesman, author, was born in Kedleston, 1859; graduate of Balliol college, Oxford; D.C.L., LL.D. Member of parliament, Lancashire, 1886-98; viceroy and governor-general of India, 1899-1905; lord warden of the Cinque ports, 1904-05. Author: *Russia in Central Asia; Persia and the Persian Question.*

Cushing (*kōōsh'ing*)**, Caleb,** American lawyer and diplomatist, was born in 1843. He was a member of Congress, 1835-43; negotiated the first treaty of the United States with China; in 1872 he was one of the counsel for the settlement of the "Alabama claims," before the Geneva tribunal; and 1874-77 was minister to Spain. Died, 1879.

Cushing, Frank Hamilton, American ethnologist, was born at Northeast, Pa., 1857. He entered the national museum at Washington, and in 1875 began making collections of Indian relics for the department of ethnology. Author: *Zuni Fetiches,* etc. Died at Washington, 1900.

Cushman (*kōōsh'man*)**, Charlotte Saunders,** American actress, was born and died at Boston Mass., 1816-1876.

Custer (*kus'tẽr*)**, George Armstrong,** American soldier, born in Ohio in 1839, graduated at West Point in 1861, and served with distinction through the Civil War. As a cavalry commander in the west, he several times defeated the hostile Indians; but on the 15th of May, 1876, he attacked 9,000 Sioux on the Little Big Horn, in Montana, and he and his 1,100 men were all destroyed.

Cuvier, Georges Chretien Leopold Dagobert Baron, (*koo've-aĭ*), one of the greatest naturalists the world has produced, was born at Montbeliard, France, 1769. After finishing his education at Stuttgart, young Cuvier accepted the situation of tutor in a Protestant family in Normandy. The Abbe Texier, whom the troubles of the time had driven into exile from the capital, introduced him by letter to Jussieu and Geoffrey. Several memoirs, written about this time, and transmitted to the latter, established his reputation, and procured his admission to two or three of the learned societies in Paris.

In 1800 he was appointed successor to Daubenton as professor of natural history at the college of France, and in 1802 he succeeded Mertrud in the chair of comparative anatomy at the Garden of Plants. From that time he devoted himself steadily to the studies which have immortalized his name. His *Lecons d'Anatomie Comparee,* and the *Regne Animal,* in which the whole animal kingdom is arranged according to the organization of the beings of which it consists, have raised him to the pinnacle of scientific fame, and established him as perhaps the first naturalist in the world after Linnaeus. His numerous works upon these subjects show a master mind in the study of zoology; and extending the principles laid down in his comparative anatomy to the study of paleontology, he has been enabled to render immense service to geology.

Starting from the law that there is a correlation of forms in organized beings,—that all the parts of each individual have mutual relations with each other, tending to produce one end, that of the existence of the being—that each living being has in its nature its own proper functions, and ought therefore to have forms appropriated for that function and that consequently the analogous parts of all animals have received modifications of form which enable them to be recognized—he was able to ascertain from the inspection of a single fossil bone, not only the family to which it ought to belong, but the genus to which it must be referred. Even the very species of animal was thus to be made out, and the restoration of its external form as it might have lived and died, became in his hands an object of certainty and precision. His *Regne Animal* has been frequently translated, and forms the basis of all arrangements followed at the present time. Cuvier filled many offices of great importance in the state; particularly those connected with educational institutions. Napoleon treated him with much consideration; Louis XVIII. and Charles X. advanced him to honor; and Louis Philippe raised him to the rank of a peer of the realm. He died, 1832.

References.—Lee's *Memoirs of Baron Curier*; Carus's *History of zoology*; Thomson's *Science of Life*; Day's *Naturalists*; Duncan's *Heroes of Science.*

Cyrus the Great, founder of the Persian monarchy, commonly called Cyrus the Elder, was born about 590 B. C. Putting himself at the head of his Persian troops, Cyrus advanced into Media and overthrew the forces of Astyages, 559 B. C. After consolidating his dominions, which was a work of some time, Cyrus proceeded to conquer the surrounding nations. The kingdom of Lydia first yielded, 546 B. C., and its king, the famous Crœsus, fell into his hands. Ultimately, the whole of Asia Minor was subdued. But the crowning triumph of Cyrus was his capture of the city of Babylon, the metropolis of Assyria, 538 B. C., whose king was Labynetus, the Belsbazzar of Daniel. Cyrus was defeated and slain, 529 B. C.

Cyrus the Younger, was born in 424 B. C., son of Darius, and governor of the western provinces of Asia Minor. After unsuccessfully plotting against his elder brother, Artaxerxes, he raised a large army, including about 12,000 Greek soldiers, with which he marched against him, but was defeated and slain at Cunaxa. Xenophon then conducted the retreat of the 10,000 surviving Greeks. Died, 401 B. C.

Dabney, Charles William, educator. president of University of Cincinnati, 1904-20, was born in Hampden-Sidney, Va., 1855; graduated from Hampden-Sidney College, 1873; Ph.D., LL.D.; was first to discover the phosphate deposits in tin ore in western North Carolina, took prominent part in establishing an industrial school at Raleigh, president of University of Tennessee, 1887-1904; assistant secretary agriculture, United States, 1893-97; member of many scientific and educational societies.

Da Costa (*dă-kos'tă*)**, John Chalmers,** American surgeon, was born in Philadelphia, Pa., 1863; graduated from University of Pennsylvania scientific department, 1882; assistant surgeon, Jefferson hospital, 1887; demonstrator of surgery, Jefferson medical college, 1891; clinical professor of surgery, same, 1898; professor of surgery, 1900. Was appointed Surgeon to Philadelphia hospital in 1895, to St. Joseph's hospital in 1896. Author: *A Manual of Modern Surgery.* Edited English edition of Zuckerkandl's *Operative Surgery,* and Gray's *Anatomy.* Died, 1910.

Daendels (*dăn'dels*)**, Herman Willem,** Dutch general, was born in 1762, died in 1818. He became colonel of a corps of volunteers in the French army in 1793, and afterward brigadier-general. After the fall of Napoleon he was intrusted with the organization of the East African colonies.

Daguerre (*dă-gâr*)**, Louis Jacques Mande,** French inventor, was born in 1789. He discovered the daguerreotype process of photography. He was also celebrated as a dioramic painter; was named by the French government as an officer of legion of honor. Died, 1851.

Dahlgren (*dal'gren*)**, John Adolf,** American admiral, was born in Philadelphia, Pa., 1809. He became a midshipman, 1826, and a lieutenant, 1837. Ten years afterward he began to experiment in the casting of heavy cannon for naval warfare, and finally devised the Dahlgren gun. He died in Washington, when in command of the navy yard, 1870.

Dahlmann (*dăl'măn*)**, Friedrich Christoph,** German historian, was born at Wismar, 1785; studied at Copenhagen and Halle, and in 1813 became a professor of history at Kiel, and in 1829 of political science at Göttingen, where he published his invaluable *Quellenkunde der deutschen Geschichte.* In 1842 he became professor of history at Bonn, and in the movement of 1848 headed the constitutional liberals. Died, 1860.

Dahn (*dăn*)**, Julius Sophus Felix,** German publicist historian, poet, was born at Hamburg, 1834, the son of the actor, Friedrich Dahn. He studied at Munich and Berlin, and in 1872 became professor of German jurisprudence at Königsberg, and in 1888 at Breslau.

Daingerfield, Elliott, artist, was born at Harper's Ferry, Va., 1859; studied drawing and painting in New York with private teacher and at art student's league. First exhibited at National academy of design, 1880; studied in Europe, 1897; commissioned to paint the Lady chapel of the church of St. Mary the Virgin, New York, 1902.

Dalberg-Acton (*dăl'berN-ak'tun*)**, Sir John Emerich Edward,** first Baron Acton, English historian, was born at Naples, Italy, 1834. In 1895, was made professor of modern history at Cambridge University, and as a liberal Catholic exerted a profound influence. He died, 1902.

D'Albert (*dal'bar'*)**, Eugene Francis Charles** pianist and composer; born in Glasgow, 1864; studied first in London, afterward under Franz Liszt in Weimar. Visited the United States several times, and was court pianist in Weimar.

Dale, Alan, pseudonym of Alfred J. Cohen, dramatic critic, author, was born in Birmingham, England, 1861; educated at King Edward's school there, and Oxford University. Came to United States, and engaged in journalism in New York; dramatic critic of New York *Evening World,* 1887-95; dramatic critic of New York *Journal* and later with New York *American.* Died, 1928.

D'Alembert. See **Alembert.**

Dalhousie (*dal-hou'zi*)**, James Andrew Broun Ramsay, Marquis of,** British statesman, was born at Midlothian, Scotland, 1812. He distinguished himself in parliament, holding with credit many important posts, and in 1847 proceeded to India as the youngest governor-general ever appointed to that country. He died in 1860.

Dallas, George Mifflin, American statesman and diplomatist, was born at Philadelphia, Pa., 1792. During 1831-33 he represented Pennsylvania in the United States senate; and minister to England, 1856-61. He died in 1864.

Dalton (*dôl'tun*)**, John,** British chemist and physicist, was born near Cockermouth in 1766. He was famous for his experiments on the elastic force of steam. Died, 1844.

D'Alviella (*dăl-vē-el'la*)**, Count Goblet,** member and secretary of the Belgian senate; professor at the University of Brussels; was born in Brussels, 1846; educated at Brussels and Paris. Director of the *Revue de Belgique,* 1874-1890.

Dalzell (*dal-zel'*)**, John,** congressman, lawyer; born in New York, 1845; removed to Pittsburgh, 1847; graduate of Yale, 1865; admitted to bar, 1867; member of congress, 1887-1913. Died, 1927.

Damien de Veuster (*dă'myăN'de vē'stâr'*)**, Joseph,** Roman Catholic missionary, was born near Louvain, Belgium, 1840. He long worked single handed for the lepers of Hawaii, but was ultimately joined by other priests. For twelve years he escaped the contagion; but in 1885 the malady appeared in him, yet he continued his labors until his death in 1889.

Damrosch (*dăm'rosh*)**, Walter Johannes,** composer and musical director, was born in Breslau, Prussia, 1862; received his musical education under his father and Rischbieter, Urspruch, and Hans von Bülow; came to United States with his father, 1871. Succeeded his father as conductor of the New York symphony society, 1885; founded the Damrosch opera company, 1894; director of New York Symphony Orchestra, since 1903. He wrote *The Scarlet Letter,* opera in three acts; *Cyrano,* opera in four acts; songs, etc.

Dana (*dă'na*)**, Charles Anderson,** American journalist, was born at Hinsdale, N. H., 1819. From 1848 to 1862 he was managing editor of the New York *Tribune,* and from 1863 to the close of the Civil War was assistant secretary of war. In 1867 took hold of the New York *Sun,* and began the successful management of that paper on democratic lines. He died on Long Island, 1897.

Dana, Edward Salisbury, mineralogist, educator, was born in New Haven, Conn., 1849; graduated from Yale, 1870; Ph.D., 1876; professor of physics, Yale, since 1890; trustee of Peabody museum since 1885; editor *American Journal of Science* since 1875. Author: *Text-book of Mineralogy; Text-book of Elementary Mechanics; Dana's System of Mineralogy; Minerals and How to Study Them,* etc.

Dana, Francis, American jurist and diplomat, was born in Massachusetts, 1743; graduated at Harvard, and admitted to the bar in 1767; was a member of the congress of 1777, which formulated the articles of confederation; judge of Massachusetts supreme court, 1785; chief justice, 1791-1806.

Dana, James Dwight, scientist, geologist, educator, was born at Utica, N. Y., 1813; graduated at Yale, 1833; professor of natural history and geology at Yale College, 1845-95. Died at New Haven, Conn., 1895.

Dana, John Cotton, librarian, was born at Woodstock, Vt., 1856, and graduated from Dartmouth, 1878; studied law, Woodstock, Vt., 1878-80; land surveyor, Colorado, 1880-81; admitted to New York bar, 1883; President of American library association, 1896; director of Newark Free Public Library. Died, 1929.

Dana, Richard Henry, Jr., lawyer and author, son of Richard Henry Dana, was born at Cambridge, Mass., 1815. He entered Harvard college in 1832, but suspended his studies on account of the weakness of his eyes in 1834. He then shipped as a common sailor on a voyage to California, of which he wrote a narrative entitled *Two Years Before the*

Mast. He was one of the founders of the free soil party in 1848. Died in Rome, Italy, 1882.

Dandolo (*dăn'dō-lō*), **Enrico,** doge of Venice, was born about 1105 or 1108 A. D. When the emperor Alexius, who had been raised to the throne by the exertions of Dandolo, was murdered by his own subjects, Dandolo laid seige to Constantinople, and took it by storm, 1204. He died in 1205 in Constantinople, and was buried in the church of St. Sophia.

Dane (*dān*), **Nathan,** American lawyer, was born in Massachusetts in 1752. He served in the continental congress, 1785-88; framed the ordinance for the Northwest territory, in which he prohibited slavery, and was United States senator, 1794-98. Died at Beverly, Mass., 1835.

Daniel, John Warwick, lawyer, United States senator, was born in Lynchburg, Va., 1842; educated at Lynchburg College and Dr. Gessner Harrison's university school; LL.D., studied law, University of Virginia, 1865-66, admitted to bar, 1866. Member of Virginia house of delegates, 1869-72; of state senate, 1875-81; member of congress, 1885-87; United States senator, 1887-1910. Died, 1910.

Daniels, Josephus, secretary of navy, journalist, was born in Washington, D. C., May 18, 1862. After an academic education at Wilson Collegiate Institute, N. C., he edited the Wilson (N. C.) *Advance,* studied law and was admitted to the bar, 1885. In the same year he became editor of the Raleigh *State Chronicle*; was state printer for North Carolina, 1887-93; chief clerk, department of the interior, 1893-95, and editor of the Raleigh *News and Observer,* since 1894. He was Secretary of the Navy, under President Wilson, 1913-1921. On May 2, 1888, he married Addie W. Bagley, of North Carolina.

D'Annunzio (*dăn-nōō'dzē-o*), **Gabriele** (1864——), Italian poet, novelist, dramatist, and soldier, displayed remarkable literary talent at the age of 15. He studied widely, often working eighteen hours a day. He is essentially a poet, excelling in command of rhythm, in richness, splendor, and accuracy of language. His chief works are: *The Child of Pleasure; The Virgins of the Rocks; The Triumph of Death; The Flame of Life; The Dead City,* etc. As an aviator in the Great War, he won distinction for his bravery, and aroused Europe by his pen and voice. At the head of a band of insurgents, he took possession of Fiume for Italy, 1919, presenting a diplomatic problem yet unsolved.

Dante, Alighieri, foremost among Italian poets, and one of the greatest that the world has ever produced, was born at Florence in 1265. He was educated at the Universities of Bologna and Padua, and at a later period, while in Paris, applied himself to the study of theology. He fought in the victorious battle of Campaldino against the Aretines, 1289, and took an active part in storming the fortress of Caprona, 1290.

Having been twice entrusted with an embassy, he was chosen one of the *priori,* or chief-magistrates, of Florence, in 1300, when the struggle between the Guelphs and the Ghibellines was at its height. Dante espoused the cause of the Ghibellines or Imperialists, who, being the weakest numerically, were overcome in the struggle by the Guelphs or adherents of the Pope. All the Ghibelline leaders were banished and their property confiscated. Dante shared their fate and left his native city, never to return. For many years he was doomed to bear the sorrows and hardships of an exile. In 1304 he left Verona, and went to Paris.

When the Emperor Henry VII. invaded Italy, Dante returned to Verona, and employed his powerful pen to further the imperial cause. It was probably at this time 1310 that he wrote the work *De Monarchia.* The fruitless siege of Florence, and the sudden death of the Emperor, 1313, demolished his last hope, and he spent the remaining years of his life under the kind protection of Guido Novello da Volenta, in the city of Ravenna, where he died, 1321. Many cities of northern and central Italy claim the honor of having harbored Dante within their walls. His remains were buried in a chapel of the *Frati Minori,* in Ravenna. They were, however, subsequently removed, and in 1835 were discovered in the Braccioforte Sepulchral Chapel of the same city. In 1830 a marble cenotaph was consecrated to his memory in the church of Santa Croce at Florence.

When about 9 years old, Dante beheld for the first time Beatrice Portinari, then 8 years of age, and the love then enkindled in the heart of the tender boy remained forever the inspiration of his life. How pure and chaste this passion was may be seen from the poet's first work, *Vita Nuova,* which consists of a collection of poems referring to his early love; each of these poems is accompanied by a history of its origin and accurate analysis. Beatrice was married to the cavaliere Simone de Bardi, but died at an early age. A few years after her death Dante married the daughter of an old and noble family, by whom he had six or seven children.

In his work *De Monarchia* he advocated the supremacy of the emperor in temporal, and that of the Pope in spiritual affairs. He wrote several other works in Latin, besides many canzones, sonnets, and lyrics in Italian; most of the latter were collected in his *Convito.* But his greatest work is the *Divine Comedy.* The best English translations of the complete poem are those of Cary and of Longfellow.

References.—Symonds's *Introduction to the Study of Dante*; Rossetti's *A Shadow of Dante*; Gardner's *Dante Primer*; Butler's *Dante, His Times and His Works*; Federn's *Dante and His Times*; Toynbee's *Dictionary of Proper Names and Notable Matters in the Works of Dante*; Fay's *Concordance* for the *Comedia.*

Danton (*dăn'tôn'*), **Georges Jacques,** French revolutionist, was born at Arcis-sur-Aube, France, 1759. As a member of the national convention, he used all his influence to hasten the execution of the king; and subsequently, as the president of the committee of public safety, he united with the other revolutionary leaders to establish that fatal tribunal under whose authority so many sanguinary judicial murders were committed. He quarreled, however, with Robespierre, and by that very tribunal which he himself had established, he was condemned and guillotined in 1794.

D'Arblay (*dăr'blā*), **Frances Burney,** English novelist; born at Lynn Regis, England, 1752. From the age of eighteen to twenty-six she worked at *Evelina,* which appeared anonymously in 1788, and won her fame. In 1793 she married General D'Arblay, a French refugee. Her later works are *Camille, The Wanderer,* and the *Memoirs* of her father. Died at Bath, England, 1840.

Darius (*dā-rī'us*), king of Persia, was born in 558 B. C., son of Hystaspes; dethroned Smerdis the usurper, and became king of Persia in 521, in succession to Cambyses. He captured Babylon after a siege of twenty months, conquered Thrace, and defeated the Scythians. He died in 486 B. C.

Darius III., Codomannus, the last ruler of the Persian empire, 336-330 B. C. At the battle of Arbela, 331 B.C., the Persian army, said to have consisted of more than 1,000,000 men, was completely routed. Darius fled to Ecbatana, where he collected a new force. Alexander pursued him thither, but before he came up with him Darius was assassinated by Bessus, satrap of Bactria, 330 B. C.

Darley (*dăr'lĭ*), **Felix O. C.,** American artist, was born at Philadelphia, Pa., 1822. Though a painter of merit, he is especially known for his work as an illustrator. Some of the finest figures and scenes on the government bonds and legal tender notes were designed by him. Died, 1888.

Darling, Grace, born, 1815; died, 1842. With the assistance of her father, who was keeper of the Longstone lighthouse on one of the Farne islands, she rescued nine of the survivors of the wreck of the Forfareshire steamer, September 7, 1838.

Darnley (*dărn'lĭ*), **Lord, Henry Stuart,** husband of Mary, queen of Scots, the eldest son of the earl of Lennox, by Lady Margaret Douglass, was born in England, 1545, where also he was educated. He is interesting chiefly on account of the position which he occupied with respect to his wife, and his tragic end in 1567. He was father of James I. of England.

Darrow, Clarence S., lawyer and socialist, was born in Kinsman, Ohio, 1857; studied law, and was admitted to bar, 1875. Elected to Illinois legislature, 1902. Active in political campaigns as independent democrat. Counsel in Debs strike case and large number of labor injunction and labor conspiracy cases on side of labor.

Darwin, Charles Robert, English naturalist, was born at Shrewsbury in 1809, died at Down, near Beckenham, in Kent, 1882. He was educated at the Universities of Edinburgh and Cambridge.

He early devoted himself to the study of natural history, and in 1831 was appointed naturalist to the surveying voyage of H.M.S. *Beagle.* The vessel sailed in 1831, and did not return till 1836, after having circumnavigated the globe. Mr. Darwin came home with rich stores of knowledge, part of which he soon gave to the public in various works. In 1839 he married his cousin Emma Wedgwood, and henceforth spent the life of a quiet country gentleman, engrossed in scientific pursuits—experimenting, observing, recording, reflecting, and generalising.

In 1839 he published his *Journal of Researches During a Voyage Round the World;* in 1844 *Structure and Distribution of Coral Reefs; Geological Observations on Volcanic Islands, etc.,* in 1846 *Geological Observations in South America;* in 1851 and 1854 his *Monograph of the Cirripedia,* and soon after the *Fossil Lepodridae and Balaenidae of Great Britain.* In 1859 his name attained its great celebrity by the publication of *The Origin of Species by Means of Natural Selection.* This work, scouted and derided though it was at first in certain quarters, may be said to have worked nothing less than a revolution in biological science. In it for the first time was given a full exposition of the theory of evolution as applied to plants and animals, the origin of species being explained on the hypothesis of natural selection.

The rest of his works are largely based on the material he had accumulated for the elaboration of this great theory. The principal are a treatise on the *Fertilization of Orchids* (1862); *Domesticated Animals and Cultivated Plants; Descent of Man and Variation in Relation to Sex* (1871); *The Expression of the Emotions in Man and Animals* (1872); *Movements and Habits of Climbing Plants* (1875); *Insectivorous Plants* (1875); *Cross and Self Fertilization* (1876); *The Power of Movement in Plants* (1880); *The Formation of Vegetable Mould* (1881); the last containing a vast amount of information in regard to the common earth-worm. Mr. Darwin was buried in Westminster Abbey.

References.—Wallace's *Darwinism*; critical expositions by T. H. Huxley, Asa Gray, J. G. Romanes, St. G. Mivart and E. D. Cope; and *Life and Letters of Charles Darwin,* by Francis Darwin.

Darwin, Erasmus, English poet and physician; born in Eltham near Newark, England, 1731. He studied at Cambridge, obtained a degree in medicine at Edinburg in 1755 and settled at Lichfield as a physician. He died in 1802.

D'Aubigne, Jean-Henri Merle. See **Merle d'Aubigne.**

Daubigny (*dō'bēn'yē'*), **Charles Francois,** French landscape painter, was born in Paris, 1817. He was made chevalier of the legion of honor, 1857. Died, 1878.

Daudet (*dō'de*), **Alphonse,** French novelist, was born at Nimes, France, 1840; obtained appointment as private secretary in the office of the Duc de Morny. Alphonse's poem *Les Amoureuses,* published in 1858, was followed by the theatrical pieces (written partly in collaboration), *La Derniere Idole; L'Œillet Blanc; Lise Tavernier.* In the journals appeared some of his best work, *Robert Helmont; Contes du Lundi,* and the charming extravaganza of *Tartarin de Tarascon,* carried further in *Tartarin sur les Alpes.* He died in 1897.

Daun (*doun*), **Leopold Joseph, Graf von,** Austrian general, was born at Vienna, 1705; served against the Turks and through the war of the Austrian succession, and in 1754 was made a field-marshal. In 1758 he gained another victory at Hochkirch, and came near to annihilating the Prussian army. In 1759 at Maxen he forced Fink to surrender with 11,000 men. After this, however, he gained no important successes. Died, 1766.

Davenport, Homer Calvin, cartoonist, was born in Silverton, Ore., 1867. In 1892 was employed on San Francisco *Examiner,* and taken to New York by W. R. Hearst, 1895, and placed on New York *Journal;* organized the $-mark suit of clothes and the giant figure of the trusts in 1899. Died, 1912.

David, king of Israel, was the son of Jesse, of the tribe of Judah; was born in Bethlehem, and flourished in the eleventh century B. C. War having broken out between the Israelites and the Philistines, he fought and vanquished the giant Goliath. Saul gave him the command of a body of men, but having conceived a great hatred of him, David was exposed to imminent danger and compelled to seek a refuge among the Philistines. After the death of Saul he was recognized as king of Israel. Many acts of weakness were committed by him, but he obtained forgiveness from Jehovah by exemplary penitence. He is the reputed author of many of the psalms.

David, Felicien, French composer, was born at Cadenet, France, 1810. He became an ardent disciple of St. Simon and of Enfantin. In 1835 he returned to Paris, and published his *Mélodies Orientales* for the pianoforte. They were unsuccessful; and David remained in obscurity until his *Désert* made him known. In 1862 he was made an officer of the legion of honor, and in 1869 librarian to the Paris conservatory. Died, 1876.

David, Jacques Louis, founder of the modern French school of painting, was born at Paris, 1748; studied at Paris and Rome, and during the revolution was artistic superintendent of national fetes and solemnities. In 1804 Napoleon appointed him his first painter and gave him a

number of commissions, and among his most celebrated works are several historic portraits of the emperor, such as *Napoleon Crossing the Alps*. As one of the judges of Louis XVI. he was banished in 1816 from France, and died at Brussels, 1825.

David, Pierre Jean, French sculptor, known as David d'Angers, was born at Angers, France, 1789. A statue of Condé established his reputation; and in 1826 he was elected to the institute and appointed a professor in the school of the fine arts. In 1835-37 he executed the pediment of the Pantheon in Paris. Among his other works are busts of Washington and Lafayette in the capitol at Washington. He died in Paris, 1856.

Davids, T. W. Rhys, English orientalist, professor of comparative religion, Manchester, 1904-1922, was born at Colchester, 1843. He was educated at Brighton school and Breslau University; LL.D., Ph.D. Author: *Buddhism; Buddhist Birth Stories; Early Buddhism*, etc. Died 1922

Davidson, Most Rev. Randall Thomas, archbishop of Canterbury since 1903, was born at Edinburgh, 1848; graduated at Trinity college, Oxford; D.D., LL.D., D.C.L. Curate of Dartford, Kent, 1874-77; sub-almoner to Queen Victoria, 1882; one of the six preachers of Canterbury cathedral, 1880-83; clerk of the closet to Queen Victoria, 1891-1901, to his majesty the king, 1901-03; bishop of Rochester, 1891-95; bishop of Winchester, 1895-1903. Author: *Life of Archbishop Tait, Charges, Sermons*, etc.

Davidson, Samuel, biblical critic, was born near Ballymena, Ireland, 1807, and educated at the Royal College, Belfast; was professor Belfast, resigned in 1857. His works include *Sacred Hermeneutics; Treatise on Biblical Criticism*. He died 1898.

Davis, Henry Winter, American lawyer, legislator, and orator, was born at Annapolis, Md., 1817. He was elected member of congress by the voters of Baltimore in 1855 and 1857. He strenuously advocated the emancipation of the slaves and the extension to them of the rights of suffrage. Died, 1865.

Davis, Jefferson, American statesman and soldier, born in Kentucky, 1808; was graduated from West Point, 1828. At the commencement of the Mexican war he left congress, engaged actively in the contest and soon acquired distinction. When Pierce was elected president in 1853, Davis was appointed secretary of war. When Buchanan became president, Davis left the cabinet, but was returned to the senate by the legislature of Mississippi, which position he retained until the secession of his state. In February, 1861, Davis was chosen president of the Confederate States and reëlected for six years in 1862. After the fall of Richmond, in 1865, he was captured when endeavoring to escape, and was imprisoned in Fortress Monroe for two years. He was released on bail in 1867, and finally set at liberty by the general amnesty of 1868. Published *The Rise and Fall of the Confederate Government*, 1881. Died at New Orleans, 1889.

Davis, Jefferson, lawyer, United States senator, was born in Little River county, Arkansas, 1862; graduated from the law department of Vanderbilt University, 1884; admitted to bar the same year. Governor of Arkansas in 1901, 1903 and 1905. Was elected to the United States senate, 1907, for term 1907-1913. Died, 1913.

Davis, John, English navigator, was born at Sandridge, near Dartmouth, about 1550, and undertook in 1585-87 three Arctic voyages in search of a northwest passage. In his last voyage as pilot of an English ship he was killed by Japanese pirates in the strait of Malacca, 1605.

Davis, John William, statesman, was born in West Virginia and was educated at Washington and Lee University. He practiced law for many years and was elected to Congress in 1911. He became solicitor general in 1913; and ambassador to England in 1918. He was president of the American Bar Association in 1922 and two years later was unsuccessful Democratic candidate for the presidency, against Coolidge.

Davis, Richard Harding, novelist, journalist, was born in Philadelphia, Pa., 1864. He graduated from Lehigh University, subsequently studied at Johns Hopkins. He served as war correspondent for the *London Times* and *New York Herald*. Author: *Soldiers of Fortune; Our English Cousins; Van Bibber and Others; The Rulers of the Mediterranean; Dr. Jameson's Raiders; Exiles; With Both Armies in South Africa; Ranson's Folly; Captain Macklin*. Plays: *Taming of Helen; The Dictator*, etc. Died in 1916.

Davis, William Morris, geographer, geologist, professor of geology, Harvard University, since 1899; was born in Philadelphia, Pa., 1850; graduated from Lawrence scientific school, Harvard; 1869, M.E., Sc.D., Ph.D.; acting dean of Harvard graduate school of arts and sciences, 1906-07; member of Pumpelly's Carnegie institution expedition to Turkestan, 1903; visited South Africa, 1905. Author: *Elementary Meteorology; Physical Geography*. Died in 1921.

Davison, Alvin, educator, biologist, was born in Ohio, and educated at the National Normal University, and Princeton University; M.A., Ph.D., Princeton; instructor in biology, Lafayette College, 1896; associate professor, 1897; and professor, from 1898. Author *Mammalian Anatomy; Practical Zoölogy; The Human Body and Health; Health Lessons*, etc. Fellow of the American association for the advancement of science and other scientific associations. Died, 1915.

Davitt (*dav'it*), **Michael,** Irish journalist and political leader, was born at Straid, Ireland, in 1846. A strong home ruler, but socialistic on the question of land nationalization; after the split in the party he opposed Parnell, and was elected to parliament in 1892 as an anti-Parnellite, but unseated on the ground of intimidation. He died in 1906.

Davout (*dȧ'vōō'*), **Louis Nicolas,** French marshal, was born in 1770, at Annoux, France; was educated with Bonaparte at the military school of Brienne. A marshal of the empire, 1804, he acted a brilliant part at Austerlitz, 1805, and Auerstadt, and was made duke of Auerstadt, 1808. At Eckmühl and at Wagram he checked the Austrian attack, and in 1811 was created prince of Eckmühl; after Waterloo he received the command of the remnant of the French army under the walls of Paris. In 1819 he was made a peer of France. He died in 1823.

Davy, Sir Humphrey, noted English chemist was born at Penzance, in Cornwall, 1778. In 1803 he became a fellow, and in 1807 secretary of the Royal society. In 1815 he invented the miner's safety lamp. He was knighted in 1812, made a baronet and elected a president of the royal society in 1820. His chief works are *Elements of Chemical Philosophy*, and *Elements of Agricultural Chemistry*. He died at Geneva in 1829, of paralysis.

Dawes, Charles Gates, was born in Marietta, Ohio, August 27th, 1865. Son of Civil War General and graduated from Marietta College and Cincinnati Law School. Practiced law for seven years in Lincoln, Nebraska, then took up business and politics, with Chicago as headquarters and was a McKinley leader in campaign of 1896. Five years Controller of Currency of Washington, then President of Central Trust Company of Illinois at Chicago. Brigadier-General in Great War and head of the American Army Purchasing Board in France. President Harding made him first Director of Federal Budget System and allies made him head of the Expert Commission on German Finances and Reparation. He has written books on finance and has published "Journal of the Great War." Elected Vice President of United States of America, March, 1925. His home is at Evanston, Ill.

Dawson, Samuel Edward, president of Royal Society of Canada, 1907, king's printer for Dominion of Canada and deputy minister of department of public printing and stationery, Ottawa, was born at Halifax, Nova Scotia, 1833.

Day, James Roscoe, clergyman, educator; chancellor of Syracuse University; was born at Whitneyville, Maine, 1845; graduated at Bowdoin College, 1874, S.T.D.; D.D.; LL.D.; D.C.L. Elected bishop of Methodist Episcopal church, 1904, but resigned.

Day, Mrs. S. A. See **Gardener, Helen Hamilton.**

Day, William, Rufus, jurist; born in Ravenna, Ohio, 1849; graduate of University of Michigan, 1870; judge of court of common pleas, 1886-90; appointed assistant secretary of state by President McKinley, 1897; succeeded John Sherman as secretary of state, 1898, but in September, 1898, was succeeded by John Hay, becoming chairman of United States peace commissioners at Paris at close of war with Spain; became associate justice of United States supreme court in 1903. Died, 1923.

Deak (*dȧ'ȧk*), **Franz,** Hungarian statesman, who did more than anyone else to establish in 1866 the Austro-Hungarian empire, was born at Kehida in Szalad district, 1803; entered the national diet in 1832, played the part of a moderate in the revolution of 1848, and died at Budapest, 1876.

Deakin (*dē'kin*), **Hon. Alfred,** Australian statesman, prime minister of commonwealth of Australia, 1903-05; born in Melbourne, Australia, 1856; graduated from Melbourne University; member of federal council, 1889-95-97-99; of national Australian convention, 1891; Australian delegate from Victoria to London to secure passing of the commonwealth bill, 1900; first attorney-general of the commonwealth of Australia, 1901-03; prime minister of the commonwealth of Australia, 1903-04, and a second time, 1905. Died, 1919.

Deane, Silas, American statesman and diplomat, was born in Connecticut, 1737; graduated from Yale, and was a member of the first continental congress. In 1776 he was sent to Paris as political and financial agent of the colonies. Benjamin Franklin and Arthur Lee joined him afterward, and he was on the committee which negotiated the treaty with France. Died in poverty, 1789.

Debs (*debz*), **Eugene Victor,** socialist, was born in Terre Haute, Ind., 1855; and became locomotive fireman on Terre Haute & Indianapolis railroad; grand secretary and treasurer of brotherhood of locomotive firemen, 1880-93; president of American railway union, 1893-97. As president of American railway union he won a large strike on the Great Northern railway; while managing the still larger strike of western roads in 1894 he was charged with conspiracy, but acquitted; then he was charged with violation of an injunction and sent to jail for six months for contempt of court. Candidate of Socialist party for president of United States, 1904, 1912 and 1920. Died, 1926.

DeBussy, Claude Achille, French composer, was born at Saint Germain, 1862, and entered the Paris Conservatoire when very young. In 1884 he won the Grand Prix de Rome and soon submitted *Printemps* and *La Demoiselle elue*, which were considered very unorthodox. After a Russian period, influenced by the music of Moussorgsky, he returned to Paris and rose to high prominence as a modern composer. His great triumph was in *Pelleas and Melisande*, produced at the Opera Comique in 1902. He died in 1918.

Decamps (*dē-kȧN'*), **Alexandre Gabriel,** French painter, was born at Paris in 1803. In 1824 he was in Switzerland, in 1827-28 in Italy and the Levant. He was made a chevalier of the legion of honor in 1839, and in 1851 an officer. He died at Fontainebleau from a hunting accident, 1860.

De Candolle (*dē kȧN'dōl'*), **Augustin Pyrame,** Swiss botanist, was born at Geneva, 1778; studied there and in Paris; in 1816 he retired to Geneva, where a professorship of botany was founded for him. He died in 1841.

Decatur (*dē-kā'tur*), **Stephen,** United States naval officer, was born at Sinepuxent, Md., 1779, and entered the navy in 1798. In 1804 he led a small party which burned, in the harbor of Tripoli, the American frigate *Philadelphia* after its capture by the Tripolitans. Having taken command of the frigate *United States*, he captured the British frigate *Macedonian*, 1812. In 1815 he captured two Algerine vessels of war, and compelled the dey of Algiers to sue for peace. He was killed in a duel by Commodore James Barron, 1820.

Deffand (*dē'fȧN'*), **Marie de Vichy-Chamrond, Marquise du,** Parisian literary leader, was born at the Chateau de Chamrond, France, 1697. In 1718 she married the Marquis du Deffand, and for a number of years she led a life of gallantry and became a conspicuous figure in Paris literary society. Died in Paris, 1780.

De Foe (*dē fō'*), **Daniel,** English novelist and political writer, was born in London, 1661. He began his career as author in 1682, by publishing a pamphlet which contained strictures upon the clergy of that day. In 1701 he published his famous satirical poem, *The True-born Englishman*, which was written in vindication of King William, and in answer to a poem in which he had been attacked, called *The Foreigners*. In 1719 appeared the famous *Robinson Crusoe*, the most popular of all his works. De Foe, in rapid succession, produced his other notable works of fiction, *Moll Flanders; Journal of the Plague; Colonel Jack; Adventures of Roxana*, and the *Memoirs of a Cavalier*. He died in 1731.

Defregger (*dā'freg-ĕr*), **Franz von,** Austrian genre painter, was born at Stronach, Tyrol, 1835. In 1878 he was made professor of painting at the Munich Academy. The subjects of almost all his pictures are drawn from the Tyrolese peasant-life. Died in 1921.

De Kalb (*dē kalb'*), **John, Baron,** general, in the American revolution, was born about 1721, in Alsace, France; he accompanied Lafayette to America in 1777. He was then appointed a major-general by congress, served in the field in New Jersey and Maryland, and was second in command to General Gates. He was killed in the battle of Camden, 1780.

De Koven (*dē kō'ven*), **Henry Louis Reginald,** American composer, was born in Middletown, Conn., 1861; graduated at Oxford, 1880. Has served as musical critic on various New York publications. His operas are: *The Begum; Don Quixote; Robin Hood; The Mandarin; The Highwayman; Student King; The Snowman*; etc. He has written also a large number of songs and various music for piano and orchestra. Died, 1920.

Delacroix (*dē-lȧ'krwȧ'*), **Ferdinand Victor Eugene,** French painter, chief of the romantic school, was born near Paris, 1799. At the age of eighteen he entered the *atelier* of Pierre Guérin. In 1822 his first work, *Dante and Virgil*, attracted much attention. In 1857 he was chosen by the institute to fill the place of Paul Delaroche. He died in 1863.

Delambre (*dē-lȧN'br'*), **Jean Baptiste Joseph,** eminent French astronomer, was born at Amiens, 1749, and studied first under Delisle, and afterward under Lalande. After the discovery of the planet Uranus in 1781, he computed tables of its motion. In 1802 he was appointed inspector-general of education, and in 1803 perpetual secretary of the mathematical section of the institute. In 1807 he obtained the chair at the Collège de France rendered vacant by the death of Lalande, his master and friend. He died at Paris, 1822.

Deland (*dē'land'*), **Margaretta Wade,** *née* Campbell, American writer, was born at Allegheny, Pa., 1857; educated at private schools, and married, 1880, Lorin F. Deland, Boston. Author: *John Ward, Preacher; The Old Garden and Other Verses; Dr. Lavendar's People; The Common Way; The Awakening of Helena Richie*; etc.

De la Ramee (*dē lȧrȧ' mā*) **Louise** (better known by her pen name "Ouida"), English novelist of French extraction, was born at Bury St. Edmunds, England, in 1840. Her first novel, *Granville de Vigne*, appeared in book form in 1863, and was followed by numerous others dealing with many phases of European society. Among her stories are: *Under Two Flags; Held in Bondage, Chandos; Two Little Wooden Shoes; Wanda; Tricotrin*, and *Santa Barbara*. She died in Italy, 1908.

Delaroche (*dē-lä'rōsh'*), **Paul,** French historical painter, was born at Paris in 1797, died in 1856. He studied under Watelet and Gros. Many of his subjects are drawn from English and French history, and they are usually of a somber character.

Delcasse (*del'kä'sä'*), **Theophile,** French statesman, was born in Pamiers, France, 1852, educated in Paris, and began his career as a journalist. He was elected to the chamber of deputies in 1889, for Foix. He has always been a consistent advocate of colonial expansion; foreign minister when M. Waldeck-Rousseau succeeded M. Dupuy, and and when M. Combes, in 1902, succeeded M. Waldeck-Rousseau; visited England with the president in 1903, and with Lord Lansdowne prepared the Anglo-French agreement, signed in 1904. The difficulty with Germany about Morocco caused his retirement in 1905.

Delille (*dē-lēl'*), **Jacques,** French poet, was born in Auvergne, France, 1738. He was educated at the College de Lisieux in Paris, and obtained a professorship in Amiens. The revolution compelled Delille to leave France, and he traveled in Switzerland and Germany, and then in London occupied eighteen months in translating *Paradise Lost.* Blind in his old age. He died in 1813.

De Martens. See **Martens, Frederic de.**

De' Medici, Catharine. See **Catharine de Medici.**

De Mille (*de-mil'*), **James,** Canadian novelist, was born at St. John, New Brunswick, in 1837. He was professor of history and rhetoric in Dalhousie College for a number of years. Died at Halifax, Nova Scotia, 1880.

Democritus (*de-mok'ri-tus*), Greek philosopher, was born at Adbera, in Thrace, about 470 or 460 B. C. Only a few fragments of his numerous physical, mathematical, ethical, and musical works are extant. Died about 357 or 360 B. C.

DeMorgan, William Frend, English novelist, was born in London in 1839. He studied art at the Royal Academy, and for several years devoted himself to pottery. His creations were much sought after on account of their beautiful design and lustre, becoming known as the "DeMorgan" pottery. When he was sixty-five years old he wrote a novel, *Joseph Vance,* which immediately made him famous as an author, and he soon followed it with another called *Alice-For-Short.* These two volumes placed him among the foremost English novelists. He also wrote *Somehow Good; It Can Never Happen Again;* and *An Affair of Dishonor.* Died in 1917.

Demosthenes, famous ancient Greek orator, was the son of a sword-cutler at Athens, where he was born in 382 (according to some in 385) B. C. His father left him a considerable fortune, of which his guardians attempted to defraud him. Demosthenes, at the age of seventeen years, conducted a suit against them himself, and gained his cause. He then set himself to study eloquence, and though his lungs were weak, his articulation defective, and his gestures awkward, by perseverance he at length surpassed all other orators in power and grace.

He thundered against Philip of Macedon in his orations known as the *Philippics,* and endeavored to instill into his fellow-citizens the hatred which animated his own bosom. He labored to get all the Greeks to combine against the encroachments of Philip, but their want of patriotism and Macedonian gold frustrated his efforts. He was present at the battle of Chaeroneia (338 B. C.), in which the Athenians and Boeotians were defeated by Philip, and Greek liberty crushed.

On the accession of Alexander, in 336 B. C. Demosthenes tried to stir up a general rising against the Macedonians, but Alexander at once adopted measures of extreme severity, and Athens sued for mercy. It was with difficulty that Demosthenes escaped being delivered up to the conqueror. In 324 B. C., he was imprisoned on a false charge of having received a bribe from one of Alexander's generals, but managed to escape into exile. On the death of Alexander next year he was recalled, but the defeat of the Greeks by Antipater caused him to seek refuge in the temple of Poseidon, in the island of Calauria, on the coast of Greece, where he poisoned himself to escape from the emissaries of Antipater (322 B. C.).

The character of Demosthenes is by most modern scholars considered almost spotless. His fame as an orator is equal to that of Homer as a poet. Cicero pronounces him to be the most perfect of all orators. He carried Greek prose to a degree of perfection which it never before had reached. Everything in his speeches is natural, vigorous, concise, symmetrical. We have under his name sixty-one orations, some of which are not genuine. The great opponent—and indeed enemy—of Demosthenes as an orator was Aeschines.

References.—Plutarch's *Life of Demosthenes;* Jebb's *Attic Orators;* Schaefer's *Demosthenes and His Time;* Blass's *Demosthenes;* and Butcher's *Demosthenes.*

Dempsey, William Harrison (Jack), was born in 1896. For several years he was world champion heavy-weight boxer, defeating Jess Willard, Georges Carpentier, Tom Gibbons, and Louis Firpo. In 1926, however, he himself met defeat at the hands of Gene Tunney, an ex-marine.

Deneen, Charles Samuel, lawyer, public official, was born in Edwardsville, Ill., 1863; graduated from McKendree College, 1882; studied law, and was admitted to the Illinois bar. Elected to Illinois house of representatives, 1892; served one term as attorney for sanitary district of Chicago, 1895-96; state's attorney of Cook county, Ill., 1896-1904; governor of Illinois, 1904-13.

Denby, Edwin, born Evansville, Ind., 1870; graduate University of Michigan Law School, 1896. Sergt. U. S. Marine Corps, 1917. Member fifty-ninth to sixty-first Congresses. Secretary of the Navy in Harding Cabinet Died, 1929.

Depew, Chauncey Mitchell, lawyer, United States senator, was born in Peekskill, N. Y., 1834; was graduated at Yale College in 1856; studied law, and was admitted to the bar in 1858; LL.D., Yale, 1887. Died, 1928.

De Quincey, Thomas, English essayist, born in Manchester, England, in 1785. In 1803 he entered Worcester College, Oxford, which he left without a degree, and soon after became acquainted with Coleridge and Wordsworth, took a cottage at Grasmere, and became a member of the famous "lake school." He had acquired the habit of taking opium by using it to cure an attack of neuralgia, and so greatly did it grow upon him that he was known to take as many as 12,000 drops, equal to ten wineglasses, in a day. He was engaged in preparing fourteen volumes of his works for the press within a few days of his death. Died, 1859.

De Reszke (*dā resh'ke*), **Edouard,** Polish singer, born in Warsaw, Poland, 1856; studied under Ciaffei and Coletti, at Milan and Naples, where he developed a splendid bass voice; made his début, Theatre des Italiens, Paris, as the king in *Aida,* 1876. Later appeared in grand opera in Europe and United States, taking basso rôles. Died, 1917.

De Reszke, Jean, Polish tenor, brother of Edouard, was born in Warsaw, Poland, 1853; studied music under Ciaffei, Cotogni, and Sbriglia; début as baritone singer in *La Favorita,* Venice, 1874; tenor début, Madrid, 1879. He made his début in Paris, 1885, and has appeared in leading rôles in grand opera in Europe and United States.

Derby, Edward George Geoffrey Smith-Stanley, fourteenth Earl of, British statesman, was born in 1799. He entered parliament in 1821, and in 1827-28 was under-secretary for the colonies. In 1844 he was called to the house of lords as Baron Stanley of Bickerstaffe. On the death of his father, in 1851, he succeeded to the earldom and the vast estates in England and Ireland. He declined the premiership in 1845 and in 1851, but accepted it in 1852, and resigned it the same year. He became prime minister a third time in 1866, and resigned in 1868. Died, 1869.

De Ruyter. See **Ruyter.**

Derzhaven (*dyer-zhä'vēn*), **Gabriel,** a Russian lyric poet and statesman, was born at Kasan, 1743. He rose from the ranks as a common soldier to high offices in the state under the empress Catharine II., and was made minister of justice by Alexander I. In 1803 he retired to private life and gave himself up to poetry. Died, 1816.

Descartes (*dā-kärt*), **Rene,** great French philosopher and mathematician, was born, 1596, at La Haye, in Touraine. He was educated at the Jesuit College of La Fleche, where he showed great talent. He entered the military profession and served in Holland and in Bavaria. In 1621 he left the army, and after a variety of travels finally settled in Holland, and devoted himself to philosophical inquiries.

Descartes, seeing the errors and inconsistencies in which other philosophers had involved themselves, determined to build up a system anew for himself, divesting himself first of all from the beliefs he had acquired by education or otherwise, and resolving to accept as true only what could stand the test of reason. Proceeding in this way he wrote *Meditationes de Prima Philosophia* in which he first enunciated that he could not doubt or divest himself of belief in himself as a thinking being, and this ultimate certainty he expressed in the celebrated phrase *Cogito, ergo sum* "I think, therefore, I am."

Here, then, he believed he discerned the test of truth. Starting from this point Descartes found the same kind of certainty in such propositions as these; that the thinking being or soul differs from the body (whose existence consists in space and extension) by its simplicity and immateriality and by the freedom that pertains to it; that every perception of the soul is not distinct; that it is so far an imperfect finite being; that this imperfection of its own leads it to the idea of an absolutely perfect being; and from this last idea he deduces all further knowledge of the truth.

Descartes also contributed greatly to the advancement of mathematics and physics. The higher departments of geometry were greatly extended by him. His system of the universe attracted great attention in his time, though long since exploded. It rested on the hypothesis of celestial *vortices,* immense currents of ethereal matter, by which he accounted for the motion of the planets (*Principia Philosophiae,* 1644). His works effected a great revolution in the principles and methods of philosophizing. In 1647 the French court granted him a pension of 3000 livres, and two years later, on the invitation of Christina of Sweden, he went to Stockholm, where he died, 1650.

References.—Fisher's *Descartes and His School;* Mahaffy's *Descartes;* Smith's *Studies in the Cartesian Philosophy;* Descartes' *Discourse on Method* and the *Meditations* are translated by Veitch.

Deschenel, Paul Eugene Louis, member of the French Academy, author, President of France, was born in 1856. His entire life was devoted to public work. President of the Commitee of Foreign and Colonial Affairs, Reporter of Budget of Foreign Affairs, etc.

De Soto (*dē sō'tō*), **Hernando,** Spanish explorer, born about 1500, followed the path of Cortes and Pizarro, served under the latter in Peru. About 1536 he was made governor of Cuba; he conducted an expedition from Florida, which resulted in the discovery of the Mississippi. Died of fever in Louisiana about 1542.

Dessalines (*dā'sä'lēn'*), **Jean Jacques,** Haytien ruler, was born in Africa about 1758, and was originally a slave to a free black in St. Domingo. He became second in command to Toussaint l'Ouverture, and, after the imprisonment of that chief, he displayed so much talent and courage that in 1804 he was chosen emperor of Hayti, under the title of Jacques I. He fell the victim of a conspiracy in 1806.

De Stael, Mme. See **Stael.**

D'Estaing. See **Estaing.**

Detaille (*dē-tä'y'*), **Edouard Jean Baptiste,** French painter, was born in Paris in 1848. His pictures are chiefly of soldiers and battle-scenes, and have gained him much fame. Member of the French Institute, member of the Academie des Beaux Arts, etc. Died, 1913.

De Tocqueville. See **Tocqueville.**

De Vere (*dē vēr'*), **Aubrey Thomas,** Irish poet and political writer, was born in 1814. He first published, in 1842, *The Waldenses.* In 1872 he produced the *Legends of St. Patrick;* in 1879, *Legends of the Saxon Saints,* and in 1882, *The Foray of Queen Meave, and Other Legends of Ireland's Heroic Age.* He died in 1902.

De Vigny. See **Vigny.**

Devine (*dē-vin'*), **Edward Thomas,** sociologist, educator, was born in Union, Iowa, 1877; graduated, Cornell College, Iowa, 1887; Ph.D.; LL.D. General Secretary of charity organization society, New York, since 1896; Schiff professor of social economy, Columbia University, since 1905. Author: *Economics; The Practice of Charity; The Principles of Relief; Efficiency and Relief.*

De Vinne (*dē vin'ē*), **Theodore Low,** printer, and writer, was born at Stamford, Conn., 1828; learned printer's trade. Was a leader in the improvement of typography, and received an honorary M.A., from both Columbia and Yale Universities. Died, 1914.

Dewar (*dū'ēr*), **Sir James,** British scientist, Fullerian professor of chemistry, Royal Institution, London; was born in Kincardine, Scotland, 1842; D.Sc., Oxford. With Sir Frederick Abel, he invented cordite. He was the first to liquefy and solidify hydrogen. Received French Academy's Lavoisier gold medal, in 1894. Died, 1923.

De Wet (*dē vet'ē*), **Christian Rudolf,** Boer general, was born in 1853. He had acquired fame as a hunter before he became conspicuous in the Transvaal war of 1880-81; and in the Boer war of 1899-1902 he was of all the Boer commanders the most audacious, swift in movement, and fertile in expedients. Died, 1922.

De Wette (*dē vet'ē*), **Wilhelm Martin Leberecht,** German biblical critic, born at Ulla, near Weimar, 1780. He studied from 1799 at Jena, and became professor at Heidelberg in 1807, in 1810 at Berlin, and in 1822 at Basel, Switzerland, where he died, 1849. His reputation rests on his *Introduction to the Old Testament.*

Dewey, George, admiral in United States navy; born in Montpelier, Vt., 1837; appointed to naval

academy, September 23, 1854; graduated in 1858, as passed midshipman; LL.D., 1898; in Farragut's squadron which forced the passage of Fort St. Philip and Fort Jackson, April, 1862. Was afterward on several vessels in North Atlantic blockading squadron, then in European squadron, and later on various duties and at different stations, being promoted to commander, 1872; captain, 1884; commodore, 1896. In January, 1898, assumed command of Asiatic squadron. On May 1, 1898, in Manila bay, destroyed the Spanish Asiatic squadron under Admiral Montojo, destroying eleven and capturing all other vessels and all the land batteries, without the loss of a man on the American side. Immediately upon receipt of official news of victory he was promoted to rear admiral, and thanked by resolution of congress; promoted to admiral, 1899. Died, 1917.

Dewey, John, educator, professor of philosophy, Columbia University, since 1904; was born at Burlington, Vt., 1859; graduated, University of Vermont, 1879; Ph.D., Johns Hopkins, 1884. Was professor of University of Minnesota, 1888–89; University of Michigan, 1889–94; and professor of philosophy, University of Chicago, 1894–1904; professor of philosophy, Columbia, 1904—. Author: *Psychology; Leibnitz; Critical Theory of Ethics; Essays*; etc.

Dewey, Melvil, librarian, was born in Adams Center, N. Y., 1851; graduated, Amherst, 1874; LL.D., 1902. Acting librarian Amherst, 1873-76; chief librarian and professor of library economy, Columbia College, 1883–88. Founder and director, New York state library school, 1887-1906; state director of libraries, New York, 1904–. Author: *Library School Rules; Decimal Classification and Relativ Index*.

De Witt (*dĕ vit'*), **Jan,** Dutch statesman, was born at Dort, 1625, son of Jacob De Witt, a vehement opponent of William II., prince of Orange. In 1654, on the conclusion of the war with England, a secret article was inserted in the treaty drawn up between De Witt and Cromwell, in virtue of which the house of Orange was to be deprived of all state offices. The Orange party carried their point in the elevation of William to the dignity of stadtholder. Subsequently his brother, Cornelius, accused of conspiracy against the life of the stadtholder, was imprisoned and tortured. De Witt went to see him on his release. As they were coming out of prison they were attacked and murdered, 1672.

De Young, Michael Harry, journalist, was born in St. Louis, Mo., 1849; removed to California with parents when five years old; with brother Charles he established, 1865, *The Dramatic Chronicle*, later changing it to the *San Francisco Chronicle*, projector and director-general of California mid-winter exposition, 1893-94; member of executive committee for relief and red cross funds. Died in 1925.

Diaz (*dē'äs*), or **Dias, Bartolomeu,** Portuguese navigator, flourished in the fifteenth century. Driven by a violent storm, he sailed round the southern extremity of Africa, the cape of Good Hope, without immediately realizing the fact, and discovered Algoa bay. Was lost in a storm, May, 1500.

Diaz, Porfirio, Mexican statesman, president of Mexico, was born at Oaxaca in 1830. He studied law, and was an officer in the war between Mexico and the United States. In 1876 he rebelled and overthrew the president, Lerdo de Tejada, and was himself made president in the same year. He was elected again in 1884, 1888, 1892, 1896, 1900, 1904 and 1908. Mexico prospered under his administration and his career gave him a high place among the world's statesmen. Forced to resign by Madero, 1911. Died, 1915.

Diaz de la Pena (*dē'äs' dĕ lä pen'yä*), **Narcisse Virgile,** French painter, was born at Bordeaux of Spanish parentage, 1807. Left dependent, he was educated by a Protestant pastor at Bellevue, near Paris. In 1831 he began to exhibit in the salon. He died at Mentone, 1876.

Dicey (*dī'sĭ*), **Albert Venn,** British lawyer and writer, Vinerian professor of English law at Oxford since 1882, was born in 1835; graduated from Balliol College, Oxford; M.A., hon. D.C.L., Oxford; hon. LL.D., Cambridge, Glasgow, and Edinburgh; studied law and was made a barrister of the Inner Temple, 1863. Died 1922.

Dickens, Charles, English novelist and humorist, was born at Landport, England, 1812. After a literary apprenticeship on *The True Sun*, he attached himself to the staff of the *Morning Chronicle*. After a visit to the United States he published, in 1842, his *American Notes for General Circulation*, but a much more admirable result of his visit was *Martin Chuzzlewit*. This was certainly the greatest of his humorous works since the *Pickwick Papers*. *Bleak House*; *Hard Times*; *Little Dorrit*; *The Tale of Two Cities*; *Great Expectations*; *Our Mutual Friend*, and other novels, equally celebrated, succeeded one another with almost periodical punctuality, and an audience larger than any English author ever had awaited each. In 1850 he commenced a weekly periodical entitled, *Household Words*, afterward merged in *All the Year Round*. In 1867 he again visited the United States, gave numerous readings, and met with a brilliant reception. He was until the last engaged in writing a new novel *The Mystery of Edwin Drood*, which was left unfinished at his death in 1870.

Dickinson, Don M., lawyer, was born at Port Ontario, N. Y., 1846, removed to Michigan in 1848. Graduated from the law department of the University of Michigan in 1866, and in 1867 became a practicing lawyer in the West. He later practised in New York, and Washington. He was postmaster-general of the United States, 1887-89. Member of many legal, municipal, financial, historical, and other associations. Died, 1917.

Dickinson, Jacob McGavock, lawyer, secretary of war, was born in Columbus, Miss., in 1851; graduated from the University of Nashville and studied law at Columbia College, New York, in Paris, and at the University of Leipzig; LL.D., Columbia University of New York and University of Illinois; was assistant attorney-general of the United States, 1895-97. He was secretary of war 1909-11. Died, 1929.

Dicksee, Francis Bernard, English painter and royal academician, was born in London in 1853. He was educated at Rev. G. Henslow's school, London. First exhibited at academy, 1876. Died, 1928.

Diderot (*dē'drō'*), **Denis,** celebrated French encyclopedist and philosophical writer, was born at Langres, France, 1713. His great work was the *Encyclopédie*, begun in 1749, of which he and D'Alembert were the joint editors. He died in 1784.

Dielman (*dēl'man*), **Frederick,** American artist, was born in Hanover, Germany, 1847, and came to United States in childhood; graduated at Calvert College. He was president of the National Academy of Design in 1899; member of art commission, New York, 1901-03. 1903 he was professor of descriptive geometry and drawing in the College of the City of New York.

Dilke (*dilk*), **Rt. Hon. Sir Charles Wentworth,** English statesman and writer, was born at Chelsea, near London, 1843. He was graduated at Cambridge, studied law and is a barrister of the Middle Temple. Was under-secretary of state for foreign affairs, 1880-82; chairman of royal commission for housing of the working-class, 1884-85; chairman of select committee on income tax, 1906. Died, 1911.

Dillmann (*dil'män*), **Christian Friedrich August,** German orientalist and theologian, was born in Würtemberg, 1823. He studied at Tübingen. In 1854 he accepted a call to Kiel, where he became professor of oriental languages in 1860, but was transferred in 1864 to the chair of old testament exegesis at Giessen, which in 1869 he resigned to become Hengstenberg's successor at Berlin. Died in 1894.

Dinwiddie (*din-wid'i* or *din'wid-i*), **Robert,** governor of Virginia from 1752 to 1758, was born in Scotland about 1690. His rule as governor was not successful, his ill-temper and avarice making him very disagreeable to his subjects. He was the first to suggest to the British board of trade the taxing of the colonies. He discerned Washington's military ability, and made him adjutant-general of one of the four military districts of Virginia. He died in England in 1770.

Diocletian (*dī-ō-klē'shan*), **Valerius Diocletianus,** Roman emperor, was born in Dalmatia in 245, and reigned from 284 to 305. After the death of Numerianus, he was chosen to succeed him by the troops at Chalcedon. In the year 305, Diocletian, being worn out by work, resigned his position as emperor and went to Salona, in Dalmatia, where he died eight years later. His reign has become memorable for the persecution of the Christians.

Diogenes (*dī-oj'ē-nēz*), philosopher of the school of cynics, was born in Asia Minor about 412 B. C. Becoming a citizen of Athens, he made himself notorious by his abnegation of all social laws and customs, lived upon alms, and took up his abode in a tub. Died at Corinth, 323 B. C.

Dionysius (*dī'ō-nish'i-us*), **the Elder,** tyrant of Syracuse, in Sicily, was born about 430 B. C. Not content with his military renown, he wrote poems and tragedies, and at one time gained a prize at Athens for the tragedy *The Ransom of Hector*. He died at Syracuse in 367 B. C.

Dionysius of Halicarnassus, critic, historian, and rhetorician, was born about 66 B. C., went to Rome in 29 B. C., and died there about 7 B. C. His Greek *Archaeology*, a history of Rome down to 264 B. C., is a mine of information about the constitution, religion, history, laws and private life of the Romans.

Disraeli (*diz-rā'li* or *diz-rē'li*), **Benjamin,** earl of Beaconsfield, eminent statesman and novelist, was born in London in 1804. He entered the house of commons in 1837, and remained a member until his elevation to the house of lords in 1876. In 1852, and again in 1858 and 1866, he was chancellor of the exchequer under the earl of Derby, and carried the reform act of 1867. In 1868, on the retirement of Lord Derby, he became premier, but resigned the same year. In 1874 he was again in office, which he held until defeated by Gladstone in 1880. Lord Beaconsfield's career as an author was even longer than his political career. His first novel, *Vivian Grey*, appeared in 1826, when he was little more than twenty-one years of age; his last, *Endymion*, appeared in 1880, only a few months before his death. He died at London in 1881.

Dix, John Adams, American statesman and general, was born at Boscawen, N. H., 1798; entered the army in 1812, and rose to the rank of adjutant-general in 1830. From 1833 he was successively secretary of state, United States senator, and secretary of the treasury. He became minister to France, 1866-69, and became governor of New York in 1872. He died in 1879.

Dix, Morgan, Protestant Episcopal clergyman, was born in New York in 1827; graduated from Columbia, 1848; B.D., General Theological Seminary, 1852; S.T.D., D.C.L., D.D. Author: *Sermons, Doctrinal and Practical; Lectures on the Authority of the Church; Good Friday Addresses*; etc. Died, 1908.

Dixon, Joseph M., lawyer, United States senator, was born at Snow Camp, N. C., 1867; graduated from Guilford College, North Carolina, 1889; was admitted to the bar in 1892; member of the fifty-eighth and fifty-ninth congresses, and elected to the United States senate, to succeed Hon. W. A. Clark, for the term 1907-13.

Dixon, Thomas, Jr., lecturer and author, was born in Shelby, N. C., 1864; graduated at Wake Forest College, N. C., 1883; Greensboro, N. C., Law School, 1886; admitted to bar, 1886; member of North Carolina legislature, 1884-86; resigned to enter Baptist ministry, 1886; pastor at Raleigh, N. C., 1887; Boston, 1888-89; New York, 1889-99.

Doane (*dōn*), **Rt. Rev. William Croswell,** Protestant Episcopal clergyman, bishop of Albany, was born at Boston, Mass., 1832; graduate at Burlington College, N. J., 1850; D.D., LL.D., D.C.L.; established the sisterhood of the Holy Child Jesus. Author: *Mosaics of the Harmony of the Collects, Epistles, and Gospels; two volumes of Addresses* to the graduates of St. Agnes' school. Died, 1913.

Dobson, Henry Austin, English poet and man of letters, was born in 1840; educated at Coventry and Strassburg, and early turned his attention to literature. He contributed largely to the *Biographies of Great Artists*. Author: *Thomas Bewick and His Pupils; Four Frenchwomen; Eighteenth Century Vignettes; A Paladin of Philanthrophy; Side-walk Studies*; etc. Died, 1921.

Dodge, Grenville Mellon, soldier, railway official, was born at Danvers, Mass., 1831; graduated C.E., Norwich University, Vermont, 1851; LL.D., 1892. Was engineer on Illinois Central and Rock Island roads; brigadier-general of volunteers, 1862, and major-general of volunteers, 1864, resigning in 1866; chief engineer of Texas and Pacific railway, 1871-81. Member of congress, second Iowa district, 1867-69. Succeeded General Sherman as president of society of army of Tennessee; commander-in-chief of military order of loyal legion, 1907-08. Died, 1916.

Dodge, Mary Abigail, American writer, was born in Massachusetts, 1830; wrote several books of merit, and contributed largely to the periodical press under the *nom de plume* of "Gail Hamilton." Died, 1896.

Dohme, Alfred Robert Louis, manufacturing chemist, was born in Baltimore, Md., 1867; graduated from Johns Hopkins University, 1886 Ph.D., 1889. Elected lecturer of pharmacy at Johns Hopkins University, medical department, 1901. In business as manufacturing chemist since 1891; member of numerous chemical and other scientific societies.

Dolci (*dŏl'chē*), or **Dolce, Carlo,** or **Carlino,** Florentine painter, was born in 1616, died in 1686. He devoted himself chiefly to sacred subjects, and excelled in small pictures.

Dole, Nathan Haskell, American author, was born at Chelsea, Mass., 1852; graduated from Harvard, 1874; became literary and musical editor of Philadelphia *Press*; literary adviser of T. Y. Crowell & Co. Author: *Young Folk's History of Russia; Famous Composers* (2 volumes); *Not Angels Quite; Six Italian Essays*; etc.

Dole, Sanford Ballard, statesman and jurist, was born in Hawaiian islands, 1844; educated at Oahu College, Hawaii, and Williams College, Mass.; studied law in Boston; became president of Hawaii by provision of constitution of 1894 that he should hold that office until 1901; was strong advocate of annexation of Hawaii to United States, and in 1898 visited the United States in that behalf. He was appointed governor of the territory in 1900, after its annexation to the United States; resigned the governorship in 1903, and has since been United States district judge of the territory. Died, 1926.

Dollinger (*dŭl'ing-ĕr*), **Johann Joseph Ignaz,** eminent German theologian, was born at Bamberg in 1799. In 1826 he was appointed professor of ecclesiastical history and canon law at the University of Munich. He was very prominent in the struggle which took place in the Roman Catholic church over the dogma of the infallibility of the pope. Died at Munich, 1890.

Dolliver, Jonathan Prentiss, lawyer, orator, United States senator, was born near Kingwood, Preston county, W. Va., 1858; graduated from West Virginia University, 1875; LL.D. Admitted to bar, 1878; established practice at Ft. Dodge, Iowa. Member of congress from the tenth Iowa district, 1889-1901; appointed United States senator to succeed late Hon. J. H. Gear; elected in 1902, and reëlected in 1907. Died, 1910.

Dollond (*dol'unḍ*), **John,** English optician, was born in London in 1706. He was originally a silk weaver of Spitalfields, London, but studied science, and with his son established a manufactory of optical instruments. Died, 1761.

Domenichino (*dō-mā'nē-kē'nō*), or **Domenico Zampieri,** Italian painter of the Bolognese school, was born in Bologna in 1581 and died at Naples in 1641.

Dominic (*dom'i-nik*), founder of the order of monks called Dominicans, was born in Castile, Spain, 1170. He studied at the University of Palencia, and in 1194 became canon of the cathedral at Osma. In 1204 he went to Languedoc, France, and preached with much vehemence against the Albigenses. As a result of this crusade against heresy he founded the order of the Dominicans, which was confirmed by papal order in 1216. He died in Bologna in 1221.

Donaldson, Henry Herbert, neurologist; graduated from Yale, 1879; Sheffield scientific school; fellow of Johns Hopkins, 1881-83; Ph.D., 1885; D.Sc.; professor and head of department of neurology, University of Chicago, 1892-1906; professor of neurology, Wistar Institution of Anatomy, Philadelphia.

Donatello (*don'a-tel'lō*), properly **Donaro di Betto di Bardi,** one of the evivers of sculpture in Italy, was born in Florence in 1386. The "St. Peter" and "St. Mark" in the church of St. Michael in Florence were his first great works. Died in Florence, 1466.

Donizetti (*dō'nē-dzet'tē*), **Gaetano,** celebrated Italian composer, was born at Bergamo, Lombardy, 1797, and studied at Bologna. He devoted himself chiefly to dramatic music and produced over sixty operas; among the number *Lucia di Lammermoor.* He died in 1848.

"Dooley, Mr." See **Dunne, Finley Peter.**

Dora d'Istria (*dō'rȧ dēs'trē-ȧ*). See **Ghika, Helene.**

Dore (*dōr'*), **Paul Gustave,** French painter and book illustrator, was born in Strassburg in 1833, and educated at a Parisian lycée. He became known by his illustrations of *Rabelais* and *Don Quixote,* and for some years was a constant contributor to the *Journal pour Rire.* He afterward devoted himself to the production of large pictures on religious subjects. Died, 1883.

Doria (*dō'rē-ȧ*), **Andrea,** Genoese naval commander and admiral, who distinguished himself in the service of several states, but chiefly in that of the Genoese republic, was born in 1468. Died 1560.

Dorion (*dō'rē'ôN'*), **Sir Antoine Aime,** Canadian statesman and jurist, was born in the province of Quebec in 1818. He was educated at Nicolet College, early studied law and in 1842 was admitted to the bar; member of the Dominion parliament, 1862-67. From 1867 he served on the judiciary of the province of Quebec, first as associate and latterly as chief-justice. He was a member of the British privy council, and was knighted in 1877. Died at Montreal, 1891.

Dorr, Thomas Wilson, American politician, was born in Providence, R. I., 1805; graduated from Harvard, 1823. He died in 1854.

Dorsey, George, American anthropologist and journalist, was born in Ohio in 1868. He received his education at Harvard. In 1891-92 he conducted anthropological investigations in South America; was curator of the Field Museum of Natural History at Chicago from 1898-1915; was Associate Professor of Anthropology in Chicago University from 1908-15. Since 1925 he has been lecturer for the New School for Social Research, New York City. He is the author of *Why We Behave Like Human Beings,* a popular treatment of biology that has had a very wide circulation.

Dostoevsky, Fyodor, Russian writer, born in a hospital at Moscow, 1822, the son of a poor doctor. In 1837 he began the study of engineering, but early turned to literature. After an absorption in the French and German romanticists, he immersed himself in the writings of Pushkin and Gogol. In 1846, he suddenly produced *Poor Folk,* and became recognized as one of those geniuses whose field lay between the old culture and the new. April 23, 1848, on the scaffold with other revolutionists, he was pardoned and banished to Siberia. Out of his prison sufferings, he wrote with keen psychological penetration and spiritual vision *The Idiot, Crime and Punishment, The Brothers Karamazof, The Possessed,* and a great number of short stories. He died in 1881, one of the lasting writers of all times.

Dougherty, Denis, Cardinal. Born in Girardville, Pa., 1865. Ordained priest in 1890. Bishop of Neura Segoria in 1903. Transferred to Buffalo, N. Y., in 1915. In 1918 made Archbishop of Phil., Pa. Created Cardinal in 1921.

Douglas, Stephen Arnold, American statesman, styled the "little giant," was born at Brandon, Vermont, 1813. In 1833 he went West and settled in Jacksonville, Ill., where he entered on the practice of law. He soon after was elected to the legislature, and in 1840 became secretary of state for Illinois. He was judge of the Illinois supreme court from 1841 to 1843. Douglas was elected to the senate in 1847, and it was as a member of the senate that he introduced, in 1854, the Kansas-Nebraska bill. In 1858 he was a candidate for the United States senate, and held a series of joint debates with Abraham Lincoln, his opponent. In 1860 the democratic party split into two divisions, one of which nominated Douglas for president, and the other John C. Breckenridge. He died in 1861.

Douglas, William Lewis, manufacturer, ex-governor of Massachusetts, was born in Plymouth, Mass., 1845; at age of seven he went to work for an uncle, who set him to pegging shoes; worked in cotton mill at Plymouth at fifteen, and later in factory at Chiltonville, Mass.; afterward went to Hopkinton and South Braintree, Mass., where he learned bootmaking; at Brockton, 1876, began with small shop, from which he built up a business with combined capacity of over 15,000 pairs of shoes daily, and owned seventy-five retail shoe stores in large cities selling the "Douglas" shoe. Member of Massachusetts house of representatives, 1883-84, and of Massachusetts senate, 1886-87; elected governor of Massachusetts, 1904. Died, 1924.

Douglass, Frederick, American orator, a mulatto slave, was born at Tuckahoe, near Easton, Maryland, in 1817. In 1838 he escaped from a Baltimore shipyard to the Northern states, and changed his name from Lloyd or Bailey to Douglass. In 1847 he started *Frederick Douglass's Paper,* a weekly abolition newspaper, at Rochester, New York, United States marshal for the District of Columbia 1876-81; recorder of deeds there, 1881-86; and United States minister to Hayti, 1889-91. He died at his home near Washington, 1895.

Dow, or **Dou, Gerard,** Dutch painter, was born at Leyden in 1613. He studied under Rembrandt, 1628-31, and at first mainly occupied himself with portraiture, but soon turned to genre. He died in 1675.

Dow, Neal, temperance reformer, was born in Portland, Me., 1804, of Quaker parentage. In 1851, while a member of the state legislature, he secured the passage of what is called the "Maine law," which, under severe penalties, prohibited the sale of intoxicating liquors. He was twice chosen mayor of Portland, and during the Civil War served as brigadier-general of volunteers, holding at different times three separate commands. Died, 1897.

Dowden (*dou'den*), **Edward,** British critic and editor, professor of English literature, University of Dublin, since 1867, was born in Cork, 1843; graduate of Dublin University; M.A., LL.D., D.C.L., Litt.D. Clark lecturer in English literature, Trinity College, Cambridge, 1893-96. He has written: *Shakespeare: His Mind and Art; Studies in Literature; Life of Shelley; A History of French Literature; Puritan and Anglican;* Wordsworth's *Poetical Works,* etc.

Doyle, Sir A. Conan, Scottish novelist and physician, was born in Edinburgh, 1859, educated at Stonyhurst and in Germany. From 1882 until 1890 he practiced medicine at Southsea, writing all the while various short stories, some of which have been since published. After *A Study in Scarlet, Micah Clarke,* and *The Sign of Four* came *The White Company,* which led to the final abandonment of medicine for literature. *The Adventures of Sherlock Holmes* and *The Memoirs of Sherlock Holmes* formed a brilliant series of detective stories. He volunteered for service in the Transvaal war, and, in 1900, gave his medical services for some months in the hospitals there and afterward published a history of the war, entitled *The Great Boer War.* Knighted in 1902.

Draco (*drā'kō*), archon of Athens and celebrated lawgiver, lived in the last half of the seventh century. He first gave stability to the state by committing the laws to writing and establishing the ephetae, or court of appeal, 621 B. C. Draco is said to have justified the severity of his code by maintaining that the smallest crime deserved death, and he knew no severer punishment for greater crimes.

Drake, Sir Francis, eminent English navigator, was born of obscure parentage in 1540, at Tavistock, England, and first served at sea under Sir John Hawkins, his relative. With five small vessels he sailed in 1577 to attack the Spaniards in the South seas. In this expedition he ravaged the Spanish settlements, coasted the North American shore as far as latitude forty-eight degrees north, and took possession of the country under the name of New Albion. Elizabeth dined on board his ship at Deptford, and knighted him in 1580. In 1585 he successfully attacked the Spaniards in the West Indies; in 1587 he destroyed many ships at Cadiz; and in 1588 as vice admiral, he participated in the destruction of the armada. He died at Nombre de Dios in 1596.

Drake, Joseph Rodman, American poet, was born in New York in 1795; graduated from Columbia College, 1815, and became an intimate friend of Fitz-Greene Halleck. He died in New York in 1820.

Drake, Samuel Gardner, American antiquarian and writer, was born in Pittsfield, N. H., 1798. He opened an antiquarian book-store in Boston in 1828, and wrote and published various works, including *Indian Biography, History and Antiquity of Boston.* Died, 1875.

Draper, Andrew Sloan, educator, commissioner of education, state of New York, 1904-13; was born in Westford, N. Y., 1848. Member of board of education, Albany, N. Y., 1878-80, 1890-92; member of state normal college board, 1882-86; judge of United States court of Alabama claims, 1885-86; superintendent of instruction, Cleveland, Ohio, 1892-94; president of University of Illinois, 1894-1904. Died, 1913.

Draper, Eben Sumner, manufacturer, governor of Massachusetts, was born in Hopedale, Mass. 1858. He became an active officer in the operations of the Draper company. Chairman of republican state committee, 1892. Director of Boston and Albany railroad, National Shawmut bank. Member of corporation of Massachusetts Institute of technology, Home Market club, etc. In 1898, through Massachusetts volunteer aid association, raised $200,000 for hospital ship *Bay State* for Spanish-American war. In 1907 he became lieutenant-governor of Massachusetts, and in 1909, governor. Died, 1912.

Dreiser, Theodore, American novelist and writer, born at Terre Haute, Ind., 1871. With little schooling, Mr. Dreiser began newspaper work on the Chicago Globe in 1892, subsequently serving as correspondent, dramatic critic and special editor for many publications. He was early impressed by the realistic attitude in letters, and toward this ideal he labored through stupendous obstacles of public prejudice and popular misunderstanding to a leading place among modern novelists. Although hampered by a loose and cumbersome style, the best of his books are already recognized as American classics, such as *Sister Carrie,* 1900; *Jennie Gerhardt,* 1911, and *An American Tragedy.* He also wrote *The Financier, The Genius, A Hoosier Holiday, Twelve Men* and the *Color of a Great City* (New York).

Drew, John, actor, was born in Philadelphia, Pa., 1853. First appearance, 1873, Arch Street theater, Philadelphia, as Plumper in *Cool as a Cucumber;* starred, 1892, playing Dr. Paul Blondet in *The Masked Ball,* and Frederick Ossian in *The Butterflies* with Maude Adams; starred in *The Bauble Shop, Rosemary, The Squire of Dames, The Tyranny of Tears,* etc. Died, 1927.

Dreyfus (*drā'fus'*), **Alfred,** French army officer, was born about 1859 at Mulhausen in Alsace, the son of a rich Jewish manufacturer; was taken in 1874 to Paris. He was an artillery captain, attached to the general army staff, when in 1893-94, he was accused of delivering to a foreign government documents connected with the national defense, he was court-martialed, degraded, and transported to Devil'sisland, French Guiana. The efforts of his wife and friends to prove him an innocent victim of malice, injustice, and forgery plunged France into a chaos of militarism and anti-Semitism and he was not reinstated until July, 1906.

Dreyse (*drī'zē*), **Johann Nikolaus von,** German inventor, was born at Sommerda near Erfurt, Prussia, 1787. He founded ironworks in Sömmerda, and from 1824 manufactured percussion caps. In 1827 he invented a muzzle-loading and in 1836 a breech-loading needle gun—adopted in the Prussian army in 1841. He was ennobled in 1864, and died in 1867.

Drinkwater, John, English poet and playwright, was born in 1882. After graduation from Oxford University, he devoted the early part of his life to business. He gave this up, to found the Pilgrim Players in Birmingham, which developed into the Birmingham Repertory Theatre Company, of which he is now manager. He is best known through his play, *Abraham Lincoln.*

Driver, Samuel Rolles, biblical scholar, regius professor of Hebrew, and canon of Christ Church, Oxford, since 1883, was born in Southampton, England, 1846. He was educated at Winchester College, and New College, Oxford; Litt.D., D.D.; member of Old Testament Revision company, 1876-84; examining chaplain to bishop of Southwell, 1884-1904. Author: *A Treatise on the Use of the Tenses in Hebrew; Isaiah; His Life and Times.*

Droysen (*droi'zen*), **Johann Gustav,** German historian, was born at Treptow, Prussia, 1808, and became lecturer on history in the University of Berlin in 1833. He published, *History of Alexander the Great, History of Hellenism.* Died, 1884.

Drummond, Hon. Sir George Alexander, Canadian legislator and financier, was born in 1829. He became a member of the upper house of the Dominion parliament in 1888. Died 1910.

Drummond, Sir George Gordon, British soldier, was born in 1772, died in 1854. He entered the British army as ensign, 1789; planned and effected the capture of Fort Niagara, and planned the successful attack on Black Rock and Buffalo; led a combined military and naval force against Oswego and destroyed the American works and stores, 1814; was in command of the British forces at the battle of Lundy's Lane, July 25. In 1815 he was appointed governor-general of Canada, resigned and returned to England.

Drummond, Henry, Scottish clergyman and author was born in Stirling, Scotland, 1851; educated at Edinburgh and Tübingen. He wrote *The Greatest Thing in the World,* intended to expound and commend the first principles of the Christian faith. His last work except one, published posthumously,

entitled *The Ideal Life*, was *The Ascent of Man*, in which he places an altruistic element in the process of evolution. Died, 1897.

Drummond, James, British biblical scholar, principal of Manchester College, Oxford, 1885-1906, was born in Dublin, 1835. He was educated at Trinity College, Dublin, and Manchester New College, London; LL.D., Litt.D., M.A., D.D. professor of theology in Manchester New College, London, 1869; succeeded Dr. Martineau as principal, 1885; removed with the college to Oxford, 1889; retired, 1906. Author: *Spiritual Religion; Sermons on Christian Faith and Life; The Jewish Messiah; Introduction to the Study of Theology; Via; Veritas, Vita*, etc.

Drusus (*drōō'sus*), **Nero Claudius,** commonly called Drusus Senior, stepson of the emperor Augustus, and younger brother of the emperor Tiberius, was born in 38 B. C. In 13 B. C. he was sent into Gaul, then in revolt, and, after crushing the rebels there, pushed across the Rhine in pursuit of their German allies. From this time he made the business of his life to establish the Roman supremacy in Germany, partly by conquest and partly by the execution of great military works. A fall from his horse cut short his brilliant career in 9 B. C.

Dryden, John, English poet, was born in Northamptonshire, 1631. After graduating at Cambridge he entered upon a literary career and succeeded Sir William Davenant as poet laureate in 1670. His essay on *Dramatic Poesy*, according to Dr. Johnson, created the school of English criticism. Dryden, by his dramas and political satires—especially his *Absalom and Achitophel*—occupies a high place among English poets. He made numerous translations from the classics—especially Vergil, Juvenal, and Ovid—and his dramatic work almost equals his verse. Died, 1700.

Du Barry (*dū-bà'rē'*), **Marie Jeanne Gomard de Vaubernier, Comtesse,** favorite of Louis XV., was born in 1746, at Vaucouleurs, the daughter of a dressmaker. Her influence reigned supreme until the death of Louis in 1774, when she was dismissed from court. She was tried before the revolutionary tribunal for having wasted the treasures of the state and having worn mourning for the late king, and was guillotined, 1793.

Du Bois-Reymond (*dū-bwà'rā'mōN'*), **Emil,** German physiologist, was born in Berlin in 1818. His name is chiefly identified with animal electricity, the subject of his chief work, which has given him a commanding place among modern scientists. Two volumes of his collected memoirs and addresses appeared in 1885-87. Died, 1896.

Du Bose, William Porcher, Protestant Episcopal clergyman, was born in South Carolina, 1836. He was educated at the military academy of South Carolina and the University of Virginia; S.T.D., D.C.L., D.D. While a student for the ministry he entered the military service of the confederacy, 1861; became chaplain and professor, University of the South, 1871; after continuous service in this university for over thirty-six years he resigned active duties, in the summer of 1908.

Du Chaillu (*dū-shà'yū'*), **Paul Belloni,** American traveler, was born in Louisiana, 1835. In 1855 he sailed to West Africa, where he spent four years. His *Explorations in Equatorial Africa* gave important contributions to geographical, ethnological, and zoölogical science, but was received at first with much distrust. Died, 1903.

Dudevant (*dūd'vaN'*), **Aurore.** See **Sand, George.**

Dufferin (*duf'ėr-in*), **Frederick Temple Hamilton Blackwood, Marquis of,** British statesman, was born in Florence, Italy, 1826. He graduated from Christ Church, Oxford, and in 1841 succeeded to his father's title. In 1860 he became British commissioner in Syria, and served as under-secretary of state for India from 1864 until 1866, and later, for a short time, was under-secretary of war. From 1868 until 1872 he was chancellor of the duchy of Lancaster; governor-general of Canada, 1872-79; ambassador to Russia, 1879-81; governor-general of India, 1884-88; ambassador to Italy, 1888-91; and ambassador to France, 1891-96. He was made an earl in 1871. Died, 1902.

Du Guesclin (*dū ge'klaN'*), **Bertrand.** See **Guesclin.**

Dumas (*dū'mà'*), **Alexandre, the Elder,** French novelist and dramatist, was born in Villers-Cotterets, 1802, son of General Dumas, a Creole. His romances are numerous, but he reached the climax of his fame in *Monte Cristo*, in 1844, and the *Three Musketeers* the year after. Latterly he lived at Dieppe, broken in health and impaired in intellect, ministered to by his son and daughter. Died, 1870.

Dumas, Alexandre, the Younger, was born in 1824. He was a son of the preceding, and, like him, a novelist and dramatist. He accompanied his father on a voyage to the Mediterranean in 1846, and in 1848 produced the work which made his reputation *La Dame aux Camélias*. Subsequently his work was chiefly dramatic, and includes such plays as *Le Demi-Monde, La Princesse Georges, Monsieur Alphonse*, and *Denise*. In 1874 he was admitted to the French Academy. Died, 1895.

Dumas, Jean Baptiste, distinguished French chemist, was born at Alais, in the department of Gard, 1800. In 1821 he was appointed tutor in the polytechnic school at Paris and then professor of chemistry in the Ecole de Medicine. His researches in organic chemistry, on atomic weights, sulphuric ether, and the law of "substitutions" attracted the attention of all Europe. In 1848 he was a member of the legislative assembly; and in 1849-51 held the portfolio of agriculture and commerce. Died, 1884.

Du Maurier (*dū-mō'ryā'*), **George Louis Palmella Busson,** artist and draughtsman, was born in Paris in 1834; educated in London, Belgium and the Netherlands. For many years a valuable art contributor to *Punch*. In 1891 he published a novel, *Peter Ibbetson*, followed by *Trilby*, in 1894. Died, 1896.

Dumouriez (*dū'mōō'ryā'*), **Charles Francois,** French general, was born at Cambria, 1739; entered the army in 1757, and served in Germany during the Seven Years' War. In 1792 he overthrew the Austrians under the duke of Sachsen-Teschen and Clairfait at Jemappes; but at Neerwinden he sustained a severe defeat from the Austrians under Coburg, with whom he entered into a plot to restore the monarchy. Reports of his meditated treason, however, reached the government at Paris, and an order of arrest was issued against him. This he succeeded in evading and escaped across the border. He died an exile at Turville Park, near Henley-upon-Thames, 1823.

Duncker (*dōōng'kėr*), **Maximilian Wolfgang,** German historical writer, was born at Berlin, 1811. He became professor of history at Halle in 1842; sat in the national assembly, 1848, and as a liberal in the Prussian chamber, 1849-52; was called to a Tübingen chair in 1857, and thence recalled in 1859 to Berlin to fill a post in the ministry of state. Died, 1886.

Dundonald (*dun-don'ald*), **Thomas Cochrane, tenth Earl of,** English seaman, was born in 1775. Entering the navy when a boy, he early distinguished himself by the destruction of the French fleet in Basque roads by fireships, 1809. In 1823, having offered his services to Brazil in her war against Portugal, he swept the Portuguese fleet from Brazilian waters. In 1827 he commanded the Greek navy in the war of independence. He died in 1860.

Dunglison (*dung'gli-sun*), **Robley,** medical professor and author, was born in England in 1798. Was professor of materia medica and therapeutics in the University of Maryland, 1833-36, and of the institutes of medicine in Jefferson Medical College, Philadelphia, 1836-68. He translated and edited a number of foreign medical works, published about twenty original volumes. Died, 1869.

Dunne (*dun*), **Finley Peter,** journalist, author, was born in Chicago, 1867; educated in Chicago public schools; entered newspaper life as reporter on editorial staff of Chicago *Evening Post* and *Times-Herald*, 1892-97; editor of Chicago *Journal*, 1897-1900. Author: *Mr. Dooley in Peace and in War; Mr. Dooley in the Hearts of His Countrymen; Mr. Dooley's Philosophy; Mr. Dooley's Opinions; Observations by Mr. Dooley*; etc.

Dunning, William Archibald, historian, educator, professor of history, Columbia University, 1891-1922, was born in Plainfield, N. J.; graduated from Columbia, Ph.D., LL.D.; was managing editor of *Political Science Quarterly*, 1894-1903. Died in 1922.

Dunois (*dū'nwà'*, **Jean, Count of Dunois and Longueville,** was born in Paris, 1402, the natural son of Louis, duke of Orleans, brother of Charles VI. His first great achievement was the defeat of the English at Montargis, 1427. In 1429 Dunois and the maid of Orleans won the battle of Patay. Shortly after Joan's tragical death, Dunois took Chartres, the key of Paris, forced Bedford to raise the siege of Lagny, chased the enemy from Paris, and soon deprived them of all their conquests except Norandy and Guienne. He died in 1468. No French hero is more popular than Dunois.

Duns Scotus (*dunz skō'tus*), **John,** famous Franciscan monk and divine, was born about 1265. He appears to have been educated at Oxford, where in 1301 he became professor of theology. Duns Scotus, as one of the most eminent of the Franciscans, was a chief opponent of the teachings of the Dominicans, the two parties representing at that time two different schools of theology.

Dunstan (*dun'stan*), **Saint,** English prelate, was born in 925, died in 988. Under several kings he wielded great influence. He was made archbishop of Canterbury in 959 by Edgar, whom he absolutely ruled. On Edgar's death he raised Edward to the throne, but on the accession of Ethelred his power was broken.

Du Pont, Henry Algernon, United States senator, soldier, was born near Wilmington, Del., 1838; graduated at West Point, 1861, at head of class, and served throughout the Civil War, in which he gained the rank of colonel. Elected United States senator, 1906, for the term 1906-11.

Dupont, Samuel Francis, American rear-admiral, was born at Bergen Point, N. J., 1803. In the summer of 1861 he was given command of the Atlantic blockading squadron. He also commanded the expedition which captured Port Royal harbor in the same year. He resigned his command in 1863, and died at Philadelphia in 1865.

Dupre (*dū'prā*), **Jules,** celebrated French painter, was born in 1812. He excels as a landscape painter, and his work is noted for its refined poetic taste as well as for its bold and vigorous drawing. He died in 1889.

Duquesne (*dū'kān'*), **Abraham, Marquis,** French naval officer, was born at Dieppe, France, 1610, and first distinguished himself in 1637-43 in the war with Spain. He defeated De Ruyter and Van Tromp several times in 1672-73, and the united fleets of Spain and Holland off Sicily in 1676. Died, 1688.

Durant, Will, American philosopher, was born at North Adams, Mass., 1885. He obtained his earlier education from the Jesuits at St. Peter's College, later taking graduate work at Columbia University, in philosophy, psychology, and biology. He received the degree of Ph.D. in 1917. Four years later he became director of the Labor Temple School, New York, an institution for adult education. His fame as a writer came through *The Story of Philosophy*, as popular and surprisingly readable as a novel.

Durer (*dū'rėr*), **Albrecht,** German artist, was born at Nuremberg in 1471. He was apprenticed to a painter in this native town, and some years later began designing on wood and engraving on copper. In 1505 he proceeded to Venice, and after his return painted his *Adam and Eve*, and *Assumption of the Virgin*, one of his finest works. He died at Nüremberg in 1528. Besides being the founder of the German school of art, Dürer ranks even higher as an engraver on metal and designer of woodcuts.

Duse (*dōō'zā*), **Elenora** Italian actress, was born in Vigevano, 1861. She appeared about 1880 on the Italian, chiefly the Roman stage, as leading lady in the plays of Dumas and Sardou, but afterward played parts of greater depth. Her latest successes are D'Annunzio's *Gioconda* and *Francesca da Rimini*. Died, 1924.

Dvorak (*dvōr'zhàk*), **Antonin,** composer, was born at Muhlhausen, Bohemia, 1841. Brahms introduced his compositions to Vienna; but the work which won for him the ear of all Europe was his *Stabat Mater*, which was first performed in London in 1883. In 1892-95 he was director of the conservatory at New York, where he wrote an American symphony. He subsequently lived at Prague, where he died in 1904.

Dwight, Theodore William, jurist, professor and editor, was born in 1822 at Catskill, N. Y.; graduated at Hamilton College, 1840, and studied at Yale Law School. In 1858 he was chosen professor of municipal law in Columbia College. In 1874 he was appointed by Governor Dix, of New York, a judge of the commission of appeals. Died, 1892.

Dwight, Timothy, educator, theologian, was born at Northampton, Mass., 1752; graduated from Yale College. He was minister of Greenfield Hill, Conn., 1783, where he also successfully conducted an academy. In 1795 he was elected president of Yale College, which position he held until his death. Died, 1817.

Dwight, Timothy, educator, theologian, was born at Norwich, Conn., 1828; grandson of the above; graduated from Yale, 1849; D.D., LL.D.; studied theology at Yale, 1859-53; tutor at Yale, 1851-55; president of Yale University, 1886-99. Member of American committee for revision of English version of the Bible. Author: *Thoughts of and for the Inner Life*. Died, 1916.

Eadie (*ē-dī*), **John,** British clergyman and writer, was born at Alva, Scotland, 1810; studied at Glasgow, and in 1835 became minister of a Glasgow United Presbyterian congregation; from 1843 he also lectured on exegesis in the college of his church. Died at Glasgow, 1876.

Eads (*ēdz*), **James Buchanan,** American engineer, was born at Lawrenceburg, Ind., 1830. He constructed the steel bridge over the Mississippi river at St. Louis, completed in 1874; partly carried out a plan of deepening the Mississippi by means of jetties. Died, 1887.

Eames (*āmz*), **Emma,** American prima donna soprano, was born at Shanghai, China, of American parentage, 1867. Made her début at the Paris grand opera, 1889; Covent Garden, London, in rôle of Marguerite in *Faust*, 1891. She resides chiefly at Torre de Campiglioni Vallombrosa, Italy.

Earle, George H., Jr., banker, lawyer, manufacturer, was born in Philadelphia, Pa., 1856; graduated from Harvard, 1879, A.M., 1904; was admitted to the bar, 1879. He is president of the Finance Company of Pennsylvania at Philadelphia; is active in a number of other financial institutions.

Earle, John, English scholar, was born at Elston, South Devon, 1824; was educated at Magdalen hall, Oxford, and became professor of Anglo-Saxon at Oxford, 1849-54, and again permanently from 1876. Among his books are: *The Philology of the English Tongue; Anglo-Saxon Literature*, etc. Died at Oxford, 1903.

Early, Jubal Anderson, soldier and lawyer, was born in Virginia, 1816; was graduated at the United States Military Academy, 1837. At the opening of the civil war he was appointed a colonel in the confederate army; was promoted brigadier-

general, 1863; commanded a division at Fredericksburg and Gettysburg; was defeated by Sheridan near Winchester and at Fisher's Hill, Va., 1864, and was completely routed by General Custer at Waynesborough, 1865, after which he was relieved of his command. He subsequently practiced law in Richmond. Died, 1894.

East, Alfred, English landscape painter and etcher, was born at Kettering, 1849. He received his art education at the government school art, Glasgow, afterward at Ecole des Beaux Arts; has exhibited at the Royal academy since 1882 and, became an associate in 1880; is now president of the Royal Society of British artists.

Eastlake, Sir Charles Lock, English painter, was born at Plymouth, 1793. From 1809 he studied under Haydon, in the Royal academy schools, and in Paris. When the *Bellerophon* put into Plymouth, Eastlake took a number of rapid sketches from a shore-boat, and produced two full-length portraits of Napoleon. He died at Pisa, 1865.

Eastman, George, inventor, was born in Waterville, N. Y., 1854; was educated in Rochester and New York, and first became an amateur photographer; began to manufacture dry plates on small scale, 1880; inventor of the kodak, and entered extensively into its manufacture; now treasurer and general manager of Eastman Kodak company.

Eaton, Wyatt, American artist, was born at Phillipsburg, Canada, 1849. He studied in New York, and in Paris with Gérome. After spending some years in study, sketching and traveling in France and England, he opened a studio in New York; was one of the founders and the first secretary of the society of American artists. Died at Newport, R. I., 1896.

Ebers (*ā'bĕrs*)**, Georg Moritz,** German novelist and Egyptologist, was born at Berlin, 1837; studied jurisprudence at Göttingen, and oriental languages and archæology at Berlin. In 1870 he was made professor of Egyptology at Leipzig. He died at Tutzing, Bavaria, 1898.

Ebert, Friedrich, first president of the German Federated Republic, was born at Heidelberg, 1871. After an elementary school education, he prepared for the saddler's trade and settled at Bremen. He became interested in socialism, obtained a position on the Bremer Volkszeitung, and was ultimately elected to the citizen's committee as the Social Democratic representative. During the war he tried to bring about understandings between Germany and other countries, but his successful work was after the revolution, to help form the first provisional government and to act as its joint president, restoring peace and order. He was elected president of the Reich by the National Assembly, Nov. 12, 1919. Died, 1925.

Eck (*ek*)**, Johann Maier von,** German monk and theologian, was born at Eck, in Swabia, 1486. He was the son of a peasant, but raised himself by his abilities to the professorship of theology in the University of Ingoldstadt. He took a prominent part in opposition to Luther in the diet at Augsburg, 1530, and in the conferences of Worms and Ratisbon, 1540 and 1541. Died 1543.

Eckermann (*ek'ĕr-mān*)**, Johann Peter,** German writer and literary executor of Goethe, was born in Winsen, Germany, 1792. The publication of his *Beiträge zur Poesie* in 1823 led to his removal to Weimar, where he assisted Goethe in preparing the final edition of his works. Died, 1854.

Eddy, Mary Baker, religious leader, founder of Christian Science, was born at Bow, N. H., 1821. She received an education from public schools and tutors and was connected with the Congregational Church until 1866, when she formulated the Principle of Christian Science. In 1867 she began to teach her religion, and in 1879 founded the Church of Christ, Scientist, in Boston, Mass. She established *The Christian Science Journal* in 1883; the *Christian Science Quarterly* in 1890; the *Christian Science Sentinel* in 1898; *The Christian Science Monitor* in 1908. She is the author of the Christian Science textbook, *Science and Health with Key to the Scriptures*, besides the Manual of The Mother Church, a biographical sketch of herself entitled "Retrospection and Introspection" and other works on Christian Science. Died 1910, Boston.

Edeson, Robert, actor, was born at Baltimore, Md., 1868. He was educated in the public schools at Brooklyn, N. Y., and made his first appearance on the stage in *Fascination*, at the Park theater, New York, 1887. Later he appeared in *A Night Off*; *The Dark Secret*; *Incog.*, and *Under the Red Robe.* He has also starred in *The Climbers*; *Soldiers of Fortune*; *Strongheart*, and *Classmates.*

Edgeworth, Maria, English novelist, was born in Oxfordshire, 1767. She began to write fiction early in the nineteenth century, though she had previously taken an interest in educational topics. Her chief books treat mainly of the virtues and vices of humanity, with a high moral aim. Died in Ireland, 1849.

Edison, Thomas Alva, celebrated American inventor and electrican, was born at Milan, Ohio, 1847; invented many telegraphic appliances, including automatic repeater, quadruplex telegraph, etc. Established workshop at Newark, N. J., removing to Menlo Park, N. J., 1876, and later to West Orange, N. J. Was made chevalier, officer, and afterward commander of legion of honor, by French government; was given the honorary degree of Ph.D. by Union University, 1878, and has been variously honored by numerous scientific, educational, and other bodies.

Edmund, or **Eadmund,** king of the English, known as Ironside, was born about 981. He was the son of Ethelred "the unready," and was chosen king by the Londoners on his father's death, 1016. By a compromise with Canute, the latter retained Mercia and Northumbria, Edmund all the South and the headship, the survivor to succeed to the whole. A few weeks afterward Edmund died, 1016.

Edmunds, George Franklin, American lawyer and statesman, was born at Richmond, Vt., 1828; removed to Burlington, 1851; was a member of the state legislature 1854-60; took his seat in the United States senate as a republican from Vermont, 1866. He was returned 1869, 1875, 1881, and 1887, and succeeded Vice-president Arthur as president *pro tem.* of the senate after the death of President Garfield, 1881. Declined the appointment of associate justice of the United States supreme court, 1882; elected president *pro tem.* of the senate, 1883, and was author of the act prescribing the manner in which electoral votes for president shall be counted, 1886. He resigned the senatorship in 1891, and practiced law in Philadelphia. Died, 1919.

Edward, or **Eadward,** "the confessor," king of the English, was born about 1004, son of Ethelred "the unready" was brought up at the Norman court, and after his accession, on the death of Hardicanute, in 1042, showed a preference for Norman customs and ideas. Edward codified the customary law of the Anglo-Saxons, which thus became known as the "laws of King Edward." Died, 1066.

Edward I., king of England, was born in 1239, succeeded his father, Henry III., in 1272. Imbued with high notions of feudal sovereignty, he sought to establish his supremacy throughout the island of Britain. A man of strictly legal, but somewhat narrow mind, he secured order and good government by the statutes of Winchester and Westminster and other enactments, and carried on Simon de Montfort's work of molding the English parliament, 1295, though, at the same time, somewhat inclined to strain the royal prerogative. His personal character was extremely high. Died, 1307.

Edward II., king of England from 1307 to 1327, son of Edward I., was born at Carnarvon, 1284. In 1301 he was created prince of Wales, being the first heir apparent to the English throne who bore that title. His reign was a succession of disputes with the nobles and with Charles IV. of France. Finally his queen and the nobles revolted against him successfully in 1327 and Edward was murdered in Berkeley castle, having been deposed by parliament several months previous. He was succeeded by his son, who had already been named as Edward III. by parliament.

Edward III., king of England, eldest son of Edward II. and Isabella of France, was born in 1312. He was proclaimed king, 1327, during his father's captivity, and soon after marched with more than 40,000 men against the invading Scots, but concluded an inglorious campaign by a treaty in which the entire independence of Scotland was recognized. In 1346 Edward gained over Philip the decisive battle of Crécy, which was followed by the siege and surrender of Calais and a truce which lasted until 1355. The war was renewed in France under his son Edward the Black Prince, who, in 1356, gained the memorable victory of Poitiers, in which he took King John of France prisoner. Edward was succeeded by his grandson Richard II. Died, 1377.

Edward IV., king of England, was born in Rouen in 1441 or 1442. He was the son of Richard, duke of York, led a force into London during the war of the Roses, 1461, and was proclaimed king by parliament while Henry VI. was still alive. In 1474 Edward formed an alliance with the duke of Burgundy, and made preparations for a war in support of his claim to the throne of France. He passed over to Calais, but the expedition proved fruitless through the dereliction of his ally Charles the Bold of Burgundy, with whom the kingdom was to have been divided. During the latter part of his life Edward was sunk in indolence and pleasure. He left five daughters, one of whom, Elizabeth, was afterward married to Henry VII., and two sons, the ill-fated princes, Edward and Richard. Died, 1483.

Edward VI., king of England, son of Henry VIII. by his third wife, Jane Seymour, was born in 1537. He succeeded to the throne at his father's death in 1547, his uncle, the earl of Hertford, being chosen protector and created duke of Somerset. Henry's famous six articles were repealed, and a new book of common prayer was issued. His reign was marked by the restoration of many of the grammar schools suppressed by Henry VIII.

Edward VII., king of the united kingdom of Great Britain and Ireland, and of all the British dominions beyond the seas, emperor of India, eldest son of Queen Victoria, was born at Buckingham Palace, 1841. He studied at Edinburgh, and subsequently at Oxford and Cambridge. As prince of Wales he bore his full name, Albert Edward. In 1860 he visited the United States and Canada; and in 1863 married the princess Alexandra. He made a visit to India in 1875-76. He constantly manifested a lively interest in exhibitions, charitable institutions, the housing of the poor, and agriculture. He assisted in promoting the Royal College of Music; and the Imperial Institute was due to his suggestion. On January 22, 1901, he succeeded his mother as Edward VII. By visits to continental capitals the king did much to allay international animosities and promote peace and goodwill, especially between Britain and France. Died, 1910, and was succeeded by his son George V.

Edward, the Black Prince, eldest son of Edward III., was born in 1330, and was created earl of Chester, 1333, duke of Cornwall, 1337, and prince of Wales, 1343. In 1346, though only a boy, he fought at Crécy, and is said to have won from his black armor his popular title—In 1361 he married his cousin, Joan, the "fair maid of Kent," who bore him two sons, Edward and the future Richard II.; in 1362 his father created him prince of Aquitaine, and next year he departed to take possession of his principality. In 1367 he espoused the cause of Pedro the Cruel, and at Navarrete won his third great victory, taking Du Guesclin prisoner. He died, 1376.

Edwards, Jonathan, celebrated American divine and metaphysician, was born at Windsor, Conn., 1703. He was graduated from Yale in 1720, and toward the close of 1723 was appointed tutor in Yale College. In 1726 he accepted an invitation to become colleague to his maternal grandfather, Mr. Stoddard, in a church at Northampton, Mass., and was ordained in 1727. Here he labored with intense zeal for more than twenty-three years, at the end of which period he was dismissed by his congregation. Edwards was a powerful and impressive preacher, somber, and even gloomy in his religious opinions and sentiments, but earnest, unaffected and nobly conscientious. After his dismissal in 1750 he became a missionary among the Indians of Massachusetts. While residing at Stockbridge, in that state, he composed his famous treatise on the *Freedom of the Will* and *Original Sin.* In 1757 he was chosen president of Princeton College, New Jersey, but died in 1758.

Egan (*ē'gan*)**, Maurice Francis,** educator, author, diplomat, was born in Philadelphia, Pa., 1852; graduated at La Salle College; entered Georgetown College, 1875; LL.D., Georgetown, 1879; J.U.D., Ottawa University, 1891; was on the editorial staff of McGee's *Illustrated Weekly, Catholic Review* and *Freeman's Journal*; professor of English literature, University of Notre Dame, Ind., 1888-95; and at Catholic University of America, 1895-1907. In 1907 appointed, United States minister to Denmark. Died, 1924.

Eggleston (*eg'lz-tun*)**, Edward,** American author, was born at Vevay, Ind., 1837. He became a Methodist preacher in 1856, and subsequently edited for various periods the New York *Independent, Hearth and Home,* etc. In 1879 he retired from the ministry, and devoted himself entirely to literature. Among his best known books are *The Hoosier Schoolmaster*; *The Graysons*; and *History of United States.* Died, 1902.

Egmont (*eg'mŏnt'*; Eng. *eg'mont*)**, Lamoral, Count of,** Dutch general, descended from the duke of Guilders, was born in 1522. As commander of the Spanish cavalry of Charles V., he defeated the French, 1557-58, but incurring the enmity of Philip II., through his lenient treatment of the Flemish protestants, he was put to death, 1568.

Ehrlich, Paul, German bacteriologist, was born in Silesia, 1854. He studied medicine at Strassburg, Frieburg, and Leipzig and eventually became director of the royal institute for experimental therapeutics at Frankfort. He improved laboratory methods of testing toxins, investigated immunities and the cancer problem, and discovered salarsan, an arsenical compound for the cure of syphilis. He received many honors from his government and from universities and scientific societies in other countries. He died in 1915.

Eichelberger (*ĭk'el-bĕr-gẽr*)**, William Snyder,** astronomer, was born in Baltimore, Md., 1865; graduated from Johns Hopkins, 1886; Ph.D., 1891. Professor of mathematics, United States navy, since 1900; head of division of meridian instruments, United States naval observatory, 1902-1907; director Nautical Almanac since 1910. Member of numerous scientific societies, and a frequent contributor to government publications.

Eichhorn (*ĭk'hôrn*)**, Johann Gottfried,** German scholar, was born at Dörinzimmern, Germany, 1752, and studied at Göttingen. His scholarship was almost universal, and he left numerous treastises on a multitude of subjects, both ancient and modern, classical and oriental, but he is chiefly known in this country as a biblical critic, and a chief of what is called the rational school. His chief works are a *Universal Library of Biblical Literature.*

Eiffel (*e'fel'*)**, Gustave,** French engineer, was born at Dijon, 1832, and early gained a reputation for bridge construction; in the huge framework erected for Bartholdi's statue of Liberty may be seen the germ of the iron Eiffel tower, 984 feet high, erected in 1887-89. Died in 1923.

Einstein, Albert (1879). German of Jewish parents. Astronomer and physicist. Born in Ulm, Germany. Educated in Munich, Bavaria and Zurich, Switzerland. Professor in the Universities of Zurich and Prague, 1909-1914. Einstein built a new theory of light, gravitation, and general physics. His theory of relativity boldly challenged some of Newton's conclusions regarding gravitation, and brought the fourth dimension into physics. It has received wide acceptance from scientific thinkers of the first rank.

Eldon, John Scott, Lord, celebrated lawyer and jurist, was born at Newcastle, of humble parentage, 1751. He was noted for the shrewd equity of his judgments and his delay in delivering them. Died, 1838.

Eleanor of Aquitaine, queen of France and of England, was born about 1122, and died in 1204. She was so called because she was a daughter of the duke of Aquitaine. She first married Louis VII. of France, who divorced her in 1152, and she then married Henry II. of England. It was through her that the English kings claimed the duchy of Aquitaine.

Elgar, Sir Edward, composer, was born near Worcester, England, 1857. His father was an organist. He early learned to play several instruments, became conductor of the Worcester instrumental society and, in 1885, successor to his father as organist at St. George's church. Among his best known compositions are *The Dream of Gerontius, The Apostles,* his popular march *Pomp and Circumstance,* and a symphony produced in 1908.

Elgin (*el'gin*) **and Kincardine** (*kin-kär'din*), **James Bruce, Earl of,** was born in London, 1811, and succeeded his father, the seventh earl, who in 1812 brought from Athens the Elgin marbles, and himself was first Baron Elgin in the United Kingdom peerage. He died, 1863.

Elijah, greatest of the prophets of Israel, was born at Tishbe, in Gilead, on the borders of the desert. He comes upon the scene at the same time as Ahab, in the ninth century B. C. After the death of Ahab he rebuked the idolatries of his son Ahaziah in a solemn fashion and also denounced the evil doings of his successor. The closing scene of his life on earth is vividly narrated. A chariot of fire and horses of fire appeared after Elisha and he had crossed the Jordan, and "Elijah went up by a whirlwind into heaven."

Eliot, Charles William, educator, ex-president of Harvard University, was born in 1834, and graduated from Harvard in 1853. He taught mathematics and chemistry at Harvard, and in 1865, he was chosen professor of analytical chemistry in the Massachusetts Institute of technology. In 1869 Dr. Eliot succeeded Dr. Thomas Hill as president of Harvard College, and continued at its head until 1909. During his administration many notable changes in the government of the college occurred, its scope was broadened and there was a great increase in the number of its professors and students, while its wealth by gifts and benefactions was greatly increased, so that now it more than successfully competes with the great European universities. Eliot was given the degree of LL.D. by Williams and Princeton Colleges in 1869, by Yale in 1870 and by Johns Hopkins in 1902. He was also an officer of the legion of honor of France, and member of many scientific and literary bodies; he published *American Contributions to Civilization; Educational Reform; Charles Eliot; Landscape Architect; More Money for the Public Schools; John Gilley; The Happy Life;* and *Four American Leaders.* Died, 1926.

Eliot, George, is the *nom de plume* of Mary Ann Evans, a distinguished English novelist, born at Arbury, in Warwickshire, 1819. She began her literary career by a translation of Strauss *'Life of Jesus,* and became, in 1851, a contributor to the *Westminster Review.* During this time she formed the acquaintance of George Henry Lewes, with whom she lived as his wife, though unmarried. Her first work was *Scenes from Clerical Life,* contributed to *Blackwood's* in 1856. The stories proved a signal success, and were followed by a series of seven novels, beginning in 1858 with *Adam Bede,* which attained an immense success, and at once secured for the writer almost undisputed rank with the most eminent novelists of the day. This was followed in 1859 by *The Mill on the Floss,* and in 1861 by *Silas Marner, the Weaver of Raveloe.* In 1861 the *Scenes of Clerical Life* were republished from *Blackwood's Magazine.* In 1863 *Romola* appeared; *Felix Holt* was published in 1866, and *Middlemarch* in 1872; *Daniel Deronda* and *Impressions of Theophrastus Such* appeared later. These, with two volumes of poems, make up her works. Lewes died in 1878, and two years later George Eliot formally married an old friend, John Cross, and after a few months of wedded life died of inflammation of the heart.

Eliot, John, the "Indian apostle," was born probably at Widford, Herts, England, in 1604; graduated from Jesus College, Cambridge, in 1622, and after taking orders quitted England for conscience' sake, and landed at Boston in 1631. In England a corporation was founded in 1649 for propagating the gospel among the Indians of New England. In 1674 the number of "praying Indians" was estimated at 36,000, but the decay of the "praying towns" was rapid after King Philip's war in 1675. Eliot died at Roxbury in 1690. His greatest work was the translation of the Bible into the Indian tongue.

Eliot, Samuel Atkins, clergyman, was born at Cambridge, Mass., 1862; graduated from Harvard, 1884; D.D., Bowdoin, 1900. Entered Unitarian ministry, 1889; minister Unity Church, Denver, Colo., 1889-93, Church of the Savior, Brooklyn N. Y., 1893-8; secretary 1898-1900, president since 1900, of the American Unitarian Association.

Elizabeth, queen of England from 1558 to 1603, was born at Greenwich in 1533. She was the daughter of Henry VIII. and Anne Boleyn. She was in her twenty-fifth year when she obtained the crown. Her first act was to release the imprisoned Protestants, and to reëstablish Protestantism. Very early in her reign she was troubled by the pretensions of the friends of Mary, queen of Scots who was now the next heir to the throne. As Mary was a most zealous Catholic, the counsellors of Elizabeth were anxious that she should marry in order to secure the Protestant succession, but while she negotiated and coquetted with one person after another, she yet finally refused to marry, though it is believed that she would have accepted her favorite, the earl of Leicester, for a husband, if she had not been prevented by her other counsellors, and especially by Cecil, Lord Burleigh, the greatest of them all. Twelve years after her accession, in 1570, Elizabeth was excommunicated by Pope Pius V. Sixteen years later, in 1586, the Babington conspiracy was formed, the object of which was to reëstablish the papacy, and to set Mary, queen of Scots, on the throne of England, but which led only to the loss of her life by Mary, after she had been imprisoned in England for nineteen years. Two years after this conspiracy, in 1588, Elizabeth had to contend with a more formidable enemy in Philip II. of Spain, who avowed his resolution to annihilate Protestantism, but whose threatened invasion of the country was prevented by the defeat and destruction of the armada. But the firmness and sagacity of Elizabeth's advisers, and especially of Burleigh, protected her against these dangers; and at the close of her reign, which lasted for forty-five years, England was stronger and greater than it had ever been before. Elizabeth was great mainly through her counsellors, among whom were some of the most eminent statesmen that England has produced. She died 1603, and was buried in Westminster abbey.

Elizabeth Petrovna (*pā-trôv'nȧ*), empress of Russia, was born in 1709, and died in 1762. She was a daughter of Peter the Great, and became empress through the deposition of Ivan in 1741. During her reign, in which throughout she was guided by favorites, a war with Sweden was brought to a successful conclusion by the peace of Abo.

Elliot, Daniel Giraud, naturalist, curator of zoölogy, Field Musuem, of Natural History, was born in New York, 1835. Led expedition into interior of East Africa in interest of Field Columbian museum, 1896, and into the recesses of the Olympic mountains, 1898, being first naturalist to penetrate that little-known range. Sc.D., Columbia, 1906. Author: *Monograph of the Pittidae, or Ant-Thrushes; The Grouse,* etc. Contributor of many papers to scientific publications in America and Europe. Died, 1915.

Elliott, Maxine, actress, was born in Rockland, Me., 1873, daughter of Thomas Dermot. Made début with E. S. Willard in small parts, 1890; soon after played leading parts in Rose Coglan's company; was under Augustin Daly's management playing leading rôles two seasons; starred in *Her Own Way,* 1903-04; *Her Great Match,* 1905-06.

Ellsworth, Oliver, American statesman and jurist, was born in Windsor, Conn., 1745. He became prominent in state affairs and in the continental congress, and was a member of the federal convention of 1787, which prepared the constitution of the United States. He led the federalist party in the senate, and was an earnest advocate of Jay's treaty with England in 1794. From 1796 to 1799 he was chief-justice of the United States supreme court, and in 1800 negotiated, with Patrick Henry and Governor Davie, a treaty with France. Died, 1807.

Elman, Mischa, violinist, born Stalnoje, Russia, Jan. 30, 1891. Pupil of Auer. Début, New York, 1908.

Elphinstone (*el'fin-stun*), **Mountstuart,** English statesman and historian, was born in 1779, educated at Edinburgh and Kensington, and entered the Bengal civil service in 1795. In 1803 he served with distinction on Wellesley's staff, and was appointed resident at Nagpur. He returned to England in 1829, and, declining the governor-generalship of India, lived in comparative retirement until his death at Hookwood, in Limpsfield parish, Surrey, 1859.

Elphinstone, William, Scottish prelate and statesman, was born in 1431. He took his M.A. at Glasgow in 1452, was ordained priest. He was engaged in embassies, and for four months before the death of James III., in 1488, was chancellor. It was chiefly through his influence that the first printing press—that of Chepman and Myllar—was established in Scotland. The University of Aberdeen (King's College) was founded by him in 1500. He died at Edinburgh in 1514.

Ely, Richard Theodore, educator, author, was born in Ripley, N. Y., 1854. He was graduated from Columbia, 1876; Ph.D., Heidelberg University, 1879; LL.D., Hobart College, 1892; president, 1899-1901, American economic association. Member of Baltimore tax commission, 1885-86; Maryland tax commission, 1886-88; founder, 1904, and director of American bureau of industrial research.

Emanuel I. (*e-man'ū-el*), king of Portugal, called "the great" or "the fortunate," was born in 1469, and became king in 1495. His reign is known as the golden age of Portugal. It was he who made Portugal the first naval power of the world, as well as its great commercial center. He died at Lisbon, 1521.

Emanuel, Filibert, duke of Savoy, son of Charles III., was born in 1528; was commander-in-chief of the imperial troops in Italy against the French. de applied himself to the administrative and military organization of his country, and is considered the founder of the Sardinian monarchy. Died, 1580.

Emerson, Ralph Waldo, celebrated American poet and essayist, was born in Boston, 1803 and graduated at Harvard College, 1821. Having turned his attention to theology, he was ordained minister of the Second Unitarian Church of Boston; but soon after formed peculiar views with regard to forms of worship, abandoned his profession, and, retiring to the quiet village of Concord, devoted himself to his favorite study—the nature of man and his relation to the universe.

In 1838 Emerson published *Literary Ethics, an Oration;* and in 1839, *Nature, an Essay.* In 1841, he published *The Method of Nature, Man the Reformer,* several lectures, and the first series of his *Essays,* the second series of which appeared in 1844. In 1846 he published a volume of poems. In 1848 he traveled in England, where he delivered lectures on *The Mind and Manners of the 19th Century,* and in 1849 delivered the series entitled *Representative Men.* In 1852, in connection with Mr. W. H. Channing, he published the *Memoir of Margaret Fuller, Marchioness d' Ossoli.* Emerson, in 1856, published a work entitled *English Traits,* and in 1860 *The Conduct of Life.* He delivered at Concord an oration on the death of President Lincoln in 1865, and received the degree of LL.D. from Harvard University in 1866. He also contributed largely to periodicals. Some of his works were translated into French and excited marked admiration among the Parisian transcendentalists. He is by common consent one of the most eminent modern philosophers of the Pantheistic school and one of the most remarkable personifications of American literary genius. He died 1882.

References.—Cabot's *Memoir; Emerson at Home and Abroad,* by Moncure D. Conway; *Ralph Waldo Emerson Biographical Sketch,* by A. Ireland; *Emerson,* by O. W. Holmes; *Emerson in Concord,* by E. W. Emerson, his son; and *Emerson,* by Richard Garnett. See also Stedman's *Poets of America;* Arnold's *Discourses in America* and Richardson's *American Literature.*

Emerton, Ephraim, educator, historian, professor of ecclesiastical history, Harvard 1882-1918, was born in Salem, Mass., 1851. He was graduated from Harvard in 1871; Ph.D., Leipzig, 1876. Member of Massachusetts historical society, American Academy of arts and sciences. Author: *Introduction to the Study of the Middle Ages; Synopsis of the History of Continental Europe; Mediaeval Europe,* 814-1300.

Emin Pasha (*ā'mēn pȧ-shȧ'*), or **Bey,** proper name Edward Schnitzer, was born at Oppeln, Silesia, in 1840. He studied medicine and in 1864 went to Turkey, where he became a well-known physician. In 1876 he joined the Egyptian service and proceeded as chief physician to the equatorial province, of which he was made governor in 1878 by "Chinese" Gordon. Here on the sudden uprising of the Madhi, his rescue reached him in May, 1888. He was killed, however, in 1892 by Arabs near Nyangwe.

Emmett, Robert, Irish enthusiast and revolutionist, was born at Dublin in 1778, the son of a Dublin doctor. He was expelled from Dublin University in 1798. His impulsive patriotism in 1803 led him to make an unsuccessful attack on Dublin castle, but he escaped into Wicklow. He was subsequently captured and was executed on Sept. 20, 1803.

Encke (*eng'kē*), **Johann Franz,** German astronomer, was born at Hamburg in 1791. In 1825, chiefly at the instigation of Bessel, he was called to Berlin as director of the observatory. In 1819 he showed that the comet discovered by Pons in 1818 revolved round the sun in the remarkably short time of 3.3 years. He was an indefatigable computer and did great service by developing and putting into convenient shape for use the new method of least squares discovered by Gauss. Died, 1865.

Endicott (*en'di-kot*), or **Endecott, John,** Puritan governor of Massachusetts, was born at Dorchester, England, about 1588. He landed as manager of a plantation near Salem in 1628; headed a sanguinary expedition against the Indians in 1636; was deputy-governor in 1641-44, 1650, and 1654, and governor six times from 1644 to 1665. He died at Boston, 1665.

Endlicher (*ent'liĸ-ĕr*), **Stephan Ladislaus,** Hungarian botanist and linguist, was born in Presburg in 1804. In 1836 he was appointed keeper of the court cabinet of natural history, Vienna, and in 1840 professor of botany and director of the botanic garden of the University. He was a chief founder of the Vienna Academy and of the *Annalen des Wiener Museums.* Died, 1849.

Ennius (*en'i-us*), **Quintus,** Roman poet, the father of Roman literature, was born in 239 B. C. Cato "the elder" took him to Rome, where he taught Greek and Latin, and gained the friendship of the noblest Romans of his day. He died in Rome, 169 B. C.

Eotvos (*ût'vûsh*), **Jozsef,** distinguished Hungarian author, was born at Buda, 1813. In 1867 he was appointed minister of religion and education and in that capacity engaged actively in the work of reform. Died at Pesth, 1871.

Epaminondas (*ē-pam'i-non'das*), greatest of Theban generals and statesmen, was born about 418 B. C. and led a retired life until his fortieth year. After the stratagem by which his fellow citizens expelled the Spartans in 379, B. C. he joined the patriots; and, when sent to Sparta in 371 B. C. to negotiate peace, displayed as much firmness as eloquence. In 368 B. C. war was renewed, and Epaminondas made a somewhat unsuccessful invasion into the Peloponnesus. To atone for this he advanced with 33,000 men into Arcadia and near Mantinea broke the Spartan phalanx, but was mortally wounded. Died, 362 B. C.

Epee, de l' (*dē lā'pā'*), **Charles Michel Abbe,** one of the founders of the system of instruction for the deaf and dumb, was born at Versailles, France, 1712. At his own expense he founded an institution for the deaf and dumb and labored with unwearied zeal for its prosperity. Died, 1789.

Epictetus (*ep'ik-tē'tus*), celebrated stoic philosopher, who flourished in the first century, was born at Hierapolis, in Phrygia. Having obtained his freedom, he retired to a hut and gave himself up wholly to the study of philosophy. Being banished from Rome, with the other philosophers, by Domitiank he settled at Nicopolis, in Epirus.

Epicurus (*ep'i-kū'rus*), Greek philosopher, was born about 342 B. C. He taught at Colophon, Mitylene, and Lampsacus. He returned to Athens about 306, B.C. and remained there until his death. He was founder of the Epicurean school, who hold that the *summum bonum* consists in pleasure—chiefly mental pleasure. Died, 270 B. C.

Epinay, d' (*dā' pē'ne'*), **Madame,** French writer, was born about 1725. In 1745 she formed a close intimacy with Rousseau. An unfortunate jealousy, however, which Rousseau conceived for Grimm, another friend of Madame d'Epinay, was followed by an open rupture with his benefactress. Died, 1783.

Erasistratus (*er-a-sis'tra-tus*), one of the most famous physicians and anatomists of ancient times, flourished in the third century B. C. He founded a school of medicine, wrote several works on anatomy, practical medicine and pharmacy.

Erasmus (*ē-raz'mus*), **Desiderius,** one of the greatest scholars of the renaissance, was born in Rotterdam about 1467; on his parents' death he entered a monastery, which he left to become a teacher at Paris, and at the invitation of his pupil, Lord Mountjoy, came to England. He settled at Oxford. In 1506 he visited Italy, staying at Bologna and Rome, where he was warmly received, but returned to England, and was made Margaret professor of divinity and professor of Greek at Cambridge. He returned to the continent, and after a journey to the low countries, settled at Basel, where he published his edition of the new testament. Erasmus was in favor of moderate reform in the church. Died, 1536.

Eratosthenes (*er'à-tos'thē-nēz*), eminent Greek writer, called the philologist, was born at Cyrene about 276 B. C. By Ptolemy Euergetes he was called to Alexandria to superintend his great library. Here he died of voluntary starvation, at the age of eighty. As an astronomer he holds an eminent rank among ancient astronomers. A letter to Ptolemy, king of Egypt, on the duplication of the cube, is the only complete writing of his that we possess.

Erckmann-Chatrian (*erk'män-shà'trē'äN'*) (Emile Erckmann and Alexandre Chatrian), two French men of letters, the first of whom was born at Phalsbourg, 1822; the second in the village of Soldatenthal, 1826. The two friends employed their pens in the same works, which they signed with the two names united in one; and it was only about 1863 that the authors informed their readers that the numerous works of fiction, which had obtained a widespread popularity and were supposed by the general public to be the work of a single writer, were the fruits of their friendly collaboration. Erckmann died in 1899; Chatrian 1890.

Eric (*er'ik*) **The Red,** Norwegian navigator, was born about 950. In 982 he located on the island of Iceland, and in 983 sailed from Bredifiord to reach some western shore said to have been visited by one of his countrymen in former times. Some of the ships were lost in a storm and others were driven home; but he succeeded in reaching the Greenland coast. About twelve years later his son Lief is said to have discovered the continent of North America.

Ericsson (*er'iĸ-sun*), **John,** Swedish-American engineer, was born in Lanzbanshyttan, Sweden, 1803. At the age of twelve he became cadet of engineers, and at seventeen entered the Swedish army. He produced in succession an instrument for sea-sounding, a hydrostatic weighing machine and a tubular steam boiler, besides other important devices. In 1853 the ship *Ericsson,* of 2,000 tons, was propelled by his motor. In 1839 he came to the United States, where, in 1841, he designed for the government the screw-propelled war ship *Princeton.* In 1861 he built for the United States government, in 100 days, the iron-clad *Monitor,* which, on March 9, 1862, in Hampton roads, defeated the confederate iron-clad ram *Merrimac.* Died, 1889.

Erigena (*ē-rij'ē-nà*), **Joannes Scotus,** famous philosopher and scholar of the middle ages, was born probably in Ireland during the ninth century, and died about 897. In the controversies of his time regarding predestination and transubstantiation he took part. His philosophic opinions were those of a neo-Platonist rather than a scholastic. His chief work was *De Virisione Naturae.*

Ernesti (*er-nes'tē*), **Johann August,** German biblical critic, was born at Tennstedt in Thüringia, 1707. He became professor of ancient literature at Leipzig in 1742, of rhetoric in 1756 and of theology in 1759. Ernesti was the chief founder of a correct exegesis of scripture by the laws of grammar and history. In his *Anti-Muratorius* he argues that a thorough investigation of the history of doctrines is the best polemic against Roman Catholicism. Died, 1781.

Erskine (*ûr'skin*), **Ebenezer,** founder of the secession church in Scotland, was born at Chirnside, Berwickshire, 1680. The popular preacher of Portmoak in Kinross-shire from 1703 on the rise of the Marrow controversy he took a prominent part on the evangelical side. He died in 1754.

Erskine, Thomas Lord, British jurist and orator, was born in Edinburgh, 1750. He purchased a commission in the first royals, and was stationed at Minorca, where he employed his leisure time in the study of English literature. An accidental interview which he had with Lord Mansfield influenced him to prosecute the study of law. He was admitted a student of Lincoln's Inn, 1775. After his first speech the attorneys actually flocked round him with their retainers. In 1786 he was made attorney-general to the prince of Wales. He was regarded as the defender of popular liberties and constitutional rights. Died, 1823.

Espartero (*es'pär-tà'rō*), **Baldomero,** Spanish general and statesman, was born at Granatula, Spain, 1792. He was destined for the priesthood, but in 1808, on the French invasion of Spain, joined a volunteer battalion. As captain-general of the Basque provinces, in 1836, he twice defeated the Carlists and drove Don Carlos into France; for this he was created duke of Vittoria; in 1856 he was supplanted by O'Donnell. Died, 1879.

Espy (*es'pi*), **James Pollard,** meteorologist, was born in Pennsylvania in 1785. His *Philosophy of Storms,* published in 1841, was commended by the Academie des Sciences. Appointed in 1842 to the Washington observatory, Espy laid the basis of the weather bureau. He died in 1860.

Esquirol (*es'kwē'rōl'*), **Jean Etienne Dominique,** French physician, was born at Toulouse, 1772. He served in the military lazaretto at Narbonne, 1794, and was appointed physician to the Salpetriere at Paris, 1811. In 1825 he became first physician to the *Maison des Alienes,* while managing his private asylum at Charenton. Died, 1840.

Essex (*es'eks*), **Robert Devereux, Earl of,** was born in 1567. His first service was in the Netherlands. At court he became a favorite of Queen Elizabeth, and was put in command of the forces sent to help Henry IV. against the league in 1591. To him was largely due the capture of Cadiz in 1596. After failing as lord-lieutenant of Ireland, he formed a wild scheme to get rid of Elizabeth's councilors, who were opposed to him. He entered London at the head of 300 men, expecting the people to rise in his favor, but was disappointed and forced to surrender. He was tried for treason, condemned, and beheaded in 1601.

Estaing (*es'taN'*), **Charles Hector, Count d',** French admiral, was born in 1729. After serving in the army in India, under the Marquis de Bussy, he entered the navy and led an expedition to Sumatra, capturing several English forts. He was then placed in command of a squadron sent to aid the United States against England. He was guillotined in 1794 during the revolution.

Esterhazy (*es'tĕr-hà'zē*), **Nicholas de,** Hungarian patron of arts and sciences, was born in 1765. He founded the splendid collection of pictures at Vienna. When Napoleon, in 1809, entertained the notion of weakening Austria by the separation of Hungary, he made overtures to Prince Esterhazy respecting the crown of Hungary, which, however, were declined. Haydn composed most of his works at the court of Prince Nicholas. Died, 1833.

Esterhazy, Prince Paul Anton, Austrian diplomat, was born in 1786. After the peace of Vienna he went as ambassador to the court of Westphalia. In March, 1848, he became minister of foreign affairs; but when the struggle between Austria and Hungary broke out he exhibited more prudence than heroism by retiring from public life altogether. He died in 1866.

Esther, the Persian name of Hadassah, daughter of Abihail, a Benjamite. She was an orphan, and brought up by her cousin Mordecai, an officer in the household of the Persian monarch, Ahasuerus. When the misconduct of Vashti had cost her her "royal estate," all "the fair virgins" of the kingdom were gathered together, that Ahasuerus might choose a successor. He selected Hadassah, who received the name of Esther on account of her loveliness.

Ethelbert (*eth'el-bĕrt*), first Christian king of Kent, England, was born about 552. He was converted by his wife, Bertha, of France, and by St. Augustine. He gave the English the first written code of laws. Reigned from 560 to 616.

Eucken (*oik'en*), **Rudolph Christoph,** German philosopher, was born at Aurich, Prussia, in 1846. He was educated at the University of Gottingen and at Berlin; Ph.D., Gottingen; D.D., Giessen, 1903; Glasgow, 1910. He was professor of Basel, Switzerland, 1871-4, and at the University at Jena. In 1908 he received the Nobel Prize for literature. His best known works in English translations are *Life's Basis and Ideal,* and *The Truth of Religion.* Exchange professor at Harvard University, 1912-13.

Euclid (*u'klid*), eminent geometrician, is said by Pappus and Proclus to have been a native of Alexandria, in which city he taught mathematics, during the reign of Ptolemy Lagus, about 300 B C. His most famous work is the *Elements of Geometry,* in thirteen books, six of which are still in use.

Eugene, Francois, usually called Prince Eugene of Savoy, celebrated Austrian general, was born in Paris, 1663. He was a son of Eugene Maurice, count of Soissons, but his application for a commission in the army of France having been refused, in consequence of a difference between Louis XIV. and Eugene's mother, he left France for Vienna, and offered his services to the emperor of Austria, in whose court and army he spent the whole of his remaining life. Died in Vienna, 1736.

Eugenie-Marie de Montijo (*ū'zhā'nē mà'rē' de mōn-tē'hō*), ex-empress of the French, was born in Spain, 1826. Her mother, the Comtesse Teba, took her to Paris, where she attracted great attention at the balls given at the Tuileries by Louis Napoleon, who proposed to the charming young Spaniard, whom he married in 1853. She forced on the war with Germany, which she spoke of as "my war," and in many ways her influence was bad for France. She was appointed regent when Napoleon III. went to fight the Germans, and was in Paris when the revolution broke out after Sedan. In 1870 she escaped from the Tuileries and sought refuge in England. Died, 1920.

Euler (*oi'lĕr*), **Leonard,** distinguished mathematician, was born at Basel, Switzerland, 1707, and at the time of his death in 1783 was director of the mathematical department of the Academy of St. Petersburg, having been previously professor of mathematics in the Academy of Sciences in Berlin.

Euripides (*ū-rip'i-dēz*), the latest of the three Greek tragedians, was born at Salamis, 480 B. C., on the very day of the great victory gained by the Greeks over the Persians. In 441 B. C. he gained the first prize for tragedy, and continued to write for the Athenian stage until 408 B. C., when he accepted an invitation to the court of Archelaus, king of Macedonia. Among his works are the *Alcestis, Hecuba* and *Medea.*

Eusebius (*ū-sē'bi-us*) **of Caesarea,** father of ecclesiastical history, was born in Palestine about 264 and died about 340. In 313 he succeeded Agapius as bishop of Cæsarea and took a prominent part in the council of Nice.

Eustachio (*ā'ōōs-tā'kyō*), or **Eustachius, Bartolommeo,** Italian anatomist, was born in 1510. He was professor of medicine at the Collegio della Sapienza at Rome. Died, 1574.

Evans, Mary Ann or **Marian.** See **Eliot, George.**

Evans, Robley Dunglison, American admiral, was born in Floyd county, Va., 1846. He was appointed to the United States navy for Utah, and graduated from the United States naval academy in 1863; rear-admiral 1901. In war with Spain, commander of *Iowa* in Sampson's fleet off Santiago, taking active part in battle with Cervera's fleet, July 3, 1898; was president of board of inspection and survey; commander-in-chief at Asiatic station, October, 1902, and in command of the Asiatic expedition, 1908. Died, 1912.

Evarts, William Maxwell, American lawyer and statesman, was born at Boston, Mass., 1818, and died at New York City, 1901. He graduated at Yale, and was admitted to the New York bar in 1841, where he built up a notable practice.

He was United States counsel before the Alabama tribunal in 1872, and senior counsel for Henry Ward Beecher in 1875. In 1877-81 he was secretary of state, and United States senator from New York for the term 1885-91.

Evelyn, John, English author, was born at Wotton, in Surrey, 1620. He took part in political affairs during the reigns of Charles I., Charles II., and James II. He is now chiefly remembered for his *Diary*, which he kept during the greater part of his life, and which forms one of the most valuable collections of historical materials for the latter half of the seventeenth century. Died, 1706.

Everett, Charles Carroll, Unitarian theologian, was born at Brunswick, Me., 1829. He graduated at Bowdoin College, 1850, and continued his studies at the University of Berlin; dean of the Harvard Divinity School after 1878. Died, 1900.

Everett, Edward, American author, orator and statesman, was born at Dorchester, Mass., 1794. He was graduated from Harvard, 1811. He became professor of Greek at Harvard in 1815; became editor of the *North American Review*, and was a member of congress from 1824 to 1834; governor of Massachusetts from 1835 to 1839; and from 1840 to 1845, minister-plenipotentiary to England. He became secretary of state in 1852, and was elected to the United States senate in 1853. He was made D.C.L. by Oxford, and LL.D., by Cambridge and Dublin universities. Died, 1865.

Ewald (*ā'vält*), **Georg Heinrich August von,** German orientalist and theologian, was born at Göttingen, 1803. He was dismissed with six others in 1837 for remonstrating against the unconstitutional proceedings of the king of Hanover and was professor at Tübingen from 1838 to 1848, when he was reinstated at Göttingen. Died, 1875.

Ewell (*ū'el*), **Richard Stoddard,** American soldier, was born in the District of Columbia in 1817. He graduated at West Point in 1840, and served in the Mexican war. In April, 1865, he surrendered to General Sheridan at Sailor's Creek, Va. Died, 1872.

Ewing (*ū'ing*), **Thomas,** American politician, was born in Ohio county, Va., 1789. He was admitted to the Ohio bar in 1816, and from 1831 to 1837 was United States senator from Ohio; in March, 1849, became the first secretary of the interior, which office he held until September 12, 1850. Died, 1871.

Eyck (*ik*), **Hubert,** and **Jan van,** two illustrious painters of the old Flemish school. Their birthplace was Maas-Eyck, and they chiefly resided at Bruges and Ghent, and became the founders of the Flemish school of painting. Hubert died in 1426, and Jan in 1440.

Ezekiel, one of the four great Hebrew prophets, was the son of Buzi, and one of the sacerdotal race. He was carried to Babylon as a captive by Nebuchadnezzar, 598 B. C. Favored by the Lord with the gift of prophecy, he soothed, comforted and admonished his countrymen, until at length he was stoned to death by order of the Babylonian authorities.

Ezekiel, Moses, American sculptor, was born at Richmond, Va., 1844; visited Berlin, Germany, 1869, where he studied at Royal academy of art; admitted into Society of Artists, Berlin. He executed the marble group representing religious liberty for the Centennial exhibition, now in Fairmount park, Philadelphia; monument to Jessie Seligmann for orphan asylum, New York. After 1886 his work became chiefly ideal. Died, 1917.

Ezra, the scribe, was living in Babylon during the reign of Artaxerxes Longimanus, who commissioned him to lead a band of his fellow countrymen from Babylon to Jerusalem in 458 B. C., there to reörganize the returned Jews. The book which bears his name was anciently and justly regarded as forming one book with *Nehemiah*; and in their present shape *Ezra* and *Nehemiah* are simply the continuation of *Chronicles*.

Faber (*fā'bẽr*), **Frederick William,** English hymn writer, was born at Calverley in Yorkshire, 1814; graduated from Balliol College, Oxford, and in 1834 was elected a scholar of University College, in 1837 a fellow. He founded a community of converts at Birmingham—"the Wilfridians"—he himself being Brother Wilfrid, from his *Life of St. Wilfrid*. He died in 1863. Faber wrote many theological works; but his fame will rest upon his hymns *The Pilgrims of the Night*; *The Land Beyond the Sea*, etc.

Fabius (*fā'bi-us*), **Maximus Quintus,** Roman general, was born about 275 B. C. He was surnamed Cunctator because, in 217 having been appointed dictator for the second time and intrusted with the defense of Italy against the victorious Hannibal, he pursued a course of cautious and patient generalship, never risking a general engagement with his opponent, but cutting off his supplies, and gradually wearing him out, and meeting with signal success. Died 203 B. C.

Fabricius (*fā-brish'i-us*), or **Fabrizio** (*fā-brēt'syō*) **Girolamo,** celebrated anatomist and surgeon, was born in 1537, and died in 1619. He graduated from the University of Padua, where, in addition to the usual instruction in the classics, he studied anatomy and surgery under the celebrated Fallopius. On the death of the latter in 1562, Fabricius was appointed to fill the vacant professorship. His chief work was his *Opera Chirurgica*.

Faed (*fād*), **John,** Scottish painter, was born in 1819. In 1841 he settled in Edinburgh, where his talents won him a high reputation. Died, 1902.

Faed, Thomas, brother of the preceding, and also an artist, was born in 1826. In 1849 he executed a work, entitled *Scott and His Friends at Abbotsford*. He was made an R.A. in 1864. Died, 1900.

Fahrenheit (*fä'ren-hīt*), **Gabriel Daniel,** physicist improver of the thermometer, was born at Dantzic, Germany, 1686. In 1720 he first conceived the idea of using quicksilver instead of spirits of wine in the construction of thermometers, by means of which the accuracy of the instrument was very much improved. Died, 1736.

Faidherbe (*fe-derb'*), **Louis Leon Cesar,** French general, was born at Lille, France, 1818, and entered the French army in 1842. His earliest service was in Algeria. During the Franco-Prussian war he was in command of the army of the North and fought several battles. He was the author of a number of works on military and archæological subjects. Died, 1889.

Fairbairn (*fär'bärn*), **Andrew Martin,** Scottish theologian and principal of Mansfield College, Oxford, was born near Edinburgh, Scotland, 1838. In 1886 he was elected principal, on its foundation, of Mansfield College, Oxford, where his labors as a metaphysician and theologian have made him famous. His books embrace: *Studies in the Philosophy of Religion and History*; *Studies in the Life of Christ*; *The City of God*.

Fairbairn, Sir William, Scottish engineer, was born at Kelso, Scotland, 1789. He was the first to use iron instead of wood in the shafting of cotton mills. Fairbairn built the tubular bridge across the Menai strait and more than a thousand other bridges. He also devised improvements for steam boilers and other steam machinery. In 1869 he was made a baronet. He died at Moor Park, Surrey, England, 1874.

Fairbanks, Arthur, educator, author, was born in Hanover, N. H., 1864; graduated from Dartmouth College, 1886; Yale Divinity School, 1887-88; professor of Greek and Greek archæology, University of Michigan, 1906-07; director of Boston museum of fine arts. Editor of *The Classical Journal*, 1905-1907.

Fairbanks, Charles Warren, lawyer, was born on a farm near Unionville Center, Union county, Ohio, 1852; graduated from Ohio Wesleyan University, 1872; admitted to Ohio bar, 1874, and established practice at Indianapolis. Elected United States senator from Indiana, 1897, and reëlected in 1903, vice-president of the Uni ed States, 1904-08. Died, 1918.

Fairbanks, Douglas (1883—), studied at Colorado School of Mines, but turned to motion picture drama, appearing with great success in *He Comes Up Smiling*, *Frenzied Finance*, *All For a Girl*, *Reaching for the Moon*, *His Majesty*, *The American*. His smile, his personality and his acrobatic feats make him one of the most popular movie actors. Address: Hollywood, Calif.

Falconio (*fäl-kō'ni-ō*), **Diomede,** R. C. cardinal and former apostolic delegate to the United States, was born in Pesocostanzo, in the Abruzzi, Italy. He entered the Franciscan order, 1860; became citizen of United States, 1868; returned to Italy, 1883, and elected provincial of Franciscans in the Abruzzi; procurator-general Franciscan order and visitor-general in various provinces of the order, 1889-92. Consecrated, 1892, bishop of Lacedonia, and was raised in 1895 to be archbishop of Acerenza and Matera; apostolic delegate to United States, 1902-11; cardinal, 1911. Died, 1917.

Falkenhayn, Eric von, German general, born at Burg Belchau, 1853. Entered army in his youth; became lieutenant general in 1906; retired, 1910; recalled to actual service, 1914; succeeded Moltke as chief of general staff, 1914; supplanted by von Hindenburg, 1916.

Fall, Albert Bacon, born Frankfort, Ky., 1861. School teacher, lawyer, farmer, ranchman, and miner. U. S. Senator from New Mexico, 1912-1921. Secretary of Interior in Harding Cabinet. Leader of U. S. Senate in Mexican affairs.

Fallieres (*fäl'yâr'*), **Clement Armand,** French statesman, president of the French republic 1906-1913, was born near Agen, South France, 1841. Settled at Nérac as a barrister, and became mayor; has been minister of the interior, of justice, and of education, and prime minister, and was eight times reëlected president of the senate. He was elected president of France in 1906, in succession to M. Loubet. He is a lover of books and has written verse both in French and in the Languedocien dialect.

Faneuil (*fan"l* or *fan'yel*), **Peter,** founder of Faneuil hall, Boston, Mass., was born in New Rochelle, N. Y., 1700. He was a rich merchant in Boston, and gave to the city a building for a market and town-hall. So many important patriotic meetings were held in Faneuil hall during the revolution that it has been called the "cradle of American liberty." Died, 1743.

Faraday (*far'a-dā*), **Michael,** distinguished English chemist and natural philosopher, was born in 1791 near London; in 1833 became professor of chemistry in the Royal Institution, London, where his lectures attracted the admiration of both Europe and America. Besides two sets on chemical subjects, we have his *Lectures on the Physical Forces*. But the great work of his life is the series of *Experimental Researches in Electricity*, published in the *Philosophical Transactions*. Died, 1867.

Farel (*fä'rel'*), **Guillaume,** Swiss reformer, was born in Dauphiné, in 1489, and studied at Paris. A convert to Protestantism, he, in 1524, put forth at Basel many Protestant theses. In 1557, together with Beza, Farel was sent to the Protestant princes of Germany to implore their aid for the Waldenses. In 1560 he was in Dauphiné preaching against Catholicism; and in 1561 was thrown into prison. He died at Neuchatel, 1565.

Farley, John Murphy, R. C. cardinal, was born in County Armagh, Ireland, 1842; was educated at St. John's College, Fordham, and St. Joseph's Seminary, Troy, N. Y., and at the American College, Rome; ordained priest at Rome, 1870. He was assistant rector of St. Peter's, New Brighton, Staten Island, 1870-2; secretary to Archbishop McCloskey, 1872-84; private chamberlain to Pope Leo XIII., 1884; domestic prelate of Pope Leo XIII., 1892; prothonotary apostolic, 1895; auxiliary bishop of New York, 1895; on death of Archbishop Corrigan, May 5, 1902, was appointed administrator of New York; fourth Archbishop of New York, 1902-1911. He was raised to the cardinalate, 1911. Died, 1918.

Farlow, Alfred, writer, was born at Orange, Ill., and graduated from the Mass. Metaphysical College, 1888; Christian Science teacher and lecturer, since 1888; located Christian Science Institution at Topeka, 1889, removed to Kansas City, 1894; pastor and reader Christian Science Church; member committee on publication Christian Science Church, Boston. Contributor to newspapers and magazines on Christian Science subjects.

Farnese (*fär-nā'sā*), **Alessandro.** See **Paul III., Pope.**

Farnum, William, actor, was born in Boston in the late seventies. Made his début at Richmond, Va., in *Julius Caesar*. In 1907 he starred in *Ben Hur* and *The Prince of India*, and appeared with his brother Dustin in *The Littlest Rebel* in 1911.

Farragut (*far'a-gut*), **David Glasgoe,** American admiral, was born near Knoxville Tenn., 1801. At the age of twenty-five he was made lieutenant and appointed to the Norfolk navy-yard. In 1862 he was appointed to the command of a naval expedition to act against the confederates in the gulf of Mexico. On April 24th, after a heavy cannonade, his squadron passed the forts at the mouth of the Mississippi, and on the 28th he received the surrender of New Orleans. Ascending the Mississippi he took Natchez. Raised to the rank of vice-admiral in March, 1863, he once more passed up the Mississippi, successfully ran past the confederate batteries of Fort Hudson, and aided General Grant in the combined attack on Vicksburg, which resulted in its capitulation, July 4th. In August, 1864, after a furious engagement between his fleet and the confederate forts and vessels at Mobile, in which the monitor *Tecumseh* was sunk by a torpedo, with the loss of all on board, he succeeded in capturing the forts, which led to the fall of the city. In 1866 he attained the rank of admiral. He died in 1870.

Farrar (*far'ar*), **Frederick William,** English clergyman and author, was born in Bombay, India, 1831; educated at London and Cambridge. In 1876 he became canon of Westminster, in 1883 archdeacon, and in 1895 dean of Canterbury. He ranks among the most eloquent of English pulpit orators, and published many works on educational, theological, and other subjects. Chief of these are: *Seekers After God*; *Witness of History to Christ*; *The Silence and Voices of God*; and the *Life of Christ*. Died, 1903.

Farrar, Geraldine, grand opera singer, was born at Melrose, Mass., 1882, daughter of Sydney and Henrietta (Barnes) Farrar; graduated at Melrose, Mass., public school, and received her musical education at Paris and Berlin. Made début, Royal opera house, Berlin; member Berlin Royal Opera since 1901; with Metropolitan opera 1906-1922, and has appeared frequently both in Europe and United States in concert.

Faunce (*fons*), **William Herbert Perry,** educator, president of Brown University, was born at Worcester, Mass., 1859. He was graduated from Brown University, 1880; pastor of Fifth Avenue Baptist church, New York city, 1889-99; lecturer in University of Chicago, 1896-97; Lyman Beecher lecturer, Yale University, 1907-08.

Faure (*fōr*), **Francois Felix,** former president of France, was born in Paris, 1841. He served as a volunteer in the Franco-German war, in 1881 became deputy for Havre, and after holding posts in several administrations, in January, 1895, succeeded Casimi~-Perier as president. He died of apoplexy in 1899.

Favart (*fa-vär'*), **Charles Simon,** French dramatist, was born at Paris, 1710. After spending some time in Flanders in the army under Marshal Saxe, Favart returned to Paris and continued to write operas. His most celebrated pieces are *Le Coq du Village*; *Bastien et Bastienne*; *Ninette à la Cour*. Died, 1792.

Favre (*fä-vr'*), **Jules Claude Gabriel,** French statesman and orator, was born at Lyons, 1809, studied for the bar, and was engaged in the July revolution of 1830; he became one of the leaders of the republicans against Napoleon III. In September, 1870, after the fall of the empire, he was appointed minister of foreign affairs, and in 1871 settled the terms for the capitulation of the capital. He resigned office in July, 1871, resumed practice at the bar, and died in 1880.

Fawcett, Henry, English statesman, born at Salisbury, 1833. Graduated from Cambridge, 1856, and elected to the chair of political economy at this school in 1863, a post which he held until his death. Totally blinded while hunting in 1858. He was elected to Parliament in 1865 and again in 1868. He strongly opposed Gladstone's Irish University Bill in 1873. Gladstone offered him the postmaster-generalship, which he accepted. Here he instituted several reforms. He died in 1884.

Fawcett, Millicent Garrett, wife of the preceding from 1867, was born at Aldeburgh, Suffolk, 1847. She has taken a keen interest in the higher education of women and the extension of the franchise to women, and received the degree of LL.D. from St. Andrews University. Died, 1929.

Fechner (*fek'nĕr*), **Gustav Theodor,** physicist and psychophysicist, was born at Gross-Sarchen, in lower Lusatia, 1801; devoted himself to psychology; laid the foundations of the science of psychophysics in his *Elements of Psychophysics*. Died, 1887.

Felix (*fē'liks*), **Antonius,** or **Claudius,** Roman governor of Judea at the time of the apostle Paul. He was an energetic ruler, clearing the country of the robber bands that abounded and holding the seditious Jews in check.

Fenelon (*fā'ne'lôn'*), **Francois de Salignac de La Mothe,** eminent French preacher and author, archbishop of Cambray from 1695 to the time of his death, was born 1651, and died at Cambray, 1715. Before his elevation to the archbishopric, he was tutor to the grandsons of Louis XIV., for whom he composed several works, among them his best-known work, *Telemachus*.

Fenn, William Wallace, theologian, Bussey professor of theology at Harvard University, was born in Boston, Mass., 1862; graduated from Harvard, 1884; A.M., 1887; Harvard D.D., 1908. Entered the Unitarian ministry, 1887; Shaw lecturer biblical literature, Meadville theological school, 1892-1901, 1905-07; preacher to Harvard, 1896-98, 1902-05; dean of Harvard divinity school.

Ferber, Edna, American short story writer, was born at Kalamazoo, Mich., 1887. She began writing as reporter for various newspapers, including the Chicago *Tribune*, but later devoted herself to short stories which have appeared in foremost magazines. Her stories include: *Buttered Side Down*, *Roast Beef Medium*, *So Big*, and the famous *McChesney* stories.

Ferdinand I., emperor of Germany, son of Philip I. of Spain and younger brother of Charles V. of Germany, was born in 1503. In 1531 Ferdinand was elected king of the Romans, and in 1556 he succeeded Charles V. as emperor. He was tolerant to the Protestants, whom he tried to reconcile with Rome. Died, 1564.

Ferdinand I., the Great, king of Castile and Leon, was the second son of Sancho III., king of Navarre and Castile, and succeeded to the latter kingdom in 1035. He was one of the most powerful monarchs of his age. In 1056 he assumed the title of emperor of Spain. Died, 1065.

Ferdinand II., emperor of Germany and king of Hungary and Bohemia, was born in 1578. After the overthrow of Frederick in 1620, Ferdinand abolished the charter of Bohemia, oppressed the Protestants, and prosecuted the war under Tilly, Wallenstein and others. Died, 1637.

Ferdinand II., king of the Two Sicilies, grandson of the preceding, was born in 1810. He succeeded his father Francis I. in 1830, and at first introduced reforms and liberal measures, but soon adopted the principles of absolutism. His harsh treatment of political prisoners led in 1857 to a diplomatic rupture with Sardinia, France, and England. Died, 1859.

Ferdinand IV., king of Naples and afterward king of the Two Sicilies as Ferdinand I., was born in 1751. In 1812 he granted his Sicilian subjects a constitution, in 1815 was restored to his former throne, and in 1816 united Sicily and Naples into a single state. His despotism provoked the revolution of 1820, which was suppressed by Austrian intervention. Died, 1825.

Ferdinand V. of Castile, III. of Naples, and II. of Aragon and Sicily, surnamed the Catholic, son of John II., was born in 1452, and succeeded his father on the throne of Aragon and Sicily in 1466. In 1469 he was married to Isabella, sister of Henry IV. of Castile, and in 1479 became, through her, king of Castile. Ferdinand died in 1516, Isabella having died twelve years before him.

Ferguson (*fer'gu-sun*), **John,** senior physician, Toronto Western hospital, editor of *The Canada Lancet*, was born at Glasgow, Scotland, 1854. He was graduated from the University of Toronto, and later studied at Edinburgh and London; Besides editing *The Canada Lancet*, he has published numerous articles and addresses.

Fergusson, James, Scottish historian of architecture, was born at Ayr, Scotland, 1808. After ten years as an indigo planter in Bengal, he explored nearly every corner of India, studying the rock-temples, which were illustrated in his earliest works. His *History of Architecture* appeared first as a handbook in 1855. He died in 1886.

Ferrari (*fer-rä'rē*), **Giuseppe,** Italian philosopher, was born in Milan, 1812; studied law at Pavia, but afterward devoted himself to literature. He died at Rome in 1876.

Ferreira (*fer-re'ē-rä*), **Antonio,** Portuguese poet, was born at Lisbon in 1528. He is considered the reformer of the national poetry of Portugal, and as the Portuguese Horace. He obtained an important situation at court, and his *Inez de Castro* gave him great celebrity. He died in 1569.

Ferrero (*fer-rā'rō*), **Guglielmo,** Italian historian, was born in 1872. He lectured at Milan on militarism, and in the Collège de France, Paris, on Roman history, and while there received the cross of the legion of honor. Author: *Symbols*, *The Greatness and Decline of Rome*.

Ferry, Jules Francois Camille, distinguished French statesman, was born at Saint Dié, in the Vosges, 1832. Admitted to the Paris bar in 1854, he speedily plunged into the politics of the time, and offered uncompromising opposition to the party of Louis Napoleon; as prime minister in 1880 and again in 1883-85 he inaugurated a spirited colonial policy, which involved France in war in Madagascar, and brought about his own downfall. He was elected to the senate in 1890, and became its president one month before his death. Died, 1893.

Fesch (*fesh*), **Joseph,** cardinal archbishop of Lyons, was born in Ajaccio, 1763. He took holy orders, but became commissary to the revolutionary army of the Alps in Italy. In 1804 he was French ambassador to Rome, and two years later he was appointed successor of Dalberg, prince primate of the confederation of the Rhine. At the approach of the Austrians in 1814, he fled to Rome, where he died in 1839.

Fessenden (*fes'en-den*), **William Pitt,** American statesman, was born in New Hampshire in 1806. He graduated at Bowdoin College in 1823, and was admitted to the bar in 1827. United States senator, 1854-64; secretary of the treasury, 1864-65; and again United States senator, 1865-69. He ranked among the first lawyers of his time, and made a notable reputation before the United States supreme court. Died, 1869.

Fetter, Frank Albert, educator, economist, was born in Peru, Ind., 1863; graduated at Indiana University, 1891; Ph.M., Cornell, 1892; Ph.D.; LL.D.; professor of political economy and finance, Cornell. Author: *Relations Between Rent and Interest*; *The Principles of Economics*.

Feuerbach (*foi'ĕr-bäx*), **Ludwig Andreas,** German philosopher, was born at Landshut, 1804, and studied at Heidelberg. The leading principle of his philosophy, a naturalistic development of Hegelianism, is that there is no God distinct from nature and man. Died, 1872.

Feuerbach, Paul Johann Anselm von, jurist, father of the preceding, was born at Jena, 1775, where he studied law. He had made a brilliant reputation by his *Kritik des naturlichen Rechts*, and his *Anti-Hobbes*. In 1808-11 he published a great collection of criminal cases. Appointed a judge at Bamberg, 1814, and at Anspach, 1817. He died at Frankfort, 1833.

Feuillet (*fū'ye'*), **Octave,** French novelist, was born at Saint-Lo, in La Manche, 1821. He started his literary career as one of Dumas' assistants, but made his first independent success in the *Revue des Deux Mondes* by a series of tales and romances begun in 1848. In 1862 he was elected a member of the academy, and later became librarian to Louis Napoleon. Died, 1890.

Fichte (*fiK'tĕ*), **Johann Gottlieb,** German philosopher, was born at Rammeau, in upper Lusatia, 1762. In 1794 he was appointed to the chair of philosophy at Jena, where he commenced to expound with extraordinary zeal his system of transcendental idealism. In 1805 he obtained the chair of philosophy at Erlangen, with the privilege of residing at Berlin in the winter. Here he delivered his celebrated lectures *On the Nature of the Scholar*. In 1810 the University was opened with a host of brilliant names, Fichte, Wolff, Muller, Humboldt, De Wette, Schleiermacher, Neander, Klaproth, and Savigny. By the votes of his colleagues Fichte was unanimously elected rector. He died in 1814.

Field, Cyrus West, founder of the Atlantic cable company, was born at Stockbridge, Mass., 1819. Devoting himself entirely to the work of uniting the old and new worlds, he crossed the ocean nearly thirty times in its prosecution; and on the laying of the first cable, 1858, was received by his countrymen with enthusiastic plaudits. He continued his exertions, and on the success of the cable of 1865 received a gold medal at Liverpool and a vote of thanks from the American congress. Died, 1892.

Field, David Dudley, American jurist, was born at Haddam, Conn., 1805, entered Williams College, 1821, studied law, and was admitted to the bar in 1828. He settled in New York, and soon made his way into the front rank of his profession. In 1867 he brought before the British association for social science a proposition to frame an international code. This led to the preparation by him of what was really a complete work on international law, though entitled *Draft Outlines of an International Code*. Died, 1894.

Field, Eugene, American poet and journalist, was born at St. Louis, Mo., 1850. He moved to New England, but was educated later in Missouri. He entered journalism at the age of twenty-three, ten years later becoming editor of the *Sharps and Flats* column of the *Chicago Daily News*. Among his works are: *Culture's Garden*; *Little Book of Western Verse*; *With Trumpet and Drum*, etc. He died in 1895.

Field, Marshall, merchant, philanthropist, was born at Conway, Mass., 1835. He was junior partner, 1860-65, then senior partner in house, which became, 1865, Field, Palmer & Leiter. Potter Palmer retired, 1867, and Levi Z. Leiter, 1881, Field becoming head of Marshall Field & Company, now having the largest wholesale and retail dry goods business in the world. Founded, with gift of $1,000,000, the Field Columbian museum of Chicago. Died in 1906, leaving an immense fortune.

Field, Stephen Johnson, American jurist, was born at Haddam, Conn., 1816, son of David Dudley Field. He studied law and took up its practice in California. Chief-justice of California, 1859-63; associate justice of the United States supreme court, 1863-97. Died at Washington, 1899.

Fielding, Henry, famous English novelist, was born near Glastonbury, England, 1707. He was early sent to school at Eton, and afterward to the University of Leyden. On his return from Leyden he commenced writing for the stage, and for ten years was a prolific play-writer. In 1737 he entered as a student of the Middle Temple, and in 1740 was admitted to the bar; but his new profession not proving remunerative he returned to literature, and in his remaining years produced the works with which his name is now principally associated. Chief of these are *Joseph Andrews*; *The History of Jonathan Wild*; *Tom Jones*; and *Amelia*. He died in 1754.

Fielding, William Stevens, Canadian statesman and journalist, minister of finance in the Canadian cabinet, was born at Halifax, Nova Scotia, 1848. He was educated at Halifax; D.C.L.; LL.D.; represented city and county of Halifax in the provincial legislature, 1882-96; member of the provincial cabinet a few months after his election, and prime minister, 1884-96. He was a representative of Canada at the colonial conference, London, 1902; one of his majesty's plenipotentiaries for the negotiation of the Franco-Canadian commercial treaty, Paris, 1907. Died, 1929.

Fiesole, Fra Giovanni Da. See **Angelico, Fra.**

Figueras (*fē-gā'räs*), **Estanislao,** Spanish statesman, was born at Barcelona, 1819. On the abdication of King Amadeus in 1873 he became president of the Spanish republic, but resigned soon after. He died in Madrid, 1882.

Fillmore, Millard, American statesman, thirteenth president of the United States, was born in Summerville, N. Y., 1800. Removed to Buffalo, N. Y., 1823, and there found entrance to the bar. He entered congress in 1832. He became comptroller of the state of New York, in 1844, was elected vice-president of the United States in 1848, and succeeded to the presidency on the death of General Taylor in 1850. By signing the act for the surrender of fugitive slaves he brought about the utter defeat of the whig party in 1853. In 1856 he was nominated for the presidency, but received only scanty support. Died, 1874.

Finch, Francis Miles, jurist and poet, was born at Ithaca, N. Y., 1827. He was graduated at Yale, 1849; studied law and entered upon its practice at Ithaca. He assisted materially in the organization of Cornell University, of which he was an original trustee. In 1892 he became dean of the Cornell Law School. Died, 1907.

Finck, Henry Theophilus, author, musical critic of *New York Evening Post*, was born at Bethel, Mo., 1854. He was graduated at Harvard in 1876. Author: *Romantic Love and Personal Beauty*; *Primitive Love and Love Stories*; *Songs and Song Writers*; *Fifty Masersongs*; *Edward Grieg*, etc. Died, 1926.

Finegan, Thomas Edward, born West Fulton, New York, 1866; graduate New York State College for Teachers, 1889. Admitted N. Y. bar, 1894; Hamilton, M.A., 1894; Pd.D. State College for Teachers, 1909; Deputy Commissioner of Education of New York, 1917-1919; Supt. of Public Instruction of Pennsylvania, 1919-1923. Reorganized the Pennsylvania school system.

Finlay, George, distinguished English historian, was born at Faversham, Kent, 1799, of Scotch parents. He received a university training at Glasgow and Göttingen; his valuable history, published in various parts, traces the national life of Greece from 146 B. C. to A. D. 1864. Died at Athens, 1875.

Finley, John Huston, educator, was born at Grand Ridge, Ill., 1863. He was graduated at Knox College, 1887; Ph.D., LL.D. He was secretary of State, Charities aid Organization, New York, 1889-92; president of Knox College, 1892-99; professor of politics, Princeton, 1900-03; president of college of the city of New York 1903. University of State of New York, 1913-1921; editor N. Y. Times since 1921.

Finley, William Wilson, president of Southern railway, was born at Pass Christian, Miss., 1853; chairman of Trans-Missouri traffic association, at Kansas City, 1889-90; chairman of Western passenger association, 1890-92; general traffic manager of Great Northern and Montana Central railroad, 1892-95; second vice-president of Southern railway, 1896-1906; president of same 1906-1913. Died, 1913.

Finney, Charles Grandison, American clergyman and educator, was born in Connecticut, 1792. He began to preach in the Presbyterian church in 1824. In 1835 he became professor of theology at Oberlin College, and from 1851 to 1866 was president of that institution. Died at Oberlin, Ohio, 1875.

Firdausi (*fĕr-dou'sē*), or **Firdusi** (*fĕr-dōō'sē*), pseudonym of Abul Kasim Mansur, the great poet of Persia, born near Tüs, in Khorassan, about 940. He spent thirty years in writing the *Shah Namah*, or *Book of Kings*, a national epic. He died about 1020.

Fischer, Emil, a noted German chemist, was born at Euskirchen, 1852. Educated at Strassburg. Professor at Munich, Erlangen, Würzburg and Berlin respectively. Died, 1919.

Fischer, Ernst Kuno Berthold, German historian of philosophy, was born at Sandewalde, Silesia, 1824. As a student of Erdmann at Halle he was smitten with the love of philosophy, and gave his life to the study of it. In 1856 he was elected to the chair of philosophy in Jena, and sixteen years later was called to Heidelberg as Zeller's successor. His chief work is a *History of Modern Philosophy*. Died, 1907.

Fischer, Louis Albert, physicist, was born at Washington, 1865; B.Sc., Columbian (now George Washington) University, 1884. In office of Weights and Measures, United States Coast and Geodetic Survey, 1891-1901; chief of weights and measures division, Bureau of Standards, with title of association physicist, 1901-1921. Author: *Recomparison of United States Prototype Meter; History of Weights and Measures;* etc. Compiler: *Laws Relating to Weights and Measures in United States;* etc. Died, 1921.

Fish, Hamilton, American diplomat, was born at New York in 1808. He graduated at Columbia in 1827. As secretary of state under Grant from 1869 to 1877, he signed the Washington treaty of 1871, and completed the settlement of the Alabama question. Died, 1893.

Fish, Stuyvesant, banker, railway official, was born in New York, 1851; graduated at Columbia, 1871, A.M., 1874; treasurer and purchasing agent of New Orleans, Jackson and Great Northern Railroad, 1877-82; president Illinois Central Railroad Company, May, 1887, to November, 1906; trustee of New York life insurance and trust company, vice-president and director of National Park bank, and director in other corporations; president of American railway association, 1904-06. Died, 1923.

Fisher, George Park, historian, theologian, professor of divinity, 1854-61, and professor of ecclesiastical history, Yale, 1861-1909, was born at Wrentham, Mass., 1827; graduated from Brown, 1847; LL.D., Yale. He was the author of a number of books on universal and church history. Died, 1909.

Fisher, Harrison, American illustrator, was born in Brooklyn, N. Y., 1875. He was educated in San Francisco, and soon evinced fine capabilities in drawing and illustration. Author: *The Harrison Fisher Book*, a collection of drawings.

Fisher, Irving, economist, professor of political economy at Yale since 1898, was born at Saugerties, N. Y., 1867. Studied at Berlin and Paris, 1893-94. Member of many economic and other learned societies. Editor of *Yale Review* 1896-1910; contributor to economic journals. Author: *The Nature of Capital and Income; The Rate of Interest.*

Fisher, John, bishop of Rochester, was born about 1457 at Beverley, Yorkshire, England. In 1483 he entered Michælhouse, now part of Trinity College, Cambridge, of which he became a fellow in 1491, and master in 1497. In 1527 he pronounced firmly against the divorce of Henry VIII.; and, for refusing the oath of succession, was sent with More to the Tower. In May, 1535, Pope Paul III. made him a cardinal; on June 17th the old man, worn by sickness and ill-usage, was tried for denial of the king's supremacy; on the 22d he was beheaded on Tower hill.

Fisher, Sir John Arbuthnot, admiral of the British navy, was born in 1841; commander-in-chief of North American and West Indies station, 1897; commander-in-chief of the Mediterranean, 1899-1902; Portsmouth, 1903; first sea lord, 1904; and admiral of the fleet, 1905. He was a member of the Esher war office committee, 1903. He received the degree LL.D. from Cambridge University. Died, 1920.

Fisher, Sydney Arthur, minister of agriculture, Canada, was born at Montreal, Canada, 1850; graduated at Trinity College, Cambridge, and adopted farming at Knowlton, in eastern townships, province of Quebec; entered parliament of Canada as M. P. for County Brome, 1882.

Fiske, Harrison Grey, editor and proprietor *New York Dramatic Mirror*, was born at Harrison, N. Y., 1861. Was editorial writer and dramatic critic, *Jersey City Argus*, and later on *New York Star;* became contributor to *New York Dramatic Mirror*, 1879, 1883, and became sole proprietor, 1888. He was manager of Mrs. Fiske, Bertha Kalich, and the Manhattan stock company.

Fiske, John, whose original name was Edmund Fiske Green, was born at Hartford, Conn., 1842. He was graduated from Harvard in 1863, and from Harvard law school in 1865. His *Discovery of America* was but one of a long series of important works on American history. His chief works are: *Myths and Mythmakers; Outlines of Cosmic Philosophy; The Destiny of Man; The Idea of God; American Political Ideas*, and *The Critical Period of American History*. Died, 1901.

Fiske, Minnie Maddern, American actress, was born in New Orleans, La., 1865, daughter of Thomas W. and Elizabeth (Maddern) Davey. At fifteen became a star, under the name of Minnie Maddern. Married, 1890, Harrison Grey Fiske, journalist and playright in whose *Hester Crewe*, she returned to the stage; she has starred in various plays.

Fitch, John, American inventor, was born in Connecticut, 1743. In 1793 he went to France, to find his projects frustrated by the revolution; but it is said that his plans of a steamboat were shown to Robert Fulton. Penniless, Fitch worked his passage back to America, and there poisoned himself, 1798.

Fitch, William Clyde, author and playwright, was born in New York in 1865. He was graduated at Amherst, 1886; A.M., 1902. Author: *The Smart Set; Nathan Hale; Captain Jinks of the Horse Marines; The Cowboy and the Lady; The Climbers; Lover's Lane; The Way of the World; The Girl With the Green Eyes; Her Own Way; The Woman in the Case; Girls*, etc. Died, 1909.

Fitzgerald, Edward, English scholar, was born at Bredfield house in Suffolk, 1809. He entered Trinity College, Cambridge, where he took his degree in 1830. About this time he took up Persian, and in 1856 published an anonymous version of Jami's *Salaman and Absal*. The quatrains of Omar Khayyam were then little known, but Fitzgerald at once recognized their beauty, and his and Omar's names will remain indissolubly linked together through his rendering of them. Died, 1883.

Fitzgerald, Lord Edward, Irish revolutionist, was born in 1763, son of the duke of Leinster. In 1791-92 he visited France, fraternized with the leading republicans, and married the reputed daughter of the Duc d'Orleans and Mme. de Genlis. In 1796 he joined the "society of united Irishmen." Arrested on a charge of high treason, he died in prison, 1798.

Fitzgerald, John Joseph, lawyer, congressman, was born in Brooklyn, N. Y., 1872. He was graduated from Manhattan College, New York; studied law at the New York law school, LL.B., and was admitted to the bar, 1893; member of Congress, 1899. An able and resourceful debater; resigned from Congress to resume practice of law in New York.

Fitzpatrick, Sir Charles, Canadian jurist, chief-justice of Canada and deputy of the governor-general since 1906, was born at Quebec in 1853. He was educated at Quebec seminary; crown-prosecutor for city and district of Quebec, 1879; resigned as provincial member for Quebec county, 1896; and was elected to sit as member for Quebec county in Dominion parliament; solicitor-general, 1901; minister of justice, Dominion of Canada, 1901-06.

Flagg, James Montgomery, American illustrator, was born 1877, at Pelham Manor, N. Y. He studied at the Art Students' League in New York and in Paris. His first accepted drawing appeared in *Life* when he was only fourteen. He is a very fine portrait painter as well as illustrator. His best known work is in charcoal and pen and ink, though he uses all mediums. He has also written and illustrated several volumes of prose and verse.

Flagler, Henry M., capitalist, was born at Canandaigua, N. Y., 1830. Owned Ponce de Leon and Alcazar hotels, Florida, also owned about 600 miles of railroad in Florida. Vice-president and director of Standard Oil Company; director Western Union Telegraph company, Morton Trust company and other corporations. Died, 1913.

Flammarion (*flà-mà-rē-ôN'*), **Camille,** French astronomer, was born at Montigny-le-Roi, 1842. He was educated at Langres, the Paris observatory, and at the Sorbonne, Paris; entered the Paris observatory in 1858. Died, 1925.

Flamsteed (*flam'stēd*), **John,** first astronomer-royal of England, was born at Denby near Derby, 1646. His success in mathematics and astronomy procured for him the appointment of astronomer to the king in 1675. Next year Greenwich observatory was built, and Flamsteed began the observations that mark the rise of modern practical astronomy. Died, 1719.

Flandrin (*flaN'draN'*), **Jean Hippolyte,** French painter, was born at Lyons, 1809. In 1832 he won the prix de Rome, and during his five years' residence in Italy produced *St. Clare Healing the Blind*, now in Nantes cathedral. In 1842 he began his great frescoes in the church of St. Germain-des-Près, Paris. After this he was mainly engaged in fresco painting, although he executed many fine portraits. He died at Rome, 1864.

Flaubert (*flō'bâr'*), **Gustave,** French novelist, was born at Rouen, 1821. Flaubert's life was extremely uneventful; in his youth some obscure form of brain-disease to some extent arrested his intellectual development. He was a very late producer, and his works, when they did appear, were marked by a strong and morbid idiosyncrasy. Died, 1880.

Flaxman, John, greatest of English sculptors, was born at York, 1755. At the age of fifteen he became a student in the Royal academy, but never worked in the studio of any master. He was elected an associate of the Royal academy in 1797, royal academician in 1800, and in 1810 was appointed professor of sculpture to that institution. Died, 1826.

Fleming, Sir Sanford, chancellor of Queen's University, Canada, 1880, was born in Scotland in 1827. Moved to Canada in 1845; president of royal society of Canada, 1880-89. Author: *The Inter-Colonial, a History*, 1832-76; *England and Canada: The New Time Reckoning*. Died in 1915.

Fletcher, Andrew, Scotch patriot and publicist was born in Saltoun, East Lothian, 1655. After some years of travel he sat in the Scottish parliament in 1681, and offered so determined an opposition to the measures of the duke of York that he had to flee to England, and thence to Holland. After the union of Scotland, with England, he retired in disgust from public life, devoting himself to promoting agriculture. He died at London in 1716.

Fletcher, Horace, author, lecturer, was born at Lawrence, Mass., 1849. He devoted his attention to sociology, and especially to scientific research in human nutrition, in chemical-physiological laboratories of University of Cambridge, England and Yale University. Died, 1919.

Fletcher, John, English dramatist, whose name is inseparably associated with that of his friend and co-worker, Francis Beaumont, was born in Northamptonshire, in 1576. The chief piece of his own unaided composition is a dramatic pastoral entitled *The Faithful Shepherdess*. The collaborated plays, such as *The Scornful Lady*, and *Rule a Wife and Have a Wife*, were during two centuries the delight of the stage. Died, 1625.

Fleury (*flü'rē'*), **Andre Hercule de, Cardinal,** French statesman and prelate, was born at Lodève, 1653. He became almoner to Louis XIV., in 1698 bishop of Fréjus, and preceptor to Louis XV., who in 1726 made him prime minister. In the same year he received the cardinal's hat. Died, 1743.

Fleury, Claude, French historian and ecclesiastic, was born at Paris, 1640; was tutor to various princes, prior of Argenteuil, and confessor to young Louis XV. Died, 1723.

Flexner, Simon, American physician, was born at Louisville, Ky., 1863. He graduated at the University of Louisville, M.D., 1889; D.Sc., Harvard, 1906; director of Ayer clinical laboratory, Pennsylvania hospital, 1901; pathologist, University hospital and Philadelphia hospital, 1900, and director of laboratories of Rockefeller Institute for medical research, New York.

Flint, Austin, American physician and medical writer, was born at Petersham, Mass., 1812. After graduation from the medical department of Harvard, he settled to practice in his native state. He was president of the New York academy of medicine, 1872-85. He is the author of a treatise on the diseases of the heart, *Principles and Practice of Medicine*, and *Manual of Auscultation and Percussion*. Died, at New York, 1886.

Flint, Austin, American physician and physiologist, son of preceding, was born in Northampton, Mass., 1836. Graduate of Jefferson medical college, 1857; LL.D., 1885. One of founders and professor of physiology, 1861-98, Bellevue hospital medical college; professor of physiology, Long Island college hospital, 1862-68; Cornell University medical college. Author: *Physiology of Man*, five vols.; *Chemical Examination of the Urine in Disease; Physiological Effects of Severe and Prolonged Muscular Strain*. Died in 1915.

Flint, Robert, British educator and philosophical writer, was born in Dumfriesshire, Scotland, 1838. He was educated at Glasgow University, and became parish minister. Professor of divinity Edinburgh University, 1876-1903. Author: *Christ's Kingdom on Earth; Philosophy of History in Europe; Theism; Anti-Theistic Theories; Historical Philosophy in France; Socialism; Sermons and Addresses; Agnosticism.*

Flotow (*flō'tō*), **Friedrich, Freiherr von,** German composer, was born at Teutendorf in Mecklenburg, 1812. He studied music under Reicha, in Paris, and made his reputation by *Le Naufrage de la Méduse, Stradella*, and *Martha*, the last two characterized by pleasing melody. From 1856 to 1863 he was director of the theater at Schwerin. He died at Darmstadt, Germany, 1883.

Flourens (*flōō'rāNs'*), **Marie Jean Pierre,** French physiologist, was born at Maureilhan, France, 1794. He attracted attention by works on the nervous system, and, after lecturing for Cuvier, 1828-30, became perpetual secretary of the academy of sciences, 1833, professor at the Collège de France, 1855, and member of the academy, 1840. Died, 1867.

Foch, Ferdinand, b. 1851 at Tarbies in the Pyrenees. Educ. Rodez, Saint Etienne, Metz. At St. Etienne he formed religious habits which he has since retained; received military training at Ecole Polytechnique and Ecole de Guerre, afterwards as a teacher in Ecole de Guerre he emphasized the study of handling large bodies of men. Is given credit for a large part in defeating the Germans at the Marne in 1914 by a counter attack, and later holding the important line from Soissons to the coast. In 1918 his appointment to supreme command of allied armies turned the tide for victory for the allies. Died, 1929.

Folk, Joseph Wingate, lawyer, former governor of Missouri, was born in Brownsville, Tenn., 1869. He was graduated at Vanderbilt University, and was admitted to the bar in 1890. He was circuit attorney, St. Louis, 1900-04, and prosecuted numerous bribery cases. From 1905 to 1909 he was governor of Missouri. Died, 1923.

Fontana (*fōn-tä'nä*), **Domenicho,** celebrated Italian architect, was born on the borders of Lake Como in 1543. He erected the obelisk near St. Peter's, Rome, in 1586, and built the Lateran palace and Vatican library. Other important works were also confided to him by the pope. He died in 1607.

Fontenelle (*fōnt-nel'*), **Bernard le Bovier de,** eminent French writer, was born at Rouen, 1657. He was a nephew of Corneille, the great tragic poet, and in 1699 was appointed perpetual secretary of the Academy of Sciences. His long life, extending over nearly one hundred years, was filled with literary activities, and, as a man of the world, his brilliant, though somewhat cynical wit, gave him a great reputation among his contemporaries. Died, 1757.

Foote, Andrew Hull, American naval officer, was born in New Haven, Conn., 1806. After the outbreak of the Civil War, he acted with signal credit in the reduction of Forts Henry and Donelson, 1862. In the same year he was promoted to rear-admiral. Died, 1863.

Foraker (*fōr'ä-kẽr*), **Joseph Benson,** lawyer, jurist, United States senator, 1897-1909, was born in 1846, on farm near Rainsboro, Highland county, Ohio. Enlisted July 14, 1862, in the 39th Ohio volunteer infantry, and served to end of war; graduated at Cornell, 1869; admitted to bar and began practice at Cincinnati, 1869; elected governor in 1885 and 1887; delegate-at-large from Ohio to national republican conventions, 1884-1904; in conventions of 1892 and 1896, served as chairman of committee on resolutions, presented name of William McKinley to the conventions of 1896 and 1900. He was elected to the United States senate in 1896, reëlected in 1902, and served until 1909. Died, 1917.

Forbes, Archibald, British war correspondent, special correspondent of the *London Daily News*, was born at Boharm, Manse, Keith, Scotland, 1838. He was for some years in the royal dragoons but in 1870-71 went through the Franco-German war as war correspondent. He lectured in Great Britain, America and Australia, and wrote *Drawn From Life; Glimpses Through the Cannon Smoke; Chinese Gordon; Studies of War and Peace; Napoleon III.*, etc. Died, 1900.

Forbes-Robertson, Johnston, English actor, was born in London in 1853. He was educated at Charterhouse, London, at Rouen, and at the Royal Academy of Arts. He has been theatrical manager since 1896. He played Romeo, Hamlet, and Macbeth, in a most impressive manner. He was the chief support of Mrs. Patrick Campbell in her tour of the United States.

Ford, Henry (1863—), auto manufacturer, has only a district school education, learned machinist's trade in Detroit. Designed practical automobile and organized Ford Motor Company, 1903, which grew phenomenally, and is now the largest plant in the world. Organized peace expedition, to end world war, 1915; expedition failed. Builder Ford Hospital, Detroit.

Ford, John, English dramatist, was born in Devon, 1586, studied at Exeter College, Oxford, and entered in 1602 the Middle Temple. His first work was an elegy on the earl of Devonshire entitled *Fame's Memorial*. Among those following were: *The Lover's Melancholy; The Fancies Chaste and Noble*, and *The Lady's Trial*. His two great tragedies, *'Tis Pity* and *the Broken Heart*, are not far inferior to Webster's masterpieces. Died, 1639.

Ford, Paul Leicester, American author, was born in Brooklyn, N. Y., 1865. He was educated privately, and early devoted himself to literature. Author: *The Honorable Peter Stirling; The True George Washington; The Many Sided Franklin; Janice Meredith; Wanted: A Chaperon*, etc. Died at New York, 1902.

Forgan, James Berwick, financier, late president of First national bank, Chicago, was born at St. Andrews, Scotland, 1852. He was educated at Madras College and Forres academy, Scotland. About 1888 he became cashier and manager of the Northwestern national bank; came to First national bank, Chicago, as vice-president, 1892. He succeeded Lyman J. Gage as president of the latter. Died in 1924.

Forrest, Edwin, celebrated American actor, was born in Philadelphia, Pa., 1806. He went on the stage at fourteen, and finally made his way to New York, where his rendering of Othello, at the age of twenty raised him to the front rank among actors. After his final appearance on the stage in 1871 he continued for a short time to give Shakespearean readings. He left a splendid library exceedingly rich in Shakespearean literature, which was destroyed by fire in 1873. Died 1872.

Forster, John, English political and historical writer, was born at Newcastle, 1812. He was educated for the bar, but in 1832 became the dramatic critic of the *True Sun*. He edited successively the *Foreign Quarterly Review*, the *Daily News* and the *Examiner*. He was the author of many admirable biographical and historical essays. He died in 1875.

Forster, William Edward, English statesman, was born of Quaker parentage at Bradpole, Dorsetshire, 1818. In 1861 he entered parliament for Bradford. In 1870 he accepted a seat in the cabinet, and carried the elementary education bill; in 1872 he piloted the ballot bill through the commons. Under the Gladstone administration of 1880 Forster was chief-secretary for Ireland in troublous times. He was attacked unceasingly in parliament by the Irish members, and his life was threatened by the "invincibles." A strong opponent of home rule, he died in London, 1886.

Forsyth (*for-sith'*), **John,** American statesman, was born in Virginia, 1780. He practiced law in Georgia, was elected attorney-general of that state in 1808, and sat in congress from 1813 to 1818, when he became United States senator. In 1834 he resigned and served as secretary of state under Jackson and his successor, Van Buren, until he died in 1841.

Fortescue (*fôr'tes-kū*), **Sir John,** English jurist, was born in Somerset about 1394, and educated at Exeter College, Oxford. He accompanied Margaret of Anjou and her son into Scotland, and there was probably appointed lord chancellor by Henry VI. In 1463 he embarked with them for Holland, and during his exile wrote his celebrated *De Laudibus Legum Angliae* for the instruction of Prince Edward. Died, 1476.

Fortier, Alcee, university professor, was born at St. James Parish, La., 1856; was educated at the University of Virginia and in Paris; Litt.D., Washington and Lee, and Laval University. Professor of romance languages, Tulane University of Louisiana, since 1880. Author: *Le Chateau de Chambord; Bits of Louisiana Folk-Lore; Histoire de la Littérature Française; Louisiana Studies; Louisiana Folk Tales; History of Louisiana; History of Mexico;* etc. Editor of a number of French texts for colleges.

Fortuny (*fôr-tōō'nē*), **Mariano,** Spanish painter, was born at Reus in Tarragona, 1839. When Spain declared war against Morocco, Fortuny followed the army, and filled his portfolios with studies of eastern life. He died at Rome in 1874.

Foscari (*fos'kä-rē*), **Francesco,** was born about 1372. He was named procurator to St. Mark's at Venice in 1415, and became doge of that city in 1423. He was forced to abdicate in 1457. He survived his loss of power but two days. Died, 1457.

Fosdick, Harry Emerson, clergyman and religious writer, was born at Buffalo, N. Y., 1878. Educated at Colgate University and Union Theological Seminary. Became Baptist minister at Montclair. In 1908 removed to New York to be pastor of the First Presbyterian Church and to teach practical theology at the Seminary. Among his writings are *The Meaning of Faith, The Meaning of Prayer*, and *Twelve Tests of Character*.

Foster, George Eulas, member of the privy council of Canada; general manager of the Union Trust company, ltd., was born in New Brunswick, Canada, 1847; educated at the University of New Brunswick, Edinburgh University, and Heidelberg; became minister of marine in Sir John A. Macdonald's government, 1885; finance minister, 1888, in same ministry.

Foster, John Watson, lawyer, diplomat, was born in Pike county, Ind., 1836. He was graduated from Indiana University, 1855; student one year at Harvard Law School; LL.D., Princeton. Entered the Union army in 1861 as major of the 25th Indiana volunteers, and was promoted to lieutenant-colonel and colonel in Indiana regiments, and brevetted brigadier-general. Established, 1881, in practice in international cases in Washington, representing foreign legations before commissions, arbitration boards, etc. Minister to Spain, 1883-85; invited by emperor of China and participated in peace negotiations with Japan; agent for United States Alaskan boundary tribunal, London, 1903. Author: *A Century of American Diplomacy, American Diplomacy in the Orient; Arbitration and the Hague*. Died, 1917.

Foster, Sir Michael, English physiologist, was born at Huntington, 1836; practiced there, 1860-66; in 1870 became lecturer on physiology at Trinity College, Cambridge, and was professor of physiology in the university, 1883-1903. His best known work is his *Text-Book of Physiology*. He died in 1907.

Foster, Stephen Collins, American song writer, was born in Pittsburg, Pa., 1826. He first wrote negro melodies, *Old Uncle Ned*, and *Oh, Susanna*, which immediately gained a wide popularity. *Nelly Bly, My Old Kentucky Home*, and *O Boys, Carry me 'Long*, were just as popular. He died in New York, 1864.

Foucault (*fōō'kō*), **Jean Bernard Leon,** French physicist, was born at Paris, 1819. He demonstrated the rotation of the earth by means of a graduated disk, invented the gyroscope and introduced physics into the study of astronomy. Died, 1868.

Fouche (*fōō'shā'*), **Joseph,** duke of Otranto, French revolutionist and statesman, was born at Nantes in 1763. In 1792 he obtained a seat in the national convention, and on the trial of Louis XVI. voted for death without appeal. At a later period he became Napoleon Bonaparte's minister of police, and in 1809 was created duke of Otranto. Subsequently, Bonaparte having returned from Elba, Fouché again became minister of police. He advised Bonaparte to abdicate after the battle of Waterloo, was placed at the head of the provisional government by the chambers and negotiated with the allies. Died, 1820.

Foulke (*fōlk*), **William Dudley,** author, publicist, was born in New York, 1848. He was graduated from Columbia, 1869, and Columbia Law School, 1871. Removed to Indiana, 1876. United States civil service commissioner, 1901-03. Author: *Slav or Saxon; Life of Oliver P. Morton; Maya, a Story of Yucatan; Protean Papers;* frequent contributor to magazines on history and other subjects.

Fouque (*fōō'kā'*), **Friedrich Heinrich Karl de la Motte,** famous German novelist and poet, was born in Brandenburg, 1777. He died in Berlin, 1843.

Fourier (*fōō'rē-ā'*), **Francois Charles Marie,** famous French socialist, was born in Besancon, 1772. In 1808 he disseminated his peculiar views on socialism by the publication of a work entitled *A Theory of Four Movements and General Destinies*, which in 1822 was reproduced in a completed form under the name of *A Treatise on Domestic and Agricultural Association*. Died, 1837.

Fourier, Jean Baptiste Joseph, baron, celebrated French geometrician, was born at Auxerre in 1768. In 1802 he was appointed prefect of the Isère, and in 1815 of the Rhône. Being afterward displaced, he gave himself up entirely to scientific studies; was admitted in 1817 a member of the academy of sciences. His chief works are *Annales de Physique, theorie de la Chaleur*, and the *'Analyse des Equations Déterminées*. He died in 1830.

Fox, Charles James, English statesman, was born in Westminster, 1749. He was educated at Eton and at Hertford College, Oxford, entered parliament at the age of nineteen as member for Midhurst. In 1782 he became secretary of state under Lord Rockingham, but on the latter's death, in the same year, refused to serve under Lord Shelburne. When his great rival, Pitt, formed his last administration, he wished Fox to join it, but the king gave a steady refusal. On Pitt's death, in 1806, the king was at last obliged to admit him to office, and Fox became foreign secretary in Grenville's ministry. His last motion in parliament was directed against the slave trade, and he died at Chiswick in 1806, a few months before the measure founded upon it passed into law. He was the first orator of his time.

Fox, George, founder of the society of Friends, was born in County Leicester, England, 1624. Early adopting the peculiar tenets and manners known as Quakerism, he suffered for many years continual persecution. His leading doctrines or convictions were the futility of learning for the work of the ministry, the presence of Christ in the heart as the "inner light" and the necessity of trying men's opinions and religious by the Holy Spirit, and not by the scriptures. He died in London, 1691.

Fox, John, English martyrologist, was born at Boston, in Lincolnshire, 1517. At sixteen he entered Brasenose College, Oxford, and was a fellow of Magdalen, 1538-45. On Queen Elizabeth's accession he was pensioned by his old pupil the duke of Norfolk, and received a prebend of Salisbury cathedral, 1563. He published numerous books, but the one upon which his fame rests is popularly known as *Foxe's Book of Martyrs*. Died, 1587.

Fox, John, Jr., American novelist, was born in Kentucky, 1863, and was graduated from Harvard in 1883. After some experience in journalism, he traveled in Southern states and California, and afterward engaged in business at Cumberland Gap, where he had ample opportunity for the study of mountain life. Died, 1919.

Fragonard (*fra-gō-nar'*), **Jean Honore,** French painter, was born at Grasse, 1732, and gained the prix de Rome in 1752. In 1765 he received 2,400 francs, from Louis XV. for his *Callirrhoe*, commissioned for reproduction in Gobelins tapestry. Died, 1806.

France (*frans*), **Jacques Anatole Thibault,** French author, member of French academy, was born in Paris, 1844, and educated at Collège Stanislaus. Author: *Le Crime de Sylvester Bonnard; L'Etus de Nacre; La Vie Littéraire; Le Mannequin d'Osier; Vie de Jeanne d'Arc*, etc. Died, 1924.

Francia (*frän'se-ä*), **Jose Gaspar Rodrigues,** dictator of Paraguay, was born near Asuncion, about 1757. Though politically despotic, he improved agriculture, promoted education, repressed superstition and enforced strict justice in his law

courts, however little he regarded it for himself. Died, 1840.

Francis I., king of France, was born at Cognac, France, 1494, and became king in 1515. His first act was to reconquer Milan. His reign is marked by the French renaissance, the beginning of the Protestant reformation, and the strengthening of the power of the monarchy. He fostered learning and art, invited painters and scholars to his kingdom, founded libraries, opened schools and built several of the finest palaces in France; but his persecution of the Vaudois has left a stain on his memory. He died in 1547.

Francis I., emperor of Germany, was born in 1708, eldest son of Leopold, duke of Lorraine. On the death of his father, 1729, Francis succeeded him in the dukedom, which in 1735, he ceded to Stanislaus Leszcynski, father-in-law of Louis XV., to revert after his death to the crown of France. Francis died at Innsbruck, 1765. His son Joseph succeeded him.

Francis II., emperor of Germany, and I. of Austria, was born at Florence, Italy, 1768, and succeeded his father, Leopold II., in 1792. His reign was a series of wars against Napoleon, in which, with the exception of the last, he was beaten. In 1806 he formally abdicated the crown of the holy Roman empire. He died at Vienna, 1835.

Francis Ferdinand of Austria, archduke, son of the late Archduke Charles Louis, by his second marriage with the Princess Maria Annonciata, daughter of Ferdinand II., king of the Two Sicilies, was born at Gratz, 1863. His murder in Bosnia, June, 1914, was the signal for the opening of the European war. The heirship of the thrones of Austria and Hungary then fell to Charles Francis Joseph.

Francis Joseph Charles, emperor of Austria and king of Hungary, was born in 1830, son of the Archduke Francis Charles, and grandson of the Emperor Francis II, and nephew of the Emperor Ferdinand I. He took part in the campaign against the Hungarians, and was present at the capture of Raab in June, 1849. Restored to the mastery of his dominions, he proceeded to undo the work of 1848. A dispute between Austria and Prussia as to Schleswig-Holstein led to war between the two nations in 1866. In this war the Austrians were completely defeated, and were compelled to accept the North German confederation under the leadership of Prussia, and to give up Venice to Italy. After these disasters the emperor restored national self-government to Hungary, and in June, 1877, was declared king of that country. By the suicide of Crown Prince Rudolph in 1889, Archduke Francis Ferdinand, the emperor's nephew, became heir. The murder of the archduke and his wife in Bosnia, June 28, 1914, precipitated the great European war. Francis Joseph died November, 1916, after reigning 68 years. The crown fell to his grand-nephew, Charles Francis Joseph, of Austria.

Francis, Charles Spencer, journalist, diplomat, was born in Troy, N. Y., 1853; graduated from Cornell University, 1877. On his father's death, 1897, succeeded to editorial direction and sole ownership of *Troy Times*; regent of University of the State of New York, 1903-06. United States minister to Greece, Roumania, and Servia, 1900-02; ambassador to Austria-Hungary. Died, 1911.

Francis, David Rowland, merchant, ex-governor of Missouri, was born at Richmond, Ky., 1850. He was graduated at Washington University 1870; LL.D.; in 1877 established what became Francis, Brother and Co., and D. R. Francis and Brother Commission company, grain merchants, of which he is president. Mayor of St. Louis, 1885-89; governor of Missouri, 1889-93; secretary of the interior, United States, 1896-97. Died, 1927.

Francis, Sir Phillip, reputed author of the *Junius Letters*, was born in Dublin, 1740. Leaving Ireland at twelve, he entered St. Paul's school in London, and at sixteen became a junior clerk in the secretary of state's office. In 1816 John Taylor wrote a book identifying Francis with *Junius*, but Francis never acknowledged having written the seventy letters, which appeared in the *Public Advertiser*, 1772. He died in 1818.

Francis de Sales (*frăn'sis de sāl*), **Saint,** an eminent theologian, orator, and writer, bishop of Geneva, was born at Sales, near Geneva, 1567, died in 1622, and was canonized in 1665. He was a Savoyard, coadjutor bishop, 1599; bishop of Geneva, 1602; and cofounder of the order of the Visitation, 1610.

Francis of Assisi, founder of the Franciscan order, one of the most extraordinary men of his age, was born 1182. His baptismal name was John; but from his familiarity with the Romance, or language of the troubadours, in his youth, he acquired the name of *Il Francesco*, "The little Frenchman."

He engaged eagerly in exercises of chivalry and of arms; and in one of the petty feuds of the time he was taken prisoner and detained for a year in captivity at Perugia. An illness which he there contracted turned his thoughts from earth; and although he again engaged in military pursuits, a second illness, at Spoleto, decided his career for life. He resolved to fulfill literally the counsels of the gospel, and he especially devoted himself to poverty. His father having in vain confined him in a dark room of his own house, cited him before magistrates, and, on Francis' declining all civil jurisdiction in such a case, before the bishop, in order to compel him to renounce his inheritance. Francis abandoned all, even to the very clothes he wore. This was in his 26th year, in 1208.

His enthusiasm by degrees excited emulation. Two of his fellow-townsmen, Bernard Quintavelle and Peter Cattano, were his first associates. They were followed, although slowly, by others; and it was not until 1210 that, for his brotherhood, now increased to eleven in number, he drew up a rule, selected in the true spirit of religious enthusiasm, by thrice opening at random the gospels upon the altar, and taking the passages thus indicated as the basis of the young institute. In common with the older forms of monastic life, the Franciscan institute is founded on the three vows of chastity, poverty, and obedience; but of these the second was, in the eyes of Francis, the first in importance and in spiritual efficacy.

Numbers now crowded to the standard of Francis and he sent them off in parties to different provinces of Italy. Five of the brotherhood repaired to Morocco to preach to the Moors, and, as the first martyrs of the order, fell victims to their holy daring. Success removed all the hesitation with which the institute at first was regarded, and in 1216 the order was solemnly approved by Pope Innocent. From this date it increased with extraordinary rapidity. At the first general assembly, held in 1219, 5,000 members were present. Francis himself inaugurated the future missionary character of his brotherhood by going (1223) to the East, and preaching the gospel in the presence of the sultan himself. It is after his return to Italy that his biographers place the celebrated legend, which, to friends or to enemies, has so long been a subject of veneration or of ridicule—his receiving, while in an ecstasy of prayer, the marks (*stigmata*) upon his own person of the wounds of our divine redeemer. Francis died in 1226.

References.—*Lives* by St. Bonaventura, Hase, Paul Sabatier, Mrs. Oliphant, Alemany, and Chérancé. Also Butler's *Lives of the Saints*; Milman's *History of Latin Christianity*; *Francis and Dominic*, by Professor Herkless; and Carmichael's *The Lady of Poverty*.

Francis of Paola (*pou'lă*), **Saint,** founder of the Minims, was born in 1416 at Paola in Calabria. At thirteen he was a Franciscan; and at nineteen he retired to a cave and inflicted on himself every species of self-mortification. He died at Plessis on Good Friday, 1507; and was canonized in 1519.

Francis Xavier, Saint. See **Xavier.**

Francke (*frăng'kē*), **Kuno,** educator, literary critic, curator of Germanic museum, Harvard University, was born at Kiel, Germany, 1855; graduated gymnasium, Kiel, 1873; Ph.D., University of Munich, 1878; LL.D., University of Wisconsin, 1904.

Frank, Glenn, university president, writer, lecturer, was born in Queens City, Mo., 1887. Graduated from Northwestern University, 1912; LL.D., 1926. Associate editor, *Century Magazine*, 1919-21, editor-in-chief, 1921-25. President of University of Wisconsin 1925——.

Frank, Henry, lecturer, author, was born at Lafayette, Ind., 1854; graduated from Phillips academy, Andover, Mass., 1874; founded, 1897, and since pastor of Metropolitan Independent church, Carnegie lyceum, New York. Actively engaged in social reform, and ethical forward movements. Associate editor of *Metaphysical Magazine*, 1901-02. Author: *Skeleton and the Rose*; *His Bold Experiment* (a sociological novel).

Frankland, Percy Faraday, English chemist, professor of chemistry, the university, Birmingham, since 1900, was born at London, 1858. He was educated at University college school, London, president of the institute of chemistry, 1906; member of council of Royal society, 1903.

Franklin, Benjamin, American writer and statesman, was born at Boston, 1706, died at Philadelphia, 1790. He was placed with his brother, a printer, to serve an apprenticeship to that trade, and his brother having started the *New England Courant*, Franklin secretly wrote some pieces for it and had the satisfaction to find them well received. But, on this coming to the knowledge of his brother, he was severely lectured for his presumption, and treated with great harshness. Soon after he quitted his brother's employment, and at the age of seventeen started for Philadelphia, where he obtained employment as a compositor.

Here he attracted the notice of Sir William Keith, the governor of Pennsylvania, who induced him to go to England for the purpose of purchasing types to establish himself in business. He got work in a printing office, and after a residence of eighteen months in London returned to Philadelphia. He again returned to his trade, and in a short time formed a partnership for the publication of a newspaper, which was managed with such ability that Franklin acquired much reputation. By his exertions, a public library, improved systems of education, a scheme of insurance, etc., were established in Philadelphia.

In 1732 he published his *Poor Richard's Almanack*, which continued to be issued till 1757. In 1746 he saw, for the first time, some experiments in electricity, which led him to begin those investigations which resulted in the identification of lightning and electricity, and the invention of the lightning conductor. As member of the provincial assembly of Pennsylvania he showed himself very active, and in 1757 he was sent to England as the agent of the province. His reputation was now such, both at home and abroad, that he was appointed agent of the provinces of Massachusetts, Maryland, and Georgia. Oxford and Edinburgh conferred on him their highest academical degrees, and the Royal society elected him a fellow.

In 1762 he returned to America; but was again appointed agent in 1764, and brought to England a remonstrance against the project of taxing the colonies. He opposed the stamp act, and in 1774 presented to the king the petition of the first American Congress. On his return he was elected member of the Congress, and exerted all his influence in favor of the Declaration of Independence. In 1776 he was sent to France as commissioner plenipotentiary, to obtain supplies from that court. After the surrender of Burgoyne he concluded with France the first treaty of the United States with a foreign power (1778), and was subsequently named one of the commissioners for negotiating peace with the mother country. On his return to his native country he filled the office of governor of Pennsylvania, served as a delegate in the Federal convention of 1787, and approved the constitution then formed. His works include his unfinished *Autobiography* and a great number of political, anti-slavery, financial, economic, and scientific papers.

References.—See *Lives of Franklin* by Sparks, Parton, and Morse. Also McMaster's *Benjamin Franklin as a Man of Letters*; Ford, *The Many-Sided Franklin*; Fisher, *The True Benjamin Franklin*; Hale, *Franklin in France*; and MacDonald, *Some Account of Franklin's Later Life, Principally in Relation to the History of His Times*.

Franklin, Sir John (1786-1847), arctic explorer, commanded expedition in 1845 for discovery of northwest passage. Expedition searching for the missing boats found only relics and skeletons, the men having perished by starvation and exposure in 1847.

Franklin, William Suddards, educator, electrician, was born in Geary City, Kan., 1863. He was graduated at the University of Kansas, 1887; M.S., 1888; professor of physics and electrical engineering, Iowa State College, 1892-97; Lehigh University, 1897-1903; professor of physics, Lehigh, 1903-1915;

Franz (*frănts*), **Robert,** German composer, was born, lived, and died at Halle, 1815-92. Franz's best songs rank with those of Schubert and Schumann. His published works first appeared in 1843.

Franzen (*frăn-sān'*), **Frans Michael,** Swedish poet, was born in Uleaborg, Finland, 1772. After the conquest of Finland, he settled in Sweden as a clergyman, finally removing to Stockholm where he was made bishop. He wrote: *Emili, or an Evening in Lapland*; *Columbus*; *Gustav Adolf in Germany*. Died, 1847.

Franzos (*frăn'tsōs*), **Karl Emil,** Austrian novelist, was born in Russian Podolia of Jewish parentage, 1848. Among his principal works are *Aus Halbasien*, sketches of South Russia and Roumania, and the novel *Junge Liebe*. Died, 1904.

Fraser, Alexander Campbell, British author and educator, professor emeritus of logic and metaphysics in Edinburgh University, was born at Ardchattan manse, County Argyll, 1819. D.C.L., Oxford; LL.D., Princeton; Litt.D., Dublin. Author: *Essays in Philosophy*; *Essays, Philosophical and Miscellaneous*; *Collected Works of Bishop Berkeley*, annotated. Died, 1914.

Fraunhofer (*froun'hō-fĕr*), **Joseph von,** German optician, was born at Straubing in Bavaria, 1787. In 1807 he was employed to found an optical institute at Benediktbeuern, which, under his management, was in 1819 removed to Munich. He is most celebrated for his improvements in telescope prisms and in the mechanism for manipulating large telescopes, and above all for his discovery of the dark lines in the sun's spectrum. Died, 1826.

Frederick I., called Barbarossa or Redbeard, was born about 1121, and became emperor of Germany in 1152. At home he managed his vassals by a system of conciliation, and by keeping the balance of power among them equal. He asserted his power, moreover, over Poland, Hungary, Denmark, and Burgundy. At the height of his fame and influence, he took the cross to fight against Saladin. He defeated the Mohammedans in two battles, but was himself drowned in Pisidia, 1190.

Frederick II., of Germany, son of Emperor Henry VI., was born at Jesi near Ancona, 1194. In his fourth year his father died, leaving him king of Sicily. When eighteen he wrested the imperial crown from Otto IV., and was crowned in 1215. During his reign he was engaged in a harassing contest with the pope, whose hands were strengthened by the accession of the revolted Lombard cities and of several princes and towns of Germany, headed by his son, Henry. Disaster and misfortune were gathering around him, when he died at Fiorentino in 1250.

Frederick II. of Prussia, commonly called *Frederick the Great,* was born, 1712, and began to reign in 1740. He found himself in possession of a full treasury and a powerful army, which he soon employed in attacking Austria, and conquering the province of Silesia (1740-1742). In 1744 he engaged in a second war with Austria, which was terminated in 1745, and left him in possession of Silesia, but with no augmentation of power, though his military renown was raised throughout Europe.

The great struggle of the Seven Years' War began in 1756. Prussia was now attacked by the Austrians, the Russians, the French, the Saxons, and the Swedes, and its destruction and dismemberment seemed inevitable. England was Prussia's only ally; but the country went through the struggle and came out triumphant. When the peace of Hubertsburg was concluded in 1763, Prussia did not cede an inch of land or pay a dollar of money; and from that time forth was recognized as one of the five great powers of Europe. For this glorious result it was indebted to Frederick.

It is not merely the military genius of Frederick, as displayed during the sanguinary campaigns of the Seven Years' War, that demands our attention, but we must also admire his moral courage and his indomitable energy under reverses which would have crushed almost any other spirit. Though victorious at Prague, at Rosbach, and Lissa (1757), at Zorndorf (1758), at Liegnitz and Torgau (1760), he suffered heavy defeats at Collin (1757), at Hochkirchen (1758), at Kunnersdorf (1759); and his lieutenants, with the exception of Prince Ferdinand of Brunswick, were generally unsuccessful. But Frederick's firmness never failed him, even when all hope seemed lost. In a period of extreme danger, he wrote to Voltaire (who had advised him to beg mercy from his enemies), "I am a man, and therefore born to suffer. To the rigor of destiny I oppose my own constancy. Menaced with shipwreck, I will bear the storm; I will be king in spirit; and I will die, as I have lived, a king."

After the conclusion of the war Frederick exerted himself earnestly in relieving the suffering which so many years of carnage and devastation had brought upon Prussia. He died in 1786. He was fond of the society of literary men, and was himself an author of many works of considerable merit. During his struggles against Austria and France Frederick was regarded in England and America as the champion of Protestantism, and he was called a second Gustavus Adolphus. He ill deserved the title. The disciple of Voltaire, he is supposed to have had no religious faith whatever.

References.—Carlyle's *History of Frederick II.* Droysen's *Friedrich der Grosse*; Kugler's *Hist. of Frederick the Great*; Longman's *Frederick the Great and the Seven Years' War*; and Reddaway's *Frederick the Great.*

Frederick III., eighth king of Prussia and emperor of Germany, son of William I., was born near Potsdam, 1831. After arousing the world's best expectations by his goodness and wisdom no less than by his bravery, he ascended the throne in 1888, during his last illness, in which he suffered as heroically as he had fought. He died when fifty-seven years old, 1888. He was succeeded by his son, William II.

Frederick VI., king of Denmark, son of Christian VII. and the princess Caroline Matilda, was born in 1768. Frederick ascended the throne on the death of his father in 1808. In 1814 he was robbed of Norway, and was at last compelled to send a contingent of 10,000 men against the French. The country had become bankrupt in 1813, but by his wise measures financial order was finally restored. Died, 1839.

Frederick Charles, prince and field-marshal of Germany, was born in Berlin, 1828. He was the eldest son of Prince Charles, brother of Emperor William I. He was known as "the red prince" from the fact that he always wore a red hussar uniform. His daughter, Louise Margaret, married the duke of Connaught, son of Queen Victoria, in 1879. Died, 1885.

Frederick William, the great elector of Brandenburg, was born in 1620. On his accession in 1640 he found the state disorganized, exhausted and devastated by the Thirty Years' war. He strenuously regulated the finances, made a treaty of neutrality with Sweden, organized his army, and strove to repeople his deserted towns and villages. By the treaty of Westphalia, 1648, he recovered eastern Pomerania, Halberstadt, and Minden, with the reversion of the archbishopric of Magdeburg; and out of a quarrel between Sweden and Poland he contrived to secure the independence of the duchy of Prussia from Poland, 1657. He founded the royal library at Berlin, reörganized the universities, opened canals, established posts and greatly enlarged Berlin. He left a well-filled exchequer and a highly organized army. He made Brandenburg virtually an absolute monarchy, only less powerful than Austria. He died at Potsdam in 1688, and his son became King Frederick I. of Prussia.

Frederick William I., king of Prussia, son of Frederick I., was born 1688, and on his accession in 1713 became embroiled in the war waged by Sweden against Russia, Poland, and Denmark, at the end of which he acquired Pomerania with Stettin. The remainder of his reign was devoted to improving the internal condition of Prussia. He was sternly practical, blunt, and determined; he despised the arts and sciences, was rigidly economical and strict in his ideas of justice. At his death in 1740 he left a treasure of $5,750,000, and an army of more than 80,000 men, the best disciplined force in Europe, which made Prussia fourth in military power.

Frederick William II., king of Prussia, nephew of Frederick the Great, was born in 1744. The abolition of some of his predecessor's oppressive measures made him very popular at his accession in 1786. He acquired large areas of Polish Prussia and Silesia by the partitions of Poland in 1793 and 1795, as also Ansbach and Baireuth. He died in 1797.

Frederick William III., of Prussia, son of Frederick William II., was born in 1770. He was more than once embroiled with the pope on account of his violation of the concordat. He concluded the great German commercial league known as the *Zollverein,* which organized the German customs and duties in accordance with one uniform system. Died, 1840.

Freeman, Edward Augustus, eminent English historian, was born at Harborne, England, 1823. He was educated at Trinity College, Oxford. He wrote histories of the Saracens and of the Ottoman power in Europe; *General Sketch of European History*; *Growth of the English Constitution*; *Comparative Politics*; *Historical Geography of Europe*; *William the Conqueror*; and various other works. In 1884 he was appointed regius professor of modern history at Oxford. Died, 1892.

Freeman, John Ripley, civil and mechanical engineer, was born in West Bridgeton, Me., 1855; graduated at the Massachusetts institute of technology, 1876; honorary Sc.D.; chief engineer investigations Charles river dam, Boston harbor, 1903; engineer member of Massachusetts metropolitan water board, 1895-96. Consulting engineer to New York board of water supply since 1905; consulting engineer isthmian canal locks and dams, 1907.

Freeman, Mary E. Wilkins, author, was born at Randolph, Mass., 1862. She was educated there and at Mt. Holyoke seminary, 1874; came into prominence as a writer for magazines, poems, short stories, etc.; married Dr. Charles M. Freeman, 1902. Author: *A Humble Romance*; *Evelina's Garden*; *The Lore of Parson Lord*; *By the Light of the Soul*; *Yates Pride.* Died, 1930.

Freiligrath (*frī'lĭg-rät*), **Ferdinand,** German poet, was born at Detmold, 1810, and was led by the success of a volume of poems published in 1838 to desert commerce for literature. Chief among his political poems are *Ca Ira*, and *Neuere Politische und Soziale Gedichte.* He translated Longfellow, Shakespeare, etc. His collected works appeared in 1870. Died 1876.

Frelinghuysen (*frē'lĭng-hī-zen*), **Frederick,** American statesman, was born in New Jersey, 1753. He raised a corps of artillery, fought in the Revolutionary war, was a member of the continental congress in 1778 and 1782-83, and a United States senator in 1793-96. He died in 1804.

Frelinghuysen, Frederick Theodore, nephew of above, was born in New Jersey, 1817. From 1866 to 1869 he served as United States senator. He was a member of the Hayes-Tilden electoral commission. In 1881 he became secretary of state in President Arthur's cabinet, and held office until his death in 1885.

Frelinghuysen, Theodore, son of Frederick, was born in New Jersey in 1787. He studied law, practiced in New Jersey. In 1829 he was chosen United States senator, and served until 1835. Afterward he was mayor of Newark, and in 1839 became chancellor of the University of New York. In 1850 he became president of Rutgers College, which position he held until his death in 1862.

Fremiet (*frā-mye'*), **Emmanuel,** noted French sculptor, was born at Paris, 1824. He studied at La Petite Ecole, and under Rude; made drawings at the Jardin des Plantes, and later drew plates for medical works. Died, 1910.

Fremont (*frē-mont'*), **John Charles,** explorer of the Rocky mountains, was born at Savannah, Ga., 1813. In 1842 he crossed the Rocky mountains, and demonstrated the feasibility of an overland route across the continent. During the Mexican war he cleared northern California of Mexican troops. In 1849 he settled in California; was United States Senator, 1850-1; and first Republican candidate for President in 1856. In 1861-62 he served in the regular army as major-general. He was governor of Arizona in 1878-82 and died in New York, 1890.

French, Alice, author, better known as Octave Thanet, was born at Andover, Mass., 1850, daughter of Hon. George Henry French. She was educated at Abbot academy there, but her life since then has been spent in the South and West. Author of *Man of the Hour*, *The Heart of Toil*, etc.

French, Daniel Chester, American sculptor, was born at Exeter, N. H., 1850. He was educated in Exeter, N. H., and Massachusetts institute of technology, Boston, one year; A.M., Dartmouth College; studied art with William Rimmer in Boston, and with Thomas Ball in Florence, Italy; occupied a studio in Washington, 1876-78; in Boston and Concord, Mass., 1878-87; and in New York, 1887-1900. Among his best-known works are: *The Minute Man of Concord*, at Concord, Mass. *John Harvard*, at Cambridge, Mass.

Freneau (*frē-nō'*), **Philip,** American poet, was born in New York City, 1752. After the return of peace Freneau became in succession editor of a newspaper, and captain of a ship. In 1790 he edited the New York *Daily Advertiser*. From that time until his death he rarely came before the public. Died, 1832.

Frere (*frâr*), **Pierre Edouard,** French painter, was born at Paris, 1819. He studied under Delaroche. His paintings are mostly figures and scenes from domestic life. He died at Ecouen, 1886.

Fresenius (*frā-zā'nē-ŏŏs*), **Karl Remigius,** noted German chemist, was born in 1818. He studied at Bonn and Giessen under Liebig, and in 1845 became professor of chemistry at Wiesbaden. Died, 1897.

Fresnel (*frā-nel'*), **Jean Augustin,** eminent French physicist, was born at Broglie, Eure, France, 1788. He was educated at the polytechnic school in Paris, and in 1816 received a permanent appointment there through the celebrated Arago. He invented the compound lighthouse lens. He died in 1827.

Freud, Sigmund, Austrian psychiatrist and founder of psychoanalysis, was born at Freiberg in 1856. He was educated at the University of Vienna and became assistant professor of neuropathology at that institution. He became widely celebrated for his method of treating nervous diseases through the "sub-conscious," formulating a unique theory of the significance of dreams. He visited the United States in 1909. His books include *Studies on Hysteria*, *Interpretation of Dreams*, and *The Introduction to Psychoanalysis.*

Freund (*froint*), **Wilhelm,** German philologist, was born of Jewish parents at Kempen in Posen, 1806. On his *Wörterbuch der lateinischen Sprache* most English-Latin dictionaries are based. Died, 1894.

Freycinet (*frā'sē'ne'*), **Charles Louis de Saulces de,** French statesman, was born at Foix, France, 1828. He was graduated at the Polytechnic school in Paris, 1848, and was originally an engineer. Elected to the senate in 1876, he became minister of public works in 1877, premier in 1879, 1882, 1886 and 1890, and in 1892 remained war minister under his successor, M. Loubet. Admitted to the academy of sciences in 1887, and to the French academy in 1890. Died 1923.

Freytag (*frī'täg*), **Gustav,** German novelist and dramatic writer, was born in Silesia, 1816. He studied at Breslau and Berlin, and lectured on German literature in the University at Breslau. He wrote poems, successful plays and novels. His best-known work is *Debit and Credit*, which has appeared in several English translations. He died at Wiesbaden, 1895.

Frick, Henry Clay, manufacturer, philanthropist, was born in West Overton, Pa., 1849. Was president, and chairman of board of directors of the H. C. Frick coke company, now the largest coke producer in the world, operating nearly 40,000 acres of coal and 12,000 coke ovens, with daily capacity of 25,000 tons. Died, 1919.

Frobisher (*frob'ish-ẽr* or *frō'bish-ẽr*), **Sir Martin,** famous English navigator, was born near Doncaster about 1535, and brought up to the sea. Persuaded that there was a northwest passage to the Indies, and after many fruitless efforts to enlist the merchants in his cause, he obtained in 1576 from the government of Queen Elizabeth three vessels, explored portions of the Arctic coast, and, passing through the strait which has since borne his name, he returned to England and was knighted. Died, 1594.

Froebel (*frū'bel*), **Friedrich Wilhelm,** founder of the famous kindergarten system, was born at Oberweissbach Germany, 1782. He founded a kindergarten at Blankenburg in 1837. His system was founded on that of Pestalozzi—under whom he worked from 1807 to 1809—which combined physical, moral, and intellectual training, commencing with the years of childhood. Died, 1852.

Frohman, Charles, theatrical manager, was born at Sandusky, Ohio, 1860. He was educated in the public schools of New York. In 1881 he saw *Shenandoah* at a Boston museum; organized a company and bought rights to that play, outside of Boston; made a great success with that and succeeding ventures; organized Charles Frohman stock company, 1890. Lost at sea, 1915.

Frohman, Daniel, theatrical manager, was born at Sandusky, Ohio, 1853. Manager of Fifth Avenue theater and Madison Square theater New York, 1879-85; manager of Lyceum theater, manager of Daly's theater, New York, and Daniel Frohman stock company. President of actors' fund of America.

Fromentin (*frō'mäN'taN'*), **Eugene,** French painter and author, was born at La Rochelle, France, 1820. He was a pupil of Rémond and Cabat; traveled in 1842-46 in Algeria, Egypt, and the East, and was made an officier of the legion of honor, 1859. Died, 1876.

Frontenac (Fr. *frôn'tē-nāk'*; Eng., *fron'tē-nak*), **Louis de Buade, Comte de,** French colonial officer, governor of Canada, was born in 1621. He served in the French army, and in 1672 was appointed governor of the French possessions in North America. He died at Quebec, 1698.

Frost, Arthur Burdett, illustrator, author, was born at Philadelphia, Pa., 1851. He was self-taught in art, and exhibited at the Paris exposition, 1900. Author: *Bull Calf and Other Tales; Golfers, Alphabet;* etc. Died, 1928.

Frost, Robert, American poet, was born at San Francisco in 1875. At the age of ten he came to the New England hills where his ancestors had lived. The routine of school was not to his liking, so he worked at various trades for several years, meanwhile writing verses, but receiving no recognition. In 1912 he went with his family to England, and in 1913 his first volume, *A Boy's Will*, was published, followed by *North of Boston*, both of which secured for Frost a high place among modern poets. In 1915 he published *Mountain Interval*. He taught in Amherst College for three years, then in the University of Michigan, but returned to Amherst in 1923.

Frothingham, Arthur Lincoln, Jr., university professor, was born at Boston, 1859. Educated at the Royal University, Rome, 1875-81; M.A., Ph.D., University of Leipzig, 1883. Professor of archæology and history of art, 1887-98, ancient history and archæology, since 1898, Princeton University. Author: *A History of Sculpture; Mediæval Art Inventories of the Vatican.* Author and reviewer of the departments of architecture, art and archæology in the *New International Encyclopædia* and many contributions to American, English, French and Italian periodicals. Died in 1923.

Frothingham (*froth'ing-am*), **Octavius Brooks,** clergyman and author, was born at Boston, Mass., 1822. He was graduated at Harvard in 1843, and became pastor of a Unitarian church in Salem, Mass. In 1855 he removed to New Jersey, and in 1859 to New York, where he acted as minister of an independent religious organization for twenty years. Died, 1895.

Frothingham, Paul Revere, clergyman, author, was born at Jamaica Plain, Mass., 1864. He was graduated from Harvard, 1886, Harvard divinity school, A.M., S.T.B., 1889; preacher to Harvard University, 1899-1902; minister of Arlington Street church, Boston, 1900. Author: *William Ellery Channing; The Temple of Virtue,* etc.

Froude (*frōōd*), **James Anthony,** eminent English historian and general writer, professor of history at Oxford from 1892 to his death, was born at Dartington, England, 1818. He was educated at Oriel College, Oxford. In literature his best-known works are those on the Carlyle family, and *Erasmus.* His accuracy has been greatly criticised in detail, but his brilliant yet simple style and power of presenting broad effects have secured for his histories great influence and popularity. Died, 1894.

Fry, Elizabeth, English philanthropist, was born near Norfolk, 1780, daughter of John Gurney, a banker. Mrs. Fry visited prisons in different parts of Great Britain and on the continent, everywhere effecting ameliorations. She died at Ramsgate, 1845.

Frye, William Pierce, lawyer, United States senator from Maine, was born in Lewiston, Me., 1831. He was graduated at Bowdoin college, 1850; LL.D., 1889; LL.D., Bates, 1881; member of congress, 1871-81; elected United States senator in 1881, reëlected for the period 1883-1913. President *pro tem.* during Roosevelt's administration, and reëlected in 1907. Died, 1911.

Fryer, John, Agassiz professor of oriental languages and literature, University of California; was born at Hythe, Kent, England, 1839; graduated from Highbury College, London, 1860; LL.D.; general editor and chairman of executive committee of educational association of China, 1887-96; hon. secretary of Chinese Polytechnic institution, Shanghai. Author: *Educational Directory for China; Translator's Vade-Mecum, or Vocabulary of Scientific Terms in Chinese and English,* etc. Died, 1920.

Fuhrich (*fōō'riK*), **Joseph von,** Austrian painter, was born at Kratzau, Bohemia, 1800. He became professor of painting in the academy of Vienna, and painted many scriptural subjects. Died, 1876.

Fukushima (*fōō'kōō-shē'mä*), **Baron,** Japanese general, was born at Matsumoto, 1853. General staff officer, 5th division, first army; then chief of administrative bureau of territory occupied by Japan during war with China; in command of Japanese contingent until fall of Tientsin, then attached to General Yamaguchi, then to Field-Marshal Waldersee as general staff officer during Boxer troubles, 1900-01; attended King Edward's coronation; general staff officer headquarters Manchurian army, Russo-Japanese war, 1904-05; succeeded General Kodama as vice-chief of general staff of the army, 1906. Died, 1919.

Fuller, George, American figure, portrait, and landscape painter, was born at Deerfield, Mass., 1822. He studied in Boston, New York, London and on the continent, and achieved his first success in 1857. Had notable exhibits at Boston and New York, 1876 and 1879, respectively. Died, 1884.

Fuller, Melville Weston, chief-justice of the United States supreme court, was born in Augusta, Me., 1833. He was graduated from Bowdoin College in 1853, and attended a course of lectures at Harvard law schools; LL.D. He became chief-justice of the United States on October 8, 1888; was chancellor of Smithsonian institution; chairman of trustees of Peabody education fund; member of permanent court of arbitration, The Hague; member of arbitral tribunal in the matter of the Muscat Dowhs, at The Hague, 1905. Died, 1910.

Fuller, Sarah Margaret, Marchioness Ossoli, transcendentalist, was born at Cambridgeport, Mass., 1810. In 1844 she published *Woman in the Nineteenth Century.* In 1847 at Rome she met the Marquis Ossoli and married him. In 1849, during the siege of Rome, she took charge of a hospital; and after the capture of the city by the French she and her husband sailed with their infant for America, 1850. On July 16th the vessel was wrecked on Fire island near New York.

Fulton, Robert, celebrated American inventor and engineer, was born at Little Britain, Pa., 1765. He was received as a civil engineer in 1795, and wrote a work on canals in which he developed his system. Accepting an invitation from the United State minister at Paris, he proceeded to that city in 1796, and remained there for seven years, devoting himself to new projects and inventions. In 1803 he constructed a small steamboat, and his experiments with it on the Seine were attended with great success. He returned in 1806 to New York and pursued his experiments there. In 1807 he launched his steam-vessel, the *Clermont,* upon the Hudson, which made a successful start, in the presence of thousands of astonished spectators. In 1815 he launched the war-steamer *Fulton,* and died the same year.

Funk, Isaac Kaufman, author, publisher, clergyman, was born at Clifton, Ohio, 1839. He was graduated at Wittenberg College: D.D., 1860; LL.D., 1896; editor-in-chief of *Standard Dictionary;* entered into partnership with A. W. Wagnalls in 1878, merging into the Funk and Wagnalls company, 1890. Author: *The Next Step in Evolution; The Widow's Mite,* etc. Died, 1912.

Funston, Fred, brigadier-general of United States army, was born in Ohio, 1865. He studied in Kansas State University; was captain, major, and lieutenant-colonel in the insurgent army in Cuba, 1896; served eighteen months; was wounded; returned to United States, commissioned colonel of 20th Kansas volunteers, 1898; went to Philippines; took part in several battles; for crossing the Rio Grande at Calumpit on small bamboo raft in face of heavy fire and establishing rope ferry, by means of which the United States troops were enabled to cross and win the battle, he was promoted to brigadier-general of United States volunteers, 1899. Continued in active service in Philippines. Organized and commanded expedition resulting in capture of Aguinaldo, head of Filipino insurrection, and was appointed brigadier-general of United States army, 1901; commanded Mexican punitive expedition, 1916. Died, 1917.

Furness (*fûr'nes*), **Horace Howard,** author, editor, Shakespearean scholar, was born in Philadelphia, Pa., 1833; graduated from Harvard, 1854; Ph.D., University of Halle; Litt.D., Columbia College and Cambridge (England); LL.D., University of Pennsylvania, Harvard, Yale, 1901. Died, 1912.

Furniss (*fûr'nis*), **Harry,** English caricature artist, author, and lecturer, was born at Wexford, 1854. Settled in London at nineteen; many years contributor to *Illustrated London News; The Graphic; Black and White; Illustrated Sporting and Dramatic News* and the principal magazines in England and America.

Furnivall (*fûr'ni-val*), **Frederick James,** English philologist, was born at Egham, Surrey, England, 1825. He was educated at University College, London, and Trinity hall, Cambridge, where he took his degree, 1846; M.A., Ph.D., Litt.D. He devoted himself to English philology, and founded the Early English text society, 1864; the Chaucer society, 1868; the ballad society, 1868; and the New Shakespeare society, 1874; was active in starting the Browning society, 1881, and the Wycliffe society, 1882. He personally edited many works, chiefly through the medium of some one of the above societies; the most important being *Saint Graal;* Roberde of Brunne's *Handlyng Synne;* Walter Map's *Queste del Saint Graal; Political, Religious, and Love Poems;* Bishop Percy's *Folio MS. of Ballads and Romances.* His most valuable works are his splendid edition of Chaucer's *Canterbury Tales,* and the *Century Shakespeare* in 39 volumes. Died, 1910.

Fuseli (*fū'zē-li*), **John Henry,** Swiss painter, was born at Zürich in 1741. He was at first a clergyman and writer of Zürich, visited England, afterward studied art in Italy, returned to London in 1778, and executed pictures for Boydell's Shakespeare gallery. Died, 1825.

Fustel de Coulanges (*fus-tel' dẽ kōō-lôNzh'*), **Nuam Denis,** French historian, was born at Paris, 1830. He filled chairs at Amiens, Paris, Strassburg, and from 1875 at the Ecole Normale at Paris. After the war of 1870 he turned his attention to history, though he had written previously *Chic* and *Polybe.* His first historical work, *La Cité antique,* made its author famous. Member of the French institute. Died, 1889.

Fyffe (*fif*), **Charles Alan,** English historian, was born at Blackheath, England, 1845. In 1867 he took classical honors at Balliol College, Oxford, and was elected a fellow of University College. During the Franco-German war he was war correspondnet for the *London Daily News,* and was in Paris during the commune. Died, 1892.

Gabrilowitsch, Ossip, pianist and orchestra conductor, was born at Petrograd, 1878. He studied under Rubenstein, winning the Rubenstein prize in 1894, and under Leschetizky. After extended concert tours in Europe, he came to the United States, 1900. In 1918 he became conductor of the Detroit Symphony Orchestra. He married Clara Clemens, the daughter of "Mark Twain."

Gade (*gä'dẽ*), **Niels Wilhelm,** Danish composer, was born, lived and died at Copenhagen, 1817-90. He was court organist at Copenhagen, and wrote several symphonies, overtures, and cantatas, as well as many choral and solo productions.

Gadsden (*gadz'den*), **Christopher,** American patriot was born in Charleston, S. C., 1724. He was a member of the first continental congress, 1774, became brigadier-general during the revolution and was lieutenant governor of South Carolina at the time of the surrender of Charleston to Sir Henry Clinton in 1780. He died in 1805.

Gadsden, James, grandson of above, was born at Charleston, S. C., 1788. He served in the war of 1812 and against the Seminoles. In 1853 he was appointed minister to Mexico, and negotiated the purchase of part of Arizona and New Mexico, known as the "Gadsden purchase." He died in 1858.

Gadski (*Gahds'kee*), **Johanna,** one of the greatest sopranos, was born in 1871 at Anclam, Russia. She made her début in Kroll's Theatre, Berlin, as *Undine* in *Lortzing's Opera.* Her success was immediate, and has grown greater each succeeding year.

Gage, Simon Henry, biologist, educator, was born in Otsego county, N. Y., 1851. He was graduated at Cornell; instructor, assistant professor and full professor of Cornell from 1878; studied in Europe, 1889, and is now one of the editors of *American Journal of Anatomy.*

Gage, Thomas, English general, last royal governor of Massachusetts, was born in 1721. In 1763 he was made commander-in-chief of the British forces in America. In 1774 he was nominated governor of Massachusetts, a post of peculiar difficulties. On June 17th the battle of Bunker Hill was fought, which resulted in a dearly bought victory to the English; but numerous complaints being lodged against Gage, he was recalled by the British government in October, 1775. Died, 1787.

Gagern (*gä'gern*), **Heinrich Wilhelm August,** German statesman, was born at Baireuth, Germany, 1799. He was educated at the military school at Munich. In 1821 he entered political life under the government of Hesse-Darmstadt. In

1832 he vigorously opposed the policies of the state governments and of the federal diet. In 1846 he published a work against the government of Hesse. Died, 1880.

Gailor, Thomas Frank, prelate, bishop of Tennessee since 1893, was born at Jackson, Miss., 1856. He graduated at Racine College, and the General theological seminary, New York; D.D., S.T.D. He became professor of ecclesiastical history, University of the South, 1882, and chaplain 1883; vice-chancellor of University of the South, 1890-93.

Gainsborough (*gānz'bŭ'rō*), **Thomas,** eminent English painter, was born at Sudbury, England, 1727. He excelled as a portrait painter, and more than two-thirds of his 300 pictures were portraits. His later years were devoted to landscape painting, especially after settling in London in 1774. At the creation of the Royal Academy he was chosen one of the first members. He died in 1788.

Gaius (*gā'yus*), or **Caius,** Roman jurist, flourished in the second century of our era. He was the author of more than fifteen works, of which the *Institutes* was the most important.

Galba (*gal'bà*), **Servius Sulpicius,** Roman emperor, was born B. C. 3. He was commander of the army in Spain when the emperor Nero died, in 68 A. D., and was so popular with the soldiers that they made him emperor when seventy-one years old. He was murdered after a reign of only seven months, in 69 A. D.

Galdos (*gäl-dōs'*), **Benito Perez,** Spanish novelist and dramatist, was born in the Canary islands, 1845, but was brought up at Madrid. His *Gloria Dona Perfecta, Trafalgar, Léon Roch, Marianela,* etc., have been translated into English, and entitle him to be classed among the most noted modern writers.

Galen (*gā'len*), or **Claudius Galenus,** celebrated Greek physician, was born at Pergamus, in Mysia, 130 A. D., He first studied medicine at Pergamus, afterward at Smyrna, Corinth, and Alexandria. In his thirty-fourth year he went to Rome, where he stayed for about four years, and gained such a reputation that he was offered, but declined, the post of physician to the emperor. The place and time of his death are alike unknown, though the latter is believed to have been 201.

Galilei, Galileo (*gä'le-lā'ō*), celebrated Italian astronomer and physicist, born at Pisa, 1564. While a student he had enunciated the law of vibrations or swings of a pendulum—i. e., its isochronism. In 1588 he was provided with a lectureship at Pisa University. At this period he invented the hydrostatic balance. Owing to veiled suspicion and hostility and the loss of court favor, he quitted Pisa and obtained the professorship of mathematics in Padua University in 1592.

In 1609 he constructed a telescope on the model of that of Hans Lippershey of Middleburg, Holland, and with it discovered four satellites of Jupiter, as well as the fact that they were not stationary, but actually revolved around the bright planet. The uneven configuration of the surface of the moon was demonstrated; and he detected sun-spots. The astronomer was invited to Florence, in 1610, by his patron, Cosimo, Grand Duke of Tuscany, and established as his philosopher and mathematician. Continued advocacy of Copernican principles and their Scriptural significance brought him under the ban of the church.

In 1632 appeared his *Dialogues on the Systems of the World,* after which he was peremptorily summoned to Rome by Pope Urban VIII. Stricken in years, and dreading imprisonment, Galileo publicly abjured his own philosophy. Accused of heresy, he was, among other penalties, to suffer detention, while his book was prohibited. At the close of 1633 he was permitted to return to Arcetri, Florence, where he thereafter lived in seclusion. An edition of Galileo's works and correspondence, including what is perhaps his most important production, *Dialogues of the New Sciences,* was undertaken by the Italian government in 1890. Died in 1642.

References.—See *Lives* by Viviani; T. Henri Martin; Favaro; and Fahie. Also Lodge's *Pioneers of Science;* Shelley's *Literary and Scientific Men of Italy;* Ball's *Great Astronomers.*

Gall (*gŏl;* Ger., *gäl*), **Franz Joseph,** German physician, founder of phrenology, was born at Tiefenbronn, on the borders of Baden and Würtemberg, 1758. In 1785 he established himself as a physician in Vienna, where for many years he carried on a series of elaborate investigations on the nature of the brain and its relation to the outer cranium. Died, 1828.

Gallait (*gäl-lā'*), **Louis,** Belgian historical painter, was born at Tournay, 1810, became famous by pictures on subjects from the history of the low countries. He died in 1887.

Galland (*gä-lāN'*), **Antoine,** French orientalist, was born at Rollot in Picardy, 1646. Attached in 1670 to the French embassy at Constantinople, he traveled in Syria and the Levant, 1673-79. In 1709 he became Arabic professor in the College de France. Is best known by his translation of the *Arabian Nights.* Died, 1715.

Gallatin (*gal'ä-tin*), **Albert,** American financier and statesman, was born at Geneva, Switzerland, 1761. He graduated there in 1779, came to the United States in 1780, taught French at Harvard, bought land in Virginia and Pennsylvania, and entered political life in 1789. In 1795 he entered congress from Pennsylvania, and in 1801-14 was secretary of the treasury. From 1827 he devoted his time to historical and ethnological researches, writing on finance, politics and the Indian tribes. He was one of the founders, and the first president, of the ethnological society of America. Died, 1849.

Galaudet, Thomas Hopkins, educator, philanthropist, was born in Philadelphia, Pa., 1787. He was graduated at Yale College, 1805; tutor there, 1808-10; founded and became superintendent of the American asylum for deaf mutes at Hartford. Died, 1851.

Galle (*gäl'lĕ*), **Johann Gottfried,** German astronomer, was born in Prussian Saxony in 1812. He studied at Berlin, 1830-33, became director of the Berlin observatory, and shares with Leverrier the honor of discovering the planet Neptune. He afterward became professor of astronomy at Breslau. Died in 1910.

Galli-Curci, Amelita, noted soprano, was born and trained in Italy. Fresh from her triumphs in Madrid and South America, where she sang with Caruso, she came to the United States, and made her debut in New York in 1918, where her singing created the wildest enthusiasm. Her voice is wonderfully pure, and amazingly flexible.

Galsworthy, John, English novelist and playwright, was born in Surrey, 1867. He was educated at Oxford, practiced law for a time, then turned to literature. His writings are of realistic nature and deal with social problems. Among them are *The Island Pharisees, The White Monkey, The Silver Spoon,* novels, and *The Silver Box, Justice, The Fugitive,* plays.

Galt (*gôlt*), **Sir Alexander Tillock,** Canadian statesman, was born at Chelsea, England, 1817, and emigrated to Canada when a boy. From July to November, 1867, he was finance minister of the Dominion. After 1857 he allied himself with the liberal-conservative party, and was considered one of the leading authorities on finances in the Dominion. He became grand commander of the order of St. Michael and St. George in 1878. He wrote *Canada from 1849 to 1859.* Died, 1893.

Galt, Sir Thomas, Canadian jurist, brother of the foregoing, was born in England in 1815, and educated in Scotland. He removed to Canada in 1832, and was admitted to the bar in 1845. In 1858 he became queen's counsel, in 1869 judge of the common pleas, and in 1887 chief justice of the court of common pleas. He was knighted in 1888. Died, 1901.

Galton (*gôl'tun*), **Francis,** English scientist and traveler, was born near Birmingham, England, 1822; cousin of Charles Darwin. He was educated at King Edward's school, Birmingham, and King's College, London, studied medicine, and was graduated at Trinity College, Cambridge, 1844; D.C.L., Oxford; Sc.D., Cambridge. He was an officer and member of many scientific societies, and for his *Narrative of an Explorer in Tropical South Africa* received the gold medal of the Royal Geographical society. Died, 1911.

Galvani (*gäl-vä'nē*), **Luigi,** Italian physician and physicist, from whom "galvanism" derived its name, was born in Bologna, 1737. He made those discoveries, partly by means of experiments on the muscles of frogs, which he published to the world in 1791 in his treatise, entitled *De Viribus Electricitatis in Motu Musculari Commentarius.* The now fully-established doctrine of animal electricity owes its origin to the patient and laborious investigations of the Bologna professor. Died, 1798.

Gama (*gä'mà*), **Vasco da,** Portuguese navigator, was born about 1469 at Sines at Alemtejo. He early distinguished himself as an intrepid mariner and was selected by King Emanuel to discover the route to India around the cape. After rounding the cape, despite hurricane and mutinies, he made Melinda early in the following year. For twenty years Da Gama lived inactive at Evora, while the extended Portuguese conquests were presided over by five viceroys. The fifth was so unfortunate that John III. in 1524 despatched Da Gama to India, where he succeeded in making Portugal once more respected, but soon after his arrival he died at Cochin, 1524.

Gamaliel (*gä-mā'li-el*), St. Paul's teacher, was a prominent Pharisee, and taught "the law" early in the first century. Tolerant and peaceful, he seems to have placed Christianity on a par with other sects; and he exhorts to long-suffering on all sides.

Gambetta (*gam-bet'à*), **Leon Michel,** French lawyer, statesman, and orator, was born at Cahors, 1838. He studied law, and in 1859 joined the Paris bar. It was not until 1868 that his name came prominently before the public. When the national assembly was resolved upon in 1871, Gambetta sought by decree to give it an exclusively republican character. The decree was canceled at the instigation of Prince Bismarck, and Gambetta resigned office as minister. He subsequently entered the assembly as a member for Paris. He became premier in 1881, but in a few months resigned. Died, 1882.

Gannett (*gan'et*), **Henry,** geographer and statistician. United States geological survey, since 1882, was born at Bath, Me., 1846. He was graduated from Lawrence scientific school, Harvard University; LL.D., Bowdoin; assistant director census of Cuba, 1907-08. Author: *Statistical Atlas of Eleventh Census; Scribner's Statistical Atlas* (in part); *Dictionary of Altitudes.* Died, 1914.

Garcia (*gär-thē'ä*), **Manuel,** musical genius, was born at Seville, Spain, 1775. After acquiring a considerable reputation as a singer in Cadiz and Madrid, he went to Paris in 1808, where he obtained great success at the Italian opera; and in 1811 proceeded to Italy, where he was received with equal favor in Turin, Rome and Naples. Died at Paris, 1832.

Garcilaso de la Vega (*gär'thē-lä'sō dā là vä'gà*), Spanish soldier and poet, was born at Toledo about 1503. He wrote a number of sonnets and other poems, several eclogues, and is sometimes called the "Spanish Petrarch." Died at Nice, 1536.

Garcilaso de la Vega, Peruvian historian, known as "the Inca," was born at Cuzco, in Peru, about 1540. At the age of twenty he proceeded to Spain, and never again visited America. His first work was a *History of Florida,* containing an account of the conquest of the country by Hernando de Soto. Died, 1616.

Garden, Mary, soprano and opera director, was born, 1877, at Aberdeen, Scotland. She came to America at the age of six; studied violin and piano in Chicago; left for Paris in 1896. She appeared first in opera as a substitute; was enthusiastically received, and continued in this field as a member of the Chicago Opera Company, of which she became general director in 1921.

Gardiner, Samuel Rawson, English historian, was born in 1829; was educated at Winchester and Christ Church, Oxford. In 1884 he was elected fellow of All Souls', and was for some years professor of modern history at King's College, London. His historical works include *England Under the Duke of Buckingham and Charles I. The Personal Government of Charles I.* and the *Fall of the Monarchy of Charles I.* Died, 1902.

Garfield, Harry Augustus, educator, was born at Hiram, Ohio, 1863, the son of James Abram Garfield. He was graduated at Williams College, 1885; studied law at Columbia Law School one year, and at Oxford, England, and Inns of Court, London. He practiced law as a member of the firm of Garfield, Garfield, and Howe, Cleveland, 1888-1903; professor of politics, Princeton, 1903-08; elected president of Williams College, 1907, and assumed duties in June, 1908.

Garfield, James Abram, twentieth president of the United States, was born in Orange, Cuyahoga county, Ohio, 1831. He entered Williams College, Mass., and was graduated in 1856. He studied and practiced law, and was a member of the Ohio senate, 1859-60; entered the army in 1861 as colonel of the 42d Ohio volunteers; served in southeastern Kentucky, and was promoted to be brigadier-general of volunteers, 1862; promoted to major-general of volunteers. He resigned to occupy a seat in the thirty-eighth congress; elected United States senator in the spring of 1880. He was elected to the presidency at the close of 1880, and entered upon office in the spring of the following year; but on the 2d of July he was shot by the assassin Guiteau, while at the Washington station of the Baltimore and Potomac railway, and died at Elberon, N. J., after lingering for nearly three months. His untimely death was mourned, not only by his own countrymen, but by the whole civilized world. Died, 1881.

Garfield, James Rudolph, lawyer, former secretary of the interior, and son of James Abram Garfield, was born in Hiram, Ohio, 1865. He was graduated at Williams College, Mass., 1885; studied at Columbia Law School; was admitted to the bar in 1888; practiced law in Ohio, 1888, 1902; was member of Ohio senate, 1896 to 1900; was secretary of the interior, 1907-09.

Garibaldi (*gä-rē-bäl'dē*), **Guiseppe,** Italian patriot, was born at Nice, France, 1807. He associated himself enthusiastically with Mazzini for the liberation of his country. He took part in the defense of Rome against France, but, being defeated, fled to New York, to return to the isle of Caprera, biding his time. He joined the Piedmontese against Austria, and in 1860 set himself to assist in the overthrow of the kingdom of Naples and the union of Italy under Victor Emmanuel. Landing in Calabria, he entered Naples and drove the royal forces before him, after which he returned to his retreat at Caprera. In 1870-71 he commanded a French force in the Franco-German war. Died, 1882.

Garland, Hamlin, American novelist and short-story writer, was born of Scotch descent at West Salem, Wis., 1860. Since 1890 he has devoted himself to lecturing and writing. Besides a collection of verse, entitled *Prairie Songs,* he has published the following books: *Rose of Dutcher's*

Cooly; A Little Norsk; Jason Edwards; A Member of the Third House; Crumbling Idols; Wayside Courtships; Prairie Folks; Hesper; The Tyranny of the Dark; The Shadow World, etc.

Garnier (*gär'nyā*), **Jean Louis Charles,** French architect, was born at Paris, France, 1825. He studied at the school of fine arts, and began to exhibit water colors in 1853, after considerable travel in Italy and Greece. In 1854 he set up as an architect in Paris, and in 1861 competed for the design of the new opera house in Paris. Died, 1898.

Garrett, E. W., Canadian physician; professor of obstetrics, Queen's University, Kingston, Canada, was born in the county of North Ontario, 1853. He was educated at Ontario College, Picton; M.A., M.D.; appointed demonstrator of anatomy in the Royal College of Physicians and Surgeons, and later filled the chair of professor of anatomy. Senior surgeon in the Kingston general hospital, and surgeon-major in the 14th battalion princess of Wales' own rifles.

Garrick, David, English actor, son of a captain in the army, was born in Hereford in 1717. He made his first appearance, under the name of Lyddal, at Ipswich, in 1741, and soon after played *Richard III.* in the theater of Goodman's Fields. In 1743 he went to Dublin; in 1747 he became joint patentee of Drury Lane, two years later marrying Mademoiselle Violette. He acted at Drury Lane until 1776. He died in 1779 and was buried in Westminster abbey.

Garrison, Lindley M., lawyer, jurist, was born at Camden, N. J., Nov. 28, 1864. He received his academic education at Phillips Exeter Academy and Harvard, and was graduated in law from the University of Pennsylvania, 1886. He was admitted to the New Jersey bar, 1888, practised in Camden for ten years, from 1899-1904, was a member of the law firm of Garrison, McManus & Enright, Jersey City. He was vice-chancellor of the New Jersey supreme court, 1904-13, when he was appointed secretary of war by President Wilson. Resigned from Cabinet, 1916.

Garrison, William Lloyd, American abolitionist, was born at Newburyport, Mass., 1805. In 1831 he founded *The Liberator*, which he published at Boston during thirty-five years. His whole course was attended by the most malignant opposition from the pro-slavery party; his life was frequently threatened, and more than once he was assaulted and publicly handled; but his courage, energy, and ability were inexhaustible, and he lived to see the complete success of the movement which he had done so much to promote. Died, 1879.

Gary, Elbert H., chairman of board of directors and chairman of finance committee of United States steel corporation, was born at Wheaton, Ill., 1846; educated at Wheaton College and Chicago University; graduated from law school University of Chicago, 1867. Admitted to Illinois bar, 1867; bar of United States supreme court, 1878; practiced law in Chicago twenty-five years; president of Chicago bar association, 1893-94; Trustee of Northwestern University. Died, 1927.

Gaskell, Elizabeth Cleghorn Stevenson, English novelist, was born at Cheyne Row, Chelsea, 1810. She married in 1832 William Gaskell. In 1848 she published anonymously *Mary Barton*, followed by the *Moorland Cottage;* and *Cranford*. She died suddenly at Holybourne, Alton, in Hampshire, 1865.

Gassendi (*gä'sän'dē*), or **Gassend, Pierre,** French philosopher and mathematician, was born at Champtercier in Provence, 1592. In 1645 appointed professor of mathematics in the Collège Royal at Paris, where he died, 1655.

Gates, Horatio, famous American general, was born in England, 1728. Sent to America in 1755, as captain of infantry; he served under General Braddock. In 1755 was made adjutant-general in the colonial army. He accompanied Washington to Massachusetts in July of the same year, where he remained until June, 1776, when he received the chief command of the army, which had just retreated from Canada. A brilliant success gained at Saratoga won him a great military reputation. In 1780 he was called by congress to the command of the army of the south. He was superseded, and was not acquitted of blame until 1782. He then retired to Virginia until 1790, when he emancipated all his slaves and settled in New York. Died, 1806.

Gates, Merrill Edwards, educator, author, was born at Warsaw, N. Y., 1848; graduated from University of Rochester, 1870; Ph.D., LL.D., L.H.D., president of Amherst College, 1890-99. He is a member of the American philosophical society, American history association, etc. Author: *Sidney Lanier, Poet and Artist; Land and Law as Agents in Educating the Indians*, etc.

Gatling, Richard Jordan, American inventor, was born in North Carolina, 1818. He took his degree in medicine about 1849, but did not practice. His most celebrated invention was that of the revolving gun, which bears his name, the conception of which came to him in 1861. Among Dr. Gatling's later inventions were an improved method of casting steel cannon and a pneumatic gun for discharging explosives. Died, 1903.

Gauss (*gous*), **Karl Friedrich,** noted German mathematician, was born in Brunswick, Germany, 1777. He was graduated at the Collegium Carolinum in his native city in 1795, at the University of Göttingen in 1798. In 1807 he was called to the chair of mathematics and the directorship of the observatory in the University of Göttingen, positions which he held until his death. Died, 1855.

Gautama (*gô'tä-mä*), **Buddha.** See Buddha.

Gautier (*gō'tyā*), **Theophile,** French poet and novelist, was born at Tarbes, 1811. From painting he turned to literature, and became a "romanticist" of extreme type. His poetry reached its highest point in *Emaux et Camées*, 1856. In 1835 appeared his celebrated novel, *Mademoisell de Maupin*. Other works were an enlarged edition of his *Emaux et Camées; Les Grotesque*, on the writers of the sixteenth and seventeenth centuries; *Honoré de Balzac; Ménagerie Intime*, a kind of informal autobiography. He died at Neuilly, 1872.

Gay, John, English poet, was born in 1685. He wrote a large number of poems and ballads, besides several operas; but little of his poetry is now read. His greatest success was *The Beggar's Opera*, which ran sixty-two nights. Died, 1732.

Gay, Sydney Howard, American journalist and author, was born at Hingham, Mass., 1814. He became connected with the New York *Tribune* and was its managing editor from 1862 to 1866. In 1881, in conjunction with William Cullen Bryant, he wrote a *History of the United States*. Died, 1888.

Gay, Walter, American artist, was born at Hingham, Mass., 1856. He was educated in Boston public schools and Roxbury Latin school. Went to Paris, 1876, to study art, where he was a pupil of Bonnat. He received gold medals at Antwerp, Vienna, Berlin, Munich, Paris, and Hors Concours, Paris. Life fellow of the Metropolitan museum of fine arts, New York.

Gayarre (*gä'a'rā'*), **Charles Etienne Arthur,** American historian, was born in New Orleans, 1805. He was admitted to the Philadelphia bar in 1829. In 1835 he was elected to the United States senate, but on account of ill health resigned his seat. During the Civil War he supported the confederacy, and after its close became reporter of the state supreme court. Died, 1895.

Gay-Lussac (*gā'lü'sàk'*), **Joseph Louis,** French chemist and physicist, was born at St. Leonard in Haute Vienne, 1778. He was educated at the Paris Polytechnic School, passed in 1801 to the department of ponts et chaussées, and began a series of researches on vapor, temperature and terrestrial magnetism. In 1808 he made the important discovery of the law of volumes. He was the first to form synthetically the hydriodic and iodic acids; and in 1815 he succeeded in isolating cyanogen. In 1818 he received the appointment of superintendent of the government gunpowder factories, and in 1829 was made chief assayer of the mint. In 1839 he was made a peer of France. Died, 1850.

Gaynor, William Jay, jurist, was born at Whitestown, Oneida county, N. Y., 1851; educated there and in Boston; worked on New York and Brooklyn newspapers, 1873-75, while studying law; admitted to bar and began practice, 1875. Justice of appellate division of supreme court; received democratic nomination for mayor of New York city, 1909, and was the only Democratic candidate on the ticket elected. Died, 1913.

Geddes (*ged'is*), **Patrick,** British biologist and botanist, was born at Perth, 1854. He was educated at the Normal school of science, London, and at several foreign universities; became professor of botany at Dundee.

Geibel (*gī'bel*), **Emanuel von,** German poet, was born at Lübeck, 1815. He studied at Bonn and Berlin. His *Voices of the Time* appeared in 1841, a book of *Sonnets* in 1846, and *Songs of Junius*, 1848. He obtained a professorship at Munich, 1852, which he resigned, 1868. Died, 1884.

Geikie (*gē'kī*), **Sir Archibald,** British geologist, was born at Edinburgh, 1835. He was educated at the Edinburgh high school and university. Was director-general of the survey of the United Kingdom, and head of the geological museum, London, 1882-1901. Knighted, 1891. Died, 1924.

Geikie, James, British geologist, brother of preceding, professor of geology and mineralogy from 1882 and dean of the faculty of science, Edinburgh University, was born at Edinburgh, 1839. He was graduated at Edinburgh University; LL.D., D.C.L. one of the founders and president of the royal Scottish geological society, and editor of *Scottish Geographical Magazine*. Author: *The Great Ice Age; Prehistoric Europe*. Died, 1915.

Gelee, (*zhe'lā*), **Claude.** See **Claude of Lorrain.**

Gellert (*gel'ert*), **Christian Furchtegott,** German poet and moralist, was born at Hainichen, Saxony, 1715. He was educated at Leipzig, and in 1751 became a professor there. He died in 1769.

Gellius (*jel'i-us*), **Aulus,** Latin author, supposed to have been born at Rome about 117 A. D. He practiced law there. He died about 180 A. D.

Gelon (*jē'lon*), tyrant of Gela and Syracuse, was the son of Deinomenes, and a native of the former city. In 485 B. C. made himself master of Syracuse. His influence soon extended itself over the half of Sicily. His clemency and the wisdom of his measures rendered him so generally beloved that when he appeared unarmed in an assembly of the people, and declared himself ready to resign his power, he was unanimously hailed as the deliverer and sovereign of Syracuse. Died, 478 B.C.

Genet, or Genest (*zhē-nē'*), **Edmond Charles Edouard,** French diplomat, was born in France in 1765. He entered the French diplomatic service as *chargé d'affaires* at St. Petersburg in 1789. He settled in New York, and married a daughter of Governor Clinton. He was the author of some historical works, and translated a Swedish history. Died at Schodak, N. Y., 1834.

Genevieve (*zhen'vyev'*), **Saint,** patroness of Paris, was born at Nanterre near Paris, about 422. She took the veil, and acquired an extraordinary reputation for sanctity, increased by her assurance that Attila and his Huns would not touch Paris, and by an expedition for the relief of the starving city during Childeric's Frankish invasion. Died, 512.

Genghis Khan (*jen'giz kän'*), celebrated Mongol conqueror, was born near Lake Baikal, 1162, the son of a Mongol chief. By his military skill and daring example he gradually raised his people to a position of supremacy in Asia, and established by means of them a kingdom which, at his death, stretched from the Volga to the Pacific, and from Siberia to the Persian gulf. Died, 1227.

Genseric (*jen'sēr-ik*), king of the Vandals, son of Godigisdus, founder of the Vandal kingdom in Spain, and natural brother of Gunderic, whom he succeeded in 429, was born in 406 A. D. He continued master of the seas until his death in 477, despite strenuous efforts of the Roman emperors to crush his power.

Gentz, von (*fŏn gents'*), **Frederick,** German diplomat and publicist, was born at Breslau, 1764. In 1786 he entered the public service of Prussia, but in 1802 exchanged into that of Austria. He wrote bitterly against Napoleon. Died, 1832.

Genung (*jē-nung'*), **John Franklin,** educator, professor of rhetoric, Amherst College, was born at Willseyville, N. Y., 1850. He graduated at Union College, 1870, Rochester Theological Seminary, 1875; Ph.D., 1881; D.D., Yale. Author: *Tennyson's in Memoriam; The Working Principles of Rhetoric; Stevenson's Attitude to Life; The Hebrew Literature of Wisdom in the Light of Today*. Died, 1919.

Geoffroy Saint-Hilaire (*zhô'frwȧ' saN'tē'lâr'*) **Etienne,** French naturalist, was born at Etampes, 1772, became a pupil of Haüy at the College of Navarre, Paris, and in 1793 professor of zoölogy in the museum of natural history. He was the author of several valuable works illustrative of the science. Died, 1844.

George, Grace, actress, was born in New York, 1880. She received a convent education, and married William A. Brady, 1899. Made her début in *The New Boy*, New York, 1894; appeared in leading parts in *The Girl I Left Behind Me; Charley's Aunt;* starred in *The Princess Chiffon*, 1899.

George, Henry, American economist and sociologist, was born in Philadelphia, 1839. In 1876 he was state inspector of gas meters, but in 1880 removed to New York, and the next year visited Ireland, on his way to England. He wrote *Progress and Poverty* in 1879, and undertook lecturing tours in 1883 and 1889 in support of his principles. Besides this book he published *The Irish Land Question, Social Problems, Protection and Free Trade* and *The Science of Political Economy*. In 1886 and again in 1897 he was a candidate for the mayoralty of New York. Died, 1897.

George I., king of Great Britain from 1714 to 1727, was born in 1660. He was the son of Ernest Augustus, elector of Hanover, and of Sophia, the granddaughter of James I. of England; and on the death of Anne, he ascended the throne, being the first monarch of the house of Hanover. In 1727 the king set out on a visit to his Hanoverian dominions, but had only reached Osnabrück when he was struck down by apoplexy. By his marriage with Sophia Dorothea, a daughter of the duke of Zell, he left one son, George Augustus, who succeeded him.

George II., son and successor of George I., and king of Great Britain from 1727 to 1760, was born in 1683. Ascending the throne when forty five years of age, he had the advantage over his father of being able to speak English, which George I. could never do. In 1756 the Seven Years' War broke out, in which England sided with Prussia and the last years of the king's reign saw the British victors in India, Canada, and on the seas. He died in London, 1760.

George III., king of Great Britain from 1760 to 1820, and king of Hanover (elector from 1760 to 1815), eldest son of Frederick Louis, prince of Wales, was born in London, 1738. In 1761 he married Princess Charlotte Sophia of Mecklenburg-Strelitz, by whom he had fifteen children. More English in sentiment and education than his two predecessors, George's main interest was centered in his English kingdom, and never during his long life did he once set foot in his Hanoverian possessions. At his accession he found the Seven Years' war in progress, and he was later involved in the war of the American revolution and the Napoleonic wars. Died at Windsor, 1820.

George V., King of England, born 1865; married, 1893, Princess Victoria Mary of Tech. Acceded to the throne, 1910, on death of his father, Edward VII. Father of Edward, Prince of Wales, born 1894.

George, Saint, the patron saint of England. His true history is not clearly known. Some say the real Saint George was a soldier in the army of Diocletian, 300 A. D., and that he suffered death

for the Christian faith. English crusaders brought home his fame from the East, and Edward III. made him patron of his new order of the garter.

Gerard (*zhā'rar'*), **Etienne Maurice, Count,** marshal of France, was born in Lorraine, 1773. He specially distinguished himself at Austerlitz, Halle, Jena, Erfurt, Lintz and Wagram. On the morning after this last battle he received the title of baron of the empire. In 1835 he was made grand chancellor of the legion of honor. Died, 1852.

Gerard, Francois Pascal, Baron, French painter, was born in Rome, 1770. Nearly the whole of his life was spent in Paris. Famous portraits were those of Napoleon, Talleyrand, Talma and Mme. Récamier. Died in Paris, 1837.

Gerhardt (*ger'härt*), **Karl Friedrich,** German chemist, was born at Strassburg in 1816. At the time of his death he was professor of chemistry in the University of Strassburg. Gerhardt and Laurent were the joint authors of the system of chemical notation now in use. All his suggestions and discoveries are embodied in his *Traité de Chimie Organique*. Died, 1856.

Gerhardt, Paul, Lutheran hymn-writer, was born at Grafenhainichen in Saxony, 1607. He became assistant pastor at St. Nicholas in Berlin in 1657, but for opposing the elector's attempted union of the Lutheran and Reformed churches was banished in 1666. Died, 1676.

Germanicus, Cæsar (*jĕr-man'i-kus*), son of Nero Claudius Drusus, and of Antonio, daughter of Mark Antony and niece of Augustus. In 12 A. D. he was consul, in 13 was appointed to the command of the eight legions on the Rhine, and in 14 quelled a great mutiny. Died, 19 A. D.

Gerome (*zhā-rōm'*), **Jean, Leon,** distinguished French painter, was born at Vesoul, Haute-Saone, France, 1824. After studying at Paris and traveling in the East he was appointed professor of painting in the school of the fine arts at Paris. Among the best known of his works are *Phryne Before Her Judges; Cleopatra and Cæsar*. Died, 1904.

Gerry, Elbridge, American statesman, fifth vice-president of the United States, was born in Marblehead, Mass., 1744. He was graduated at Harvard College, 1762. In 1776 he was elected a delegate to the continental congress, signed the declaration of independence, and was placed on the most important committees. He was a member of congress, 1789-93, and in 1797-98 special envoy to France, with Pinckney and Marshall. In 1812 he was elected vice-president of the United States. Died, 1814.

Gerson (*zher'sōn'*), **Jean Charlier de,** French theologian, was born at Gerson, in the diocese of Rheims, 1363. He became chancellor of the University of Paris, 1395, and used his great influence for church unity and ecclesiastical reform. Died at Lyons, 1429.

Gervais (*zher'vā'*), **Honore Hippolyte Achille,** member of Canadian house of commons for city of Montreal since 1904, was born at Richelieu, Quebec, 1864. Promoter of technical schools of Montreal and Quebec and high school of agriculture of Oklahoma; administrator of Laval University; corresponding member of La société de législation comparée de France; member of council of Montreal bar; Batonnier of the bar of Montreal, 1908, batonnier of the bar of the province of Quebec, 1908.

Gervinus (*ger-vē'nōōs*), **Georg Gottfried,** German critic and publicist, was born at Darmstadt, 1805, became in 1836 professor of history at Göttingen. In 1844 he was appointed honorary professor in Heidelberg, and from this period wrote in behalf of constitutional liberty. His great commentaries on Shakespeare were translated into English in 1862. He died in 1871.

Gesenius (*gē-sē'ni-us*), **Friedrich Heinrich Wilhelm,** German Hebraist and oriental scholar, was born at Nordhausen, 1786. He became professor of theology at Halle in 1811. His greatest work is his *Hebrew and Chaldee Lexicon*, left unfinished at his death. He died in 1842.

Gessner (*ges' nĕr*), **Salomon,** German pastoral poet, who also painted and engraved landscapes, was born at Zürich, 1730, where he was a bookseller. His landscape-paintings are all in the conventional classic style, but his engravings are of real merit. Died, 1788.

Ghiberti (*gē-ber'tē*), **Lorenzo,** Italian sculptor, was born in Florence about 1378. He was the sculptor of the bronze doors of the baptistry of San Giovanni, Florence. He died in Florence in 1455.

Ghika (*gē'kä*), **Helena,** or "Dora d'Istria," daughter of Prince Michael Ghika, was born at Bucharest, 1828. Her works include *La Vie Monastique dans l'Eglise Orientale; La Suisse Allemande Les Femmes en Orient*. She wrote much for the *Revue des Deux Mondes*. Died, 1888.

Ghirlandajo (*gēr'län-dä'yō*), otherwise called **Corradi,** or **Bigordi, Domenico del,** Florentine painter, was born in 1449. He assisted in the decoration of the Sistine chapel in Rome, and executed a series of frescoes in the Sassetti chapel in Santissima Trinita, Florence. Died, 1494.

Gibbon, Edward, celebrated English historian, was born at Putney in 1737. He was sent to Magdalen College, Oxford, where he became a convert to the Roman Catholic Church; and finally to Lausanne, where he renounced the Catholic faith, without embracing any other, and became a skeptic.

On returning to England he entered upon the duties of active life, but read much, and prepared himself for authorship. In 1763 he went to Italy; and while sitting, amidst the ruins of the Capitol at Rome, he conceived the idea of writing the history of the decline and fall of that city. In the meantime, he joined M. Deyverdun, a Swiss scholar, in publishing a journal called, *Memoires Litteraires de la Grand Bretagne*, which met with no success.

In 1770 he began his celebrated history of the *Decline and Fall of the Roman Empire*, the first volume of which appeared in 1776, the second and third in 1781, and the three concluding volumes in 1788. Previous to this undertaking, Gibbon was chosen member of Parliament for Liskeard; and when hostilities commenced between England and France, in 1778, he was employed to draw up the manifesto on that occasion, after which he was made commissioner of the board of trade, but lost his place on the change of administration, in 1783. He then went to reside at Lausanne, where he remained till the French Revolution obliged him to return to England; and died in 1794.

Gibbon's great history abounds with proofs of immense learning, of a mind penetrating and sagacious and of almost unrivalled talents for ridicule. No other proof of the substantial trustworthiness of the *Decline and Fall of the Roman Empire* is needed than the fact, perhaps unparalleled, that, notwithstanding the very great advance made in historical studies and criticism during the present century, it still holds its place as preeminently the history of the period it embraces.

References.—Milman's *Life and Correspondence of Gibbon;* the *Memoirs*, ed. by Emerson, and Morison's *Gibbon* in English Men of Letters Series.

Gibbons, Grinling, English sculptor and wood-carver, was born at Rotterdam, 1648. Died in *London*, 1720.

Gibbons, James, Roman Catholic cardinal, was born in Baltimore, Md., 1834. Entered St. Charles College, Maryland, 1855; transferred, 1857, to St. Mary's Seminary, Baltimore; ordained priest, 1861; later private secretary to Archbishop Spalding and chancellor of the arch-diocese; assistant chancellor, second plenary council of American Roman Catholic church, Baltimore, 1866; vicar apostolic of North Carolina; coadjutor archbishop of Baltimore, 1877; succeeded to the see, 1877; was nominated as cardinal; invested with the princely insignia, 1886. Died, 1921.

Gibbs, Josiah Willard, American physicist, was born at New Haven, Conn., 1839. Educated at Yale University and in Europe. Became professor of mathematical physics at Yale in 1869 where he remained till his death in 1903. In 1876-8 he published his paper *On the Equilibrium of Heterogeneous Substances*, which won him the name of "the founder of chemical energetics." It contained the famous Phase Rule. For this and other researches he was awarded the Copley medal in London, 1901, the Rumford medal of the American academy, and numerous honorary degrees.

Gibson, Charles Dana, illustrator, was born in Roxbury, Mass., 1867. He was educated at Flushing, L. I., and at the art students' league, New York, 1884-85. He has done much illustrating in principal magazines; also illustrated numerous books.

Gibson, John, British sculptor, was born a market-gardener's son, at Gyffin near Conway, North Wales, 1790. The innovation of tinting his figures he defended by a reference to Grecian precedents. He died at Rome in 1866.

Gibson, John Morison, lieutenant governor of Ontario since 1908, was born in 1842. He was graduated at the University of Toronto; LL.D., queen's counsel, 1890; bencher of law society of upper Canada, 1899; president of Dominion power and transmission company. Died, 1929.

Giddings, Franklin Henry, sociological writer, professor of sociology, Columbia, since 1894, was born at Sherman, Conn., 1855. He graduated at Union College, 1877; Ph.D., LL.D., professor of Bryn Mawr College, 1888-94. Member of Authors' and Century club.

Giers (*gērs*), **Nikolai Karlovitch de,** Russian diplomat and statesman, was born in Russia, of Swedish origin, 1820. He entered the diplomatic corps at eighteen years of age. In 1876, and again in 1877, during the war with Turkey, M. de Giers directed the affairs of the foreign office. He became a privy councillor, and when Prince Gortchakoff attended the Berlin congress M. de Giers for a third time took his place. Died, 1895.

Giesebrecht (*gē'zē-brekt*), **Friedrich Wilhelm Benjamin von,** German historian, was born in Berlin, 1814. He became professor of history at Königsberg in 1857, and in 1862 at Munich.

Gifford, Robert Swain, American painter, was born in Massachusetts, 1840. He studied painting under Albert van Beest, and opened a studio in Boston, 1864. In 1866 he settled permanently in New York City and became an academician in 1878. Died in New York, 1905.

Gifford, Sandford Robinson, American painter, was born in Greenfield, N. Y., 1823. In 1854 he became a member of the National Academy, New York. Died, 1880.

Gifford, William, English critic and poet, was born at Ashburton, 1756. Gifford's editorship of the *Anti Jacobin* procuring him favor with the tory magnates, he was appointed to offices that brought him 900 pounds a year. He died in 1826.

Gigli, Beniamino, Italian tenor, was born in 1890. He studied under Rosati at Rome, began his operatic career in Italy in 1915 and after touring Spain and South America came to the Metropolitan Opera House, New York, in 1920. He has sung roles in Lucia, Lohengrin, Tosca, Boheme, etc.

Gil, Emilio Portes. See **Portes Gil, Emilio.**

Gilbert, Grove Karl, geologist, was born in Rochester, N. Y., 1843. He was graduated at the University of Rochester, 1862; LL.D. United States geological survey, 1879. Past president of American association for the advancement of science. Author: *Geology of the Henry Mountains*.

Gilbert, William Schwenck, English dramatist, was born in London, 1836. In conjunction with Sir Arthur Sullivan, besides *Thespis* and *Trial by Jury*, he has produced *The Sorcerer; H. M. S. Pinafore; The Mikado; Ruddigore; The Yeoman of the Guard; The Gondoliers*. Died, 1911.

Gilder, Jeannette Leonard, journalist, critic, was born at Flushing, N. Y., 1849. With brother, Joseph B. Gilder, started, 1881, *The Critic*, which she still edits; was for eighteen years, over the pen-name "Brunswick," New York correspondent for *Boston Saturday Evening Gazette* and *Boston Evening Transcript;* now regular correspondent of *Chicago Tribune*.

Gilder, Richard Watson, author, editor, was born in Bodentown, N. J., 1844 and educated at his father's seminary at Flushing, L.I.; LL.D., A.M. L.H.D., Yale, LL.D.; managing editor of *Scribner's Monthly*, 1870; editor-in-chief, 1881, under its present name, *The Century Magazine*. President of public art league of United States; member of council of national civil service reform league. Author: *The New Day; The Celestial Passion; Lyrics; In Palestine*. Died, 1909.

Gildersleeve, Basil Lanneau, professor of Greek in Johns Hopkins, 1876, was born in Charleston, S. C., 1831. He was graduated from Princeton, 1849; Ph.D., LL.D., 1869; Harvard, 1896, D.C.L., L.H.D. Editor of *American Journal of Philology* since it was founded, 1880. Author: *Latin Grammar*. Died, 1924.

Gill, Theodore Nicholas, zoölogist, educator, was born in New York, 1837. Assistant librarian, library of congress, 1866-75; LL.D., 1895, Columbian University. Adjunct professor of physics and natural history, 1860-61; head department zoölogy, Columbian (now George Washington) University. President of American association for the advancement of science, 1897. Author: *Principles of Zoögraphy: Scientific and Popular Views of Nature Contrasted*, etc. Died in 1919.

Gillette, William Hooker, actor, playright, was born at Hartford, Conn., 1855. Began theatrical work, 1877. Author of the following plays (unpublished): *The Professor; The Private Secretary; Held by the Enemy; Because She Loved Him So; Settled Out of Court; Secret Service*, and *Sherlock Holmes*.

Gillray, James, English caricaturist, was born a Lanark trooper's son, at Chelsea in 1757. He died in 1815.

Gilman, Daniel Coit, educator, was born in Norwich, Conn., 1831. He was graduated at Yale, 1852; LL.D., professor of physical and political geography, Yale, 1856-72; president of University of California, 1872-75; first president of Johns Hopkins University, 1875-1902; first president of Carnegie Institution, 1901-04; editor-in-chief, *New International Encyclopædia*. Died, 1908.

Gilman, Nicholas Paine, sociologist, professor of sociology and ethics of Meadville Theological School, 1895-1912, was born at Quincy, Ill., 1849. He graduated at Harvard Divinity School, 1871. Settled as Unitarian clergyman over three parishes in Massachusetts, 1872-84. Author: *Profit Sharing Between Employer and Employee; Methods of Industrial Peace*. Died, 1912.

Ginn, Edwin, publisher, was born at Orland, Me., 1838. Graduated at Tufts College, 1862. Head of the firm of Ginn and Company, publishers of school and college text-books. His first book was Allen's *Latin Grammar*, 1868. Died, 1914.

Giorgione (*jōr-jō'nā*), or **Giorgio Barbarelli,** Italian painter, was born at Castelfranco about 1478. Several early portraits by him have disappeared, but his *Enthroned Madonna* is an altarpiece at Castelfranco. Died, 1511.

Giotto (*jōt'tō*), or **Ambrogio** (or Ambrogiotto, shortened to Giotto), **di Bondone,** Italian painter and architect, was born in 1276. He was a pupil of Cimabue and friend of Dante, whose portrait he painted at Ravenna. Was employed at Padua

and Florence, where his frescoes in the Peruzzi chapel of Santa Croce were discovered in 1863. He also painted the *Miracle of the Loaves and Fishes*, at Naples, and designed the campanile of Florence. He died in 1336.

Girard (*ji-rärd'*), **Stephen,** American philanthropist, was born near Bordeaux, France, 1750. He was very eccentric in his habits, a freethinker, a liberal benefactor of public charities. During several yellow fever seasons in Philadelphia no citizen was more active in relieving distress; and at his death nearly all his estate was bequeathed to various charitable and municipal institutions. Died, 1831.

Gish, Dorothy (1896—), movie star was discovered by D. W. Griffith, and was first featured in *The Little Disturber* and *Hearts of the World*. Her piquancy and unique charm have made her a leading comedienne. Her best film, perhaps, is *Turning the Tables*.

Gissing, George Robert, English writer, born at Wakefield, 1857, was educated at Owens College, Manchester. Spent the early part of his life in poverty. He was among the first novelists to undertake realism in England. Of his early writings *New Grub Street* is his best. Dealing with the lower middle classes, he wrote painstakingly of life as he saw it, but, as he admitted before his death in 1903, his heart was in the Greek and Latin poets. Poverty forced him to more lucrative writing. *By the Ionian Sea* and *The Private Papers of Henry Ryecroft* are other works.

Gladden, Washington, author, Congregational clergyman, was born in Pottsgrove, Pa., 1836. He was graduated at Williams College, 1859. D.D., LL.D., University of Wisconsin and Notre Dame University, Ind. In 1882, pastor of First Congregationalist church, Columbus, Ohio. Author: *Plain Thoughts on the Art of Living; From the Hub to the Hudson; Parish Problems; Burning Questions; Santa Claus on a Lark; Christian Pastor; How Much Is Left.* Died 1918.

Gladstone (*glad'stun*), **William Ewart,** English statesman, orator, and man of letters, was born in Liverpool, 1809. He was graduated at Oxford, and entered the house of commons in 1832 for the borough of Newark. In 1838 he published his first work, *The State in Its Relations With the Church*. In 1847 he was elected a member of parliament for the University of Oxford, which he represented for eighteen years. In 1858 he accepted a special mission to the Ionian islands. In the same year he published an elaborate work on *Homer and the Homeric Age*. In 1866, now leader of the house of commons, he brought in a reform bill, the defeat of which caused Earl Russell to resign. Gladstone, in 1869, disestablished the Irish church; in 1870 carried his Irish land bill; and in 1872 carried the ballot bill. In 1874 he dissolved parliament, and on the unfavorable result of the ensuing election the Gladstone ministry resigned. On the defeat of the Disraeli administration at the polls, 1880, he became premier, but resigned in 1885. Early in 1886 after the shortlived administration of Lord Salisbury, Gladstone again came into power, and signalized his return to office by presenting in 1886 a dual scheme of Irish government—a land bill and a home rule bill. Intense and bitter opposition from liberals and conservatives alike greeted the measure, and the bill was rejected on its second reading, in 1886. In consequence parliament was dissolved, and Gladstone and his colleagues appealed to the country, but were defeated. During the succeeding years, 1887-91, Gladstone was in opposition, the chief incident in his career being his outspoken advocacy of home rule in Ireland and his consequent alliance with the Irish party. At the general election of 1892 his supporters obtained a slight majority in parliament, and he became prime minister for the fourth time. He resigned in 1894 on account of increasing years, and spent his last days chiefly in literary work. He died at Hawarden, 1898, and was buried in Westminster abbey.

Glanville, Ranulf de, chief-justiciary of England in 1180-89, and reputed author of the earliest treatise on the laws of England, the *Tractatus de Legibus et Consuetudinibus Angliae*, was born at Stratford St. Andrew, near Saxmundham, about 1130. In 1174 he raised a body of knights to fight against William the Lion of Scotland. He died at the siege of Acre, 1190.

Glasgow, Ellen Anderson Gholson, American novelist, was born at Richmond, Va., 1874. Author: *The Descendant; Phases of an Inferior Planet; The Voice of the People*, etc.

Glauber (*glou'bĕr*), **Johann Rudolph,** German chemist and physician, was born at Karlstadt in Franconia, 1604. In 1648 he discovered hydrochloric acid. Died, 1668.

Glazebrook (*glāz'brŏŏk*), **Richard Tetley,** British educator and physicist, principal of University College, Liverpool, 1898-99, was born in 1854. He was educated at Liverpool College, and at Trinity College, Cambridge; Sc.D., Victoria and Heidelberg. Author: *Text-books of Physical Optics, and of Practical Physics; Cambridge Natural Science Manuals*. President of the Institute of Electrical Engineers, 1906.

Glendower (*glen'dōōr*), or **Glendwr, Owen,** Welsh chief, claimed descent from Llewelyn, the last prince of Wales, and was born in Montgomeryshire about 1359. In 1402 he captured Lord Grey and Sir Edmund Mortimer, both of whom married, daughters of the Welsh chieftain. In 1404 Glendower entered into a treaty with Charles VI. of France, who in 1405 sent a force to Wales; and the Welsh prince, though often defeated, kept up a desultory warfare until his death, about 1416.

Glinka (*gling'kä*), **Michael Ivanovitch,** composer, "The Russian Beethoven," was born near Novospaskoi, 1804. He studied under John Field in St. Petersburg. He died at Berlin in 1857.

Gluck (*glook*), **Alma,** a recognized soprano of wonderful talent, was born in Roumania, and came to America at the age of six. She made her debut in New Theatre as *Sophie* in "*Werther*," and awoke to find herself a phenomenal success.

Gluck (*glŏŏk*), **Christoph Willibald,** German composer, was born at Weidenwang, in Bavaria, 1714. He studied music at Prague, Vienna, and Milan, and began his career at Vienna at the age of twenty-two. His last years were passed in Vienna, where he died, 1787.

Godfrey of Bouillon. See **Bouillon.**

Goethals, George Washington, Army engineer: born Brooklyn, N. Y., June 29, 1858, graduated West Point, 1880. Chief Engineer, Volunteers, Spanish War. Major-General, March 4, 1915; retired, Nov. 15, 1916. Chief Engineer, Panama Canal, 1907-1914; first civil governor, Panama Canal Zone, 1914-1916. General Manager, Emergency Fleet Corporation, 1917. Chief, Division of Purchase, Storage and Traffic, 1918; member War Industries Board. D. S. M., 1918; Commander Legion of Honor (France), 1919. Died, 1928.

Goethe, (*gŭ'tĕ*), **Johann Wolfgang von** German author, born in Frankfort, 1749, died 1832. Before he was 10 years of age he wrote several languages, and had a considerable familiarity with works of art. In 1765 he was sent to Leipsic to begin his collegiate studies. Here he wrote two dramas. He was transferred in 1770 to the University of Strasburg, where he studied jurisprudence and the natural sciences.

In 1772 he went to Wetzlar to practice law, and in 1773 published *Götz von Berlichingen* a dramatic version of the story of Götz of the Iron Hand. It excited the greatest enthusiasm in the literary world, and romantic dramas for a time became the fashion. An unrequited love romance of his own, and the suicide of a friend on account of a similar passion, suggested the incidents of his novel called *Die Leiden des jungen Werther*, "The Sorrows of Werther," which met with an extraordinary success. The same year he wrote Clavigo.

An invitation from Charles Augustus of Saxe-Weimar in 1775 to visit his court resulted in his making Weimar his permanent residence. He was created a privy councillor of legation, but his principal public occupation seems to have been to superintend the artistic pleasures of the court. His first years there were spent in wild and tumultuous enjoyments, but his intellectual activity was too great to be long beguiled by frivolities. In 1779 he produced *Iphigenie auf Tauris*, and, after a visit to Switzerland the same year, composed a little opera called *Jery und Bätely*. Many of his best small poems were produced at this period (1780-83), and he also studied natural science.

In 1786 he went to Italy, and spent nearly two years in study and in the composition of the drama *Torquato Tasso*. On his return to Weimar in 1788, he published *Egmont*, a romantic drama. In 1792 he accompanied the Prussian army into France, and soon after appeared his metrical version of *Reinecke Fuchs*. The results of his scientific studies appeared in his *Beiträge zur Optik* and his *Farbenlehre*. The first part of *Wilhelm Meister* (the *Lehrjahre*) appeared in 1795. *Hermann und Dorothea*, a pastoral poem in hexameters, the most perfect of his minor productions, was written in 1797, and the *Achilleis* the same year; and he engaged in friendly rivalry with Schiller in bringing forth a series of ballads, which are among the masterpieces of German literature.

In 1805 appeared the first part of *Faust*, a work which raised Goethe to the highest pinnacle of fame, and he was universally acknowledged to be the first poet of his age. When the French occupied Weimar, he took refuge in his books and scientific experiments, and exhibited such impassiveness amid the political disturbances as to incur the reproach of a want of patriotism. He afterward accepted Napoleon's invitation to visit Paris. In 1809 Goethe printed the most exceptionable of his novels, the *Wahlverwandtschaften* ("Elective Affinities"). Next appeared the ballads *Der Todtenkranz*, *Der getreue Eckart*, and *Die wandelnde Glocke*, the *Dichtung und Wahrheit*, an autobiography, and the *Westöstlicher Divan*, a collection of oriental songs and poems. In 1816 he published an art journal, to which he contributed largely; and in 1818 the second part of *Wilhelm Meister*.

In 1831 the second part of *Faust* appeared, a continuation of the first part, obscure and mystical, but full of passages of rare splendor, profound thought, grotesque humor, and bewitching melody. One year after the completion of *Faust* Goethe was taken ill of a cold, which turned into a fatal fever; but he continued to work. His last writing was an essay on the dispute between Geoffroy Saint-Hilaire and Cuvier, on the question of unity of composition in the animal kingdom and his last words were, "More light."

References.—Grimm's *Goethe;* Heinemann's *Goethe;* Carlyle in *Miscellaneous Essays;* G. H. Lewes's *The Life of Goethe;* J. R. Seeley's *Goethe Reviewed After Sixty Years;* Caro's *La Philosophie de Goethe;* E. Lichtenberger's *Etudes sur les Poesies Lyrique de Goethe.*

Goff, Nathan, jurist, United States circuit judge since 1892, was born at Clarksburg, W. Va., 1843. He was educated at the Northwestern Virginia Academy, Georgetown College, and New York University. Admitted to bar, 1866; member of West Virginia legislature, 1867; secretary of the Navy, United States, 1881; member of congress, 1883-89; *U. S. Senator, 1913-19.*

Gogol (*gō'gŏl-y'*), **Nikolai Vassilyevitch,** Russian novelist, was born at Sorochintsi in Poltava, 1809. In 1828 he settled in St. Petersburg, and became famous through two series of stories of *Little Russia*. He was the first great master of the Russian novel. Died at Moscow, 1852.

Goldmark, Karl, Austrian composer, was born at Keszthely, Hungary, of Jewish parents, about 1832, but he chiefly resided in Vienna. His *Landliche Hochzeit* (*Country Wedding*) symphony is a great favorite.

Goldoni (*gōl-dō'nē*), **Carlo,** Italian dramatist, was born at Venice, 1707. A tragedy, *Belisario*, proved successful, but he soon discovered that his forte was comedy, and set himself to effect a revolution in the Italian comic stage. In 1761 he undertook to write for the Italian theater in Paris, and was attached to the French court until the revolution. He died in 1793.

Goldsmith, Oliver, British poet and novelist, was born in Ireland, 1728. He was graduated at the University of Dublin, 1749, and then went to Italy, where he took his degree of M.D. at Padua or Louvain, and returned to England in 1756. His first publication of note, an *Inquiry Into the Present State of Polite Learning in Europe*, was published in 1759. In 1764 *The Traveler* appeared, and at once placed him in the front rank of English authors. Two years after this he published the *Vicar of Wakefield*, which may be said to have indicated his proper rank in the literary world. In rapid succession he produced his other works: the comedy of the *Good-Natured Man*, in 1768; the *Roman History*, in 1769; and *The Deserted Village*—the sweetest of all his poems—in 1770. In 1773 his comedy *She Stoops to Conquer* was produced at Covent Garden with great applause. Although now in receipt of large sums for his works, Goldsmith had not escaped from pecuniary embarrassment. In 1774 returned to London, ill in body and harassed in mind, and took to bed on March 25th. He died April 4th, more sincerely lamented than any other literary man of his time.

Gomez y Baez (*gō'mās ē bä'äs*), **Maximo,** Cuban patriot, was born in San Domingo, 1826. He served in the Spanish army in San Domingo and in Cuba. In the insurrection of 1868-78 he became a colonel and later commander. In 1895, on the breaking out of the second revolution, he returned to Cuba, became general-in-chief of the Cuban army, and later put his force at the disposal of the American troops when they landed in Cuba. Died, 1905.

Gompers (*gom'pĕrz*), **Samuel,** labor leader, president of the American federation of labor, was born in England, 1850. He was a cigar-maker by trade. He was one of the founders of the American federation of labor and editor of its official magazine. Died, December, 1924.

Goncourt (*gōn'kōōr*), **Edmond** and **Jules de,** French novelists, born, the former at Nancy in 1822, the latter at Paris in 1830. Artists primarily, in 1849 they set out to traverse France for water-color sketches. The important work of the De Goncourt brothers commenced when they took to novel-writing. The first of these novels, *Les Hommes de Lettres*, was followed by *Soeur Philomene; Renée Mauperin; Germinie Lacerteux; Manette Salomon;* and *Madame Gervaisais*. After Jules' death in 1870, Edmond, who lived until 1896, issued the extraordinarily popular *La fille Elisa*.

Gonsalvo de Cordova (*gōn-säl'vō dā kôr'dō-vä*), "the great captain," Spanish commander, was born at Montilla near Cordova, Spain, 1453. Sent to assist Ferdinand II. of Naples against the French, 1495, he conquered the greater part of the kingdom of Naples, and expelled the French. When the partition of Naples was determined upon in 1500, Gonsalvo again set out for Italy, but first took Zante and Cephalonia from the Turks, and restored them to the Venetians. He then landed in Sicily, occupied Naples and Calabria, and demanded from the French that they should keep the compact. Recalled in 1506, and treated by the king with neglect, he withdrew to his estates in Granada, and died in 1515.

Goodale (*gōōd'āl*), **George Lincoln,** botanist, professor of botany, 1878, and Fisher professor of natural history and director of botanic garden, Harvard, was born at Saco, Me., 1839. He graduated at Amherst, 1860; M.D., professor at Bowdoin and in medical school of Maine, 1867-72; assistant professor of vegetable physiology, Harvard, 1873-78. He is author of various works on plant physiology and economic botany, and associate editor of *American Journal of Science*.

Goodnow, Frank Johnson, educator, author, was born at Brooklyn, N. Y., 1859. He was graduated at Amherst College, 1879, and at Columbia Law School, 1882. Lyall professor of administrative law and municipal science, Columbia, 1883. President, Johns Hopkins University, 1914-28. Author *Comparative Administrative Law*; *Municipal Home Rule*; *Municipal Problems*.

Goodwin, Nathaniel Carl, American actor, was born in Boston in 1857; studied under Wyzeman Marshall, then manager of Boston theater; went to New York and played in *Law in New York*, 1876, and later as *Captain Crosstree* in *Black-eyed Susan*, a burlesque. Died, 1919.

Goodwin, William Watson, educator, Greek scholar, was born in Concord, Mass., 1831. He was graduated at Harvard, 1851; Ph.D., Göttingen, LL.D., Cambridge, England, 1883; Harvard, 1891; D.C.L., Oxford, 1890. Knight of Greek order of the Redeemer; professor of Greek literature, Harvard, 1860-1901; professor emeritus since 1901; overseer of Harvard, 1903. Author, *Greek Grammar*. Died, 1912.

Goodyear, Charles, inventor of vulcanized rubber, was born in New Haven, Conn., 1800. In 1844 he produced his new method of hardening rubber by means of sulphur. His patents latterly amounted to sixty, and both medals and honors were awarded him in London and Paris. Died, 1860.

Gordon, Charles George, British soldier, familiarly known as "Chinese Gordon," was born in 1833. In 1884 he proceeded to the Soudan, in lower Egypt, as an emissary of England to quiet the insurgent tribes under El Mahdi, the "false prophet of the Soudan." He was killed when Khartoum was captured by El Mahdi, 1885.

Gordon, Charles William, Canadian novelist, Presbyterian clergyman, was born in Indian Lands, Glengarry, Ontario, Canada, 1860; was graduated at Toronto University, 1883. He was a missionary to Banff, etc., Rocky Mountains, 1890-94; minister of St. Stephen's church, Winnipeg, since 1894. Author: *Black Rock; Beyond the Marshes; Gwen's Canyon; The Sky Pilot; The Prospector; The Doctor;* all under the pseudonym of *Ralph Conner*.

Gordon, George Angier, Congregational clergyman, religious writer, was born in Scotland, 1853. He was educated in common schools, Insch, Scotland, and was graduated at Harvard in 1881; D.D., Bowdoin and Yale, 1893, Harvard, 1895. Minister of Old South church, Boston, since 1884. Author: *The Witness to Immortality; The Christ of To-day; Immortality and the New Theodicy; The New Epoch for Faith;* etc. University preacher to Harvard, Yale.

Gordon, John Brown, American soldier, was born in Georgia, 1832. He served with distinction in the confederate army, 1861-65, and rose to the rank of lieutenant-general. From 1873 to 1879 and 1891 to 1897 he was a member of the United States senate; governor of Georgia, 1886-90. Died, 1904.

Gore, Christopher, American statesman and diplomat, was born in Boston, Mass., 1758. He was a graduate of Harvard, a lawyer by profession and the first United States district attorney for Massachusetts. He was governor of his state in 1809, and United States senator, 1814-17. Died, 1829.

Gore, Thomas Pryor, lawyer, United States senator, was born in Webster county, Miss., 1870. He lost the sight of both eyes by accident when a boy. Graduated from the law department of Cumberland University, Lebanon, Tenn., 1892, moved to Texas in 1896 and to Oklahoma in 1901. After serving one term in the territorial senate, he was appointed United States senator by the governor, 1907; was elected by the legislature, 1909, and was reëlected in the same year for the full term 1909-15.

Gorgas, William Crawford (1854-1920), son of confederate brigadier general, was educated at Belvue Hospital Medical College, New York, Captain Medical Corps, U. S. A., 1885, promoted to Colonel, 1903, Surgeon General, 1914. He was Chief Health Officer of the Isthmian Canal Commission, 1907, and made the canal zone a model of sanitary conditions, completely ridding it of malaria. Died in 1920.

Gorki (*gôr'kē*), **Maxim,** pen name of Alexei Maximovitch Pyeshkoff, a self-educated Russian novelist, was born in Nizhni-Novgorod, 1868 or 1869, the son of an upholsterer. After the death of his parents he was engaged in various occupations until, through the influence of his friend Kalushni, his attention was turned to literary work, and his first story, *Makar Chudra*, appeared in 1892.

Gortchakoff (*gôr'chä-kôf'*), **Prince Alexander Mikhallovitch,** Russian statesman, was born at St. Petersburg, 1798. As ambassador at Vienna, 1854-56, he displayed great ability during the Crimean war. As chancellor of the empire, 1863, he was, until Bismarck's rise, the most powerful minister in Europe. After the conclusion of the Russo-Turkish war, the repudiation of the treaty of San Stefano and the signing of the treaty of Berlin, his influence began to wane. He died at Baden-Baden, 1883.

Gosnold (*gos'nuld*), **Bartholomew,** English navigator, was born in England about the middle of the sixteenth century. In 1602 he left Falmouth with a ship and twenty colonists, attempting to cross the ocean in a direct line. Contrary winds took his vessel to the Azores, whence, after a tedious voyage of seven weeks, he reached the coast of Maine. Following the land-line in a southwesterly direction, he discovered Cape Cod and Martha's Vineyard. In 1606 Gosnold united with Captain John Smith to locate in Virginia. Through their joint efforts the settlement at Jamestown was established in 1607. He died in Virginia, 1607.

Gosse (*gos*), **Edmund,** English poet and writer, librarian to the house of lords since 1904, was born at London, 1849. M.A., Trinity College, Cambridge; LL.D., St. Andrews, 1899; translator to board of trade, 1875-1904; Clark lecturer in English literature at Trinity College, Cambridge, 1884-90, and lectured in United States, 1884-85. Author: *Collected Poems; Life of Gray; Seventeenth Century Studies; Questions at Issue; History of Modern English Literature*; etc. Died, 1928.

Gosse, Phillip Henry, British naturalist, was born at Worcester, 1810. In 1827 he went to Newfoundland, as a clerk, and was afterward farmer in Canada, schoolmaster in Alabama, and naturalist in Jamaica. Author: *The Birds of Jamaica; A Naturalist's Sojourn in Jamaica;* and *The Romance of Natural History*, his best-known work. He died at St. Mary Church near Torquay, 1888.

Gottschalk (*got'shälk*), **Louis Moreau,** American pianist and musical composer, was born in New Orleans, 1829. He studied in Europe, and from 1845 to 1852 made successful tours of the continent, returning to America in 1853 to tour this country; met with wonderful success, playing and conducting his own compositions. Died at Rio Janeiro, 1869.

Gough (*gof*), **John Bartholomew,** temperance lecturer, was born at Sandgate, Kent, England, 1817. He came at twelve to America, and in 1831 found employment in New York, but lost it by dissipation, and was reduced to singing comic songs at grog-shops. In 1842 he was induced to take the pledge; and, devoting the rest of his life to the cause of temperance, he became a singularly effective lecturer. He published an *Autobiography; Orations; Sunlight and Shadow*, etc. Died, 1886.

Gouin, Sir Lomer, prime minister, and attorney-general of Quebec since 1905, was born at Grondines, Quebec, 1861. He was admitted to the Quebec bar, 1884; elected member provincial parliament for Montreal, 1897; appointed member of public instruction council, 1898; minister of colonization and public works, Quebec, 1900; reëlected for Montreal (St. James division), 1900, 1904-1905; elected for Portneuf, 1908. Died, 1929.

Goujon (*goō'zhôn'*), **Jean,** French sculptor and architect, was born in Paris about 1515. He was employed on the church of St. Maclou, at Rouen, 1540, and on the cathedral there, 1541; worked with Pierre Lescot, architect of the Louvre, on the restorations of St. Germain l'Auxerrois, 1542-44; was employed with Bullant on the Chateau d'Ecouen; and on the accession of Henry II. entered the royal service. In the Louvre he executed the reliefs of the Escalier Henri II., the carvings at the southwestern angle of the court, and the Tribune des Cariatides and was the author of what is considered the masterpiece of French sculpture, the *Diane Chasseresse*, now in the Louvre collection. His death is believed to have occurred in the St. Bartholomew massacre, 1572.

Gould, Benjamin Apthorp, American astronomer, was born at Boston, Mass., 1824. He was graduated at Harvard College in 1844, afterward studied at Göttingen, where he took a degree in 1848, and was for some time an assistant in the observatory at Altona, Germany. In 1856 he was appointed director of the Dudley observatory at Albany, N. Y. In 1866 he established an observatory at Valentia, Ireland, and made the first determination of transatlantic longitude by telegraph cable. His principal works are: *Report on the Discovery of the Planet Neptune; On the Transatlantic Longitude*, and several charts of stars of scarcely less importance than those already noted. Died, 1896.

Gould, Elgin R. L., economist, was born at Oshawa, Ontario, 1860. He was educated at Victoria University and at Johns Hopkins University, Ph.D., 1886. Formerly lecturer at Johns Hopkins and professor at Chicago University; chamberlain of city of New York, 1902-04. He was very active in public, religious and philanthropic affairs. Author: *The Gothenburg System of Liquor Traffic; Housing of the Working People; Public Control of the Liquor Traffic; The Social Condition of Labor; Civic Reform and Social Progress*, etc.

Gould, George Jay, American capitalist and man of affairs, was born in New York, 1864, and received a private education. As trustee of the Gould estate he was a director in numerous large railroads and other corporations. Died, 1923.

Gould, Helen Miller, American philanthropist, was born in New York, 1868, daughter of the late Jay Gould. She has been identified with philanthropic work for many years; gave a library building, costing $310,000 to university of city of New York; $100,000 for cyclone sufferers, St. Louis; $100,000 to United States government for war purposes, 1898; $50,000 to naval branch of Brooklyn Y.M.C.A., and numerous other donations for educational and charitable purposes. She also established and maintains a home for children. Married Finley J. Shepard, 1913.

Gould, Jay, American financier, was born at Roxbury, N. Y., 1836; was brought up on his father's farm; attended Hobart academy a short time, and began his railroad career shortly after the panic of 1857. He first invested in bonds of the Rutland and Washington railroad, and became president, treasurer and superintendent of the road. Soon afterward he removed to New York, opened a broker's office and began dealing in Erie stocks and bonds. In association with James Fisk, Jr., he entered the directory of the company and was elected president, with Fisk as vice president and treasurer. He subsequently invested heavily in the various Pacific railroads, secured control of a number of important lines, built branches and effected combinations which resulted in the establishment of what is known as the "Gould system." He died in 1892, worth some $100,000,000.

Gould, John, English ornithologist, was born at Lyme Regis, 1804. He became curator of the zoölogical society's museum in 1827. His eighteen works include *A Century of Birds From the Himalaya Mountains; Icones Avium; The Birds of Europe; The Birds of Australia; The Mammals of Australia; The Family of Kangaroos; Humming Birds; The Birds of Great Britain*, etc. Died, 1881.

Gounod (*goō'-nō'*), **Charles Francois,** French operatic composer, was born in Paris in 1818. He studied music at the Paris conservatoire, and in 1839 gained the prize for composition. He then visited Rome and Vienna, and in 1849 became an organist in Paris. His first opera, *Sappho*, was written in 1851. This was followed by *Sa Nonne Sanglante; le Médicine malgré lui; la Colombe; Philémon et Baucis; Mireille; la Reine de Saba; Roméo et Juliette*, and *Faust*—the two latter being the best known of his works. He was a member of the Academy of Fine Arts, and was decorated with the legion of honor. Died, 1893.

Gowan, Sir James Robert, jurist, member of Canadian senate, was born in Ireland, 1815. He settled in Canada, 1832; admitted to the upper Canada bar, 1839; appointed judge, 1843; one of the three judges appointed to frame a new procedure *in re* probate administration and guardianship, 1858; engaged in revision and consolidation of the whole statute law of United Canada and the provinces of upper and lower Canada (afterward enacted), 1859; chairman of board of judges, Ontario, 1869 to 1889; retired from bench, 1883, and was appointed by the crown a life member of the senate, 1885. He introduced a new procedure on bills of divorce before parliament, which was adopted and now governs in Canada. He was admitted to Irish bar, 1890, and created C. M. G., 1893, "in recognition of his long and valuable services in the Dominion of Canada." In 1855 he founded the *Canada Law Journal*. Died in 1909.

Graaf (*grāf*), **Regnier de,** Dutch physician and anatomist, was born in Schoonhove, 1641. He was specially distinguished by his discovery that all animals are oviparous. The Graafian vesicles were also discovered and named after him, though he mistook their functions. He rendered great service to anatomy through his use of the injections into the blood-vessels which Swammerdam and Ruysen afterward brought to a state of comparative excellence. Died at Delft, 1673.

Gracchus (*grak'us*), name of a distinguished Roman family, to which belonged the two celebrated tribunes, Tiberius Sempronius Gracchus (163-133 B. C.) and Caius Sempronius Gracchus (159-121 B. C.). The former was tribune of the plebs, 133 B. C., and the latter, 123-122 B. C. They were both the sons of Tiberius Sempronius Gracchus (who had been tribune of the plebs in 187 B. C.), and of Cornelia, the daughter of Publius Scipio Africanus the elder. Both the brothers fell victims to their zeal in attempting to contend with the growing corruptions of the Roman state.

Grady, Henry Woodfin, journalist, orator, was born at Athens, Ga., 1851. He was educated at the state university at Athens, and took a post graduate course at the University of Virginia. He became editor of the Rome, (Ga.) *Daily Commercial*, and afterward of the Atlanta *Herald*, and in 1880 became part owner and managing editor of the Atlanta *Constitution*, which he conducted until his death. He was an eloquent speaker, a man of

broad and liberal views; and, during his brief public life, did as much as any one man could to advance the interests of Georgia and the South. Died at Atlanta, Ga., 1889.

Grand, Sarah, assumed name of Frances Elizabeth Clarke, British novelist, was born in Ireland, of English parents; daughter of Edward John Bellenden Clarke, lieutenant, royal navy. She married at sixteen, brigade-surgeon Lieutenant-Colonel McFall, who died in 1898. She traveled for five years in the East, China and Japan, wrote *Ideala* at twenty-six, and has since interested herself in the woman's movement. She is vice president of the Central and Western society for woman's suffrage, vice-president of the Scottish association for the promotion of women's public work, vice-president of Garden City association, etc.

Grant, Frederick Dent, United States army officer, was born at St. Louis, Mo., 1850, son of President Ulysses Simpson Grant. He was graduated from the United States military academy, 1871; commissioned second lieutenant 4th cavalry, 1871, and served on the frontier, 1873-81. Appointed United States minister to Austria by President Harrison, 1885; police commissioner of New York, 1894-98; major-general of United States army, 1906. Served in Puerto Rico one year, and after war commanded military district of San Juan; in Philippine islands, 1899-1902; commanded department of Texas, 1902-04, department of the Lakes, January-September, 1904, department of the East, 1904-08. Died, 1912.

Grant, Robert, author, judge probate court and court of insolvency for Suffolk county, Mass., since 1893, was born at Boston, 1852. He was graduated at Harvard College, 1873; Ph.D., 1876; Harvard Law School, 1879; was water commissioner, Boston, 1888-93. Author: *The Confessions of a Frivolous Girl; The Little Tin God on Wheels* (verse); *The Lambs* (verse); *Yankee Doodle* (verse); *The Oldest School in America* (verse); *An Average Man; The Art of Giving; Search-Light Letters; Unleavened Bread; The Undercurrent; The Orchid; The Law-Breakers,* etc. He has been an overseer of Harvard College since 1895.

Grant (Hiram), Ulysses Simpson, eighteenth president of the United States, was born at Point Pleasant, Clermont county, Ohio, 1822; graduated at the military academy of West Point in 1843 and served under General Taylor in the war with Mexico, 1846, up to the capture of Monterey. In 1852 he served in Oregon; but in 1854 resigned his commission and settled in St. Louis, Mo., whence, in 1859, he moved to Galena, Ill., and engaged in the leather trade. At the beginning of the Civil War, in 1861, he volunteered his services, and was appointed colonel of an Illinois regiment. In August he was appointed brigadier-general, commanding the important post of Cairo, occupied Paducah, and led an expedition on the Mississippi. In February, 1862, he distinguished himself in the capture of Fort Donelson, on the Tennessee river, and was made major-general. On April 6th following, after a preliminary defeat, he won a great battle over the confederates at Pittsburg Landing, or Shiloh. Succeeding General Halleck in the West, he commanded the land forces which, in conjunction with the navy, reduced Vicksburg, July 4, 1863, soon followed by the fall of Fort Hudson, and the opening of the Mississippi. He then, in 1864, was appointed lieutenant-general and commander-in-chief, and personally directed the operations of the great final struggle in Virginia, in which the northern forces, though often repulsed with heavy losses, finally compelled the evacuation of Richmond, April 2, 1865, followed on the 9th by the surrender of the confederate army under General Lee, and soon after of the entire confederate forces. Congress, in recognition of his eminent services, passed an act reviving the grade of "general of the army of the United States," to which Grant was immediately appointed. In 1868 he was elected, on the republican platform, president of the United States; and having in 1872 been reëlected over a notable opponent, Horace Greeley of the *New York Tribune,* he retired in 1877, after his second term of office. In the latter year Grant visited Europe and toured the world. In England and France he received an enthusiastic welcome. Simple, reticent, earnest, and persevering in his character, he owed his military success not so much to strategy as to superior numbers and resources and hard fighting in which even a series of victories left his enemy less able to resist. Having lost his moderate fortune in an unfortunate speculation, Grant wrote an account of his life, which, being successful, to some extent relieved him. He died of cancer in 1885 after a year of severe suffering.

Grattan (*grat'an*), **Henry,** Irish orator and statesman, was born in Dublin in 1746. He was educated at Trinity College, Dublin; in 1772 was admitted to the Irish bar, and in 1775 was returned to the Irish parliament. Mainly to him was owing, among other things, the partial abolition of the heavy restrictions on Irish commerce. As an orator he stands in the first rank. His style is full of point, rapidity, antithesis, and poetic suggestiveness. His eulogy on Chatham and his invective against Bonaparte are not surpassed in British eloquence. Died, 1820.

Graves, Frank Pierrepont, born New York city, 1869; graduate of Columbia, 1890, M.A. 1891, Ph.D. 1912. Professor of Greek in Tufts College, 1891-1896; president University of Wyoming, 1896-1898; president University of Washington, 1898-1903. Dean Dept. of Education, University of Pennsylvania, 1913-1921. Commissioner of Education, State of New York, 1921—. Author of textbooks in Greek and in History of Education. Member of Phi Beta Kappa.

Graves, John Temple, journalist and orator, was born at Willington Church, Abbeville county, S. C., 1856. He was graduated at the university of Georgia, 1875; was editor of *Daily Florida Union,* Jacksonville, 1881-83; *Atlanta* (Ga.) *Daily Journal,* 1887-88; *Tribune* of Rome (Ga.), 1888-90; editor-in-chief and co-proprietor of *Atlanta Daily Georgian,* 1905-07; editor-in-chief of *New York American* since 1907. Presidential elector-at-large, Florida, 1884; was colonel on staff of Governor Northern of Georgia. Author: *History of Florida of To-Day; Twelve Standard Lectures; Platform of To-Day; Speeches and Selections for Schools; The Negro.* Contributor to various American periodicals as advocate of separation of black and white races, etc. Died, 1925.

Gray, Asa, American botanist, was born at Paris, N. Y., 1810. He was graduated in medicine at Fairfield College, and in 1843 received the appointment of botanist of the United States exploring expedition. He was afterward appointed professor of botany in the university of Michigan, but before he had entered upon the duties of that office he was elected, in 1842, Fisher professor of natural history at Harvard University. In addition to his prelections at Cambridge he delivered some lectures at the Lowell Institute in Boston. He ranked among the leading botanists, not only of America, but of the age. He wrote: *Elements of Botany; Flora of North America; How Plants Grow; Field, Forest and Garden Botany; Darwiniana; Synoptical Flora of North America; Natural Science and Religion,* etc. Died, 1888.

Gray, George, jurist, was born at New Castle, Del., 1840. He was graduated at Princeton, 1859; LL.D., 1889. Studied law at Harvard and was admitted to the bar, 1863; attorney-general of Delaware, 1879-85; United States Senator, 1885-99; member of peace commission, Paris, 1898; appointed by the President a member of the joint high commission at Quebec, 1898, and member of the international permanent court of arbitration under The Hague convention, 1900; judge of United States Circuit Court, third judicial circuit, since 1899; chairman of anthracite coal strike commission, 1902. Died in 1925.

Gray, Horace, American jurist, was born at Boston, 1828; was graduated at Harvard, 1845, and its law school, 1849; was admitted to the bar, 1851; Associate-justice of the Massachusetts supreme court, 1864-73, and chief-justice, 1873-81, when he was appointed successor to Judge Clifford in the United States supreme court. He remained a member of this tribunal until shortly before his death in 1902.

Gray, Thomas, English poet, was born in London, 1716. He was educated at Cambridge and appointed professor of history and modern languages there in 1769. He had a just appreciation of the natural beauty of his native country, made notes wherever he went, and wrote copious descriptions of what he had seen to his literary friends. He published his *Ode to Eton College* in 1747, and his *Elegy Written in a Country Churchyard,* by which he is best known, several years afterward. On the death of Colley Cibber he was offered, but declined, the post of poet laureate. Died, 1771.

Greeley, Horace, American journalist, was born at Amherst, N. H., 1811. He entered a printing office as an apprentice at East Poultney, Vt., 1825. On the completion of his apprenticeship he worked for some time as a journeyman printer, and in 1834 founded the *New Yorker,* a literary weekly paper, for which he wrote essays, poetry and other articles. After one or two other attempts at editorship he founded, in 1841, the New York *Tribune,* and became the leading editor. The *Tribune* under his leadership was an earnest advocate of temperance, woman's rights, the abolition of slavery and capital punishment and other reforms, and was recognised as the organ of the extreme, or radical party. His aspirations to political position were defeated by the more conservative party leaders, and he, in turn, influenced the election of Lincoln instead of Seward, in 1860. On the secession of several of the southern states from the Union, Greeley at first admitted their right to secede, in accordance with the principles of the declaration of independence; but, when the war began, he became its most zealous advocate, and is supposed to have caused the premature advance that resulted in the defeat at Bull Run, 1861. In 1872 he was an unsuccessful candidate for the presidency. Died, 1872.

Greely, Adolphus Washington, American general, was born at Newburyport, Mass., 1844. Entering the volunteer service, he attained the rank of captain during the Civil War, and at its close was transferred to the regular army with the rank of lieutenant. In 1868 he was placed in the signal service and in 1881 was assigned to the command of the Lady Franklin bay expedition to northern Greenland. After suffering extreme and terrible hardships, Greely and a few surviving members of his command were rescued in 1884 by an expedition sent to his relief by the United States Government. He published an account of the expedition in 1886, under the title of *Three Years of Arctic Service.* In 1887 he became chief of the United States signal service, and was head of the weather bureau from that time until it passed under control of the department of agriculture. He was made major-general in 1906 and retired, 1908.

Green, Hetty Howland Robinson, American financier, was born in New Bedford, Mass., 1835, daughter of Edward Mott Robinson, who died in 1865, leaving her a large fortune. She was said to be the richest woman in America, and probably the greatest woman financier in the world.' She personally managed her large property in stocks, bonds and real estate in Chicago, New York, and elsewhere. Died, 1916.

Green, John Richard, English historian, was born at Oxford, England, 1837, and educated at Magdalen College school and Jesus College. He took orders in 1860, and was for some time vicar of St. Philip's, Stepney, becoming in 1868 librarian at Lambeth. Author: *A Short History of the English People; A History of the English People; The Making of England,* and *The Conquest of England.* The latter was published after his death by his wife, who assisted him in various works, and herself wrote *Henry II.* in the Twelve English Statesmen series. Died, 1883.

Green, Thomas Hill, English philosopher, was born in Yorkshire, 1836. Educated at Rugby and Balliol College, Oxford, 1859, he in 1860 was elected to a Balliol fellowship, and reëlected in 1872, became in 1877 Whyte professor of moral philosophy, and died in 1882. Green's noble character, contagious enthusiasm, philosophical profundity and strong interest in social questions drew around him many of the best men at Oxford. His *Prolegomena to Ethics,* left incomplete at his death, was edited by A. C. Bradley, and two "lay-sermons" by Arnold Toynbee in the same year. His scattered essays in *Mind* and elsewhere were edited as *The Works of T. H. Green,* by R. L. Nettleship.

Green, William Henry, American Presbyterian theologian, was born at Groveville, N. J., 1825. He was graduated from Lafayette College, 1840, and at Princeton theological seminary, 1846. In 1851 he was made professor of biblical and oriental literature at Princeton, and was chairman of the committee which revised the old testament. He wrote: *A Grammar of the Hebrew Language; Moses and the Prophets; The Hebrew Feasts,* etc. Died at Princeton, N. J., 1900.

Greene, Nathanael, American general, was born in 1742, at Potowhommet, Rhode Island. In 1774 he enlisted as private, and in 1775 was appointed to the command of the Rhode Island contingent to the army at Boston, with the rank of brigadier-general. He was promoted to major-general in 1775, and distinguished himself at the engagements of Trenton and Princeton. At the battle of Brandywine, he commanded a division and by his skillful movements saved the American army from utter destruction; and at Germantown he commanded the left wing. In 1778 he became quartermaster-general. In 1780 he succeeded Gates in the command of the army of the south and found the army in a wretched state, without discipline, clothing, arms or spirit. By dint of great activity he got his army into better condition and remained on the defensive for the remainder of the year. In 1781, with 5,000 new recruits, he entered upon more active operations and finally defeated the English at Eutaw Springs, the hardest fought field of the revolution, which put an end to the war in South Carolina. Congress struck and presented to him a medal in honor of this battle, and the Carolinas and Georgia made him valuable grants of land. When peace was restored in 1783, Greene returned to Rhode Island, where he received numerous testimonials of the public admiration. In 1785 he retired with his family to his estate in Georgia, where he died of sunstroke in 1786. He was one of the very best generals of the war of independence, second, perhaps, only to Washington, whose intimate friend he was.

Greenough (*grēn'ō*), **Horatio,** American sculptor, was born in Boston, Mass., 1805. He graduated at Harvard in 1825, and from that year till 1851 lived chiefly in Italy. His principal work is the colossal statue of Washington formerly in front of the capitol. Others are "Medora," "Venus Victrix," and a group of four figures, "The Rescue." He died at Somerville, Mass., 1852.

Greer, David Hummell, Protestant Episcopal clergyman, bishop coadjutor, was born at Wheeling, W. Va., 1844. He was graduated at Washington College, Pa., 1862; studied theology at Protestant Episcopal seminary, Gambier, Ohio; D.D., Brown university, LL.D., Washington and Jefferson College; S.T.D., Columbia; was ordained deacon, 186 priest, 1868; rector Grace church, Providence, R. I., 1871-88, St. Bartholomew's church, New York, 1888-1904; bishop of the diocese of New York since 1908. Died, 1919.

Gregoire (*grā'gwär'*), **Henri,** French ecclesiastic and revolutionist, was born near Lunéville, 1750. He took orders and lectured at the Jesuit College of Pont-a-Mousson. Curé of Emberménil in Lorraine, and an ardent democrat, he was sent to the states-general of 1789 as a deputy of the clergy, attached himself to the tiers-état party,

and acted a prominent part throughout the revolution. He was the first of his order to take the oaths, and was elected "constitutional bishop" of Loire-et-Cher. At the blasphemous feast of reason he refused, in the face of the infuriated rabble, to renounce Christianity. He became a member of the constituent assembly, 1789, but the concordat forced him to resign his bishopric. He died at Paris, unreconciled with the church, 1831.

Gregorovius (*greg'ō-rō'vi-ūs*), **Ferdinand,** German historian, was born at Neidenburg in East Prussia, 1821. He studied theology, but devoted himself to poetry and literature. His great work—the standard work on the subject—is the *History of the City of Rome in the Middle Ages.* He wrote on Italian geography and history, also a tragedy on the death of Tiberius, and an epic, *Euphorion.*

Gregory I., Pope, called "the great," was born in Rome about 540. After being secretary to Pelagius II., he succeeded him as bishop of Rome; renounced communion with the eastern Christians because of the assumption of the title "universal bishop" by the patriarch of Constantinople; composed chants and established a musical school, in which he himself taught, and collected and arranged fragments of ancient hymns. He was the author of numerous sacred works, of which the chief was his *Morals From the Book of Job.* Died, 604.

Gregory VII., Pope, Hildebrand, son of a carpenter, was a native of Soano, Tuscany. He was the friend and counsellor of Leo IX. and the four succeeding popes, and on the death of Alexander II., 1073, succeeded him.

He obtained confirmation in his election from the Emperor Henry IV., and immediately applied himself zealously to reforms, ecclesiastical and political. He menaced the emperor and the king of France; the latter without effect. In 1074 he assembled a council, by which it was forbidden the prelates to receive investiture of a layman; and this was the first step in the quarrel with the emperor, which lasted so many years. Henry, disregarding the papal authority, was summoned to Rome; but he held a diet at Worms, and pronounced the deposition of the pope. To this Gregory replied by procuring the deposition of the emperor and the election of Rudolph of Suabia.

Henry now promised submission; and in the early winter of 1077 went with his wife and child to Italy. The pope was at the castle of Canossa, and there, after keeping the penitent king of Germany three days waiting at the gate he received and gave him absolution. The terms imposed on him were intolerable, and he soon broke them, made war on Rudolph, and defeated him, set up a rival pope in Guibert, archbishop of Ravenna, with the title of Clement III., and after several unsuccessful attempts entered Rome in 1084, had himself crowned emperor by his own pope, and besieged Gregory in San Angelo. The pope was delivered by Guiscard, and retiring to Salerno, died there in 1085.

Whatever may be said of the power in itself, or of the length to which it has at times extended, the occasion and the object of its exercise in the hands of Gregory were always such as to command the sympathy of the philosophical student of the history of the Middle Ages. By his firm and unbending efforts to suppress the unchristian vices which deformed society and to restrain the tyranny which oppressed the subject as much as it enslaved the Church, he taught his age "that there was a being on earth whose special duty it was to defend the defenceless, to succor the succorless, to afford a refuge to the widow and orphan and to be the guardian of the poor."

References.—See *Lives* by Gfrörer; W. R. W. Stephens, Delarc, and Vincent. Also, Neil's *Epoch Men;* and Villemain's *Gregory VII.*

Grenville, George, English statesman, was born in 1712. He entered parliament in 1741, in 1762 became secretary of state and first lord of the admiralty, and in 1763 succeeded Lord Bute as prime minister. In his administration befell the American stamp act, which excited the American colonies to resistance. He resigned in 1765. Died, 1770.

Gresham (*gresh'am*) **Sir Thomas,** English financier, philanthropist, was born at London in 1519. From Cambridge, in 1543, he became connected with the Mercers' company, and in 1551 was employed as King's agent at Antwerp. In two years he paid off a heavy loan and restored the king's credit. He was knighted by Queen Elizabeth in 1559, and was for a time ambassador at Brussels. In 1569, by his advice, the state borrowed money from London merchants instead of from foreigners. Having in 1564 lost his only son, Richard, in 1566-71 he devoted a portion of his great wealth to building an exchange, in imitation of that of Antwerp; he made provision for founding Gresham College, and left money for eight almshouses. Died, 1579.

Gresham, Walter Quinton, American politician and jurist, was born in Harrison county, Ind., 1832. He was admitted to the bar in 1853; was elected to the state legislature in 1860, but resigned to accept a commission in an Indiana regiment. He was severely wounded near Atlanta and received the brevet of major-general of volunteers for his gallantry. In 1869 he was appointed United States judge for the district of Indiana by President Grant, but in April, 1882, resigned from the bench to become postmaster-general under President Arthur. On the death of Secretary Folger, in 1884, he became secretary of the treasury. In October, 1884, he was appointed United States judge for the seventh circuit. In 1893 he became secretary of state in President Cleveland's cabinet. Died at Washington, 1895.

Greuze (*grûz*), **Jean Baptiste,** French painter, was born at Tournus near Macon, France, 1725. He studied under Gromdon at Lyons, and at the academy in Paris. His first notable works were historical; after a visit to Italy, 1775, he painted Italian subjects; but he is seen at his best in such studies of girls as "The Broken Pitcher," the "Girl with Doves," and "Girl with Dead Canary." His art, though full of delicacy and grace, is marred by its triviality and pursuit of mere prettiness. Died, 1805.

Grevy (*grā'vē'*), **Francois Paul Jules,** French statesman, was born at Mont-sous-Vaudry, in the Jura, near the boundary of Switzerland, 1807. When not yet twenty years of age he began his law studies at the capital, and, becoming interested in politics, took part in the revolution of 1830, which drove Charles X. from the French throne. The voters of his old department, the Jura, elected him to represent them in the constituent assembly of 1848, and he took a prominent part in the organization of the government. After Napoleon's downfall, he was chosen president of the national assembly, which met in 1871, and in 1873, when the young republic seemed to be headed toward another monarchy, Grévy earnestly advocated democracy as the only hope of France. In 1879 he was chosen president of the republic by an enormous majority. In 1886 he was re-elected, but on account of a scandal in which his son-in-law was implicated he was forced to resign, 1887. Died, 1891.

Grey, Albert Henry George, fourth Earl Grey. English statesman and administrator, governor-general of Canada beginning 1904, was born in 1851. He was the son of General Charles Grey; was educated at Harrow and Trinity College, Cambridge, and succeeded his uncle, the third Earl Grey, in 1894. He was a liberal member of the House of commons, 1880-86; administrator of Rhodesia, 1896-97; director of British South Africa company, 1898-1904; was lord-lieutenant of Northumberland, 1899-1904. He succeeded Lord Minto, as governor-general of Canada in 1904 and served until 1911. Died in 1917.

Grey, Charles, second Earl Grey, English statesman, was born at Falloden, Northumberland, 1764, and educated at Eton and King's College, Cambridge. In 1806 Grey (now Lord Howick), became first lord of the admiralty, and, on the death of Fox, foreign secretary and leader of the house of commons. In 1807 he succeeded his father as second Earl Grey. In 1830 he formed a government whose policy, he said, would be one of peace, retrenchment and reform. The first reform bill was produced in 1831; its defeat led to a dissolution and the return of a parliament still more devoted to reform. Early in 1832 another bill was carried in the commons, and it weathered the second reading in the house of lords, but when a motion to postpone the disfranchising clauses was adopted ministers resigned. The duke of Wellington failed to form an administration, and Grey returned to office with power to create a sufficient number of peers to carry the measure. Wellington now withdrew his opposition, and in June the reform bill passed the house of lords. He carried the act for the abolition of slavery in the colonies, as well as a number of minor reforms; but dissensions sprang up, and in consequence of his Irish difficulties he resigned in 1834. He died at Howick House, Alnwick, 1845.

Grey, Sir Edward, English statesman, secretary of state for foreign affairs since 1905; member of parliament for Berwick-on-Tweed since 1885; was born in 1862. He was graduated at Balliol College, Oxford, and succeeded to the baronetcy in 1882; was under-secretary for foreign affairs, 1892-95. He is a man of brilliant talents of whom Gladstone is alleged to have said: "I have never remembered so signal a capacity for parliamentary life and so small a disposition to it."

Grey, Lady Jane, eldest daughter of Henry Grey, marquis of Dorset, afterward duke of Suffolk, and of Lady Frances Brandon, was born at Bradgate, Leicestershire, 1537. In 1553, Lady Jane Grey, now sixteen years old, was married to Lord Guilford Dudley, fourth son of the duke of Northumberland. The king, failing in body and weak in mind, and surrounded by selfish or fanatical advisers, was persuaded to make a deed of settlement, setting aside the right of succession of his sisters, Mary and Elisabeth, and Mary, queen of Scots, leaving the crown to Lady Jane, who was innocent of the conspiracy. After the king's death her ambitious relatives hailed her as "queen." The people of England resented the unscrupulous conduct of Suffolk and Northumberland, and, learned, brilliant and amiable as Lady Jane was, they rallied round Mary. Northumberland was defeated, sent to the Tower, and beheaded August 22, 1554; and in the following November Lady Jane and her husband were also condemned and she was executed in February, 1554.

Grey, Zane, American writer, was born at Zanesville, Ohio, 1875. He studied dentistry and practiced in New York City for several years, then devoted himself to literature. Among his best known works are *The Lost Trail, The Call of the Canyon, The Mysterious Rider,* and *Tales of the Lonely Trails.*

Grieg (*grēg*), **Edward Hagerup,** Norwegian composer, was born at Bergen, Norway, 1843. His nationality became a strong element even in his earliest compositions. He spent the winter of 1865-66 and some months of 1870 in Rome, where he inaugurated a Norse music concert. In 1888 he went to London, where he both played and conducted, and this was followed by important engagements in Germany and elsewhere. Among his compositions are numerous pieces for the piano, songs, dances, and an opera. He died in 1907.

Griffis (*grif'is*), **William Eliot,** lecturer, author, was born in Philadelphia, 1843. He served in the Civil War, graduated at Rutgers, Union Theological Seminary, Union College. In 1870 he went to Japan to organize schools; professor of physics in Imperial University, Tokio, 1873-4. Author of *Brave Little Holland, The Religions of Japan, In the Mikado's Service.* Died, 1928.

Griffith, David Wark, motion picture director, on entering motion pictures was attracted to the technical side, in which he has won great distinction. He was the first to use "close-ups" and "cutbacks," and handles his players admirably. Noted for *The Birth of a Nation.*

Griggs, Edward Howard, lecturer, author, was born at Owatonna, Minn., 1868. He was graduated from Indiana University, 1889, A.M., 1890; special studies, university of Berlin; was instructor of English literature and professor of literature, Indiana University; professor of ethics and later head of combined departments of ethics and education Leland Stanford Jr., University; public lecturer. Author: *The New Humanism; A Book of Meditations, Moral Education, Human Equipment,* etc.

Griggs, John William, lawyer, United States attorney-general, 1898-1901, was born at Newton, N. J., 1849. He was graduated at Lafayette College, 1868; admitted to the bar, 1871; practiced at Paterson; member of New Jersey general assembly, 1876 and 1877; state senator, 1882-88; president of New Jersey senate, 1886; governor of New Jersey from January, 1896, until he resigned, January, 1898, to take office of attorney-general in President McKinley's cabinet; member of Hague permanent court of arbitration.

Grillparzer (*gril'pär-sĕr*), **Franz,** Austrian dramatic poet, was born at Vienna, 1791. He studied jurisprudence, and in 1813 entered the imperial civil service, in which he remained until 1856. He first attracted notice in 1817 by a tragedy, *Die Ahnfrau,* which was followed by *Sappho; Das goldene Vlies; Des Meeres und der Liebe Wellen; Der Traum ein Leben,* etc. He produced in lyric poetry much meritorious work, and one good prose novel, *Der Arme Spielmann.* Died at Vienna, 1872.

Grimm, Friedrich Melchior, Baron von, German-French critic and writer, was born at Ratisbon, 1723. He became acquainted with Rousseau in 1749, and through him with Diderot, Holbach, and Madame d'Epinay. His connection with the encyclopedists, added to his own acquirements, opened up a brilliant career. In 1776 he was made a baron by the duke of Gotha and appointed minister-plenipotentiary at the French court. At the revolution he withdrew to Gotha and afterward to the court of Catharine II., whence he was sent in 1795 as Russian minister to Hamburg. He died at Gotha, 1807.

Grimm, Jakob Ludwig Karl, German philologist and antiquary, was born at Hanau, in Hesse-Cassel, 1785. Though holding at various times important public offices, his life was devoted to philological and antiquarian studies. His German *Grammar,* in four volumes, is perhaps the greatest philological work of the age. After 1814, in company with his brother Wilhelm, he published numerous works of a more popular character, the best known of which is *Kinder- und Hausmärchen,* nursery and fireside stories. The greatest joint undertaking of the two brothers was the *Deutsche Wörterbuch,* begun in 1852. Jakob Grimm died in 1863. Wilhelm was born in 1786 and died at Berlin in 1859.

Grimston (*grim-stun*), **Mrs. Margaret B.** See **Kendal, Mrs.**

Grimston, William H. See **Kendal, Mr.**

Gros (*grō*), **Antoine Jean, Baron,** French historical painter, was born at Paris, 1771. He studied in the school of David, and acquired celebrity by

his great pictures of Napoleon's battles, "*Francis I. and Charles V. at Saint Denis*," "*Departure of Louis XVIII. for Ghent*," "*The Plague of Jaffa*," and "*Embarkation of the Duchess of Angouleme*." He drowned himself in the Seine, 1835.

Gross, Samuel David, American surgeon, was born in Pennsylvania, 1805. He was graduated from Jefferson Medical College, 1828; was professor of pathological anatomy in Cincinnati Medical College, 1835-39; professor of surgery in university of Louisville, 1839-50, and at univeristy of New York, 1850-51; professor of surgery in Jefferson Medical College, 1856-84. He wrote: *System of Surgery* (2 vols.); *American Medical Biography*, etc. He was the founder and chief editor of the *North American Medico-Chirurgical Review*, and was president of the American Medical Association, 1867. Died, 1884.

Grosscup (*grōs'kup*), **Peter Stenger,** jurist, judge of United States circuit court of appeals, 7th circuit, since 1899, was born at Ashland, Ohio, 1852. He was graduated from Wittenberg College, 1872, Boston Law School, 1874; practiced law at Ashland, Ohio, 1874-83, where he was city solicitor for six years; practiced in Chicago, 1882-92; United States judge of northern district of Illinois 1892-99. He was president of the John Crerar library, Chicago. Died, 1921.

Grosvenor, Edwin Augustus, educator, historian, was born in Newburyport, Mass., 1845. He was graduated from Amherst, 1867, Andover theological seminary, 1872; LL.D., Wabash, 1903. Professor of modern governments and their administration, 1898-1901, modern government and international law since 1901, Amherst College. Author: *The Hippodrome of Constantinople; Constantinople; The Permanence of the Greek Type; Contemporary History*, etc.

Grote (*grōt*), **George,** English historian and politician, was born at Clay Hill, Kent, England, 1794. He published many pamphlets on reform, and contributed to the *Westminster Review*. In 1833 he was elected to parliament for the city of London, for which he continued to sit until 1841, as one of the "philosophical radicals." His *History of Greece* appeared between 1846 and 1856, and was followed by *Plato and Other Companions of Socrates*. He died in 1871, and is buried in Westminster abbey.

Grotius, or **De Groot, Hugo,** eminent Dutch scholar and statesman, was born at Delft, Holland, in 1583. He was descended from a noble family, received an excellent education and gave early manifestations of surprising talents.

In 1599 he commenced his career as advocate; and was successively appointed historiographer, advocate-general of Holland and Zeeland, a member of the states-general and envoy to England. Hitherto his life had been marked by splendor, but now it began to be clouded by the part which he took in the Arminian controversy. In 1613 he became syndic, or pensionary, of Rotterdam, and declaring himself on the side of Barneveldt, he supported him and the cause of the Arminians by his pen and influence. For this he narrowly escaped the fate of Barneveldt (who suffered on the scaffold) and received sentence of imprisonment for life in the fortress of Loewestein. He remained in prison 18 months; while there wrote his celebrated *Treatise on the Truth of the Christian Religion*, and then succeeded in escaping. This was effected by the management of his wife, who contrived to have him carried out of the castle in a chest that had been used for the conveyance of books and linen.

Grotius at first sought an asylum in France and it was during his residence there that he composed his great work, *De Jure Belli et Pacis* "On the Law of War and Peace." After an absence of 12 years, he returned to his native country, relying on the favor of Frederick Henry, prince of Orange, who had written him a sympathizing letter. But by the influence of his enemies he was condemned to perpetual banishment. He passed the remnant of his life in the diplomatic service of Sweden, and died at Rostock, in 1645.

With the talents of the most able statesman, Grotius united deep and extensive learning. He was a profound theologian, a distinguished scholar, an acute philosopher, a learned jurist and an erudite historian. Among his works not mentioned above may be noticed *De Antiquitate Reipublicae Batavicae;* a *History of the Goths*, etc.

References.—Burigny's *Life of Hugo Grotius;* Buller's *Life;* and *Grotius* trans. by D. P. de Bruyn.

Grouchy (*grōō-shē'*), **Emmanuel, Marquis de,** distinguished French marshal, was born in Paris, 1766. He entered the French army, 1781; was a lieutenant in the royal body-guard, 1787-93; served with Lafayette, was promoted brigadier-general, commanded the cavalry in the army of the Alps, aided in the conquest of Savoy, and after fighting in La Vendee, 1794, was cashiered with all other officers of the nobility. He then enlisted as a private soldier, and after the fall of Robespierre was reinstated and promoted general of division by a special decree. Defeated the Prussian cavalry at Zendenik, 1806; was governor of Madrid, 1808; took part in the battle of Wagram, 1809; distinguished himself at Borodino, 1812; and commanded Napoleon's body-guard on the retreat from Moscow. When Napoleon reappeared from Elba, Grouchy was given a command and made a marshal of France for his successes in the north. He then marched into Belgium, defeated the allied English and Prussian armies at Fleurus and Ligny, and by following Napoleon's orders to the letter to pursue Blücher is believed to have caused the French defeat at Waterloo. He was again banished by the Bourbons, lived five years in Philadelphia, was recalled to France, 1819, and after the revolution of 1830 was restored to rank as marshal and created a peer. Died, 1847.

Grove, Sir George, British engineer and writer on music, was born at Clapham, 1820. He was trained as a civil engineer, erected in the West Indies the first two cast-iron lighthouses and assisted in the Britannia tubular bridge, which unites Anglesey and Wales. He was made D.C.L. by Durham, LL.D. by Glasgow, and was knighted in 1883 on the opening of the Royal College of music, of which he was director until 1895. He died in 1900.

Grove, Sir William Robert, English lawyer and physicist, was born at Swansea, 1811. He studied at Oxford, was admitted to the bar, raised to the bench, 1871, knighted, 1872, and in 1875-87 was a judge in the high court of justice. He greatly distinguished himself in the subjects of electricity and optics, and in 1839 he invented the powerful voltaic battery known by his name. He published very important lectures, in which he propounded the theory of the mutual convertibility of the natural forces; the *Correlation of the Physical Forces; Voltaic Ignition*, and the *Continuity of Natural Phenomena*. Died, 1896.

Grundtvig (*grōnt'vēg*), **Nikolai Frederik Severin,** Danish poet and theologian, was born at Udby in Zealand, 1783. He first became known by his *Northern Mythology*, published in 1808, and *Decline of the Heroic Age in the North*, in 1809. These were followed by the *Rhyme of Roeskilde* and the *Roeskilde Saga*, and by a collection of patriotic songs. In 1818 he had begun the translation of Snorri Sturluson and Saxo Grammaticus; in 1820 published a Danish translation of *Beowulf*. After 1861 he had the title of bishop, though he held no see. He died in 1872.

Grundy (*grun'dĭ*), **Felix,** American jurist and statesman, was born in Berkeley county, Va., 1777. In 1799 he was chosen a member of the Kentucky constitutional convention, and from that time until 1806 served as a member of the legislature. He was appointed judge of the supreme court of errors and appeals in 1806; in 1807, became chief justice, in 1811 was sent to congress, and reëlected in 1813, and in 1829 became United States senator, to fill the unexpired term of John H. Eaton. Later he was elected to fill that place as a partisan of Andrew Jackson. In 1838 he served for a few months as United States attorney general during the administration of Martin Van Buren; resigning this office he was immediately reëlected to the United States senate. Died at Nashville, Tenn., 1840.

Grunsky, Carl Ewald, civil engineer, was born in San Joaquin county, Cal., 1855. His first professional work was as topographer with river surveying party of state engineering department of California, 1878; member of San Francisco sewerage commission, 1892-93; city engineer, San Francisco, 1900-04; member of isthmian canal commission, 1904-05; consulting engineer, United States reclamation service, Washington, 1905-07; and, since 1907, consulting engineer, New York.

Guarini (*gwä-rē'nē*), **Giovanni Battista,** Italian poet and diplomat, was born at Ferrara, 1537. He was intrusted by Duke Alfonso II. with diplomatic missions to the pope, the emperor, Venice, and Poland. His chief work was the famous pastoral play, *Il Pastor Fido*, really an imitation of Tasso's *Aminta*. Died, 1612.

Guericke (*gä'ri-kĕ*), **Otto von,** German physicist, was born at Magdeburg, in Prussian Saxony, 1602. As a physicist he is chiefly known by his discoveries relative to nature and effects of air. The experiments of Galileo and Pascal on the weight of air led Guericke to attempt the creation of a vacuum. This resulted in the first air pump, invented about 1650. Guericke's invention soon became famous, and in 1654 he was summoned to the presence of the emperor Ferdinand III. of Germany at Ratisbon, at which time he made the famous experiment commonly known as the "Magdeburg hemispheres," in demonstration of atmospheric pressure. Died at Hamburg, 1686.

Guesclin (*gĕ'klan'*), **Bertrand,** French general and the most famous French soldier of the age, was born in 1320. Becoming a soldier of fortune under Charles, he gained great distinction at the siege of Vannes, 1342. He was knighted, and in 1351 went, with the lords of Britanny to England to secure the release of his captive master. He soon took service under the French king and, after several brilliant actions, was made marshal of Normandy and count of Longueville. At the battle of Auray, 1364, he was taken prisoner, but was ransomed for a large sum of money and led his soldiers into Spain. He was afterward taken prisoner by the Black Prince, then in alliance with Pedro "the cruel." Being again ransomed, he restored Henry to the throne in 1369. In 1370 he was made constable of France, and for ten years was active and successful in driving the English from the south and west of France. In 1373 he seized and held most of the strongholds in the duchy of Brittany. He died while besieging the fortress of Chateauneuf-Randon, 1380.

Guest, Edgar Albert, American writer, was born in Birmingham, England, 1881. He came to the United States when ten. Since 1895 he has been a writer for the Detroit Free Press and has had his verse in countless newspaper columns. Among his volumes of collected poems are *A Heap o' Livin'*, *When Day Is Done*, *The Passing Throng*.

Guggenheim, Simon, capitalist, United States senator, was born in Philadelphia, Pa., 1867. He was graduated from public schools of Philadelphia, after which he studied languages in Europe two years. Went to Pueblo, Col., 1888, and engaged extensively in mining and smelting in the United States and Mexico. He was elected United States Senator from Colorado, 1907-13.

Guido Reni (*gwē'dō rā'nē*), Italian painter of the electic (Bolognese) school, was born near Bologna, 1575. He studied under Calvaert, but subsequently followed the more refined and ideal school of the Caracci, previous to finally striking out a style for himself. In 1608 he went to Rome, where he remained for twenty years, and was a rival of Caravaggio. The "Aurora" of Guido, on the ceiling of one of the halls of the Rospigliosi palace, a fresco of world-wide fame, is considered the greatest of his works. Died, 1642.

Guild, Curtis, Jr., journalist, ex-governor of Massachusetts, was born at Boston, 1860. He was graduated at Harvard, 1881; entered office of *Commercial Bulletin*, Boston, founded by his father; served from bill collector to editor, and, since 1902, sole owner of the paper. He was brigadier-general of state militia at outbreak of Spanish war; served as lieutenant-colonel, inspector-general on staff, 7th corps (General Fitzhugh Lee) until break-up of corps in Cuba; lieutenant-governor of Massachusetts, 1902-05; governor of Massachusetts, 1906-09. Died, 1915.

Guise (*gü-ēz'*), a ducal family of Lorraine, was so named from the town of Guise. The most prominent members historically are the following: Claude of Lorraine (1496-1550), fifth son of René II., duke of Lorraine, was born at the chateau of Condé, fought at Marignano in 1515, but after that campaign remained at home to defend France against the English and Germans. For suppressing the peasant revolt in Lorraine, 1527, Francis created him duke of Guise.

Mary of Lorraine (1515-60), his daughter, in 1534 married Louis of Orleans, duke of Longueville, and in 1538 James V. of Scotland, at whose death, in 1542, she was left with one child, Mary, Queen of Scots. During the troublous years that followed, the queen-mother acted with wisdom and moderation; but after her accession to the regency in 1554 she allowed the Guises so much influence that the Protestant nobles raised a rebellion, which continued to her death in Edinburgh castle.

Francis (1519-63), her brother, second duke, became one of the greatest generals of France. He and his brother Charles, the cardinal, afterward conspicuous at the council of Trent, managed to become all-powerful during the reign of Francis II. Heading the Roman Catholic party, they sternly repressed Protestantism. Guise and Montmorency won a victory over the Huguenots at Dreux, 1562, and Guise was besieging Orleans when he was assassinated by a Huguenot.

Henry (1550-88), third duke, fought fiercely against the Protestants at Jarnac and Moncontour, 1569, and forced Coligny to raise the siege of Poitiers. He was ambitious to succeed to the throne of France, when Henry III. procured his assassination at Blois.

Henry (1614-64), his grandson, fifth duke, at fifteen became archbishop of Rheims, but in 1640 succeeded to the dukedom. Having joined the league against Richelieu, he was condemned to death, but fled to Flanders. He put himself at the head of Masaniello's revolt in Naples as the representative of the Anjou family, but was taken by the Spanish, 1647, and carried to Madrid, where he remained five years. After another attempt to win Naples, 1654, he settled at Paris.

Guiteras, Juan, physician, professor of general pathology and tropical diseases, university of Havana, since 1900, was born at Matanzas, Cuba, 1852. He was educated at La Empresa, Matanzas; M.D., University of Pennsylvania, 1873; Ph.D. was professor of pathology, university of Pennsylvania; on staff of General Shafter as yellow fever expert in Santiago campaign, 1898. Editor of *La Revista de Medicina Tropical*, and member of many medical and scientific associations. Died, 1925.

Guizot (*gē'zō'*), **Francois Pierre Guillaume,** French statesman and historian, was born at Nimes, France, 1787. His first work, the *Nouveau*

Dictionnaire Universal des Synonymes de la Langue Francaise, appeared in 1809. He contributed to the dissolution of the *Chambre Introuvable* by writing a memorial which was placed in the hands of Louis XVIII. by Decazes. The latter committed to him the direction of the administration of the communes and departments in 1819. After the revolution of 1830 he became successively minister of public instruction, and minister of the interior, the latter office he held, with two interruptions, until 1836. In 1847 he became the official leader of the cabinet, which maintained its ground, as the organ of Louis Philippe's policy, until the revolution of 1848. Among his works are: *History of the English Revolution; Life of Oliver Cromwell; History of Civilization in Europe;* and *History of Civilization in France.* He died in 1874.

Gunsaulus (*gŭn-sô'lŭs*), **Frank Wakeley,** Congregational clergyman, educator, was born at Chesterville, Ohio, 1856. He was graduated at Ohio Wesleyan University, 1875; D.D., Beloit College, Wisconsin; Pastor of Memorial Congregational church, Baltimore, 1885-87; Plymouth church, Chicago, 1887-99; Central church, Chicago, 1899; president of Armour Institute of technology, since 1893; lecturer at Yale theological seminary, 1882; professorial lecturer of university of Chicago. Author: *Phidias and Other Poems; Songs of Night and Day; Transfiguration of Christ; Monk and Knight; Life of William Ewart Gladstone; Metamorphosis of a Creed; November at Eastwood; Loose Leaves of Song; The Man of Galilee; Paths to Power; Paths to the City of God; Higher Ministeries of Recent English Poetry,* etc. Died, 1921.

Gustavus Vasa (*gŭs-tā'vŭs vā'sà*), king of Sweden, was born of a noble house at Lindholmen in Upland, 1496, and in 1518, during the patriotic struggle with Christian II. of Denmark, was treacherously carried off to Denmark as a hostage. After a year he escaped to Lubeck, thence to Sweden, where he strove in vain to rouse a spirit of resistance against the Danes. Retreating to Delecarlia, he wandered for months with a price set on his head and worked on farms and in mines. At last the infamous "blood-bath" of Stockholm, 1520, roused the Swedes, and soon Gustavus had an army large enough to attack the enemy. His capture of Stockholm in 1523 drove the Danes from Sweden, and he was elected king. He found the whole country demoralized. Yet after a forty years' rule he left Sweden a peaceful and civilized realm with a full exchequer and a well organized army. He died in 1560, and was succeeded by his eldest son, Eric.

Gustavus II., Adolphus, was born at Stockholm, 1594. He was the grandson of Gustavus Vasa by his youngest son, Charles IX., at whose death, in 1611, he succeeded to the throne of Sweden. He was acquainted with eight languages, five of which he spoke and wrote fluently, was well read in the classics and ancient history. He was proficient in music and excelled in all warlike and manly exercises. Having made various administrative reforms, and availed himself of the short interval of peace to promote the material prosperity of the country, he remitted the charge of the government to his chancellor, Oxenstiern, and set sail, in the summer of 1630, with an army of about 15,000 men, to aid the Protestants of Germany in their hard struggle against the Catholic league, which was backed by the power of the empire. With and for the Germans he fought until his death on the battlefield of Lützen, 1632. He made Sweden a power in northern Europe.

Gustavus III., king of Sweden, was born at Stockholm, 1746, and succeeded his father, Adolphus Frederick, in 1771. In 1792 he was mortally wounded by Ankarström at a masked ball in the opera house which he himself had built. Gustavus was a man of varied learning and the author of several dramatic works and poems of considerable merit.

Gustavus V., king of Sweden, was born in 1858, and married, in 1881, Princess Victoria of Baden, first cousin of the German emperor and a descendant of the old Swedish royal family of Vasa. He succeeded his father, King Oscar II., on December 8, 1907, having several times previously acted as regent. The king's eldest son, Prince Gustavus Adolphus, married Princess Margaret of Connaught, June, 1905. His majesty is a knight of the garter of Great Britain and received the royal Victorian chain in April, 1908.

Gutenberg, Johann, or **Henne** (*goo'ten-bûrg*), the inventor of printing, was born in Mentz, Germany, about 1400, died 1468. His father's name was Gensfleisch or Gansfleisch, Gutenberg being the name of his mother, or of an estate belonging to his family, which was of noble lineage.

He became a citizen of Strasburg about 1420, where he appears to have devoted many years to mechanical experiments, and as early as 1438 he had a press, movable types, forms and other appliances for printing. After 1444 all trace of him is lost till 1448, when he was again in Mentz. In 1450 he entered into a partnership with Johann Faust of Mentz for the purpose of carrying on the business of printing, the latter undertaking to furnish the funds. The partnership terminated at the end of five years, most of the materials being taken by Faust for his advances and Gutenberg appears to have afterward carried on printing with considerable activity alone.

In 1465 he abandoned the business and entered the service of the archbishop-elector Adolphus of Nassau. In his own and in modern times he has been obliged to share with Faust and Peter Schöffer the credit of his invention; but in the preface to a German translation of Livy (Mentz, 1505) it is distinctly declared by Johann Schöffer that the "admirable art of printing was invented in Mentz in 1450 by the ingenious Johann Gutenberg." The opinion of most modern writers seems to be that Gutenberg not merely invented the art, but practiced it long before he became associated with Faust.

References.—Pearson's *Gutenberg and the Art of Printing;* Hessels's *Gutenberg;* Zatzman's *Gutenberg;* Lamartine's *Celebrated Characters.*

Gutzkow (*gŏŏts'kō*), **Karl Ferdinand,** German dramatist and author, was born in 1811. He started a newspaper in 1831; went to Stuttgart to assist in editing Menzel's *Literaturblatt;* was imprisoned three months and had all his writings suppressed for the atheistic and socialistic views expressed in his novel, *Wally, die Zweiflerin,* 1835, and in the same year elaborated his opinions in *Nero,* a dramatic work. To escape the surveillance of the Prussian government he went to Hamburg in 1837, thence to various German cities, and in 1870 made his permanent residence in Berlin. He was author of numerous comedies, tragedies, dramas and novels, which attained wide popularity. Died, 1878.

Guyot (*gē'yō*), **Arnold Henry,** Swiss geographer and geologist, was born at Neuchâtel, 1807. He came to America in 1848, and devoted his life to science; was professor of geology and physical geography at Princeton College, 1855-84. He formed an intimacy with Agassiz, and made numerous maps, mathematical tables and textbooks. His greatest works were *The Meteorological and Physical Tables,* issued by the Smithsonian Institution, and his *Earth and Man.* Died, 1884.

Haakon VII. (*hô'kŏn*), king of Norway, was born in 1872, and is the second son of King Frederik of Denmark and a nephew of Queen Alexandra of Great Britain. His baptismal name was Charles, but he assumed the above title on becoming king, November 18, 1905, on the separation of Norway and Sweden. King Haakon and Queen Maud made their formal entry into Christiania November 25, 1905, and the king took the oath before the Storthing on the 27th, and was crowned at Trondhjem on June 22, 1906. The king married Princess Maud Alexandra, daughter of King Edward VII., July 22, 1896. His son and heir-apparent is Prince Alexander, born July 2, 1903, and renamed Prince Olaf on his father's accession to the throne.

Hackett, James Keteltas, actor, was born at Wolfe island, Ont., 1869. He was graduated at the college of the city of New York, 1891, and studied at New York Law School. Made his début on stage in Palmer's stock company, 1892; was leading man at New York Lyceum at twenty-six. His most notable successes were *Prisoner of Zenda,* and its sequel, *Rupert of Hentzau,* and *The Pride of Jennico,* under the management of Daniel Frohman. Died in Paris, 1926.

Hading (*ä'dan'*), **Jane,** stage name of Jeanne-Alfrédine Tréfouret, French actress, was born at Marseilles, France, 1859. At the age of three she played Blanche de Cayius in *Le Bossu,* her father at the same time playing the leading character. Some years later she was sent to the Marseilles conservatoiré, where she won considerable distinction. On leaving she entered upon an engagement at the Algiers theater, and when but fourteen played Zouella in *Le Passant,* Stefano in *Chef d'œuvre in Connu,* the blind girl in *Les Deux Orphelines,* and Pedro in *Giroflé-Girofla.* At the Palais Royal she played La Chaste Susanna, and at the Renaissance she was the original Jolie Persane and Belle Lurette, and the heroine in *Hélöise and Abelard.* She again appeared in comedy as Paulette in *Antour de Nariage,* and as Claire de Beaulieu in *La Maitre de Forges.* She subsequently appeared in London at the Royalty theater, and in 1888 and 1894 made a successful tour of the United States, accompanied by M. Coquelin. One of her greatest successes was in *The Second Mrs. Tanqueray.*

Hadley, Arthur Twining, American educator and economist, president of Yale University, 1899-1921, was born in New Haven, Conn., 1856. He was graduated at Yale, 1876; was a student of University of Berlin; LL.D., Harvard, 1899; Columbia, 1900; Johns Hopkins, 1902. Tutor, 1879-83, lecturer, 1883-86, Yale; commissioner of labor statistics, Connecticut, 1885-87; professor of political science, Yale, 1886-99; president of American Economic Association, 1899-1900. Author: *Railroad Transportation: Its History and Laws; Connecticut Labor Reports;* 1885-86; *Economics; An Account of the Relations Between Private Property and Public Welfare; The Education of the American Citizen; Freedom and Responsibility; Baccalaureate Addresses; Standards of Public Morality,* etc. He was American editor of the tenth edition of *Encyclopedia Britannica.* Died, 1930.

Hadley, James, father of preceding, American classical scholar and writer, was born in Fairfield, N. Y., 1821. He was graduated at Yale College in 1842, became tutor in mathematics at Middlebury College, and in 1845 tutor of classical history at Yale. In 1848 he was appointed assistant professor, and in 1851 succeeded Theodore D. Woolsey as professor of Greek, which position he held until his death in 1872. He was a distinguished student of philology and civil law; was one of the American committee for the revision of the New Testament and a member of a number of learned societies.

Hadrian, or Publius Ælius Hadrianus, Roman emperor from 117 to 138, was born in 76 A. D. He was elected by the army successor of Trajan. His reign was one of the happiest periods in Roman history, the only important war which broke out during the reign being a rebellion of the Jews, which lasted for three years. After his death, which took place at Baiae, 138 A. D., he was succeeded by Antoninus Pius. The amusoleum which he built for himself in Rome forms the ground work of the present castle of St. Angelo.

Haeckel (*hek'el*), **Ernst Heinrich,** German naturalist and writer, was born at Potsdam, Prussia, 1834. He studied medicine and science at Würsburg, Berlin and Vienna, where he was appointed professor of zoölogy. Between 1866 and 1875 he traveled over the greater part of Europe, besides visiting Syria and Egypt. Later he visited India and Ceylon, and published a lively account of his travels. He is regarded in Germany as the foremost supporter of Darwin's theories. Among his works are *The History of Creation; The Origin of the Human Race; Life in the Deep Seas; The History of Man's Development; Popular Lectures on Evolution; Voyage of H. M. S. Challenger,* etc. Died in 1919.

Hafiz (*hä'fiz* or *hä-fēz'*), **Mohammed Shamsuddin,** or **Shams-ud-Din,** better known by his poetical name of Hafiz, was the greatest of Persian lyrical poets. The name of Hafiz is a household word throughout Persia, and his songs are recited in every social assembly. The date of his birth is unknown, but he is said to have died at a good old age in 1388 A. D.

Haggard, Henry Rider, English novelist, barrister and social reformer, was born in England, 1856. He accompanied Sir Henry Bulwer, as secretary, to Natal in 1875, and formally hoisted the British flag over Transvaal territory, 1877. He retired from the colonial service in 1879; returned to England and became a barrister. His first book, published in 1882, of a political character, is named *Cetywayo and His White Neighbors.* Subsequently he published *She,* a novel of great power; *Ayesha,* or *the Return of She; Jess; Cleopatra,* etc. He also wrote *Rural England* and *A Farmer's Year,* and made extensive studies in socialistic settlements. Died, 1925.

Hague (*hag*), **Arnold,** American geologist, was born in Boston, Mass., 1840. He was graduated at the scientific school of Yale, 1863, and for several years studied in Germany. D.Sc., Columbia, 1901; LL.D., Aberdeen, 1906. He was assistant geologist of United States geological exploration of 40th parallel, 1867-77; secretary, national academy of sciences, since 1901, and member of many scientific societies. Author: *Descriptive Geology; Geological Exploration of 40th Parallel; Geology, Yellowstone National Park; Geological Atlas of Yellowstone Park, etc.* Died, 1917.

Hahnemann (*hä'nē-măn*), **Samuel Christian** Friedrich, founder of the homeopathic system of medicine, born at Meissen, Saxony, in 1755. Degree of M.D. at Erlangen in 1779. In 1790, he noticed a similarity between the effects of cinchona upon a healthy person and the results of diseases for the cure of which that drug was used. He became convinced that the cure for a disease is the very drug that would in a healthy individual produce the symptoms of such disease. Further investigation caused him to conclude that the doses of his day were injurious, and to another principle, that of very minute doses, made by a process of "potentization," described by him at length in his *Organon,* 1810, which work was translated into many languages. He encountered opposition and was driven out of Leipsig, 1821. The grand duke of Anhalt, however, appointed him court physician, and he remained at Köthen, occupying that position until 1835, when he removed to Paris. He died in 1843.

Haig, Field-Marshal Sir Douglas, Commander in Chief British forces in Great War. b. 1861; m. 1905. Educ.: Clifton; Brasenose College, Oxford; served in Soudan, 1898; South Africa, 1899; inspector Gen. of cavalry India, 1903-6; Lt.-Gen. 1910; Gen., 1914, for distinguished service; field marshal, 1917, for distinguished service; stood the brunt of German Spring drive, 1918. Died, 1928.

Hakluyt (*hak'lōōt*), **Richard,** English author, was born about 1552. He was lecturer on cosmography at Oxford University, and was the first to teach the use of globes. He was afterward pro-

fessor of divinity, and in 1584-89 was in Paris, where he published several works. On his return he joined Raleigh's company of gentlemen adventurers and merchants for colonizing Virginia. His chief work is *The Principal Navigations, Voyages, and Discoveries of the English Nation*, commonly called *Hakluyt's Voyages*. Died, 1616.

Haldane (*hal'dān*), **Richard Burdon,** British statesman and writer, was born in 1856. He was educated at Edinburgh academy and university and at Göttingen; in 1879 was called to the chancery bar, and in 1890 was made a queen's counsel; hon. D.D.L., Oxford; LL.D. Edinburgh. He entered parliament in 1885 as member for Haddingtonshire; and became secretary of state for war, 1905-12; Lord High Chancellor of Great Britain, 1912-15 and 1924. In *Education and Empire*, 1902, he zealously insisted on educational reform as essential to national well-being. Died, 1928.

Haldeman (*hôl'dē man*), **Samuel Stehman,** American naturalist and philologist, was born near Columbia, Pa., 1812. He occupied the chair of natural history, and later of comparative philology, in the University of Pennsylvania, and was the author of numerous articles on philology, conchology, entomology, and paleontology. His work, *Analytic Orthography*, obtained in England the highest Trevelyan prize over eighteen competitors, 1858. Died, 1900.

Hale, Edward Everett, Unitarian clergyman, author, was born in Boston, Mass., 1822. He was graduated at Harvard University, 1839; S.T.D., 1879; LL.D., Dartmouth, 1901; Williams, 1904. Studied theology, and became minister of the church of the Unity, Worcester, Mass., 1846-56; minister of South Congregational (Unitarian) church, Boston, Mass., 1856-1909; chaplain United States Senate, 1902-09. He actively promoted the Chautauqua movement, assisted in the organization of "Lend-a-Hand" clubs, and was a prolific editor and writer. Author: (stories) *The Man Without a Country; In His Name; His Level Best; The Ingham Papers; Christmas Eve and Christmas Day; Christmas in Narragansett; Our Christmas in a Palace*, etc. Also: *Sketches in Christian History; The Story of Massachusetts; Sybaris and Other Homes; Ralph Waldo Emerson; We, the People; New England Ballads*, etc. Died, 1909.

Hale, Eugene, United States Senator from Maine, 1881-1911, was born in Turner, Oxford county, Me., 1836. He received an academic education; LL.D., Bates College, Colby University and Bowdoin College; was admitted to the bar, 1857; member of Congress, 1869-79; delegate to national Republican conventions, 1868, 1876, and 1880. He was elected to the United States senate to succeed Hannibal Hamlin in 1881, and continued in that until 1911. Died, 1918.

Hale, George Ellery, American astronomer, was born at Chicago, Ill., 1868. He was graduated at Massachusetts Institute of technology; studied at Harvard College Observatory, 1889-90, University of Berlin, 1893-94; Sc.D., Yale, 1905; LL.D., Beloit, 1904. Professor astrophysics, Universit of Chicago, 1897-1905, director Yerkes observatory, 1895-1905; director solar observatory of Carnegie Institution of Washington at Mt. Wilson, Cal. Joint editor *Astronomy and Astrophysics*; editor *Astrophysical Journal* since 1895. He has written many papers on the sun, stellar spectroscopy, etc.

Hale, Sir Matthew, English lawyer and jurist, was born at Alderley, England, 1609. He was graduated at Oxford, studied law at Lincoln's Inn, and was admitted to the bar in 1637. Became a judge of common pleas in 1653, and sat in parliament until the restoration, when he was made lord chief baron of the exchequer. In 1671 he became lord chief justice, and resigned shortly before his death, in 1676.

Hale, Nathan, American patriot, was born in Coventry, Conn., 1755. He was graduated at Yale College, in 1773, and devoted himself to the cause of the colonies in the contest with Great Britain. After the defeat of the patriot army of Long Island he endeavored to obtain knowledge of the enemy's plans and position for the information of Washington. He obtained the knowledge, but was arrested by the British before he could return, and, the papers containing the information being found on his person, he was hanged as a spy, by order of Sir William Howe, 1776. His sentence was carried into effect in the most unfeeling manner; he was refused the attendance of a clergyman, and the letters which he wrote to his mother a short time before his death were destroyed. His last words were, "I only regret that I have but one life to lose for my country."

Halevy (*á'lá'vē'*), **Jacques Francois Fromental,** French composer, was born at Paris, of Jewish parentage, 1799. The first work that brought him any considerable reputation was *La Juive*, produced at the Grand Opéra in 1835. The most important of his subsequent pieces were *La Reine de Chypre; Charles VI.; La Juive Errant*, and *La Magicienne*. Those executed for the Opera Comique are regarded as his most successful; the principal are: *Les Mousquetaires, L'Eclair*, and *Le Val d'Andorre*. He was a great favorite with his countrymen, but his style was so purely national that in spite of his great dramatic power he did not enjoy a great celebrity out of France until recently. Died, 1862.

Halevy, Ludovic, French novelist and dramatic author, was born at Paris, 1834, and received his education at the Lycée Louis le Grand. He was chief of the department for Algiers and the colonies, and in 1861 was appointed to edit the proceedings of the *corps législatif*. This position he resigned to devote himself to the drama. Under his own name, and with various collaborators, he produced *Ba-La-Clan; Rose et Rosette; Orphée aux Enfers; La Belle Hélene*, a burlesque of ancient Greek life, which had a great succss; *La Barbe Bleue; Froufrou; L'Abbé Constantin; Karikari*, etc. In 1872 he published *L'Invasion*, personal recollections of the war; and in 1873, *Madame et Monsieur Cardinal*. He was a member of the French academy. Died, 1908.

Haliburton (*hal'i-bûr'i'n*), **Thomas Chandler,** Canadian humorist, was born at Windsor, Nova Scotia, 1796. He was judge of the supreme court of Nova Scotia, but is best known as a satirical writer. In 1837 he published *The Clockmaker; or the Sayings and Doings of Samuel Slick of Slickville*, which became very popular. In 1856 he went to England to reside permanently, and in 1859 entered the house of commons as member for Launceston, which seat he held until within a few months of his death. Besides the works already mentioned, he wrote several other books. He died at Isleworth, Middlesex, England, 1865.

Halifax, Charles Montagu, Earl of, British poet and statesman, was born at Horton, England, 1661. He was educated at Trinity College, Cambridge. He was member of parliament for Maldon in 1689, and a lord of the treasury in 1692, and in that year proposed to raise a million sterling by way of loan—so the national debt was established. In 1694, Montagu founded the bank of England, as proposed by William Paterson three years earlier. His next work was the recoinage in 1695, appointing his friend, Newton, warden of the mint, and raising a tax on windows to pay the expense; and now he first introduced exchequer bills. In 1697 he became premier, but his arrogance and vanity soon made him unpopular, and he was impeached in 1701, but was protected by the lords and the proceedings fell to the ground. He was president of the royal society, 1695-98. Died, 1715.

Hall, Charles Cuthbert, American theologian, was born in New York city, 1852; graduated at Williams College, 1872; D.D., University of New York, 1890; Harvard, 1897; Yale, 1901; LL.D., Union, 1905. Studied theology at Union Theological seminary and in London and Edinburgh. Pastor of Union Presbyterian church, Newburgh N. Y., 1875-77; First Presbyterian church, Brooklyn, 1887-97. Barrows lecturer for the University of Chicago to the far East, 1902-03 and 1906-07; Cole lecturer, Vanderbilt University, 1905; Noble lecturer at Harvard, 1906. Was president of Union theological seminary from 1897 until his death. He did much to encourage higher criticism and to induce a more liberal and broadminded attitude on the part of the clergy. Author: *Christian Belief Interpreted by Christian Experience; Redeemed Life After Death; Universal Elements of the Christian Religion; Christ and the Human Race; The Witness of Oriental Consciousness to Jesus Christ*. Died, 1908.

Hall, Charles Martin, inventor, manufacturer, was born at Thompson, Ohio, 1863; graduated at Oberlin College, 1885, A.M., 1893. Invented the electrolytic process for the manufacture of aluminum, now universally used, 1886; commenced its commercial manufacture in 1888 with Pittsburg Reduction company, now the Aluminum Company of America. The Hall process has reduced the price of aluminum so as to make it a common metal of commerce, where it was formerly as costly as silver and little used. Member of many scientific societies; trustee of Oberlin College. Died in 1914.

Hall, Granville Stanley, American educator and psychologist, president of Clark University, 1888-1921, was born in Ashfield, Mass., 1846. He was graduated at Williams College, 1867; Ph.D., Harvard, 1878; LL.D., University of Michigan, 1888; Johns Hopkins, 1902; studied in Berlin, Bonn, Heidelberg and Leipzig; lecturer on psychology in Harvard and Williams, 1880-81; professor of psychology, Johns Hopkins, 1881-88. Author: *Hints Toward a Select and Descriptive Bibliography of Education* (with John M. Mansfield); *Adolescence* (2 vols.); etc. Editor and founder of *The American Journal of Psychology; The Pedagogical Seminary*, and *American Journal of Religious Psychology and Education*. Died, 1924.

Hall, Robert, British pulpit orator, was born at Arnsby near Leicester, England, 1764. He was appointed assistant minister and tutor in the Bristol Academy, where his eloquent preaching attracted overflowing audiences. He went in 1790 to Cambridge, where he rose to the highest rank of British pulpit orators. In 1807 he settled in Leicester, but returned in 1826 to Bristol. He died in 1831. Among his writings are *Apology for the Freedom of the Press* and *on Terms of Communion*.

Hallam, Henry, English historian and critic, was born at Windsor, England, 1777. He was graduated at Christ Church, Oxford, 1799, and subsequently called to the bar. LL.D., D.C.L., Cambridge and Oxford respectively. His first writings were published in periodicals; afterward he was distinguished among the literary men of Europe for his extensive and profound learning, powers of generalization, taste, judgment and conscientiousness, exhibited in a succession of great works, the principal of which are *Europe During the Middle Ages, The Constitutional History of England*, and *Introduction to the Literature of Europe*. Died, 1859.

Halleck, Fitz-Greene, American poet, was born in Guilford, Conn., 1790. He began life as a clerk in a store in Guilford, but when twenty-one years old he was employed in a banking-house in New York, where he remained many years. His earliest poem, *Twilight*, was printed in 1818. Five years after he visited Europe, and in 1827 a volume of his poetry, including *Marco Bozzaris*, appeared. He died in Guilford, 1867. A bronze statue of him has been erected in Central Park, New York.

Haller (*hál'ĕr*), **Albrecht von,** Swiss anatomist, botanist, physiologist and poet, was born at Bern, 1708. He started practice in 1729, but in 1736 was called to a chair at Göttingen. Here he organized a botanical garden, an anatomical museum and theater, and an obstetrical school; helped to found the academy of sciences; wrote anatomical and physiological works; and took an active part in the literary movement. His poems were descriptive, didactic, and (the best of them) lyrical. Died, 1777.

Halley, Edmund, English astronomer, was born in 1656. He went to St. Helena in 1676 to study the southern heavens, and in 1679 published his *Catalogus Stellarum Australium*, containing the positions of 360 stars, and numerous other observations. In 1681, near Paris, he discovered the comet known by his name; his prediction of its return was the first of the kind that proved correct. He prevailed on Sir Isaac Newton to complete his *Principia*, the first volume of which was printed by Halley at his own expense. In 1703 he was chosen Savilian professor of geometry at Oxford. In 1721, after the death of Flamsteed, he was appointed astronomer royal; and he continued for twenty years, without an assistant, to carry on the operations of the Greenwich observatory. In 1721 he published his method of finding the longitude at sea, and in 1725 drew up his tables for computing the places of the planets, which did not appear until 1749. Died, 1742.

Halliwell-Phillipps (*hal'i-wĕl-fil'ips*), **James Orchard,** English Shakespearean scholar and antiquary, was born at Chelsea, 1820. He studied at Jesus College, Cambridge. His studies embraced the whole field of our earlier literature, but gradually he concentrated himself upon Shakespeare alone, and more particularly upon the facts of his life, the successive editions of his *Outlines of the Life of Shakespeare* recording the growing results of his discoveries. In 1872 he added to Halliwell the surname of Phillipps, that of his first wife, a Worcestershire heiress. Besides his sumptuous folio edition of Shakespeare, he published *Nursery Rhymes and Tales of England* and *Dictionary of Archaic and Provincial Words*. Died, 1889.

Hals (*hāls*), **Frans,** the elder, portrait and genre painter, was born, probably at Antwerp, between 1580 and 1584. He settled in Haarlem about 1604, and is regarded as the founder of the Dutch school of genre-painting. His subjects of feasting and carousal are treated with marvelous vivacity and spirit. His works are distributed among the chief galleries of England and the continent. He died at Haarlem, 1666.

Hamerton (*ham'ĕr-tun*), **Philip Gilbert,** English writer on art, was born at Laneside, Oldham, the son of a solicitor at Shaw, 1834. He began as an art-critic by contributing to the *Fine Arts Quarterly* and *Saturday Review*. From 1869 he edited the *Portfolio*. *The Intellectual Life*, published in 1873, is a volume of letters of advice addressed to literary aspirants and others; *Human Intercourse* is a volume of essays on social subjects; *The Graphic Arts*, finely illustrated, is a treatise on drawing, painting and engraving. He died at Boulogne-sur-Seine, 1894.

Hamilcar Barca (*hă-mil'kăr bär'kă*), Carthaginian general, was born shortly before the first Punic war. While very young he was appointed to the command of the Carthaginian forces in Sicily in 247 B. C., at which time the Romans had possession of almost all the land. His first care was to discipline his infantry thoroughly; he then established himself on Mount Ercte (now Pellegrino, near Palermo), and from this point made pillaging excursions in all directions, sending his privateers along the coast of Italy as far north as Cumae, thus obtaining abundant supplies for his troops. In 241 B. C., Hamilcar was compelled to abandon his fortress and evacuate Sicily. He was next appointed commander-in-chief of the Carthaginian army, and was engaged for some time in wars with the neighboring tribes, which were abruptly ended by his entering upon the Spanish campaign in (probably) 236 B. C. His great aim was to found a new empire in Spain, from which, as his basis, he might assail the Romans. He spent nine years in Spain, and at length, in 228 B. C., met his death on the field of battle while fighting against the Vettones. His military genius is considered scarcely inferior to that of his son Hannibal.

Hamilton, Alexander, celebrated American statesman, was born in the West India island of Nevis,

1757, son of a Scotch merchant who had married a young French widow. His father soon failed in business, and Alexander, at the age of twelve, had to enter the counting house of a rich American merchant. His extraordinary abilities, however, induced some of his friends to procure for him a better education than could be secured at home. He was accordingly sent to a grammar-school at Elizabethtown, N. J.; and shortly afterward entered Columbia College, New York. On the outbreak of the war he obtained a commission as captain of artillery, gained the confidence of Washington, was made his aide de-camp in 1777, and acquired the greatest influence with him as his friend and adviser. On the termination of the war he left the service with the rank of colonel, and, betaking himself to legal studies, soon became one of the most eminent lawyers in New York. In 1782 he was elected by the state of New York a representative to the continental congress; in 1789 he became a member of the New York legislature; and in 1787 he was appointed one of the delegates to the convention which met at Philadelphia for the purpose of revising the Articles of Confederation. In conjunction with Madison, he had the most important share in drawing up the constitution afterward adopted. He was a strong supporter of the federal, as opposed to the democratic party; and, along with Jay and Madison, defended the constitution against all attacks, by a series of letters in the New York *Daily Advertiser*, afterward collected and published under the title of *The Federalist*. On the establishment of the new government in 1789, with Washington as president, Hamilton was appointed secretary of the treasury. In order to re-establish public credit, he carried, in spite of much opposition, a measure for the funding of the domestic debt, founded a national bank, rearranged the system of duties, and altogether showed himself one of the greatest of American financiers. In 1795 he resigned his office, and resumed the practice of law in New York. When the war with France broke out in 1798, he was, according to the wish of Washington, made major-general of the United States army; and, on the death of Washington, he succeeded to the chief command. When peace was restored, he returned to his civil duties, but became involved in a political quarrel with Aaron Burr. This difference unhappily culminated in a duel, in which Hamilton received a wound from which he died the following day, 1804.

Hamilton, Allan McLane, American physician, great-grandson of General Philip Schuyler and grandson of Alexander Hamilton, was born in Brooklyn, N. Y., 1848. He was graduated at the college of physicians and surgeons, New York, 1870; became a health inspector, 1873; later was physician in charge of the New York state hospital for diseases of the nervous system, and visiting physician to the epileptic and paralytic hospital on Blackwell's island, N. Y.; professor of mental diseases in Cornell university medical college, New York. He was appointed health officer of the port of New York in 1889. Author: *Clinical Electro-Therapeutics; Nervous Diseases; Medical Jurisprudence; A System of Legal Medicine; Railway and Other Accidents.* Died, 1919.

Hamilton, Rt. Rev. Charles, bishop, 1896, was born at Hawkesbury, 1834. He was educated at Montreal high school and University College, Oxford; D.D., Bishop's College, 1885; D.C.L., Trinity College, Toronto, 1885; ordained, 1857; curate of Quebec cathedral, 1857-58; incumbent, St. Peters, Quebec, 1858-64; rector of St. Matthews, Quebec, 1864-85, and bishop of Niagara, 1885-96; first Bishop of Ottawa, 1896-1909; first Archbishop of Ottawa from 1909.

Hamilton, Sir William, Scottish metaphysician, was born at Glasgow, 1788. He studied at Glasgow and Oxford, was admitted to the bar, but rarely practiced. From 1836, he was widely known as a philosophical writer. His chief books were an edition of Reid's works, *Discussions in Philosophy; Literature and Education; Metaphysics, Logic,* and his *Lectures*, published after his death. He left his library to the University of Glasgow. Died, 1856.

Hamilton, Sir William Rowan, British mathematician, inventor of quaternions, was born in Dublin, 1805. He was educated at Trinity College, Dublin, and in 1827 was appointed professor of astronomy at Dublin and Irish astronomer-royal; in 1835 he was knighted. He published many important treatises and papers, and his memoir on *Algebra as the Science of Pure Time* was one of the first steps to his great invention of quaternions. On this subject he published in 1853 a large volume of *Lectures*. Died, 1865.

Hamlin, Hannibal, American statesman, was born in Paris, Me., 1809. He practiced as a lawyer many years, and became a member of the state legislature. In 1842 he was elected to congress; was United States senator from 1848 to 1857, when he was elected governor on the republican ticket, but resigned immediately on again being elected senator. In 1861 he became vice-president under Lincoln, whose views he shared. He was again senator from 1869 to 1881, when he was named minister to Spain, 1881-83. Died, 1891.

Hammer, William Joseph, consulting engineer, was born in Schuykill county, Pa., 1858. He was assistant to Edward Weston in Weston malleable nickel company, Newark, N. J., 1878; in 1880 became an assistant to Thomas A. Edison in the laboratory at Menlo Park, N. J., and was sent to England the following year to become chief engineer of the English Edison company; installed in London the first central station in the world for incandescent electric lighting. Was manager of the Boston Edison electric illuminating company for a year. Since 1890 he engaged in practice as a consulting engineer. Member of many scientific societies.

Hammerstein (*hăm'ĕr-shtīn*), **Oscar,** theater manager, was born in Berlin, Germany, 1847. He came to the United States in 1863; invented and patented several labor-saving devices, wrote three one-act comedies in German, 1868, which were produced in New York. He became lessee and manager of Stadt theater, New York, 1870; built Harlem opera house, 1880; later Columbus theater, Manhattan opera house, Olympia (now the New York) theater, Victoria theater, Belasco theater and New opera house. Died, 1919.

Hammond, James Bartlett, typewriter inventor, was born in Boston, 1839. He was graduated at the University of Vermont, 1861; was newspaper correspondent during Civil War; graduate of Union theological seminary, 1865; devoted many years to mechanical experiments; patented, 1880, a typewriting machine made on scientific principles; introduced "ideal" keyboard and true alignment in the Hammond typewriter; put machine on market, 1884, and won highest honors in competition. Died, 1913.

Hammond, John Hays, mining engineer, was born in San Francisco, 1855. He was graduated at the Sheffield scientific school, Yale, 1876; M.A., Yale; pursued a mining course at royal school of mines, Freiburg, Saxony. He examined properties in all parts of the world; become consulting engineer for Barnato Bros., 1893, and later for Cecil Rhodes, of whom he became a strong supporter. Was consulting engineer of consolidated gold fields of South Africa, British South Africa company, and the Randfontein Estates gold mining company. Was one of four leaders in reform movement in the Transvaal, 1895-96; after Jameson raid (with which he was not in sympathy), he was arrested and sentenced to death. Sentence was afterward commuted to fifteen years' imprisonment; and later he was released on payment of a fine of $125,000. He then went to London and became interested in many large mining companies. Returned to the United States and traveled extensively, examining mines in United States and Mexico.

Hammond, William Alexander, American physician, was born in Annapolis, Md., 1828. He was graduated from the medical department of the University of the city of New York, and entered the United States army in 1848 as assistant surgeon. At the beginning of the Civil War he entered the army as an assistant surgeon. When the medical bureau was organized, in 1862, he was appointed surgeon-general of the army, with the rank of brigadier-general, and served as such until 1864. In that year he was court-martialed and dismissed from the army, but in 1878 was reinstated. He practiced his profession in New York, where he made a specialty of nervous diseases. He published *Diseases of the Nervous System; Insanity in its Relation to Crime; On Certain Conditions of Nervous Derangement*, etc. Died at Washington, D. C., 1900.

Hampden, John, celebrated English patriot, was born in London in 1594. He graduated at Oxford, studied law, and in 1621 entered the house of commons as member for the borough of Grampound. In 1627, for refusing to pay his proportion of the general loan which the king attempted to raise on his own authority, Hampden was committed to close imprisonment in the Gatehouse. After the dissolution of the parliament of 1628-29 he retired to his estate, and devoted himself to study and to country sport and occupations. In the short parliament of 1640 he took a prominent part in the great contest between the crown and the house of commons; to the long parliament he was returned both for Wendover and the county of Buckingham. For his resistance to the king's proceedings he was one of the five members whom Charles, in 1642, rashly attempted in person to seize in the house of commons; and on the breaking out of the civil war he raised and became colonel of a regiment in the parliamentary army under the Earl of Essex. Prince Rupert having attacked a parliamentary force at Chinnor, near Thame, Hampden put himself at the head of a few cavalry that were rallied in haste to oppose him, and in the fight that ensued at Chalgrove Field received in the first charge a wound, from which he died, 1643.

Hampden, Walter, American actor, was born at Brooklyn, N. Y., 1879. He was educated at Brooklyn Polytechnic Institute and at Harvard University. From 1901 to 1907 he was in England, where he acted in many classic roles, including that of *Hamlet*. Upon his return to America he appeared in *A Doll's House, The Servant in the House,* and *Comtesse Coquette*. In 1923-24 he revived *Cyrano de Bergerac* at National Theatre, New York, which he leased for a year. His best known later roles are *Cyrano de Bergerac* and *Othello*.

Hampton, Wade, American politician and soldier, was born at Columbia, S. C., 1818. He was a grandson of General Wade Hampton, and, though opposed to secession, he joined the confederate army and raised a force called "Hampton's legion." These troops he led with distinction at the first battle of Bull Run. He attained the rank of lieutenant-general, and was thrice wounded. In 1877-79 he was governor of South Carolina; United States senator, 1879-91; and United States commissioner of railroads, 1893-97. He died in 1902.

Hancock, John, American patriot, was born in 1737. He was one of the leaders in the revolt in Massachusetts, the seizure of his sloop, *Liberty*, being the occasion of a riot in Boston. He was very active in denouncing the "Boston massacre," and was one of the persons whose seizure was attempted by the expedition which led to the battle of Lexington. He was president of the continental congress from 1775-77, and governor of Massachusetts, 1780-85, 1787-93, and the first signer of the declaration of independence. He presided at the constitutional convention of 1788, and favored the adoption of the proposed federal constitution. Died, 1793.

Hancock, Winfield Scott, American general, was born in Pennsylvania, 1824. After graduating at West Point in 1844, he served with great gallantry during the Mexican war. Appointed brigadier-general of volunteers in 1861, he took part in the campaign on the Potomac, fought at Antietam, and commanded a corps in the battle of Gettysburg, where he was wounded, 1863. In 1864 he became brigadier-general in the regular army, in 1866 a major-general. At his death, in 1886, he was in command of the department of the East.

Handel, George Frederick, noted German musician, was born at Halle, Saxony, 1685. At ten years of age he composed a set of sonnets. In 1703 he went to Hamburg, where he played a violin in the orchestra of the opera. He was soon its director, and composed his first opera, *Almira*, which was rapidly followed by *Nero, Florinda,* and *Daphne*. His violent temper involved him in a quarrel with a brother-composer, which resulted in a duel; the sword of his adversary was stopped by a button of a music score.

He next visited Italy. In Florence, he composed *Rodrigo*, 1709. His *Agrippina*, composed in Venice, had a run of 30 nights. At Rome he produced his *Il Trionfo del Tempo*. At Naples, he composed *Acis and Galatea*, and in 1710 returned to Germany, where he was appointed chapel-master to the Elector of Hanover, afterwards George I.

He afterwards went to England where he was patronized by Queen Anne and the nobility. He composed *Rinaldo, Pastor Fido, Theseus,* and in 1715, *Amadis da Gaula*, in which Nicolini and Valentini first sung in England. The opera was an exotic in England, and a plant of slow growth. A royal academy of music was formed, and after some competition was placed under Handel's management; but his overbearing temper could not cope with musical jealousies. An opposition house was started, and both soon failed, with a loss to Handel of $50,000. He now began the composition of his oratorios. *Esther* was produced in 1733; it was followed by *Deborah, Alexander's Feast,* and *Isarel in Egypt;* and in 1740 appeared *L'Allegro e Penseroso*, and *Saul*. These were produced in the Lincoln's Inn Fields theatre, but with no profit. Even the *Messiah*, the most sublime of his compositions, was at first a failure. Tired of this titantic struggle, Handel went to Dublin, where he remained nine months, and received a generous support. On his return to London he composed his *Samson*, and produced his *Messiah* for the benefit of the Foundling Hospital. It was repeated annually for the same purpose, and from 1749 to 1777 brought to that charity $51,500.

Handel became blind, but he still composed, and played on the organ, being led to his seat, and forward to receive the plaudits of the audience. Died, 1759.

References.—Marshall's *Handel;* Rockstro, *Life of G. F. Handel;* and the German life by Chrysander.

Hanly, J. Frank, lawyer, ex-governor of Indiana, was born in St. Joseph, Ill., 1863. He was educated in common schools, Champaign county, Ill., taught school for nine years in Warren county, Ind., and was admitted to the bar in 1889. He practiced at Williamsport, Ind., 1889-96; was elected to the state senate, 1890; elected to congress, 1894, serving one term, and was a candidate for the United States senate, 1899. Governor of Indiana, 1905-09. Died, 1920.

Hanna, Marcus Alonzo, American politician and legislator, was born in New Lisbon, Columbiana county, Ohio, 1837. He began his career in his father's wholesale grocery house. In 1867 entered

the firm of Rhodes and company, dealers in coal and iron, and ten years later the firm name was changed to M. A. Hanna and company. He was appointed to the United States senate as a republican by Governor Bushnell, 1897, to fill a vacancy caused by the resignation of John Sherman, who resigned to accept the position of secretary of state in President McKinley's cabinet, and took his seat March 5, 1897. His term of service under the appointment expired in January, 1898, and he was elected for a full term. Died, 1904.

Hannibal, Carthaginian general, the famous son of Hamilcar Barca, was born in 247 B. C. At nine years he accompanied his father on his Spanish expedition, and before starting swore an oath of eternal hatred to the Roman name. He attacked Saguntum, a city in alliance with Rome, for making aggressions on the Torboletes, subjects of Carthage. After eight months' siege the city was taken, and the Romans, after unsuccessfully demanding the surrender of the general who had thus wantonly violated the treaty, declared war in 218 B. C. Hannibal started from New Carthage in 218 B. C. with 90,000 foot and 12,000 horse. From the Pyrenees he marched to the Rhone without opposition, since Scipio was at Massilia (Marseilles), four days' march from the point where Hannibal crossed the river in the face of the Celtic hordes who sided with the Romans. He effected the passage of the Alps in fifteen days, in spite of the attacks of the mountain tribes, the snow, storms, and other difficulties. Scipio, having returned from Massilia, took command of the army in the north of Italy, and first met Hannibal on the plain near the river Ticinus. The Romans were entirely routed, and Scipio, severely wounded, retreated across the Po. Hannibal next inflicted a severe defeat, near Lake Thrasymene, on the consul Flaminius. He wintered in Cannæ, and in June, or, according to others, in August, 216 B. C., almost annihilated a Roman army of 90,000 men under Terentius Varro and Æmilius Paulus. In this battle about 50,000 are said to have fallen, including Æmilius Paulus. Hannibal traversed Italy in all directions, surprised the Roman generals, defeated their armies, captured their towns. The defeat of Hasdrubal, his brother, at the river Metaurus, and the loss of his army, compelled Hannibal to confine himself to the mountainous peninsula of Brutium, where for four years he resisted all the efforts of the Romans to dislodge him. At length, after having maintained himself in Italy for upward of fifteen years, he was recalled to Africa, to defend his country against Scipio; but notwithstanding his utmost exertions and the bravery of his veteran troops he was defeated near Zama, with a loss of 20,000 men, 201 B. C. The surrender of Hannibal was one of the conditions of peace; but, foreseeing such a result, he fled to Bithynia, and, seeing no hope of escape he committed suicide by taking poison, 183 B. C.

Hapgood, Norman, editor, author, and critic, was born in Chicago, Ill., 1868. He was graduated at Harvard, 1890; LL.B., Harvard law school; A.M., 1893. Author: *Literary Statesmen; Daniel Webster; Abraham Lincoln; The Stage in America,* etc. He was dramatic critic of New York *Commercial Advertiser,* and *Bookman.* 1897-1902, and editor of *Collier's Weekly,* 1903-13; *Harper's Weekly,* 1913-16; *Hearst's International Magazine,* 1923-25.

Harahan, James Theodore, president of Illinois Central railroad company, 1906-1911, was born at Lowell, Mass., 1843. He rose step by step in the service of the Orange and Alexandria railroad, the Nashville and Decatur, and the Louisville and Nashville, from 1864 until he became general manager of the latter, 1885. He was then successively assistant general manager of the Lake Shore and Michigan Southern railway, general manager of the Chesapeake and Ohio, and later of the Louisville, New Orleans and Texas railway until 1890, when he became second vice-president of the Illinois Central railroad. Made president in 1906. Killed in railroad wreck, 1912.

Harben, William Nathaniel, American novelist, was born at Dalton, Ga., 1858. He was educated at high schools and privately. He has traveled extensively, and was associate editor of the *Youth's Companion,* Boston, 1891-93. Author: *Whit Marie; Almost Persuaded; A Mute Confessor; The Land of the Changing Sun; From Clue to Climax; The Caruthers' Affair; Northern Georgia Sketches; The Woman Who Trusted; Westerfelt; Abner Daniel; The Substitute; The Georgians; Pole Baker; Ann Boyd; Mam' Lindy; Gilbert Neal,* etc. Died, 1919.

Harden, Maximilian, German editor (1861-1927). His first writings were literary essays published in newspapers. Then came social and political essays written under the pen-name, Apostata. He founded a newspaper *Die Zukunft* in 1892 which influenced the public greatly and later caused him to be sentenced to six months' imprisonment for his criticism of the government. During the war he was very outspoken, especially in the case of the *Lusitania,* and often commended the Allies, for which his paper was suppressed more than once. He advocated a democratic form of government for Germany, but was not a revolutionist.

Hardenberg (*här'den-berg*), **Karl August, Prince von,** Prussian statesman, was born at Essenroda in Hanover, 1750. In 1791 he became a Prussian minister and in 1804 first Prussian minister. In 1810 he was appointed chancellor, and addressed himself to the task of completing the reforms begun by Stein. In the war of liberation he played a prominent part, and after the treaty of Paris, in 1814, was made a prince. He took part in the congress of Vienna and in the treaties of Paris. To Hardenberg Prussia is mainly indebted for the improvements in her army system, the abolition of serfdom and the privileges of the nobles, the encouragement of municipalities and the reform of education. Died, 1822.

Hardie, James Keir (1856-1915), British labor leader, member of parliament, editor of the *Cumnock News,* 1882-86, traveled widely in India and Australia, founded the *Labor Leader,* 1907, and was a frequent contributor to magazines and reviews.

Harding, Samuel Bannister, university professor, was born in Indianapolis, 1866; graduated from Indiana University, 1890; Ph.D., Harvard, 1898. Professor of history, Indiana University. Died, 1927.

Harding, Warren G., journalist, Senator, was born near Blooming Grove, Ohio, November 2, 1865. At 14 he entered Ohio Central College, from which he was graduated. As editor of the College paper he developed an exceptional talent for journalism. He learned the printers' trade and with the aid of his father bought "The Star" a diminutive daily paper, Marion, Ohio. He made "The Star" a brilliant success and because of his liberality and generosity, there never was a strike or threatened strike in "The Star" office. Within the last score of years Mr. Harding had been abroad three times studying the systems of government of the European countries and international economic problems with which the United States has to deal. He twice represented the Thirteenth Senatorial district of Ohio in the State Legislature; served one term as Lieut.-Gov., and elected United States Senator in 1915. November 2, 1920, he was elected President of the United States by an overwhelming majority. Died, Aug. 2, 1923.

Hardinge, Henry, Viscount (1785-1786), English General, Gov. General of India, was born in Wrotham, Kent. In 1844 he was appointed Gov.-General of India and after the peace of Lahore was created Viscount and was granted a pension of 5,000 pounds by the East Indian Company and 3,000 pounds by Parliament. Returning to England, he succeeded Wellington as Commander-in-Chief in 1852 and in 1855 was made Field-Marshal.

Hardy, Arthur Sherburne, diplomat, author, was born at Andover, Mass., 1847. He was graduated at West Point, 1869; served one year in 3d United States artillery; was professor of civil engineering, Iowa college, 1871-73; was editor of the *Cosmopolitan Magazine,* 1893-95; United States minister and consul-general, Teheran, Persia, 1897-99; minister of United States to Greece, Roumania, and Servia, 1899-1901; to Switzerland, 1901-03, and to Spain, 1903-05. Author: *Elements of Quaternions; Elements of Calculus; Elements of Analytic Geometry; New Methods in Topographical Surveying; Imaginary Quantities;* also several novels, etc.

Hardy, Thomas, English novelist, was born in Dorsetshire, 1840. He was educated as an architect. The scenes of his novels are chiefly laid in the south of England, the early Wessex. His chief works are: *Under the Greenwood Tree; Far From the Madding Crowd; The Return of the Native; The Trumpet Major; The Woodlanders.* Died, 1928.

Hare, Augustus John Cuthbert, English author, was born in Rome, 1834. He was educated at Harrow and at University College, Oxford. He wrote the famous and often reprinted *Walks in Rome; Wanderings in Spain; Days Near Rome; Cities of Northern and Central Italy; Walks in London; Cities of Southern Italy and Sicily; Sussex,* etc. Other works are his delightful biography of Maria Edgeworth; *Memorials of a Quiet Life and Letters of Baroness Bunsen; Two Noble Lives,* etc. Died, 1903.

Hare, John, English actor, was born in London, 1844. He was educated at Giggleswick grammar school, Yorkshire, and obtained an engagement at a London theater, 1865. In 1875 he became manager of the Court theater, and 1879-88 maintained a partnership with W. H. Kendal. From 1889 to 1895 his tenancy of the Garrick theater was important for his production of *La Tosca* and *A Pair of Spectacles,* the latter possibly his greatest success. He visited the United States, 1896-97 and again in 1900. Died, 1921.

Hargreaves (*här'-grēvz*), **James,** English mechanic and inventor, was born probably at Blackburn, England, about 1745. He was an illiterate weaver and carpenter of Stanhill near that town. In 1760 he invented a carding-machine, and about 1764 the spinning-jenny. He removed to Nottingham, where he erected a spinning-mill, but his patent proved invalid. He continued to carry on business as a yarn manufacturer until his death in 1778.

Harkness (*härk'-nes*), **Albert,** American classical scholar, was born at Mendon, Mass., 1822. He was graduated at Brown University in 1842, studied at Berlin, Bonn, and Göttingen, and became professor of Greek in Brown University in 1855. He published a series of Latin classics, and a standard *Latin Grammar* which has been widely used. Died, 1907.

Harlan (*här'-lan*), **John Marshall,** jurist, associate justice of the United States supreme court 1877-1911, was born in Boyle county, Ky., 1833. He was graduated at Centre College, Ky., 1850; LL.D., Bowdoin, 1883. Studied law at Kentucky University, practiced at Frankfort, Ky., removed to Louisville in 1867 and practiced law there. Colonel of 10th Kentucky regiment in Union army, 1861-63; attorney-general of Kentucky, 1863-67; his name was presented by republican convention of Kentucky for vice-president of United States in 1872; member of Louisiana commission, 1877; one of American arbitrators on Bering sea tribunal which met in Paris, 1893; was vice-moderator of the general assembly of the Presbyterian church in 1905; and had been for more than fifteen years, and was at time of his death, lecturer in George Washington University. Died, 1911.

Harley, Robert, earl of Oxford and Mortimer, British statesman, was born in 1661. He entered parliament which met under the chieftainship of Rochester and Godolphin in 1689, and in 1701, was, by a large majority, elected speaker. He retained this post until 1704, when he became secretary of state. The principal act of his administration was the treaty of Utrecht. When George I. was proclaimed, Oxford was sent to the Tower for conspiracy to restore the Stuarts and after two years' imprisonment brought to trial. The two houses quarreled as to the mode of procedure, and the commons having in anger refused to take any part in the trial, he was acquitted by peers and released. He spent the remainder of his life in retirement. Died, 1724.

Harmon, Judson, American lawyer and statesman, was born in Hamilton county, Ohio, 1846. He was graduated at Denison University, 1866, and from the Cincinnati law school, 1869; LL.D., Denison, 1892. He was judge of common pleas court, 1876-78; was attorney-general of the United States, 1895-97; president of Ohio bar association, 1897-98, and member of faculty law department, university of Cincinnati. In 1908 he was elected governor of Ohio, and re-elected 1910. Died, 1927.

Harmsworth (*härmz'wûrth*), **Sir Alfred Charles William,** Lord Northcliffe, first baron of the isle of Thanet, was born in Chapelizod, county of Dublin, 1865. He founded, 1888, the weekly periodical *Answers,* which had an immediate success. He bought the *London News* in 1894. Two years later founded the *Daily Mail.* He subsequently founded the *Glasgow Daily Record,* and acquired the *Leeds Mercury* and the *Birmingham Gazette.* He visited the United States in 1900 and 1909, and in 1906 was elevated to the peerage as Lord Northcliffe. Died in 1922.

Harnack (*här'näk*), **Adolf,** the foremost of living church historians, was born in Dorpat, Russia, 1851, educated at the University there, 1869-72; became privat-docent at Leipsig, 1874; professor extraordinary of church history there in 1876; ordinary professor of church history at Berlin in 1889. He is a man of strong and inspiring personality, and his lectures are attended by hundreds of students from Europe and America. Is the author of many standard works on theology, the most important of which are his *What is Christianity* and the *History of Dogma.* Since 1881 he has edited, with E. Schurer, the *Theologische Litteraturzeitung.*

Harned (*här'ned*), **Virginia,** American actress, was born in Boston, Mass., 1868; joined George Clark's company at sixteen and appeared as Lady Despar in the *Corsican Brothers.* She made her début at Fourteenth street theater, 1890, in *A Long Lane, or Green Meadows.* She was engaged as leading woman for E. A. Sothern, under Daniel Frohman's management; subsequently played leading roles in A. M. Palmer's stock company. Created the title role in *Trilby,* Park theater, Boston, 1895, and starred in that play one season. She married E. H. Sothern in 1896, and subsequently appeared in leading parts in his company. The marriage was dissolved, 1910.

Haroun al Raschid (*hà-rōōn' ăr-rà-shēd'*), famous caliph of Bagdad, the fifth of the Abbasides dynasty, was born about 765. He invaded Greece, and obtained from the empress Irene 70,000 gold dinars; in 801 he sent presents to Charlemagne; he raised Bagdad to unprecedented eminence in learning, commerce and splendor, and it is around him that the tales of the *Arabian Nights* center. He died in 809, when on an expedition against Khorassan.

Harper, William Rainey, American educator and scholar, president of University of Chicago, 1891-1906, was born in New Concord, Ohio, 1856. He was graduated at Muskingum College, 1870; Ph.D., Yale, 1875; D.D., Colby, 1891; LL.D., Yale, 1901; Johns Hopkins, 1902. He was principal of Masonic College, Macon, Tenn., 1875-76; tutor, 1876-79; principal preparatory department Denison University, Granville, Ohio, 1879-80; professor of Hebrew, Baptist Union theological seminary, Chicago, 1879-86; professor of Semitic languages, Yale, 1886-91, and professor of biblical literature, 1889-91; principal Chatauqua college of liberal arts, 1885-91; head professor of Semitic languages and literature, University of Chicago, 1891-1906. Author of many textbooks. Died, 1906.

Harraden (*ha.'-à-den*), **Beatrice,** English novelist, was born at Hampstead, 1864, youngest daughter of Samuel Harraden. She was educated at Dresden, Cheltenham College, Queen's College, Bedford College, and received a B.A. at London

university. Author: *Things Will Take a Turn* (for children); *Ships That Pass in the Night; In Varying Moods; Hilda Strafford; Untold Tales of the Past* (for children); *The Fowler; Katharine Frensham; The Scholar's Daughter; Interplay*, etc.

Harriman, Edward Henry, capitalist, railroad administrator, was born at Hempstead, L. I., N. Y., 1848. He was the son of a clergyman, received a common school education, became a broker's clerk in Wall street at fourteen, and later a stock broker on his own account. He was a member of the New York stock exchange from 1870 until his death. Was president and director of the Southern Pacific railway; director of Union Pacific railway company, Delaware and Hudson railroad, Central Pacific railway, Illinois Central railway, Western Union telegraph company, Pacific Mail steamship company, Oregon railroad and navigation company, Wells-Fargo and Company, Colorado fuel and iron company, National city bank, etc., trustee Equitable trust company, and director in many other corporations. He was considered the greatest genius in railroad organization and administration in modern times. Died, 1909.

Harrington, B. J., Canadian educator and scientist, Macdonald professor of chemistry, McGill University, Montreal, was born at St. Andrews, province of Quebec, Canada, 1848. He was graduated at McGill University, 1869; Ph.D., Yale University, 1871; LL.D. McGill, 1899. He was appointed lecturer in chemistry at McGill 1871, and the following year succeeded Dr. T. Sterry Hunt as chemist and mineralogist to the geological survey of Canada. Was appointed David Greenshields professor of chemistry and mineralogy in 1883, and for many years also lectured on both mining and metallurgy. He was president of the national historical society of Montreal, president of the chemical and physical section of the royal society of Canada; vice-president, chemical section of British association, etc. Author: *Notes on Dawsonite, a New Carbonate; Notes on the Iron Ores of Canada and Their Development; The Sap of the Ashleaved Maple; Life of Sir William Logan, First Director of the Geological Survey of Canada*, etc.

Harris, George, American educator, president Amherst College, 1899-1912, was born at East Machias, Me., 1844. He was graduated at Amherst, 1866; D.D., Amherst, 1883, Harvard, 1899, Yale, 1901; LL.D., Dartmouth, 1899; and graduated at Andover Theological Seminary, 1869. Professor Christian theology, Andover Theological Seminary, 1883-99. Preacher to Dartmouth College, 1894-99; to Harvard 1897-99. Author: *Moral Evolution, Inequality and Progress*, etc., and was one of the editors of *Andover Review*, 1884-93. Died, 1922.

Harris, James Rendel, English biblical scholar, director of studies at the Friends' settlement for social and religious study, Woolbrooke, near Birmingham, England, since 1903, was born at Plymouth. Was professor at Johns Hopkins University, 1882-85; professor at Haverford College, 1886-92; university lecturer in palæography, Cambridge, 1893-1903; professor of theology, University of Leyden, 1903-04; president Free church council, 1907-08. He has traveled extensively in the East in search of MSS. Author: *The Teaching of the Apostles and the Sibylline Books; The Teaching of the Apostles; The Apology of Aristides; Union with God; The Gospel of the Twelve Apostles; Tract on Triune Nature of God; The Guiding Hand of God*, etc.

Harris, Joel Chandler, American author, was born in Eatonton, Ga., 1848. He served apprenticeship to printing trade, and was one of the editors of the *Atlanta Constitution* twenty-five years. Author: *Uncle Remus: His Songs and His Sayings; Nights with Uncle Remus; Uncle Remus and His Friends; Mingo; Little Mr. Thimblefinger; On the Plantation; Daddy Jake, the Runaway; Balaam and His Master; Mr. Rabbit at Home; The Story of Aaron; Sister Jane; Free Joe; Stories of Georgia; Aaron in the Wild Woods; Tales of the Home Folks; Georgia, From the Invasion of De Soto to Recent Times; Evening Tales; Stories of Home Folks; Chronicles of Aunt Minerva Ann; On the Wings of Occasion; The Making of a Statesman; Gabriel Tolliver; Wally Wanderoon; a Little Union Scout; The Tar Baby Story and other Rhymes of Uncle Remus*, etc. Died, 1908.

Harris, William Torrey, American educator and philosophical writer, United States commissioner of education, 1889-1906, was born at North Killingly, Conn., 1835. Ph.D., Brown, 1893; University of Jena, 1899; LL.D., University of Missouri, 1870, University of Pennsylvania, 1894; Yale, 1895; Princeton, 1896; settled at Concord, Mass., in 1880 and became lecturer at school of philosophy. Established, in St. Louis, 1867 *Journal of Speculative Philosophy;* was chief editor of the Appleton school readers. Edited department of philosophy in *Johnson's Cyclopædia*, writing many important articles, and was editor-in-chief of *Webster's International Dictionary*. Author: *Introduction to the Study of Philosophy; The Spiritual Sense of Dante's Divina Commedia; Hegel's Logic, A Book on the Genesis of the Categories of the Mind*, and *Psychologic Foundation of Education*. Died, 1909.

Harrison, Benjamin, lawyer, twenty-third president of the United States, was born in North Bend, Ohio, 1833. He was a great-grandson of Benjamin Harrison, signer of the declaration of independence, and grandson of William Henry Harrison, ninth president of the United States. He was graduated at Miami University, 1852; studied law in Cincinnati; removed to Indianapolis, Ind., in 1854, and laid the foundation of a fine legal practice; entered the Union army in 1862, serving with conspicuous gallantry in the Atlanta campaign, finally returning to civil life at the close of the war with the rank of brevet brigadier-general; entered the United States senate in 1881, and in 1888 was nominated for the presidency of the United States; elected in the ensuing November, and inaugurated, 1889. His administration was quiet, successful, and measurably popular. In 1892 he received again the nomination in the national republican convention, but by this time the able and persistent attacks of the democracy on the high tariff policy led to a general revulsion against it, and he was defeated at the election by Grover Cleveland. He thereupon pursued a private law practice, occasionally giving public addresses. He died in Indianapolis, Ind., 1901.

Harrison, Charles Custis, American educator, provost University of Pennsylvania, 1895-1910, was born at Philadelphia, Pa., 1844. He was graduated at the University of Pennsylvania, 1862, LL.D., Columbia, 1896; Princeton, 1896; Yale, 1901. Was in active business as a manufacturer, 1863-92. He was a trustee since 1876, University of Pennsylvania. Died, 1929.

Harrison, Elizabeth, principal of Chicago Kindergarten College, was born in Kentucky, and educated in Iowa and Chicago. From 1880 to 1883 her time was devoted to kindergarten teaching and special instruction in kindergarten work and philosophy, under Mrs. Alice H. Putnam, Miss Susan E. Blow, Professor John Kraus and Madam Kraus-Boelte, together with observation work in England and France. Kindergarten teacher Loring School, Chicago, 1884-1890; studied in Germany with Frau Schrader and Baroness Maren Holtz von Bulow, 1890, founder and principal Chicago Kindergarten College, 1890——. She was, also for two years, head of kindergarten department, Chicago Normal School, and for fifteen years was prominent as public speaker and lecturer on kindergarten subjects. Author of *A Study of Child Nature; In Storyland; Two Children of the Foothills; Christmas-tide; Kindergarten Building Gifts; Some Silent Teachers; Misunderstood Children*. Died, 1927.

Harrison, Francis Burton, lawyer, congressman, was born in New York City, 1873. He was graduated from Yale, 1895, from New York law school, 1897, and was instructor at New York law school, 1897-99. During the war with Spain he was a private, troop A, New York volunteer cavalry, and captain and assistant adjutant-general, United States volunteers. Was elected to the fifty-eighth congress from the thirteenth New York district; was democratic candidate for lieutenant governor of New York, 1904. He was elected to the sixtieth congress, and reëlected to the sixty-first congress, from 16th district.

Harrison, Frederic, English essayist and philosophical writer, was born in London, 1831. He was educated at Wadham College, Oxford, became fellow and tutor of his college, and was called to the bar in 1858. A positivist and an advanced liberal, he has written *The Meaning of History; Order and Progress; The Present and the Future; On the Choice of Books; Oliver Cromwell; Annals of an Old Manor House; William the Silent*, etc. From 1889 to 1892 he was an alderman of the London county council. Died, 1923.

Harrison, James Albert, American philologist, educator, was born at Pass Christian, Miss., 1848. He was graduated at the university of Virginia, 1868; studied in Germany, 1871; L.H.D., Columbia, 1887; LL.D., Washington and Lee University; professor of English and modern languages, Washington and Lee, 1876-95; professor of English and romance languages, 1895; was professor of Teutonic languages, university of Virginia; lecturer on Anglo-Saxon poetry, Johns Hopkins. Author: *Spain in Profile; French Syntax; History of Spain; Story of Greece*. Was one of the editors of the *Century Dictionary* and *Standard Dictionary*. Died, 1911.

Harrison, John, British inventor of the chronometer, was born at Foulby near Pontefract, 1693. By 1726 he had constructed a time keeper with compensating apparatus for correcting errors due to variations of climate. In 1713 the government had offered three prizes for the discovery of a method to determine the longitude accurately. After long perseverance Harrison made a chronometer which, in a voyage to Jamaica in 1761-62, determined the longitude within eighteen geographical miles. After further trials, he was awarded the largest prize of 20,000 pounds. He wrote five works on his chronometer, etc. Died, 1776.

Harrison, William Henry, ninth president of the United States, was born in Virginia, 1773, son of Benjamin Harrison, who signed the declaration of independence. On the death of his father he joined, in 1792, as ensign, the army which Wayne was leading against the Indians of the Northwest. He left the army in 1798. In the war against the Indians in 1811, and which soon became also a war against the English in Canada, Harrison, as commander-in-chief of the American army, showed great military talent. He defeated the Indians in an important battle at Tippecanoe, and by the victory of Perry on Lake Erie was enabled to pursue the British invaders into Canada, where, in 1813, he totally routed them in the battle of the Thames. In 1824 became a member of the United States senate. In 1828 he went as ambassador to Colombia, but was recalled in 1829, and the following few years he spent in retirement as clerk in a county court in Ohio. The whig party tried in vain to make him president of the United States in 1835, and succeeded in 1840. He died suddenly in 1841, after serving one month.

Hart, Albert Bushnell, American educator and historian, was born in Clarksville, Pa., 1854. He was graduated at Harvard, 1880; Ph.D., Freiburg, Baden, 1883; LL.D., Richmond College, 1902. In 1897 he was made professor of history at Harvard University. Author: *Introduction to the Study of Federal Government; Formation of the Union; Guide to the Study of American History* (with Edward Channing); *Foundations of American Foreign Policy; Actual Government; Essentials of American History*. Editor: *Epochs of American History* (3 vols.); *American History Told by Contemporaries* (4 vols.); *American Citizen Series; Source-Book of American History; Source Readers in American History* (4 vols.); *The American Nation*, etc. Joint editor: *American History Leaflets; Harvard Graduates' Magazine; American History Review*.

Hart, James McDougal, American landscape painter, was born in Kilmarnock, Scotland, 1828. When a child he removed with his family to America, and lived at Albany, N. Y. He was made an academician in 1859. His pictures are admired for their harmony of color and quiet peacefulness of tone. The best known among them are: *Woods in Autumn; Moonrise in the Adirondacks; Peaceful Homes; Coming Out of the Shade; Threatening Weather; Indian Summer*. Died at Brooklyn, N. Y., 1901.

Hart, Joel T., American sculptor, was born in Kentucky, 1810. While working as a stonecutter at Lexington he began modeling busts in clay. He soon attained a phenomenal success in portrait busts, and on receiving a commission for marble statue of Henry Clay, 1849, went to Florence to study and work. He executed many busts and statues of eminent men during his twenty-eight years' residence in Florence. He died in 1877, and his remains were removed from Florence to Lexington, Ky., 1884, where the state erected a monument over them.

Hart, Sir Robert, British diplomat, was born at Milltown, County Armagh, Ireland, 1835. He was educated at Queen's college, Taunton, Wesley college, Dublin, and Queen's College, Belfast, graduating from the latter in 1853; M.A., 1871; hon. LL.D., 1882. Secretary to the allied commissioners for the government of the city of Canton, 1858; granted special permission to resign and accept an appointment in the Chinese imperial maritime customs, 1859; officiating inspector-general, 1861-63; commissioner at Shanghai, with charge of Yangtze ports and Ningpo, 1863; inspector-general, 1863; gazetted minister plenipotentiary, 1885, but declined. Author of *These From the Land of Sinim*, etc. Died, 1911.

Hart, William, American painter, brother of James McDougal Hart, was born in Scotland, 1823. He came to Albany, N. Y., 1831, and, like his brother, developed a taste for landscape painting; in 1848 exhibited a specimen of his work in the national academy of design in New York. For several years he was president of the Brooklyn academy of design. Some of his most notable works are: *The Last Gleam; The Golden Hour; Sunset in Dark Harbor, New Brunswick; Opening in the Elands; Up in the Glen*. He was one of the founders, and for some years, president, of the water-color society, and was himself eminent in that branch of art. Died, 1894.

Harte (*härt*), **Francis Bret,** American writer, was born in Albany, N. Y., 1839. He was at different times a miner, school teacher, printer, and editor. From 1864 to 1870 he was in San Francisco as secretary of the United States mint, and, in 1869, he published *The Heathen Chinee*. He was named American consul at Grefeld in 1878, at Glasgow in 1880, and after leaving the latter in 1885, lived in London. Chief among his works are *Condensed Novels; The Luck of Roaring Camp and Other Sketches; Poetical Works; Tales of the Argonauts; The Twins of Table Mountains and Other Stories; By Shore and Sedge; A Millionaire of Rough and Ready and Devil's Ford; A Ward of the Golden Gate*, etc. Died, 1902.

Hartly, Sir Charles Augustus, British engineer, engineer-in-chief and consulting engineer to the European commission of the Danube, 1856-1907, was born at Heworth, in Durham, 1825. He served in Crimea as captain in the Anglo-Turkish contingent, 1855-56, and in 1867 reported to foreign office on important questions of engineering connected with the river Scheldt. He was appointed member of a board of engineers to report on the improvement of the Mississippi, 1875; was nominated by the British government member of international technical commission of Suez canal, 1884, and served until 1907; has been con-

sulted at various periods by the Indian, Austrian, Russian, Egyptian, Roumanian and Bulgarian governments. Author: *Delta of the Danube; Public Works in the United States and Canada; Finland Navigations in Europe; History of the Engineering Works of the Suez Canal*, etc. Died, 1915.

Hartley, David, British philosopher, was born near Halifax, 1705. A clergyman's son, at fifteen he entered Jesus College, Cambridge, and in 1727 became a fellow. He studied for the church, but dissenting from some points in the thirty-nine articles, abandoned his intention. As a medical practitioner he attained considerable eminence at Newark, Bury St. Edmunds, London, and Bath. His chief work is *Observations on Man*. Died, 1757.

Hartmann, Karl Robert Eduard von, German philosopher, was born at Berlin, 1842. His great work was *The Philosophy of the Unconscious*, followed by books on the ethical consciousness, the development of the religious consciousness, German æsthetics, Lotze, and Kant, besides a work on the self destruction of Christianity, criticisms of neo-Kantianism and contemporary philosophies, defenses of his own system and political and educational treatises. Died, 1906.

Harvard, John, founder of Harvard College, was born in Southwark, England, 1607. He was graduated at Emmanuel College, Cambridge, England, 1631; married and came to America, 1637; was made a freeman of Massachusetts, and given a tract of land in Charlestown, where he began preaching as a Congregational minister. In his will he bequeathed about 750 pounds and 320 volumes from his library for the establishment of a college. He died at Charlestown, Mass., 1638. A granite monument was erected over his remains in Charlestown, 1828, and a memorial statue on the delta at the university was unveiled in 1884.

Harvey, George Brinton McClellan, editor of the *North American Review*, and president of Harper and Brothers, publishers, was born in Peacham, Va., 1864. He was educated at Peacham academy; was consecutively reporter on the *Springfield Republican*, *Chicago News* and the *New York World*; was later managing editor of the *New York World*, insurance commissioner, New Jersey, colonel and aide-de-camp of Governors Green and Abbett, New Jersey. He has been president of Harper and Brothers since 1900, and bought the *Metropolitan Magazine*, 1903. He was made honorary doctor of laws by Erskine College, South Carolina, 1905, and by the University of Nevada, 1908. Was Bromley lecturer on journalism at Yale, 1908. Ambassador to England. Died, 1928.

Harvey, William. English physician, and discoverer of the circulation of the blood, was born at Folkestone, 1578. He studied at the University of Cambridge, completing his medical studies and graduating M.D at Padua. After his return to England he became fellow of the Royal college of physicians, and physician to St. Bartholomew's Hospital. In 1623 he was named physician to James I., and held the same post under Charles I.

His great discovery, developed and completed by careful and laborious investigation, was published in 1628, in the treatise entitled *Exercitatio de Motu Cordis et Sanguinis*. It was at once generally accepted, and though controversy was excited and many opponents started up, many more books were written in favor of it than against it. No Englishman opposed it. The reputation of Harvey was European. The only reply he published to any of his opponents was that to Riolanus professor of anatomy, Paris. Harvey was author also of *Exercitationes de Generatione Animalium*. He wrote other works, the manuscripts of which were mostly burned during the English civil war; two only being preserved in the British museum. He died in 1657.

References.—Willis' *Life of Harvey;* Power's *William Harvey*, in *Masters of Medicine*.

Hase (*hä'zē*), **Karl August von,** German theologian, was born at Steinbach in Saxony, 1800. Became in 1823 tutor at Tübingen. From 1830 to 1883 he was professor of theology at Jena, after which he was ennobled. His chief writings are *Desalten Pfarrers Testament; Handbook of Dogmatics; Gnosis; Life of Jesus; Church History; Francis of Assisi; Handbook of Protestant Polemical Theology; Life of St. Catharine of Siena;* and lecture on church history. Died, 1890.

Haskell, Charles Nathaniel, ex-governor of Oklahoma, was born in Putnam county, Ohio, 1860. He was reared on a farm, taught school and read law, and was admitted to the bar in 1881. He began practice at Ottawa, Ohio; engaged in railway building and other construction work, 1888; went to Muskogee, I. T., 1901, and built many lines of railroad there. Was member of Oklahoma constitutional convention, and was elected first governor of the state of Oklahoma, 1907-1911.

Hassall (*has'al*), **Arthur,** British historical writer, was born at Bebington, Cheshire, 1853. He was graduated at Trinity College, Oxford; was lecturer and tutor of Keble College, 1880-83; student of Christ Church, 1884; censor of Christ Church, 1894-95, and student and tutor since 1895. Author: *Life of Bolingbroke; Louis XIV.; A Handbook of European History; The Balance of Power; A Class Book of English History; History of France; The French People; Mazarin; The Tudor Dynasty; War and Reform; The Expansion of Great Britain*, etc.

Hassam, Childe, American artist, was born in 1859. He was educated in Boston public schools and studied art in Boston and Paris, 1886-89. He exhibited widely in this country and in Europe, and follows generally the methods of the French impressionist school. His pictures are represented in the collections of the Pennsylvania academy of fine arts; Carnegie institute, Pittsburg; Cincinnati museum; Corcoran art gallery, Washington; Boston art club, etc.

Hastings, Warren, English statesman and administrator, in India, was born in 1732. He became a member of the council of Madras, and in 1772 governor of Bengal, a position, which, in 1774, became that of governor-general of India. He was now involved in quarrels with his council, and sent in his resignation, which, however, when accepted, he disavowed. The supreme court decided in his favor, and he was reappointed. During his first term of office he sold the vale of Rohilcund to Siraj-ud Dowlah and brought about the execution of Nucomar, his enemy. Three years after his return he was impeached before the lords for high crimes and misdemeanors, but, after a trial which proceeded at intervals for seven years, and in spite of the eloquence of Burke and Sheridan, he was acquitted in 1795. He was ruined by the expense, but was granted an annuity by the court of directors. To him the British government is largely indebted for its political and judicial organization in India and its method of Indian administration. Died, 1818.

Hauff (*houf*), **Wilhelm,** German novelist, was born at Stuttgart, 1802. He studied at Tübingen, was for two years a tutor, and had been editor of a paper for nearly a year when he died, 1827. His *Märchen* and his *Novellen* are admirable for their simplicity and playful fancy. His other works include: *Die Bettlerin vom Pont des Arts; Das Bild des Kaisers; Lichtenstein*, an imitation of Scott; and *Mitteilungen aus den Memoiren des Satans*, a story rich in satiric humor.

Haupt (*houpt*), **Lewis Muhlenberg,** American civil engineer, was born at Gettysburg, Pa., 1844. He attended the Lawrence scientific school, Harvard, and graduated at the United States military academy, 1867. Member of the Nicaragua canal commission, 1897-99; Isthmian canal commission, since 1899; president Colombia Cauca arbitration, 1897; chief engineer survey for ship canal across New Jersey; consulting engineer of Lake Erie and Ohio River ship canal, etc. He edited *The American Engineering Register*, 1885-86. Author: *Engineering Specifications and Contracts; Special Report on Railway Plant of Paris Exposition; Canals and Their Economic Relation to Transportation; A Move for Better Roads;* and a number of pamphlets and other contributions to engineering.

Haupt, Paul, philologist, professor of Semitic languages, Johns Hopkins, since 1883, was born at Görlitz, Germany, 1858. He was graduated at Gymnasium Augustum, Görlitz, 1876; University of Leipzig, Ph.D., 1878; LL.D. University of Glasgow, 1902. Editor: *The Polychrome Bible, New Critical Edition of Hebrew Text of the Old Testament.* Co-editor: *The Assyriological Library; The Johns Hopkins Contributions to Assyriology and Comparative Semitic Grammar.* Author: *The Sumerian Family Laws; The Babylonian Nimrod Epic; The Cuneiform Account of the Deluge; The Book of Canticles; The Book of Ecclesiastes;* and numerous papers on biblical and Assyrian philology, history and archæology, comparative Semitic grammar, Sumeria, etc. Died, 1926.

Haussmann (*ōs'mān'*), **George Eugene,** French magistrate, was born in Paris, 1809. He entered the public service, and under Napoleon III. became prefect of the Seine in 1853. He then began his task of improving Paris by widening streets, laying out boulevards and parks, building bridges, etc. For these services he was made baron and senator. In 1871 he was appointed director of the *Crédit Mobilier*, and in 1881 was elected to the chamber of deputies. He died in comparative poverty, 1891.

Havelock (*hav'lok*), **Sir Henry,** English general, was born at Bishop-Wearmouth, in Durham, 1795. He entered the army a month or two after the battle of Waterloo, went to India in 1823, and honorably distinguished himself in the Afghan and Sikh wars. In 1856 he commanded a division of the army that invaded Persia, and subsequently took an important part in quieting the Indian mutiny. After the relief of Lucknow Havelock was attacked by dysentery, and died in 1857.

Hawkins, Sir Anthony Hope, English novelist, born in London, 1863. He was graduated from Balliol College, Oxford; received his M.A. there, and was admitted as a barrister of the Middle Temple, 1887. Author: *The Prisoner of Zenda; The King's Mirror; Tristram of Blent; The Intrusions of Peggy; Double Harness; A Servant of the Public; Sophie of Kravonia; The Great Miss Driver*s, etc. Plays: *The Adventure of Lady Ursula, Pilkerton's Peerage*, etc. He was knighted in 1918.

Hawkins, Sir John, English navigator, was born at Plymouth in 1532. He was one of the first Englishmen to carry on the slave trade, in which so little shame was seen in those days that Queen Elizabeth allowed him to use as the crest of his coat-of-arms a Moor bound. He afterward became noted in fighting the Spaniards, was a rear-admiral in the great struggle with the Spanish armada, and commanded expeditions with Frobisher and Drake. He died at sea in the West Indies, 1595.

Hawthorne, Nathaniel, celebrated American novelist, was born at Salem, Mass., 1804. He was graduated at Bowdoin College in 1825, and three years later published his first novel, *Fanshawe*. He then wrote a number of stories for the journals, which he afterward collected in 1837, and published under the title of *Twice-told Tales*, a second volume of which appeared in 1842. In 1843 he took up his residence at the charming village of Concord, in a manse which had formerly been the dwelling of Emerson, and which suggested the title of his next work, *Mosses From an Old Manse*, published in 1843. This sketch, in which he gives some interesting recollections of his boyhood, first made his name known in Europe. After a three years' residence at Concord, he accepted a situation in the custom-house at Salem, and removed to that city. *The Scarlet Letter* appeared in 1850, and was received with universal approbation, as was likewise *The House of the Seven Gables*, published in 1851. His *Blithedale Romance*, published in 1852, may be regarded as a kind of autobiography so far as it goes and is founded on incidents in his own life. In 1853 he received the appointment of consul at Liverpool from his friend and classmate, President Pierce, whose biography he had written. He resided in Liverpool, discharging the duties of his office for five years, and afterward went to Italy to recruit his impaired health—a journey which furnished him with material for his fantastic romance, *The Marble Faun*, generally regarded as one of the best of his works. After his return to America he published a sketch of England and the English. He died suddenly at Plymouth, N. H., 1864. As a writer he combined a true poetic spirit with a charming style, and displayed a deep knowledge of human nature.

Hay, John, American statesman and writer, was born in Salem, Ind., 1838. He was graduated from Brown University, 1858, and settled in Illinois as a lawyer. He went to Washington in 1861, as one of Lincoln's private secretaries, acting also as his aide-de-camp. He was subsequently in the United States diplomatic service, stationed at Paris, Vienna, and Madrid. In 1897 he was made ambassador to England, and in 1898 secretary of state. In the latter capacity he inaugurated the important "open door" policy, for all nations, in China, and laid the foundation for subsequent diplomatic relations with the Orient. As secretary of state he gained a standing equal to that of the most eminent men who have held that high office. In coolness, foresight, and statesmanlike appreciation of current and coming events, he had no superior among contemporary diplomats. His literary reputation rests upon *Pike County Ballads, Castilian Days*, a volume of travel, and *Life of Abraham Lincoln* (with J. G. Nicolay). Died, 1905.

Haydn, Joseph, Austrian composer, was born at Rohrau, Austria, 1732. He was the son of a poor wheelwright, and, manifesting great musical talent, he was received, at the age of eight, into the choir of the cathedral of St. Stephen's at Vienna. In the latter part of 1750 he composed his first quartet for stringed instruments. In 1759 a certain Count Morzin engaged him as music director and composer, "with a salary of 200 florins, free lodging, and table with his secretaries and other officials." In 1760 Prince Esterhazy placed him at the head of his private chapel. For him Haydn composed his beautiful symphonies and the greater number of his magnificent quartets. He is often called "Father Haydn," as having been the inventor of the symphonic form as we now essentially know it. After the death of Prince Esterhazy, in 1790, Haydn accompanied Salomon, the violinist, to England, where, in 1791-92, he produced six of his "Twelve Grand Symphonies." In England he first obtained that recognition which afterward fell to his share in his own country. On his return to Austria he purchased a small house with a garden in one of the suburbs of Vienna. Here he composed his oratorios, the *Creation* and the *Seasons*. The former work, the harmonies of which are pervaded with the fire of youth, was written in his sixty-fifth year, and is considered by many to be equal to the finest productions of Handel; the *Seasons* was almost his last work. Died in Vienna, 1809.

Haydon, Benjamin Robert, English historical painter, was born at Plymouth, England, 1786. He exhibited his first picture at the academy in 1807, *Joseph and Mary Resting With Our Savior After a Day's Journey on the Road to Egypt.* "*Christ's Entry Into Jerusalem,*" "*Mock Election,*" and "*Napoleon Musing at St. Helena,*" are his most famous paintings. He forsook the brush for the platform, and his lectures on art, in London and the provinces, brought him fame. Died, 1846.

Hayes, Patrick Joseph, (1867). Prelate in Roman Catholic Church. Born in New York City, graduated from Manhattan College, 1888. Ordained priest, 1892. President Cathedral College, 1903-1914. Consecrated Bishop, 1914; Archbishop, 1919; Cardinal, 1924.

Hayes, Rutherford Birchard, nineteenth president of the United States, was born at Delaware, Ohio, 1822. He was graduated at Kenyon College and at Harvard Law School, and began the practice of law at Lower Sandusky in 1845. At the outbreak of the Civil War he was appointed major of the 23d Ohio infantry, and shortly afterward, lieutenant-colonel. He distinguished himself in the campaigns of West Virginia and in the battles around Winchester, and was severely wounded at South Mountain. In 1864 he was made brigadier-general and in 1865 brevetted major-general. He was elected to congress from Ohio, 1864-66, and was governor of that state, 1868-72 and 1876-77. He was the republican candidate for the presidency in 1876, and, after the memorable contest with Samuel J. Tilden, was inaugurated in 1877. As chief magistrate his career was marked with moderation, wisdom and a sympathy with all true reforms. His independence of character, however, was strongly shown by his vetoes, his steady adherence to principle and his refusal to pander to mere party politics. Died, 1893.

Hayne, Robert Young, American statesman, was born in South Carolina, 1791. He was admitted to the bar in 1812. He sat in the United States senate from 1823 to 1832. He was a vigorous opponent of protection, and in 1832 boldly supported in congress the doctrine of nullification. The great debates between Daniel Webster and Hayne on the principles of the constitution, the authority of the general government and the rights of the individual states are of unusual historical value. He was mayor of Charleston, 1835-37. Died, 1840.

Hays, Will H., born Sullivan, Ind., 1879; graduate Wabash College, 1900. Member Indiana Bar. Chairman Republican National Committee, 1918-1921. In 1922 became President of Motion Picture Producers & Distributors of America. Postmaster-General in Harding Cabinet.

Hazlitt (*haz'lit*), **William,** English essayist and miscellaneous writer, was born in Kent, England, 1778. In 1803 he went to London, and shortly after published his *Essay on the Principles of Human Action.* In 1813 he delivered a course of lectures on the history of English philosophy, and he subsequently delivered courses on the English poets. He wrote essays in the *Examiner,* in conjunction with Leigh Hunt, which were afterward republished in a volume entitled *The Round Table.* He also wrote *Characters of Shakespeare's Plays; View of the Contemporary English Stage; Life of Napoleon,* etc. Died, 1830.

Hearn, Lafcadio, writer, of Irish-Greek parentage, was born on the island of Leucadia, 1850. He came early to the United States and in Cincinnati, New York, and New Orleans lived by means of news reports and fine imaginative sketches, contributed to the city newspapers. His exquisitely beautiful tales, as in the volume *Fantastics and Other Fancies,* were created from Creole, French, and negro life of Louisiana. In 1902 he went to Japan to lecture at the University of Tokio. He became a naturalized Japanese and married a Japanese woman. *Appreciations of English Literature* and *Talks to Writers* contain the University lectures. On the manners and impressions of the Orient he wrote *Glimpses of Unfamiliar Japan, Gleanings in Budda-Fields,* and others. Died, 1905.

Hearst (*hûrst*), **Phoebe Apperson,** philanthropist, was born in 1840; became a teacher. In 1861 she married George Hearst, late United States senator from California, and a man of large wealth. Gave $200,000 to build National Cathedral school for girls; established working girls' clubs, San Francisco; erected and equipped a mining building at University of California as a memorial to her husband; built, endowed and gave thousands of volumes to free libraries at Lead City, South Dakota, and Anaconda, Mont. Her other charities extend to numerous objects and institutions. She was a regent of the University of California. Died, 1919.

Hearst, William Randolph, American newspaper publisher and politician, was born in San Francisco in 1863, son of late Senator George F. and Phoebe Apperson Hearst. He was educated in the public schools of San Francisco and at Harvard. He then became editor and proprietor of the *San Francisco Examiner,* 1886; bought *New York Journal,* 1895; later bought the *New York Advertiser,* to secure news franchise, and consolidated it with the *Journal;* started the *Chicago American,* 1900. In 1902 changed name of morning issue in Chicago to *The Examiner,* and morning issue in New York to *The American.* After 1904 he also acquired the *Boston American* and the *Los Angeles Examiner.* He was elected to the 58th and 59th congresses from the 11th New York district, as democrat. He was candidate for mayor of New York in 1905 and 1909.

Heber (*hē'bẽr*), **Reginald,** English prelate and hymn writer, was born at Malpas, Cheshire, 1783. He entered Brasenose College, Oxford, 1800, and in 1803 wrote his prize poem *Palestine.* He was appointed a prebendary of St. Asaph in 1812. Bampton lecturer in 1815, and preacher of Lincoln's Inn in 1822. In 1823 he accepted the see of Calcutta; but an espicopate of apostolic zeal was terminated by his sudden death at Trichinopoly, 1826. He published sermons, *A Journey Through India,* etc., and edited Jeremy Taylor's *Works.* His fame rests upon hymns, which include *Lord of Mercy and of Might; From Greenland's Icy Mountains; Holy, Holy, Holy,* and *The Son of God Goes Forth to War.*

Hebert (*eā'bâr*), **Louis Philippe,** French-Canadian sculptor, was born in the province of Quebec, 1850. In early days he worked on a farm; obtained prize at provincial exhibition, Montreal, for wood-carving in 1873; afterward studied in Paris, and won prize given by Dominion government for full-length statue of George Cartier. His chief works consist of statues, among which are those to Maisonneuse and Chénier, in Montreal. Died, 1917.

Hecker, Isaac Thomas, founder and superior of the order of Paulist fathers, was born in New York in 1819. In 1843 he joined the Brook Farm community in West Roxbury, Mass. Later he established a similar society at Worcester, Mass., then took up the study for the Episcopal ministry, but in 1845 joined the Roman Catholic church, and became a Redemptorist father. Much of his time was devoted to literature. He founded the *Catholic World,* organized the Catholic publication society, and wrote *Questions of the Soul; Aspirations of Nature; The Church and the Age,* etc. Died, 1888.

Hedin (*he-dēn*), **Sven Anders,** Swedish traveler and geographer, was born in Stockholm, 1865. He was educated at Stockholm at Upsala, and in Germany; Ph.D., Halle. He began his explorations in Persia in 1885, and has traveled through Khorasan and Turkestan, several times through Tibet and other parts of central Asia. His books include: *Through Asia; Central Asia and Tibet; Scientific Results of a Journey in Central Asia; The Tarim River,* etc.

Hegan, Alice Caldwell. See **Rice, Alice Hegan.**

Hegel, Georg Wilhelm Friedrich, German thinker and founder of a new school of philosophy, was born at Stuttgart, 1770. He was professor successively at Jena, Heidelberg, and Berlin. He was at first the disciple of Schelling, with whom he was associated in the conduct of a philosophical journal in 1802-3. But his opinions gradually took a different turn. He rejected Schelling's intellectual intuition as an unwarrantable assumption, although he continued to maintain its leading idea—the unity of the subjective or ideal, and the objective or real—and in this idea endeavored to establish that absolute cognition and absolute truth, which alone, according to this school, can satisfy the demands of the philosophical spirit.

Hegel seems not to have perfected his system; and as he had no power of exposition or of lucid expression of his thoughts, it is impossible to give a clear view of his philosophy. Indeed, it would appear that he himself had the same notion; for he is said to have remarked, that, "of all his numerous disciples, only one had ever understood him, and even he had understood him falsely."

Be this as it may, his system has been the subject of much philosophical interest in the speculative world, chiefly from the widely discrepant deductions, political and religious, which his friends and enemies draw from it; some maintaining it to be favorable to the present order of things in church and state, others founding upon it conclusions at variance with all ordinary notions of religion or morality. Hegel died of cholera, at Berlin, 1831. A considerable portion of Hegel's system is accessible in translations; the *Logic* and *Philosophy of Mind* from the *Encyclopaedia,* translated by Wallace; the *Philosophy of Right,* by Dyde; part of the *Philosophy of Fine Art,* by Bosanquet; *Philosophy of History,* by Sibree; *Philosophy of Religion,* by Speirs and Sanderson; *History of Philosophy,* by Haldane.

References.—Caird's *Hegel,* in *Phil. Classics;* Wallace's *Prolegomena to Hegel's Logic;* Seth's *Hegelianism and Personality;* Ritchie's *Darwin and Hegel;* and Macintosh's *Hegel and Hegelianism.*

Hegenberger, Lieutenant Albert S., aviator, was born in Boston, Massachusetts, September 30th, 1895. Studied civil engineering at Massachusetts Institute of Technology. Was commissioned Second-Lieutenant on April 6th, 1918. Serving with the United States Army Air Corps, he was chosen to fly with Lieutenant Maitland on the first trans-Pacific flight from Oakland, California, to Hawaii. On June 29th, 1927, the two successfully completed this flight of 2,400 miles.

Heifetz (*High'-fetz*), **Jascha,** began playing the violin at three, completed the course at the Royal Music School in Vilna, Poland, at seven, and after finishing with Professor Leopold Auer in Petrograd was a mature artist at ten. His tour through Russia was a triumph. Coming to the U. S., he conquered America. Hardly twenty years old, he ranks with the greatest violinists of the day. His technique is flawless; the intonation perfect, the quality superb and individual.

Heine (*Hi'ne*), **Heinrich,** 1797-1856, German poet and wit, was born at Dusseldorf, of Jewish parents. Abandoning Judaism, he was baptized in the Lutheran Church. His *Buch der Lieder* was a brilliant success. Many of his songs are of the most exquisite and ethereal beauty, unmatched in German literature except by the lyrics of Goethe.

Helmholtz, Herman von, German scientist, was born at Potsdam, 1821. He was elected professor of physiology at Königsberg in 1849, at Bonn in 1855, and at Heidelberg in 1858. Although his earlier researches were mainly physiological, he took rank as a physicist and mathematician in 1847, when he published his striking tract on the *Conservation of Energy.*

Naturally gifted with a powerful mathematical mind and a profound physical intuition, he gave a new direction to physiological research in optics and sound. His *Sensations of Tone* and his *Physiological Optics* were epoch-making works. Meanwhile he had created a new field in hydrodynamics by his famous investigations on vortex motion; and his inquiry into the connection between sensation and knowledge led him to the study of the foundations of geometry.

He was called to Berlin in 1871, to fill the chair of physics. His contributions to the theory of electro-dynamics, in which he aimed at greater generality than was given by Maxwell's theory, are of great importance, and it was at his instigation that Hertz demonstrated the existence of Maxwellian electromagnetic waves. He enriched the theory of thermo-dynamics by his discussion of "monocyclic" systems, and in his later papers endeavored to get at the real essence of the principle of least action. Although the idea is tentatively put forth in Maxwell's writings, Helmholtz was the first to work out explicitly the notion of the electric atom or electron, as it is now called. From 1887 until his death in 1894, he was director of the technological institute at Charlottenberg, near Berlin.

References.—M'Kendrick's *Life* in Masters of Medicine Series; *Life,* in German by Konigsberger; and article by Prof. Rucker in the *Fortnightly Review* for Nov., 1894.

Helmont (*hel'mont*), **Jan Baptista van,** Belgian chemist, was born at Brussels, in 1577. In 1609 he settled at Vilvorde, near Brussels, where he practiced medicine gratuitously for thirty years. He was the first to point out the imperative necessity for employing the balance in chemistry. He paid much attention to the study of the gases, and is supposed by some authorities to have been the first to apply the term *gases* to elastic aëriform fluids. Of these gases he distinguished several kinds. His works were published under the title *Ortus Medicinæ.* Died, 1644.

Helps, Sir Arthur, English essayist and historian, was born at Streatham, 1813. He was graduated at Cambridge in 1835, and on leaving the university obtained a post in the civil service. He then resigned and retired to Bishop's Waltham, in Hampshire, where, in the possession of ample means, he enjoyed lettered ease. His first work of consequence was entitled *Essays Written in the Intervals of Business.* Died, 1875.

Helst (*helst*), **Bartholomeus van der,** Dutch painter, was born at Haarlem or Dordrecht, between 1611 and 1614. He was joint-founder in 1654 of the painters' guild of St. Luke at Amsterdam, where he attained great celebrity as a portrait-painter. His best-known work is *The Banquet of the Civic Guard,* now in the Amsterdam gallery. Died, 1670.

Helvetius (*hel-vē'shi-us*), **Claude Adrien,** French philosopher, was born at Paris, 1715. In 1758 appeared his celebrated work *De l'Esprit,* in which he endeavored to prove sensation to be the source of all intellectual activity, and that the grand lever of all human conduct is self-satisfaction. He visited England in 1764, and the year following was entertained by Frederick the Great at Potsdam. His complete works were published after his death. Died, 1771.

Hemans (*hem'ans*), **Felicia Dorothea,** English poet, was born in Liverpool, 1793, daughter of George Browne, a Liverpool merchant, and became the wife of Captain Hemans. Her best poem of any length is *The Forest Sanctuary;* but her shorter pieces, published under the title of *Songs of the Affections,* etc., are by far the most popular. Many of these shorter pieces have become stand-

ard English lyrics, and upon them, almost exclusively depends her claim to remembrance. She died in Dublin, 1835.

Henderson, Charles Richmond, American educator, sociologist, professor of sociology, University of Chicago, since 1892, was born at Covington, Ind., 1848. He was graduated at the University of Chicago, 1870; B.D., 1873; D.D., 1885, Baptist Union theological seminary; Ph.D., Leipzig, 1901. Associate editor of *American Journal of Theology* and *American Journal of Sociology*. Author: *Introduction to Study of Dependents; Social Spirit in America; Social Settlements;* Edited: *The Christian and Civic Economy of Large Towns; Modern Methods of Charity; Modern Prison Systems*, etc.

Henderson, William James, American writer, music critic, *New York Sun*, since 1902, was born at Newark, N. J., 1855. He was graduated at Princeton University, 1876. Was member of staff of *New York Tribune*, 1876; *Times*, 1883; music critic, 1887-1902. Author: *Story of Music; Preludes and Studies; Elements of Navigation; What is Good Music? How Music Developed; The Orchestra and Orchestral Music; Richard Wagner; Modern Musical Drift; Pipes and Timbrels, Poems; The Art of the Singer*, etc. Associate editor, *Standard Dictionary*.

Hendricks, Thomas Andrews, vice-president of the United States in 1885, was born in Muskingum county, Ohio, 1819. Graduated at Hanover College in 1841, and was admitted to the bar in 1843. He was a democratic member of the house of representatives, 1851-55, served as United States senator, 1863-69, and as governor of Indiana, 1873-77. In 1876 he was nominated for the office of vice-president of the United States by the democrats, but was defeated. In 1876, 1880, and 1884 he was a prominent candidate for the nomination for the presidency; and in 1884, when Cleveland was nominated, he consented to take the nomination for the vice-presidency and was elected. Died, 1885.

Heney, Francis Joseph, lawyer, was born in Lima, N. Y., 1859, and has been a resident of San Francisco practically since 1864. Was admitted to the bar, 1883. He engaged in cattle business in Arizona, 1885-89; practiced law, Tucson, Arizona, 1889-95; was attorney-general of Arizona, 1893-94; removed to San Francisco, 1895, and confined cases to civil business until urged by United States Attorney-General Knox to undertake land fraud cases at Portland, Ore.; discovered conspiracy of United States Attorney John H. Hall to protect guilty politicians in consideration of reappointment; secured removal and indictment of Hall, and indictment of Senator Mitchell, George C. Brownell, and others. He was then district attorney for San Francisco, but was defeated for reëlection in 1909. Special counsel for U. S. Senate committee investigating Internal Revenue Bureau, 1924.

Henley, William Ernest, English poet, playwright, critic, and editor, was born at Gloucester, 1849. Months of illness in Edinburgh infirmary, 1873-75, bore fruit in *Hospital Rhymes*, and *A Book of Verses*, which won much attention, and was followed by *Views and Reviews; The Song of the Sword; For England's Sake; Hawthorn and Lavender*, etc. He edited the *Magazine of Art*, the *Scots Observer*, and the *New Review*, besides an edition of Burns. He also collaborated with R. L. Stevenson in four plays, *Deacon Brodie; Beau Austin; Robert Macaire*, and *Admiral Guinea*. Died, 1903.

Hennepin (*hen'ẽ-pin*), **Louis,** French priest, missionary and traveler, was born in Belgium about 1640. When La Salle undertook his exploration of the Mississippi Valley, Father Hennepin was assigned to his command. They discovered Niagara Falls, travelling west as far as Mackinac, and thence to Peoria, on the Illinois river. Here La Salle was obliged to leave the party, and Father Hennepin and two men in a canoe went down the Illinois river to its mouth, and thence north up the Mississippi, a journey of some six weeks, when they fell into the hands of a party of Sioux Indians. Father Hennepin spent nearly a year among the Indians, and was finally rescued by Du Luth, after whom Duluth was named. Upon his return to Europe, Hennepin published a history of his travels, which is of the greatest value in dealing with the early explorations of the Mississippi valley. Died at Utrecht about 1706.

Henry I., king of England, youngest son of William the Conqueror, was born in 1068. He successfully held the crown against his brother Robert, at first negotiating with him, and granting him a pension to resign his pretensions, but finally making war against his badly governed duchy. Robert was defeated in a bloody battle before the walls of Tenchebray in 1106, taken prisoner, and shut up in Cardiff castle during the remaining twenty-eight years of his life. The acquisition of Normandy, the ancient patrimony of his family, had been a point of ambition with Henry, but he had some trouble in keeping it, as the French king, Louis VI., and the counts of Anjou and Flanders took part with William, Roberts' youthful son, whose virtues and misfortunes secured him friends. Henry, however, brought over to himself the count of Anjou; he rendered neutral, by his eloquence and fair promises, Pope Calixtus II. and defeated the French king and his mailed knights in the almost bloodless battle of Brenneville, 1119. Next year his successes in arms and intrigues were darkened for life by the death of his only son William, who was drowned at sea on his passage from Normandy to England. Henry was styled *Beauclerc*, or "the scholar," in honor of his learning, which, for a king in his age, was not undeserving of distinction. Died, 1135.

Henry II., king of England, grandson of Henry I., was born in 1133. He was crowned with his queen, Eleanor, who was countess of Poitou and duchess of Aquitane in her own right. Henry inherited from his father Anjou, Touraine and Maine, and his father and mother succeeded in keeping and taking possession of Normandy for themselves and him; so that, by one method and another he came to be possessed of a large portion of France as well as England. His chief rivals in power were the clergy. To aid him in reducing the church to subjection to the civil power he appointed his trusted chancellor, Thomas á Becket, to the see of Canterbury, and compelled him and the other ecclesiastics to agree to the constitutions of Clarendon. Becket, however, proved to be a true churchman, and the long and obstinate struggle between him and his monarch was only terminated by his murder. During his reign occurred the conquest of Ireland. This was a nominal conquest, for the majority of the Irish tribes and chieftains continued to be independent barbarians for centuries. Henry's sons, incited by their jealous mother, Queen Eleanor, rebelled against him, and their cause was espoused by the kings of France and Scotland. In the course of this filial rebellion Henry, the eldest, died of a fever, and Geoffrey was killed in a tournament at Paris. Richard, surnamed Coeur de Lion, with King Philip of France, obtained some advantages over his father. A treaty of peace was concluded between them, of which one of the stipulations was for an indemnity for all the followers of Richard. Died, 1189.

Henry III., king of England, grandson of Henry II., and eldest son of King John, was born in 1207. He came to the throne in 1216, when a minor, and in the course of a long reign provoked much hostility by his foreign favorites and his submission to papal exactions. This discontent culminated in the barons' war, 1262-65, in which he was defeated and compelled to submit to control of the government by De Montfort and his friends. During this reign the great charter (with important clauses omitted) was frequently renewed and Westminster abbey was almost entirely built. Died, 1272.

Henry IV., king of England, first king of the house of Lancaster, was born in 1367, and surnamed Bolingbroke, from his birthplace. About 1380 he was made earl of Derby, and married Mary de Bohun. In 1397 he supported Richard II. against Gloucester, and the following year was banished. Upon the death of his father, John of Gaunt, his estates were forfeited. In July, 1399, he landed in York with three small vessels, and on September 29th he obtained from Richard, then a prisoner in the Tower, an abandonment of his claims to the throne. On the next day, Henry arose in parliament and claimed kingdom and crown. In 1412 he sent two expeditions into France, but in his closing years he was afflicted with epileptic fits, in one of which he died at Westminster, 1413.

Henry V., king of England, was born at Monmouth, 1387, eldest son of Henry IV. by Mary de Bohun. He was crowned in 1413, and at the outset of his reign liberated the young earl of March, the true heir to the crown, restored Hotspur's son to his father's lands and honors, and had Richard II.'s body buried in Westminster. The great effort of his reign was an attempted conquest of France; and in 1414 he demanded the French crown, to which he seems to have believed that he had a valid claim through his great-grandfather, Edward III. In 1415 he sailed with an army of 30,000 men and in September took Harfleur. In October, at Agincourt, he gained a battle against such odd as to make his victory one of the most notable in history. In 1420 was concluded the "perpetual peace" of Troyes, under which Henry was recognized as regent and "heir of France," and married the French king's daughter, Catherine of Valois. In 1421 he took his young queen to England to be crowned; but in a month he was recalled by the news of the defeat at Beaugé of his brother, the duke of Clarence. Henry's wonted success was attending him, when he was seized with illness, and died at Vincennes, 1422, leaving an infant to succeed him.

Henry VII., king of England, was born about 1457, first of the Tudor dynasty. He was the son of Edmund Tudor and Margaret Beaufort, a descendant of John of Gaunt. He invaded England in 1485, and defeated Richard III. at Bosworth, after which he married Elizabeth, daughter of Edward IV. His reign was marked by three Yorkist risings, which he defeated, by the measures he enforced against the nobles, by his system of marriages with foreign princes, and the enactment of Poyning's law. Died, 1509.

Henry VIII., king of England, second son of Henry VII. and Elizabeth of York, was born in 1491. Betrothed at twelve, he was married in 1509, shortly after his succession, to Catharine of Aragon, his brother's widow, six years his senior. He chose his ministers wisely, and, leaving much to their discretion, nevertheless held the reins of government himself. Wolsey, archbishop of York, his chief minister, held almost unlimited power, dependent, however, on the king's will and favor. In 1521 Henry gained from the pope the title "defender of the faith," still borne by the English sovereign, for his *Assertio Septum Sacramentorum* against Luther. The appearance at court of Anne Boleyn, and the failure of a male heir, encouraged Henry to raise the old question as to the legality of the marriage with Catharine. Wolsey zealously aided him, seeing in a divorce the possibility of a breaking of ties with Charles V. and an alliance with France. The appeal to the pope in 1527 resulted only in the appointment of a commission. In 1533 Henry, impatient at the delay, was privately married to Anne, with whom he had long been living; three months later the marriage was announced, and Cranmer, calling a court, as the highest ecclesiastical authority in England, pronounced the divorce from Catharine and declared the marriage null and void from the beginning. A year later Clement decided in favor of Catharine, but not until Henry had severed all connections with Rome, by making it treason to deny his authority as head of the church of England. In quick succession came the translation of the Bible, its introduction into every church, the act of uniformity, and the ten articles of faith, later changed again to six articles, embodying substantially the old creed, with the penalty of death for denial. In 1536 Henry charged Anne Boleyn with infidelity, sent her to the block and married Jane Seymour, by whom he had a son, Edward VI. Jane died in 1537 and three years later he married Anne of Cleves, at Cromwell's suggestion. She proved far from handsome, was divorced, and Cromwell sent to the block. On the day of Cromwell's execution Henry married Catherine Howard, but she was soon found unfaithful and beheaded. In 1543 Henry married Catharine Parr, who survived him. He died, 1547.

Henry II., king of France, was born in 1519, son of Francis I., whom he succeeded in 1547. By his alliance with the German Protestants, he acquired Metz, Toul and Verdun, carried on his father's war with Spain, was defeated at St. Quentin in 1557, but in 1558 he regained Calais from the English. He died in 1559 of a wound inflicted in a tournament held to celebrate the conclusion of the war by the marriage of his daughter and Philip II. of Spain.

Henry III., king of France, third son of Henry II. and Catharine de' Medici, was born in 1551. In 1573 the intrigues of the queen-regent secured his election to the crown of Poland; but in 1575 he succeeded his brother, Charles IX., on the French throne. His reign was a period of almost incessant civil war between Huguenots and Catholics, the duke of Guise having formed the holy league to assert the supremacy of Catholicism and secure the revercion of the throne to the Guises. In 1588 the assassination of the duke of Guise roused the Catholics to the utmost pitch of exasperation; Henry threw himself into the arms of Henry of Navarre, and the two marched upon Paris at the head of a Huguenot army. But in August, 1589, Henry was stabbed by a fanatical Dominican named Jacques Clément; after nominating Henry of Navarre as his successor, he died, the last of the house of Valois, on the following day.

Henry IV., king of France, was born in 1553, son of Anthony of Navarre, a descendant of Louis IX. He was founder of the Bourbon dynasty, succeeding Henry III. in 1589. His marriage with Marguerite de Valois, in 1572, was the occasion of the Bartholomew massacres. In 1576 he quitted the court and became leader of the Huguenots and opponent of the league, being the rival of the Guises for the succession. He defeated them at Arques and Ivry, but was unable to conquer Paris without becoming a Roman Catholic, which he did in 1593. He concluded peace with Philip II. at Vervins, and issued the edict of Nantes. He was assassinated by Ravaillac, 1610.

Henry IV., emperor of the holy Roman empire, was born at Goslar, Prussia, 1050, son of Henry III. He was crowned emperor in 1084 by Clement III. The chief occurrence of his reign was the struggle with Gregory VII., with whom he began the investiture disputes. During this celebrated controversy he deposed Gregory, but was himself excommunicated and deposed, and was obliged to submit at Canossa in 1077. In 1084 he again invaded Italy and captured Rome. Died, 1106.

Henry, Joseph, American physicist, was born in Albany, N. Y., 1799; was appointed professor of natural philosophy in the college of New Jersey at Princeton, 1832, and, in 1846, was called to the office of secretary or director of the Smithsonian institution at Washington, to the organization and wide reputation of which he had mostly contributed. Henry made most important discoveries in electro-magnetism, and disputed with Morse the invention of the electric telegraph. Died, 1878.

Henry, Patrick, American orator and statesman, was born in Virginia in 1736. After receiving a common school education and spending some time in trade and agriculture, he commenced the practice of law, after only six weeks of preparatory study. In spite of several years of poverty, he first rose to distinction in managing the popular cause in the controversy between the legislature and the clergy, touching the stipend which was

claimed by the latter. In 1765 he was elected a member of the Virginia house of burgesses, with express reference to an opposition to the British stamp act. He was one of the delegates sent by Virginia to the first general congress of the colonies, in 1774, and in that body distinguished himself by his boldness and eloquence. In 1776 he was appointed the first governor of the commonwealth, and to this office was repeatedly reëlected. In 1788 he was a member of the convention which met in Virginia to consider the constitution of the United States, and he exerted himself strenuously against its adoption. Without extensive information upon legal or political topics, he was a natural orator of the highest order, possessing great powers of imagination, sarcasm and humor, united with great force and energy of manner and a deep knowledge of human nature. Died, 1799.

Henry, king of Navarre. See **Henry IV.,** king of France.

Henry the Lion, duke of Saxony and Bavaria, was born in 1129. He was the son of Henry the Proud, a rebellious noble, who had been deprived of his estates by Conrad III. On his death these dukedoms were restored to the former's son, Henry the Lion, who became the greatest of all the German princes. Great improvements were made by him in his dominions and he became so powerful as to determine to be no longer a subject even to the emperor. Died, 1195.

Henry the Navigator, son of John I., king of Portugal, and the English Philippa, daughter of John of Gaunt, was born in 1394. He distinguished himself at the capture of Ceuta in 1415; took up his residence at Sagres, in Algarve; and during the war against the Moors his sailors reached part of the ocean before unknown. Henry's thoughts were now directed toward the gold-producing coasts of Guinea; and in 1434 one of his mariners sailed round Cape Nun, and touched Cape Bojador. Next year another expedition reached a point 120 miles beyond Cape Bojador. Up to this period the prince had borne the expense of these voyages himself; henceforth, societies for the purpose were formed under his guidance. In 1445 Henry's captain, Nuno Tristam, doubled Cape Verde, and in 1448 Gonzalez Vallo discovered three of the Azores. Henry died in 1460.

Henry, O.—See **Sydney Porter.**

Henson, Herbert Hensley, canon of Westminster abbey and rector of St. Margaret's since 1900 was born in London, England, 1863. He was educated privately and at Oxford; was a fellow of All Souls College, Oxford, 1884-91; reëlected 1896; B.D., 1898; hon. D.D., Glasgow, 1906. Author: *Light and Leaven; Apostolic Christianity; Cross Bench Views of Current Church Questions; Preaching to the Times; English Religion in the 17th Century; Moral Discipline in the Christian Church; Religion in the Schools; Christ and the Nation,* etc.

Hepburn, Alonzo Barton, banker, was born at Colton, N. Y., 1846. He was graduated at Middlebury College, Vermont, 1871; LL.D., St. Lawrence University, 1900; D.C.L., 1906. United States bank examiner for New York, 1888-92; comptroller of the currency, 1892-93; president Third National Bank, New York City, 1893-97; president Chase National Bank since 1899. He is also a trustee in the New York Life Insurance Company; director Bankers Trust Company, etc. Author of *History of Coinage and Currency,* and frequent contributor to reviews and magazines.

Hepburn, James Curtis, American physician and medical missionary, was born at Milton, Pa., 1815. He graduated at Princeton College, 1832; University of Pennsylvania medical department, M.D., 1836; LL.D., Lafayette, 1872, Princeton, 1905. Went to China as medical missionary, 1840; went to Japan, 1859; lived in Yokohama until 1892; returned to United States, 1893, and retired. He compiled first English dictionary of Japanese language; published an *English-Japanese Dictionary;* wrote a grammar of the Japanese language; translated the Bible into the Japanese language, 1872-88, and published a Japanese *Dictionary of the Bible,* 1891. Died, 1911.

Hepburn, William Peters, lawyer, congressman, was born in Wellsville, Ohio, 1833. His parents removed to Iowa in 1841, where he was educated in local schools and in a printing office. He was admitted to the bar in 1854; in the Union army, 1861-65, as a captain, major, and lieutenant-colonel, 2d Iowa cavalry; was presidential elector, 1876 and 1888; member of congress, 1881-87, and 1893-1909 from the 8th Iowa district. While a member of congress he was chairman of committee on interstate and foreign commerce, and author of the Hepburn bill to regulate interstate commerce. He was regarded as one of the ablest debaters in lower house for many years. Died, 1916.

Heraclius (*her-ā-klī'us*), Byzantine emperor, was born in Cappadocia about 575. In 610 he headed a revolt against Phocas, slew him, and mounted his throne. After thirty years of almost incessant fighting, he died in 641.

Herbart (*her'bärt*), **Johann Friedrich,** German philosopher, was born at Oldenberg, Germany, 1776. He then studied at Jena, became the pupil of Fichté, and received his philosophy with enthusiasm; but after more reflection he found himself obliged to reject much of his system, and to form one of his own. In 1808 he was appointed professor at Göttingen, and in 1809 obtained the chair of philosophy at Königsberg. In 1833 he returned to Göttingen, where he remained until death. His collected works were published by his scholar, Hartenstein, 1850-52. Died, 1841.

Herbert, George, English poet, was born in Montgomery Castle, Wales, 1592. In 1609 he entered Trinity College, Cambridge, in 1615 was elected a fellow, and was public orator, 1619-37. He looked for advancement at court, but, by the gift of a prebend of Lincoln and the friendship of Nicholas Ferrar, he was drawn toward a religious life, and in 1630 was presented to the vicarage of Bemerton near Salisbury. He held it only three years, when he died in 1633. His *Country Parson* is generally considered to be a picture of himself; *The Temple, or Sacred Poems, and Private Ejaculations* contains some of the purest religious verse in the English language.

Herbert, Victor, conductor, composer, was born in Dublin, Ireland, 1859. He began his musical education in Germany at the age of seven, studying under leading masters, and gained his first position of prominence as principal violoncello player in court orchestra, Stuttgart. Subsequently he was connected with Theodore Thomas', Seidl's, and other orchestral organizations as soloist and conductor. Bandmaster of 22d regiment band, New York, since 1894; conductor of Pittsburg, Pa., orchestra, 1898-1904; Victor Herbert's New York orchestra, since 1904. Composer: *The Captive,* an oratorio; *Prince Ananias; The Wizard of the Nile; The Serenade; Cyrano de Bergerac; The Ameer; The Viceroy; The Idol's Eye; The Fortune Teller; The Singing Girl; Babette; Babes in Toyland; It Happened in Nordland,* etc., all comic operas. He also wrote several compositions for orchestra, songs, and a concert for violoncello and orchestra. Died, 1924.

Herder (*her'dĕr*), **Johann Gottfried von,** German critic and poet, was born at Mohrungen in East Prussia, 1744. He studied at Königsberg, and there became acquainted with Kant and Hamann. Between 1766 and 1769 he wrote two works, in which he maintained that the truest poetry is the poetry of the people. In 1769 he made the acquaintance of Goethe at Strassburg. In 1802 he was ennobled by the elector of Bavaria. He wrote many important works, among them: *Fragments of the More Modern German Literature; Origin of Language; The Oldest Record of the Human Race; Folk-Songs; Voices of the Nations in Songs; Letters for the Advancement of Humanity,* etc. He died at Weimar, 1803.

Herkomer (*hûr'kō-mĕr*), **Hubert von,** English artist, was born in Waal, Bavaria, 1849. His father, Lorenzo Herkomer, a skillful wood-carver, emigrated with his family to the United States, 1851, but in 1857 removed to England and settled in Southampton. At the age of thirteen Herkomer entered the art school at Southampton, and won a bronze medal there. He then studied at Munich, established himself in the village of Hythe, and there painted two pictures, which he exhibited at the Dudley gallery. He finally removed to London, where he occupied himself successfully with water-color painting and designing for wood engravings. Subsequently he turned his attention to etching and other branches of practice. He became a member of the royal academy, an honorary member of the imperial academy of Vienna, and succeeded Ruskin as Slade professor of art at Oxford, 1885-94. Died, 1914.

Hermes (*her'mēs*), **Georg,** Roman Catholic philosopher, was born at Dreyerwalde in Westphalia, 1775. He sought to base the Catholic faith and doctrines on a critical theory of knowledge like Kant's. The Hermesian method departed widely from the old text-books of the schools; and although his substantial orthodoxy was not questioned, his doctrines were condemned by a papal brief in 1835 as heretical, and his followers were deprived of their chairs. Died, 1831.

Herne (*hûrn*), **James A.,** American actor and dramatist, was born at Troy, N. Y., 1840. He appeared chiefly in his own plays, the best of which are: *Hearts of Oak; Margaret Fleming; Shore Acres; Rev. Griffith Davenport; Sag Harbor.* He was an actor of great ability and a skillful stage manager. Died, 1901.

Herod (*her'ud*) **the Great,** king of Judæ, was born at Askalon, 63 B. C., became governor of Galilee about 47 B.C., and through the influence of Mark Antony ascended the throne of Judæ in 40 B.C. During his reign occurred the birth of the Messiah, and the consequent massacre of the innocents. Herod was so cruel by nature that for deeds of blood and violence his name became a proverb. Died, 4 B. C.

Herodotus, Greek historian, styled the father of history, was born in Halicarnassus, Asia Minor, about 484 B. C., and died about 420 B. C. He belonged to an illustrious family, received a high education and engaged in frequent and distant travel. He visited Babylon, Ardericca near Susa, the remoter parts of Egypt, Cyrene, Colchis, Scythia, Thrace, Zante, Dodona, and Magna Græcia, thus ranging over a space more than 1,700 miles from east to west and 1,600 miles from north to south.

It is related that in 446 B. C. the Athenian assembly decreed a reward to him for his *History,* which he had read publicly; and that he made known his work by recitation not only at Athens but in other cities, and also before the assembled Greeks at the great Olympian festival. He went about 440 B. C. to Thurii, a colony newly founded by the Athenians near the site of the former Sybaris, where he is said to have passed the remainder of his life, perfecting his *History.* The abruptness of its close and occasional traces of incompleteness indicate that it was not entirely finished at his death.

The main subject of Herodotus' *History* is the Persian war of invasion, yet he takes every opportunity of diverging from it in order to introduce his various historical, geographical and antiquarian knowledge. In Egypt the priests took advantage of his ignorance of the language to magnify the antiquity of their nation and to modify inglorious portions of their history. His accounts of Babylon are correct in outline, but lack the fullness and precision of the narrative of Berosus. His Persian history is based in the main on authentic national records, diversified especially in the earlier part by circumstances and adventures from romantic chroniclers.

His chief defect as a historian is an undue love of the marvelous; but he is truthful and accurate whenever he speaks from his own observation. The simple beauty of his style, the grandeur of his historical combinations and the entertainment which his narrative furnishes have never been questioned; and he is esteemed by scholars the earliest and best of romantic historians.

References.—His *History,* with commentary, has been translated into English, by Rawlinson, by Sayce, and by Macan. There is also a good translation by G. C. Macaulay. See also Wheeler's *Life and Travels of Herodotus.*

Herrera (*er-rā'rā*), **Antonio de,** Spanish historian, was born at Cuellar near Segovia, 1549. Philip II. made him chief chronicler of America, and historian of Castile, which offices he filled for many years. He wrote a history of *Castilian Exploits in the Pacific,* a description of the West Indies, a history of England and Scotland in the time of Mary Stuart, etc. Died, 1625.

Herrera, Fernando de, Spanish lyric poet, was born at Seville about 1534, and took orders in the church. Many of his love-poems are remarkable for tender feeling, while his odes display a lofty enthusiasm. He wrote a prose history of the war in Cyprus, and translated from the Latin of Stapleton a *Life of Sir Thomas More.* Died, 1597.

Herrera, Francisco, "the elder," Spanish painter, was born in Seville, 1576. He painted historical pieces, wine-shops, fairs, carnivals and scenes from the life of the people, and was one of the most eminent Spanish painters of the school of Seville. The cupola of the church at St. Bonaventure displays his skill in fresco-painting. Some of his best works are in the Louvre at Paris. Died 1656.

Herrick, Myron T., financier, ex-governor of Ohio, was born at Huntington, Ohio, 1854. He was educated in the district schools in Ohio, at Oberlin College and Ohio Wesleyan University; was admitted to the bar, Cleveland, 1878. He retired from law practice, 1886. From 1903 to 1906 he was governor of Ohio, and later was influential in the politics. Ambassador to France. Died, 1929.

Herrick, Robert, English poet, was born in Cheapside, London, 1591, son of a goldsmith. He was educated at St. John's College and at Trinity Hall, Cambridge. After taking orders as a clergyman of the church of England, he was presented by Charles I. to the vicarage of Dean Prior. In 1648 he published his celebrated Collection of lyrical poems, entitled *Hesperides, or the Works Both Human and Divine of Robert Herrick, Esq.* About the same time he published *Noble Numbers, or Pious Pieces.* His poems, not fewer than thirteen hundred in number, include, though they are very unequal, some of the finest lyrical pieces in the language. Died, 1674.

Herrick, Robert, educator, novelist, was born at Cambridge, Mass., 1868. He was graduated at Harvard, 1890; was instructor in rhetoric, Massachusetts Institute of Technology, 1890-93; professor of English, University of Chicago. Author: *The Man Who Wins; Literary Love Letters and Other Stories; The Gospel of Freedom; Love's Dilemmas; Composition and Rhetoric* (with Professor L. T. Damon); *The Web of Life; The Real World; Their Child; The Common Lot; The Memoirs of an American Citizen,* etc.

Herschel (*hûr'shel*), **Caroline Lucretia,** sister of the astronomer, Sir (Frederick) William Herschel, was born in Hanover, 1750. When William was

appointed astronomer to George III. she acted as his assistant, and in that character received a small salary from the king. She discovered seven comets, for five of which she has the credit of priority of discovery. Several remarkable nebulæ and clusters of stars included in her brother's catalogues were described from her original observations. She was made an honorary member of the royal society. Died, 1848.

Herschel, Sir John Frederick William, English astronomer, son of Sir (Frederick) William Herschel, was born in 1792. About 1825 he began his observations in sidereal astronomy, to which he chiefly devoted himself. His great enterprise was his expedition toward the close of 1833 to the Cape of Good Hope to take observations of the southern firmament. In 1847 appeared his *Results of Astronomical Observations at the Cape of Good Hope*, one of the most notable works of our time. His residence at the cape gave not only valuable additions to astronomy, but also to meteorology. His observations on the milky way, on the brightness and the color of stars, on variable stars, on the sun's rays, on the atmospheric air, and on the Magellanic clouds, all possess great value. He also made noteworthy researches in light, sound and celestial physics. His best known work is *Outlines of Astronomy*. Died, 1871.

Herschel, Sir (Frederick) William, German-English astronomer, was born in Hanover, 1738. In 1757 he went to England. Here he turned his attention to astronomy. Wanting a telescope, and unable to afford a reflector, he made one for himself. In 1781 he discovered the planet Uranus, which discovery resulted in his appointment as private astronomer to George III., with a salary of 200 pounds a year. He was knighted by George III., and made a D.C.L. by the University of Oxford. He greatly added to our knowledge of the solar system; discovered six satellites of Uranus and two satellites of Saturn; detected the rotation of Saturn's ring, the period of rotation of Saturn itself and the existence of the motion of binary stars, the first revelation of systems besides our own. He threw new light on the milky way and the constitution of nebulæ, and, in fact, was the first to give the human mind a proper conception of the immensity of the universe. Died, 1822.

Hertz, Heinrich, German physicist, was born at Hamburg in 1857. He received his college training at the University of Berlin, but continued his researches as assistant to the great Helmholtz. In 1887 he invented an apparatus not only for the detection of electromagnetic waves but also for measuring their length and velocity. These radiations are now known as Hertzian waves. In 1889 he became professor of physics at the University of Bonn. Died, 1894.

Hertz (*hërts*), **Henrik,** Danish poet and dramatist, was born in Copenhagen, 1798. He was of Jewish descent, was educated at the University of Copenhagen, traveled abroad, and returned as a professor of the University. His first important work was *Letters of a Ghost*, a rhymed satirical poem. His subsequent works include: *Svend Dyring's House; The Saving's Bank; Love and Politics; The Heirs*, etc. Died, 1870.

Hervieu (*er'vyû*), **Paul Ernest,** French author and dramatist, was born at Neuilly-sur-Seine, 1857. He was educated at the Lycée Condorcet, Paris; and at the Ecole de Droit, and was admitted as an advocate, 1877. In 1900 he was elected to the French academy. He has written several novels, but his most notable achievements are his dramas, which are marked by keen observation of life and delicate fancy. Died, 1915.

Herzog (*her'tsōg*), **Johann Jakob,** German theologian, was born at Basel, 1805. He became professor at Lausanne, 1830, at Halle, 1847, and Erlangen, 1854. He wrote books on the Plymouth brethren and the Waldenses, lives of Calvin and Æcolampadius, a church-history, etc., and edited the great *Realencyklopädie für Protestantische Theologie und Kirche* (22 volumes). Died, 1882.

Hesiod (*he'si-ŏd*), one of the earliest Greek poets, was born in Bœotis, lived in the eighth century B. C., chiefly at Orchomenos; probably of humble birth. Of the works ascribed to him the principal were the *Works and Days*, the *Theogony* and the *Shields of Hercules*. His poems treat of the quiet pursuits of ordinary life, the origin of the world, the gods and heroes, while those of Homer are occupied with the restless and active enterprises of the heroic age.

Hewlett, Maurice Henry, English historical writer and novelist, was born at London, 1861. He was educated at the London International College, at Spring Grove, Isleworth; was admitted as a barrister, 1891. Author: *Earthwork Out of Tuscany; The Masque of Dead Florentines; Songs and Meditations; The Forest Lovers; Pan and the Young Shepherd; Little Novels of Italy; Richard Yea-and-Nay; New Canterbury Tales; The Queen's Quair; The Road in Tuscany; Fond Adventures; The Fool Errant; The Stooping Lady; Half-way House*, etc. Died, 1923.

Heyne (*hi'nĕ*), **Christian Gottlob,** German classical scholar, was born in Saxony, 1729. In 1753 he obtained the situation of under-clerk in the Brühl library at Dresden. In 1756, unfortunately for Heyne, the Seven Years' war broke out. Frederick the Great marched against Dresden, and burned, among other things, the Brühl library, but not before Heyne had edited, from a *codex* there, the *Enchiridion* of Epictetus. In 1763, on the death of Gessner, professor of rhetoric at Göttingen, Heyne was appointed his successor. Died, 1812.

Heyse (*hi'zĕ*), **Paul Johann,** German poet, dramatist and novelist, was born in Berlin, 1830. He was educated at Berlin and Bonn, and settled at Munich in 1854. He published more than a score of collections of novelettes, good specimens of which are contained in *Das Buch der Freundschaft*. His poetic works include narrative poems, such as *Urica*, and epics, such as *Die Braut von Cypern* and *Thekla*. Died, 1914.

Hezekiah, king of Judah, son and successor of Ahaz, reigned from 726 to 696 B. C. There was "none like him among all the kings of Judah" is the praise bestowed upon him in the book of *Kings*. At the head of a repentant and united people Hezekiah returned to assume the aggressive against the Philistines, and in a series of victories not only re-won the cities his father had lost, but captured others. At length Sennacherib with a mighty host advanced against Jerusalem, but by some catastrophe 180,000 men in the Assyrian camp were killed in a single night, and Sennacherib was obliged to retreat. A second Assyrian invasion, however, under Moerdach-baladan, resulted in the capture and the end of Hezekiah's rule.

Hibben, John Grier, educator, president of Princeton University, was born at Peoria, Ill., 1861. He was graduated from Princeton, 1882; Princeton Theological Seminary, 1886; Ph.D. 1893; LL.D., LaFayette College, 1907. Pastor of Presbyterian church, 1887-91; instructor and professor of philosophy, Princeton, 1891-1912. President of Princeton since Jan. 1912. He is the author of several works on philosophy, chiefly logic, and also editor of *Epochs of Philosophy*, in twelve volumes, by English and American writers.

Hick, Elias, American Quaker-preacher, was born at Hempstead, L. I., 1748. At twenty-seven he was a well-known and influential Quaker preacher, and for many years traveled through the United States and Canada. He exercised great influence among his co-religionists until his Unitarianism brought him into disfavor with orthodox Friends; but he defended his views with perseverance, and at eighty he still preached. The result was schism of the society into two divisions, known as orthodox and Hicksite Friends. He was a vigorous abolitionist. Died, 1830.

Higginson, Henry Lee, banker, was born in New York, 1834. He entered Harvard in 1851, but did not complete course. He served in United States volunteers in Civil War, becoming major and brevetted lieutenant-colonel of 1st Massachusetts cavalry, and was severely wounded at Aldie, Va., June, 1863. He later entered the firm of Lee, Higginson and Company, bankers, Boston. He devoted a considerable sum to organization of the symphony orchestra in Boston. Died, 1919.

Higginson, Thomas Wentworth, American writer, was born in Cambridge, Mass., 1823. He graduated at Harvard, 1841; LL.D., Harvard. After several years in the ministry he entered into the movement against slavery; took part in the Civil War as captain of the 51st Massachusetts volunteer militia, later colonel 1st South Carolina (Union) volunteers, and afterward of the 33d United States colored troops. Author: *Outdoor Papers; Army Life in a Black Regiment; Life of Margaret Fuller Ossoli; Larger History of the United States; The Monarch of Dreams; The New World and the New Book; Concerning All of Us; Such As They Are*, poems; *English History for Americans; Old Cambridge; Contemporaries; Henry W. Longfellow*, in American Men of Letters series; *John G. Whittier*, in English Men of Letters series; *A Reader's History of American Literature; Part of a Man's Life*, etc. Died, 1911.

Hildebrand (*hil'dĕ-brand*), **Saint.** See Gregory VII.

Hildreth (*hil'dreth*), **Richard,** American historian, was born in Deerfield, Mass., 1807. He was graduated at Harvard College in 1826; admitted to the bar in 1830, and became connected with the Boston *Atlas* and other newspapers. In 1861 he became United States consul at Trieste, Austria. Among his most notable works are the *White Slave*, an anti-slavery novel; *History of the United States* (6 volumes); *Banks, Banking and Paper Currency;* etc. He died at Florence, Italy, 1865.

Hilgard (*hil'gärd*), **Eugene Woldemar,** professor of agriculture, University of California, and director California agricultural experiment station since 1875, was born at Zweibrücken, Rhenish Bavaria, 1833. Was graduated at Heidelberg, Ph.D., 1853; LL.D., Columbia. He was state geologist, Mississippi, 1855-73; also professor of chemistry, University of Mississippi, and professor of geology and natural history, University of Michigan, 1873-75. Received the Liebig medal for distinguished achievements in agricultural sciences from academy of sciences, Munich; also gold medal, Paris exposition, 1900, as collaborator in agricultural science. Author: *Report on the Geology and Agriculture of Mississippi; Report on the Agricultural Features of the Pacific Slope; Reports and Bulletins California Experiment Station*, 1877-1903. Editor: *Cotton Culture in the United States, 10th Census.* Died, 1916.

Hill, Adams Sherman, educator, was born in Boston, Mass., 1833. He was graduated at Harvard College, 1853; Harvard Law School, 1855; LL.D., 1903. He was law reporter, correspondent, and editor, New York, Washington, and Chicago, 1856-68; assistant professor of rhetoric, 1872-76, Boylston professor of rhetoric and oratory, Harvard, 1876-1904, emeritus professor same until 1911. Author: *Principles of Rhetoric; Our English; Foundations of Rhetoric; Beginnings of Rhetoric and Composition*, etc. Died, 1911.

Hill, Albert Ross, educator, president University of Missouri, 1908-1922, was born in Nova Scotia, 1869; graduated at Dalhousie University, 1892; Ph.D., Cornell, 1895; LL.D., University of South Carolina, 1905, and director of psychological laboratories, University of Nebraska; professor educational psychology and dean of teachers' college, University of Missouri, 1903-07; professor philosophy of education, director of school of education and dean of college of arts and sciences, Cornell University, 1907-08. He was president of the Western philosophical association, 1904-05. director foreign operations, American Red Cross, 1921-23; gen. mgr. Ward Investment Co., Kansas City, Mo., since 1923.

Hill, Ambrose Powell, American soldier, was born in Virginia, 1825. He was graduated at West Point, 1847, served in the Mexican war, and entered the confederate army in 1861 as colonel. He served in Johnston's command at the first battle of Bull Run; became a major-general, 1862; commanded the right wing of Jackson's corps at Chancellorsville; was promoted to lieutenant-general, 1863; commanded a corps at Gettysburg; repelled, with Longstreet, the attack on Weldon railroad; was killed near Petersburg, Va., 1865, while reconnoitering.

Hill, David Bennett, American lawyer and politician, was born at Havana, N. Y., 1843. He was educated at the district schools and Havana Academy and was admitted to the bar in 1864. Delegate to national democratic conventions, 1876, 1884, 1896, 1900, 1904; seconded nomination of William J. Bryan for presidency, 1900; mayor, 1882, Elmira, N. Y., lieutenant-governor of New York, 1882-85; governor of New York, 1885-91; United States senator, 1891-97; prominent candidate for presidential nomination in national democratic convention, 1892; candidate for governor of New York, 1894; died, 1910.

Hill, David Jayne, American diplomat, scholar, was born in Plainfield, N. J., 1850. He was graduated at Bucknell University, Pa., 1874; LL.D., Colgate, University of Pennsylvania, President of Bucknell University, 1879-88; president of University of Rochester, 1888-96; resigned; spent nearly three years in study of public law of Europe; professor of European diplomacy in school of comparative jurisprudence and diplomacy, Washington. Assistant secretary of state of United States, 1898-1903, envoy extraordinary and minister plenipotentiary of United States to Switzerland, 1903-05; to the Netherlands, 1905-07; ambassador to Germany, 1908-1911. Author: *Life of Washington Irving; Principles and Fallacies of Socialism; Genetic Philosophy; International Justice; The Life and Work of Hugo Grotius; The Contemporary Development of Diplomacy; A History of Diplomacy in the International Development of Europe*, etc. Also numerous political pamphlets.

Hill, James J., railway official, capitalist, was born near Guelph, Ont., 1838. He was educated at Rockwood Academy; left his father's farm for business life in Minnesota. He established in 1870 the Red River transportation company, which was the first to open communication between St. Paul and Winnipeg; organized, 1875, the Northwestern fuel company, and three years later sold out his interest, in the meantime having organized a syndicate which secured control of the St. Paul and Pacific railroad, from the Dutch owners of the securities. He reörganized the system as the St. Paul, Minneapolis and Manitoba Railway Company, and was its general manager, 1879-82; vice-president, 1882-83, and president after 1883. This railway became part of the Great Northern system, 1890. He became president of the entire Great Northern system, 1893; retired in 1907 and became chairman of the board of directors of same. He gave $500,000 toward establishing the Roman Catholic Theological Seminary at St. Paul, Minn. Died, 1916.

Hill, Sir Rowland, originator of penny postage, was born at Kidderminster, England, 1795, and was a teacher from an early age down to 1833. Sensible of the urgent need for reducing the high rates of postage, he advocated, in 1837, an adhesive postage stamp and a low and uniform rate between all places in the British isles in a pamphlet, *Post-office Reform*. Two years later Hill was attached to the treasury for the purpose of putting his projected reforms into execution; and in 1840 the present uniform penny rate came into force. In 1844 Hill became secretary to the postmaster-general, and in 1854 secretary to the post-office. In 1864 he resigned owing to ill-health, and was awarded a pension of 2,000 pounds for life, together with a parliamentary grant of 20,000 pounds. He died at Hampstead in 1879.

Hill, Thomas, American educator and writer, was born at New Brunswick, N. J., 1818. He graduated at Harvard, 1843, and from the divinity

school, 1845. He was pastor of the Unitarian church at Waltham, Mass., 1845-59; president of Antioch College, 1859-62; president of Harvard, 1862-68, resigning on account of poor health. He then accompanied Agassiz to South America on a scientific expedition, and in 1873 became pastor of a Unitarian church at Portland, Me. He was an able mathematician, an authority on natural sciences, and a gifted classical scholar. Died at Waltham, Mass., 1891.

Hillel (*hil'el*), surnamed Hababli, "the Babylonian," and Hazaken, "the elder," one of the greatest doctors of the Jewish law, was born in Babylonia about 60 B. C. He was president of the sanhedrim in Jerusalem, through appointment of Herod I., 30 B. C. to 9 A. D., and was distinguished for his humility, gentleness and humane spirit. He founded the Talmudic Judaism, and wrote extensively on law and morals. Died, 10 A. D.

Hillis (*hil'is*), **Newell Dwight,** clergyman, author, was born in Magnolia, Ia., 1858. He was educated at Iowa College, Lake Forest University and McCormick theological seminary; M.A.; D.D., Northwestern University. He entered the Presbyterian ministry; was pastor at Peoria, Ill., 1887-90; at Evanston, Ill., 1890-94; succeeded the late Professor David Swing as pastor of Central church, Chicago, 1894; pastor of Plymouth church, Brooklyn, from 1899 to 1924. Author *The Investment of Influence; A Man's Value to Society; How the Inner Light Failed; Foretokens of Immortality; Great Books as Life Teachers; Influence of Christ in Modern Life; Quest of Happiness.* Died, 1929.

Hindenberg, Paul Ludwig Hans Anton von Beneckendorff und von, German general, born 1847; graduated from military academy at 16; lieutenant in Austro-Prussian war; received Iron Cross at Sedan in 1870; later, professor in the War Academy; retired, 1911; commander of Eastern armies in European War, 1914; chief of general staff, 1916. In 1925 he was elected President of the German Republic.

Hipparchus (*hi-pär'kus*), first great Greek astronomer, was born at Nicæa in Bithynia, flourished between 160 and 125 B. C., and made observations at Rhodes. He discovered the precession of the equinoxes and the eccentricity of the sun's path, determined the length of the solar year, estimated the distances of the sun and moon from the earth, drew up a catalogue of 1,080 stars, and fixed the geographical position of places on the earth by giving their latitude and longitude.

Hippocrates (*hi-pok'rā-tēz*), Greek physician, the most celebrated of antiquity, was born in the island of Cos, probably about 460 B. C.; and thereafter visiting Athens, he settled in practice. He died at Larissa in Thessaly in 377 or 359 B.C. Seventy-two works bear his name. He seems to have gathered up all that was sound in the past history of medicine, was good in diagnosis and prognosis, and believed that the four fluids or humors of the body, blood, phlegm, yellow bile and black bile, are the primary seats of disease. His works were first printed in a Latin translation in 1525 B.C. The first Greek edition appeared in 1526 B.C.

Hirsch (*hirsh*, Ger. *hirsh*), **Emil Gustav,** German American clergyman, educator, was born in Luxemburg, Germany, 1852. He received his education in Germany; was graduated at University of Pennsylvania, 1872; LL.D., Austin College, Ill., 1896; L.H.D., Western University of Pennsylvania, 1901. Minister of Sinai congregation, Chicago, since 1880. President and member of public library board, Chicago, 1888-97; professor of rabbinical literature and philosophy, University of Chicago, since 1892. Edited *The Reform Advocate,* Chicago. Edited biblical department, *Jewish Encyclopedia.* Author of various monographs on biblical and religious subjects, and was prominent as orator on public and patriotic occasions. Died, 1923.

Hitchcock, Charles Henry, American geologist, was born at Amherst, Mass., 1836. He was graduated at Amherst College, 1856; LL.D., 1896; Ph.D., Lafayette, 1870; professor of geology, Dartmouth College, since 1868. He headed the expedition occupying Mt. Washington, N. H., in winters of 1870-71, the first high mountain observatory in this country. Was one of the founders of the geological society of America. Author: *Mt. Washington in Winter; Report on Geology of New Hampshire,* etc. Died, 1919.

Hitchcock, Edward, American geologist, was born at Deerfield, Mass., 1793. He was educated at Yale and ordained to the Congregational ministry, 1821; professor of chemistry and natural history in Amherst College, 1825-45; president and professor of natural theology and geology, 1845-54, and subsequently held the chair of geology until his death. In 1824 he published *The Geology of the Connecticut Valley.* In 1850 he was appointed agricultural commissioner for his native state, visited and examined the chief agricultural schools of Europe, and subsequently published his *Report on the Agricultural Schools of Europe.* Died, 1864.

Hitchcock, Frank Harris, American politician, postmaster-general, was born at Amherst, Ohio, 1867. He was graduated at Harvard, 1891; the Columbian University Law School, 1894; LL.M. 1895; was admitted to bar of District of Columbia, 1894, and to that of the United States Supreme Court, 1897. He entered the government service in 1891; was chief of division of foreign markets, United States department of agriculture, and was first assistant postmaster-general, 1905-08. He was chosen chairman of the republican national committee in 1908, and conducted the presidential campaign of that year. He served as postmaster-general under President Taft, 1909-13. Resumed law practice, 1913.

Hitchcock, Roswell Dwight, American clergyman and theologian, was born in Maine, 1817. He was graduated at Amherst College in 1836; taught in several seminaries, and in 1845 became pastor of a Congregational church in Exeter, N. H. He was professor of church history in Union Theological Seminary, New York, 1855-80; in 1871 was chosen president of the American Palestine exploration society, and in 1880 became president of the Union Theological Seminary, still retaining his professorship. The degree of D.D. was conferred upon him by the University of Edinburgh in 1884. From 1863 to 1870 he was one of the editors of the *American Theological Review,* to which he furnished many papers. Died, 1887.

Hoar, George Frisbie, American statesman, lawyer, was born in Concord, Mass., 1826. He was graduated from Harvard College, 1846 and afterward from the Dane Law School, Harvard. He practiced law at Worcester, was member of congress, 1869-77, and United States senator from 1877 until his death. He was an able lawyer, a keen debater and a man of scholarly attainments. He left valuable *Memoirs* containing his observations during his long political career. In the senate he was a steadfast opponent of President McKinley's policy in the Philippines. Died in Worcester, Mass., 1904.

Hobart (*hō'bärt*), **Garret Augustus,** American legislator and vice-president of the United States. He was educated in Rutgers College, studied law, member of the republican national committee. He was nominated and elected vice-president by the republican party in 1896, and to a greater extent, perhaps, than any of his predecessors made his office one of real influence and power. Died in office, 1889.

Hobbes (*hobz*), **John Oliver,** pseudonym of Mrs. Pearl Mary Teresa Craigie (*nee* Richards), novelist, was born at Boston, Mass., 1867, and died in 1906. She wrote *Some Emotions and a Moral; The Sinner's Comedy; A Study in Temptations; The Gods, Some Mortals, and Lord Wickenham; The Herb-moon; The Ambassador,* a play; *The School for Saints; Robert Orange,* etc.

Hobbes, Thomas, English philosopher, was born at Malmesbury, England, 1588. He was graduated at Oxford, and in 1610 went abroad with the earl of Devonshire as his pupil, and made a tour of France and Italy. His first original work, entitled *Elementa Philosophica de Cive,* was printed in Paris, 1642. After the meeting of the long parliament he went to Paris, because of his dread of the civil troubles. In 1647 he was appointed mathematical tutor to the prince of Wales, afterward Charles II. Then followed his *Leviathan,* embodying his famous "social compact" theory, and *Liberty and Necessity.* His last works were a translation of Homer and a history of the civil wars. Died, 1679.

Hobson, Richmond Pearson, congressman, lecturer, was born in Greensboro, Ala., 1870. He was graduated from the United States naval academy, 1889, studied at the Ecole National Superior des Mines and Ecole d'Application du Genie Maritime, Paris. Served on flagship *New York* in blockade duty, in bombardment of Matazas in expedition against San Juan de Puerto Rico, commanded collier *Merrimac* and sunk her in Santiago harbor to prevent the exit of the Spanish fleet. As a result was captured and made a prisoner in Spanish fortress, June 3 to July 6, 1898. He was then superintending naval construction of the Crescent shipyard, Elizabeth, N. J., May-June, 1902. He resigned from the United States navy, 1903, and was a member of congress from the sixth Alabama district, 1907-15; organizer, 1921, and general secretary American Alcohol Education Association organized 1923, and president International Narcotic Education Association. Author: *A Study of the Situation and Outlook in Europe; The Disappearing Gun Afloat; The Yacht Defender, and the Use of Aluminum in Marine Construction; The Sinking of the Merrimac,* etc.

Hodge, Charles, American theologian, was born in Philadelphia, Pa., 1797. He was graduated at Princeton College in 1815, and in 1822 became a professor in the Princeton Theological Seminary, where he remained until the close of his life. Author: *Commentaries on Romans, Corinthians, and Ephesians; History of the Presbyterian Church in America; What is Darwinism?* Died, 1878.

Hodges, George, American clergyman and writer, dean of the Episcopal Theological School, Cambridge, Mass., since 1894, was born in Rome, N. Y., 1856. He was graduated from Hamilton, 1877; D.D., Western University of Pennsylvania, 1892; D.C.L., Hobart, 1902. Was ordained priest, 1882. Author: *The Episcopal Church; Christianity Between Sundays; Fountains Abbey; The Human Nature of the Saints; Three Hundred Years of the Episcopal Church in America; The Administration of an Institutional Church; The Happy Family; The Pursuit of Happiness; The Year of Grace; Holderness,* etc. Died, 1919.

Hodgins (*hoj'inz*), **John George,** Canadian educator and writer, librarian and historiographer of the education department of Ontario since 1890, was born in Dublin, 1821. He removed to Canada, 1833, and was educated at Upper Canada academy, Victoria College, Coburg. He was graduated in law at Toronto University, 1860; LL.D., 1870; was admitted to the bar of Ontario, 1870. He was editor of the *Upper Canada Journal of Education* nearly thirty years; Lovell's *General Geography; First Steps in General Geography; School Manual; Lectures on the School Law.*

Hodgins, Thomas, Canadian jurist, judge of the admiralty division of the exchequer court and master-in-ordinary, supreme court, Ontario, was born in Dublin, 1828. He emigrated to Canada, 1848, was graduated from Toronto University, 1856; LL.B., 1858; M.A., 1860; honorary LL.D., 1906; was admitted to the bar, 1858; queen's counsel for Dominion, 1873; member for West Elgin in the Ontario legislature, 1871-78; contested West Toronto, 1878, and West York, 1882, for the Dominion house of commons; declined the county judgeship of York, 1875. Author: *Bills of Exchange, Notes and Cheques; British and American Diplomacy Affecting Canada,* 1782-1899; etc. Died, 1910.

Hodgkin (*hoj'kin*), **Thomas,** English historian, was born at Tottenham, 1831. He was graduated at University College, London, and was a partner in the banking firm of Hodgkin, Barnett and Company, Newcastle-on-Tyne. Since 1874 he devoted his leisure time to historical writing, and retired from business. Author: *Italy and Her Invaders; Life of George Fox; Life of Charles the Great,* in Foreign Statesmen series; *Political History of England,* etc. Died, 1913.

Hodzumi, Nobushige, Japanese educator and law writer, professor of law in the Imperial University of Tokyo since 1881, was born in 1855. He was educated at Tokyo University, Middle Temple, London, England, and at Berlin University. He was a member of the house of peers, 1890-92, and with two colleagues drafted the present Japanese civil code. Author: *Ancestor Worship and Japanese Law; The New Japanese Civil Codes as Material for the Study of Comparative Jurisprudence; Gonin-gumi, or the System of Mutual Help and Supervision among Five Families,* etc.

Hoe, Robert, manufacturer, inventor, was born in New York, 1839. He was educated in the public schools, entered printing press factory of R. Hoe and Company, founded by his grandfather, Robert, and developed the printing press from the "Hoe cylinder" of the 1846 patent to the present double-sextuple Hoe. He was one of the founders of the Metropolitan museum of art. Died, 1909.

Hoeber, Arthur, painter; was born at New York, 1854; educated at the Art Student's League and at Ecole des Beaux Arts, Paris, under Gérôme, 1881-86. First exhibit at Salon, Sur la Grande Route, 1882; last exhibit Salon, Le Pain Quotidien, 1885, and contributor to most American exhibitions. Writer and lecturer on art; art critic *New York Times,* three years; associate editor of *Illustrated America,* one year; then art critic *The Globe and Commercial Advertiser,* New York. Member of American Newspaper Association. Author: *Treasures of the Metropolitan Museum of Art; Painting in XIX. Century in France, Belgium, Spain and Italy;* art contributor to the *New Encylcopædia Britannica;* etc. Died, 1915.

Hofer (*hō'fĕr*), **Andreas,** Tyrolese patriot, was born at St. Leonard, 1767. In 1796 he led a body of Tyrolese against the French on the lake of Garda; in 1808 secret deputies, among whom was Hofer, arrived at Vienna, to present to the archduke John the sufferings of the people, and their wish to be reunited to Austria. By the desire of the archduke, Baron von Hormayr sketched for them a plan of insurrection, which met with such success that, in three days, from the 11th to the 13th of April, 1809, nearly the whole country was liberated. Napoleon, however, at once marched three armies to the Tyrol, to subdue the rebellious peasantry. At first Hofer concealed himself in a cave, but when Spechbacher, Joachim Haspinger, a Capuchin, and Peter Mayer, at the head of the armed population, renewed the defense of the Tyrol, and repeatedly defeated the enemy, Hofer issued from his retreat, and took the leadership of the Tyrolese. At the battle fought August 12th on the Iselberg, Lefebvre was driven from the Tyrol. Hofer continued to conduct the civil and military administration until the peace of Vienna. The French and Bavarians poured into the country for the third or fourth time, and after a brief struggle Hofer was obliged to take refuge in concealment. After a lapse of two months he was betrayed into the hands of the French by a priest named Douay, conveyed to Mantua, tried and condemned to be shot. The sentence was carried into execution in 1810.

Hoff (*hof*), **Jakobus Hendrikus van't,** Dutch chemist, was born at Rotterdam, 1852. He was appointed professor of chemistry, mineralogy, and geology at Amsterdam, and in 1896 became professor of chemistry in the University of Berlin. He made notable researches in physical chemistry, and is the founder of stereo-chemistry. In 1901 he received the Nobel prize for the most important contribution to chemistry. Died, 1911.

Hoffding (*hŭf'deng*), **Harold,** Danish psychologist, philosopher and educator, professor of philosophy.

University of Copenhagen, was born in 1843. He graduated from the University of Copenhagen, and received his Ph.D. in 1870; D.Sc., Oxford; LL.D., St. Andrews, Aberdeen. He is a member of the royal Danish society of letters and sciences; Author: *Psychology; Ethics; History of Modern Philosophy; Philosophical Problems; Modern Philosophers; The Philosophy of Religion*, etc.

Hoffmann, Ernst Theodor Wilhelm, German writer, composer, critic and caricaturist, was born at Königsberg, 1776. In 1797 he was appointed assessor at Posen; but his love of caricature got him into trouble, and he was degraded to an inferior post. In 1815 he resumed his career in the Prussian service, and from 1816 until his death held a position in the supreme court at Berlin. His shorter tales were mostly published in collections. Died, 1822.

Hofmann, August Wilhelm von, German chemist, was born at Giessen, 1818. He became assistant there to Liebig, and, when the royal college of chemistry was established in London in 1845, Hofmann was made superintendent. In 1865 he went to Berlin as professor of chemistry and, ennobled in 1888.] Died there in 1892.

Hofmann, Josef Casimir, pianist: born, Cracow, Poland, Austria-Hungary, Jan. 20, 1876. Pupil of Rubenstein and of Moszkowski. Composer and concert soloist.

Hogarth (*hō'gärth*), **William,** English painter, engraver and pictorial satirist, was born at London, 1697; about 1720 began business for himself, first employed in engraving coats of arms, crests, etc., and designing plates for booksellers. He made the illustrations for Gray's edition of Butler's *Hudibras*. He secretly married the daughter of Sir James Thornhill in 1729, and in 1730 began the painting of his satires, among them being: *Harlot's Progress; A Midnight Modern Conversation; A Rake's Progress; The Distressed Poet;* and his master-piece, the famous *Marriage a la Mode*. He died at London, 1764.

Holbein (*hōl'bin*), **Hans,** or **Johann,** called "the younger," German painter, was born at Grünstadt, 1497. About 1526 he contracted an intimacy with Erasmus, whose portrait he painted, and soon after visited England, where he passed the remainder of his life. Henry VIII. made him court painter. As an engraver he is chiefly known by the celebrated "*Dance of Death*," a series of fifty-three woodcuts engraved from his own designs, although it is seldom found with more than forty-six. Died, 1543.

Holberg (*hol'berx*), **Ludvig, Baron,** creator of modern Danish literature, was born at Bergen in Norway, 1684. His first notable works were satirical poems, among them *Peder Paars*, in which he ridicules the pedantic stiffness and stupidity of contemporary life and thought. In 1721 the first Danish theater was opened at Copenhagen, and Holberg began to write comedies with marvelous success. After 1724 he turned to history. In 1741 he produced the romance *Niels Klim's Subterranean Journey;* and lastly the serious reflective works, *Moral Thoughts* and *Epistles* and his own *Autobiography*. Died, 1754.

Holden (*hōl-den*), **Edward Singleton,** American astronomer, was born in St. Louis, Mo., 1846. He was graduated at the scientific school in Washington University in 1866, at West Point in 1870, and was appointed second lieutenant of artillery. In 1873 he became professor of mathematics in the United States navy, and was ordered to the naval observatory at Washington, D. C. In 1881 he became professor of astronomy in the University of Wisconsin and director of the Washburn observatory, where he remained with brief intermission until 1885, and published four volumes of observations. He was chosen president of the University of California, 1885-88; director of the Lick observatory on Mt. Hamilton, 1888-98; and librarian of the United States military academy since 1901.

Holland, Sir Henry, English physician and writer, was born at Knutsford, Cheshire, 1788. He was graduated at Edinburgh, 1811, and in 1815 published *Travels in Albania, Thessaly*, etc. He settled in London in 1816; became one of the most eminent members of his profession, in 1840 was appointed physician to the prince consort, in 1852 to the queen; and in 1853 was created a baronet. He died in London, 1873.

Holland, Josiah Gilbert, American writer was born at Belchertown, Mass., 1819. He studied medicine and practiced for some three years, and then became superintendent of public schools at Vicksburg, Miss.; was one of the founders of *Scribner's Magazine* in 1870, and remained editor of it and of its successor, the *Century Magazine*, until his death. He was a prolific author and all his books were of a high moral tone. Some of the best known of them are *Letters to Young People; Bitter-Sweet; Gold Foil; Arthur Bonnicastle; The Story of Seven Oaks*. Died at New York, 1881.

Holland, Thomas Erskine, English law writer and educator, professor of international law and diplomacy at Oxford, was born in 1835. He was graduated at Oxford, D.C.L., Oxford; LL.D., Bologna, Glasgow, Dublin. A fellow of the British academy; associate of the Royal academy of Belgium. He was British plenipotentiary at the Geneva conference, 1906; bencher, Lincoln's Inn, 1907. Author: *The Elements of Jurisprudence; The Institutes of Justinian; The Admiralty Manual of Naval Prize Law; Studies in International Law; The Laws and Customs of War on Land; Neutral Duties in a Maritime War*, etc.

Holland, William Jacob, educator, naturalist, was born in Jamaica, West Indies, 1848, of American parentage. He was graduated at Amherst, 1869, and Princeton theological seminary, 1874; Ph.D., 1886, Sc.D., 1902, Washington and Jefferson; LL.D., St. Andrews University, 1905. He was chancellor Western University of Pennsylvania, 1891-1901; director of Carnegie institute, Pittsburg, Pa., 1898 to 1922. Regarded as an authority on zoölogy and museum administration. Author: *The Butterfly Book; The Moth Book*, and of many scientific papers published by the United States government, the zoölogical society of London, etc. Editor of the *Annals* and *Memoirs* published by the Carnegie museum.

Holmes, Oliver Wendell, jurist, was born in Boston, Mass., 1841. He was graduated from Harvard, 1861, and from Harvard law school, 1868; LL.D., 1895; Yale, 1886. He served three years in the 20th Massachusetts volunteers; was wounded at Ball's Bluff, 1861, at Antietam, 1862, and at Marye's Hill, Fredericksburg, 1863, and received brevets as major, lieutenant-colonel, and colonel. After the war he engaged in practice at Boston, and was editor of the *American Law Review*, 1870-73; was professor of law, Harvard law school, 1882; associate justice, 1882-99; chief-justice, 1899-1902, supreme judicial court of Massachusetts; associate justice of supreme court of United States since December, 1902. Author: *The Common Law*, lectures at Lowell institute, *Speeches*, etc. Edited the twelfth edition of *Kent's Commentaries*.

Holmes, Oliver Wendell, American physician and poet, was born in Cambridge, Mass., 1809. He was graduated at Harvard in 1829, studied law for a period, but subsequently devoted himself to medicine, and, after attendance in the hospitals of Europe for several years, received his degree in medicine in 1836. In 1838 he became professor of anatomy and physiology in the Dartmouth College, and in 1847 was appointed to the same chair at Harvard. He gained some reputation as an anatomist, and was, besides, an able microscopist and a skillful auscultator; but his widest fame is as a poet, a wit, and a man of letters. His wit and humor are transcendent, and all his literary efforts of rare originality and excellence. He was also a fascinating and instructive lecturer, while his admirable social qualities endeared him to the large and intellectual circle he so adorned. The first collection of his poems appeared in 1836 and attracted marked attention. Then followed his Phi Beta Kappa poems, *Poetry; Terpsichore; Urania;* and *Astræa*, all of which added to his reputation. In 1857 he contributed his *Autocrat of the Breakfast Table*, a connected series of prose essays, to the *Atlantic Monthly*, which was followed by *The Professor at the Breakfast Table; The Poet at the Breakfast Table;* and *Over the Teacups*. This brilliant series, which was in his happiest vein, was interspersed with poems, and was fraught with humor, pathos, practical wisdom and a healthy sentiment grateful and refreshing. His other works include *Currents and Counter-Currents in Medical Science; Elsie Venner*, a romance; *Songs in Many Keys; Soundings From the Atlantic; The Guardian Angel;* and *Mechanism in Thought and Morals*. Died, 1894.

Holmes, William Henry, American anthropologist, archæologist, was born in Harrison county, Ohio, 1846. He was graduated at McNeely Normal College, 1870; curator department aboriginal pottery, United States national museum, 1882-93; archæologist United States bureau ethnology, in charge of explorations, 1889-98; curator anthropology, Field Columbian museum and professor anthropic geology, University of Chicago, 1894-97; head curator department anthropology, 1898-1902; chief bureau American ethnology since 1902; curator prehistoric archæology, 1903, and national gallery of art, 1907, United States national museum. Member of numerous scientific societies, foreign and domestic. Author: *Archæological Studies Among the Cities of Mexico; Stone Implements of the Potomac-Chesapeake Tidewater Province*, etc.

Holmested, George Smith, Canadian lawyer and legal writer, was born in England 1841; educated in English private schools, studied law in Canada, and was admitted to the bar in 1864; registrar in Chancery, 1881, and following; senior registrar of the High Court of Justice of Ontario. Kings Counsel, 1902. Author: annotated editions of the *Ontario Mechanics' Lien Act; Workmen's Compensation Act; Ontario Judicature Act; Imperial Statutes Relating to Property and Civil Rights*, etc.

Holst (*hōlst*), **Hermann Eduard von,** German-American historian, was born in Fellin, Livonia, Russia, 1841. He came to the United States in 1867, engaged in literary work and lectured for several years, returned to Europe, and became professor in the University of Strassburg, 1872, and at Freiburg, 1874. He was appointed professor of history in the University of Chicago, 1892, which post he retained until 1900, when he returned to Freiburg and retired. Died, 1904.

Holyoake (*hōl'yōk; hōl'i-ōk*), **George Jacob,** English reformer, founder of "secularism," was born at Birmingham, 1817. He taught mathematics for several years; was secretary to Garibaldi's British contingent, edited the *Reasoner* and promoted the bill leagalizing secular affirmations. Holyoake was the last person imprisoned in England on a charge of atheism. He wrote *The Rochdale Pioneers; Self-help a Hundred Years Ago; Trial of Theism; Sixty Years of an Agitator's Life*, etc. Died, 1906.

Homer, was the greatest poet of Greece and of the ancient world; he lived about the ninth century B. C., and was an Asiatic Greek. Seven cities disputed for the honor of being his birthplace; he was blind and poor and went about reciting his verses for bread; the *Iliad* and the *Odyssey* were his works; such are the main items of the almost universal and unquestioned belief respecting Homer in the ancient world. To sum up all doubts and denial on the matter in one word—no one knows even so much as the fact of the existence of the great poet.

The *Iliad* and the *Odyssey* are facts beyond doubt; their high antiquity, their immense importance as sources not only of later poetic inspiration, but even of the popular religious faith of the Greeks, and their incalculable influence on all subsequent literature, are also unquestionable. It is, however, established by recent criticism that the *Iliad* is not *one* poem; but that this work, in common with the *Odyssey*, is made up of a series of antecedent lays of heroic and mythological character, bearing on one subject, and skillfully welded together, perhaps in great measure re-written, by the unknown person who gave these works to the world.

The origin of these remarkable poems has been critically studied by many learned authors within recent time, whose conclusions generally agree with the statements given above.

Among the numerous English or American translations of Homer we must name the earliest and very spirited version by Chapman, afterward republished; those by Pope in heroic verse, and by Cowper in blank verse and, more recently, the *Iliad* in blank verse by the Earl of Derby, and in the same meter by Wright; the *Odyssey* in blank verse, by Musgrave; the excellent translation of the *Iliad* in blank verse by W. C. Bryant, published in 1870, and which is still generally considered the best. The *Odyssey* has been translated by Worsley, Morris and Butcher and Lang.

References.—Lang's *Homer and the Epic;* Jebb's *Introduction to Homer;* Leaf's *Companion to the Iliad;* Gladstone's *Studies on Homer;* Autenrieth's *Homeric Dictionary;* and Ridgeway's *Early Age of Greece*.

Homer, Louise, an American contralto, was the daughter of a Pittsburg clergyman. Her musical education began in Philadelphia with Alice Groff and W. L. Whitney. After two years of devoted study in Paris she accomplished wonders for her voice, and in 1898 made her debut as *Leona* in *Favorita*. An immediate engagement at Covent Garden, London, followed. In 1899 she was secured by the Theatre de la Monnie, in Brussel, where she remained two years. The next year she returned to Covent Garden, and achieved an old-world triumph.

Homer, Sidney, American composer, was born in Boston, December 9, 1864. He studied in this country with George W. Chadwick, then in Germany. His chief music is of interpretative nature for the works of noted poets: *Thy Voice Is Heard* (Tennyson), *Requiem*, and *Sing Me a Song of a Lad That Is Gone* (Stevenson's *Underwoods*), *The Leaf* (Oliver Wendell Holmes), and a number of ballad songs. Louise Dilworth Beatty, the wife of Sidney Homer, is a noted soprano.

Homer, Winslow, American artist, was born at Boston, 1836. While young he worked at lithography in Boston, and in 1859 went to New York and became a student of art at the academy of design. He pursued his studies in Paris and won recognition as an artist of originality. Among his pictures are *Prisoners From the Front; Snap the Whip* and the marine paintings: *Northeaster; Stormbeater; The Maine Coast*, his masterpiece; and *Wood's Island by Moonlight*. Died in 1910.

Honorius (*hō-nō'ri-us*), **Flavius,** emperor of the West, was born at Constantinople, 384 A. D. He was the second son of Theodosius the Great, at whose death the empire was divided between his sons Arcadius and Honorius. The latter, when only ten years old, received the western half. Stilicho was the *de facto* ruler of the western empire until 408; and after his death Alaric the Goth overran Italy, and took Rome in 410. Honorius died at Ravenna, which he had made his capital, in 423.

Hood, John Bell, American general, was born in Kentucky, 1831. He was graduated from the United States military academy in 1853, and appointed lieutenant of infantry in the same year. He was actively engaged on frontier duty until 1861, when he entered the confederate army, where he served in every position from first lieutenant to that of division commander, with the rank of lieutenant-general. He took a conspicuous part in the Virginia peninsular campaign, at the second battle of Bull Run, Antietam, Gettysburg and Chickamauga, where he lost a leg, and in 1864 succeeded Johnston in command of the army, resisting Sherman's invasion of Georgia. He died in 1879.

Hood, Samuel, Viscount, English admiral, was born at Thorncombe, Dorset, 1724. He entered the British navy in 1741, and became post-captain in 1756. In 1778 he was made commissioner of the Portsmouth dockyard. In 1780, promoted to flag rank, he was sent to reinforce Rodney on the North American and West Indian stations. In the West Indies in 1782 he showed himself a masterly tactician in the series of maneuvres by which he outwitted De Grasse off St. Kitts; and he had a conspicuous share in the decisive victory of Dominica. For his services he was made Baron Hood in the Irish peerage; and in 1788 became a lord of the admiralty. In 1793, appointed to the Mediterranean, he directed the occupation of Toulon and the operations in the gulf of Lyons. In 1796 he was made Viscount Hood, and died at Bath, 1816.

Hood, Thomas, English poet and humorist, was born in London, 1798. In 1821 he was offered the post of sub-editor of the *London Magazine*, at once entered upon its duties and acquired an extensive literary acquaintance. He published *Whims and Oddities* in 1826, of which a second and third series appeared during the following two years. In 1829 he commenced *The Comic Annual*, and continued it for nine years. In 1831 he wrote his novel of *Tylney Hall*. In 1838 he commenced the publication of *Hood's Own*, to which his portrait was attached. In 1844 he started *Hood's Magazine*, and contributed to its pages until within a month of his death. His *Song of the Shirt* and *Bridge of Sighs* are among the most perfect poems of their kind in the English language. He died in 1845.

Hooke, Robert, English natural philosopher, was born at Freshwater, Isle of Wight, 1635. He was educated at Westminster and Christ Church, Oxford. He has justly been considered one of the greatest philosophical mechanics. His theory of gravitation subsequently formed part of Newton's; he anticipated the invention of the steam-engine. His other discoveries were the law of the extension and compression of elastic bodies, the simplest theory of the arch, the balance-spring of watches and the anchor-escapement clocks. The quadrant, telescope and microscope are also materially indebted to him. He died in 1703.

Hooker, Joseph, American general, was born in Hadley, Mass., 1814. He was graduated at West Point in 1837, and fought in the Florida and Mexican wars, being three times promoted for gallant conduct. In 1853 he resigned, and became a farmer in California. When the Civil War began he entered the army again and soon became a major-general. He fought under McClellan on the march to Richmond, and afterward in northern Virginia and Maryland, receiving a wound at the battle of Antietam. His bravery in action brought him the nickname "Fighting Joe Hooker." In January, 1863, he was made commander of the army of the Potomac, and in May he fought the bloody battle of Chancellorsville. Owing to a difference between Hooker and his commander-in-chief, General Halleck, the former resigned his command, June 27, 1863, but he still served as a major-general, and fought under Sherman at Atlanta. After the war he commanded in different departments, and in 1868 retired from the army. He died at Garden City, N. Y., 1879.

Hooker, Sir Joseph Dalton, British botanist, was born at Glasgow in 1817. He graduated as an M.D., but always devoted his attention to botany. In 1871 he made an expedition to Morocco, ascended the Great Atlas, the summit of which had never before been reached by a European, and secured a valuable collection of plants. He was appointed assistant-director at Kew gardens in 1855, and, on the death of his father in 1865, succeeded him as director, retiring in 1885. He was president of the British Association in 1868, and was elected president of the Royal Society in 1873. His great work, which he undertook in conjunction with George Bentham, is the *Genera Plantarum*, the first part of which appeared in 1862; and the first part of the second volume, bringing down the work to the *Compositae*, was published in 1873. Died, 1911.

Hooker, Richard, English theologian and writer, was born in Exeter, England, 1554. He was graduated from Oxford, 1574, was a fellow of Corpus Christi College, Oxford, and deputy professor of Hebrew. The archbishop of York promoted him to the mastership of the Temple in London, 1585. The morning and afternoon services belonged respectively to him and to Walter Travers, the one inclining to the Arminian view and maintaining the Anglican form of worship, the other maintaining Calvinistic opinions and inclining to the Presbyterian form. A controversy arose, which was the occasion of Hooker's great work on *Ecclesiastical Polity*. Died, 1600.

Hooker, Thomas, English clergyman and American colonist, was born at Markfield, Leicester, about 1586. He became a fellow of Emmanuel College, Cambridge, and was for three years a Puritan lecturer at Chelmsford. In 1630 he retired to Holland; in 1633 sailed for Massachusetts, and received a charge at Cambridge. In 1636 he removed with his congregation to Connecticut, and founded Hartford. Died, 1647.

Hoover, Herbert Clark, engineer, U. S. and World's Food Commissioner, was born at West Branch, Iowa, 1874. Graduated from Stanford University, 1895. Practiced mining engineering in the United States and the Far East and in London. Helped defend Tientsin during the Boxer uprising. During World War in charge of American relief in London and in Belgium. U. S. food administrator, 1917-18, and after armistice extended services to destitute European peoples. Secretary of Commerce, 1921-28. Prominent in radio broadcasting regulation, also in flood relief. President of United States, 1929——

Hopkins, Mark, American educator, was born in Massachusetts, 1802. He was graduated at Williams College in 1824, and received the degree of M.D. in 1828; was professor of moral philosophy and rhetoric in Williams College from 1830 until his death in 1887; was president of the college, 1836-72; in 1857 became president of the American board of commissioners for foreign missions.

Hopkinson, Francis, American politician and author, was born in Philadelphia, Pa., 1737. He was a delegate to the continental congress from New Jersey, and was one of the signers of the declaration of independence. He wrote *The Battle of the Kegs; A Pretty Story; The Political Catechism*, and other works in prose and verse. His son, Joseph, judge of the United States district court, wrote *Hail Columbia*. Died, 1791.

Hopper, De Wolf, comedian, was born in New York, 1858. He made his first professional appearance in *Our Boys*, 1878; later with Daniel Frohman's Madison square company as *Pittacus Green* in *Hazel Kirke* and other rôles; studied vocal music and joined the McCaull opera company. For several years he starred in comedy rôles at the head of his own company; later with Weber and Fields company; then again starred at the head of his own company, playing *Mr. Pickwick*. He became famous in *Wang* and *Happyland*.

Horace, Quintus Horatius Flaccus, famous Roman poet, was born near Venusia, Italy, 65 B. C. Athens was at this time regarded as the university of the world, and thither Horace repaired in his nineteenth year to complete his education by a course of philosophy and science under Greek masters. But the civil wars which followed the death of Julius Cæsar, in 44 B. C., interrupted him in his studies. The arrival of Brutus at Athens roused the patriotic feelings of the youthful Romans, and along with others Horace ardently embraced the cause of the republic. Though entirely inexperienced in war, he was promoted to the rank of military tribune, with the command of a legion, and in this character shared in the defeat at Philippi, 42 B. C. After the battle he returned to Rome, and by acting as clerk in the quæstor's office he contrived to live until he found means of making himself known to the poets Varius and Vergil, by whom his name was first mentioned to Mæcenas. The friend of the prime minister found easy access to the emperor; Horace was soon on terms of familiarity with Augustus, and enjoyed his friendship and patronage during the remainder of his life. But the friendship of Mæcenas, who gave him an estate in the Savine territory, about thirty-four miles from Rome, made him independent for life. His works consist of two books of *Satires*, a book of *Epodes*, four books of *Odes*, two books of *Epistles*, and a treatise on the *Art of Poetry*. Died, 8 B. C.

Hornaday (*hôr'nà-dà*), **William Temple,** American naturalist, director of the New York zoölogical park since 1896, was born in Plainfield, Ind., 1854. He was educated at Iowa Agricultural College; studied zoölogy and museology. Chief taxidermist, U. S. National Museum, 1882-90. Director N. Y. Zoölogical Park, 1896-1926. Author *Two Years in the Jungle; The Extermination of the American Bison; The American Natural History; Camp-Fires in Canadian Rockies*, etc.

Hornblower, William Butler, American lawyer, was born in Paterson, N. J., 1851. He was graduated at Princeton University, 1871; LL.B., Columbia Law School, 1875; LL.D., Princeton, 1895, and was a member of the firm of Hornblower, Miller and Potter of New York; was appointed, 1893, by President Cleveland, associate justice of the United States supreme court, but was not confirmed by senate, owing to opposition by New York senators, for political reasons. He was a member of the board of commissioners of statutory consolidation which engaged in examining and consolidating all general statutes of New York from 1777. Died, 1914.

Horsford (*hôrs'fêrd*), **Eben Norton,** American chemist, was born in Livingston county, N. Y., 1818. He studied engineering and was engaged on the geological survey of the state of New York. He studied in Germany, under Liebig, and, on his return to the United States in 1847, was elected Rumford professor of science at Harvard. After sixteen years' service there he resigned to engage in chemical manufactures. He wrote extensively on scientific subjects. Died, 1893.

Hoskin, John, Canadian lawyer, chairman of the board of governors of the University of Toronto, was born at Holsworthy, Devon, England, 1836. He was educated in London; went to Canada, 1854, and was admitted to the bar, 1863. He was made a queen's counsel in 1873; and was a member of the dominion senate for Toronto University; hon. LL.D., 1889; D.C.L., Trinity University. He was head of the firm of M'Carthy Osler, Hoskins and Harcourt; and director of many corporations.

Hosmer (*hoz'mĕr*), **Harriet,** American sculptor, was born in Watertown, Mass., 1830. She early showed a talent for sculpture by modeling figures in clay. To prepare herself for her chosen career she studied anatomy, first with her father, and afterward at the medical school at St. Louis. Returning to her home in 1851, she modeled her first work, *Hesper*, which had so decided a success that she was sent to Rome, where she became the pupil of Gibson. Her most ambitious work is a colossal statue of *Zenobia in Chains*. She devised a method for converting Italian limestone into marble. Died, 1908.

Hosmer, James Kendall, 1834-1927, American author, librarian of Minneapolis public library, 1892-1904, was born at Northfield, Mass. He was graduated at Harvard, 1855; Ph.D., University of Missouri; LL.D., Washington University. Served in Civil War as private in 52d Massachusetts volunteers; after the war was professor in Antioch College, in University of Missouri, and professor of English and German literature, Washington University, St. Louis, Mo., 1874-92. Author: *Color Guard; Short History of German Literature; Story of the Jews; Life of Samuel Adams*, in American Statesmen series; *History of the Louisiana Purchase; History of the Civil War in America*, etc.

Houdini, Harry (1874-1926), magician, was the son of a Wisconsin minister. He began trapeze performing at the age of eight, and made several tours of the world, appearing before many rulers and eminent people. In 1910 he made the first successful airplane flight in Australia. Was actively engaged in motion pictures of a most sensational and thrilling variety. Author: *The Right Way To Do Wrong, Handcuff Secrets*. Died, 1926.

Hough (*huf*), **Emerson,** American author, was born at Newton, Ia., 1857. He was graduated at the State University of Iowa, 1880. He traveled over the wildest portions of the West; explored Yellowstone park during the winter of 1895, and the act of congress protecting the park buffalo was due to this trip. He was for ten years writer of *Chicago and The West* department and western manager, beginning 1889, of *Forest and Stream*, New York. Author: *The Singing Mouse Stories; The Story of the Cowboy; The Law of the Land; Heart's Desire; The Story of the Outlaw;* etc. Died, 1923.

Houston, David Franklin, secretary of agriculture, educator, was born in Union county, N. C., Feb. 17, 1866. He was graduated from South Carolina College, 1887, and received the degree A.M. from Harvard, 1892; LL.D., Tulane, and University of Wisconsin. After his course at Harvard, he was professor of political science at the University of Texas, 1894-1902; president of the Agricultural and Mechanical College of Texas, 1902-05; president of the University of Texas, 1905-08; and chancellor, Washington University, St. Louis, Mo., 1908-13. Secretary of Agriculture and later Secretary of the Treasury in the Wilson Cabinet. He married Helen Beall, of Austin, Texas.

Houston (*hū'stun*), **Edwin James,** American electric engineer, was born at Alexandria, Va., 1844; emeritus professor of physical geography and natural philosophy, Central high school, Philadelphia, and of physics in Franklin institute, Philadelphia; for two terms president of the American Institute of Electrical Engineers, and received the degree Ph.D. from Princeton University. Author: *Outlines of Natural Philosophy; The Electric Transmission of Intelligence; Alternating Currents; Electric Railways; Electro-Dynamic Machinery; Telegraphy; Telephony; Electricity in Every Day Life*, etc. Died, 1914.

Houston, Sam, American soldier, was born in Virginia, 1793. He enlisted in the war of 1812, was chosen ensign, and fought under Jackson with a courage that won his lasting friendship. In 1823 he became a member of congress, and in 1827 governor of Tennessee. In 1829 he married the daughter of ex-Governor Allen and in the following April, for reasons never made public, abandoned wife, country and civilization; was adopted as a son by the chief of the Cherokee nation and was formally admitted as a chief. In 1832 he went to Washington and procured the removal of several United States Indian agents on charges of fraud. The Texan war offered a new field to his ambition, and he was made commander-in-chief; fought the remarkable and decisive battle of San Jacinto, 1836; at one blow annihilated the Mexican army and achieved the independence of Texas. The "hero of San Jacinto"

was elected first president of Texas, and reëlected in 1841, and on the annexation of Texas to the United States in 1845 was sent to the United States senate, where he remained until 1859, when he was elected governor of Texas. He opposed secession, but retired to private life when he found that opposition was fruitless. Died, 1863.

Howard, John, noted English philanthropist, was born at Enfield, near London, 1726. Appointed high sheriff of Bedford in 1773, his attention was called to the state of the prisons of the country. His sympathies once aroused, he extended his inquiries over the whole kingdom, bringing to light an amount of misery and degradation of which hitherto his countrymen had had no conception. In 1774 he was examined before a committee of the house of commons, and many reforms were the result. In 1777 after a tour through England, he published a volume entitled, *The State of the Prisons in England and Wales, With Preliminary Observations, and an Account of Some Foreign Prisons.* Died, 1790.

Howard, Leland Ossian, American entomologist, chief of bureau entomology, United States department of agriculture, since 1894, was born at Rockford, Ill., 1857. He was graduated at Cornell, 1877; Ph.D., Georgetown University, 1896; was assistant entomologist, United States department of agriculture, 1878-94. He was for some years editor of *Insect Life*, a journal of the department of agriculture; prepared definitions in entomology for *Century* and *Standard* dictionaries; is lecturer on insects at Swarthmore College, and in the graduate school Georgetown University. Author: *Mosquitoes— How They Live, Etc.; The Insect Book*, and many government publications.

Howard, Oliver Otis, American soldier, was born at Leeds, Me., 1830. He was graduated at Bowdoin College, 1850; at West Point, 1854; LL.D., Waterville College, 1865; Shurtleff College, 1865; Gettysburg Theological Seminary, 1866, and Bowdoin College. He served in the Civil War; lost an arm at the battle of Fair Oaks, 1862; was made major-general of volunteers, 1862; accompanied Sherman on his march to the sea. At the close of the Civil War he was placed at the head of the freedmen's bureau. From 1869-73 he was president of Howard University; became brigadier-general in the United States army, 1864; brevet major-general, 1865; superintendent of West Point military academy, 1881-82; commanded the department of the East, 1888. Founder, 1895, and president board of directors, Lincoln Memorial University, Cumberland Gap, Tenn.; chevalier legion of honor, France, 1884, commander's medal, legion of honor, 1904. Author: *Donald's School Days; Nez Perces Joseph; Our Wild Indians;* and *Autobiography*, 2 vols. Died, 1909.

Howe, Elias, inventor of the lock-stitch sewing-machine, was born at Spencer, Mass., 1819. He worked at Lowell and Boston as a mechanic. At the latter place he developed, constructed and patented the sewing-machine, 1846. By his royalties he in time obtained $200,000 per annum, and amassed a fortune of $2,000,000. During the Civil War he served as a private. Died, 1867.

Howe, Julia Ward, American author, was born in New York, 1819, daughter of Samuel Ward. She received a private education, and married in 1843 the eminent philanthropist, Dr. Samuel Gridley Howe. With him, she conducted the *Boston Commonwealth*, an anti-slavery paper, prior to the Civil War. After the slavery question was settled she became active in woman suffrage, prison reform, cause of peace, etc. She was a Unitarian preacher, lecturer and writer. Her *Battle Hymn of the Republic* is widely known. Author: *Passion Flowers; Words for the Hour; Life of Margaret Fuller; Modern Society; Is Polite Society Polite? Sketches of Representative Women of New England*, etc. Died, 1910.

Howe, Richard Earl, British admiral, was born in 1726. He was with Admiral Vernon in 1745, and took part in the siege of Fort William. He was commodore of the squadron which sailed in 1758 for St. Malo. In the same year he took Cherbourg. In 1578 he succeeded to the Irish title of viscount. He took part in the defeat of the fleet under the Marquis de Conflans, and captured the *Hero*. In 1756 he commanded a fleet on the American coast, and in 1778 defended the American coast against a superior naval force under D'Estaing. He received an English earldom in 1788. When war with France broke out in 1793 he took the command of the channel fleet, and next year gained a signal victory off Ushant. George III. visited him on board the *Queen Charlotte*, gave him a sword and made him knight of the Garter. Died, 1799.

Howe, Samuel Gridley, American philanthropist, was born in Boston, 1801. He was graduated from Brown University, 1821, and from Harvard Medical College, 1824. In 1831 he went to Paris to study the methods of educating the blind, and becoming involved in the Polish insurrection, spent five weeks in a Prussian prison. On his return to Boston he established schools for the blind and for idiots, and was the teacher of the famous Laura Bridgman. He was chairman of the Massachusetts state board of charities, 1865-74. Died, 1876.

Howe, Sir William, English general, was born in 1729. He served at Quebec under Wolfe and succeeded General Gage in command of the royal troops during the American revolution. In 1775 he was made commander-in-chief of the English army in North America; had command at the battles of Bunker Hill, Long Island, White Plains and Brandywine. He was superseded by Sir Henry Clinton in 1778, as he had failed to crush the rebellion. Died, 1814.

Howe, William Wirt, American jurist and law writer, was born at Canandaigua, N. Y., 1833; received an academic education, studied law and was admitted to the bar. He served in the Union army, 1861-65, becoming major. He was associate justice supreme court of Louisiana; president American bar association, 1898. Trustee Carnegie Institution, Washington; professor of Roman and civil law, George Washington and Tulane Universities, and United States district attorney of Louisiana, 1900-08. Author: *Municipal History of New Orleans; Studies in the Civil Law; Comparative Jurisprudence*, etc. Died, 1909.

Howell, William Henry, American physician and educator, dean of Johns Hopkins medical school since 1899, was born at Baltimore, Md., 1860. He was graduated at Johns Hopkins, 1881; Ph.D. 1884; M.D., University of Michigan, 1890; LL.D., Trinity 1901; was associate professor of physiology, Johns Hopkins University, 1888-89; professor of physiology and histology, University of Michigan, 1889-92; associate professor of physiology, Harvard University, 1892-93, and professor of physiology, Johns Hopkins University, 1893. Contributed widely to both American and foreign medical literature; is author of *Text-Book of Physiology*, etc.

Howells, William Dean, American novelist, was born at Martin's Ferry, Ohio, 1837. His early education was largely gained in newspaper offices, though he was given the degree A.M. by Harvard, 1877; Litt.D., Yale, 1901; Oxford, 1904; Columbia, 1905; LL.D., Adelbert College, 1904. He was United States consul to Venice, 1861-65; was editorial writer on *New York Nation*, 1865-66; editor, 1872-81, *Atlantic Monthly;* editorial contributor to *Harper's Magazine*, 1886-91; was writer of *Editor's Easy Chair* for *Harper's*. Author: *Life of Abraham Lincoln; A Chance Acquaintance; A Foregone Conclusion; Dr. Breen's Practice; A Modern Instance; A Woman's Reason; April Hopes; A Hazard of New Fortunes; The Shadow of a Dream; The Quality of Mercy; The Day of Their Wedding; Their Silver Wedding Journey; Literary Friends and Acquaintances; Between the Dark and the Daylight*, etc. Died, 1920.

Howison (*hou'i-sun*), **George Holmes,** American educator and writer, Mills professor of philosophy, University of California, beginning 1884, was born in Montgomery county, Md., 1834. He was graduated at Marietta College, 1852; Lane theological seminary, 1855; LL.D., 1883; professor of logic and philosophy of science, Massachusetts Institute of Technology, 1871-79; lecturer on ethics, Harvard, 1879-80; lecturer on philosophy, University of Michigan, 1883-84. Author: *Treatise on Analytic Geometry; Limits of Evolution and Other Essays in Philosophy.* Co-editor: *Psychological Review*, etc. Died in 1916.

Howitt (*hou'it*), **William** and **Mary,** English authors, may properly be treated together. William Howitt was born in 1792, at Heanor, in Derbyshire. In 1823 he married Miss Mary Botham, a lady of literary acquirements, born 1799, and whose family, like his own, was attached to the principles of Quakerism. For three or four years they employed themselves in contributions to annuals and magazines, and in 1827 a selection from these fugitive pieces appeared under the title of *The Desolation of Eyam.* In 1837 they removed to Esher, in Surrey, and at that place William wrote *Rural Life in England; Colonization and Christianity; Boy's Country Book*, and *Visits to Remarkable Places*, first series. Mary at the same time employed herself in writing *Tales for Children*, many of which are popular. William died in 1879; Mary died in 1888.

Hoxie, Vinnie Ream, sculptor, was born in Madison, Wis., 1847. After modeling one year she received a commission from congress, in 1862, to execute a life-size statue of Abraham Lincoln. He sat for his bust at the White House, and his statue is now in the rotunda of the capitol. Later congress commissioned her to make the heroic statue of Admiral Farragut, which now stands in Farragut square, Washington. These are the only two statues ever ordered by the United States government from a woman. Married Colonel Hoxie, 1878. Died, 1914.

Hoyles, Newman Wright, Canadian lawyer and educator, principal of law school, Osgoode hall, Toronto, since 1894, was born at St. John's, Newfoundland, 1844. He was graduated from Trinity College, Cambridge, England, admitted to Ontario bar, 1872; queen's counsel, 1889. President of the corporation and chairman of the council of Wycliffe College, Toronto; member of the senate of the University of Toronto. Wrote numerous articles in legal magazines; prominent in the auxiliary work of the church of England.

Hubbard, Elbert, author, journalist, lecturer, was born in Bloomington, Ill., 1859, and received a common school education; hon. M.A., Tufts College. He was editor of *The Philistine*, and proprietor of *The Roycroft Shop*, devoted to making *de luxe* editions of the classics. Author: *Little Journeys to the Homes of American Authors; Little Journeys to the Homes of Famous Women; Old John Burroughs; Contemplations; Consecrated Lives; The Man of Sorrows*, etc. Lost at sea, 1915.

Huc (*ūk; hük*), **Evariste Regis,** Roman Catholic missionary, was born at Toulouse, 1813. In 1839 he joined the mission of the Lazarist fathers to China. Huc's health having broken down, he returned to France in 1852. He wrote *Souvenirs* of his great journey; *L'Empire Chinois; Le Christianisme en Chine*, etc. Died, 1860.

Hudson, Henry, English navigator, of whose early life nothing is known. In 1607 he sailed in search of a short route to China and India by way of the northern ocean, but was stopped by the ice off the coast of Greenland and forced to return. In 1609; while in the service of the Dutch East India company, he discovered the Hudson river, and sailed up to where Albany now stands. On a fourth voyage, 1610, he discovered Hudson strait and bay, which are also named after him. Impeded by ice, he determined to spend the winter on the shores of the bay. Here he and his men suffered terribly from want of food and started to return in 1611. The men mutinied on the return voyage, got possession of the ship, put Hudson, his son John, and seven sailors into an open boat and turned them adrift. Nothing was ever known of their fate.

Hufeland (*hōf'fe-länt*), **Christoph Wilhelm,** noted German physician, was born at Langensalza, in Thuringia, 1762. His *Makrobiotik*, or the art of prolonging life, has been translated into almost all the European languages; he also wrote a work on the physical education of the young, and an *Enchiridion Medicum.* Died, 1836.

Huggins (*hug'inz*), **Sir William,** English astronomer and spectroscopist, was born in London, 1824. Having in 1856 built an observatory near London, he began the study of the physical constitution of stars, planets, comets and nebulæ. He determined the amount of heat that reaches the earth from some of the fixed stars. He became a fellow of the royal society, 1865, and president of the royal society, 1900. Was president of the British and other associations, and received the order of merit in 1902. Died, 1910.

Hugh Capet (*hū kā'pet*), founder of the third, or Capetian dynasty of French monarchs, was born 939 and was king of France, 987-996. As count of Paris, on the death of Louis V., last of the Carlovingians, he usurped the throne and was confirmed in its possession by a confederacy of nobles. The race of Capet has given 118 sovereigns to Europe:—thirty-six kings to France, twenty-two to Portugal, five to Spain, eleven to Naples and Sicily, three to Hungary, and three to Navarre; three emperors to the East; seventeen dukes to Burgundy, thirteen to Brittany, two to Lorraine, and four to Parma. Died, 996.

Hughes, Charles Evans, jurist, was born in Glens Falls, N. Y., 1862. He was graduated from Brown University, 1881, LL.B., Columbia Law School, 1884; LL.D., Brown, 1906; admitted to New York bar, 1884; practiced in New York, 1884-91; prize fellow Columbia Law School, 1884-87. Professor of law Cornell University, 1891-93; active practice in New York, 1893-1906; Attorney for Armstrong Insurance Investigating Commission; associate justice United States supreme court, 1910. Resigned 1916 to accept republican nomination for president of the United States. He was defeated by a narrow margin by Woodrow Wilson. Returned to New York to take up practice of law, 1916. Secretary of State in Harding and Coolidge cabinets Appointed chief justice of the United States supreme court in January, 1930, after resignation of W. H. Taft.

Hughes, Rupert, author, was born at Lancaster, Mo., 1872; graduate of Western Reserve University, 1892; M.A., Yale, 1899. Was assistant editor *Godey's Magazine*, *Current Literature* and *The Criterion.* Author: *American Composers; The Musical Guide; The Whirlwind; Love Affairs of Great Musicians; Songs by Thirty Americans; Colonel Crockett's Coöperative Christmas;* etc., and numerous plays.

Hughes, Thomas, English author, was born at Uffington, Berks, 1823. He was educated at Rugby under the celebrated Dr. Arnold; entered Oriel College, Oxford, 1841; took his degree of B.A. in 1845. In 1856 he gave to the world *Tom Brown's School Days.* It was followed in 1858 by *The Scouring of the White Horse*, in 1861 by *Tom Brown at Oxford*, and in 1869 by *Alfred the Great.* He gained the confidence and goodwill of the working classes by endeavoring to promote a better understanding between masters and men, and by teaching the latter the value of coöperation as a means of social elevation. Died at Brighton, England, 1896.

Hugo, Victor Marie, Vicomte, distinguished French poet, politician, and man of letters was born at Besancon, 1802. He received a classical education in a religious house, and, in 1822, brought out the first volume of his *Odes and Ballads;* and his tales *Hans of Iceland*, and *Bug Jargal*, were also written about this time. In 1826 he published a second volume of the *Odes and Ballads*, which

exhibited a change in his political and literary opinions, and, in 1827, he composed his drama *Cromwell*. In 1829 he published his *Last Days of a Condemned Criminal*, a work which, owing to its fearful interest, gained an immense success.

Hugo now prepared a further attack on the classical style of French dramatic literature in his *Hernani*, first played at the Théatre Francais in 1830, when it caused a scene of riotous confusion. The French academy went so far as to complain to the king against Hugo's attempted innovations. Charles X. sensibly replied, that "in matters of art he was no more than a private person."

Shortly after the revolution of July, 1830, his *Marion Delorme*, which had been suppressed under the restoration, was performed with success. *Le Roi's Amuse* was also performed at the Théatre Francais in 1832, but interdicted by the government the day after. His lyrical poems, *Les Orientales*, published in 1828, and *Les Feuilles d' Automne*, which appeared in 1832, were received with enthusiasm. Hugo, who published afterward a number of dramatic pieces of various merit, was, after much opposition, admitted into the academy in 1841, and was created a peer of France by Louis Philippe. In 1849 he was chosen president of the peace congress, of which he had been a leading member.

On the *coup d' etat* of December 2, 1851, Hugo, then a member of the legislative assembly, was among those deputies who vainly attempted to assert the rights of the assembly and to propose the constitution. His conduct led to his proscription. He took refuge in the island of Jersey, and subsequently in that of Guernsey, having steadfastly refused to avail himself of the general amnesties issued in 1859 and in 1869.

He wrote much after he had left France. His very trenchant satire, *Napolion le Petit* (Napoleon the Little), appeared at Brussels in 1852, and was rigorously suppressed in France, into which country it had been smuggled. *Les Châtiments* was brought out in 1852 also in Brussels; and in 1856 he published, under the title *Les Contemplations*, a collection of lyrical and personal poems which are among his best performances. Hugo's admirable romance *Notre-Dame de Paris* has been translated into most European languages, and is known in English under the title of the *Hunchback of Notre-Dame*. His social romance, *Les Miserables*, appeared in 1862.

On the fall of the empire in 1870 he returned to France, was elected to the national assembly, but soon resigned and repaired to Brussels, whence he was expelled by the government on account of the violence of his political writings and his sympathy with the communists. Returning to Paris, he was (1876) elected a senator for six years. Of his later works may be mentioned *The Man Who Laughs*, *The History of a Crime*, and *Les Quatre Vents de L'Esprit*, a volume containing some of his most charming lyrics. Died in Paris, 1885, and was buried in the Pantheon.

References.—Swinburne's *A Study of Victor Hugo;* Renouvier's *Victor Hugo, the Poet;* Marzial's *Life of Victor Hugo;* King's *French Political Leaders;* Barbou's *Victor Hugo and His Time.*

Hull, Isaac, American naval officer, was born in Derby, Conn., 1773. In 1812 he commanded the frigate *Constitution*, which was pursued by a British squadron for three days, but escaped by skillful sailing. While cruising in the gulf of St. Lawrence he met the British frigate *Guerciere*, which after a bloody fight of half an hour, surrendered, August 19, 1812. This was the first naval battle of the war of 1812, and congress gave Captain Hull a gold medal for his services. He died in Philadelphia, Pa., 1843.

Humbert I. (*hum'bĕrt*), king of Italy, eldest son of King Victor Emmanuel, was born in 1844. When the war between Prussia and Austria became imminent, Prince Humbert was dispatched to Paris to ascertain the sentiments of the French government in reference to the alliance between Italy and Prussia. On the outbreak of hostilities he obtained command of a division of General Cialdini's army, with the title of lieutenant-general; and was present at the disastrous battle of Custozza, 1866. He succeeded to the throne on the death of his father, 1878. The most notable event in his reign was the formation of the triple alliance, 1887. He was assassinated at Monza, near Milan, 1900.

Humboldt (*hum'bōlt*), **Friedrich Heinrich Alexander, Baron von,** eminent German scientist and traveler, was born in Berlin, 1769. He became director-general of the mines of Bayreuth and Anspach in 1792. In 1799 he started with Bonpland for South America, and occupied four years in the exploration of that continent. After his return to Europe in 1804, he passed a period of twenty years in Paris, and was there admitted to the institute. His chief works are: *Journey to the Equinoctial Regions of the New Continent; Central Asia; Researches on the Chains of Mountains and the Comparative Climatology; Aspects of Nature;* and what is commonly esteemed his masterpiece, *Kosmos—Essay of a Physical Description of the Universe*—begun in his seventy-fourth year. He died in Berlin, 1859.

Humboldt, Karl Wilhelm von, elder brother of the preceding, was born at Potsdam, 1767. In 1801 he became Prussian minister at Rome, and was a most generous patron of young artists and men of science. Berlin University owes its existence to him. In 1810 he went to Vienna as minister plenipotentiary, and from this time took part in all important Prussian political affairs. He was the first to study Basque scientifically; he also worked much on the languages of the East and of the South Sea Islands. Died, 1835.

Hume, David, Scottish philosopher and historian, born at Edinburgh, 1711. After a short experience with merchandizing and law he turned to the life of a student. In 1734 he went for a time to France, and there wrote the important *Treatise of Human Nature* (1739-40). Hume then turned his pen to subjects of more general interest, and in 1742 published *Essays—Moral, Political, and Literary.*

During 1747-9 he served as secretary to an embassy, after which he settled down to literary work in Edinburgh. Two other philosophical works, which were really popular abridgments of parts of the *Treatise*, were published about this time—the *Inquiry Concerning Human Understanding*, in 1748, and the *Inquiry Concerning the Principles of Morals*, in 1751; and another volume of essays, the *Political Discourses*, followed in 1752.

With the exception of his *Natural History of Religion* (1755), his literary activity for the next ten years was mainly concentrated on his *History of England*. In 1763 he was again abroad, attached to an embassy to France; and on his return he was, for a short time, under-secretary of state. In 1769 he returned to Edinburgh, where he remained till his death in 1776. His *Dialogues Concerning Natural Religion* were published in 1779.

The philosophy of Hume was an extreme and thoroughgoing development of the sensationalism that was latent in Locke's account of the origin of knowledge. Applying Locke's method of analysis in all its strictness he set up as a general test for all ideas that they must be capable of being referred to a definite source or original in impressions. Ideas which cannot confirm to this test have no real or objective meaning; they are illusions produced in the mind by the workings of imagination.

Thus, to take a single instance, Hume reduces the conception of causal connection to a mere blind belief engendered by custom, the constant conjunction of two impressions (*e. g.* flame and heat) suggesting the idea of the so-called cause. The outcome of such criticism applied to the fundamental concepts on which knowledge rests was naturally a total scepticism.

References.—Huxley's *Hume* in *English Men of Letters;* Seth's *Scottish Philosophy;* his *Autobiography*, edited by Adam Smith; and Burton's *Life and Correspondence of David Hume.*

Hume, Martin Andrew Sharp, English educator and writer, lecturer in Spanish history and literature, Pembroke College, Cambridge, was born at London, 1847. He was attached to the Turkish army during the campaign on the Lom, 1878-79; traveled much in South America and Africa; later was prominently identified with the universities at Cambridge. London and Birmingham. Author: *Chronicle of Henry VIII.; Calendar of Spanish State Papers; Elizabeth*, 4 vols.; *The Love Affairs of Mary Queen of Scots; Cambridge Modern History*, vols. iii. and iv., *Queens of Old Spain; The Court of Philip IV.*, etc.; and many historical articles in the principal English and Spanish magazines and reviews. Died in 1910.

Humperdinck (*hōōm'pĕr-dingk*), **Engelbert,** German composer, was born at Siegburg, near Bonn, Prussia, 1854. He studied music at Cologne, Frankfort, Munich and Berlin. In 1890-96 at Frankfort, he became famous as the composer of the musical fairy play, *Hänsel und Gretel*, which was phenomenally successful, compositions that have earned for him the title of the "modern Wagner." In 1900 he became professor of music at Berlin. Died in 1921.

Humphreys (*hum'friz*), **Milton Wylie,** American educator and scholar, professor of Greek, University of Virginia, beginning 1887, was born in Greenbrier county, Va. (now W. Va.), 1844. He was graduated at Washington and Lee, A.M., 1869; Ph.D., Leipzig, 1874; LL.D., Vanderbilt. He was professor of Greek, Vanderbilt University, 1875-83, and professor of Latin and Greek, University of Texas, 1883-87. President in 1882-83 of the American philological association, and was ten years American chief editor to *Revue de Philologie*, Paris. Edited, with notes: *The Clouds of Aristophanes, The Antigone of Sophocles*, etc.

Huneker (*hun'e-kĕr*), **James Gibbons,** journalist, music critic, was born in Philadelphia, Pa., 1860. He was graduated at Roth's military academy, Philadelphia, 1873; studied law and conveyancing at law academy, Philadelphia, five years. Music and dramatic critic of *New York Recorder*, 1891-95, and of the *Morning Advertiser*, 1895-97. He was formerly music and dramatic; art editor, of the *New York Sun*. Author: *Mezzo-tints in Modern Music; Visionaries*, etc. He also wrote the article on music, *New International Encyclopædia*, and has been a contributor to leading magazines. Died in 1921.

Hunt, James Henry Leigh, English poet and essayist, was born at Southgate, near London, 1784. In 1813, as editor of *The Examiner*, he wrote some articles severely criticising the prince regent, afterward George IV., and for these he was prosecuted by order of the government, and sentenced to two years' imprisonment in the Surrey jail. While in jail he wrote *The Descent of Liberty, a Masque; The Story of Rimini*, an Italian tale in verse; and *The Feast of the Poets*. In 1828 he published *Lord Byron and Some of his Contemporaries*, in which, having quarreled with Byron during a visit to Italy, he indulged in some severe animadversions upon the character of that poet. Among his last works was his *Autobiography*. He died at Putney, England, 1859.

Hunt, Thomas Sterry, American chemist and geologist, was born in Connecticut, 1825. In 1845 he became assistant to Professor Silliman in his chemical laboratory at Yale College, and in 1847 was appointed chemist and mineralogist to the geographical survey of Canada. He held this post for more than twenty-five years, resigning in 1872 to accept the chair of geology in the Massachusetts Institute of Technology. He furnished many important articles in his specialty to Appleton's *American Cyclopedia*, and was a member of the leading societies of both continents. He died in New York, 1892.

Hunt, Walter, English painter, was born in Middlesex, England, 1861. He has been a constant exhibiter at the royal academy since 1881. The following are among his best pictures: *A Rainy Day; A Foster-Mother; The Orphan; The Otter Hunt—the Find; Motherless; An Old Offender; Home from Work*, etc.

Hunt, William Henry, creator of the English school of water-color painting, was born in London, 1790, the crippled child of a tinplate worker. He is ranked by Ruskin with the greatest colorists of that school. He generally chose very simple subjects for his pictures, such as: *Peaches and Grapes; Old Pollard; Wild Flowers; Too Hot; Fast Asleep*, etc., but they are conceived in a finely poetical spirit, and present the perfection of finish. Died, 1864.

Hunt, William Holman, English painter, was born in London, 1827. In 1845 he was admitted a student of the royal academy, and next year exhibited his first picture, *Hark!* He shared a studio with D. G. Rossetti, and the two, along with Millais and a few others, inaugurated the "pre-Raphaelite brotherhood," which aimed at detailed and uncompromising truth to nature. Among the first of his pre-Raphaelite works was *Rienzi*, in 1849. It was followed by *A Converted British Family Sheltering a Christian Missionary* and *The Light of the World*, now in Keble College, Oxford. In 1905 he was nominated to the order of merit, and was made a D.C.L. by Oxford. Died, 1910.

Hunt, William Morris, American genre and portrait painter, was born in Brattleboro, Vermont, 1824. He was educated at Düsseldorf, and under Couture at Paris; but made the technic of the French school subsidiary to his own original ideas, and was one of the first to introduce the characteristics of the French school into the United States. Among his productions are: *The Lost Kid; The Choristers; Bugle Call*, etc. He painted *The Flight of Night* and other decorations in the state capitol at Albany, N. Y. Died, 1879.

Hunter, John, noted British surgeon, anatomist, and physiologist, was born in Lanarkshire, Scotland, 1728. He spent five years at the University of Edinburgh, and went to London and studied at Chelsea hospital. His progress in anatomy and surgery was so rapid that in the second session he was able to undertake the directing of the pupils in their dissections. After ten years in the the dissecting room his health gave way, and in 1759 he applied for an appointment in the British army, was immediately made staff-surgeon, and

sent out to Belle Isle, and afterward to the Peninsula. In 1767 he was elected a fellow of the royal society, and in the following year was appointed surgeon to St. George's hospital. In 1776 he was appointed surgeon-extraordinary to the king. His famous operation for the cure of aneurism, that of simply tying the artery at a distance from the tumor, and between it and the heart, has been more fruitful in important results than any since Ambrose Pare's application of ligatures to divided arteries. He died in 1793.

Huntingdon (*hun'ting-dun*), **Selina, Countess of,** daughter of Earl Ferrers, was born in 1707. She married the earl of Huntingdon, 1728, and became a widow in 1746. Joining the Methodists in 1739, she made Whitefield her chaplain in 1748, and assumed a leadership among his followers, who became known as "the countess of Huntingdon's connection." She died in London, 1791, bequeathing to four persons her sixty-four chapels, most of which became identical with the Congregational churches.

Huntington, Daniel, American painter, was born in New York, 1816, and was educated at Hamilton College. In 1835 he began to study art under Morse, and still later with Inman. In 1839 he visited Italy; returned the next year and commenced work. Thereafter he became a permanent resident of New York and painted the portraits of many notable people. He is probably best known by his picture, *The Republican Court in the Time of Washington*, in which there are more than sixty figures. Died, 1906.

Hunyadi (*hōōn'yod-i*), **Janos,** Hungarian general, was born at Hunyad, Transylvania, about 1387. He was governor of Transylvania in 1442, and distinguished himself against the Turks, who at that time were the terror of the whole of Christendom. The most splendid of his deeds was the storming of Belgrade, where the monk John Capistran, carrying the holy cross, raised the enthusiasm of the Christian warriors to such a height that a most complete victory brought that fortress again into the possession of the Hungarians. Shortly after dysentery broke out in the camp, and Hunyadi, after a short illness, fell a victim to the disease, 1456.

Hurd, Henry Mills, American physician, superintendent Johns Hopkins hospital since 1889, was born in Union City, Mich., 1843. He was graduated at the University of Michigan, 1863; M.D., 1866; A.M., 1871; LL.D., 1895. Was superintendent eastern Michigan asylum, Pontiac, 1878-89, and professor psychiatry, 1889-1906, Johns Hopkins. Editor *American Journal of Insanity*, beginning 1897; of *Johns Hopkins Hospital Bulletin* and of *Johns Hopkins Hospital Reports*, beginning 1890. Author: *Hints to Hospital Visitors*, with Dr. John S. Billings; also editor, with same, *Hospitals, Dispensaries and Nursing*, etc.

Hurlbut, Jesse Lyman, Methodist Episcopal clergyman, editor, was born in New York, 1843. He was graduated at Wesleyan University, Connecticut, 1880. Was pastor Methodist Episcopal churches, 1865-79; editor of Sunday school literature and secretary of Sunday school union and tract society, 1888-1900. Author: *Outline Normal Lessons; Studies in the Four Gospels; Our Church; Hurlbut's Story of the Bible*, etc.

Hurst (*hûrst*), **John Fletcher,** American clergyman and writer, was born in Maryland, 1834. He was graduated at Dickinson College, and became a Methodist Episcopal clergyman. In 1871 he became professor of theology in Drew seminary, Madison, N. J., and from 1873 until 1880 was president of that institution. At Cincinnati, in the last-named year, he was elected bishop. In 1891 he was made chancellor of the American University at Washington. He died at Washington, 1903.

Huss, or **Hus** (*hus;* Ger., *hōōs*), **John,** Bohemian religious reformer, was born at Hussinecz, in Bohemia, about 1370. He studied at the University of Prague, was appointed dean of the philosophical faculty in 1401, and rector of the university, 1402. As a preacher he was greatly esteemed both by the common people and by the students, while as confessor to Queen Sophia he obtained access to the court. At this time he became acquainted with the writings of Wycliffe, which exercised a great influence over him. In 1412 Pope John XXIII. having published a bull of indulgence in order to organize a crusade against Ladislaus, the excommunicated king of Naples, whose kingdom the pope claimed as a papal fief, Huss boldly raised his voice against the whole procedure as unchristian, while Jerome of Prague also stood forth to condemn, in the strongest manner, both the bull and the venders of indulgences. An interdict against Huss in 1412 was the consequence. Huss, however, appealed from the pope to a general council and to Christ, and wrote a book *On the Church*, in which he condemned the abuses of the papacy, and denied the unconditional supremacy of the Roman pontiff. In 1414 he went to Constance to the general council, under a safe-conduct from the emperor, but his opponents procured his imprisonment as a heretic, and, on refusal to retract, he was burned at the stake, 1415.

Hutchins (*huch'ins*), **Harry Burns,** American educator, president of the University of Michigan, since 1910, was born at Lisbon, N. H., 1847. He was graduated at the University of Michigan, Ph.B., 1871; LL.D., University of Wisconsin. He was professor of law, 1884-87; professor of law, Cornell, 1887-95; acting president of University of Michigan, 1897-98, and again, beginning 1909. He revised and annotated five volumes *Michigan Supreme Court Reports*, under appointment of the supreme court, 1882-83; edited American edition of *Williams on Real Property*, and contributed to legal periodicals.

Hutchins, Robert Maynard, educator, was born in Brooklyn, N. Y., 1899; graduated from Yale, 1921; secretary of Yale, 1923-1927; degree of LL.B. 1925; dean of Yale Law School, 1928-1929; inaugurated president of the University of Chicago, November 19, 1929.

Hutchinson (*huch'in-sun*), **Anne,** religious enthusiast, was born about 1590, and emigrated from Lincolnshire, England, to Boston, Mass., 1634. Banished from the colony for heresy, she and her friends now obtained from the chief of the Narrangansetts liberty to reside in Rhode Island, where they set up a community on the highly commendable principle that no one was to be "accounted a delinquent for doctrine."

Hutchinson, John, Scotch sculptor, was born in Edinburgh, Scotland, 1832. He was apprenticed to a wood-carver in Edinburgh at the age of thirteen; executed wood carvings and other decorations in relief for the picture gallery at Hospitalfield, Arbroath, 1852, and studied in Edinburgh and in Rome. Principal works: *King Robert Bruce; John Knox*, a colossal bronze statue in Edinburgh, etc.

Hutton (*hut'n*), **Ulrich von,** German reformer and humorist, was born in 1488. When he was ten years of age he was placed in the monastery at Fulda; but, disliking this mode of life, he fled to Erfurt in 1506, where he associated with scholars and poets. In 1518 he accompanied Albert, archbishop of Mainz, to the diet of Augsburg, where Luther had his famous conference with Cajetan. He took sides with Luther, was persecuted by his enemies, and availed himself of the protection of Franz von Sickingen, but was soon forced to flee. From this time he was compelled to adopt a wandering life, and died in 1523 in the isle of Ufnau, in the lake of Zürich.

Hutton (*hut'n*), **Maurice,** Canadian educator, professor of Greek since 1887, and principal in 1901, University College, Toronto, was born at Manchester, England, 1856. He was educated at Magdalen College school and Worcester College, Oxford; M.A., Oxford; LL.D., Toronto and Queen's. He was fellow of Merton College, Oxford, 1879-86; lecturer on classics and ancient history at Firth College, Sheffield, 1880, and professor of classics in the University College, Toronto, 1880. Author of *Hellenism*, and various articles of a popular character on the classics and on Oxford.

Huxley (*huks'li*), **Thomas Henry,** noted English biologist and comparative anatomist, was born at Ealing, England, 1825. He was graduated at London University, 1845. Imbued with a passion for natural history, Huxley devoted himself with zeal and intelligence to the study of numerous marine animals collected from time to time and made them the subject of scientific papers. In 1851 papers on other branches of the same subject were printed in the *Philosophical Transactions*, and in the same year Huxley was elected a fellow of the royal society. In 1854 he was appointed professor of natural history in the royal school of mines, and among his lectures in that institution he delivered courses to workingmen with beneficial results. In 1874 he was made lord rector of Aberdeen University; was Rede lecturer at Cambridge in 1883, and president of the royal society, 1883-85. Among his many works, in addition to those mentioned, are: *Oceanic Hydrozoa; Evidence as to Man's Place in Nature; Physiography; Science and Culture; Evolution and Ethics*, etc. He died in Eastbourne, England, 1895.

Huygens (*hi'genz;* Dutch *hoi'gens*), or **Huyghens, Christian,** Dutch physicist and astronomer, was born at The Hague in 1629. He improved the telescope, and devised new methods for grinding and constructing lenses. He also invented the first pendulum clock; defined the rings of Saturn; and developed the wave theory of light. He was made a fellow of the royal society, 1663, and at the invitation of Louis XIV. lived for a number of years in Paris, where he produced many of his scientific works. Died, 1695.

Hyde, William De Witt, American educator and writer, president of Bowdoin College, beginning 1885, was born in Winchendon, Mass., 1858. He was graduated at Harvard, 1879; D.D., Harvard; LL.D., Syracuse. Author: *Practical Ethics; Social Theology; Practical Idealism; The Evolution of a College Student; God's Education of Man; The Art of Optimism; School Speaker and Reader; The Cardinal Virtues; Jesus' Way; The New Ethics; From Epicurus to Christ*, etc. Died, 1917.

Hypatia (*hi-pā'shi-ā*), Greek female philosopher, daughter of Theon, an astronomer of Alexandria. She was renowned for her knowledge of mathematics and of the Platonic philosophy, of which she was a teacher at Alexandria. Being accused by the clergy of undue influence over Orestes, prefect of Alexandria, against St. Cyril, then archbishop there, she was attacked by a mob led by priests, dragged into a church, stripped of her clothing and killed. This occurred about 415 A. D., when she was about sixty years of age. Hypatia has been made the subject of a romance by Charles Kingsley.

Hyrcanus (*hēr-kā'nus*), **John,** Jewish high priest, who lived about 135 B. C. He succeeded his father, Simon Maccabæus, in the high priesthood as one of the Asmonean rulers of Judea. His reign has been compared to that of Solomon. He was succeeded by his son, Aristobulus, a weak, irresolute character, who took the title of king of Judea. Died about 105 B. C.

Hyslop (*his'lop*), **James, Hervey,** American psychologist and psychic investigator, professor of logic and ethics, Columbia University, was born at Xenia, Ohio, 1854. He was graduated at Wooster University, 1877; Ph.D., Johns Hopkins, 1887. Author: *Elements of Logic; Ethics of Hume; Science and a Future Life; Enigmas of Psychical Research; Borderland of Psychical Research.* Editor of *Proceedings and Journal of American Society for Psychical Research.* Died in 1920.

Hyvernat, Eugene Xavier Louis Henry, French-American educator and orientalist, professor of oriental languages and archæology, Catholic University of America, since 1889, was born at St. Julien-en-Jarret, Loire, France, 1858. He was graduated at the University of France, Lyons, 1876; studied divinity, Séminaire de St. Sulpice, Issy, 1877-79, and at Paris, 1879-82; D.D., Pontifical University of Rome, 1882. He was chaplain at St. Louis of the French, Rome, 1882-85; professor interpreter of oriental languages for Propaganda, Rome, 1885-89; professor of Assyriology and Egyptology, Roman seminary, Rome, 1885-88; intrusted with scientific mission in Armenia by the French government, 1888-89; chief department Semitic and Egyptian literatures, Catholic University of America, since 1889. Author: *Les Actes des Martyrs de l'Egypte; Album de Paléographie Copte; Du Caucase au Golfe Persique*, with Dr. Paul Muller-Simonis; contributed to Vigouroux's *Dictionnaire de la Bible, The Jewish Encyclopædia*, and various American, French, and German reviews.

Ibanez, Vicente Blasco, Spanish writer and socialist, was born at Valencia, 1867. His revolutionary ideas made him several times a political prisoner, but this did not discourage him. He was at one time a Republican deputy in the Spanish parliament and wrote many novels in sympathy with the working classes. Perhaps his best known work is *The Four Horsemen of the Apocalypse.* He visited the United States in 1920-21. Died, 1928.

Iberville d' (*dē'ber'vēl*), **Pierre le Moyne, Sieur,** French-Canadian commander, was born at Montreal, Canada, 1661, and was distinguished in the French service. Sailing from Brest in 1698 with two frigates he reached the mouth of the Mississippi with his brother Bienville; fortified Biloxi, the first outpost in Mississippi, and in 1700 ascended the river. In 1701, on account of the unhealthiness of the climate, he transferred the colony from Louisiana to Mobile, and began the settlement of Alabama. In 1702 he fortified Dauphin island, in Mobile bay. Died at Havana, Cuba, 1706.

Ibrahim Pasha (*ib'rā-hēm' pā-shā'*), Egyptian general, adopted son of Mehemet Ali, viceroy of Egypt, was born in 1789. Mohammed Ali having conceived the design of adding Syria to his dominions, Ibrahim crossed the Egyptian border with an army in 1831, took Acre by storm, and quickly made himself master of the whole of Syria. In 1848, when the aged viceroy reached absolute dotage, Ibrahim went to Constantinople and was installed viceroy of Egypt. Died, 1848.

Ibsen (*ib'sen; ip'sen*), **Henrik,** Norwegian poet and dramatist, was born at Skien, in south Norway, 1828. He studied medicine, was a chemist's assistant at Grimstad, 1842-50, but soon devoted himself wholly to literature. His first drama, *Katilina*, was a failure. In 1857 he became director of the national theater in Christiana. His next dramas were *The Warriors in Helgeland, The Pretenders, Love's Comedy.* The first two, reproducing the spirit of the old sagas, placed Ibsen in the foremost rank of Scandinavian dramatists; the last was a precursor of his satirical social dramas. In 1862 the national theater became bankrupt, and Ibsen, enraged because Norway held aloof from the Danes in their struggle against the Germans, forsook his country, 1864-92, living in Rome, Dresden and Munich. The Norwegian parliament granted him a pension in 1866. In 1866-67 appeared the lyric drama *Emperor and Galilean.* There followed *Pillars of Society; A Doll's House; Ghosts; Rosmersholm; Hedda Gabler; The Master Builder; Solness; When We Dead Awaken;* and *John Gabriel Borkman.* These plays aroused a storm of controversy in the literary world from 1889, because of their author's passionate advocacy of individual liberty. The interest and method of his plays are almost exclusively psychological. Died, 1906.

Ide, Henry Clay, governor, jurist, was born a Barnet, Vt., 1844. He was graduated at Dartmouth College, 1866; LL.D., 1900, Tufts College, 1903. He was a member of Vermont state senate, 1882-85; United States commissioner to Samoa, 1891; chief-justice of Samoa under joint appoint-

ment of England, Germany, and the United States, 1893-97; member Taft commission on establishment of civil government in Philippine islands, 1900; secretary of finance and justice for Philippine islands, 1901; vice-governor, 1904-05; acting governor, 1905-06; governor-general beginning 1906, Philippine islands. Author: *Code of Procedure in Civil Actions and Special Proceedings in the Philippine Islands*, etc. Died, 1921.

Ignatieff (*ig-nā'tyef*), **Nikolai Pavlovitch,** Russian diplomat, was born at St. Petersburg, 1832. In 1856 he entered the diplomatic service, and in 1858 induced China to give up the Amur province. In 1864 he was made ambassador at Constantinople. An ardent panslavist, he intrigued with the Balkan Slavs, and took a principal part in the diplomatic proceedings before and after the Russo-Turkish war of 1878. Under Alexander III. he was minister of the interior, 1881-82, and subsequently retired to private life. Died, 1908.

Ihmsen, Maximilian Frederick, journalist, was born at Pittsburg, Pa., 1868. He was educated in the public schools in Stuttgart, Germany, in Allegheny, Pa., and the Pittsburg Catholic College. He became clerk in the Pittsburg postoffice, 1887; reporter *Pittsburg Post*, 1889; was first newspaper man to reach the dam above South Fork, Pa., which, by bursting, caused the Johnstown flood; Albany correspondent, *New York Journal*, 1895; city editor, 1896-98, and 1901-02; Washington correspondent, 1898-1900, and later political editor *New York American*. Was fusion nominee for sheriff of New York county, 1907.

Ihne (*ē'ne*), **Wilhelm,** German historian, was born at Fürth in 1821, and was educated at Bonn. He was a private tutor in England, 1843-47, later had charge of a school at Liverpool, 1849-63, and in 1873 became a professor at Heidelberg. He published his great *History of Rome*, in 8 vols. 1868-90; *Early Rome*, 1876; and a number of other historical works. Died, 1902.

Illingt n, Margaret (Mrs. Bowes), former actress, was born at Bloomington, Ill., 1881, daughter of I. H. and Mary Ellen Light. She was educated at Illinois Wesleyan University and studied at Chicago Musical College. In 1903 she married Daniel Frohman, from whom she was divorced in 1909; married in the same year Edward J. Bowes. She made her debut in *The Pride of Jennico* at the Criterion theater, New York, 1900; played in Daniel Frohman's stock company, Lyceum theater, New York; created leading rôle in *The Japanese Nightingale; The Two Orphans; Mrs. Leffingwell's Boots; The Lion and the Mouse; His House in Order; The Thief*, etc.

Ingalls, John James, American lawyer, essayist, and statesman, United States senator, was born at Middleton, Mass., 1833. He was graduated at Williams College, studied law, and was admitted to practice in Massachusetts in 1857, and in 1858 settled in Kansas. He was elected United States senator from Kansas in 1873, and was again elected in 1879 and 1885. During his last senatorial term he was president *pro-tem* of the senate. He was the author of the famous sonnet *Opportunity*. He died at Las Vegas, New Mexico, 1900.

Ingalls, Melville Ezra, railroad president, was born in Harrison, Me., 1842. He was educated at Bridgeton academy, studied at Bowdoin College, and graduated at Harvard Law School, 1863. He practiced first at Gray, Me., but soon removed to Boston. President in 1870, receiver in 1871, of the Indianapolis, Cincinnati and Lafayette railroad, and from a bankrupt condition, with the aid of reörganizations in 1873 and 1880, he put its successor, the Cincinnati, Indianapolis, St. Louis and Chicago, upon a sound footing, consolidating it with other roads into the Cleveland, Cincinnati, Chicago and St. Louis railroad, comprising the "Big Four" system, of which he became president. He was president of the Merchants' National Bank, Cincinnati. Died, 1914.

Ingelow (*in'-jē-lō*), **Jean,** English poetess and novelist, was born at Boston, Lincolnshire, England, 1820. A great part of her poetry is of a devotional type, sweet and simple, and filled with beautiful thoughts. Among her noted works is the ballad, *The High Tide on the Coast of Lincolnshire*, and the larger poem, *A Story of Doom*. Her works of fiction are *Off the Skelligs; Fated to Be Free; Sarah de Berenger; Don John;* and others. She died, 1897.

Ingersoll (*ing'gēr-sol*), **Robert Green,** American lawyer, orator, and writer, was born at Dresden, N. Y., 1833. He settled to the practice of law at Peoria, Ill., 1857; became colonel of the 11th Illinois cavalry, 1862, was captured and exchanged; resigned and retired to private life, and, in 1836; was attorney-general of the state. He was a well-known orator, lecturer, and religious controversialist. He published *The Gods, and Other Lectures; Some Mistakes of Moses; Great Speeches*, etc. Died at Dobbs Ferry, N. Y., 1899.

Ingraham (*ing'grā-am*), **Joseph Holt,** American clergyman and novelist, was born at Portland, Me., 1809. After some years spent at sea, he became a teacher of languages in Mississippi, and was ordained Episcopal clergyman in 1855; prior to his ordination he wrote stories of adventure, *Captain Kyd*, etc., but subsequently confined himself to biblical subjects. His best known work is *The Prince of the House of David*. He died at Holly Springs, Miss., 1860.

Ingram (*ing'gram*), **Arthur Foley Winnington,** bishop of London since 1901, dean of the Chapels Royal, was born in Worcestershire, 1858. He was educated at Marlborough College and Keble College, Oxford; chaplain to the archbishop of York and to the bishop of St. Albans, 1889; canon of St. Paul's cathedral, 1897-1901, and bishop of Stepney, 1897-1901. Author: *Work in Great Cities; Messengers, Watchmen, Stewards; The Men Who Crucify Christ; Christ and His Friends; Banners of the Christian Faith*, etc.

Ingres (*an'gr'*), **Jean Dominique Auguste,** French painter, was born at Montauban, 1780. He studied under David, and after taking the *grand prix* in 1801, worked in Rome, 1806-20. To this period belong his best portraits, and his *Œdipus and the Sphinx; Venus Anadyomene; Vergil Reading the Æneid; Raphael and the Fornarina*, etc. Died, 1867.

Inman, Henry, American painter, was born in Utica, N. Y., 1801. He was noted for his skill as a portrait painter, and besides making portraits of Chief-Justice Marshall and many other distinguished Americans, he visited England and painted portraits of Wordsworth and Macaulay. In 1845 he began a series of historical paintings for the capitol at Washington, but before they were completed he died in New York, 1846.

Innes (*in'is*), **Cosmo,** Scottish historian and antiquarian, was born at Durris, Scotland, 1798. He was graduated both at Glasgow and Oxford, and in 1822 passed as an advocate. He became in 1846 professor of constitutional law and history in the University of Edinburgh. He is best known as the author of *Scotland in the Middle Ages* and *Sketches of Early Scotch History*. Died, 1874.

Inness (*in'es*), **George,** American artist, was born at Newburg, N. Y., 1825; studied in New York, France, and Italy. He excelled as a painter of American landscapes, and became a national academician in 1868; resided in Italy, 1871-75; died at Bridge of Allan, Scotland, 1894. Among his best paintings are: *Delaware Valley; American Sunset; Pontine Marshes; Niagara Falls; Sunset—Montclair; Autumn Oaks*, etc. Died, 1894.

Inness, George, Jr., artist painter, was born in Paris, France, 1854, son of the preceding. He was a pupil of his father in Rome, Italy, 1870-74; studied one year in Paris, 1875; after that lived in Boston and New York, where he occupied studio with his father, 1878. He resided with his family in Montclair, N. J., after 1880, but had his studio in Paris, 1895-99, and exhibited annually at the Paris salon. He received a gold medal at the 1899 Paris salon. Died in 1926.

Innocent III., one of the greatest of the popes, was born at Anagni, Italy, 1161, son of Count Trasimund, a Roman noble. He was educated at Paris, Rome and Bologna, and was elected pope in 1198. He aimed at making the papacy supreme in all European affairs; extended the territorial power of the church, and made nearly all Christendom subject to its sway; was zealous for the purity as well as supremacy of the church, and countenanced every movement that contributed to enhance its influence and stereotype its beliefs as well as its forms of worship. The papal power probably attained its greatest height during his pontificate. He died at Perugia, Italy, 1216.

Ireland, John, American prelate, Roman Catholic archbishop of St. Paul beginning 1888, was born in Ireland, 1838. He came to the United States in boyhood; was educated in the cathedral school, St. Paul; studied theology in France, and was ordained priest in 1861; LL.D., Yale, 1901. He was chaplain of the 5th Minnesota regiment in the Civil War; rector of the cathedral at St. Paul; secretary and later coadjutor to Bishop Grace, of St. Paul, and was consecrated archbishop in 1888. He had been active in establishing Roman Catholic colonies in the Northwest, and in the organization of total abstinence societies. Author *The Church and Modern Society*. Died, 1918.

Irene (Lat., *ī-rē'nē*; Eng., *ē-rin'*), Byzantine empress, once a poor orphan girl of Athens, Greece, was born about 752. Her beauty and talents drew the attention and love of the emperor Leo IV., and he married her in 769. After his death she ruled as regent, during the minority of her son Constantine VI. She was banished to Lesbos in 802, where she died in the following year. The Greek church counts her among its saints.

Irving, Sir Henry (John Henry Brodribb), English actor, was born in Keinton, near Glastonbury, 1838. He acted at the Theater Royal, Edinburgh, 1856-59, and afterward for seven years at Manchester. He played in London, 1859, but attracted little notice until his appearance at St. James' theater, 1866. He soon established a connection with the Lyceum, of which he became manager in 1878. There he played his chief parts, in conjunction with Miss Ellen Terry, producing among other plays, *Hamlet; The Merchant of Venice; Faust; Macbeth; Henry VIII.; The Bells*, and other well-known productions. He first came to the United States in 1883, with Miss Terry and his Lyceum company, and made his début in New York, as Mathias, in *The Bells*. He died in England, 1905, and was buried in Westminster abbey.

Irving, Isabel, actress, was born at Bridgeport, Conn., 1871. She made her début as *Gwendolyn Hawkins* in *The Schoolmistress*, with Rosina Vokes company, 1887. She was selected by Charles Frohman to create the rôle of *Lady Jocelyn Leigh* in *To Have and To Hold*, at the Knickerbocker theater, New York; later starred under the management of James K. Hackett in *The Crisis;* was engaged by Clyde Fitch to play the comedy part in *The Toast of the Town*, 1906; and was starred by Liebler and Company in *Susan in Search of a Husband*, 1907. She married W. H. Thompson, 1899.

Irving, Washington, distinguished American author, was born in the city of New York, 1783. Irving, at the age of sixteen, entered a law office; but found greater profit from his father's well-stocked library, Chaucer and Spenser, being his favorite authors. New York, at this period, was a town of about 50,000 inhabitants, many of whom were descendants of the original Dutch settlers, having quaint manners and customs, of which Irving was a curious observer. In 1809 he wrote *A History of New York, From the Beginning of the World to the End of the Dutch Dynasty, by Diedrich Knickerbocker*, a burlesque chronicle written in so quiet a vein of humor that it has sometimes been taken for a veritable history. At the close of the war, in 1815, he visited England, where he was warmly welcomed by Campbell, whose biography he had formerly written, and was introduced by him to Walter Scott. In 1819 he published the well-known *Sketch Book*, containing *The Legend of Sleepy Hollow* and *Rip Van Winkle*. At the invitation of Edward Everett, American ambassador to Spain, he accompanied him to Madrid to tran late documents connected with the life of Columbus. With these materials he wrote his *History of the Life and Voyages of Columbus; Voyages of the Companions of Columbus; The Conquest of Granada*, and many Spanish works. In 1842 he was appointed United States minister to Spain. In 1846 was published his *Life of Goldsmith*, and his great work, the *Life of Washington*, was published in 1855-59. He spent the last years of his life with his nieces at Sunnyside, in his own "Sleepy Hollow," on the banks of the Hudson, near Tarrytown, where he died suddenly of disease of the heart, 1859.

Irwin, Wallace, author, was born at Oneida, N. Y., 1875. He studied at Stanford University, 1896-99, and was editor *San Francisco News Letter*, 1901; editor *Overland Monthly*, 1902. Burlesque writer, Republic theater, 1903; writer of topical verse, *New York Globe*, 1904-05, and on staff *Collier's Weekly*, 1906-07. Author: *The Love Sonnets of a Hoodlum; At the Sign of the Dollar; Chinatown Ballads; Random Rhymes of Odd Numbers*, etc. He is a prolific contributor to magazines and weeklies.

Isabella (*iz'ā-bel'ā*), queen of Castile, daughter of John II., was born in 1451, and united in 1469 to Ferdinand V., king of Aragon. When a union of the kingdoms of Aragon and Castile took place. Ferdinand and Isabella together assumed the royal title of Spain. She was a woman of fine intellect, a wise and humane ruler, was always present during the transaction of state business, and her name was placed beside that of the king in state ordinances. She proved also a stanch supporter of Columbus in his search for the western route to India. Died, 1504.

Isabey (*ē'zā'bē*), **Jean Baptiste,** court painter and favorite of Napoleon, was born at Nancy, 1767. He was a pupil of Girardet Claudet, Dumont, and David. He painted the portraits of Josephine, Napoleon, his marshals, and the chief personages of Europe. He visited the Russian court at the invitation of Alexander. Died at Paris, 1855.

Isaiah (*ī-zā'yā, ī-zā'yā*), one of the most eminent of the Hebrew prophets, flourished about 740-701 B. C. He was the son of Amoz, but of his personal history very little is known. His prophecies, though delivered later in point of time than several of those uttered by other prophets, occupy in our Bible, the first place, both on account of their bulk, and for the sublimity and importance of the predictions.

Isidore (*iz-i-dor*) **of Seville,** or **Isidorus Hispalensis,** one of the most distinguished ecclesiastics of the sixth century, was born at Cartagena, Spain, about 560. The episcopate of Isidore, which began in 600, is rendered notable by the half-ecclesiastical, half-civil counsels of Toledo, in 619 and 633, which were held under his presidency, and the canons of which may almost be said to have formed the basis of the constitutional law of the Spanish kingdoms, both for church and for state, down to the great constitutional changes of the fifteenth century. Died, 636.

Ismail Pasha (*is'mā-ēl'pā-shā*), khedive of Egypt, was born in 1830. He succeeded Said Pasha as fifth viceroy of Egypt, 1863; promoted the Suez canal project, and gained wealth by the cultivation of cotton during the American war. Financial disaster coming in 1879, he abdicated in favor of his son, Mohammed Tewfik, and lived after 1888 in Constantinople. Died, 1895.

Isocrates (*ī-sok'ra-tēz*), Greek orator and teacher, was born in Athens, 436 B. C. About 390 B. C. he set up as a teacher of oratory, though he professed also to give a general practical education. He drew to him pupils subsequently distinguished as statesmen, historians and orators. But he also wrote speeches intended to be practical; the

Archidamus may actually have been composed for the Spartan king Archidamus. As a politician, Isocrates' one idea was to unite all Greeks together in a joint attack upon the common foe, Persia. The outcome was the destruction of Greek freedom at Chæronea by Philip. Died, 338 B. C.

Israels (*ēs'rā-els'*), **Josef,** Dutch painter, was born at Groningen, 1824. He studied at Amsterdam, under Kruseman, and next at Paris, under Picquet, and received gold medals of honor at Paris, Brussels and Rotterdam. He also had conferred upon him the Belgian order of Leopold, and was nominated a member of the French legion of honor. Principal works: *The Shipwrecked Mariner; The Cradle; Interior of the Orphans' Home at Katwyk; The True Support.* Died, 1911.

Itō (*ē'tō*), **Marquis Hirobumi,** Japanese statesman, was born in the province of Choshu, 1841. In 1871 he visited the United States for the purpose of examining the coinage system, and on his return to Japan was successful in establishing a mint at Osaka. He became prominent in the Japanese cabinet in 1886, made many reforms, and in 1888 prepared the written constitution of Japan, which was promulgated in 1889. In 1900, on the resignation of the Yamagata ministry, he was summoned by the emperor to form a cabinet. Assassinated, 1909.

Itō, Count Yuko, Japanese admiral, chief of the naval general staff, was born in Satsuma province, 1843. He was educated at the Tokyo Kaisei College. Entered the imperial Japanese navy, 1868; attained the rank of lieutenant-commander, 1872; was promoted rear-admiral and commander of the standing squadron, 1886; vice-admiral and chief of Yokosuka naval station, 1892; fought the battle of Yalu with all the combined squadrons under his command, 1894; chief of the naval general staff, 1895; created viscount for services in the war, and made a full admiral in 1898. Died, 1914.

Ivan, III. (*ē-vän', ī'van*), **Vasilevitch,** czar of Russia, sometimes named "the great," may be regarded as the founder of the Russian empire. He was born in 1440, was at first only grand-duke of Moscow, but succeeded in shaking off entirely the yoke of the Tartars, and in subjecting a number of the Russian principalities to his own sway. In 1472 he married Sophia, a niece of Constantine Palæologus, assumed the title of "ruler of all Russia," and adopted the two-headed eagle of the Byzantine empire. Died, 1505.

Ivan IV., Vasilevitch, czar of Russia, called "the terrible," was born in 1530. He did much for the advancement of his country in arts and commerce, as well as for its extension by arms. But his hand fell with merciless cruelty upon the boyars of his kingdom, and upon some of his towns, as Moscow, Tver and Novgorod. Ivan died of sorrow for his son, whom three years before he had slain in a mad fit of rage. Died, 1584.

Ives (*īvz*), **Frederic Eugene,** American inventor, was born at Litchfield, Conn., 1856. He was educated in the public schools at Litchfield, Norfolk, Newton, Conn. In charge of photographic laboratory, Cornell University, 1874-78. His experiments in color photography on the so-called trichromatic principle, commenced in 1878, culminated in the three-color printing process in the typographic press, now an important industry, and in the Kromskop system. Author: *Isochromatic Photography With Chorophyll, A New Principle in Heliochromy.* Contributor to technical and educational journals on photographic processes.

Ixtlilxochitl (*ēsh'tlil-shō'chēl'l*), **Fernando de Alva,** Mexican antiquarian, was born in Mexico, about 1568. He was a descendant of the kings of Tezcuco, was interpreter of the native languages to several viceroys of Mexico and a laborious collector of the ancient MSS. and traditions of his country. Died, 1648.

Jackson, Abraham Valentine Williams, American educator and scholar, professor Indo-Iranian languages, Columbia University, since 1895, was born in New York, 1862. He was graduated at Columbia, 1883; L.H.D., 1885; Ph.D., 1886; LL.D., 1904. He traveled in India, 1901, and Persia and Central Asia, 1903 and 1907. Author: *A Hymn of Zoroaster; An Avestan Grammar; Persia, Past and Present.* He edited *A History of India,* 9 volumes, and the Columbia University Indo-Iranian series, in three volumes.

Jackson, Andrew, seventh president of the United States, was born in North Carolina, 1767. His father, a Scotch-Irishman, emigrated to America in 1765. When Jackson grew up he was sent to study for the church, but on the outbreak of the American revolution he and his brothers were summoned to the field. In 1784 he commenced the study of law, and in 1788 was appointed solicitor for the western district of North Carolina, now the state of Tennessee. In 1813, at an outbreak of hostilities with the Creek Indians, he raised a volunteer force of 3,000 men and defeated them. Jackson's final victory on March 27, 1814, broke the power of the Indian race in North America. He was appointed major-general of the United States army; defended New Orleans against the attack of the British under General Packenham; December, 1814. The result of this action gave General Jackson a great and enduring popularity. After Spain had ceded Florida to the United States he was made governor of the territory, and subsequently was chosen United States senator from Tennessee. Elected president of the United States by the democratic party in 1828, and in 1832 reelected by an overwhelming majority. His administration was marked by singular firmness. He vetoed important measures against large majorities, destroyed the bank of the United States, and took the first steps toward a specie currency and an independent treasury. He retired with undiminished popularity after the election of President Van Buren. Died, 1845.

Jackson, Helen Hunt, American author and poet, was born in Amherst, Mass., 1831. Her maiden name was Helen Maria Fisk. She studied at Ipswich female seminary, and in 1852 was married to Major E. B. Hunt, of the United States engineers. She afterward married William S. Jackson, and lived most of the latter part of her life at Colorado Springs, Colo. She began to write verses about 1870 over the signature "H. H.," which soon became familiar to magazine readers. In 1883 Mrs. Jackson was made a commissioner by the government to look into the condition of the Mission Indians of California. Her last book, *Ramona,* which deals with Indian life, leaped at once into great popularity. She died at San Francisco, 1885. Buried near Colorado Springs.

Jackson, John Price, electrical engineer, was born at Philadelphia, 1868; graduated at Pennsylvania State College, 1889, M.E., 1892, E.E., 1901; was electrical engineer with Sprague and Edison electrical companies, 1890-2; professor electrical engineering, 1893-1907; dean school of Engineering 1907-15, Pennsylvania State College. Member electrical jury, St. Louis Exposition, 1904; member American Institute Electrical Engineers, American Society Mechanical Engineers, etc. Joint Author: *Alternating Currents and Alternating Current Machinery; Elementary Electricity and Magnetism;* etc.

Jackson, Samuel Macauley, American educator and writer, professor of church history, New York University, was born in New York City, 1851. He was graduated from the college of the city of New York, 1870; Union Theological Seminary, 1878; LL.D., Washington and Lee University, 1892; D.D., New York University, 1893. He has been editor of numerous church dictionaries and encyclopædias. His other publications include: *Huldreich Zwingli, Handbooks for Practical Workers in Church and Philanthropy,* etc.

Jackson, Thomas Jonathan, better known the world over as "Stonewall Jackson," American general, was born in Lewis county, Virginia (now West Virginia), 1824. He was graduated at West Point academy in 1846, and after serving with distinction in the Mexican war, he became a professor in the military institute at Lexington, Va. At the outbreak of the Civil War he was appointed brigadier-general in the confederate service. At the battle of Bull Run, July, 1861, his command on that occasion "stood like a stone wall," hence the sobriquet; captured Harper's Ferry with 11,000 federal prisoners; commanded a corps at Antietam; and was made lieutenant-general for his services in largely contributing to the federal defeat at Fredericksburg. In 1863, by a clever flank movement, he defeated the 11th corps of General Hooker's army at Chancellorsville; and on the evening of the same day was fired at by a patrol party of his own men, who mistook him and his staff, in the darkness, for a detachment of Union cavalry. He died of his wounds on May 10, 1863.

Jacobi (Ger. *yä-kō'bē*), **Abraham,** American physician, was born at Hartum, Westphalia, 1830. He studied at the Universities of Griefswald and Göttingen; was graduated from Bonn, M.D., 1851; LL.D., University of Michigan, 1898; Columbia, 1900; Yale, 1905; Harvard, 1906. He settled in practice in New York, 1853; was professor of diseases of children, New York Medical College, 1860-65, and at New York University, 1865-70; later professor of diseases of children, College of Physicians and Surgeons. Author: *Dentition and Its Derangements; The Raising and Education of Abandoned Children in Europe; Therapeutics of Infancy and Childhood; Intestinal Diseases,* etc. Died in 1919.

Jacobi, Friedrich Heinrich, German philosopher, was born at Düsseldorf, 1743. He was trained for a mercantile career, but in 1772 was appointed finance officer for Jülich and Berg, and devoted himself to literature and philosophy. He elaborated no system of philosophy, but criticised all other philosophies from his special doctrine that by the "reason," not the understanding, we have immediate conviction or belief not only of the reality of objects perceived by the senses, but also of the reality of the highest verities that lie beyond the apprehension of sense. Died, 1819.

Jacobi, Karl Gustav Jakob, celebrated German mathematician, was born in Prussia, 1804. In 1829 he became a professor at Königsberg, and published his celebrated work, *Fundamenta nova Theoriae Functionum Ellipticarum,* for which he received the great medal of the Academy of Sciences of Paris. He also wrote a great number of memoirs on the different branches of the higher mathematics, chiefly on *Series and Definite Integrals,* and was a regular contributor to the celebrated *Journal für reine und angewandt Mathematik* of Crelle. Died, 1851.

Jacotot (*zhä'kō'tō'*), **Jean Joseph,** inventor of the "universal method" of education, was born at Dijon, France, 1770. The principles of his system are that the mental capacities of all men are equal; the unequal results of education depend almost exclusively upon will; everyone is able to educate himself, provided he is once started in the right way; knowledge should first be acquired through instinctive experience, or by the memory. He expounded his views in *Enseignement Universel.* Died, 1840.

Jacquard (*zhä'kär'*), **Joseph Marie,** French inventor, was born at Lyons, 1752. He attempted to establish a manufactory for weaving figured fabrics, planned several ingenious improvements in machinery, and brought to perfection the apparatus for figured weaving, which now perpetuates his name—the Jacquard loom. He resided at Lyons for many years, encountering much opposition from a prejudice excited against machinery, but eventually triumphed. He passed his latter years in tranquil retirement, and died in 1834. During his life he received the cross of the legion of honor, and in 1840 a public statue was erected to his memory at Lyons.

Jahn (*yän*), **Friedrich Ludwig,** the "Turnvater" or father of gymnastics, was born at Lanz in Prussia, 1778. In 1811 he started the first gymnasium in Berlin. His system, meant to revive patriotism, attracted the Prussian youth, and to the training thus obtained must be largely attributed the expulsion of the French. But the gymnasiums began to witness political gatherings, too liberal to please the Prussian government, and they were closed in 1818. Jahn, who had taken a prominent part in the movement, was arrested in 1819 and suffered five years' imprisonment. He was elected to the Frankfort national assembly in 1848. Died, 1852.

Jahn, Otto, German philologist, archæologist and classical editor, was born at Kiel, 1813. He lectured at Kiel, Griefswald and Leipzig. Deprived of his chair in 1851 for his part in the political movements of 1848-49, he became in 1855 professor of archæology at Bonn. He published works on Greek art, representations of ancient life on vases, a number of Latin and Greek classics, besides a *Life of Mozart,* and a number of masterly essays on music. Died, 1869.

James I. of England, VI. of Scotland, the only son of Mary, queen of Scots, and Henry, Lord Darnley, was born in Edinburgh, 1566. When his mother was forced to resign the crown, James was proclaimed king of Scotland, 1567. In 1578 the earl of Morton, then regent, was driven from power, and James assumed full control. In the winter of 1589 James went to Denmark, where he married Princess Anne, daughter of Frederick II., king of that country. By the death of Elizabeth, in 1603, James succeeded to the throne of England. He soon became unpopular with his new subjects. He really governed through his favorites, Kerr and Buckingham, both of them unpopular; and England's prestige as a power, which had been gained under Elizabeth, soon disappeared. The so-called King James Bible was completed during his reign. He has been described as two men in one—"a witty, well-read scholar, who wrote, disputed and harangued, and a nervous, driveling idiot who acted." Died, 1625.

James II. of England and VII. of Scotland, son of Charles I. and Henrietta Maria, was born in 1633. In 1648, during the civil war, he made his escape to France. He then entered the military service of Spain. At the restoration he was made lord high admiral of England. On the death of Charles II., 1685, James succeeded to the crown without opposition. On becoming king he promised to maintain the church and to respect the liberties of the people, but his government, nevertheless, was arbitrary and tyrannical; he paraded his Catholicism, persecuted the covenaters, subordinated English interests to French, permitted the "bloody assize," suspended the test act, violated the rights of the Universalists, gave church offices to Roman Catholics, and by these and many other acts of despotism made his deposition necessary; leading statesmen invited William of Orange to assume the throne, and James fled to France; an invasion of Ireland in 1689 ended in his defeat at the battle of the Boyne. He retired again to France, and lived at St. Germains until his death, 1701.

James IV. of Scotland, son of James III. and Margaret of Denmark, was born in 1473. His rule gave promise of being both vigorous and popular, while the personal beauty he possessed and his open frankness won the hearts of his people. In 1503 the king married Margaret, eldest daughter of Henry VII. of England, an alliance which led to the union of the two crowns just one hundred years later. Henry VIII. came to the English throne in 1509, and, in the disputes which followed, James invaded England with an army. He was met by the earl of Surrey, and in the battle which took place at Flodden, 1513, the king and many of his nobles were killed. He was forty-six years old, and had reigned twenty-six years.

James, Edmund Janes, American educator, was born in Jacksonville, Ill., 1855. He was educated at the Illinois state normal school and at Northwestern and Harvard Universities: Ph.D.,

1877, University of Halle; LL.D.; Cornell College, Wesleyan, Queen's College, professor of political and social science, University of Pennsylvania, 1884-95; professor of public administration, and director of extension division of the University of Chicago, 1896-1901; president of Northwestern University, 1902-04, and president University of Illinois 1904-20. Died, 1925. Author *Relation of the Modern Municipality to the Gas Supply; The Legal Tender Decisions; Charters of City of Chicago; Growth of Great Cities in Area and Population; Government of a Typical German City—Halle;* etc.

James, George Payne Rainsford, English historical novelist, was born in London, 1801. He was educated at Putney and in France, and by seventeen had written some Eastern tales, which found favor with Washington Irving. In all he published seventy-seven works, historical romances mostly, but also biographies, poems, etc. Died, 1860.

James, Henry, American author, was born in New York, 1843. He was educated in France and Switzerland, and at Harvard law school. He began his literary career as contributor to periodicals, 1866, and from 1869 he lived in England. Author: *Confidence; Diary of a Man of Fifty; Washington Square; The Portrait of a Lady; Siege of London; Portraits of Places; Tales of Three Cities; A Little Tour in France; The Author of Beltraffio; The Bostonians; The Lesson of Balzac; American Scenes,* etc. Died, 1916.

James, William, eminent American psychologist and philosophical writer, was born in New York, 1842. He was educated in private schools and by tutors, and at Lawrence scientific school, 1861-63; M.D., Harvard medical school, 1870; Ph.D. and Litt.D., Padua, 1893; LL.D., Princeton, 1896, Edinburgh, 1902, Harvard, 1905. He was professor of psychology, 1889-97, and professor of philosophy, 1897-1907, Harvard University. He was Gifford lecturer on natural religion, University of Edinbrugh, 1899-1901. Corresponding member of the French institute, Paris, royal Prussian academy of sciences; member National Academy of Sciences, etc. Author: *Principles of Psychology,* 2 vols.; *The Will to Believe, and Other Essays in Popular Philosophy; Human Immortality—Two Supposed Objections to the Doctrine; The Varieties of Religious Experiences; Pragmatism—A New Name for Some Old Ways of Thinking,* etc. Died, 1910.

Jameson (*jām'sun*), **Mrs.** (Anna Brownell Murphy), British writer, was born in Dublin, 1794. She was the daughter of an artist, and many of her books are about pictures, painters and other art matters. In 1823 she married Robert Jameson, and went with him to Canada, where he held a government office. Among her books are: *Memoirs of Celebrated Female Sovereigns; Characteristics of Women; Memoirs of Italian Painters; The History of Sacred and Legendary Art;* and *Legends of the Madonna.* She died in London, 1860.

Jameson, John Franklin, American educator, historian, was born in Boston, 1859. He graduated at Amherst College, 1879; Ph.D., Johns Hopkins, 1882; LL.D., 1902; Amherst, 1898; was head of department of history, University of Chicago, 1901-05, and director department of historical research, Carnegie institution, Washington, since 1905. He was managing editor of *American Historical Review,* 1895-1901 and again in 1905; president American historical associations, 1907-08. Author: *Willem Usselinx, Founder of the Dutch and Swedish West India Companies,* etc. He edited the *Correspondence of John C. Calhoun;* Editor of the historical publications of the Carnegie institution since 1905.

Jameson, Leander Starr, South African politician, was born at Edinburgh, 1853. He studied medicine there and at London, and began practice at Kimberley in 1878. Through Cecil Rhodes he engaged in pioneer work, was in 1891 made administrator of the South African company at Fort Salisbury, and won enormous popularity. During the troubles at Johannesburg between the Uitlanders and the Boer government, Jameson, who by order of Rhodes had concentrated the military forces of Rhodesia at Mafeking on the Transvaal frontier, started with five hundred troopers to support the Uitlanders, 1895. At Krugersdorp they were overpowered by an overwhelming force of Boers, and, sleepless and famishing, were compelled after a sharp fight to surrender, January 2, 1896. Handed over to the British authorities, Jameson was in July condemned to fifteen months' imprisonment, but was released in December. In 1900 he was elected to the legislative assembly, and was, from 1904 to 1908, premier of Cape Colony. Died, 1917.

Janet (*zhá'ne'*), **Paul,** French philosopher, was born in Paris, 1823. In 1864, he became professor of the history of philosophy at the Sorbonne, and a member of the Academy of Moral and Political Sciences.

Janeway, Edward Gamaliel, physician, born in New Jersey, 1841. Graudated from Rutgers College, 1860, and received LL.D. from College of Physicians and Surgery, N. Y., 1864. Identified with Bellevue Hospital Medical College, first as curator, then as professor of pathological anatomy and later as dean. Died, 1911.

Jansen (*jan'sen;* D., *yän'sen*), **Cornelius,** sometimes called Jansenius, bishop of Ypres, in the Netherlands, and founder of the Jansenists, was born at Acquoi, near Leerdam in Holland, 1585. In 1636 he was made bishop of Ypres. He died in 1638, just as he had completed his great work, the *Augustinus,* in 3 vols., which sought to prove that the teaching of St. Augustine against the Pelagians and semi-Pelagians on grace, free-will, and predestination was directly opposed to the teaching of the Jesuit schools. On the publication of the *Augustinus* in 1640, it was received with loud clamor, especially by the Jesuits, and was prohibited by a decree of the inquisition in 1641; in the following year it was condemned by Urban VIII. in the bull *In Eminenti.*

Jastrow (*yas'trō*), **Joseph,** American educator, professor of psychology, University of Wisconsin. 1888-1928, was born at Warsaw, Poland, 1863. He was graduated at the University of Pennsylvania, 1882; Ph.D., Johns Hopkins, 1886. Author: *Time-Relations of Mental Phenomena; Epitomes of Three Sciences,* part author; *Fact and Fable in Psychology; The Subconscious,* etc.

Jastrow, Morris, Jr., American orientalist, professor of Semitic languages, and librarian, University of Pennsylvania, was born in Europe, 1861. He was graduated at the University of Pennsylvania, 1881; Ph.D., University of Leipzig, 1884, and also studied at other universities of Germany and France. He is a recognized authority on Semitic religions, languages and literatures. Author: *Religion of the Babylonians and Assyrians,* Editor: *Jewish Encyclopædia; Encyclopædia Britannica; Hastings' Dictionary of Religions; Journal American Oriental Society* and various other technical publications. Died, 1921.

Jay, John, American statesman and jurist was born in New York City, 1745, and was there admitted to the bar in 1768. In 1774, as a member of the first continental congress, he formed one of the committee of three which drew up the celebrated address to the people of Great Britain. He largely assisted in framing the New York state constitution; in 1777 was appointed chief-justice of New York, and in the following year became president of congress. He next took part in negotiating the treaty of peace entered into at Paris, 1783, between Great Britain and the United States. On his return he was appointed secretary of foreign affairs and in 1789 chief-justice of the United States supreme court. In 1794 he proceeded on a special mission to England, where he concluded a treaty which met with violent opposition from the anti-federalist party. He afterward held the governorship of New York state, and, after refusing a second nomination to the chief-justiceship, died, 1829.

Jebb, Sir Richard Claverhouse, British Greek scholar, was born at Dundee, Scotland, 1841. He was graduated from Trinity College, Cambridge, as senior classic in 1862, and was elected fellow. In 1869 he became public orator of the University, in 1875 professor of Greek at Glasgow, and in 1889 regius professor of Greek at Cambridge. In 1891 he was elected member of parliament for Cambridge University. His books include *Characters of Theophrastus; The Attic Orators; Primer of Greek Literature;* and his *Bacchylides.* But his greatest work is his translation of Sophocles. Died, 1905.

Jeejeebhoy (*jē-jēb-hoi'*), **Sir Jamsetjee,** Hindu philanthropist, was born at Bombay, India, 1783. He was taken into partnership by his father-in-law, a Bombay merchant, in 1800. By 1822 he had amassed 2,000,000 pounds, and began to exhibit a magnificent liberality. He contributed generously to various educational and philanthropic institutions in Bombay, and spent upward of a quarter of a million pounds in benevolence. Queen Victoria knighted him in 1842, and in 1857 he was made a baronet. Died, 1859.

Jefferson, Charles Edward, Congregational clergyman, was born at Cambridge, Ohio, 1860. He was graduated at Ohio Wesleyan University, 1882; School of Theology, Boston University, 1887; D.D., Oberlin, 1898; Union, 1898, Yale: 1903. He was ordained to the Congregational ministry, 1887; now pastor of Broadway tabernacle, New York. Author: *Quiet Talks With Earnest People in My Study; The Minister as Prophet; Faith and Life; The World's Christmas Tree; The Old Year and the New; The New Crusade,* etc.

Jefferson, Joseph, American actor, was born at Philadelphia, Pa., 1829. He came from a family of actors, and made his first appearance as a child in *Pizarro.* From 1856 to 1858 he played minor parts, and managed several theaters in the South, meanwhile visiting London. Shortly after he made his first substantial success as *Dr. Pangloss* in *The Heir at Law,* at New York. He toured Australia and New Zealand, 1861-65, returned by way of London, and played an engagement at the Adelphia theater in that city in an adaptation of *Rip Van Winkle.* He presented the same play in New York, 1866, and confined himself almost solely to it for fifteen years. In 1880 he produced *The Rivals* with himself as *Bob Acres,* and in the two last-named characters his great reputation was made on the American stage. He died at Palm Beach, Fla., 1905.

Jefferson, Thomas, third president of the United States, was born at Shadwell, Va., 1743. He graduated from William and Mary College, and studied law. In 1773, as a member of the assembly, he took a prominent part in the measures which resulted in the calling of the continental congress, to which he was sent as a delegate, and where he drew up the declaration of independence. During the war in defense of this declaration, he was governor of Virginia, and in 1784 was sent as minister to France. Returning in 1789, he was appointed, by Washington, secretary of state. In this capacity Jefferson led the party in favor of states' rights and a federal government of restricted and carefully defined powers. The other party took the name of Federalists; the former were first called Anti-Federalists, then Republicans, and finally adopted the title first given them as a reproach of Democrats.

When Washington retired, after eight years as president, Jefferson became the vice-president in 1797 under John Adams. The strife of these parties culminated in 1800, when Jefferson and Aaron Burr were elected president and vice-president, against John Adams the federal candidate. The most importance act of his administration was the purchase of Louisiana from France.

Though born and educated in the first rank of colonial life, he was a democrat in theory and practice; he held that "the world is governed too much," and that "that government is best which governs least." Though a large slaveholder, he labored for the prohibition of the slave trade and of slavery in the territory beyond the Ohio river, and advocated emancipation in Virginia.

His writings consist mostly of state papers and letters. His only literary work was his *Notes on Virginia,* published in 1782. His death occurred on the 4th of July, 1826, while the nation was celebrating the fiftieth anniversary of the declaration of independence, which he had writen.

References.—The best edition of his *Writings* is that edited by P. L. Ford in 10 volumes. See biographies by Randall, Parton, Morse, in the "American Statesmen" series, and Schouler in the "Makers of America" series.

Jeffrey, Francis, Lord, Scottish critic and jurist, was born at Edinburgh, 1773. He studied at Glasgow and Oxford, and in 1794 was admitted to the Scottish bar, but as a whig made little progress for many years. In 1820 and again in 1823 he was elected lord rector of Glasgow University; in 1829 dean of the faculty of advocates. After the passing of the reform bill he was returned for Edinburgh, which he represented until 1834, when he was made a judge of the court of sessions. From 1815 he lived at Craigcrook, where he died in 1850. It is as literary critic and leader in a new departure in literary enterprise that Jeffrey holds his title to fame. Together with Sydney Smith, Francis Horner, and a few others, he established the *Edinburgh Review,* of which he was editor until 1829. His own contributions were very numerous and brilliant, if biased.

Jeffreys, George, Baron, English judge, was born at Acton near Wrexham, 1648, and was called to the bar in 1668. Hitherto nominally a Puritan, he now began to intrigue for court favor, was made solicitor to the duke of York, was knighted in 1677, and became recorder of London in 1678. His first exploit was the judicial murder of Algernon Sidney, but in every state-trial he proved subservient to the crown, thus earning the favor of James, who raised him to the peerage in 1685. Among his earliest trials were those of Titus Oates and Richard Baxter; later he was sent to try the followers of Monmouth, and hanged 331, transported 849 to the American plantations, and whipped or fined thirty-three others. He was lord chancellor from 1685 until the downfall of James. On James' flight he tried to follow his example, but was caught at Wapping, disguised as a sailor and sent to the Tower to save him from the mob. Here he died four months after, in 1689.

Jelliffe, Smith Ely, American physician, was born in New York, 1866. He was graduated at the Brooklyn polytechnic, 1886; medical department of Columbia University, 1889; Ph.D., Columbia, 1900. He began practice, 1889, spent one year in Europe, and since 1895 has practiced in New York. He is professor of mental diseases at Fordham University; visiting neurologist to the city hospital; and an authority in mental and nervous diseases. Author: *Nervous Diseases in Butler's Diagnostics; Outlines of Pharmacognosy.*

Editor and translator: *Dubois' Psychoneuroses;* and contributor to medical, botanical and pharmaceutical press.

Jenkin, Henry Charles Fleeming, British engineer and electrician, was born in Scotland, 1833. In 1859 he began experiments in conjunction with Sir William Thompson (Lord Kelvin) in electricity, and was specially occupied with practical work in cable telegraphy, 1858-73. He was made fellow of the royal society, 1865, became professor of engineering in University College, London, same year, and in 1868 professor at Edinburgh University. Died, 1885.

Jenks, Jeremiah Whipple, American economist and educator, professor of economics and politics, New York University since 1912. Was born in St. Clair, Mich., 1856. He was graduated from the University of Michigan, 1878; LL.D., 1903; Ph.D., University of Halle, 1885. Studied law, and was admitted to the Michigan bar. Expert agent of United States industrial commission on investigation of trusts and industrial combinations in the United States and Europe, 1899-1901; and consulting expert of United States department of labor on same subject. Special commissioner of war department, United States, to investigate questions of currency, labor, internal taxation and police in the Orient, 1901-02. Since 1917, director division of Oriental commerce and politics, New York University. Author *The Trust Problem; Citizenship and the Schools; Government Action for Social Welfare,* etc. Died, 1929.

Jenner (*jen'ẽr*), **Edward,** English physician, discoverer of vaccination, was born at Berkeley vicarage Gloucestershire, 1749. He was apprenticed to a surgeon at Sodbury, in 1770 went to London to study under John Hunter, and in 1773 settled at Berkeley, where he acquired a large practice. In 1775 he began to investigate the truth of the traditions respecting cow-pox, became convinced that it was efficacious as a protection against small-pox. Many investigations delayed the actual discovery of the prophylactic power of vaccination, and the crowning experiment was made on May 14, 1796. This experiment was followed by many others; and in 1798 Jenner published his *Inquiry Into the Causes and Effects of the Variolae Vaccinae.* Yet the practice met with violent opposition for a year, when upward of seventy of the principal physicians and surgeons in London signed a declaration of their entire confidence in it. Parliament voted him in 1802 a grant of 10,000 pounds, and in 1807 a second grant of 20,000 pounds. He died at Berkeley, 1823.

Jeremiah, one of the four great prophets of Israel, author of the book in the Bible which bears his name, and of the book of *Lamentations,* flourished about 629-580 B. C. The writings of this prophet, dictated by him to Baruch, although arranged with little regard to order, exhibit great tenderness and elegiac beauty of sentiment, but lack the sublime grandeur of Isaiah. He often borrows from his poetic predecessors. Several of the *Psalms* have been attributed to him, especially by modern critics.

Jeritza, Maria, opera singer, born in Morania, Czecho-Slovakia. She studied, besides voice, the violin, cello, harp, and piano. She made her debut in Olmutz, Austria. After about ten years of opera at Vienna she came to New York and joined the Metropolitan Opera Company, in 1922. Since then she has appeared with great success in *The Jewels of the Madonna, Tosca, Thais,* and other opera, and has made extensive concert tours.

Jeroboam (*jer-ō-bō'am*), first king of the divided kingdom of Israel, ruled about 937-915 B. C. After Solomon's death he headed the successful revolt of the northern tribes against Rehoboam, and, as their king, established idol shrines at Dan and Bethel to wean away his people from the pilgrimages to Jerusalem. He reigned twenty-two years.

Jerome (*jē-rōm'*), **Jerome Klapka,** English humorist, writer, and lecturer, was born at Walsall, England, 1859. He has been at various times clerk, school-master, actor, journalist, and editor of *Idler,* with Robert Barr, 1892-97, and of *To-day* 1893-97. Author: *Idle Thoughts of an Idle Fellow; Three Men in a Boat; Ruth; Wood Barrow Farm; Prude's Progress; The Second Thoughts of an Idle Fellow; Three Men on the Bummel; Tea Table Talk; Passing of the Third Floor Back; The Angel and the Author,* etc. Died, 1927.

Jerome of Prague, the friend of Huss, was born at Prague between 1360 and 1370. He studied at Oxford, became a convert there to Wycliffe's doctrines, and zealousy taught them after his return home in 1407. Jerome entered with his whole soul into the contest carried on by Huss. When Huss was arrested at Constance, Jerome hastened to his side to defend him, but, being refused a safe-conduct, he set out to return to Prague, was arrested in Bavaria, 1415, and was brought back to Constance. He recanted, but withdrew his recantation, and went to the stake, 1416.

Jerome, Saint, Sophronius Eusebius Hieronymus, was born at Stridon, Dalmatia, at some period between 331 and 345. In 379 he was ordained and went in 382 to Rome, where he resided until 384, as secretary to the pope Damascus, and where, although already engaged in his great work of the revision of the Latin version of the Bible, he attained to great popularity and influence by his sanctity, learning and eloquence. Many pious persons placed themselves under his spiritual direction, the most remarkable of whom were Lady Paula and her daughter Eustochium. These ladies followed him to the holy land, whither he returned in 384. He permanently fixed his residence at Bethlehem in 386, Lady Paula having founded three convents and a monastery, the latter by Jerome himself. He is universally regarded as the most learned and eloquent of the Latin fathers. He died in 420.

Jerome, William Travers, American lawyer, was born at New York, 1859. He was educated at Williston seminary and Amherst college; was graduated at Columbus law school, 1884; admitted to the bar, 1884. He was justice of special sessions, 1895-1902. District attorney, New York county, 1901-09. During his career as district attorney he appeared in many noted trials, and attained a high rank as a lawyer and pleader. Author: *Liquor Tax Law in New York.*

Jerrold (*jer'uld*), **Douglas William,** English journalist, author, and wit, was born in London, 1803. He is chiefly remembered for his contributions to *Punch,* with which he was connected from 1841 until within a short time of his death. His best play is *Black-eyed Susan,* published in 1829; his best novels are *St. Giles and St. James,* and *The Chronicles of Clovernook.* An edition of his *Works* was published during his lifetime; and his *Life and Remains* was edited by his son, Blanchard Jerrold, about a year after the father's death in 1857.

Jerrold, William Blanchard, son of Douglas Jerrold, was born in London, 1826. He was a writer for many of the principal newspapers of London, and wrote also many plays, novels, books of travel and other works. Among his best books are *Trips Through the Vineyards of Spain; The Story of Madge and the Fairy Contents London,* illustrated by Doré, and *Life of Napoleon III.* He died in 1884.

Jevons (*jev'unz*), **Frank Byron,** English classical writer, subwarden of Durham University beginning 1902, was born in 1858. He was graduated at Wadham College, Oxford, and was University treasurer, 1898-1902. Author: *Plutarch's Romance Questions; A Manual of Greek Antiquities; An Introduction to the History of Religion; Religion in Evolution,* etc.

Jevons, William Stanley, English economist and logician, was born in Liverpool, 1835. He studied there and at University College, London. In 1866 he became professor of logic and political economy at Owens College, Manchester, and 1876-81 held the chair of political economy at University College, London. He was drowned in 1882 while bathing at Bexhill, near Hastings. He popularized the mathematical methods of Boole, and wrote many works on logic.

Jewett, Sarah Orne, American author, was born at South Berwick, Me., 1849, daughter of the late Dr. Theodore H. Jewett. She was educated at Berwick academy; Litt.D., Bowdoin College. Author: *Country By-Ways; The Mate of the Daylight and Friends Ashore; Betty Leicester—A Story for Girls; Strangers and Wayfarers; The Life of Nancy; The Country of the Pointed Firs,* etc. Died, 1909.

Joan of Arc (*jō-an'; jōn uv ärk'*) or **Jeanne d' Arc,** was born at Domremy, 1412. A prophecy was current in Lorraine, that the kingdom should be saved by a virgin, which with her visions helped to define her mission. She dressed in a suit of white armor, mounted a black charger, bearing a banner of her own device. Her sword was one that she divined would be found buried behind the altar in the church of St. Catherine de Fierbois. Thus equipped she put herself at the head of an army of 6,000 men and advanced to Orleans. Her arrival fired the French, and, on April 29, 1429, she threw herself into the city. The English were compelled to retreat. On May 24, 143, with a handful of men she forced her way into Compiegne, which was then besieged by the forces of Burgundy; was left behind by her men, taken prisoner, and sold to the English by John of Luxembourg. She was carried to Rouen, the headquarters of the English, and flung into prison, arrainged before spiritual tribunal of Pierre Cauchon. Trial was disgraced by brutality. Burned at stake on May 30, 1431.

Joffre, Joseph Jacques Cesaire, Marshal of France, b. Rivesaltes, 1852; Educ. College of Perpignan; Ecole Polytechnic; 2d Lt. Franco-Prussian war; Capt. 1876; Major 1889; Lt.-Col. 1894; Col. 1897; Brigadier 1901; en. Div. 1905; served in China; organized defenses of Formosa; chief en. staff 1914; Com.-in-Chief, 1914-17; defeated Germans at the Marne. Visited U. S. in 1917 and received with great enthusiasm.

John, Saint, the apostle, was born about 4 A. D., and was one of the earliest of Christ's disciples. During the crucifixion our Lord commended His mother to his care, and the apostle "took her to his own home." John afterward became bishop of Ephesus. According to Tertullian, he was plunged into a caldron of boiling oil during the persecution under Domitian, but received no injury. He was subsequently exiled to the island of Patmos, where he is said to have written the book of *Revelation.* He was also author of the gospel and epistles which bear his name. Died about 99.

John the Baptist, forerunner of Christ, was the son of the priest Zacharias and Elizabeth, the cousin of Mary, mother of our Lord. He baptized and preached repentance and forgiveness of sins. He had denounced Herod Antipas for taking Herodias, his brother Philip's wife, was flung into prison, where he was executed at the request of Salome, daughter of Herodias.

John II., Casimir, king of Poland, was born in 1609, the younger son of Sigismund III. During his reign Poland was attacked by Russia and Sweden, resulting in wars which terminated in the cessation of several provinces on the Baltic and Dnieper. His wife, intriguing for the son of the prince of Condé as successor to the throne, and the nobles contending among themselves, he abdicated at the diet of Warsaw, 1668, and retired to France, where he was kindly received by Louis XIV. Died, 1672.

John III., Sobieski, king of Poland, was born about 1624. He was sent to Paris to complete his education, and entered the musketeers of Louis XIV. under Condé; but in 1648 he returned to combat the revolted Cossacks. He fought bravely against them and against the Swedish and other invaders, and next to Czarniecki he was foremost in saving the country from ruin. In 1672 he defeated the Turks and Tartars, and when King Michael, being besieged by the Turks in Kamenetz, concluded an ignominious treaty, he caused its rejection by the senate, hastened to Podolia, and routed the Turks at Khotin, 1673. The king had died a few days before, and Sobieski was elected his successor in 1674. He resumed the war, and rescued the fortress of Trembowla, but subsequently at Zurawno, barely escaped surrender. In 1683 he hastened to the rescue of Vienna, which was besieged by an army of 300,000 Turks. Sobieski, after a triumphal entry into Vienna, pursued the enemy into Hungary, which was soon restored to the emperor. He afterward made attempts to conquer Wallachia, but failed. The last years of his life were embittered by civil as well as domestic troubles. Died, 1696.

John, king of England, surnamed Lackland, was born in 1166. He was the youngest son of Henry II., and the successor, in 1199, of Richard I., his brother. In 1203 he murdered his nephew Arthur at Rouen, and imprisoned Arthur's sister Eleanor, known as the damsel of Brittany, in Bristol castle. In 1215, on the demand of his barons, who were headed by Stephen Langton, now archbishop of Canterbury, he signed *Magna Charta.* Though John thus accepted the charter which has been solemnly ratified on thirty-eight different occasions by subsequent kings, yet he had no intention of being bound by it. He actually procured from the pope a bull annulling the charter, and introduced foreign soldiers to fight against the barons, who immediately offered the throne to Louis, son of Philip of France, an offer which was readily accepted, but which led to no result. During this reign the English lost nearly all their French possessions, even Normandy falling to the crown of France. Died, 1216.

John, king of Saxony, was born in 1801. He was the youngest son of Duke Maximilian of Saxony and Princess Carolina of Parma. His brother, Frederick Augustus II., dying without issue, in 1854, he became king. In the war of 1866 he took the side of Austria. The Prussians entered Saxony, and the Saxon army, having withdrawn to Bohemia, fought against them in the battle of Königgrats. Subsequently Saxony entered the North German confederation, and her troops took part in the Franco-Prussian war of 1870-71. Under the pseudonym Philalethes, John published a translation of Dante's *Divina Commedia,* with critical and historical notes, and left manuscript translations of seventy English poems. Died, 1873.

John II., king of France, surnamed "the good," the second son of the Valois family, was born in 1319. He succeeded his father, Philip VI. of Valois, in 1350. He commenced his reign by acts of despotism and cruelty. England, being appealed to by the friends of those whom he had slain, invaded France, when John was defeated by Edward, the Black Prince, at Poitiers in 1356, and carried to Bordeaux and then to London, where he was a prisoner for three years. He died in 1364.

John of Austria, or **Don Juan d'Austria,** natural son of the emperor Charles V., was born at Regensburg, about 1547. He was early taken to Spain, and after the death of his father was acknowledged by his half-brother Philip II. In 1570 he was sent with an army against the Moors in Granada, whom he completely expelled from the country. He sought to win the favor of the people by mildness; hard pressed for a time by William the Silent, he, with the help of Parma's troops, won the victory of Gembloux in 1577. But Philip now feared he might make himself king of the Netherlands, and Don John's death at Namur, 1578, was not without suspicion of poison.

John of Gaunt (*gänt; gônt*), or **Ghent,** fourth son of Edward III., who made him duke of Lancaster, was born in 1340, at Ghent. In the French wars he served with great bravery under his brother, Edward, the black prince. In 1359 he married

Blanche, heiress of the duke of Lancaster, and himself became duke in 1362. Toward the end of his father's reign he became the chief man in the kingdom, and perhaps wished to succeed him; at any rate, the young king, Richard II., distrusted him and sent him on another wild expedition to recover his Castilian kingdom. This resulted in a treaty between John and Henry Trastamara, who had possession of the throne, by which John's daughter Catharine should succeed as queen of Castile. John of Gaunt died at London, 1399.

John of Salisbury, English schoolman, by Bishop Stubbs styled "for thirty years the central figure of English learning," was born at Old Sarum, about 1118. He studied at Paris and Chartres, and from 1150 lived at Canterbury, meanwhile often visiting Italy. From 1164 to 1170 he had to take refuge at Rheims, but he returned in time to witness Becket's murder. In 1176 he became bishop of Chartres. His Latin works include over 300 letters, the *Policraticus*, etc. Died, 1180.

John XXII., pope, otherwise, Jacques d'Use, was born at Cahors, France, about 1244. Attempting, after his election as pope in 1316, to carry out the vast policy of Gregory VII., he interposed his authority in the contest for the imperial crown between Louis of Bavaria and Frederick of Austria, supporting the latter and excommunicating his rival. He died at Avignon in 1334, having accumulated 18,000,000 gold florins.

John XXIII., pope, a Neapolitan named Balthazar Cossa, was born at Naples about 1360. He became chamberlain to Boniface IX., who in 1402 made him a cardinal. He succeeded Alexander in 1410. By the decree of a council held at Constance in 1414, John was deposed and imprisoned for four years, under charge of Lewis, duke of Bavaria. At the end of that time he was liberated, and found such favor with the existing pope, Martin V., that he was created by that pontiff cardinal-bishop of Tusculum, and dean of the sacred colleges, and allowed precedence over the other cardinals. He died at Florence, Italy, 1419.

Johnson, Andrew, seventeenth president of the United States, was born at Raleigh, N. C., 1808. He was self-educated, a tailor by trade, and made his entry into politics in 1840 as a presidential elector in Tennessee for Van Buren, the democratic candidate. In 1843 he became a member of congress, where for ten years he supported the policy of the democratic party. In 1853 he was elected governor of Tennessee, and again in 1855. In 1857 he was elected to the United States senate, and on the occupation of Nashville by the federals, 1862, was appointed by President Lincoln military governor of Tennessee. In this position he gave such satisfaction to the North that in 1864 he was nominated by the republican party for the office of vice-president, and was elected with President Lincoln, then reëlected for his second term. On April 14, 1865, by the assassination of President Lincoln, he succeeded to the presidency. Some indiscreet and violent speeches, during a tour to Chicago and St. Louis, turned the tide against him, and in the congressional elections his opponents triumphed by increased majorities. His vetoes were generally nullified by the two-thirds vote of both houses. In 1867 Johnson suspended Stanton, secretary of war, who was reinstated by the senate the following year. An attempt to gain possession of the war department during this quarrel led to the impeachment of the president in 1868, but he was acquitted by a single vote. Chief-Justice Salmon P. Chase, one of the most eminent American statesmen and jurists, presided at this remarkable trial. His term of office expired in 1869; and afterward he was elected United States senator, taking his seat in 1875. Died, 1875

Johnson, Clifton, author, illustrator, was born at Hadley, Mass., 1865. He was educated in the common schools there, 1870-80, and ten years later entered upon a literary career. Author: *The New England Country; The Country School; The Farmer's Boy; Highways and Byways of the South; Highways and Byways of the Mississippi Valley.* Illustrator: White's *Natural History of Selbourne;* Barrie's *Window in Thrums;* Burroughs' *Year in the Fields*, etc.

Johnson, Eastman, American artist, was born in Lovell, Me., 1824. He studied two years in royal Academy, Düsseldorf. Among many notable genre pictures are: *The Kentucky Home; Husking Bee* and several portraits of distinguished persons. He is represented in the Metropolitan museum of art and Lenox galleries, New York; Corcoran gallery, White House and treasury building, Washington; capitol at Albany; Knickerbocker, Century, and Union League clubs, chamber of commerce, etc., New York. Died, 1906.

Johnson, Sen. Hiram Warren (1866—), was born in California, studied law, admitted to bar, 1888. Elected Governor of California, 1911-19, on platform designed to free the state of the domination of the Southern Pacific Railroad; resigned to take seat in Senate, 1917-23. With Roosevelt, founded Progressive Party, 1912.

Johnson, Joseph French, American educator and economist, was born at Hardwick, Mass., 1853, and graduated at Harvard. He was engaged on the *Springfield Republican, Chicago Tribune, Spokane Spokesman.* Professor of Political Economy, New York University. Author: *Money and Currency, Syllabus of Money and Banking.* Editor. Died in 1925.

Johnson, Reverdy, American lawyer and politician, was born in Annapolis, Md., 1796. He began to practice in upper Marlboro, and in 1817 removed to Baltimore. From 1845 to 1849 he sat in the United States senate as a whig, but he supported the Mexican war beyond the lines of the political party to which he belonged. Later he was appointed attorney-general in President Taylor's cabinet. He again entered the United States senate in 1863, sustained the government throughout the Civil War, and, when peace was restored, argued in favor of the prompt readmission of the southern states. In 1868-69 he was minister to Great Britain. On his return from England he renewed his law practice. Died, 1876.

Johnson, Samuel, English writer and lexicographer, was born at Lichfield, 1709, where his father was a bookseller. He was educated partly at Litchfield and partly at Sowbridge, and entered Pembroke College, Oxford, 1728. Here he remained for three years, and was compelled to leave the university without a degree. In 1731 Johnson became usher in a school in Market Bosworth, Leicestershire. Disgusted with the ill-treatment he received there he left, and was next employed in Birmingham in translating for a bookseller. Here in 1736 he married the widow of Mr. Porter, a mercer. His wife was twenty years his senior, but this disparity she compensated for by bringing her husband 800 pounds. Relying upon this capital he opened a classical boarding school, but procured only three pupils, one of whom was the celebrated Garrick. Disappointed in this enterprise, he started, in company with Garrick, for London. They reached the metropolis in 1737, where Johnson was employed by Cave, the founder and proprietor of the *Gentleman's Magazine.* In 1738 his poem *London,* an imitation of the third satire of Juvenal, was published. From 1740 to 1743 he wrote the parliamentary debates for the *Gentleman's Magazine,* and in 1747 issued the prospectus of his *English Dictionary,* for which he was to receive 1,575 pounds. In 1750 he commenced his periodical, *The Rambler,* and in 1755 his great *Dictionary* appeared. For this work the University of Oxford awarded him the degree of M.A. On the death of his mother in 1759, Johnson wrote the story of *Rasselas* to pay her funeral expenses. In 1762 a pension of 300 pounds per annum was granted to him by the king, and subsequently he received the title of doctor of laws from both the Universities of Dublin and Oxford. In 1781 he published his *Lives of the Poets,* and, after a life spent in incessant literary labor, died at his house in Bolt-court, Fleet street, London, 1784.

Johnson, Tom Loftin, American politician and reformer, was born at Georgetown, Ky., 1854. He became clerk in street railway office, Louisville, Ky., 1869-75. He invented several street railway devices; bought a street railway in Indianapolis; later acquired large street railway interests in Cleveland, Detroit, and Brooklyn. He also engaged in the business of iron manufacturing in Cleveland. Was member of congress, 1891-95, prominent advocate of the *Single-tax* theories of late Henry George; he gave much attention to taxation questions and municipal reform. He was mayor of Cleveland, 1901-10, and during his tenure of office gained national prominence by his campaign for a three-cent fare on the Cleveland street railway system, which, however, failed in 1909. Died, 1911.

Johnston, Albert Sydney, American general, was born in Kentucky, 1803, and was graduated at West Point, 1826. In 1837 he superseded General Houston as commander-in-chief of the Texan army. In 1857 he commanded the expedition sent against the Mormons of Utah; and in 1860 was made military commander of the department of Kentucky and Tennessee by the confederate government. After the surrender of Fort Donelson he formed a junction with the army of General Beauregard, and fell in the battle of Shiloh, 1862.

Johnston, Alexander, Scottish painter, was born at Edinburgh, 1815, and first exhibited at the royal academy in 1836. His earlier pieces were derived from Scottish song and story: *The Covenanter's Burial.* Then followed: *The Arrest of John Brown the Lollard; The Pressgang; John Bunyan in Bedford Jail; The Cotter's Saturday Night,* etc. He died at Hampstead, 1891.

Johnston, Alexander, American historian, was born at Brooklyn, N. Y., 1849. He was graduated at Rutgers College, 1870; was admitted to the bar, 1876; was professor of political economy and jurisprudence at Princeton from 1883 until his death in 1889. He wrote: *History of American Politics; The Genesis of a New England State; History of the United States; The United States: Its History and Constitution,* etc.

Johnston, Sir Harry Hamilton, English traveler and writer, was born at Kennington, London, 1858. He was graduated at King's College, London; was a student at the royal academy of arts, 1876-80. He traveled in North Africa, 1879-80; explored Portuguese West Africa and River Kongo, 1882-83; commanded a scientific expedition of the royal society to Mount Kilimanjaro, 1884; made an expedition to Lakes Nyasa and Tanganyika, which led to the founding of the British Central Africa protectorate, 1889; commissioner and consul-general, 1891; consul-general of regency of Tunis, 1897-99; special commissioner, commander-in-chief and consul-general for Uganda protectorate, etc., 1899-1901. Author: *Essays on the Tunisian Question; The Uganda Protectorate; British Mammals; The Nile Quest; Liberia; George Grenfell and the Congo,* etc.

Johnston, Joseph Eggleston, American soldier, was born in Virginia, 1807. He was graduated at West Point, 1829; served in the Mexican war, 1846-47; and was commissioned quartermaster-general of the United States army, 1860. He joined the confederate army as a brigadier-general at the outbreak of the Civil War, served with distinction throughout that conflict, and in 1865 was in command of the army of the Tennessee. He published a volume of memoirs, chiefly military, in 1874. Died, 1891.

Johnston, Joseph Forney, lawyer, United States senator, was born in North Carolina, 1843. He left school to join the confederate army as a private in 1861; served during the war, was wounded four times, and rose to the rank of captain. After the war he was admitted to the bar; practiced law seventeen years; was a banker ten years; and was elected governor of Alabama in 1896, reëlected in 1898, serving four years. He was unanimously elected to the United States senate from Alabama to fill out the unexpired portion of the term of Hon. E. W. Pettus, deceased, ending 1909, also for the term 1909-15.

Johnston, Mary, American novelist, was born at Buchanan, Botetourt county, Va., 1870, daughter of John William Johnston. She was educated at home, and exhibited literary talent at an early age. Author: *Prisoners of Hope; To Have and To Hold; Audrey; Sir Mortimer; The Goddess of Reason,* etc.

Joinville (*zhwaN'vēl*), **Jean, Sire de,** French historical writer, was born in 1224, and became sénéschal to the count of Champagne and king of Navarre. When almost eighty he undertook his delightful *Vie de Saint Louis.* His style conforms closely to his character; it is veracious, flowing, naïve, often singularly expressive. Died, 1317.

Jokai (*yō'ko-ē*), **Maurice,** Hungarian novelist, was born at Komorn, Hungary, 1825. He published his first book in 1845, and took part as a journalist in the revolution of 1848. In 1863 he entered the Hungarian parliament, and during his long career there was one of the principal supporters of Koloman Tisza, 1875-90. He wrote about 200 novels. Died, 1904.

Joliet (Fr. *zhō'lyā';* Eng., *jō'li-et*), **Louis,** French-Canadian explorer, one of the early explorers of the Mississippi, was born at Quebec, 1645. He studied for the priesthood at the Jesuit College, Quebec. With Marquette he was selected to explore the western country and to push through to the Mississippi. They started West in May, 1673, reaching the Mississippi at the mouth of the Wisconsin in June. They floated down the Mississippi, passing the mouths of the Missouri and the Ohio, and going far enough to be sure that the river flowed into the gulf of Mexico. Joliet upset his canoe on his way back, losing all his maps and papers, so that the only accurate report of the expedition was Marquette's. Few men have contributed more to the geography of that time than did Joliet. Died, 1700.

Jolly, Philipp von, physicist, was born in 1809 at Mannheim, Germany. He was educated at the universities of Vienna, Berlin, and Heidelberg, and was later professor at Heidelberg and Munich. His inventions were numerous, including the Jolly or spring balance for determining specific gravity, the air thermometer and the mercury air pump. He died in 1884.

Jolson, Al., actor, was born in Washington, D. C., May 26, 1886. He made his first appearance on the stage in 1899 as a member of a mob. He worked up to his present exalted position at the height of the entertainment stage through vaudeville, minstrel shows. He made his first Winter Garden (New York) appearance in 1911 in *La Belle Paree.* He has starred in talking moving pictures, including *The Jazz Singer* and *The Singing Fool.*

Joly de Lotbiniere, Sir Henry Gustave, Canadian statesman, was born in 1829. He was educated at the Sorbonne, Paris, France, and admitted to the bar of Quebec, 1855; queen's counsel, 1878; premier of Quebec, 1878-79; leader of opposition, 1883-85; vice-chairman, Dominion liberal convention, 1883; minister of inland revenue for Dominion of Canada, 1896-1900; and lieutenant-governor of British Columbia, 1900-06. He always took an active interest in forestry, and was vice-president of the American forestry congress, 1885. He published various writings on forestry and on the metric system. Died in 1908.

Jomini (*zhō'mē'nē*), **Henri, Baron,** noted Swiss, soldier and military writer, was born at Payernes Switzerland, 1779. When very young he entered the Swiss guard of Louis XVI., but when it was disbanded returned to his own country, and before he was twenty years old was made head of the war department. In 1812 he was invited by Napo-

leon to join the campaign against Russia, and was appointed historian of the grand army. When the cause of Napoleon was almost lost he resented an affront he had received by going over to the allies. Napoleon bore him no ill-will for this course, saying, "He was not a Frenchman, and there was no love of country to retain him." He is known now chiefly by his works on military history and the art of war. He died at Passy, near Paris, 1869.

Jones, Henry Arthur, English dramatic author, was born at Grandborough, England, 1851. He was educated at Winslow, Bucks; hon. M.A. from Harvard University, 1907. Author: *A Clerical Error; The Rogue's Comedy; The Physician; The Liars; The Manœuvres of Jane; Carnac Sahib; The Lackey's Carnival; Mrs. Dane's Defence; The Princess's Nose; The Idol; Whitewashing Julia; Joseph Entangled; The Chevalier; The Heroic Stubbs; The Hypocrites; The Evangelist; The Renascence of the English Drama;* essays, lectures, etc.

Jones, Inigo, English architect, was born in London about 1573. At Venice his attention was drawn to the works of Palladio, which awoke in him a passion for architecture, to which his attention was thenceforward wholly directed. Having been appointed first architect to Christian IV. of Denmark, when that monarch visited James I. in England, Jones attended him, remained there, and became architect to the queen. In 1620 he was named one of the commissioners for repairing St. Paul's cathedral, and in the following reign he erected the banqueting-house at Whitehall. He wrote a book on *Stonehenge.* Died, 1652.

Jones, Jenkin Lloyd, independent minister, editor, and lecturer, was born at Cardiganshire, South Wales, 1843. He served as a private in the 6th Wisconsin battery for three years in the Civil War; was graduated from Meadville, Pa., theological seminary, 1870; was nine years pastor of All Souls church, Janesville, Wis.; secretary of western Unitarian conference for nine years; organized and was first secretary of western Unitarian Sunday-school society; in 1878, with others, established *Unity,* a weekly paper, now organ of the congress of religions, and was its editor since 1879; organized and until 1882 was pastor of All Souls church, Chicago. Died, 1918.

Jones, John Paul, American naval commander, was born at Arbigland, in Scotland, 1747. His original name was John Paul. He settled in Virginia, assuming the name of Jones. When the congress, in 1775, resolved to fit out a naval force, he offered his services; and, visiting the British coast in a brig of eighteen guns, performed some remarkably bold exploits and took advantage of his familiarity with the scenes of his boyhood to make a hostile visit to the shores of the Solway Firth. In 1779 he was appointed to the command of a small squadron of French ships, displaying the American flag, with which he again visited the British coasts, causing great alarm and taking some prizes. Off Flamborough he fell in with a fleet of forty-one British merchantmen, convoyed by the forty-gun *Serapis* and the twenty-gun *Countess of Scarborough.* Jones lashed his *Bon Homme Richard* to the *Serapis* and after three hours of desperate fighting compelled her surrender, after which, his own ship sinking, he transferred his crew to the *Serapis.* In 1787 he accepted an appointment in the Russian service, and the command of a fleet at the mouth of the Dnieper, with which he took an active part in the Turkish war. He died at Paris, 1792.

Jones, Samuel Milton, American olitical reformer, known as "Golden Rule" Jones because of his persistent advocacy of that practice in politics and in business, was born in Wales, 1846. Brought to America in 1849, he worked as a boy in the oil fields. He established large manufacturing plants at Toledo, Ohio, and gained an immense fortune and a splendid reputation in business. Elected as a republican mayor of Toledo in 1897, he was reëlected on an independent ticket in 1899, 1901, and 1903; used his office to defeat graft and dishonesty and to secure the rights of the common citizen. Died, 1904.

Jones, Wesley L., lawyer, United States senator, was born near Bethany, Ill., 1863. He was graduated at Southern Illinois College, 1886; read law in Chicago, and moved to the territory of Washington just before its admission as a state, 1889. He first worked in a real estate office; began law practice, 1890. He took part as speaker in Blaine campaign, 1884, and Harrison campaign, 1888, in Illinois, and since that in every campaign in Washington. He was member of congress from the state-at-large, 1899-1909, and was elected to the United States senate for the terms 1909-27.

Jones, Sir William, English orientalist, was born in London, 1746. In 1765 he became tutor to the son of Earl Spencer; in 1774 was called to the bar, and in 1776 became commissioner of bankrupts. In 1783 he obtained a judgeship in the supreme court of judicature in Bengal, and was knighted. He at once devoted himself to Sanskrit, whose startling resemblance to Latin and Greek he was the first to point out in 1787. He established the Asiatic society of Bengal in 1784, and was its first president. He died at Calcutta, 1794. There is a monument to his memory, erected by the East India company, in St. Paul's cathedral.

Jonson, Benjamin, or **Ben,** English dramatist, was born at Westminster, about 1573, and was educated at Westminster school. The first piece that brought him into prominence was *Every Man in His Humor,* published in 1598. The best of his subsequent productions are *Volpone, or the Fox, The Silent Woman,* and *The Alchemist.* He also composed two tragedies, *Sejanus* and *Catiline's Conspiracy.* His *Masques,* written for the courts of James and Charles, are very graceful. Jonson had a pension from these monarchs, but his improvidence involved him in difficulties, and he died in poverty, 1637.

Jordaens (*yōr'dāns*), **Jakob,** Flemish painter, was born at Antwerp, 1593. He ranks next to Rubens among Flemish painters, and was master in the guild of St. Luke. He excelled in humorous scenes of Flemish life, also painted scriptural and mythological subjects. Among his numerous works are: *Jesus in the Midst of the Doctors; The Adoration of the Shepherds; The Satyr and the Man Who Blew Hot and Cold,* etc. Died, 1678.

Jordan, David Starr, American naturalist and educator, was born at Gainesville, N. Y., 1851. He was graduated at Cornell University, M.S., 1872; M.D., Indiana Medical College, 1875; Ph.D., Butler University, 1878; LL.D., Cornell, 1888, Johns Hopkins, 1902; president of Leland Stanford University 1891-1913; chancellor 1913, now emeritus. He was also United States commissioner in charge of fur seal investigations, etc. Author: *A Manual of Vertebrate Animals of Northern United States; Standeth God Within the Shadow; The Philosophy of Despair; The Blood of the Nation; Food and Game Fishes of North America,* with B. W. Evermann; *A Guide to the Study of Fishes; Highlights of Geography—I North America, II Europe.*

Joseph, favorite son of Jacob by his wife Rachel, who excited the envy of his elder brothers and was by them sold into Egyptian slavery, was born in Haran and died in Egypt. He flourished about the nineteenth century B. C. Having acquired the confidence of Pharaoh through his successful interpretation of dreams, he was placed as viceroy at the head of the arrangements for provisioning the kingdom during seven consecutive years of famine, and was thus enabled to preserve, in the persons of his father and brothers, with their families, the future Israelitish nation. After his death his body was embalmed and carried up into Canaan by the Israelites at their exodus.

Joseph I., emperor of Germany, was born at Vienna, 1678, and was crowned king of Hungary in 1687. He then succeeded his father, Leopold I., as emperor of Germany in 1705. He granted privileges to the Protestants, and, in alliance with Britain, prosecuted successfully the war of the Spanish succession against France, under command of Prince Eugene and the duke of Marlborough. He died in 1711.

Joseph II., emperor of Germany, son of Francis I. and Maria Theresa, was born in 1741. In 1764 he was elected king of the Romans, and after his father's death, in 1765, emperor of Germany. As soon as he found himself in full possession of the government of Austria he declared himself independent of the pope, and prohibited the publication of any new papal bulls without his *placet.* He suppressed 700 convents, reduced the number of the regular clergy from 63,000 to 27,000, prohibited papal dispensations as to marriage, and in 1781 published the edict of toleration for Protestants and Greeks. He also abolished serfdom, reörganized taxation, and curtailed the feudal privileges of the nobles. In 1788 he engaged in an unsuccessful war with Turkey; and the vexation caused by this, and by revolts in his dominions, hastened his death, 1790.

Josephine, Marie Josephe Rose Tascher de la Pagerie, first empress of the French, was born in Martinique, 1763. She married first the Vicomte de Beauharnais, by whom she became mother of Eugene Beauharnais, and Hortense, mother of Napoleon III. Her husband perished during the reign of terror, and she married, in 1796, Napoleon Bonaparte, the newly-appointed commander-in-chief of the army of Italy. Sharing her husband's fortunes, she became in time the occupant of an imperial throne, which she adorned by her beauty, grace and womanly virtues. Failing, however, to afford an heir to the new monarchy, Napoleon resolved to divorce her, which act was consummated in 1809. Josephine thereupon retired to her château at Malmaison. Died, 1814.

Josephus (*jō-sē'fus*), **Flavius,** celebrated Jewish historian, was born at Jerusalem, 37 A. D. As a dependent of the Flavian family, he assumed his name of Flavius. His *Antiquities of the Jews,* in twenty books, gives an account of Jewish history from the creation of the world to 66 A. D. A remarkable passage in this work relating to Jesus Christ is now believed to be spurious. His other works are: *History of the Jewish War* and an *Autobiography.* He died about 100 A. D.

Joshua (*josh'ū-a*), celebrated Hebrew warrior under whose leadership the land of Canaan was conquered, was the son of Nun, of the tribe of Ephraim, and was born in Egypt. The so-called book of *Joshua,* in its present form, containing an account of the conquest and division of the "land of promise," is of composite structure. The compiler made copious use, especially in the earlier chapters, of documents drawn up during the period of the conquest. He died about 1425 B. C.

Josiah (*jō-sī'a*), king of Judah, succeeded his father Amon at eight years of age, and flourished about 649-609 B. C. He reëstablished the worship of Jehovah, and instituted the rites in the newly-discovered "book of the law." He fell at Megiddo attempting to check Pharaoh-Necho's advance against the Assyrians.

Joubert (*you'bert*), **Petrus Jacobus,** Boer general and statesman, was born in Cape Colony, 1831. He was a farmer and ranchman; became a member of the Volksraad; was attorney-general in 1870; and in 1874 was acting-president. He was one of the triumvirate who organized a Transvaal revolt against the British government in 1880, held the chief command in the engagements at Laing's Nek, Ingogo river, and Majuba hill. In 1899 he was commander-in-chief of the Boer forces in the war with England. He conducted the siege of Ladysmith, but was forced to retire on account of ill-health. He died 1900.

Jouffroy (*zhoo'frwȧ'*), **Theodore Simon,** French philosopher, was born at Pontets in the Jura, 1796. He studied under Cousin, and from 1817 taught philosophy in Paris, until in 1838 he exchanged his chair for the post of librarian to the university. The lucid interpreter of the Scottish philosophers, Reid and Dugald Stewart, he translated their works. His own best books were *Mélanges Philosophiques, Cours du Droit Natural,* and *Cours d'Esthétique.* Died, 1842.

Joule (*joul*) **James Prescott,** English physicist, was born at Salford, England, 1818. He was a pupil of Dalton's, and devoted his time to physical and chemical research, made discoveries in connection with the production of heat by voltaic electricity, demonstrated the equivalence of heat and energy, and established on experimental grounds the doctrine of the conservation of energy. Died, 1889.

Jourdan (*zhoor'dȧn'*), **Jean Baptiste, Comte,** French marshal, was born at Limoges, France, 1762. In 1797 he became president of the council of five hundred, but was expelled in 1799, owing to his opposition to Bonaparte, by whom, however, he was afterward employed. He subsequently followed the fortunes of Joseph Bonaparte in Naples and Spain. He owed his title to Louis XVIII., but joined in the revolution of 1830. Died, 1833.

Jowett (*jou'et*), **Benjamin,** English classical scholar, master of Balliol College, Oxford, was born at Camberwell, 1817. He was a fellow and tutor of his college until his election to the mastership in 1870. He wrote *On the Interpretation of Scripture,* a commentary on certain epistles of St. Paul; but he achieved his greatest literary successes by his translation of Plato's *Dialogues,* the *History* of Thucydides, and the *Politics* of Aristotle. Died, 1893.

Joy, George William, British artist, was born at Dublin, Ireland, 1844. He was educated at Harrow, and studied at Kensington, the royal academy, and at Paris under Charles Jalabert and Bonnat. Pictures: *Domenica; Chess-players; Laodamia; Young Nelson's First Farewell; Wellington at Angers; The Death of General Gordon,* and many portraits. He obtained gold medals at Paris, Munich and Berlin, and also the Chicago medal.

Joyce, James, Irish writer and leader of the modern school of psychological impressionism, was born in Dublin, 1882. He was educated at Royal University, Dublin. Forced into exile for his religious, anti-national, and artistic opinions, he has lived in Rome, Trieste, and Paris; in the latter city he finished and brought out his valuable work of fiction, the radically conceived and executed *Ulysses,* February, 1922. His other works include *Dubliners,* short stories, *A Portrait of the Artist as a Young Man,* the introductory study to Ulysses, and *Exiles,* a play.

Juarez (*hwȧ'rās*), **Benito,** Mexican politician, was born in Oaxaca, 1806, of Indian parents. He became an advocate, and was governor of his native state in 1847-52. In 1861 he entered the capital, and was elected president for four years. In 1866 the French emperor declared war against Juarez, who retreated to the northern frontier; but, on the withdrawal of the French, he reëntered Mexico City in 1867, the emperor, Maximilian, having meanwhile been shot by court-martial. Juarez was elected president again in 1871, though the risings became fiercer and more frequent. He died in 1872.

Juch (*yōōk*), **Emma Johanna Antonia** (Mrs. Francis L. Wellman), operatic singer, was born during the sojourn of her parents in Vienna, Austria-Hungary, 1863, daughter of Justin Juch. She studied three years with Murio-Celli; made her début in concert at Chickering hall, N. Y., and her operatic début in her majesty's grand Italian opera, London, 1881, as *Felina* in *Mignon.* Later she sang during three seasons under Colonel Mapleson in soprano rôles, alternating with Nilsson as *Elsa* in *Lohengrin,* under management of Theodore Thomas. Was prima donna with the American opera company three seasons, and since then has sung in concerts, and in the Emma Juch English opera company.

Judson, Harry Pratt, American educator, president of the University of Chicago, since 1907, was born

in Jamestown, N. Y., 1849. He was graduated at Williams College, 1870; LL.D., 1893; LL.D., 1903, Queens University, Canada. He was teacher and principal of high school, Troy, N. Y., 1870-85; professor of history, University of Minnesota, 1885-92; and head professor of political science and dean of the faculties of arts, literature and science, Chicago University, 1892-1907. Author: *The Latin in English; The Mississippi Valley,* in Shaler's *United States of America; The Young American; The Government of Illinois.* Died, 1927.

Julian (*jōōl'yan*) *jōō'li-an*), or **Julianus, Flavius Claudius,** surnamed the Apostate, Roman emperor, 361-63, was born in Constantinople, probably 331 A. D. In 355 he was declared Cæsar, and sent to Gaul, where he obtained several victories over the Germans; and in 316 the troops in Gaul revolted from Constantius and declared for Julian. He took from the Christian churches their riches and divided them among his soldiers. He sought likewise to induce the Christians, by flattery or by favor, to embrace paganism. His malice was further evinced by extraordinary indulgence to the Jews, and an attempt to rebuild the temple at Jerusalem, that the prophecy of Christ might be falsified; but the design was frustrated. He did not long survive his disappointment, being killed in 363 in his expedition against the Persians.

Julien (*zhü'lyaN'*), **Stanislas Aignan,** Chinese scholar, was born at Orleans, France, 1799. He became at twenty-one assistant professor at the Collège de France. He gave himself with such zeal to the study of Chinese that in less than a year he was able to make a Latin translation of Mencius. He succeeded Abel Rémusat as professor of Chinese at the Collège de France, 1832. Julien produced admirable French versions of specimens of the Chinese drama and of Chinese romances, as well as a collection of Indian novels. His *Syntaxe Nouvelle de la Langue Chinoise* appeared 1869-70. Died, 1873.

Julius II., Pope (Cardinal Giuliano della Rovere), was born in Italy, 1443, became pope in 1503. He endeavored to extend the papal territory, and, after driving Cæsar Borgia from the Romagna, formed the league of Cambrai with Maximilian and Louis XII. against Venice in 1508. In 1511 the holy league was formed, and the French army driven back over the Alps. He sanctioned the marriage of Henry VIII. with Catharine of Aragon, commenced to rebuild St. Peter's at Rome, and was the patron of Michelangelo and Raphael. Died, 1513.

Junot (*zhü'nō'*), **Andoche,** marshal of France, was born at Bussy-le-Grand, 1771, and distinguished himself in the early wars of the republic. In 1804 he was made governor of Paris; in 1807 was appointed to the command of the army of Portugal. He quickly made himself master of all the strong places in the kingdom, was created Duc d'Abrantès, and appointed governor of Portugal. He served in Germany and Russia, and, made one of the scapegoats for the Russian disaster, was sent to govern Illyria. Becoming deranged, he was taken to his father's house near Dijon, threw himself from a window, 1813, and died soon afterward.

Jusserand (*zhü's'-rāN'*), **Jean Adiren Antoine Jules,** French diplomat and man of letters, French ambassador at Washington since 1902, was born at Lyons, 1855. He was educated at Lyons and Paris, and entered the foreign office in 1876. LL.D., Harvard. He was councillor of the French embassy at London, 1887-90; member of the legion of honor, 1883, and minister at Copenhagen, 1898. Author: *Les Anglais au moyen âge; La Vie Nomade et les Routes d'Angleterre au xiv. siecle; Le Roman au temps de Shakespeare; Histoire littéraire du Peuple anglais; Shakespeare en France; Les sports et jeux d'exercice dans l'ancienne France,* etc.

Jussieu (*zhü'syü'*), **Antoine Laurent de,** French botanist, was born at Lyons, France, 1748. He reformed the arrangement of the gardens and collections of plants under his uncle's ideas in regard to the natural method. For thirty years he continued to develop his novel views; and when his *Genera Plantarum,* which he began in 1778, was completed in 1789, the natural system was finally established as the true basis of botany. In 1793 he became professor of botany in the newly organized Jardin des Plantes, where he continued to teach until 1826, when blindness compelled him to resign his chair to his son Adrien. Died in Paris, 1836.

Justin, surnamed the Martyr, was born at Shechem in Samaria about 100 A. D., and was successively a stoic and a Platonist; and after his conversion to Christianity wandered about, arguing for the truth of the new faith. At Rome, between 150 and 160, he wrote the *Apologia* of Christianity addressed to the emperor, followed by a second one. He is said to have been martyred about 165 A. D.

Justinian (*jus-tin'i-an*) **the Great** (Flavius Anicius), nephew of the emperor Justin, was born 483 A. D., in the village of Tauresium. His reign, which extended from 527 over a period of thirty-eight years, was the most brilliant in the history of the eastern empire. Immediately on his accession he compiled a code which comprised all the constitutions and laws of his predecessors, now known as the *Code of Justinian.* He died in 565.

Juvenal, or **Juvenalis, Decimus Junius,** celebrated Latin poet and satirist, was born in Aquinum, about 60 A. D. His satires, sixteen in number, are written in indignant scorn of the vices of the Romans under the empire, in the descriptions of which the historian finds a portrait of the manners and morals of the time. He practiced at Rome as an advocate, and, it is thought, also visited Egypt. Died about 128 A. D.

Kalakaua (*kä'lä-kou'ä*), **David,** king of the Hawaiians, 1874-91, was born in Honolulu, 1836, and was descended from Keawe, an ancient king of the islands. In 1860 he visited California. On the death of Lunalilo, who appointed no successor, Kalakaua was elected king in 1874 by the legislature, over Emma, queen dowager and relict of Kamehameha IV. In 1887 he granted a new constitution. Died, 1891.

Kames (*kāmz*), **Henry Home, Lord,** Scottish philosopher and critic, was born at Kames in Berwickshire, 1696. He was admitted to the bar in 1723, and appointed to the bench as Lord Kames in 1752. Besides books on Scotch laws, he published *Essays on Morality; An Introduction to the Art of Thinking; Elements of Criticism,* his best-known work; and *Sketches of the History of Man.* Died, 1782.

Kamimura, Hikonojo, Japanese admiral, was born in Satsuma, 1850. He commanded a cruiser in the China-Japanese war, 1894-95, was promoted vice-admiral, 1903, and at the outbreak of the Russo-Japanese war was placed in command of the second Japanese squadron. In 1904 he sank the Russian cruiser *Rurik* off Ulson, Korea, and gained a decisive victory over the Russian squadron. Died, 1916.

Kane, Elisha Kent, arctic explorer, was born in Philadelphia, Pa., 1820. He entered the United States navy as a surgeon, in which capacity he visited China, India, the East Indies, and, under leave of absence, Arabia, Egypt, Greece, and western Europe. In 1850 he commenced his career of arctic discovery as surgeon, naturalist, and historian to the first Grinnell expedition. In the spring of 1853 he was again sent out, this time as commander of a second Grinnell expedition, in which he achieved important results. Died, 1857.

Kant, Immanuel, celebrated German philosopher, the founder of the "critical" or Kantian philosophy, was born at Konigsberg, Prussia, 1724, died at the same place 1804. He early showed great application to study, and was sent to the Collegium Fredericianum, and then to the university of his native city. Leaving the university after three years, he engaged in teaching, and it was not till 1755 that he took his doctor's degree.

Soon after this he was appointed to a place in Konigsberg University, and lectured on logic, metaphysics, mathematics, and natural philosophy, to which, at subsequent periods, he added natural law, moral philosophy, natural theology, and physical geography. In 1770 he became a full professor, obtaining the chair of logic and metaphysics, a post that he occupied till 1797.

The philosophy of Kant profoundly influenced all subsequent philosophical speculations. Dissatisfied with the dogmatisms of Wolff and the skepticism of Hume, he set out to investigate the field of metaphysics for himself, and in the first place proceeded to the examination of the origin, extent and limits of human knowledge. According to him, part of our knowledge is knowledge *a priori,* or original, transcendental, and independent of experience; part of it is *a posteriori priori,* or based on experience. What he calls the "pure reason" has to do with the former.

His great work named the *Kritik der reinen Vernunft*—"Critique of Pure Reason," contains the foundation for his whole system of philosophy. In 1790 he published a supplementary work, the *Kritik der Urtheilskraft*—"Critique of the Power of Judgment." Far from rejecting experience, Kant considers the work of all our life but the action of our innate faculties on the conceptions which come to us from without. He proceeds in a similar way with morality; the idea of good and bad is a necessary condition, an original basis of morals, which is supposed in every one of our moral reflections, and not obtained by experience. He treats this part of his philosophy in his *Kritik der praktischen Vernunft*—" Critique of Practical Reason."

References.—The works of Kant above referred to are translated: *The Critique of Pure Reason* by Max Müller, by Meiklejohn, and by Morris; *Kant's Theory of Ethics,* by Abbott; the *Critique of Judgment* by Bernard. The fullest English account of Kant's philosophy is Caird's *Critical Philosophy*—a more compendious view. See also Adamson's *Philosophy of Kant;* Watson's *The Philosophy of Kant as Contained in Extracts From His Own Writings;* Wallace's *Kant;* Paulsen's *Immanuel Kant;* and Mahaffy's *Kant's Critical Philosophy for English Readers.*

Katsura (*kä'tsoo-rä*), **Marquis Taro,** Japanese statesman, premier of Japan, was born in the province of Coshiu, 1847. During the restoration era, in 1867, he distinguished himself in the civil war. In 1891 he was promoted to lieutenant-general, and in the following year was appointed to the command of the third division of the army. During the China-Japanese war he marched with his division through Korea to Manchuria; and later on served under General Nodzu. For his services he was created a viscount, and two years after promoted to the rank of general. He was premier of Japan from 1901 until 1906, covering the period of the war with Russia, and in 1906 was appointed a member of the high military council of Japan. Created marquis, 1907. He became premier again in 1908. Died, 1913.

Kauffman (*kouf'măn*), **Angelica,** Swiss historical and portrait painter, was born at Coire, Grisons, in the Tyrol, 1741. In 1781 she married the Italian painter Zucchi, and, returning to Rome, spent the remainder of her life in a circle of poets, artists and scholars. Died at Rome, 1807.

Kaulbach (*koul'bäĸ*), **Wilhelm von,** German painter, was born at Arolsen, 1805. He studied at Düsseldorf, Munich, and Rome, and from 1849 was director of the Munich Academy of Painting. For several years he was painting the vestibule of a new museum at Berlin with a cycle illustrating the progress of civilization. His last gigantic painting was the *Sea-fight of Salamis* at Munich. Died, 1874.

Kaunitz (*kou'nits*), **Wenzel Anton, Prince von,** Austrian statesman, was born at Vienna, 1711. He distinguished himself in 1748 at the congress of Aix-la-Chapelle, and as Austrian ambassador at the French court in 1750-52 converted old enmity into friendship. In 1753 he was appointed chancellor, and for almost forty years had the principal direction of Austrian politics. He took an active part in the ecclesiastical reforms of Joseph II., and was a liberal patron of arts and sciences. Died, 1794.

Kean, Charles John, British actor, was born in Waterford, Ireland, 1811, son of Edmund Kean. He was educated at Eton, and made his début at Drury Lane, 1827, but did not establish his reputation until 1838, when he acted as *Hamlet, Richard III.* and *Sir Giles Overreach.* In 1842 he married Miss Ellen Tree, a celebrated actress. His last appearance was as *Louis XI.* at Liverpool in 1867. Died, 1868.

Kean, Edmund, English actor, was born in London 1787, son of Nance Carey, a strolling actress. A stage cupid and a cabin-boy to Madeira, he, when about sixteen, turned a "stroller," and after ten years in the provinces made his first appearance as *Shylock* at Drury Lane in 1814. He at once took rank as the first actor of the day. A period of wonderful success followed. He was cordially received in 1827, after a twelve-months' visit to America; but both mind and body gave way, and, breaking down hopelessly in 1833, he died at Richmond in May of that year.

Keane, Augustus Henry, British ethnologist and geographer, emeritus professor of Hindustani, University College, London, was born at Cork, Ireland, 1833. He was educated in Jersey, Italy, Dublin, and Hanover, Germany, and traveled extensively in Europe, Asia, and North America. LL.D., St. Andrews University. Author and editor: Stanford's *Asia, Africa, Central and South America; Ethnology; Man, Past and Present; The Gold of Ophir; The Boer States; The World's Peoples.* Died in 1912.

Keane, John Joseph, American scholar and educator, Roman Catholic archbishop of Dubuque, Ia., beginning 1900, was born in Ballyshannon, Ireland, 1839. He came to the United States in 1846; was educated at St. Charles' College and St. Mary's seminary, Baltimore, Md. Ordained priest, 1866. Was active in organizing Roman Catholic societies, and was rector of the Catholic University of America, at Washington, 1886-97, when he resigned and went to Rome. Upon his return to America he was installed as bishop. Died, 1918. Author: *Onward and Upward,* etc.

Kearny (*kär'ni*), **General Philip,** American soldier, was born in New York, 1815. He was attached to the staff of General Scott, 1841-44, and distinguished himself in the Mexican war. Commanded the cavalry of the army of the Potomac in the peninsula campaign during the Civil War, in which he won an enviable reputation for courage and gallantry. He took an active part in the second battle of Bull Run and also at Chantilly, Va., where he was killed in 1862, by a confederate soldier while reconnoitering in front of his command.

Keats, John, English poet, was born in London, 1795. He was apprenticed to a surgeon at Edmonton, near London, and found time to cultivate that taste for poetry which he had exhibited from his boyhood; in 1817 he published a volume of juvenile poems, having already made several contributions to the *London Examiner,* then under the editorship of Leigh Hunt. In 1818 appeared his *Endymion,* a poetic romance, founded in part on the model of Fletcher's *Faithful Shepherdess.*

This work, though the production of a youth of little more than two-and-twenty, was severely criticised in the *Quarterly Review*, and in *Blackwood's Magazine*, the wrath of the reviewers being probably inspired by their hatred of the political party with which Keats had identified himself, and which was represented by Keat's friends, Hazlitt and Hunt. He profited, however, by the criticisms of his reviewers and in 1820 published his *Eve of St. Agnes;* his odes to *The Nightingale* and *The Grecian Urn;* and the fragments of *Hyperion*, taken, like *Endymion*, from mythological sources, and written in an airy strain of classic imagery, characterized by much pensive quiet beauty. But already consumption had taken hold of the poet; he went to Naples, from there to Rome, where he died, 1821.

Keble (*kē'b'l*), **John,** English clergyman and poet, was born in 1792. At the age of fifteen he entered Corpus Christi College, Oxford, where he won several prizes and otherwise distinguished himself. In 1827 he published his volume of sacred poetry, entitled the *Christian Year*, which attained a very large circulation and an influence that can hardly be overestimated. He was one of the leading spirits in what was known as the "tractarian movement" in the English church, and for several years was actively engaged with Pusey, Newman and others in issuing *Tracts for the Times*. He died at Bournemouth, 1866.

Keen, William Williams, American surgeon, was born in Philadelphia, Pa., 1837. He was graduated at Brown University, 1859; M.D., Jefferson Medical College, Philadelphia, 1862; LL.D., Brown, 1891, Northwestern, Yale, 1906. He was assistant surgeon of 5th Massachusetts regiment, 1861; since 1866 in practice in Philadelphia; professor of artistic anatomy at Pennsylvania academy of fine arts, 1876-90; and was professor of surgery at Jefferson Medical College, 1889-1907. Member of many medical and other bodies. Author: *Keen's Clinical Charts; History of the Philadelphia School of Anatomy.*

Keifer (*kē'fer*), **Joseph Warren,** congressman, ex-speaker of United States congress, was born in Clark county, Ohio, 1836. He was educated at Antioch College, and since 1858 practiced law at Springfield, Ohio. He served in the Ohio volunteers in the field, 1861-65; four times wounded. Was department commander of Ohio G. A. R., 1868-70; member of congress, 1877-85, and again in 1905; speaker of congress 1881-83. He was appointed and served, 1898-99, as major-general of volunteers in the war against Spain. Author: *Slavery and Four Years of War.*

Keith (*kēth*), **George Keith-Elphinstone, Viscount,** British admiral, son of the tenth Lord Elphinstone, was born at Elphinstone Tower, Stirling, 1746. He commanded the expedition in 1795-97 which took Cape Town, and the fleet landed Abercromby's army in Aboukir bay in 1801. He was made Baron Keith in 1797 and a viscount in 1814. Died, 1823.

Keller, Helen Adams, American authoress, was born at Tuscumbia, Ala., 1880, daughter of Captain Arthur H. Keller. She is descended on her father's side from Alexander Spottswood, colonial governor of Virginia, and through her mother related to Adams and Everett families of New England. She has been deaf and blind since the age of nineteen months as result of illness. When seven years old she was placed under the instruction of Miss Anne Mansfield Sullivan, her teacher from the beginning of her education to the present time. She entered Radcliffe College, 1900, and graduated, A.B., 1904. She has contributed occasional papers to *Century Magazine; Youth's Companion; Ladies' Home Journal; McClure's Magazine*, etc., and is the author of *The Story of My Life; Optimism*, an essay, etc.

Kellerman (*kel'ĕr-măn*), **Francois Christopher,** French soldier, was born in Bavaria, 1735, and entered a regiment of French hussars at the early age of seventeen. When the revolution broke out he had risen to the rank of major-general. For his services in Italy, he was made duke of Valmy and marshal of the empire by Napoleon. The Bourbons, whose party he joined at the restoration, confirmed his title of duke, and also created him a peer of France. He died in 1820.

Kellogg, Clara Louise, American prima donna, was born at Sumterville, S. C., 1842. She made here debut in opera, 1861-62, as *Gilda* in *Rigoletto* at the academy of music, New York, and from that time rose steadily and securely in the estimation of the public. She sang repeatedly in London and once or twice before Queen Victoria at Buckingham palace. She sang in Italian opera for several years and organized her own English opera company. She married, 1887, Carl Strakosch, nephew of the well-known impressarios, Max and Maurice Strakosch. Died, 1916.

Kellogg, Frank B., American lawyer, was born at Potsdam, N. Y., 1856. He went to Minnesota with his parents in 1865; studied law, and was admitted to the bar. He removed to St. Paul in 1887. He was general counsel of the Chicago, Great Western Railway Company, Duluth and Iron Range Railroad Company, Duluth, Messabe and Northern Railway Company, Minneapolis Iron Company, Oliver Iron Mining Company, etc.; special counsel for United States in the case against the paper and Standard Oil trusts. U. S. senator, 1917-23. Appointed U. S. ambassador to England, 1923-25. Secretary of State, 1925-29.

Kelly, Howard Atwood, American physician, was born at Camden, N. J., 1858. He was graduated at the University of Pennsylvania, 1877; M.D., 1883; LL.D., Aberdeen, 1905, Washington and Lee, 1906, University of Pennsylvania, 1907; F.R.C.S., Edinburgh. He was founder of the Kensington hospital, Philadelphia; now professor of gynecology, Johns Hopkins University, and gynecological surgeon, Johns Hopkins hospital. He is a member of many medical and scientific societies, both foreign and American. Author: *Operative Gynecology*, 2 vols.; *The Vermiform Appendix and Its Diseases*, etc.

Kelly, James Edward, American sculptor, was born at New York, 1855. He studied art at the National Academy of design. His first piece of sculpture was *Sheridan's Ride*, 1878; forty generals, including Grant, Sherman, Sheridan and Hancock, gave him sittings for a series of bronzes. Prominent works: *Monmouth Battle Monument, Call to Arms*, Troy, N. Y., equestrian figures of General Sherman, Colonel Roosevelt at San Juan hill; busts from life of Admirals Dewey, Sampson and C. E. Clark, and President Roosevelt as colonel of the Rough Riders; panels from life of Dewey's captains, Sampson's captains, etc. He was one of the founders of the art students' league.

Kelvin, William Thomson, Lord, was born at Belfast in 1824. After graduating at Cambridge, he was appointed, 1846, to the chair of natural philosophy in Glasgow University, a post he retained till 1899.

His research work includes all branches of mathematical and practical physics. In heat, his principal work has been in extending thermodynamical principles—notably in devising a method of arriving at an absolute scale of temperature, in discovering the "Joule-Thomson effect," and in enunciating the principle of the dissipation of energy. In general physics, he has done much to apply mathematics as a means of expressing the relations of observed facts; and in particular he has worked out most fertile ideas as to the nature of the ether, of inertia, and the application of vortex motion to explain the properties of atoms.

His principal work, however, is probably in the field of electricity and magnetism, the first fruit of which appeared in the paper he published in 1845 on the laws of electrostatics, and which was greatly developed in his researches on electrodynamics and submarine telegraphy. These theoretical investigations he applied to the Atlantic and other cables from 1857 to 1879, and used in his invention of many instruments of the highest precision for the use both of the investigator and of the practical man.

Among the best known of these appliances are the reflecting galvanometer, the siphon recorder, several forms of electrometer, the ampere balance, electrostatic voltmeter and electric supply meters. He has also taken much interest in navigation, and in this connection invented an improved form of mariner's compass and an invaluable soundingmachine, besides working out methods for compass correction and for the investigation of tidal phenomena. In addition to three series of monographs—(1) *Electrostatics and Magnetism*, (2) *Mathematical and Physical Papers*, and (3) *Popular Addresses*—he has also published *Baltimore Lectures on Molecula Dynamics and Wave Theory of Light*, and, in collaboration with Professor P. G. Tait, *A Treatise on Natural Philosophy*. He was given a peerage in 1892. Died in 1907.

References.—Fitzgerald's *Lord Kelvin;* S. P. Thomson's *Life of Lord Kelvin.*

Kemble, Charles, English tragedian, was born at Brecknock, in South Wales, 1775. In 1794 he made his first appearance at Drury Lane, London, in the character of *Malcolm* in *Macbeth*. He visited the United States in 1832. Appointed examiner of plays in 1836, he performed the duties of his office by proxy until he relinquished the stage in 1840. Died, 1854.

Kemble, Frances Anne, English actress and Shakespearean reader, was born in London, 1809. She was the daughter of the celebrated Charles Kemble, and was commonly known by the name of "Fanny." She made her début at Covent Garden in 1829, and in 1832 came to the United States with her father, where she met with great success. In 1860 she returned to England and from that date divided her time between England and the United States. Died, 1893.

Kemble, John Philip, English tragedian, was born at Prescott, 1757. His first appearance was at Wolverhampton, in 1776. The success of his sister, Mrs. Siddons, gave him his opportunity, and in 1783 he played *Hamlet* at Drury Lane, and aroused the keenest interest. In 1802 he purchased a share in Covent Garden theater, became manager, and made his first appearance there in 1803 as *Hamlet*. He retired in 1817, and afterward settled at Lausanne, where he died, 1823.

Kempis, Thomas a, German mystic and writer, so called from Kempen, a town in the Prussian Rhine provinces, where he was born about 1379. He was educated at Deventer, and in 1400 entered an Augustinian convent in the diocese of Utrecht. His death took place in 1471, at which time he certainly had attained his ninetieth year, and most probably his ninety-second. The character of Kempis for sanctity and ascetic learning stood very high among his contemporaries, but his historical reputation rests almost entirely on his writings, which consist of sermons, ascetical treatises, pious biographies, letters and hymns. Of these, however, the only one which deserves special notice is the celebrated ascetical treatise, *Imitation of Christ*, a work that in the regard of many ranks second to the Bible, and is thought likely to survive in the literature of the world as long as the Bible itself.

Kendal, Mr. (William Hunter Grimston), English actor and manager, was born in London, 1843. He commenced his career on the stage at Glasgow in 1862, where he remained until 1866, in which year he made his first appearance in London at the Haymarket theater in *A Dangerous Friend*. He became lessee and manager with John Hare, of St. James' theater, 1879-88. He produced there *The Queen's Shilling; The Squire; Impulse; The Iron Master; A Scrap of Paper; Lady of Lyons; As You Like It; William and Susan; Ladies' Battle*, etc. He toured with Mrs. Kendal in the United States and Canada, 1889-95, with phenomenal success. Died, 1917.

Kendal, Mrs. (Margaret Brunton Robertson), English actress, was born at Cleethorpes, Lincs, 1849. She married William Hunter Kendal (Grimston), 1869. She made her début in London, in 1865, as *Ophelia* to the *Hamlet* of Walter Montgomery, and in the following month she played at the same theater, *Desdemona* to the *Othello* of Ira Aldridge. The creation of the character of *Lilian Vavasour* in *New Men and Old Acres* gave Mrs. Kendal a position among the leading comédiennes of the day. In 1875 she began a short engagement at the Opera Comique. During the period 1889-95, Mr. and Mrs. Kendal played highly successful engagements in the United States and Canada.

Kennan (*ken'an*), **George,** American author and lecturer, was born at Norwalk, Ohio, 1845. He became telegraph operator and later manager of the Western Union office, Cincinnati, 1863-64; went to northeast Siberia as explorer and telegraphic engineer, 1865; investigated Russian exile system in Siberia, 1885-86, and later he became a lecturer in the United States and Great Britain. In 1898 he went to Cuba on the steamship *State of Texas*, with American national Red Cross society, and as special commissioner for *The Outlook*. Went to Japan, 1904, to report on Russo-Japanese war for *The Outlook*, and joined the staff of *McClure's Magazine*, 1907. Author: *Tent Life in Siberia; Siberia and the Exile System*. 2 vols.; *Campaigning in Cuba*, etc. Died, 1924.

Kent, Charles Foster, American biblical scholar, Woolsey professor of biblical literature, Yale University since 1901, was born at Palmyra, N. Y., 1867. He was graduated at Yale University, 1889, Ph.D., 1891; Berlin University, 1891-92. Author: *Outlines of Hebrew History; The Wise Men of Ancient Israel and Their Proverbs; Narratives of the Beginnings of Hebrew History; Israel's Historical and Biographical Narratives; Origin and Permanent Value of the Old Testament; Israel's Laws and Traditional Precedents; Work and Teachings of the Earlier Prophets*, etc. Died in 1925.

Kent, Charles William, university professor, was born at Louisa C. H., Va., 1860; graduated from the University of Virginia, 1882; student Göttingen, Berlin, Leipzig, 1884-7; Ph.D., 1887; LL.D., University of Alabama, 1906. Was professor of English and modern languages, University of Tennessee, 1888-93; professor English literature, rhetoric and belles lettres, Linden Kent Memorial School of English Literature, University of Virginia, since 1893. Author: *Shakespeare Note Book; Graphic Representations of English and American Literature*. Editor: Cynewulf's *Elene; Idyls of the Lawn; Selected Poems from Burns;* Tennyson's *Princess; Poe Memorial Volume; Poe's Poems; Library of Southern Literature*, 15 vols., etc.

Kent, James, American lawyer and jurist, was born in Philippi, N. Y., 1763. He was graduated at Yale College, 1781, was admitted to the bar when twenty-two years old, and soon became noted for his legal learning. He was several times elected to the New York legislature, and in 1793 became professor of law in Columbia College. He is best known for his *Commentaries on American Law*, which were published from 1826 to 1830, and are now used by every American lawyer, as well as by many in other countries. He died in New York, 1847.

Kepler, Johann, great German mathematician and astronomer, was born 1571, near Weil (Würtemberg), died at Ratisbon 1630. He studied at the University of Tübingen, and in 1593 he was appointed a teacher of mathematics at Gratz, Styria.

Here he devoted himself with much ardor to the study of astronomy; but in 1599 the religious persecutions commenced in Styria and Kepler, being a protestant, gladly accepted Tycho Brahe's invitation to Prague, to assist in the preparation of the new astronomical tables, called the Rodolphine tables. Tycho died in 1601, and Kepler continued the work alone, being appointed imperial mathematician and astronomer. After twenty-five years' incessant labor the tables were published in 1627 at Ulm. Kepler had become the happy possessor of all Tycho's papers, and the mass of observations made by that astronomer during twenty years, with a precision till then unsurpassed, enabled Kepler to establish his three laws which have proved so fruitful in the development of astronomical science.

Kepler enjoyed the patronage of the Emperors Rodolph and Ferdinand, the Dukes of Würtemberg and Wallenstein, but his life was a continued struggle; he was exposed to much religious persecution, and his domestic relations were equally unfortunate. The latter part of his life was chiefly passed at Linz as professor of mathematics. He wrote much, but the work that has rendered him immortal is his *Astronomia Nova, seu Physica Cœlestis tradita Commentariis de Motibus Stellæ Martis*—"New Astronomy, or Celestial Physics Delivered in Commentaries on the Motions of Mars."

References.—Brewster's *Lives of Galileo, Tycho Brahe, and Kepler;* Muller's *Johannes Kepler;* and Gunther's *Johannes Kepler.*

Kerensky, Alexander Federovich (1881—), Graduated from law, University of Petrograd, and married in 1904. Patriot, orator, popular leader, he was ever fervently and eloquently striving for better conditions. He was active in events that led up to the overthrow of the monarchy, 1917. Was Minister of Finance and Premier in the provisional government. He successfully thwarted Gen. Korniloff's rebellion, but lost the capital to the Bolsheviki.

Kern, John Worth, United States Senator, lawyer, was born in Howard county, Ind., 1849. He was graduated from the University of Michigan, 1869; was reporter of the supreme court of Indiana, 1885-89; state senator, 1892-96; city attorney, Indianapolis, 1897-1901; was the democratic candidate for vice-president of the United States, 1908; elected U. S. Senate 1910. Died, 1917.

Key, Francis Scott, American poet, author of "*The Star Spangled Banner,*" was born in Maryland, 1780. He was a lawyer of note, and brother-in-law to Chief-Justice Taney. Being detained by the British during the bombardment of Fort McHenry, September 13, 1814, his feelings found vent in the verses which have become our national lyric. They were printed on his return to Baltimore, and soon diffused widely through the country. Died, 1843.

Kidd, Benjamin, English philosopher and sociologist, was born in 1858. He first entered the British civil service, and was little known until the publication of *Social Evolution,* in 1894. He also published: *The Control of the Tropics; Principles of Western Civilization;* and was the author of articles on the application of the doctrine of evolution to sociological theory and sociology in the supplement to the 9th edition of *Encyclopaedia Britannica.* He delivered the Herbert Spencer lecture before the University of Oxford, 1908. He traveled for economic study in the United States and Canada in 1898. Died, 1916.

Kilmer, Joyce, American poet, was born at New Brunswick, New Jersey, in 1886. He was educated at Rutgers College and at Columbia University and subsequently worked for several years as teacher and journalist. In 1917 he entered the 165th infantry regiment of the U. S. Army and was killed in action at the Battle of the Ourcq in 1918. His poetry includes *Summer of Love, Trees and Other Poems, Main Street and Other Poems.* His later poems are intensely religious.

Kilpatrick, Hugh Judson, American cavalry officer, was born in New Jersey, 1836. He was graduated at West Point in 1861, and was appointed to the first United States artillery. He was wounded at the battle of Big Bethel, and received rapid promotion, being a colonel of cavalry in 1862, and commissioned brigadier-general of volunteers the following year. He was commissioned major-general in 1865, and resigned from the regular army in that year and from the volunteer service, 1866. From 1865 to 1868, and again in 1881, he was United States minister to Chili. Died, 1881.

King, Charles, American soldier and author, was born at Albany, N. Y., 1844. He was graduated at West Point, 1866, and served in artillery and cavalry until retired as captain, 1879, for wounds received in action. He was inspector and instructor of Wisconsin national guard, 1882-89. In 1898 he was appointed brigadier-general of the United States volunteers in the war against Spain; served in the Philippines under General Lawton, and was commandant of Michigan Military Academy, 1902. Author: *Famous and Decisive Battles; Between the Lines; The Iron Brigade; Medal of Honor;* and others, over fifty in all.

King, Henry Churchill, American educator, president of Oberlin College, 1902-27, was born at Hillsdale, Mich., 1858. He was graduated from Oberlin, 1879; Oberlin Theological Seminary, 1882; post-graduate at Harvard, 1882-84; A.M., 1883; Berlin, 1893-94; D.D., Oberlin, 1897, Western Reserve, 1901, Yale. Author: *Outline of Erdmann's History of Philosophy; Outline of the Microcosmus of Hermann Lotze; The Appeal of the Child; Reconstruction in Theology; Theology and the Social Consciousness; Personal and Ideal Elements in Education; Rational Living;* and various pamphlets on philosophy, etc.

King, Rufus, American statesman, was born in Scarborough, Me., 1755. He was graduated at Harvard College in 1777, immediately entered as a student at law in the office of Theophilus Parsons, at Newburyport, and was admitted to the bar, 1780. In 1787 he was appointed a delegate to the general convention assembled at Philadelphia, and in 1788 removed from Massachusetts to the city of New York. In 1796 he was appointed minister to the court of Great Britain, and remained there for seven years, with equal honor to the country and himself. In 1813 he was chosen by the legislature of New York as United States senator, and continued until the expiration of the term in 1825. Upon his retirement from the senate, he accepted from President Adams an invitation again to represent the United States at the court of Great Britain. During the voyage to England his health was seriously impaired, his illness induced him to return in about a year, and he died in 1827.

King, Thomas Starr, American clergyman and author, was born in New York City, 1824. He studied theology and became pastor of a Unitarian church at Charlestown, Mass., 1846. He gained wide popularity as a lecturer, and his activity in the presidential campaign of 1860 had an important part in preserving California to the union. Died, 1864.

King, William Frederick, chief astronomer of the department of the interior of Canada since 1890, was born at Stowmarket, England, 1854. He was graduated from the University of Toronto, 1875; LL.D., 1904. Was Dominion land and topographical surveyor, 1876; her majesty's commissioner for the international boundary between Canada and the United States under treaties of 1892, 1903, 1906 and 1908; and also under agreement entered into in 1899, 1901, and 1906; member of the international waterways commission, 1904-07, and director of the Dominion astronomical observatory from its opening in 1905. Died, 1916.

King, William Rufus, American statesman, was born in North Carolina, 1786. He was a member of the North Carolina legislature for three years; entered congress from North Carolina in 1810; represented Alabama in the United States senate, 1820-44. He was then minister to France from 1844 to 1846; and again United States senator from 1848 to 1853, when, shortly before his death, he became vice-president of the United States. He died in Alabama, 1853.

Kinglake, Alexander William, English historian, was born in Taunton, 1809. He was educated at Cambridge, was called to the bar in 1837; went to Algiers in 1845, and in 1854 followed the fortunes of the British army in Crimea until the siege of Sebastopol. He represented Bridgewater in parliament, 1857-68. Died, 1891.

Kingsley, Charles, English divine and author, chaplain-in-ordinary to Queen Victoria, was born in Devonshire, 1819. He was educated at King's College, London, and at Cambridge University, and in 1842 became curate and shortly after rector of Eversley. In 1851 he published *Yeast, a Problem,* in which he handles the condition of the English agricultural laborer; and in 1853 *Hypatia, or New Foes with an Old Face,* a most vigorous and brilliant delineation of Christianity. Two years after he published *Westward Ho!,* probably the greatest of his works. He was appointed professor of modern history at Cambridge in 1860, and after resigning was made canon of Chester, 1869. Died, 1875.

Kingsley, John Sterling, biologist, was born at Cincinnatus, N. Y., 1854; graduated at Williams College, 1875; S.C.D., Princeton, 1885; University of Freiburg, 1891-92. Was professor of zoölogy, Indiana University, 1887-89; professor of biology, University of Nebraska, 1889-91; Tufts College, 1892-1913; professor of zoology, University of Illinois, 1913-21; now emeritus professor of zoölogy Editor: *Standard Natural History.* Author: *Elements of Comparative Zoölogy; Vertebrate Zoölogy; Guides for Vertebrate Dissection.* Translator: *Hertwig's Manual of Zoölogy,* etc.

Kipling, Joseph Rudyard, English author, was born in Bombay, India, 1865. He was educated in United Services College, North Devon, England, and was assistant editor of *Civil and Military Gazette* and *Pioneer* in India, 1882-89. LL.D., McGill University, 1899; Litt.D., Durham, Oxford, and Cambridge. He was awarded the Nobel prize for literature in 1907. He has traveled extensively in Japan, China, Africa, and Australia. Author: *Departmental Ditties; Plain Tales From the Hills; Soldiers Three; In Black and White; The Light That Failed; Barrack-Room Ballads; The Jungle Book; Second Jungle Book; The Seven Seas; The Day's Work; Stalky and Company; The Brushwood Boy; Just So Stories; The Five Nations; Puck of Pook's Hill,* etc.

Kirk, Sherman, educator, was born in Belmont county, Ohio, 1865, and was graduated from Bethany College, W. Va., 1888; M.A., Drake University, 1898; held pastorates in Kansas, Nebraska and Missouri, 1891-96; professor of Greek, Drake University, since 1897, and, in 1911, dean of the College of the Bible, in that institution. Delegate to and speaker before the National Congress of the Disciples of Christ.

Kitchener (*kich'en-ẽr*), **Horatio Herbert, Lord,** British general, was born in Ireland, 1850. He was educated at the Royal military academy at Woolwich, and entered the British army in 1871. In the action at Hundub, in 1888, he led the Egyptian troops against Osman Digna, and for his gallantry was made aide-de-camp to the queen. For subsequent service in Sudan campaigns he was made companion of the bath. In 1888 he was made adjutant-general in the Egyptian army, and held that position until 1892. He commanded at the taking of Dongola in 1896, and was then made K. C. B. In 1898 he was in command of an English and Egyptian army near Omdurman, opposite the site of Khartum, where he gained a notable victory. He was chief of staff of forces in South Africa, 1899-1900; commander-in-chief, 1900-02; later created viscount. Lost in North Sea, 1916.

Kitchin, George William, English historian, was born at Naughton rectory, Suffolk, 1827. He was educated at Ipswich, King's College, London, and Christ Church, Oxford. He became dean of Winchester in 1883, and of Durham in 1894. His chief work is his *History of France.* Died in 1912.

Klaw, Marc, theatrical manager, was born at Paducah, Ky., 1858. He was educated in the public and high schools of Louisville, Ky.; studied law and was admitted to the bar. Since 1881 he has been engaged as theatrical manager, and is now a member of the theatrical firm of Klaw and Erlanger of New York.

Kleber (*klā'bâr'*), **Jean Baptiste,** French general, was born at Strassburg, 1753, and in 1776 obtained a commission in the Austrian army. In 1794 he led the left wing at Fleurus, and captured Maestricht; in 1796 he gained the victory of Altenkirchen. He accompanied Bonaparte to Egypt, was wounded at Alexandria, and won the battle of Mount Tabor, 1799. When Bonaparte left Egypt he intrusted the chief command to Kléber, who concluded a treaty with Sir Sidney Smith for its evacuation; but on Admiral Keith's refusal to ratify it Kléber resolved to reconquer Egypt, and destroyed the Turkish army at Heliopolis. In the course of an attempt to conclude a treaty with the Turks, he was assassinated by a Turkish fanatic at Cairo, 1800.

Klein (*klīn*), **Charles,** playwirght, was born in London, England, 1867, and was educated at North London College. He was formerly censor of plays for Charles Frohman. Author: *A Mile a Minute; El Capitan; Heartsease; The Hon. John Grigsby; Dr. Belgraff; A Royal Rogue; The Music Master.* Lost at sea, 1915.

Klopstock (*klōp'shtōk*), **Friedrich Gottlieb,** German poet, was born at Quedinburg, 1724. Incited by Virgil's *Æneid* and Milton's *Paradise Lost,* he resolved to write a great epic, and as a student at Jena, in 1745, he began *The Messiah.* The last cantos of *The Messiah* were published in 1773. Regarded in his own time as a great religious poet, he helped to inaugurate the golden age of German literature. *The Messiah* was translated into both English verse and prose. Died, 1803.

Knapp, Martin Augustine, American lawyer and jurist, chief justice of the U. S. Court of Commerce, was born in Stafford, N. Y., 1843. He was graduated from Wesleyan University, Connecticut, 1868; LL.D., 1892; hon. A.M., Syracuse University, 1892. He was interstate commerce commissioner 1891-1910; chairman of the commission, 1898-1910, and appointed chief justice of the new U. S. Commerce Court, established 1910. For a number of years he lectured on interstate commerce law at George Washington University. Died, 1923.

Kneisel (*k'ni'zel*), **Franz,** German-American musician, director of Kneisel quartette, was born in Roumania, of German parentage, in 1865. He studied violin instruction under Grün and Hellmesberger; was concertmaster of Hofburg theater orchestra, Vienna; later of Bilse's orchestra, Berlin, and concertmaster of the Boston symphony orchestra. He was especially prominent as violin soloist. From 1905 to 1926 he was head of violin department in the Institute of Musical Art, New York. Died, 1926.

Kneller (*nel'ẽr*), **Sir Godfrey,** noted portrait-painter, was born at Lübeck, 1646. He studied at Amsterdam and in Italy, went to London, 1675, and in 1680 was appointed court-painter. In 1693 William III. knighted him, and in 1715 George I. made him a baronet. His best-known works are the *Beauties of Hampton Court*, painted for William III.; his portraits of the *Kit-Cat Club;* and of fourteen sovereigns. He died at Twickenham, 1723.

Knight, Charles, English publisher and author, was born at Windsor, 1791. He early turned his attention to publishing. In 1823 he started *Knight's Quarterly Magazine*, and continued it for some time in London. The whole of his noteworthy career was devoted to popular literature, of which he was one of the earliest and most accomplished advocates. Among the works which he published or edited are the *Penny Magazine*, which was started only a month or two after *Chambers' Edinburgh Journal* and the *British Almanac*. Died, 1873.

Knowles, James Sheridan, British dramatist, was born at Cork, 1784. His *Caius Gracchus* was first performed at Belfast. *Virginius*, his most effective play, had been a success in Glasgow before Macready in 1820 produced it at Covent Garden. Besides *William Tell*, in which Macready achieved one of his greatest triumphs, Knowles' other best plays are *Love*, *The Hunchback*, *The Love Chase*, and *The Wife*. He appeared with fair success in many of his own pieces; but about 1844 became a Baptist preacher, drew large audiences to Exeter hall, and published two anti-Roman Catholic works. He died at Torquay, 1862.

Knox, Henry, American general, was born in Boston, Mass., 1750. He was an officer in a military company, and, when the revolution broke out, he escaped from the city with his wife, who hid his sword in the folds of her dress, and took part in the battle of Bunker Hill. He soon attracted the attention of Washington by his skill in planning fortifications and his knowledge of artillery, and throughout the war he commanded the artillery in various battles. Congress made him a major-general, and from 1785 to 1795 he was secretary of war. Died, 1806.

Knox, John, Scottish divine and reformer, was born at Giffordgate, in Haddingtonshire, 1513. He became a priest and notary in the diocese of St. Andrews before he had attained the age of twenty-five. He renounced Catholicism about 1543, and openly preached the new faith. In the reign of Mary, he retired to Frankfort, and thence to Geneva, where he became acquainted with Calvin. Having returned to his own country in 1559, he denounced the priesthood, and especially the mass and image-worship, and declaimed against the queen of Scots, whom he called Jezebel. With tireless perseverance and vehement eloquence he labored until his death for the establishment of Protestantism in Scotland. The person of Knox was diminutive, and his frame wasted and feeble, but his energy was inexhaustible. He was the author of several works, notably of a *Historie of the Reformation of Religion in Scotland*. But the influence he exerted was by the tongue rather than by the pen. Died, 1572.

Knox, Philander Chase, American lawyer and statesman, was born in Brownsville, Pa., 1853. He was graduated at Mt. Union College, Ohio, 1872; LL.D., University of Pennsylvania, 1905; Yale, 1907. He was admitted to the bar, 1875; was assistant United States district attorney, Western district of Pennsylvania, 1876-77. He was attorney-general of the United States 1901,-04; United States senator from Pennsylvania 1904-09, and secretary of state 1909-13. Died, 1921.

Kobbe (*kob'ē*), **Gustav,** American author and journalist, was born in New York, 1857. He was graduated at Columbia University, 1877; Columbia Law School, 1879. He engaged in newspaper and magazine work, chiefly on musical and dramatic subjects. Author: *The Ring of the Nibelung; Wagner's Life and Works*, 2 volumes; *Opera Singers; Signora, a Child of the Opera House*, a novel; *Wagner's Music Dramas Aanalyzed; Wagner and His Isolde; Famous American Songs; How to Appreciate Music; The Pianolist*, etc. Died, 1918.

Koch (*kōK*), **Robert,** German physician and bacteriologist, was born at Klausthal, in the Hartz mountains, 1843. He studied medicine at Göttingen, receiving his doctor's degree in 1866. His first substantial achievement was the result of the penetration, skill, and thoroughness of his researches on the contagion of splenic fever in cattle. In 1879 he had begun his investigations into the causes of consumption, and in 1882 he announced the discovery of the tubercle bacillus before the physiological society of Berlin. He discovered the comma bacillus, or cholera germ, in 1884. He was rewarded with a gift of 100,000 marks by the government, and imperial titles and honors were showered upon him. In 1885 he was appointed a professor in the University of Berlin, the new chair of hygiene being created for him, and was made director of the hygienic institute. In 1905 he was awarded the Nobel prize for achievements in physiology. Died, 1910.

Kohlsaat (*kōl'sät*), **Hermann Henry,** capitalist, journalist, was born in Albion, Ill., 1853. He was educated in the common schools at Galena, Ill. He was traveling salesman for two other firms, and, 1875-80, for Blake, Shaw and company, wholesale bakers; became junior partner, 1880, and had charge of a bakery lunch established by this firm. He bought that branch of the business, 1883, greatly enlarged it, and the firm of H. H. Kohlsaat and company now owns several large establishments devoted to the wholesale bakery business. He was part owner of the *Chicago Inter-Ocean*, 1891-93; was editor and publisher of *Chicago Times-Herald*, 1894; also of *Chicago Evening Post*, 1894-1901. He purchased control of the *Chicago Record-Herald* in 1910, and has been largely identified with local real estate operations. Died, 1924.

Komura (*kō'moo-rä*), **Count Jutaro,** Japanese statesman, minister for foreign affairs since 1908, was born at Hyuga, 1855. He was educated at the University of Tokyo, and at Harvard University Law School. Was *chargé d'affaires* in China, 1893-94; minister to United States, Russia, China, 1898-1901; minister for foreign affairs, 1901-06; senior plenipotentiary to the peace conference, and signed, with Mr. Takahira, peace treaty at Portsmouth, N. H., 1905; Japanese ambassador to Great Britain, 1906-08. Died, 1911.

Korner (*kûr'nẽr*), **Karl Theodore,** German lyric poet, was born at Dresden, 1791. He studied at Freiburg, Leipzig, and Berlin, and in 1811 settled at Vienna. Here he was dramatist to a Vienna theater, and wrote some light comedies, among them *Der Grüne Domino* and *Der Nachtwächter*, and some tragedies, of which *Zriny* was the most successful. The most famous song, *Das Schwert-Lied*, was dashed off in a pause of battle only a few hours before the author fell at Gadebusch near Schwerin, 1813.

Kosciusko (*kos'i-us'kō*), **Thaddeus,** Polish general and patriot, was born in Minsk, West Russia, 1746. He became a captain in the Polish army, came to America and served in the war of independence, and returned to Poland in 1786, with the rank of general. With 20,000 regular troops and 40,000 ill-armed peasants he resisted for months the united Russian and Prussian army of 150,000 men. Overpowered by superior numbers in the battle of Maciejowice, 1794, he was captured and kept a prisoner until after the accession of the emperor Paul. When Napoleon, in 1806, formed a plan for the restoration of Poland, Kosciusko felt himself restrained from taking an active part in it by his promise to the emperor Paul. He released from servitude, in 1817, the peasants on his own estate in Poland. His death took place in 1817, in consequence of a fall from his horse.

Kossuth (*kosh'oot*), **Francis,** son of Louis Kossuth, leader of the independence party in the Hungarian parliament, was born in 1841. He suffered exile with his father, was partly educated in England, and lived in France and Italy. After his father's death in 1894 he went back to Hungary, took the oath of allegiance as a Hungarian subject, and soon became leader of those aspiring to national independence. When the coalition came into office in 1906 he became minister of commerce in the Wekérle cabinet. Died, 1914.

Kossuth, Louis, Hungarian patriot, orator and leader, was born at Monok, 1802. In 1832 he commenced his political career as editor of a liberal paper. To his speeches must in part be ascribed not only the Hungarian revolution, but the insurrection in Vienna in 1848. To put an end to all the hopes and schemes of the moderate party he induced the national assembly at Bebreczin, in 1849, to declare the independence of Hungary, and that the Hapsburg dynasty had forfeited the throne. He was then appointed provisional governor of Hungary. In 1849 he was compelled to abandon his position, and to flee into Turkey, where, however, he was made a prisoner. In 1851 he landed in the United States, where he met with a most enthusiastic reception. He returned in 1852 to England, and there he chiefly resided until the Italian war broke out against Austria, when he organized an Hungarian legion in Italy. Later he lived in Turin until his death in 1894.

Kotzebue (*kōt'se-bōō*), **Augustus Frederic Ferdinand von,** German dramatist and historic writer, was born at Weimar, 1761, and was educated at Jena and Duisburg. In 1801 he left Russia, where for several years he had resided, and spent the remainder of his life in innumerable literary productions and in politics. The emperor Alexander subsequently employed him in various posts, and in 1817 appointed him his literary correspondent in Germany. This invidious office Kotzebue is said to have filled in a manner hostile to the freedom of his native country; and for this supposed crime he was assassinated in 1819 by a youthful fanatic named Sand. His dramas number nearly three hundred. Among his other works are: *History of the German Empire*, *History of Ancient Prussia*, and various narratives and recollections of his travels.

Kreisler, Fritz, violinist born, Vienna, Austria, Feb. 2, 1875. Educated, Vienna Conservatory, and Paris Conservatory, where he won Premier Prix de Rome at 12. M. Harriet Lies of New York City, 1902. Début, Berlin, 1899. Owns famous violin—Josef Guarnerius del Gesu, 1737. Capt. Austrian Army, 1914-15.

Kropotkin (*krä-pōt'kēn*), **Prince Peter,** Russian socialist, writer, was born at Moscow, 1842. In 1871 he explored the glacial deposits of Finland and Sweden; in 1872, while on a visit to Belgium and Switzerland, he associated himself with the extremest section of the International. In 1874, after his return to Russia, he was arrested, but in 1876 effected his escape to England. In France at Lyons he was condemned, in 1883, to five years' imprisonment for anarchism, but was released in 1886 and returned to England. Author: *In Russian and French Prisons; Mutual Aid, a Factor of Evolution; Modern Science and Anarchism; The Great Revolution*, 1789-1903, etc. Died in 1921.

Krouskopf (*krous'kopf*), **Joseph,** rabbi, lecturer and author, was born in Ostrowo, Prussia, 1858. He came to America in 1872, worked as clerk at Fall River, Mass. He was graduated at the University of Cincinnati, 1883, and as rabbi from Hebrew Union College, 1883; D.D., 1885. He founded the Jewish Publication Society of America; founded, and was president at organization of the National Farm School, in which Jewish boys are trained in practical and scientific agriculture. Author: *The Jews and Moors in Spain; Evolution and Judaism; Some Isms of To-day; Gleanings From Our Vineyard; The Service Manual; The Service Ritual*, etc. Died, 1923.

Kruger (*krōō'ger*), **Stephanus Johannes Paulus,** Boer statesman, was born at Rastenburg in Cape Colony, 1825. With his family he "trekked" to Natal, the Orange river free state, and the Transvaal and won such a reputation for cleverness, coolness, and courage that in the war against England, in 1881, he was appointed head of the provisional government. *Oom Paul* was the soul of the policy that issued in the so-called Boer war of 1899-1902, showed consummate resolution and energy, and, after the tide had fairly turned against the Boers, went to Europe to seek alliances against Britain. He died, 1904.

Krupp (*krōōp*), **Alfred,** German ironmaster, was born at Essen, 1812. Krupp established the first Bessemer steel works and the first forging-hammer erected in Germany. The first steel gun manufactured by him, in 1847, was a 3-pounder muzzle-loader; in 1880 at the Düsseldorf exhibition he showed the first 100-ton steel gun. These factories are not permitted by other Powers to manufacture guns. Krupp died in 1887.

Kubelik (*kōō'be-lik*), **Johann,** Bohemian violinist, was born in 1880 at Miehle, near Prague. He was very successful at concerts in Austria-Hungary prior to appearing in Berlin with the Philharmonic orchestra, 1900. He was then invited to England by Dr. Richter, and made his début at St. James' hall. In 1905 he began a two years' tour round the world, and met with high favor throughout Europe and America.

Kuenen (*kū'nen*), **Abraham,** Dutch theologian, was born at Haarlem, 1828. He studied at Leyden and became, in 1853, a professor there. His first important work was his *Historical-Critical Inquiry into the Old Testament*, the result of which was to reconstruct the history of Israel, the priestly code and the historical portions connected with it being made the latest element in the pentateuch. This view was developed further in a succeeding volume. He died at Leyden, 1891.

Kugler (*kōōg'lẽr*), **Franz Theodor,** German historian of art, was born at Stettin, 1808, and studied at Heidelberg and Berlin. In 1833 he became a professor at the art academy in Berlin. His most valuable work is the *Manual of the History of Art*. He is also favorably known as a poet and as the author of several dramas. Died, 1858.

Kuroki (*kōō'rō-kē*), **General, Count,** noted Japanese general, was born at Satsuma, 1844. He commanded the first army in the Russo-Japanese war, 1904-05, and was victorious at Yalu, Liulien-ling, Liao-Yang, Mukden, etc. In 1906 he became inspector-general of the Japanese army, and subsequently made a tour of the United States. Died, 1923.

Kuropatkin (*kōō-ro-pät'kin*), **Alexei Nicholaevitch,** Russian general, was born in the government of Pskov, 1848. After receiving an excellent education in the Russian military schools, he entered the army and distinguished himself in the war against the Bokharans. In 1904 he was made commander-in-chief of the Russian army during the Russo-Japanese war. In 1905 he was succeeded by General Linievitch, and was appointed to command the first Manchurian army. He commanded the Russian armies on the northern front Feb.-Aug., 1916, and then was governor of Turkestan until 1917. Died, 1921.

Kutusoff (*kōō-tōō'zof*), **Mikhail, I. G.,** prince of Smolenskoi, Russian field-marshal, was born in 1745. He was appointed in 1805 to the command of the first *Corps d'armée* against the French. In that year he was victorious over Marshal Mortier at Dürenstein. In 1811-12 he commanded the Russian army in the war against the Turks, and, notwithstanding his advanced age, succeeded Barclay de Tolly in 1812 as commander-in-chief of the army against the French, and obtained a great victory over Davout and Ney at Smolensk. Died, 1813.

Kuyper (*koi'pĕr*), **Abraham,** Dutch theologian, statesman and writer, was born at Maassluis, 1837. He was graduated at the University of Leyden; D.Sc., Delft; LL.D., Princeton; D.D., Leyden. He founded the free university at Amsterdam, 1880; became professor of theology and literature there; founded the daily *Standard* and became its chief editor, 1872; the *Heraut*, 1878; and founded the Reformed Free church, 1886. He lectured in America, England, and Belgium, and in 1897 was president of Netherland press association He edited the *Encyclopædia of Sacred Theology* and is the author of the following works: *The Work of the Holy Spirit; Calvinism; Socialism and Christianity; The Evolution; The South African Crisis; Varia Americana; Around the Old Word*, etc. Died, 1920.

Lackaye, Wilton, actor, was born in Virginia, 1864. He studied law for one year; began his stage career, in *Francesca da Rimini* in New York, 1883. His principal rôles have been *Prince Saviana*, in *Jocelyn; Don Stephano*, in *Featherbrain; Jefferson Stockton*, in *Aristocracy; Solomon Strong*, in *The Idler; Svengali*, in *Trilby; Curtis Jadwin*, in *The Pit; Jean Valjean*, in *The Law and the Man; John Haggleton*, in *The Battle*.

Lacordaire (*là'kôr'dâr'*), **Jean Baptiste Henri,** French divine, was born at Recey-sur-Ource, 1802. He went to Paris in 1821 to continue his legal studies. He assisted Lamennais and Montalembert to found the *Avenir*, and was once summoned for opposing the government. In 1834 Lacordaire gave a series of "conferences" or lectures to students which attracted gr at attention, and led the way to his famous conferences in Notre Dame, Paris, in 1835-36. In 1839 he entered the Dominican order, and in 1840 reappeared in the pulpit of Notre Dame, where, from 1843 to 1851 he continued his conferences. His last conferences, delivered at Toulouse in 1854, are the most eloquent of all. Thenceforward until his death, in 1861, he was director of the military school of Sorrèze. He was a member of the academy.

Lacretelle (*là'krĕ-tel'*), **Jean Charles Dominique de,** French historian and journalist, was born at Metz, 1766. He was attracted to Paris on the outbreak of the revolution. In 1809 he was made professor of history at the University of Paris, where he remained until 1848. In 1810 censor of the press, and in 1808-12 published his *History of France in the Eighteenth Century*, a work of high merit. From 1811 a member of the French Academy, he became its president in 1816. He died near Mâcon, 1855.

Lacroix (*là'krwà*), **General de,** French general, vice-president of the supreme council of war and commander-in-chief of the French army, was born in 1844. In the Franco-Prussian war he was taken prisoner at Sedan. He served in the French expedition to Tonquin, and in 1902 succeeded General Bonnal at the Ecole de Guerre. In 1903 he was appointed military governor of Lyons and commander of the fourteenth army corps. He succeeded General Hagron in his present post in 1907.

Lactantius (*lak-tan'shi-us*), **Lucius Caelius, Firmianus,** Christian apologist, was born in the latter part of the third century. He was brought up in Africa, and settled as a teacher of rhetoric in Nicomedia in Bithynia, where he was converted by witnessing the constancy of the Christian martyrs under the persecution of Diocletian. His most important work is *Divinarum Institutionum libri vii.*, which is a vindication of Christianity, and an exposure of the paganism he had formerly professed. Died, 325.

Ladd, George Trumbull, American educator, professor of philosophy at Yale University beginning 1881, was born in Painesville, Ohio, 1842. He was graduated at Western Reserve College, 1864; Andover Theological Seminary, 1869; D.D., 1879; LL.D., 1895, Western Reserve; LL.D., Princeton, 1896; lecturer on church polity and on systematic theology, Andover theological seminary, 1879-81; lectured on philosophy before University of Bombay, India, 1899-1900, and on philosophy of religion at Calcutta, Madras, Benares, etc. Author: *Principles of Church Polity; Doctrine of Sacred Scripture*, 2 vols.; *Lotze's Outlines of Philosophy*, translated to 6 vols.; *Elements of Physiological Psychology; What Is the Bible? Introduction to Philosophy; Outlines of Physiological Psychology; Philosophy of Mind*. Several of his books have been translated into Japanese and into the language of the blind. Died, 1921.

La Farge (*là fârzh'*), **John,** American artist, was born in New York, 1835. He studied architectural decoration, then painting with Couture and William M. Hunt. He began painting with religious subjects and decorative work; then devoted himself to mural painting and stained glass windows mostly of religious or ecclesiastical character. Much of his work was in churches and residences in Boston, New York, Chicago, Cleveland, Philadelphia, Washington, Detroit, and elsewhere. Author: *Lectures on Art, Letters from Japan*, etc. Died, 1910.

Lafayette (*là'fà-yet'*), **Marie Jean Paul Roche Yves Gilbert du Motier, Marquis de,** French general and statesman, descended from an ancient family of Auvergne, and was born in the castle of Chavagnac, now in the department of upper Loire, 1757. He became a soldier at an early age, and in 1777 came to America to take part with the colonists in the war of independence, and was intrusted by congress with the defense of Virginia, where he rendered important services. He had imbibed liberal principles, and on his return to France eagerly sought to promote a thorough reform in his native country. He was called to the assembly of notables in 1787, and was one of those who most earnestly urged the summoning of the states-general. He took part also in the movements which converted the assembly of the states into the national assembly in 1789. The extreme French republicans soon came to dislike him, because he advocated a constitutional kingdom; and the court-party, especially the queen, did the same—in spite of the services he rendered them—because of his zeal for the new order of things. Along with Bailly, he founded the club of the Feuillants. After the adoption of the constitution of 1790 he retired to his estate of Lagrange until he received the command of the army of Ardennes, with which he won the first victories at Philippeville, Maubeuge, and Florennes. Nevertheless, the calumnies of the Jacobins rendered him exceedingly unpopular, and he was accused of treason, but acquitted. After several efforts to maintain the cause of rational liberty, he left Paris for Flanders, but was taken prisoner by the Austrians, and detained at Olmütz until Bonaparte obtained his liberation in 1797. He sat in the chamber of deputies from 1818 to 1824, and from 1825 to 1830. In 1824 he revisited America, by invitation of congress, which voted him a grant of $200,000 and a township of land. In 1830 he took an active part in the revolution, and commanded the national guards. Died, 1834.

Laffitte (*là'fet'*), **Jacques,** French banker and statesman, was born at Bayonne, France, 1767. He acquired great wealth as a Paris banker, and in 1814 became governor of the bank of France. In 1830 his house was the headquarters of the revolution, and he supplied a great part of the funds needed. In November he formed a cabinet, but he held power only until March. As the government became less liberal, Laffitte became more active in opposition; in 1843 he was elected president of the chamber of deputies. Died, 1844.

La Follette (*là fol'et*), **Robert Marion,** lawyer, statesman, was born in Primrose, Wis., 1855. He was graduated at the University of Wisconsin, 1879; LL.D., 1901; was admitted to the bar, 1880, and became district attorney of Dane county, 1880. He was a member of congress, 1885-91. He was elected governor of Wisconsin in 1901, 1903, and 1905; and led the movement to nominate all candidates by direct vote, adopted by his state, 1904; to tax railway property by same system and at same rate as other taxable property, adopted, 1903; and also for the control of railway rates within the state by state commission, enacted into a law by the legislature of 1905. He was elected United States senator in 1905 and again in 1910. He made important contributions to railroad and other public reforms. Was candidate for President of United States in 1924. Died, 1925.

Lafontaine (*là-fôN'tĕn'*), **Jean de,** French poet and fabulist, was born at Chateau Thierry in Champagne, 1621. In 1654 he published a verse translation of the *Eunuchus of Terence*, and then went to Paris, where Fouquet awarded him a pension of 1,000 francs for a piece of verse quarterly. His *Contes et Nouvelles en Vers* appeared in 1665, his *Fables Choisies mises en Vers* in 1668, and his *Amours de Cupid et Psyche* in 1669. In 1684 on his reception by the academy, he read an admirable *Discourse en Vers*. The subjects of the *Contes* are taken from Boccaccio, Ariosto, Machiavelli, Rabelais, the *Heptameron*, Apuleius, Athenæus, and other writers. He was a brilliant writer, but not a great poet. Died, 1695.

Lagrange (*là'grănzh'*), **Joseph Louis, Count,** mathematician, was born in Turin, 1736, of French extraction. He became professor of mathematics in Turin at the age of nineteen. In 1766 he succeeded Euler as director of the Academy of Berlin. Removing to Paris in 1787, he remained there during the revolution, was afterward patronized by Napoleon, and created by him a count and a senator. Died, 1813.

Lalande (*là'lănd'*), **Joseph Jerome Le Francais de,** French astronomer, was born at Bourg-en Bresse, 1732. He devoted himself with such success to mathematics and astronomy that the French Academy sent him to Berlin, 1751, to determine the moon's parallax, at the same time that Lacaille was sent to the Cape of Good Hope. His chief work is *Traité d'Astronomie*. Died, 1807.

Lally-Tollendal (*là'lē' tō'lăN'dàl'*), **Thomas Arthur, Comte de Lally** and **Baron de Tollendal,** French general; of Irish descent, was born at Romans in Dauphiné, 1702. His father, Sir Gerard Lally, was an Irish Jacobite refugee in the French service. Lally in 1756 became commander-in-chief in the French East Indies. He commenced vigorous hostilities against the British, and besieged Madras; but, being defeated, retreated to Pondicherry, which was attacked in 1760 by a superior British force. Lally capitulated in 1761, after ten months' siege, and was conveyed to England. Accused of cowardice, he returned to France, and was thrown into the Bastile. The parliament of Paris at last condemned him, and he was executed in 1766. But his son, supported by Voltaire, procured a royal decree in 1778, declaring the condemnation unjust, and restoring all the forfeited honors.

Lamar, Joseph Rucker, lawyer, jurist, was born at Ruckersville, Ga., October 14, 1857, educated at the University of Georgia, Washington and Lee Universities, and Bethany College; admitted to bar, 1879, and practised at Augusta, Ga., 1879-1903. Member Georgia house of representatives, 1886-9; commissioner to codify the laws of Georgia, 1895; associate justice supreme court of Georgia, 1903-10; associate justice of the United States supreme court, 1910-1916. Died, 1916.

Lamar (*la-mär'*), **Lucius Quintus Cincinnatus,** American lawyer and statesman, was born in Putnam county, Ga., 1825. Removed to Mississippi, 1854, and was a member of congress from that state, 1857-60; served in the confederate army during the Civil War, and was sent to Europe as agent of the confederacy. In 1866 he was made professor of political economy at the University of Mississippi; was a member of congress, 1872-77, and of the United States senate, 1877-85. President Cleveland made him secretary of the interior and, in 1888, associate justice of the United States supreme court. He died at Macon, Ga., 1893.

Lamarck (*là'märk'*), **Jean Baptiste Pierre Antoine Monet de,** celebrated French naturalist and pre-Darwinian evolutionist, was born at Bazentin, 1744. In 1778 he published a *Flore Francaise*. In 1779 he became a member of the French Academy and keeper of the royal garden, afterward the nucleus of *Jardin des Plantes*, and here he lectured for twenty-five years on invertebrate zoölogy. About 1801 he had begun to think about the relations and origin of species, expressing his conclusions in his famous *Philosophie Zoölogique*, in 1809. His *Historie des Animaux sans Vertèbres* appeared in 1815-22. He broke with the old notion of species, expressly denied the unchangeableness of species, sought to explain their transformation and the evolution of the animal world, and prepared the way for the now accepted theory of descent. Died, 1829.

Lamartine (*là'mär'tēn'*), **Alphonse,** French author and politician, was born at Mâcon, 1790. He exercised a most important influence upon the revolution of 1848, restraining the populace from many excesses into which they might otherwise have been led. The greater part of his career was devoted to literature, in which he obtained eminence. His *History of the Girondists*, published in 1847, undoubtedly did much to hasten the revolution and his *History of the Revolution of* 1848, which appeared in the following year, is a deeply interesting account of a movement which if it had not been turned into another direction by the temporarily successful ambition of Louis Napoleon, might have gained for France at once that free government that France obtained only after the fall of the empire. Died, 1869.

Lamb, Charles, English essayist and poet, was born in London, 1775. He was the son of a clerk to one of the benchers at the Inner Temple, and was educated at Christ's Hospital, where he was the schoolfellow and friend of Samuel Taylor Coleridge. From 1792 to 1825 he was a clerk in the accountant's office of the East India company, retiring at last on a pension; but, during most of these years, and indeed up to the close of his life, he devoted himself, in a spirit of noble self-sacrifice, to the care of his sister Mary, who, like himself, had inherited a taint of insanity. Lamb's earliest literary efforts were in verse. In 1807 he published, in conjunction with his sister, a series of *Tales from Shakespeare;* and in 1808 two volumes of *Specimens of English Dramatic Poets Who Lived About the Time of Shakespeare*, with short but felicitous notes. On the establishment of the *London Magazines* in 1820, he began that series of essays, signed *Elia*, which are the chief foundation of his fame. He died in 1834, his sister Mary surviving him until 1847.

Landor, Arnold Henry Savage, English artist and traveler, was born at Florence, Italy, 1865, and was educated there and at Paris. He traveled in the East several years, also in America, Australia, Azores and northern Africa. He was the first white man to reach both sources of the great Brahmaputra river and establish their exact position; to settle the geographical problem that no range higher than the Himalayas existed north of the Brahmaputra river. He held the world's record in mountaineering for many years, but later climbers of Mount Everest have reached much higher altitudes. Author: *Alone With the Hairy Ainu, or 3,800 Miles on a Pack-saddle; Corea, or the Land of the Morning Calm; The Gems of theEast; Tibet and Nepal; Across Widest Africa*, etc. Died, 1924.

Landor, Walter Savage, English poet and prose writer, was born at Ipsley Court, Warwickshire, 1775. He studied at Oxford, where he won high reputation as a scholar, and in 1808 raised a body of men, at his own expense, and joined the Spanish patriots under Blake. He was made a colonel in the service of Spain, but resigned his commission on the restoration of King Ferdinand. He first became known as the author of a poem called *Gebir*, in 1798, which was followed by *Count Julian*. In 1824-29 appeared his *Imaginary Conversations of Literary Men and Statesmen*, in 5 vols. He was a thorough classical scholar, and his Greek and

Roman characters speak as we should expect the ancient heroes to have spoken. "He has," says Emerson, "an English appetite for action and heroes." Died in Florence, Italy, 1864.

Landseer, Sir Edwin, English painter, was born in London, 1802. The first work that brought him prominently before the public was *Dogs Fighting*, exhibited in 1819. It was succeeded by the *Dogs of St. Gothard*, the popularity of which was very great. In 1830 he was elected a royal academician, and in 1850 was knighted. Among this most celebrated achievements are: *The Return From Deerstalking; The Illicit Whiskey-still; Night; Morning; The Children of the Mist; Saved; Flood in the Highlands; Windsor Park; Squirrels Cracking Nuts.* He was elected president of the Royal Academy in 1865, but declined the honor. He was the most superb animal-painter of his time. Died, 1873.

Lane, Edward William, English orientalist and Arabic scholar, was born at Hereford, 1801, the son of a prebendary. The result of Egyptian visits was his *Manners and Customs of the Modern Egyptians*, still a standard authority. This was followed by the annotated translation of the *Thousand and One Nights*, which was the first accurate rendering. His later years in Egypt were devoted to the great work of his life, the *Arabic-English Lexicon.* Died, 1876.

Lane, Franklin Knight, Secretary of the Interior, lawyer, was born Prince Edward Island, July 15, 1864. He was graduated from the University of California, 1886, and began the practice of law in San Francisco, 1889. Was corporation council of San Francisco, 1897-1902; candidate for governor of California, 1902, and for United States senator 1903; and member of the Interstate Commerce Commission, 1905-13. He was appointed Secretary of the Interior by President Wilson, 1913. On April 11, 1893, he married Anne Wintermute, of Tacoma, Wash. Died, 1921.

Lane-Poole, Stanley, English historian and archaeologist, professor of Arabic at Trinity College, Dublin, 1898-1904, was born in London, 1854. M.A., Oxford, and Dublin; Litt.D., Dublin. Visited Australia, 1890; employed by Egyptian government on archaeological research at Cairo, 1895-97; lecturer at the royal institution, 1900, and examiner in Arabic to the University of Wales, 1901-02. Author: *Catalogue of the Oriental and Indian Coins in the British Museum*, 14 vols.; *Social Life in Egypt; Studies in a Mosque; The Art of the Saracens of Egypt; Speeches and Table-talk of Mohammed; Essays in Oriental Numismatics*, 3 vols., etc. Edited: Lane's *Arabic Lexicon*, *The People of Turkey*, 2 vols., Lane's *Koran; Arabian Society in the Middle Ages*, etc.

Lanfranc (*lan'frangk*), prelate and scholar, archbishop of Canterbury, was born in Pavia, Italy, about 1005. In 1045 he was chosen prior of the Benedictine Abbey of Bec. William of Normandy appointed him a counsellor of state, and in 1066 abbot of a monastery in Caen, where he established a school. Afterward William caused him to be elected to the see of Canterbury, and he was consecrated in 1070. His works consist of commentaries, letters and sermons. Died, 1089.

Lang (*lang*), **Andrew,** Scottish writer and critic, was born at Selkirk, Scotland, 1844. He was educated at St. Andrews University and Balliol College, Oxford. Litt.D., Oxford, LL.D., St. Andrews. He was elected a fellow of Merton College, 1868, and shortly became one of the busiest and brightest writers in the world of London journalism. He wrote *Ballads and Lyrics of Old France; Helen of Troy; Rhymes a la Mode; Customs and Myth; Modern Mythology;* contributions to the study of the philosophy and religion of primitive man. Among his other works are: *The Library Life of Lockhart; Pickle the Spy; Companions of Pickle; History of Scotland*, 2 vols.; *Prince Charles Edward*; *The Mystery of Mary Stuart; Homer and His Age*, etc. He translated Theocritus and, with others, Homer, besides editing the *Fairy Books*, etc. Died, 1912.

Langevin (*länzh'van'*), **Louis Philip Adelard,** Canadian prelate, Catholic archbishop of St. Boniface, Manitoba, since 1895, was born at St. Isadore, La Prairie, province of Quebec, Canada, 1855. He was educated at Montreal College, completed his course of theological study at St. Mary's College, Montreal; entered the order of oblates of Mary Immaculate, 1881, and was ordained priest, 1882. Professor of moral theology in the Catholic University of Ottawa, where he soon became vice-dean of the theological faculty, 1885; D.D., 1892. He visited England, France, Belgium, Germany, in 1890; Rome in 1896, 1898, and 1904, and the same year visited the Holy Land. Has founded twenty-eight parishes, twenty-four educational convents, three hospitals, two orphanages, six Indian boarding schools, and doubled the number of priests and the number of missionaries among the Indians.

Langton, Stephen, English prelate, was born about 1160. He studied in Paris and there became canon of Notre Dame and chancellor of the University. In 1207 was consecrated archbishop of Canterbury. In 1213 he joined the barons opposed to the misgovernment of John, and his name stands first among the subscribing witnesses to Magna Charta. He again placed himself at the head of the barons, in 1823, to demand from Henry III, the confirmation, of their liberties. Died, 1228.

Lanier (*la-nēr'*), **Sidney,** American poet, was born in Macon, Ga., 1842. He was graduated at Oglethrope College, Ga., 1860, and served in the confederate army during the Civil War. From 1868 to 1872 he practiced law in company with his father at Macon. In 1876 he prepared an ode for the centennial exhibition at Philadelphia, and in 1877 settled in Baltimore, where he delivered lectures on English literature. In 1879 he was appointed lecturer on English literature at Johns Hopkins University. In the summer of 1880, enfeebled by consumption, he sought relief in the mountains of North Carolina, where he died, 1881. His two notable books are *Science of English Verse*, and *Poems.*

Lankester (*lang'kes-tēr*), **Sir Edwin Ray,** English zoölogist, was born in London, 1847. He was educated at Downing College, Cambridge, and at Christ Church, Oxford; D.Sc., Oxford and Leeds; LL.D., Cambridge. He was fellow and tutor of Exeter College, regius professor of natural history, Edinburgh, 1882; Linacre professor of comparative anatomy, Oxford, 1891-98, and director of the natural history departments of the British museum, 1898-1907. Author: *A Monograph of the Cephalaspidian Fishes; Degeneration.* Died, 1929.

Lannes (*län*), **Jean,** duke of Montebello, French marshal, was born at Lectoure, 1769. He entered the army in 1792, and by his conspicuous bravery in the Italian campaign fought his way up to the rank of brigadier-general, 1795. He rendered Napoleon important service, and on the 9th of June, 1800, won the battle of Montebello. In 1809 he commanded the center at Aspern, where he was mortally wounded, and died in that year.

Lansdowne (*lanz'doun*), **Henry Charles Keith Petty-Fitzmaurice, fifth Marquis of,** English statesman, was born in 1845. He was educated at Eton and Balliol College, Oxford; D.C.L., Oxford. He succeeded to the marquisate in 1866, from 1868 held minor offices in the liberal administration, and in 1872-74 was under-secretary of war. In 1880 he became under-secretary for India, but resigned owing to a difference with Gladstone over the compensation for disturbance bill. He was governor-general of Canada, 1883-88, of India, 1888-94, war secretary in 1895-1900, and in 1900-1905 foreign secretary, promoting the *entente* with the United States and France and the treaties with Japan. Minister without portfolio, 1915-16.

Lansing, Robert, diplomatist, born at Watertown, N. Y., 1864, represented United States in Behring Sea Arbitration, Behring Sea Claims Commission, Alaskan Boundary Tribunal, and Atlantic Fisheries Commission. He was considered one of the great authorities on International Law. In 1919 he was one of the American delegates to the International Peace Conference at Versailles. Secretary of State, 1917-1920. Dismissed by President Wilson, February, 1920, on claim of usurpation of presidential powers. Since then member firm Lansing & Woolsey; counsel for Chinese government; he died in 1928.

Laotse (*la'o-tsu'*), Chinese sage, founder of Taoism, was born about 604. He was a contemporary of Confucius, and wrote the celebrated *Tao-te-King* canon, one of the sacred books of China.

Laplace (*la'plās'*), **Pierre Simon, Marquis de,** eminent French mathematician and astronomer, was born at Beaumont-en-Auge, in Normandy, 1749. He was for some time a teacher of mathematics in the military school there, and afterward went to Paris. He was gifted with wonderful scientific sagacity and solved several problems which had for many years defied the attempts of geometers. He was the author of the nebular hypothesis, and together with Lagrange did much to verify Newton's theory. His *Traité de la Mécanique Céleste*, and supplements to it, are, next to Newton's *Principia*, the greatest of astronomical works. Died at Paris, 1827.

Lardner, Ring, American writer, was born at Niles, Michigan, in 1885, and received his training at the Armour Institute of Technology, Chicago. He wrote for newspapers in Boston, Chicago, and St. Louis until 1919, when he began work for the Bell Syndicate. His writings, mostly humorous, include *Gullible's Travels, You Know Me, Al; The Big Town*, and *My Four Weeks in France.*

Larned, Josephus Nelson, author and journalist, was born in Chatham, Ont., 1836. He was educated in the public schools of Buffalo; was on editorial staff of *Buffalo Express*, 1859-72; superintendent of education, Buffalo, 1872-73; and superintendent of Buffalo library, 1877-97. Author: *A Multitude of Councilors; Primer of Right and Wrong; History of the United States for Secondary Schools; Seventy Centuries—a Survey.* Died, 1913.

La Rochefoucauld (*là rōsh'fōō'kō*), **Francois, Duc de,** French moralist, was born at Paris, 1613. He joined the Frondeurs and was wounded at the siege of Paris. In 1652, wounded again, he retired to the country. On Mazarin's death in 1661 he repaired to the court of Louis XIV. A surreptitious edition of his *Mémoiers*, written in retirement, was published in 1662; as it gave wide offense he disavowed its authorship. His *Réflexions, ou Sentences et Maximes Morales* appeared in 1665. His last years were brightened by his friendship with Mme. de La Fayette, which lasted until he died, in 1680.

Larrey (*là'rā*), **Dominique Jean, Baron,** noted French surgeon, was born at Baudéan in 1766. He went to Paris, and entered the navy as surgeon, and afterward became a surgeon in the army. He served under Napoleon in the wars of Egypt, Germany and Spain, and was much loved by the soldiers because of his bravery and skill as surgeon. Once he killed his own horses to make soup for the wounded men under his care. Napoleon said of him: "If the army ever erects a monument of gratitude, it should be to Larrey"; and in his will said: "I leave 100,000 francs to the surgeon-chief Larrey, the most virtuous man I know." There is a bronze statue of Larrey in Paris, in which he is shown standing and holding Napoleon's will in his hand, open at these words. Died, 1842.

La Salle (*là sal'*), **Rene Robert Cavelier, Sieur de,** noted French navigator, was born in Rouen, 1643. He came to America in 1667. After a voyage of exploration from Lake Erie to Lake Superior and down the Mississippi, he took possession of the land around the gulf of Mexico, called it Louisiana, after the French king, and went to France to get men and means to colonize it. But quarrels arose between him and the commander of the fleet, which ended in the return of the ships, and fifty of the people, to France. With the others La Salle kept on his way, but failed to find the Mississippi again, and wandered from place to place, until his followers were nearly all dead. At last, he started for Canada with sixteen men in 1687. On the way in 1687 two of the men, who hated La Salle, shot him. He was the first European to travel from the headwaters to the mouth of the Mississippi.

Lassalle (*là'sal'*), **Ferdinand,** founder of socialism in Germany, was born in Breslau, 1825, of Jewish parents. He became a disciple of Hegel, took part in the revolution of 1848, and was sent to prison for six months. In 1861 his *System of Acquired Rights* started an agitation of labor against capital, and he was again thrown into prison. Returning to Switzerland, he conceived a passionate affection for a lady betrothed to a noble, whom she was compelled to marry, and whom he challenged; the noble mortally wounded Lassalle in a duel in 1864.

Latimer, Hugh, English bishop and martyr, was born at Thurcaston, in Leicestershire, about 1485, the son of a yeoman. He was educated at Christ's College, Cambridge. He was made bishop of Worcester, 1535, by Henry VIII. The bishopric, however, he resigned, on the passing of the act of the six articles; and was punished by being imprisoned during the remainder of Henry's reign. The accession of Edward VI. set Latimer at liberty, and he resumed his preaching, but refused to resume the mitre. On Mary's ascending the throne he was again incarcerated; and, in 1555, was brought to the stake, where he suffered with unshaken courage. Ridley was his fellow martyr.

Latour D'Auvergne (*là'tōōr' dō'vern'y'*), **Theophile Malo Corret de,** noted French soldier, was born at Carhaix Brittany, 1743. He entered the French army when twenty-four years old. He was a man of extraordinary bravery, became distinguished in the wars of 1792-1800, and was commander of the troop called the "infernal column." When peace came, Latour went to his home and lived quietly until the war again broke out; then he joined the army in place of the only son of a friend. After his death his name was called at roll for many years, and the oldest sergeant used always to answer for him; "Died on the field of honor." He fell in battle at Oberhausen, Bavaria, 1800.

Latrobe (*la-trōb'*), **Benjamin Henry,** American architect and engineer, was born in Yorkshire, England, 1764. In 1785 he entered the Prussian army in a regiment of hussars, and was twice wounded in battle. In 1796 he came to the United States, when he was made engineer of the James river and Appomattox canal, and superintended the building of the penitentiary in Richmond. In 1798 he settled in Philadelphia, where he designed the bank of Pennsylvania, the old academy of art and the bank of the United States. In 1811 he completed the capitol at Washington, and after its destruction by the British in 1814, superintended its reconstruction. Died at New Orleans, 1820.

Laud (*lôd*), **William,** 1573-1645, English prelate, Archbishop of Canterbury, was born at Reading, the son of a clothier. He rose to the primacy, but declined offer of a cardinal's hat, and became a chief advisor of Charles I. His advice did not benefit the king, and on Towerhill he was beheaded for treason.

Lauder, Harry, one of the most popular Scottish comedians, is declared to be among the greatest entertainers now before the public. The secret of his success is that he is simply natural, bubbling over with wit and melody because he cannot help it.

Laughlin (*läf'lin*), **James Laurence,** American educator, economist, head professor of political economy, University of Chicago, 1892-1916; and since emeritus professor same. Was born at Deerfield, Ohio, 1840. He was graduated at Harvard, 1873; Ph.D., 1876. He taught in

Hopkinson's classical school, Boston, 1873-78; was instructor, 1878-83, assistant professor, 1883-87, of political economy at Harvard; president of Manufacturers' Mutual Fire Insurance Company, Philadelphia, 1887-90; and professor political economy; Cornell, 1890-92. Author: *Anglo-Saxon Legal Procedure in Anglo-Saxon Laws; Elements of Political Economy; Gold and Prices Since 1873; Facts About Money; Principles of Money; Reciprocity; Industrial America*, etc. He was lecturer in Berlin on invitation of Prussian cultus ministerium, 1906.

Laurens (*lô'ens*), **Henry,** American statesman, was born in Charleston, S. C., 1724. He was educated for a merchant, was very successful and accumulated a large fortune. In 1776 he became a member of the continental congress from South Carolina, and in the following year was elected its president. In 1779 he was sent on important state business to Holland, but was captured on the way by a British ship-of-war, and taken to London, where he was kept prisoner in the Tower for fifteen months. When the war was ended, he was freed and became one of the ministers to Paris, 1782, to conclude the terms of peace. He died in Charleston, 1792.

Laurie (*lou'rē*), **Simon Somerville,** Scotch educator, was born at Edinburgh, 1829. He was educated at the University of Edinburgh; LL.D., Edinburgh, Aberdeen, and St. Andrews. He was secretary to the endowed schools of Scotland commission, 1872; and at one time president of the teachers' guild. He was Gifford lecturer at Edinburgh, 1905-06, and professor emeritus of the institutes and history of education. Author: *Philosophy of Ethics; Primary Instruction in Relation to Education; Institutes of Education; Historical Survey of Pre-Christian Education;* and many philosophical and educational articles. Died in 1909.

Laurier (*lo'ri-ē'*), **Sir Wilfrid,** Canadian statesman, first French-Canadian premier of the Dominion since 1896, was born in St. Lin, 1841, and educated for the bar at L'Assomption College, 1864; D.C.L., LL.D. He rose rapidly in his profession, and in 1871 was elected as a liberal to the Quebec provincial assembly. In 1874 he was elected to the federal assembly. On the retirement of Blake in 1891 he was chosen leader of the liberal party, and at the general election of 1896 he led his followers to a notable victory. His tariff legislation during 1897, giving Great Britain the benefit of preferential trade with Canada, aroused much enthusiasm both in the colony and at home, and he was warmly welcomed when he went to London to attend the jubilee festivities. He was then appointed a member of the privy council and made a G. C. M. G. In 1900 he again secured the approval both of the Dominion and of the empire by the prompt despatch of Canadian troops to aid the mother country in South Africa, and led his party to another victory at the polls in November. He attended the colonial conference and the coronation in England in 1902. He was again returned to power in 1904 and 1908. Died in 1919.

Laveleye (*lav'le'*), **Emile Louis Victor de,** Belgian political economist, was born at Bruges, 1822. He studied at Ghent, and in 1864 became professor of political economy at Liége. His works include *De la Propriété Lettres d'Italie; Le Socialisme Contemporain; Elements d'Economie Politique; La Péninsule des Balkans;* and works on rural economy in the Netherlands, and on current topics of the day. He was made a baron a few weeks before his death in 1892.

Lavelle, Michael J., American Roman Catholic priest, was born in New York, 1856. He was graduated at Manhattan College, 1873, St. Joseph's Seminary, Troy, N. Y., 1874, and was ordained to the priesthood, 1879. He was assistant, of St. Patrick's cathedral, 1879-86, and rector since 1886; was appointed vicar general, New York, 1902, and domestic prelate to Pope Pius X., 1903. He has been prominent in educational and philanthropic movements.

Lavoisier, Antoine Laurent, celebrated French chemist, was born at Paris, in 1743. He was educated at Mazarin College, and on quitting it, devoted himself wholly to the sciences, but more particularly to chemistry. To obtain the means of more fully prosecuting his researches, he accepted, in 1769, the office of farmer-general. In 1768, he was made an academician; in 1776, discovered a way of greatly improving the quality of gunpowder; and made other beneficial discoveries in economics, and in the application of chemistry to agriculture.

Availing himself of the discoveries of Black Priestly, and Cavendish, and making many experiments and discoveries himself, he was led to connect the discovery of gas, oxygen, with the phenomena of combustion and of acidity; and in 1783, he proved that water can be formed by burning oxygen and hydrogen together, and that it can be decomposed into the same elements. Another great contribution to science by Lavoisier was the chemical nomenclature which he is understood to have invented, and which is still retained, having served as the basis of all subsequent improvements in this important branch of the literature of the science in general.

Notwithstanding his talents and virtues, he was condemned to death by the revolutionary tribunal of Paris, on the frivolous charge of having adulterated the tobacco with ingredients obnoxious to the health of the citizens, and was guillotined, 1794. His principal work is his *Traité Elementaire de Chimie*, "Treatise on the Elements of Chemistry."

References.—*Life* by *Grimaux*; Thorpe's *Essays in Historical Chemistry;* Brougham's *Lives of Philosophers.*

Lawrence, Abbott, American merchant and philanthropist, was born at Groton, Mass., 1792. He was elected to congress in 1839, and in 1842 was one of the commissioners to settle the northeast boundary question with Great Britain. He founded the Lawrence scientific school at Harvard University, and made a bequest for model lodging houses. Died at Boston, Mass., 1855.

Lawrence, Amos, American philanthropist, and brother of Abbott, was born at Groton, Mass., 1786. Having acquired an immense fortune in trade, he devoted over $700,000 of it to charities and donations, among other institutions to Kenyon and Williams Colleges and the theological seminary at Bangor, Me. He died at Boston, Mass., 1852, and his son published his *Life and Correspondence* in 1855.

Lawrence, James, American naval officer, was born at Burlington, N. J., 1781. In the war of 1812 he served under Commodore Decatur, and by brave conduct rose rapidly. In 1813, after a short engagement, he captured the British ship *Peacock*, and soon after was made commander of the frigate *Chesapeake*. After he had been in command of its undisciplined crew for only a few days, in June, 1813, he met the British frigate *Shannon* just out of Boston, and during a hard fight he was mortally wounded and his ship was captured. It was here that he uttered the words, "Don't give up the ship!"

Lawrence, Sir Thomas, English portrait painter, was born in Bristol, 1769; succeeded Sir Joshua Reynolds in 1792 as first painter to King George III. In 1820 he became president of the Royal Academy. He painted nearly all the monarchs and notabilities of Europe; his pictures are distinguished by fidelity of touch and by a peculiar softness and grace of finish. Died, 1830.

Lawrence, William, American prelate, Protestant Episcopal bishop of Massachusetts since 1893, was born in Boston, 1850. He was graduated at Harvard, 1871; D.D., 1893; S.T.D., Hobart, 1889; LL.D., Princeton, 1904. He was rector of Grace church, Lawrence, Mass., 1876-84; professor of homiletics and pastoral theology, Episcopal theological school, Cambridge, 1884-93; dean of same, 1888-93. Author: *Life of Amos A. Lawrence; Visions and Service; Life of Roger Wolcott; Study of Phillips Brooks*, etc.

Lawson, Thomas William, American banker, yachtsman and author, was born in Charlestown, Mass., 1857. He was educated at the public schools of Cambridge, was in business as banker and broker since 1870, and was formerly senior member of the firm of Lawson, Arnold, and company, members of Boston and New York stock exchanges. He was prominent as yachtsman and as a contributor to magazines, reviews and newspapers. Author: *The Krank; History of the Republican Party; Secrets of Success; Frenzied Finance; Friday the Thirteenth*, etc. Died in 1925.

Layard (*lā'ard*), **Sir Austen Henry,** English diplomat, was born in Paris, 1817. Traveling along the Tigris on his way to Ceylon in 1840, he was struck with the ruins of Nimrud, the supposed site of Nineveh; and in 1845-47 carried on excavations there, finding the remains of four palaces. He published *Nineveh and Its Remains, Monuments of Nineveh*, etc. He was presented with the freedom of the city of London, was made D.C.L. by Oxford, and was lord rector of Aberdeen University, 1855-56. He was member of parliament for Aylesbury, 1852-57, foreign under-secretary 1861-66, chief commissioner of works, 1868-69, and in 1869 went as British ambassador to Spain, from 1877 to 1880 to Constantinople, being made K.C.B. in 1878. Died, 1894.

Lea (*lē*), **Henry Charles,** American author and historian, was born in Philadelphia, 1825. He received private education; LL.D. University of Pennsylvania, Harvard and Princeton, and was made a member of many learned societies in Europe and the United States. He was in the publishing business, 1843-80; then retired and devoted himself to literary and historical research. Author: *A History of the Inquisition of the Middle Ages; Chapters From the Religious History of Spain; Formulary of the Papal Penitentiary in the Thirteenth Century; History of the Inquisition of Spain;* and also many articles in periodicals. Died, 1909.

Learned, Marion Dexter, university professor, was born near Dover, Delaware, 1857; graduated at Dickinson College, 1880; L.H.D., 1904; studied in Germany, 1885; Ph.D., Johns Hopkins, 1887. He was instructor associate and associate professor of German, Johns Hopkins, 1886-95; professor of German, University of Pennsylvania, since 1895. President Modern Language Association of America, 1909. Author: *The Saga of Walther of Aquitaine; German Grammar; Herder and America; German Diaries of the American Revolution*, etc.

Le Brun (*lē brun'*), **Charles,** French historical painter, was born in Paris, 1619. He studied four years in Rome, and for nearly forty years, 1647-83, exercised a despotic influence over French art and artists, being usually considered the founder of the French school of painting. From 1668 to 1683, he was employed by Louis XIV. in the decoration of the palace of Versailles; but, being superseded, he became ill and died, 1690.

Le Brun, Marie Anne Elisabeth Vigée, French painter, was born in Paris, 1755, daughter of one Vigée, a painter. In 1776 she married J. B. P. Le Brun, picture dealer and grand-nephew of Charles Le Brun. Her portrait of Marie Antoinette in 1779, led to a lasting friendship with the queen. She painted numerous portraits of the royal family. In London she painted portraits of the prince of Wales, Lord Byron, and others. Died, 1842.

Lecky (*lek'i*), **William Edward Hartpole,** British historian and philosopher, was born near Dublin, Ireland, 1838. He was graduated in 1859 at Trinity College, Dublin. In 1861 he published anonymously *The Leaders of Public Opinion in Ireland*, four brilliant essays on Swift, Flood, Grattan and O'Connell. His later works were *Rationalism in Europe; History of European Morals; History of England in the 18th Century;* and *Democracy and Liberty* with a volume of poems in 1891. He was elected to parliament for Dublin University in 1895 and again in 1900. Died, 1903.

Le Conte (*lē kont'*), **Joseph,** American naturalist and physicist, was born in Liberty county, Ga., 1823. He was graduated at Franklin College, University of Georgia, in 1841, and the New York College of Physicians and Surgeons in 1845, and practiced his profession at Macon, Ga. In 1850 he went to Cambridge, Mass., where he studied under Agassiz. He subsequently held several professorships, and in 1869 became professor of geology and natural history in the University of California. He published several essays on education and the fine arts: *The Mutual Relations of Religion and Science; Elements of Geology; Sight; A Compend of Geology; Evolution*, etc. He died in the Yosemite valley, California, 1901.

Lee, Fitzhugh, American soldier, nephew of Robert E. Lee was born in Fairfax county, Va., 1835. He was graduated at West Point military academy 1856, and became a lieutenant in the second United States cavalry. At the opening of the Civil War he resigned and entered the confederate service, advancing to the rank of major-general. In 1885 he was elected governor of Virginia, serving until 1890. He was appointed consul-general to Havana by President Cleveland, and was retained at that post by President McKinley. He administered his office with signal ability during the investigation of the explosion of the battleship *Maine*, and throughout the trying times preceding the Spanish-American war. In that war he served as major-general of volunteers and after peace was declared he was made governor of the province of Havana. He was later appointed brigadier-general in the regular army, retiring in 1901. Died, 1905.

Lee, Henry, distinguished American general, was born in Virginia, 1756. He was one of the most daring, vigilant and successful cavalry officers on the side of the colonists. "Lee's legion" was probably the most effective and courageous body of troops raised in America. At the battles of Guilford Court House and Eutaw, at the sieges of Forts Watson, Motte, and Granby and Augusta, and, at the storming of Fort Grierson, Lee particularly signalized himself. After the war he was sent to congress as a delegate from Virginia, advocated the adoption of a federal constitution, and in 1792 was chosen governor of Virginia. When Washington died Lee was chosen by congress to write a eulogy of him; in it occurs the famous words "First in war, first in peace, and first in the hearts of his countrymen." Died, 1818.

Lee, Richard Henry, eminent American patriot, and signer of the declaration of independence, was born in Virginia, 1732, and received his education in England. He returned to his native country in his nineteenth year. In 1764 he was appointed to draft an address to the king, and a memorial to the house of lords, which are among the best state papers of the period. The memorial of congress to the people of British America, and the second address of congress to the people of Great Britain, were both from his pen. In June, 1776, he introduced the measure that declared the colonies free and independent states, and supported it by a speech of the most brilliant eloquence. He continued to hold a seat in congress until 1780, when he declined a reëlection until 1784. In that year he was chosen president of congress, but retired at its close, and in 1786 was chosen a member of the Virginia assembly. He was a member of the convention which adopted the present constitution of the United States. and one of the first senators

under it. In 1792 he again retired from public life, and died in 1794.

Lee, Robert Edward, American general, was born in Westmoreland county, Va., 1807. At eighteen he entered West Point, was graduated second in his class in 1829, and received a commission in the corps of engineers. In the Mexican war he was chief-engineer of the central army in Mexico, and at the storming of Chapultepec was severely wounded. In 1852-55 he was superintendent of the United States military academy, and greatly improved its efficiency. He was in command in Texas in 1860, but was recalled to Washington in March, 1861, when seven states had formed the southern confederacy. Virginia seceded on April 17th, and Colonel Lee, believing that his allegiance was due to his state, sent in his resignation. Within two days he was made commander-in-chief of the forces of Virginia. At Richmond he superintended the defenses of the city until the autumn, when he was sent to oppose General Rosecrans in West Virginia. His masterly strategy in the seven days' battles around Richmond defeated McClellan; his battles and strategy in opposing General Pope, his invasion of Maryland and Pennsylvania and other achievements are cardinal to the history of the war. On April 9, 1865, Lee surrendered his army to General Grant at Appomattox Court House, Virginia, and the war was practically ended. After the close of the war he frankly accepted the result, and, although deprived of his former property at Arlington on the Potomac, and the White House on the Pamunky, he declined proffered offers of pecuniary aid, and accepted the presidency of what came to be called the Washington and Lee University, at Lexington, Va., at whose head he remained until his death in 1870. Numerous military critics regard Lee as the greatest military leader produced by the Civil War, and one of the very first produced by the nineteenth century.

Le Gallienne (*lē gal'i-en'*), **Richard,** journalist, was born in Liverpool, England, 1866. He was educated at Liverpool College, and engaged in business seven years, but abandoned it for literature. For a few months he was private secretary to Wilson Barrett, then became literary critic for several papers, and settled in London. For some years his journalistic and literary work has been confined to the United States. Author: *My Ladies' Sonnets; Volumes in Folio; George Meredith; The Book-Bills of Narcissus; English Poems; The Religion of a Literary Man; Prose Fancies; Robert Louis Stevenson and Other Poems; The Beautiful Life of Rome; Rudyard Kipling, a Criticism; The Life Romantic; Sleeping Beauty; Mr. Sun and Mrs. Moon; Odes from the Divan of Hafiz; Painted Shadows; Little Dinners With the Sphinx,* etc.

Legare (*lē-grē'*), **Hugh Swinton,** American statesman, was born in Charleston, S. C., 1797. He studied law, traveled in Europe, and was a member of the South Carolina legislature, 1820-22 and 1824-30. In 1830 he was elected attorney-general. He was *chargé d'affaires* at Brussels, 1832-36, and took his seat as a member of congress during the session of 1837. After the accession of President Tyler in 1841, Legaré was appointed attorney-general of the United States, and in the spring of 1843 he succeeded Webster as secretary of state. He was distinguished as a scholar, and contributed largely to periodicals. Died, 1843.

Leibnitz, Gottfried Wilhelm, von, perhaps the most extraordinary example of universal scholarship upon record, was born, 1646, at Leipzig. In 1672 he submitted to Louis XIV. an essay entitled *Consilium Ægyptiacum,* containing a plan for the invasion of Egypt, which is by some supposed to have led to the Egyptian expedition of Bonaparte in 1798. Died, 1716.

He was the chief organizer of the academy of Berlin, of which he was the first president, and originated both at Dresden and Vienna a project for the establishment of similar bodies. It was to him, likewise, that Peter the Great owed the plan of the since celebrated academy of St. Petersburg. He was eminent in languages, history, divinity, philosophy, political studies, experimental science, mechanical science, and even belles-letters. But it is through his philosophical reputation that he lives in history.

The principal metaphysical speculations of Leibnitz are contained in his *Théodicée Nouveaux Essais, Systeme nouveau de la Nature, De Ipsa Natura, Monadologie,* and in portions of his correspondence. He controverted Locke's rejection of innate ideas, holding that there are necessary truths which cannot be learned from experience, but are innate in the soul, not, indeed, actually forming objects of knowledge, but capable of being called forth by circumstances. Authorities seem generally agreed that Leibnitz discovered the differential calculus independently of any knowledge of Newton's method of fluxions, so that each of these great men in reality attained the same result for himself.

References.—Guhrauer's *G. W. F. Leibnitz;* Dewey's *Leibnitz's New Essays Concerning the Human Understanding;* Stein's *Leibnitz and Spinoza;* Merz's *Leibnitz;* Latta's *Leibnitz, The Monadology and Other Philosophical Writings;* Russell's *A Critical Exposition of the Philosophy of Leibnitz.*

Leighton (*lā'tun*), **Frederick, Lord,** English painter, was born at Scarborough, England, 1830. His early years were spent in the study of art, under the best masters in Rome, Florence, Frankfort, Paris and Brussels. His famous picture, "*Cimabue's Madonna Carried in Procession Through the Streets of Florence*" was his first appearance in the Royal Academy in 1755, and was at once purchased by the queen. Among his other paintings are *Ariadne; Romeo and Juliet; Wedded,* etc. In 1878 he became president of the Royal Academy, was made a baronet in 1885, and raised to the peerage in 1896. In his lifetime he received almost every honor possible to an artist. Died, 1896.

Lemieux, Rodolphe, French statesman, postmaster-general, and minister of labour of Canada since 1906, was born at Montreal, 1866. He was educated at the seminary of Nicolet, and at Laval University, Montreal; barrister, 1891; Q. C., Quebec, 1898, and K. C., Ottawa, 1904. He was a member of parliament for Gaspé, 1896; reëlected, 1900 and 1904; represented Canada before the privy council in England, 1904; solicitor-general of Canada, 1904-06; fellow of the royal society, Canada, 1908. Author of several works on law and a number of addresses.

Lenbach (*len'bäĸ*), **Franz von,** noted German portrait painter, was born at Schrobenhausen, Bavaria, 1836. He studied at the Munich Academy under Gräfle and Piloty, and in 1858 went to Rome. In 1860 he become professor of art at Weimar, but resigned in 1862 and went to Italy and Spain. On his return to Munich he devoted himself exclusively to portraiture, but after 1872 spent much time in travel and work in Vienna, Morocco and Egypt. His portraits of Bismarck are specially famous. Died, 1904.

Lenin, Nikolai, Russian Soviet leader, was born at Simbirsk, 1870. When he was seventeen his elder brother was hanged for a conspiracy against the czar. Lenine studied law at the university of Kazan from which he was expelled for his revolutionary agitations and at Petrograd. In 1896 he was arrested but escaped and went abroad, where he wrote much in favor of Marxism and social upheaval, advocating terrorism and violence. At the beginning of the World War he was a leader in socialist circle. He soon saw that his cause would be helped by Russia's defeat and worked to this end, with the financial aid of the German secret service. He was made president of the Soviet Republic in 1918. His health failed in 1923 and he died, 1924.

Leo I., the Great, pope of Rome 440-461, was born about 390. He succeeded Sixtus III. in 440; zealously opposed the Manichæans and Pelagians, and secured the condemnation of the Eutychian heresy at the general council of Chalcedon; extended the Roman see, and induced Attila to spare Rome. He published several volumes of letters and sermons. Died at Rome, 461.

Leo X., Pope (Cardinal Giovanni de Medici), son of Lorenzo the Magnificent, was born in Florence, Italy, 1475. He was banished, with his family, in 1497; traveled in Germany and Flanders, and formed a friendship with Erasmus. On his return to Italy he became legate to Julius II; was taken prisoner at Ravenna in 1512, escaped and became pope in 1513. In 1515 he signed the famous concordat with Francis I. His pontificate is one of the most brilliant periods in the history of art and literature, and is also memorable as the time when the reformation began. Died, 1521.

Leo XIII., Pope (Gioacchino Pecci), son of Count Ludovico Pecci, was born in Carpineto, in the papal states, 1810. He was educated at the Collegio Romano and the Academy of Noble Ecclesiastics; appointed by Gregory XVI. a domestic prelate in 1837. He was made archbishop of Damietta *in partibus* and sent to Belgium as nuncio in 1843, nominated archbishop of Perugia in 1846, and in 1853 created a cardinal by Pius IX. Upon the death of Pius IX., in 1878, he was elected to the papacy under title of Leo XIII. He restored the hierarchy in Scotland and composed the difficulty with Germany. He regarded himself as the despoiled sovereign of Rome, and as a prisoner at the vatican; and persistently declined to recognize the law of guarantees. He protested against heresy and "godless" schools, and in his encyclicals affirmed that the only solution to the socialistic problem is the influence of the papacy. In 1894 he constrained the French clergy and the monarchists to accept the republic. In 1883 he opened the archives of the vatican for historical investigations, and made himself known as a poet, chiefly in the Latin tongue. The jubilee of his episcopate in 1893 was marked by pilgrimages, addresses, and gifts, as was that of his priesthood in 1887. In 1896 he issued an encyclical pronouncing Anglican orders null and void. Died, 1903. Down to the time of his death he was one of the foremost figures of modern times, and a potent force in religion, education and morals.

Leonardo da Vinci (*lā'ônär'dō dä vēn'chē*). See Vinci.

Leonidas I. (*lē-ŏn'idas*), king of Sparta, succeeded his brother, Cleomenes I., 491 B. C. When the Persian monarch, Xeres, approached with an immense army, Leonidas opposed him at the narrow pass of Thermopylæ, 480 B. C., with a force of 300 Spartans and more than 5,000 auxiliaries. The treachery of one Ephialtes having made it impossible to bar any longer the progress of the foe, Leonidas and his little band threw themselves on the swarming myriads and found a heroic death.

Lepsius (*lep'sē-oos*), **Karl Richard,** noted German Egyptologist, was born at Naumburg, 1810. In 1836 at Rome he studied Egyptology, Nubian, Etruscan, and Oscan, writing numerous treatises. In 1842-45 he was at the head of an antiquarian expedition sent to Egypt by the king of Prussia, and in 1846 was appointed professor in Berlin. His *Chronologie der Aegypter* laid the foundation for a scientific treatment of early Egyptian history. His other works consist of letters from Egypt, Ethiopia, and Sinai, 1852; the *Konigsbuch* and the *Todtenbuch,* or the Egyptian *Book of the Dead.* Died, 1884.

Lesage (*le'säzh'*), **Alain Rene,** French novelist and dramatist, was born in Sarzeau, in Brittany, 1668, and studied at the Jesuits' College at Vannes. After having held a situation under the farmers-general in his native province, he went to Paris in 1692, tried the bar for a short time, and then adopted the profession of an author. For some years he continued to be little known as a writer: but in 1707 he rose at once into popularity by his comedy of *Crispin the Rival of His Master,* and his romance of *Le Diable Boiteux.* The comedy of *Turcaret,* in 1709, added to his fame, which subsequently was rendered imperishable by his admirable *Gil Blas.* He composed twenty-four dramatic pieces, and had a share in the composition of seventy-six others. He died in Paris, 1747.

Lesseps (*lē-seps'*), **Ferdinand, Viscount de,** French engineer and diplomat, was born at Versailles, 1805. He held various consular offices; in 1854 proposed to the viceroy of Egypt the cutting of the Suez canal, and completed the work in 1869. He entered upon the construction of the canal across the isthmus of Panama, afterwards completed by the United States. The sentence of imprisonment pronounced upon him by the French government in 1893, as one of the officers of the French Panama Canal Company, was never enforced. Died, 1894.

Lessing, Gotthold Ephraim, German critic, dramatist and scholar, was born, 1729, at Kamentz, in upper Lusatia. He entered the University of Leipzig in 1746 to study theology, but his love of the drama and his intimacy with Schlegel, Mylius, Weisse and other young men of literary tastes, led him to abandon his intention.

After a short stay in Wittenberg he went in 1748, with Mylius to Berlin, where he wrote for magazines and booksellers. He also undertook, with Mylius, in 1750, a publication entitled *Beiträge zur Historie und Aufnahme des Theaters* "Contributions to the History and Improvement of the Theater;" published some poems under the title of *Kleinigkeiten* ("Trifles"); translated a work of the Spanish philosopher Huarte; and wrote some articles in *Voss' Gazette.* He entered at this time into friendly relations with Moses Mendelssohn and the bookseller Nicolai, in conjunction with whom he established the critical journal, *Briefe die neueste Literatur treffend* ("Letters on the Newest Literature").

In 1755 appeared *Miss Sara Sampson,* a tragedy dealing with English life. In 1760 Lessing became secretary to General Tauenzien in Breslau for five years, when he returned to Berlin and published the *Laokoon oder uber die Grenzen der Malerei und Poesie* ("Laocoon, or on the Limits of Painting and Poetry,") and his comedy *Minna von Barnhelm.* About 1767 he became director of the National Theater at Hamburg. While here he wrote his *Dramaturgie.* His criticisms made him enemies, and having been compelled to quit Hamburg, the Duke of Brunswick appointed him his librarian at Wolfenbüttel.

In 1775 he went to Vienna and accompanied Prince Leopold of Brunswick to Italy. He married in 1776, but his wife died in little more than a year. At this period he was involved in fierce theological disputes, which his philosophical drama *Nathan der Weise* did nothing to allay. Besides those men-

tioned, he wrote another drama, *Emilia Galotti*. He died at Brunswick in 1781.

References.—Biographies by Danzel and Guhrauer, Erich Schmidt, Borinski, Sime, Helen Zimmern, Rolleston; and Stahr's *Life and Works of Lessing*.

Leutze (*loit'sĕ*), **Emanuel,** German-American painter, was born at Gemünd in Würtemberg, 1816. He was brought up in America, studied in Europe, 1841-59, then settled in New York. Among his works are: *Washington Crossing the Delaware; Washington at Monmouth; Landing of the Norsemen; Cromwell and His Daughter*, etc. Died at Washington, D. C., 1868.

Lever (*lĕ'vẽr*), **Charles James,** Irish novelist, was born at Dublin, 1806. He was graduated at Trinity College in that city, 1827; studied medicine at Göttingen, and then returned to Dublin. His most popular work, *Charles O'Malley*, is a reflex of his own college life at Dublin, and many of the incidents in this novel are no doubt drawn from his own experience in the world. He died at Trieste, Italy, 1872.

Levermore, Charles Herbert, authority on world peace, was born in 1856. He was graduated from Yale University then taught for several years at the University of California and the Massachusetts Institute of Technology. He was principal of Adelphi Academy and president of Adelphi College, Brooklyn. From 1913 he was active in societies for the promotion of peace and was made secretary of the New York Peace Society in 1917. He won the Bok Peace Prize of $50,000 for the best plan for maintaining peace among the nations.

Lewes (*lū'is*), **George Henry,** English philosopher and critic, was born in London, 1817. He was educated partly at Greenwich under Dr. Burney, and partly in Jersey and Brittany; left school early to enter first a notary's office, and then the house of a Russian merchant. In 1838 he proceeded to Germany, and remained there nearly two years, studying the life, language and literature of the country. He was married unhappily and had children when his connection with George Eliot began in 1854; it ended only with his death at their house in Regent's Park, 1878. Lewes was one of the best of critics and biographers; as a popularizer of philosophy he was inferior to none, as a popularizer of science he was inferior to few. His works, besides a tragedy and two novels, include: *Biographical History of Philosophy; Physiology of Common Life; Studies in Animal Life; Aristotle; On Actors and the Art of Acting; Problems of Mind, Life*, etc.

Lewis, Edwin Herbert, college professor, was born at Westerly, R. I., 1866. Graduated from Alfred University, 1887; Ph.D., Syracuse University, 1892; University of Chicago, 1894; studied in Italian libraries, 1888-89; professor of Latin, Alfred University, 1890-92; assistant in rhetoric, 1893-94; instructor in English, 1895-6, University of Chicago; associate professor of English, 1896-99, University of Chicago and Lewis Institute; professor of English since 1899, dean college students since 1906, Lewis Institute, Chicago. Author: *The History of the English Paragraph; A First Book in Writing English; A First Manual of Composition; An Introduction to the Study of Literature; A Second Manual of Composition; Specimens of the Forms of Discourse; Applied English Grammar*, etc.

Lewis, Meriwether, American explorer, was born near Charlottesville, Va., 1774. In 1803-06 he was engaged with Captain William Clarke in an expedition to the Pacific Ocean, the results of which were important to geographical science; and in 1807 he was made governor of the territory of Louisiana. He was subject to periods of mental depression, in one of which he is said to have taken his own life near Nashville, Tenn., 1809. His memoir by Jefferson was published, together with Biddle and Allen's *Narrative of the Lewis and Clarke Expedition*, in 1804.

Lewis, Sinclair, American novelist, was born in Minnesota in 1885. He was educated at Yale, and began his literary work by writing editorials and short stories for magazines. His first novel, *Our Mr. Wren*, appeared in 1914, followed by *The Trail of the Hawk* and *Free Air*. In 1920 he published *Main Street*, a story of life in a small middle western town, and shortly after, *Babbitt*. His later works include *Arrowsmith*, and *Elmer Gantry*.

Lewis, William Draper, American educator and law writer, dean of the law department, University of Pennsylvania, since 1896, was born in Philadelphia, Pa., 1867. He was graduated at Haverford, 1888; University of Pennsylvania, LL.B., Ph.D., 1891. Author: *Federal Power Over Commerce and Its Effects on State Action; Our Sheep and the Tariff; Restraint of Infringement of Incorporeal Right*. Editor: Lewis' *Greenleaf's Evidence*, 3 vols.; Wharton's *Criminal Law;* Lewis' *Blackstone's Commentaries*. 4 vols.; *Digest of Decisions of United States Supreme Court and Circuit Court of Appeals*, etc.

L'Hopital (*lō'pē'tal'*), **Michel de,** French statesman, was born about 1507. He was president of the court of accounts, 1554-60, and afterward chancellor of France until 1568. He promoted the edict of Romorantin, which excluded the inquisition from France; the ordinance of Orleans, an administrative, judicial and religious code; the edict of acification, for the free exercise of Protestant worship; and the ordinance of Moulins, to reform the administration of justice. He died in 1573.

Liddon (*lid'un*), **Henry Parry,** English clergyman, was born at North Stoneham, Hampshire, 1829. He was graduated at Christ Church, Oxford, 1850; was ordained in 1852 as senior student of Christ Church; from 1854 to 1859 was vice-principal of Cuddesdon theological college, and in 1864 became a prebendary of Salisbury, in 1870 a canon of St. Paul's, and Ireland professor of exegesis at Oxford, until 1882. In 1886 he declined the bishopric of Edinburgh, and in 1887 visited the Holy Land. Canon Liddon was the most able and eloquent exponent of liberal high church principles. He died suddenly at Weston-super-Mare, 1890.

Lieber (*lē'ber*), **Franz,** German-American publicist, was born in Berlin, 1800. After suffering imprisonment for his political opinions, he came to America in 1827, and was made professor of history in South Carolina College, 1835-56, of political economy in Columbia College, 1857-60, and of political science in Columbia law school, 1860-72. He edited the *Encyclopædia Americana*, and wrote *Political Ethics; Civil Liberty and Self-Government, Guerilla Parties*, etc. Died, 1872.

Liebig (*lē'bĭg*), **Justus, Baron von,** German chemist, was born in Darmstadt, 1803. He studied at Bonn and Erlangen; then went to Paris, and attracted the attention of Humboldt by a paper on the fulminates. He was appointed professor at Giessen in 1824, where he established a laboratory celebrated for researches in organic chemistry and the application of chemistry to agriculture, food, etc. Among his chief works are: *Organic Chemistry in Its Application to Agriculture; Animal Chemistry in Its Application to Physiology and Pathology*. He died at Munich, 1873.

Li Hung Chang (*lē'hoong'chäng'*), Chinese statesman, was born in 1823, and studied at Hanlin College. In 1853, in the Taiping rebellion, he joined the imperial army as secretary. In 1864 he was appointed governor-general of the Kiang provinces, and in 1872 of Chih-li, and senior grand secretary. He founded the Chinese navy and promoted a native mercantile marine. On the outbreak of the war with Japan in 1894, Li, in supreme command of the military and naval forces in Corea, was thwarted by the incompetence, dishonesty and cowardice of inferior officers. The Chinese forces were swept out of Corea, and Li, whose policy was that of peace, was deprived of his honors and summoned to Pekin. With this last command he refused to comply, and the disastrous course of events soon compelled the emperor to restore him to honor. Through his efforts the war was brought to a termination in 1895, China ceding Formosa and paying a war indemnity of $175,000,000. Professedly friendly to foreigners, and well aware of the value of western culture and industry, he visited Russia, Germany, France, England and America in 1896. He died in 1901.

Lincoln, Abraham, American statesman and the sixteenth president of the United States of America, was born in Kentucky 1809. He removed with his family in 1816 to Spencer county, Indiana, and for the next ten years was engaged in laborious work of various kinds, having only about a year's schooling at intervals.

At the outbreak of the Black Hawk war in 1832 he joined a volunteer company, and as captain he served three months in the campaign. He next opened a country store, was appointed postmaster of New Salem, Illinois, began to study law, and at the same time turned amateur land surveyor. In 1834 he was elected a member of the Illinois legislature, to which he was again returned at the three following biennial elections, and in 1836 he was licensed to practice law.

In 1846 he was elected a representative in congress from Illinois, and voted steadily in congress with the anti-slavery party. In 1849 and again in 1858 he was unsuccessful in attempts to enter the United States Senate. In the Republican national convention held at Chicago in May, 1860, he was nominated as a candidate for the presidency, and after several votes he gained a majority, and was eventually chosen unanimously. The southern states alarmed at the aggressive anti-slavery policy which many of the leading Republicans had proclaimed their determination to follow, refused to acquiesce in Lincoln's election, and began one after another to announce their secession, and to organize the means of resisting the enforcement of the claims of the central government.

The election of Lincoln took place in November, 1860, and he assumed office on the 4th of March, 1861. It was the intention of Lincoln to use every means of conciliation consistent with the policy he deemed essential to the national interest to pursue. On one point, however, his resolution was steadfast, to admit no secession, and before his assumption of office secession was as resolutely determined on the other side. On the 4th of February the southern confederacy had been constituted, and on the 14th of April the first blow in the Civil War was struck by the capture of Fort Sumter by the Confederates.

The events of the Civil War during the next four years in Lincoln's career belong to the history of the United States. Lincoln's persistence in raising and pouring in fresh troops after every disaster finally enabled the Federal government to subdue the secession. The toleration of slavery was always in Lincoln's opinion an unhappy necessity; and when the southern states had by their rebellion forfeited all claim to the protection of their peculiar institution, it was an easy transition from this view to its withdrawal. The successive stages by which this was effected—the emancipation of the slaves of rebels, and the offer of compensation for voluntary emancipation, followed by the constitutional amendment and unconditional emancipation without compensation—were only the natural steps by which a change involving consequences of such vast extent was reached.

The determination of the northern states to pursue the war to its conclusion on the original issue led to the reelection of Lincoln as president in 1864. The decisive victory of Grant over Lee on April 2d, 1865, speedily followed by the surrender of the latter, had just afforded the prospect of an immediate termination of this long struggle, when, on the 14th of the same month, President Lincoln was shot in Ford's Theater, Washington, by the assassin, John Wilkes Booth, and expired on the following day. In the affections of America Lincoln holds a place second only to Washington.

References.—Nicolay and Hay, *Abraham Lincoln: A History;* the same authors edited the *Complete Works of Abraham Lincoln*. See also *Lives* by Morse, Arnold, Herndon and Weik, Lamon, and Tarbell. Also see Rhodes' *History of the United States From the Compromise of* 1850.

Lincoln, Robert Todd, American lawyer, was born at Springfield, Ill., 1843, eldest son of Abraham Lincoln. He was graduated at Harvard, 1864; entered Harvard Law School, but left to enter the army, serving until end of war as captain on staff of General Grant. He then finished his law studies, was admitted to the Illinois bar, 1867, and practiced at Chicago. He was presidential elector, 1880; secretary of war, 1881-85, and United States minister to Great Britain, 1889-93. He was also vice-president of the Commonwealth Edison Company; Central Union Telephone Company, Commercial National Bank, Pullman Loan and Savings Bank, etc. Died in 1926.

Lind, Jenny (Madame Otto Goldschmidt), the Swedish singer, was born in Stockholm, Sweden, 1820. At three years of age she could sing correctly any piece she had once heard, and at nine was placed under Croelius, a famous teacher of music. She visited New York in 1850, under the auspices of P. T. Barnum, and was enthusiastically received, but dissolved the engagement prematurely in 1851, was married to M. Otto Goldschmidt, a skillful pianist and conductor, and retired from the stage. She reappeared in 1855, in 1861, in 1863, and in 1880 for a limited period. She was professor of singing at the Royal College of Music. Wiesbaden, 1883-86. She died in Wynd's Point, Malvern, England, in 1887.

Lindbergh, Colonel Charles A., was born February 4th, 1902, at Detroit, Michigan. Son of Congressman Charles A. Lindbergh. After several "barnstorming" tours he entered at Brooks Field, where he was commissioned a Second-Lieutenant. He served as an Air Mail Pilot. On May 20th, 1927, he made the first flight from New York to Paris in "The Spirit of St. Louis." In 1927-28 he made a good-will flight to Latin America.

Lindsay, Nicholas Vachel, American writer, was born at Springfield, Illinois, in 1879. He attended Hiram College, and studied art in Chicago and New York, but eventually devoted himself to writing. He has a theory that strongly emphasized rhythm can convey moods to people not reached by conservative verse. So one finds in his works the monotonous beat of the tom-tom, the rhythm of the Ford car, or the martial drum beats of the Salvation Army. Among his works are *The Congo and Other Poems; General William Booth Enters Heaven; The Santa Fe Trail; Adventures While Preaching the Gospel of Beauty*, was written after some of his walking tours through the United States

Lindsey, Benjamin Barr, jurist, reformer, was born in Jackson, Tenn., 1869. He was educated in the public schools studied law and was admitted to the bar. Judge of the county court and juvenile court of Denver, Colo., beginning 1900. He is the originator of the juvenile court system and has an international reputation as an authority on juvenile delinquency. In 1906 he was a candidate for governor of Colorado. Author: *The Beast and the Jungle.*

Linevich (*li-nev-ich*), **Nicolay Petrovich,** Russian general, was born in the government of Techrnigoff in 1838. He served in the Russo-Turkish war and in 1900 succeeded to the command of the Siberian troops in Manchuria. In 1904 he commanded the Russian left at the battle of Mukden in the Russo-Japanese war and succeeded General Kuropatkin in 1905 as commander-in-chief in the far East. Died, 1908.

Linne (*lin'nä*), **Karl Von,** commonly called Linnæus, the greatest botanist of his age, was born at Rsahult, Sweden, 1707, and died at Upsala in 1778. He was the son of a clergyman, who had him educated at the grammar-school and the gymnasium of Wexiö. He showed an early interest in botany; entered the University of Lund, where his botanical tastes were encouraged; and removed to Upsala in 1728, where he undertook the supervision of the botanic garden. Here he made the acquaintance of the botanist Rudbeck, whose assistant he became.

Aided by the academy of sciences at Upsala, Linné made a journey through Lapland, the result of which was shown in his *Flora Lapponica,* published 1735. In this year he went to the University of Harderwyk in Holland and took an M.D. degree; afterward visited Leyden, where he published the first sketch of his *Systema Naturæ* and *Fundamenta Botanica.* In 1736 he visited England, went to Paris in 1738, and afterward settled in Stockholm as a physician.

He became professor of medicine at Upsala in 1741, and then of botany and natural history; was made a knight of the Polar Star, with the rank of nobility; and died on his estate near Upsala from apoplexy.

The great merit of Linné as a botanist was that he arranged plants on a simple system of sexual relationship and prepared the way for the more natural and satisfactory classification which has superseded the Linnæan system. Nor must it be forgotten that he was eminent not only in botany, but in all the sciences of his time. His chief works, besides those already mentioned, were: *Genera Plantarum; Classes Plantarum; Flora Suecica; Fauna Suecica, Philosophia Botanica,* and the *Species Plantarum.*

References.—Sach's *History of Botany;* Caru's *History of Zoölogy;* Stoever's *Life of Sir Charles Linnæus;* Caddy's *Through the Fields with Linnæus.*

Lipton, Sir Thomas Johnstone, British sportsman and merchant, was born in Glasgow, of Irish parentage, 1850. He started life as a retail merchant, acquired extensive tea, coffee and cocoa estates in Ceylon, and accumulated a large fortune. He is chairman of Lipton, Ltd., and is also largely interested in business enterprises in the United States and Canada. He owned the yachts *Erin, Shamrock,* and *Shamrock III.,* and challenged for the American cup 1889, 1901 and 1903. He was knighted in 1898, and created a baronet in 1902.

Lister, Joseph, Lord, English surgeon, was born in Upton, England, 1827. He was graduated at London University in 1847, and in medicine, 1852. He was successively lecturer on surgery, Edinburgh; regius professor of surgery, Glasgow; professor of clinical surgery, Edinburgh; professor of clinical surgery, King's College hospital, London, and surgeon-extraordinary to Queen Victoria. In addition to important observations on the coagulation of the blood, inflammation, etc., his great work has been the introduction, since 1860, of the antiseptic system, which has revolutionized modern surgery. He received many foreign honors, and was made a baronet in 1883 and a peer in 1897. Died, 1912.

Liszt (*list*), **Franz,** noted Hungarian pianist and composer, was born at Raiding, 1811. In 1849 he became conductor of the court theater at Weimar; in 1861 was made commander of the legion of honor, and in 1865 took orders and received the tonsure. In 1871 his native country granted him a pension of 600 pounds a year, and in 1875 he was named director of the Hungarian academy of music. One of his two daughters married Richard Wagner, his lifelong friend. Though Liszt's fame as a pianist overshadows his name as a composer, yet he was the creator of the symphonic poem, and his *Hungarian Rhapsodies* for the piano are unrivaled. He died at Bayreuth, Bavaria, 1886.

Litman, Simon, educator, economist, was born in Odessa, Russia, 1873. He was educated at Odessa Commercial College, School of Political Science, Paris, at the University of Zurich, and University of Munich; lecturer at the Russian School of Social Science, in Paris, 1902; instructor in commerce University of California, 1903-1908; associate in commerce, 1908-1910, and assistant professor in economics, 1910, University of Illinois. Member of the American Economic Association, American Statistical Association, American Association for Labor Legislation and National Geographic Society. Author of *Trade and Commerce; Die Lohnfondstheorieu,* and of many articles on industry, commerce and transportation.

Littleton, Martin W., American lawyer, was born in Roane county, Tenn., 1872. He was practically self-educated and began practicing law in 1891. He was assistant prosecuting attorney, Dallas, Texas; delegate from New York to national democratic convention, 1904; and has appeared in many famous legal trials. He was elected to Congress 1910.

Littleton, Sir Thomas, English jurist, was born in Worcestershire, England, 1402. He was recorder of Coventry in 1450, king's sergeant in 1455, in 1466 judge of common pleas, and in 1475 a knight of the bath. His reputation rests on his treatise on *Tenures,* written in law French, and turned into English about 1500. It was the text that Coke commented on in his *Coke Upon Littleton.* Died, 1481.

Littre (*lē-trā'*), **Maximilien Paul Emile,** French philosopher and philologist, was born in Paris, 1801. He studied at the Lycée Louis-le-Grand, then graduated in medicine and finally turned to philology. He fought on the barricades in 1830, was one of the principal editors of the *National* down to 1851, and became an enthusiastic follower of Comte. His *La Poésie Homerique et l'Ancienne Poésie Francaise* was an attempt to render the first book of the *Iliad* in the style of the Trouvères. His splendid *Dictionnaire de la Langue Francaise* did not prevent the academy in 1863 from rejecting its author, whom Bishop Dupanloup denounced as holding impious doctrines. In 1871 the academy at last admitted him. He was one of the first linguists and scientists of this century. Died, 1881.

Livingston, Edward, American jurist and statesman, was born at Livingston, N. Y., 1764. He was elected a member of congress in 1794, and became federal attorney and mayor of New York in 1801. In the dispute with England in 1814-15 he became aide-de-camp and secretary to General Jackson. In 1821 he was appointed to draw up a code of civil procedure for Louisiana. It was the simplest known up to that time, and received the warmest approval from Bentham and other jurists. He was thereafter United States senator for Louisiana, 1829-31; secretary of state, 1831-33; minister to France, 1833-35, and supported the demand of $5,000,000 made by the United States government for indemnity on account of French spoliations, and succeeded in securing its payment. Died at his own estate on the Hudson, 1836.

Livingstone, David, African explorer and missionary, was born at Blantyre, in Lanarkshire, Scotland, 1813. Was sent to southern Africa by the London missionary society in 1840; resided for several years at various stations near the Limpopo, discovering Lake Ngami in 1849, and penetrating to the Makola Country in 1851; in 1853-54 and in 1854-56 made his way from Loando to Quilimane, following the course of the Zambesi, and discovering the Victoria falls. He returned to England in 1856, and published *Missionary Travels,* 1857; returned to Africa as consul at Quilimane in 1858; explored the country north of the Zambesi, 1858-64, discovering Lakes Shirwa and Nyassa, and in 1865 published a narrative of the journey. He undertook his third expedition in 1866, and spent the remainder of his life endeavoring to ascertain whether the Nile flowed from the water-system west of Lake Tanganyika. In 1871 he was found by Stanley at Ujiji. He died in central Africa, 1873.

Livy, or **Titus Livius,** Roman historian, was born at Patavium (Padua), in the north of Italy, 59 B. C. He was the most eminent of the Roman historians. His history of Rome was written partly at Rome and partly at Naples, under the patronage of the emperor Augustus. It consisted originally of 142 books; but of these only thirty-five have come down to us and some of these in a very imperfect state. Of all but two, however, we possess fragments, with short epitomes from another hand. The history, or as it was called by its author, *The Annals of the Roman People,* begins with the foundation of the city, and ends with the death of Drusus, the younger brother of the emperor Tiberius, 9 B. C. Died, 17 A. D.

Lloyd-George, Rt. Hon. David, Premier of England, was born at Manchester, 1863, of Welsh stock. Elected to Parliament in 1890; appointed Privy Councillor, 1905; president of Board of Trade, 1905-08; Chancellor of the Exchequor, 1908-15; Minister of Munitions, 1915-16; came into power at downfall of Asquith ministry, 1916; called to premiership by King. Resigned, 1922.

Locke, George Herbert, Canadian educator, professor of education and dean of training school for teachers, Macdonald College, McGill University, Montreal, Canada, since 1907, was born in Ontario, Canada, 1870. He was educated at Victoria College, University of Toronto, and University of Chicago; instructor in history and art of teaching, Harvard University and Radcliffe College, Cambridge, Mass., 1897-99; associate professor of education, University of Chicago, 1899-1905; in editorial department of Ginn and Company, Boston, 1905-07; associate editor of *The Quarterly Journal of Pedagogy,* 1907. He is the author of many contributions to educational periodicals.

Locke, John, eminent English philosopher, was born at Wrington, in Somersetshire, 1632, and died, 1704, at Oates in Essex. He was sent to Christ Church, Oxford, where he took the degrees of B.A. and M.A., and applied himself to the study of medicine. In 1666 Locke made the acquaintance of Lord Ashley, afterward earl of Shaftesbury, and held various offices in the patronage of that nobleman. When in 1682 his patron was obliged to retire, for political reasons, to Holland, Locke accompanied him in his exile. Owing to the troubled condition of his country, and the continued triumph of the party which he had opposed, Locke continued to reside abroad.

He returned to England at the revolution, and was appointed commissioner of appeals under the new government. As early as 1670 he had formed the plan of his famous *Essay on the Human Understanding,* a plan which he had carefully elaborated in his exile, and which he published in its completed form in 1690. It was received with much opposition, notably by the University of Oxford, which resolved to discourage it; but despite this it acquired a great reputation throughout Europe, and was translated into French and Latin. Locke was made a commissioner of trade and plantations in 1695, but retired when unable to perform its duties, and lived with his friend Sir F. Masham until his death.

Briefly, it may be stated that the chief purpose of Locke's celebrated *Essay* was to find the original sources and the scope of human knowledge. The conclusions he arrived at were that there is no such thing as an "innate idea;" that the human mind is a sheet of white paper prepared to be written upon; that the knowledge thereon written is supplied by experience; and that "sensation" and "reflection" are the two sources of all our ideas.

Among other works of Locke are his *Letters on Toleration; Thoughts Concerning Education; Reasonableness of Christianity; Two Treatises on Government; Notes Upon St. Paul's Epistles to the Galatians, Corinthians, Romans, and Ephesians;* and *Treatise on the Conduct of the Understanding.*

References.—Stewart's *Philosophical Essays;* King's *Life of John Locke;* Scharer's *John Locke;* Cousin's *Philosophy of John Locke;* Bourne's *Life of Locke;* Fowler's *Locke;* Fraser's *Locke;* and Russell's *The Philosophy of Locke.*

Lockhart, John Gibson, Scottish biographer, was born in Scotland, 1794. He was graduated at Oxford, studied law at Edinburgh, and was admitted to the Scottish bar in 1816. He and John Wilson were long the chief supporters of *Blackwood's Magazine.* It was this connection which led to his acquaintance with Sir Walter Scott. In 1820 he married Sophia Scott, eldest daughter of Sir Walter. After the publication of other works, and from 1837-39, appeared his *Life of Scott,* a production of undoubted merit, but which has given rise to much bitter controversy. In 1843 Lockhart was appointed auditor of the duchy of Cornwall. Died, 1854.

Lockyer (*lok'yēr*), **Sir Joseph Norman,** English astronomer, was born at Rugby, 1836. He became a clerk in the war office, 1857; in 1869 was made a fellow of the royal society; in 1870 lecturer on astronomy at the normal school of Science at South Kensington; in 1894 a C. B., and in 1897 a K. C. B. He headed eclipse expeditions to Sicily, India, Egypt, and the West Indies. He wrote *Elementary Lessons in Astronomy; The Chemistry of the Sun; The Dawn of Astronomy,* etc. Died, 1920.

Lodge, Henry Cabot, American author, statesman, was born in Boston, Mass., 1850. He was graduated from Harvard College, 1871; from Harvard law school in 1875, was admitted to the Suffolk bar in 1876, and received the degree of Ph.D. from Harvard University for his thesis on *The Land Law of the Anglo-Saxons;* LL.D., Williams, Yale, Harvard; editor *North American Review,* 1873-76; university lecturer on American history, Harvard, 1876-79, and lecturer before Lowell Institute, Boston, 1880. He was elected a member of congress, 6th Massachusetts district, 1887-93, and United States senator in 1893 and re-elected for several terms. Editor: *Complete Works of Alexander Hamilton.* Author: *Life and Letters of George Cabot; Life of Washington, History of Boston; Certain Accepted Heroes and Other Essays in Literature and Politics; Story of the Revolution,* etc. Died, 1924.

Lodge, Sir Oliver Joseph, British educator and physicist, principal of the University of Birmingham since 1900, was born at Penkhull, Staffordshire, 1851. He was graduated at University College, London; D.Sc., London, Oxford, Victoria, and Liverpool) LL.D., St. Andrews, Glasgow, and Aberdeen. Was professor of physics, University College, Liverpool, 1881-1900. Author: *Elementary Mechanics; Modern Views of Electricity; Pioneers of Science; Signalling Without Wires; Ministers and Stewards; Man and the Universe,* etc.

Loeb (*lōb*), **Jacques,** German-American physiologist, professor of physiology, University of California, beginning 1902, was born in Germany, 1859. He studied medicine at Berlin, Munich, and Strassburg; M.D., Strassburg, 1884; assistant professor of physiology and experimental biology, 1892-95; associate professor, 1895-1900; professor, 1900-02, University of Chicago. Author: *The Heliotropism of Animals and Its Identity With the Heliotropism of Plants; Studies in General Physiology,* etc. Died, 1924.

Logan, John Alexander, American soldier, was born in Illinois, 1826. He served in the Mexican war, was admitted to the bar in 1852, and was elected to congress as a democrat in 1858. He raised an Illinois regiment in the Civil War, and retired at its close as major-general. He returned to congress as a republican in 1866, was United States senator from Illinois, 1871-86. He was nominated for the vice-presidency in 1884, but was defeated with the rest of the Blaine ticket. Died, 1886.

Lombroso (*lōm-brō'zō*), **Cesare,** famous Italian alienist and criminologist, was born at Verona, Italy, 1836. He was educated at the University of Turin, became professor of mental diseases at the University of Favia, 1862, and finally professor of forensic medicine and psychiatry at Turin. Lombroso was the author of many books on his special subject, particularly the pathology of genius, and his investigations of insanity and criminology led the way to great reforms in the treatment of these classes in Europe and elsewhere. He visited England in 1908, and died in 1909.

London, Bishop of. See **Ingram, A. F. W.**

London, Jack, American author and socialistic lecturer, was born in San Francisco, Cal., 1876. He was educated at Oakland high school and the University of California. He left college to go to the Klondike and never completed his course; went to sea before the mast, 1892; went to Japan and seal hunting in Bering sea, 1893; tramped throughout the United States and Canada for sociological and economic study, 1894, and traveled widely at various times. Author: *The Son of the Wolf; A Daughter of the Snows; The Children of the Frost; The Call of the Wild; The Faith of Men; The Sea Wolf; White Fang; Before Adam; The Road; Martin Eden,* etc. Died, 1916.

Long, George, English scholar, was born at Poulton, Lancashire, England, 1800. He was graduated at Trinity College, Cambridge, 1822, and in 1823 was made fellow, over Macaulay's head. He was professor of Latin at University College, London, 1842-46, reader in jurisprudence to the Middle Temple, and classical lecturer at Brighton College, 1849-71. His great work was the editing of the *Penny Cyclopædia.* He died at Portfield, Chichester, 1879.

Long, John Davis, American lawyer and publicist, was born at Buckfield, Me., 1838. He was graduated at Harvard, 1857; LL.D., Harvard, 1880; he practiced law at Buckfield, Me., 1861-62, and since then at Boston, Mass.; was a member of the Massachusetts legislature, 1875-78; speaker, 1876-78; lieutenant-governor of Massachusetts, 1879; governor, 1880-82; secretary of the United States navy, 1897-1902. Was senior member of the law firm of Long and Hemenway, Boston, and president of the board of overseers of Harvard College. Author: *After-Dinner and Other Speeches; The Republican Party—Its History; Principles and Policies.* Died, 1915.

Long, John Luther, lawyer, author, was born in Pennsylvania, 1861. He studied law, was admitted to the Pennsylvania bar, traveled extensively, and about 1898 turned to dramatic writing. Author: *Madam Butterfly; Miss Cherry-Blossom of Tōkyō; The Fox-Woman; The Prince of Illusion; Naughty Nan; Heimweh, and Other Stories; Billy Boy; The Way of the Gods,* etc. Died, 1927.

Longfellow, Henry Wadsworth, distinguished American poet, was born in Portland, Me., 1807, at which period Maine formed part of the commonwealth of Massachusetts. He was graduated in 1825 from Bowdoin College, when but eighteen years old, and began his poetical career while he was in college. When nineteen he was made professor of modern languages and literature in Bowdoin College, and passed the next three years in Europe, preparing himself for his professional duties. That time was spent in Germany, France, Spain and Italy. He then held the chair to which he had been appointed from 1830 until 1835. *Outre-Mer: A Pilgrimage Beyond the Sea,* came out two years later, and after its publication he was appointed to the professorship of modern languages and belles-letters in Harvard College. He began his official duties at Cambridge in 1837, and held the professorship until 1854, when he resigned. Meantime his career as an author went steadily on. *Ballads and Other Poems* dates from 1841. *The Spanish Student* was published in 1843, and in 1845 he prepared *Poets and Poetry of Europe,* a critical compilation. Then came *The Belfry of Bruges, and Other Poems,* in 1846, and *Evangeline* in 1847. *The Golden Legend* has the date of 1851. In 1855 he published *The Song of Hiawatha.* Three years later, in 1858, *The Courtship of Miles Standish* met with the applause it deserved, *Tales of a Wayside Inn* appeared in 1863, *Flower-de-Luce* in 1867, and *New England Tragedies* in 1868. The publication of his translation of Dante took place in 1867, and filled three superb and massive volumes. His *Three Books of Song* appeared in 1872, *The Hanging of the Crane* in 1874, and *Morituri Salutamus* in 1875. In 1869 he received the degree of D.C.L. from Oxford University, and in 1874 a large complimentary vote for the lord rectorship of the University of Edinburgh. Died, 1882.

Longford, Joseph Henry, British scholar, professor of Japanese, King's College, London, beginning 1903; was born in 1849, in County Dublin, Ireland. He was graduated at Queen's College, Belfast, Ireland, entered the British consular service in Japan as student interpreter, 1869, and was subsequently called to the British bar. After many years of service in Japan he retired on a pension in 190-.

Longinus (*lon-ji'nus*), **Dionysius Cassius,** one of the greatest of Greek critics and philosophers, flourished during the third century. The only work which has been preserved of this eminent writer is the celebrated treatise *On the Sublime.* Died, 273 A. D.

Longstreet, James, American general, was born in South Carolina, 1821. He was graduated at West Point, 1842. He resigned his commission to take part with the South in the Civil War, 1861. In 1862 he was made major-general, and after the battle of Fredericksburg, 1862, Longstreet was promoted to the command of a corps, with the rank of lieutenant-general. He surrendered with General Lee in April, 1865. In 1875 he took up his residence in Georgia, and in 1880 was sent as minister to Turkey, where he remained until 1881. He was United States marshal for the northern district of Georgia, 1881-84; and United States railroad commissioner from 1898 until his death in 1904.

Longworth, Nicholas, congressman, capitalist, was born at Cincinnati, Ohio, 1869. He was graduated at Harvard, 1891, Harvard Law School, 1893, Cincinnati Law School, 1894, and was admitted to the bar in the same year. He was a member of the board of education, Cincinnati, 1898; Ohio house of representatives, 1899-1901, Ohio senate, 1901-03, and member of congress, 1st Ohio District, 1903-13. 1915-27.

Loomis, Elias, American mathematician and physicist, was born in Connecticut, 1811, and was graduated from Yale College in 1830. He published a series of text books embracing the whole range of mathematics, natural philosophy, astronomy and meteorology. His *Treatise on Analytical Geometry and Calculus* has been translated into the Chinese language, and his *Treatise on Meteorology* into Arabic. His scientific papers embrace the various departments of meteorology, the phenomena of auroral exhibitions and atmospheric electricity, territorial magnetism, astronomical observations, shooting-stars, solar-spots, etc. Died, 1889.

Lope de Vega (*lō'pā dā vā'gā*), **Felix.** See **Vega.**

Lorenz (*lō'rents*), **Adolf,** Austrian surgeon, surgeon-in-chief of the orthopedic department in the imperial royal general hospital, Vienna, was born in Silesia, 1854. He was graduated at Vienna University, M.D., 1880; professor of general surgery in Vienna University, since 1889. He is especially famous for his bloodless methods in orthopedic surgery, and has taught the cure of hip-deformities and all forms of club foot in a rapid bloodless way, without bone resections. In 1895 he published a treatise on *Dislocation of the Hip* which has received wide scientific approval. He visited the United States on several occasions since 1902.

Lorenzo de Medici. See **Medici.**

Lorimer (*lor'i-mēr*), **George Horace,** American journalist and writer, editor-in-chief of the *Saturday Evening Post* since 1899, was born in Louisville, Ky., 1868. He pursued a college course at Colby and Yale, and immediately entered upon a journalistic career. Author: *Letters From a Self-Made Merchant to His Son; Old Gorgan Graham; The False Gods; Jack Spurlock—Prodigal,* etc.

Lossing (*los'ing*), **Benson John,** watchmaker, wood-carver, journalist, editor, and historian, was born in Dutchess county, N. Y., 1813. He edited some magazines and prepared several illustrated works, among which are an *Outline History of the Fine Arts, Lives of the Signers of the Declaration of Independence,* and *Pictorial Field-Book of the Revolution.* Died, 1891.

Lotze (*lōt'sē*), **Rudolf Hermann,** German philosopher, was born in Bautzen, Saxony, 1817. He was educated at Leipzig, where he studied medicine and philosophy, and was appointed to a professorship there in 1842. He ranks among the first metaphysicians, and gave a strong impulse to the development of physiological psychology. Died in Berlin, 1881.

Loubet (*lōō'be'*), **Emile,** French statesman, ex-president of France, was born at Marsanne, in the department of the Drôme, 1838. He became a barrister, practicing at Montélimar, and steadily rose step by step from the municipal council of Montélimar to the presidency. As president of the senate in 1896 he was kept more or less outside of parties, though he was known to be a moderate with radical tendencies. On the sudden death of President Faure, in 1899, he was elected by a large majority to succeed him, and held office until 1906. His uprightness, patriotism, and simplicity of demeanor made him the most popular president France has ever had.

Louis IX. (Fr., *lōō'ē'*), or **Saint Louis,** of France, was born in Poissy, 1215, and succeeded his father, Louis VIII., in 1226. When he attained his majority he became involved in a war with Henry III. of England, and defeated the English at Taillebours, at Saintes, and at Blaye, 1242. During a dangerous illness he made a vow that if he recovered he would go in person as a crusader, and accordingly, having appointed his mother regent, he sailed in 1248 with 40,000 men to Cyprus, whence, in the following spring, he proceeded to Egypt. He embarked on a new crusade, 1270, and proceeded to Tunis; but a pestilence breaking out in the French camp carried off the greater part of the army and the king himself. Died, 1270.

Louis XII. of France, son of Charles, duke of Orleans, was born in 1462, and succeeded Charles VIII. in 1498. In 1499 he invaded Italy, and gained possession of Milan. In 1508 he united with Ferdinand, Pope Julius II., and the emperor in the league of Cambrai against the Venetians. In 1511 Ferdinand joined Julius in the holy league against the French, who were finally driven out of Italy by means of the Swiss in 1513. By his good government he earned the title of "Father of His People." Died, 1515.

Louis XIII., king of France, was born at Fontainebleau, 1601. When his father, Henry IV., was assassinated in 1610, he succeeded to the throne, but his mother, Marie de Medici, was regent during his youth. Under the guidance of his great minister, Richelieu, the king gradually increased the power of the monarchy, at the expense of the Protestant nobles, ending in the overthrow of the Huguenots by the capture of La Rochelle in 1628. His possession of Alsace and Roussillon was confirmed in the next reign. Died, 1643.

Louis XIV., king of France, 1643-1715, was born in 1638. He inherited from his father the war with Spain, and this was followed by the civil war of the Fronde, which lasted from 1649 to 1653. He changed the feudal monarchy of France into an absolute one, and his favorite motto, *L'etat c'est moi,* "I am the state" was at once the expression of the ruling principles of his life, and a description of his policy. On the death of Philip IV., the father of his queen, he laid claim to Holland, which he invaded; but this led to the alliance against him of England, Sweden and Holland, usually called "the triple alliance," and Louis was speedily compelled to make peace. Several other wars followed, notably the war of the Spanish succession, in which Louis sought to secure the Spanish monarchy for his grandson, the duke of Anjou. Two years afterward, 1715, Louis died at Versailles, in his seventy-seventh year. He left several children. Many of the most famous names in French literature belong to this reign.

Louis XV., surnamed "the well-beloved," king of France, 1715-74, was born at Fontainebleau, 1710. He was the son of the duke of Burgundy, and the successor of his great-grandfather, Louis XIV. On the death of Augustus, king of Poland, 1733, Louis supported the pretensions of his father-in-law to the vacant throne, and was opposed by the emperor of Germany, who upheld the claims of the elector of Saxony. Afterward, in 1755, a new war was kindled between England and France, about their possessions in Canada; and this war was not terminated until 1763, when, by the treaty signed in Paris in that year, France formally ceded to England, Canada, Nova Scotia and its other North American colonies, besides Granada, Dominica and Tobago, in the West Indies. During his later years, Louis suffered himself to be governed wholly by favorites, among whom were the Marchioness de Pompadour and Madame Du Barry. He died at Versailles, 1774.

Louis XVI., king of France, 1774-93, was born at Versailles, 1754. He was the grandson of Louis XV., whom he succeeded, having already, in 1770, married Marie Antoinette of Austria, daughter of Maria Theresa, and sister of the emperor Joseph. The first acts of Louis, after his accession, endeared him to his people, for he gave them immunities to which they had been hitherto unaccustomed, and effected many reforms in the administration; but he soon became embarrassed by financial difficulties, and was not fortunate in his choice of ministers. In October a mob of armed women from Paris made an attack on the palace of Versailles, after which the king and queen were forcibly removed to Paris. In 1789 the states-general of the kingdom was convoked at Versailles. Within a few days it was superseded by the national assembly, which assumed the whole legislative authority; and then began the revolution, which culminated, as far as the king was concerned, in the insurrection of 1792, and in his execution on the scaffold in January, 1793.

Louis XVIII., king of France, a younger brother of Louis XVI., was born at Versailles, 1755. He fled from Paris on the same night as the king, Louis XVI., and reached the Belgian frontier in safety. After the execution of his brother, he proclaimed the dauphin king, under the title of Louis XVII., and in 1795 took the title of king himself. The fall of Napoleon opened the way for him to the French throne and in 1814 he landed at Calais after twenty-four years of exile. He ruled by "the divine right of kings." The revolution had taught him nothing, and his treatment of the protestants, republicans and the followers of Napoleon, opened the way for Napoleon's return from Elba, when he fled into exile until after the battle of Waterloo. He was restored to the throne by the allied powers in 1815, and ruled until his death at Paris, 1824.

Louis Philippe (*lōō'ĕ'fē'lēp'*), king of France, was born at Paris, 1773, eldest son of Louis Philippe Joseph, duke of Orleans. He sought, during the revolution, in Switzerland a place of security for his sister Adelaide, wandered about for four months, and accepted a situation as teacher of geography and mathematics in a school at Reicheneau, near Chur, assuming the name of Chabaud-Latour. On the fall of Napoleon he hastened to Paris, where he was received with distrust by Louis XVIII. After the second restoration, when he returned to France, he recovered his great estates. He was very popular in Paris. He kept aloof, however, from political intrigues; and the three bloody days of the revolution of 1830 were nearly over before he was brought forward, the banker Laffitte proposing, in the provisional committee, his appointment as lieutenant-general of the kingdom, from which he proceeded to the acceptance of a constitutional throne, August 9, 1830. Insurrectionary movements caused by a demand for a more liberal suffrage, ensued in the streets of Paris in February, 1848; and the "citizen king" saw with alarm that the national guard could not be expected to support him. On February 24th Louis Philippe, deserted by his courtiers, fled to the coast of Normandy with his queen, concealed himself for some days, and at length found opportunity of escaping in a British steamboat to Newhaven under the name of Mr. Smith. He died at Claremont, 1850.

Louise, queen of Prussia, was born in 1776, at Hanover, where her father, Duke Karl of Mecklenburg-Strelitz, was commandant. She was married to the crown prince of Prussia, afterward Frederick William III., in 1793, and was the mother of Frederick William IV. and William III. afterward emperor. Died, 1810.

Lounsbury (*lounz'bĕr-i*), **Thomas Raynesford,** American educator and scholar, professor of English since 1871, and librarian at Sheffield scientific school, Yale, was born at Ovid, N. Y., 1838. He was graduated at Yale, 1859; LL.D., Yale, 1892, Harvard, 1893, Aberdeen, 1905; L.H.D., Lafayette, 1895, Princeton, 1896. He was engaged on the *American Cyclopædia*, 1860-62; was first lieutenant 126th New York volunteers, 1862-65; instructor at Yale, 1870-71. He edited Chaucer's *Parliament of Foules*, and is the author of: *History of the English Language; Studies in Chaucer; Shakespeare as a Dramatic Artist, etc.* Died, 1915.

Lovett, Robert Scott, lawyer, president of Union Pacific railroad, was born in San Jacinto, Texas, 1860. He was educated in the public schools; studied law, and was admitted to the bar in 1882; attorney for Houston East and West Texas railroad, 1884-89; assistant general attorney, 1889-91, and general attorney, 1891-92, Texas and Pacific railroad; general counsel for Harriman railroads, 1904-09; succeeded Edward H. Harriman as president and chairman of board of directors, Union Pacific railroad, 1909.

Low, A. Maurice, journalist, author, was born in London, England, 1860. He was educated at King's College, London, and in Austria. Since 1886 he has been Washington correspondent of *The Boston Globe;* chief American correspondent of the *London Morning Post.* Author: *The Supreme Surrender.*

Low, Seth (1850-1916), American educator and publicist, graduated from Columbia, 1870, and held LL.D. degree from many other colleges. Was elected mayor of Brooklyn, 1881-85, on independent ticket, held presidential chair at Columbia University, 1890-1901, and was elected mayor of New York, 1902-03. In 1895 he erected the Columbia University Library, at a cost of $1,175,000. President McKinley appointed him a member of the United States delegation to the International peace conference at The Hague. Died, 1916.

Lowden, Frank Orren (1861—), American public official, received degree of LL.B. at Union College of Law, Chicago, 1887. He practised law in Chicago for many years, held seat in Congress 1906-11, and was elected governor of Illinois for the term 1917-21.

Lowell, Abbott Lawrence, American educator and writer, president of Harvard University since 1909, was born in Boston, Mass., 1856. He was graduated at Harvard, 1877; Harvard Law School, 1880; practiced law in Boston, 1880-97. He was lecturer at Harvard, 1897-99; professor of the science of government, Harvard, 1900; trustee of the Lowell Institute of Boston, 1900, and was elected president of Harvard to succeed Dr. Charles W. Eliot, who resigned, in 1908. He is an accepted authority in the field of government and comparative politics. Author: *Essays on Government; Governments and Parties in Continental Europe.*

Lowell, Amy, American poet and critic, was born in Brookline, Mass., in 1874. She attended private school and travelled abroad. In 1912 she published *A Dome of Many Colored Glass*—a volume of conventional poetry—which was followed in 1914 by *Sword Blades and Poppy Seed,* containing many poems which immediately identified her with the imagist school of free verse. Her later volumes include *Men, Women,* and *Ghosts; Can Grande's Castle; Pictures of a Floating World,* and many translations of Chinese and Japanese poetry. *Fir Flower Tablets*—poems translated from the Chinese, —appeared shortly before her death in 1926.

Lowell, James Russell, American poet and diplomat, was born in Boston, Mass., 1819. He was educated at Harvard University, spent several years abroad studying languages, and, in 1855, succeeded Longfellow as professor at Harvard. LL.D., Harvard, and Cambridge, England; D.C.L., Oxford. Was United States minister to Spain, 1877-80, and ambassador to Great Britain, 1880-85. In 1869 he published *Under the Willows, and Other Poems,* and *The Cathedral,* an epic; in 1870; a collection of essays; in 1871, *My Study Windows;* in 1887, *Democracy;* in 1888, *Political Essays, Heartsease and Rue,* etc. Among his poems, the best known are *The Vision of Sir Launfal; The First Snowfall,* and the *Commemoration Ode.* He died in Cambridge, 1891.

Lowell, Percival, author, astronomer, was born in Boston, Mass., 1855. He was graduated at Harvard, 1876; LL.D., Amherst, 1907. He went to Japan in 1883, and lived there from time to time until 1893; established the Lowell observatory, 1894, and undertook an eclipse expedition to Tripoli, 1900. He received the Janssen medal of the French astronomical society, 1904, for researches on Mars, and made discoveries on the planets, especially Mars; was appointed non-resident professor of astronomy, Massachusetts Institute of Technology. Author: *Annals of the Lowell Observatory; The Solar System; Mars and Its Canals,* etc. Died, 1916.

Lowther (*lou'thĕr*), **James William,** British statesman, speaker of the House of Commons since 1905, was born in 1855. In 1883 he was elected to parliament for Rutland; contested Mid-Cumberland, 1885; was under-secretary for foreign affairs, 1891; represented Great Britain at International conference at Venice, 1892; chairman of committee on ways and means and deputy speaker, 1895-1905.

Loyola, Ignatius (*lō-yō'lă*), original name Inigo Lopez de Recalde, the founder of the order of the Jesuits, was descended from a noble Biscayan family, born at the castle of Loyola, Guipuscoa, in 1491, and died 1556. He was attached in his youth as a page to the court of Ferdinand and Isabella, and trained up in all the vices and frivolities peculiar to his position.

When still a young man he entered the army, and during the defence of Pampeiuna in 1521, against the French, he was severely wounded, and a long and tedious confinement was the result. The only books he found to relieve its tedium were books of devotion and the lives of saints. This course of reading induced a period of mystical devotion in which he renounced the world, made a formal visit to the shrine of the Virgin at Montserrat, and vowed himself her knight.

After his dedication he made a pilgrimage to Rome and Jerusalem, and from 1524 to 1527 attended the schools and universities of Barcelona, Alcala and Salamanca. In 1528 he went to Paris, where he went through a seven years' course of general and theological training. Here in 1534 he formed the first nucleus of the society which afterwards became so famous. Francois Xavier, professor of philosophy, Lainez, and others joined with Loyola and bound themselves together to devote their lives to the care of the church and the conversion of infidels.

Rome ultimately became their headquarters, when Loyola submitted the plans of his new order to Paul III., who, under certain limitations, confirmed them, 1540. Loyola continued to reside in Rome and govern the society he had constituted till his death. He was beatified in 1607 by Paul V., and canonized in 1622 by Gregory XV.

References.—Of the complete *Lives,* the best in English are those by Genelli, and Stewart Rose. In French, the *Life* by Bartoli. See also Druffel's *Ignatius v. Loyola;* Gothein's *Ignatius v. Loyola und die Gegenreformation;* and Joly's *Ignace de Loyola.*

Lubbock (*lub'uk*), **Sir John, Lord Avebury,** English naturalist and politician, was born in London, 1834. He was educated at Eton College, then entered his father's banking house, and in 1858 became a member of parliament, where he served at intervals until elevated to the peerage, in 1900, as Lord Avebury. He is the author of *Prehistoric Times; The Origin of Civilization and the Primitive Condition of Men; Fifty Years of Science: Pleasures of Life,* etc. Died, 1913.

Lucretius (*lu-krē'shi-us*), or **Titus Lucretius Carus,** Roman poet of the first rank, was born about 99 B. C. His principal work, *De Rerum Natura,* in six books, appeared 56 B. C. and is still unequaled as a philosophical didactic poem. Died about 55 B. C.

Lucullus (*lū-kul'us*), **Lucius Licinius,** celebrated Roman general, was born about 110 B. C. He twice defeated Tigranes of Armenia; but his legions became mutinous, and he was superseded by Pompey, in 66 B. C. He attempted to check Pompey's power, and was consecutively edile and consul, but soon withdrew from politics. He died about 57 B. C.

Luini (*lōō-ē'nē*), or **Luvino, Bernardino,** painter of the Lombard school, was born at Luino, about 1475. His skill was developed in the school of Leonardo da Vinci; indeed, many of his works were at one time attributed to that great artist. He is one of the five great painters whose "supremacy" Ruskin affirmed. Died about 1533.

Lummis (*lum'-is*), **Charles Fletcher,** American author, explorer, was born at Lynn, Mass., 1859. He was graduated at Harvard, 1881; Litt.D., Santa Clara College. Edited newspaper in Ohio, 1882-84. He was city editor *Los Angeles Daily Times,* 1885-87; lived five years in Indian Pueblo of Isleta, New Mexico, learning Indian languages and customs; traveled all over the southwest on horseback; also in Mexico and South America; has explored entire continent from Canada to Chili. Editor: *Out West Magazine; The King of the Broncos; The Enchanted Burro; The Awakening of a Nation; Mexico To-Day,* etc. Died, 1928.

Lurton, Horace Harmon, American jurist, was born at Newport, Ky., 1844. He was graduated at Cumberland University, Tennessee, 1867; D.C.L., University of the South, 1899. Judge of the United States circuit court, 6th judicial circuit, 1893-1909, and became associate justice of the United States supreme court in 1909. He was for a number of years professor of constitutional law and dean of the law department, Vanderbilt University. Died, 1914.

Luther, Martin, great German religious reformer, was born at Eisleben, 1483, and died there 1546. At school he made rapid progress in Latin and other studies and in 1501 entered the University of Erfurt; here in 1505 he received a master's degree.

About this time he discovered in the library of the university a Latin Bible, and found, to his no small delight, that it contained more than the excerpts in common use. He was destined by his father to the law, but his more intimate acquaintance with the Bible induced him to turn his attention to the study of divinity, with the view of entering monastic life. Contrary to the wishes of his father, he entered the monastery of the Augustines at Erfurt in 1505. In 1507 he was consecrated priest, and in 1508, by the influence of his patron, Staupitz, who was provincial of the order, he was made professor of philosophy in the new University of Wittenberg.

In 1510 he visited the court of Pope Leo X. at Rome on business connected with the order. Returning to Wittenberg he was made a doctor of theology in 1512, and here his profound learning and powerful eloquence drew large audiences. At that time he had no controversy with the pope or the church, but the arrival in 1517 of John Tetzel in Wittenberg selling indulgences for sins roused the fiery energy of Luther, and caused him to draw up his famous protest in ninety-five propositions, which he nailed to the church-door in Wittenberg. The result was that the sale of indulgences ceased, Tetzel fled, and a great religious commotion spread rapidly through Germany.

Luther was summoned to Rome to explain his heretical proceedings, but refused to go; nor were the efforts of Cardinal Cajetan able to effect a reconciliation between him and the pope. His dispute with Dr. Eck at Leipzig in 1519, in which he denounced indulgences, and questioned the authority of the pope, was followed in 1520 by a bull of anathema—a document which Luther straightway burned publicly in Wittenberg.

This open defiance of Rome required him to vindicate his conduct, which he did in a

pamphlet addressed to the *Christian Nobles of Germany*, with the result that many rallied to his aid. When summoned to appear before the German emperor, Charles V., at the Diet of Worms (1521), Luther appeared, acknowledged his writings, made an eloquent defence, but refused to recant. When he retired from Worms he was met by a friendly troop of soldiers belonging to Frederick the Elector of Saxony, who conveyed him to the castle of Wartburg, where he remained for nearly a year. Here he employed his time in translating the New Testament into German, but when he heard that disturbances had been excited in Wittenberg on the question of images, he could no longer bear the restraint of inaction. Returning suddenly, Luther succeeded in quieting the people by means of a wise and patient moderation.

In 1524 he laid aside his cowl as a priest of the Roman church, and in 1525 married Catharina von Bora, one of nine nuns who had renounced their religious vows under his teaching. The wisdom of this marriage was doubted by his friends, but his home-life and the birth of six children, contributed greatly to the happiness of the reformer.

From the year 1521 Luther had been busy translating the Bible into German with the aid of Melanchthon and others, and the great task was completed in 1534. This important work, taken in connection with the protestant confession made at Augsburg in 1530, served to establish the reformer's doctrines in Germany, and closed the important part of his public life. He continued, however, till the end his private work of teaching, preaching and writing.

The massive character of the German reformer lay along simple lines and found its full and direct expression in his work. The learning of Calvin, and the balanced judgment of Melanchthon were not his, but a vivid practical insight enabled him to mark the abuses of the Roman church, and his fervid energy urged him to reform them. Behind all the zeal of the reformer he had much lowly human sympathy, humor, tenderness and a love of homely things. This side of his character is most clearly seen in his *Letters* and *Table-Talk*. His German writings were varied and extensive.

References.—Luther has been the subject of numerous biographies, including those of Melanchthon, Michelet, Koestlin, Freytag, Kolde, Jacobs, and T. M. Lindsay. See also Seiss' *Luther and the Reformation*.

Luxembourg (*luk'sĕn'bōōr'*), **Francois Henri de Montmorency-Bouteville, Duke of,** marshal of France, was born in Paris, 1628. In 1667 he served under Conde in Franche-Comte; in 1672 he successfully invaded the Netherlands and, driven back in 1673, conducted a masterly retreat. During the war he stormed Valenciennes and twice defeated the prince of Orange. Made a marshal in 1675, soon after the peace of 1678, he quarreled with Louvois, and was not employed for twelve years. Died, 1695.

Lyall (*li'ăl*), **Edna,** pen-name of Ada Ellen Bayly, English novelist, daughter of a London barrister and bencher of Gray's Inn. She was born at Brighton, Sussex, and at an early age took to writing as a profession. Her first story, *Won by Waiting*, was published in 1879, and was followed by *Donovan; We Two; In the Golden Days; Knight Errant;* and *A Hardy Norseman*, etc. Her books have attained a wide-spread popularity. Died, 1903.

Lycurgus (*li-kûr'gus*), lawgiver of Sparta, flourished in the ninth century B. C. He was uncle of the young king Charilaus, and governed wisely during his nephew's infancy, then traveled in Crete, Ionia and Egypt. On his return, finding Sparta in anarchy, he redivided property, and remodeled the constitution, military and civil. Lycurgus was afterward honored as a god at Sparta. His laws remained in force for about seven hundred years.

Lyell, Sir Charles, British geologist, was born in Scotland, 1797. He was graduated at Oxford, and studied law, but left his practice and gave himself to the study of geology, to which he had been attracted by Alexander Buckland's lectures when he was at Oxford. He made geological tours in 1824, and again in 1828-30, over various parts of Europe, and published the results of his investigations in the *Transactions of the Geological Society* and elsewhere. The first volume of his great work, *The Principles of Geology*, appeared in 1830, the second in 1832, and the third in 1833. Died, 1875.

Lyon, Mary, American educator, founder of Mount Holyoke College, was born at Buckland, Mass., 1797. In 1837 she founded the famous seminary, now Mount Holyoke College, at South Hadley, Mass., upon the plan of uniting domestic service with intellectual culture. She died at South Hadley, Mass., 1849.

Lysander (*li-săn'dĕr*), Spartan soldier, son of Aristoclitus. In 407 B. C., he became commander of the Spartan fleet in the Ægean, and defeated the Athenian fleet off Notium. As the Lacedæmonian law did not allow the office to be held twice by the same person, he was there named vice admiral, nominally subordinate to Aracus. He captured, at Ægospotami in the Hellespont, the entire navy of Athens, except eight or nine galleys, which escaped with Conon to Cyprus, and in 404 B. C. ended the Peloponnesian war by the capture of Athens. Died, 395 B. C.

Lysias (*lis'i-as*), Greek orator, was born about 450 B. C., son of a rich Syracusan, who settled in Athens about 440 B. C. The first use to which Lysias put his eloquence was, on the fall of the Thirty in 403 B. C., to prosecute Eratosthenes, the tyrant, chiefly to blame for his brother's murder. His thirty-four surviving speeches show Lysias delightfully lucid in thought and expression, and strong in character drawing. Died, 380 B. C.

Lysimachus (*li-sim'a-kus*), Greek general, king of Thrace, was born about 360 B. C. On the division of the provinces, after the death of Alexander in 323 B. C., Thrace and the region bordering on the Danube were allotted to him. In 306 B. C. he assumed the title of king. Lysimachus so improved and enlarged New Ilium and the Mysian Alexandria that he came to be regarded as their founder. In 288 B. C. he formed a confederacy with Ptolemy, Seleucus, and Pyrrhus against Demetrius Poliorcetes, and acquired Macedonia. Having consented to the death of his son Agathocles at the instigation of his new wife Arsinoë, daughter of Ptolemy, his Asian subjects rebelled, and with the aid of Seleucus defeated and slew Lysimachus at Corus in Phrygia, 281 B. C.

Lytton, Edward George Earle Lytton, Bulwer, Lord, eminent English novelist, was born in Norfolk, of an ancient family, 1803. In 1826 he was graduated at Cambridge, and published in 1827 his first novel, *Falkland*. In the year following *Pelham* appeared—a work which placed him at once in the first rank of contemporary writers of fiction. Thenceforward his literary career was one of meteoric brillancy; novel after novel, drama after drama, flowed from his pen almost without intermission. In 1866 he was created a peer of the realm. Among his principal novels are: *The Disowned; Devereux; Paul Clifford; Eugene Arm; Night and Morning; Zanoni; The Last of the Barons; Harold, the Last of the Saxon Kings; The Caxtons; Kenelm Chillingly*, etc. He is also author of the plays, *The Lady of Lyons, Richelieu*, and *Money*, and of the poems, *The New Timon*, and *King Arthur*. Died, 1873.

Lytton, Edward Robert, Earl of, "Owen Meredith," poet, diplomat and statesman, was born at London, 1831. He was educated at Harrow and at Bonn. In 1849 he came to Washington as an attaché and private secretary to his uncle, Sir Henry Bulwer. In 1873 he succeeded his father as second Lord Lytton, and in 1876 became viceroy of India. In 1892 he was appointed English ambassador to France. His literary works, of which perhaps the most popular is *Lucile*, have been published under his pseudonym. He also wrote *Clytemnestra; The Wanderer; The Ring of Aamsis;* and *Fables in Song*. Died, 1891.

Maartens (*mär'tens*), **Maarten,** pen name of J. M. W. van der Poorten-Schwarz, Dutch author, was born at Amsterdam, 1858. He attended school in Germany, and studied law at Utrecht University. He is the author of a series of powerful novels, including *The Sin of Joost Avelingh; A Question of Taste; My Poor Relations; Dorothea; The Jailbird*, a one-act play; *The Healers; The Woman's Victory; The New Religion*, etc. Died in 1915.

Mable, Hamilton Wright, American journalist and writer, associate editor of *The Outlook*, was born at Cold Spring, N. J., 1846. He was graduated at Williams College and Columbia Law School; L.H.D., Williams; LL.D., Union College and Western Reserve University. Author: *Norse Stories Retold From the Eddas; Nature in New England; My Study Fire; Works and Days; Parables of Life; Backgrounds of Literature; Myths Every Child Should Know*. Died, 1916.

Mabillion (*mà'bē'yôn'*), **Jean,** French scholar and historian, was born at St. Pierremont in Champagne, 1632. In 1653 he entered the Benedictine order, in 1663 became keeper of the monuments at St. Denis, and from 1664 worked in the abbey of St. Germain-des Prés at Paris. He edited St. Bernard's works, and wrote a history of his order: also *De Re Diplomaticâ; Vetera Analecta; Musæum Italicum*, etc. Died, 1707.

Macaulay (*mà-kô'li*), **Thomas Babington, Lord,** British historian and statesman, was born at Rothley Temple, Leicestershire, 1800. He entered Trinity College, Cambridge, at the age of eighteen, where he acquired a brilliant reputation both as a scholar and debater. In 1825 he contributed to the *Edinburgh Review* his famous essay on Milton, the eloquence, brilliancy of fancy, and generous enthusiasm of which quite fascinated the educated portion of the public. He was elected to parliament in 1830, where he made a brilliant reputation; and in 1834 went to India as legal adviser of the supreme council. In 1839 he was appointed war secretary. While holding this office he composed the *Lays of Ancient Rome*, and in the following year published a collected series of his *Essays*, in three volumes. In 1848 appeared the first two volumes of his *History of England from the Accession of James II*. The third and fourth volumes of his *History* were published in 1855. Died, 1859.

McAdoo (*mak-à-dōō'*), **William Gibbs,** lawyer, public official, was born near Marietta, Ga., 1863, and was educated at the University of Tennessee. He was deputy clerk of United States circuit court of Tennessee, 1882; studied law and was admitted to the bar, 1885; practiced at Chattanooga. He removed to New York to practice in 1892. In 1902 he was elected president of the Hudson and Manhattan railroad, and completed in 1909 the fourth tunnel under the Hudson River. Appointed Secretary of the Treasury by President Wilson in 1913.

MacArthur, Arthur, American soldier, was born in Springfield, Mass., 1845. He was educated in the public schools of Milwaukee and by private tutors. He entered the union army in 1862 as first lieutenant, served throughout the Civil War, and entered the United States army, 1866. Awarded medal of honor, 1890, for seizing colors of regiment at critical moment and planting them on captured works on the crest of Missionary Ridge, 1863. He commanded the third expedition to Manila, and took part in the battle of Manila, August, 1898. He was subsequently commander of the division of the Philippines and military governor, 1900-01, and was created lieutenant general of the U. S. army, 1906. Died, 1912.

MacArthur, Robert Stuart, American clergyman, was born at Dalesville, Quebec, Canada, 1841. He was graduated at the University of Rochester, 1867; Rochester Theological Seminary, 1870; LL.D., Columbian, Washington, 1896. He was correspondent for years of the *Chicago Standard;* long editorially connected with *Christian Inquirer*, and *Baptist Review*, and was also a well-known lecturer on foreign travel. He was pastor of Calvary Baptist church, New York. Died, 1923.

McBurney, Charles, American surgeon, was born in Roxbury, Mass., 1845. He was graduated at Harvard, 1866, and from the College of Physicians and Surgeons, New York, 1870. He was in practice as surgeon in New York from 1870; was professor of clinical surgery, College of Physicians and Surgeons, beginning 1896, and was consulting surgeon to President McKinley after the President was shot by an assassin in 1901. Died, 1913.

McCall, Samuel Walker, American congressman, lawyer, was born in East Providence, Pa., 1851. He was graduated at Dartmouth College, 1874, and was admitted to the bar, 1876. Member of the Mass. house of representatives, 1888, 1889, and 1892; member of Congress, eighth Massachusetts district, 1893-1913. Died, 1923.

McCarthy, Justin, British novelist and historian, was born at Cork, Ireland, 1830. He was educated privately at Cork, and engaged in journalism there, 1848-52; in Liverpool, 1852-60; and London, 1880. Was chairman of Irish parliamentary party, 1890-96. Author of many novels including: *Miss Misanthrope; Dear Lady Disdain; Donna Quixote; Maid of Athens; Red Diamonds; Mononia*, etc.; histories: *A History of Our Own Times; Reminiscences*. Died, 1912.

McClellan, George Brinton, American general, was born at Philadelphia, Pa., 1826. He was graduated at West Point, 1846. In 1861 he was commissioned major-general of the United States army, and appointed in command of the department of the Ohio. He subsequently commanded the army of the Potomac, but after indecisive engagements, was superseded by General Burnside, 1862. In 1865, as a democrat, he was the unsuccessful opponent of Lincoln for the presidency. Died, 1885.

McClellan, George Brinton, lawyer, public official, was born at Dresden, Saxony, 1865, during the residence of his parents, General George Brinton and Ellen M. McClellan, in that city. He was graduated at Princeton, 1886; LL.D., 1905; LL.D., Fordham University, 1905, Union College, 1906. Admitted to the bar, 1892; president of board of aldermen, New York, 1893 and 1894; member of congress, 1895-1903, and mayor of New York, 1903-10; Democrat. Hon. Chancellor Union U., 1906; Stafford Little lecturer on public affairs, 1908-10; university lecturer public affairs, 1911-12, prof. econ. history Princeton University since 1912.

McCloskey, John, American prelate, first cardinal of the Roman Catholic church in America, was born at Brooklyn, N. Y., 1810. He was the first president of St. John's College (now Fordham University), Fordham, N. Y., 1841-42; was consecrated bishop of Albany in 1847; archbishop of New York in 1864, and in 1875 was created cardinal. He built the cathedral at Albany, the Theological Seminary at Troy, was an effective preacher, and otherwise noted as an able executive and administrator. He died at New York, 1885.

McCormack, John, a recognized tenor of superior quality, was born in Athlone, Ireland, 1885. Winning in a musical competition at the Dublin Musical Festival inspired and enabled him to go to Italy to study. His success was so complete that he was engaged for Covent Garden, 1907. Has appeared in most of large cities of the United States.

McCormick, Cyrus Hall, American inventor, was born at Walnut Grove, Va., 1809. He invented a reaping machine, patented in 1831, which possessed all the essential points of modern machines and in 1847 established the McCormick Harvesting Machine Company (Chicago) in partnership with his brother. He made large gifts to education and endowed a chair at Washington and Lee University. He had only a common school education. Died in 1884.

McCormick, Robert Sanderson, American diplomat, was born in Rockbridge county, Va., 1849. He was graduated at the University of Virginia; envoy extraordinary and minister plenipotentiary, 1901-02, and first ambassador, 1902, to Austria-Hungary; United States ambassador to Russia, 1902-05, to France, 1905-07.

McCosh, James, 1811-1894, educator and philosopher, was born in Ayrshire, Scotland. Educated at the University of Glasgow and Edinburgh, he was appointed to the chair of logic and metaphysics in Queen's College. In 1868 was elected president of College of New Jersey at Princeton, which position he held for twenty years. He wrote *First Fundamental Truths* and *Religious Aspects of Evolution.*

MacCracken, Henry Mitchell, American educator, chancellor of New York University 1891-1911, was born at Oxford, Ohio, 1840. He was graduated at Miami University, 1857; D.D., Wittenberg, 1878; LL.D., Miami, 1887; chancellor of Western University, Pittsburg, Pa., 1881-84; vice-chancellor and professor of philosophy, New York University, 1884-91; deputy to general assembly, Free church of Scotland, 1867, and to Irish Presbyterian general assembly, 1884. Author: *Tercentenary of Presbyterianism; Kant and Lotze; A Metropolitan University,* etc. Died, 1918.

McCrea, James, American railway president, was born in Philadelphia, 1848. He entered the railway' service in 1865; with Pennsylvania railroad, 1871-82, consecutively as assistant engineer and division superintendent; manager, general manager, and fourth vice-president, Pennsylvania lines west of Pittsburg, 1882-90; second vice-president, 1890-91; first vice-president, 1891-1907; and president of Pennsylvania railroad company, 1907-1913. Died, 1913.

McCumber, Porter James, lawyer, United States senator from North Dakota, was born in Illinois, 1858. Taught school for a few years, and took a law course in the University of Michigan, graduating in 1880. He removed to Wahpeton, North Dakota, 1881, where he practiced his profession. He was a member of the territorial legislature, 1895 and 1897; was elected to the United States senate, 1899, and reslected in 1905 and 1911.

McCutcheon, George Barr, journalist, author, was born on a farm in Tippecanoe county, Indiana, 1866. He was graduated at Purdue University, and was city editor of the *Lafayette Courier*, 1893. Author: *Graustark; Beverly of Graustark*, etc., and numerous short stories. Died, 1928.

Macdonald, George, Scottish poet and novelist, was born at Huntley, 1824; was educated at Aberdeen and the Independent College at Highbury, and became pastor at Arundel and at Manchester. His first book was one of verse, and a long series of novels followed, including *David Elginbrod; The Portent; Alec Forbes; Annals of a Quiet Neighborhood; Malcolm; St. George and St. Michael.* In 1872-73 he made a lecturing tour in the United States; in 1877 received a pension of 100 pounds. Died, 1905.

Macdonald, J. A., Canadian journalist, managing editor of *The Globe*, Toronto, beginning 1902, was born in Middlesex, county of Ontario, Canada, 1862. He was graduated at Knox College, Toronto, 1887; was ordained to ministry of the Presbyterian church, and inducted pastor of Knox church, St. Thomas, Ontario, 1891. He was principal of the Presbyterian Ladies' College, 1896-1901; and was appointed by Ontario government to serve for six years on first board of governors of the University of Toronto, 1906. Died in 1923.

Macdonald, Sir John Alexander, distinguished Canadian statesman, was born in Glasgow, 1815. His parents settled in Canada during his childhood, and he was educated at Kingston Grammar School, studied law, and was admitted to the Canadian bar in 1836. He entered the Canadian parliament in 1844; attorney-general, 1854-62 and 1864-67; prime minister, 1858. He was chairman of the London colonial conference 1866-67, and more than any other person was responsible for Canadian federation. After its establishment, he was head of the new Dominion government, as minister of justice and attorney-general, 1867-73, when he resigned from the cabinet. From 1878 until his death he was premier of the Dominion. He died at Earnscliffe Hall, near Ottawa, 1891.

MacDowell, Edward Alexander, composer, was born in New York City, 1861. He studied at home, then in Europe, at Paris and in Germany, where he lived for eight years. At this time he met Raff and Liszt and gave many concerts. He returned to America in 1888 and in 1896 was made the first professor of music at Columbia University. He suffered a mental breakdown from overwork in 1905 and died in 1908. Among his best known compositions are *Woodland Sketches* and *Sea Pieces* for the piano, the orchestral *Indian Suite*, sonatas and symphonic poems.

McGee, Anita Newcomb, American physician, was born at Washington, D. C., 1864, daughter of Professor Simon Newcomb. She was educated in private schools, and graduated at Columbian University, M.D., 1892. In 1888 she married W. J. McGee, the anthropologist. She was appointed, in 1898, acting assistant surgeon of United States army, being the only woman to hold such a position. In 1904, she took a party of trained nurses, formerly in the United States army, to serve gratuitously in the Japanese army for six months.

McGiffert, Arthur Cushman, American Theological writer and critic, professor of church history, Union Theological Seminary, New York, since 1893, was born at Sauquoit, N. Y., 1861. He was graduated at Western Reserve College, 1882; Union Theological Seminary, 1885; University of Marburg, Germany, Ph.D., 1888; studied in Germany, 1885-87, and in France and Italy, 1887-88.

McGrath, Harold, journalist, author, was born in Syracuse, N. Y., 1871, and has been engaged in journalism since 1890. Author: *Arms and the Woman; The Man on the Box; Hearts and Masks; Half a Rogue; The Best Man; The Lure of the Mask; The Puppet Crown; The Grey Cloak; The Princess Elopes; Enchantment; The Watteau Shepherdess,* an operetta; *The Goose Girl;* and numerous magazine stories.

McGraw, John J., baseball player and manager, was born at Truxton, N. Y., 1873. He started playing professionally with the Olean Club in 1890, played with Baltimore from 1891 to 1899, when he became manager, then went with St. Louis. In 1901-02 he managed the Baltimore Orioles, then became manager of the Giants (New York National League). The Giants have held the highest record of victories in the national league.

Machiavelli (*mä'kyä-vel'lē*), **Niccolo di Bernardo del,** Italian statesman and author, was born in Florence, Italy, 1469, son of a jursit of good family. He was secretary of state at Florence from 1498 to 1512, went on several important missions, but was deprived of office and exiled in the latter year by the Medici. His chief works were *Il Principe; Istorie Fiorentine; Arte della Guerra,* some comedies and poems; and *Discorsi sulle Deche di Tito Livio.* In 1521 he again took part in public affairs for a short time, but died in poverty, 1526.

Mack, Norman Edward, American journalist and politician, editor and publisher of the *Buffalo Times*, was born in Canada, 1858. He was a delegate to the national democratic conventions of 1892, 1896, 1900, 1904, 1908, 1912, 1916, 1920 and 1924; is a member of the national democratic committee and member executive committee of the same, since 1900; and was chairman in 1908.

McKenna, Joseph, American lawyer and jurist; born at Philadelphia, Pa., 1843; educated at the College of St. Augustine, Benicia; studied law and was admitted to the bar in 1865. Assisted in the framing of the McKinley tariff of 1890. Appointed to the United States circuit bench of the Pacific slope in 1893; attorney-general of the United States, 1897-98; appointed associate justice of the United States supreme court, 1898. Died, 1926.

Mackensen, August von, German general, born at Haus Leipnitz, Saxony, 1849. Served as volunteer in the Franco-Prussian war; raised to nobility, 1899; in European war directed the Austro-German drive, which swept Russians from the Carpathians in 1915; honored for signal victories in Balkan campaign in 1916. Author of a military history.

Mackenzie, Alexander, Canadian statesman, born near Dunkeld, Scotland, 1822; moved to Canada in 1842 and engaged in contracting. Elected to the assembly, 1861-67, and remained a member for twenty-five years. Became premier of the Dominion and minister of public works. Resigned upon election of a conservative majority in 1878. Died, 1892.

McKenzie, Alexander, Congregational clergyman, was born at New Bedford, Mass., 1830. He was graduated at Harvard, 1859; Andover Theological Seminary, 1861; D.D., Amherst, 1879, Harvard, 1901; pastor First church, Cambridge, beginning 1867. He was a trustee of Phillips Academy, Andover, and Hampton Institute, Virginia; lecturer at Andover Theological Seminary, and president of trustees of Wellesley College. Author: *Two Boys; A Door Opened; Now,* etc. Died, 1914.

McKim, Charles Follen, American architect, was born in Chester county, Pa., 1847. He was educated at Lawrence Scientific School, Harvard, 1866-67. He began practice, 1872, joined in partnership by William R. Mead, 1877, and by Stanford White in 1879 as McKim, Mead and White. Among the notable buildings erected by the firm are: Columbia University; state capitol, Rhode Island; music hall, public library, Boston; Newport casino; University, Harvard, Century clubs, New York, etc. He was a member of the congressional commission for the improvement of Washington park system. He was awarded the royal gold medal by King Edward for promotion of architecture, 1903. Died, 1909.

McKinley, William, American statesman, twenty-fifth president of the United States, was born in Niles, Ohio, 1843. He was educated in the public schools, at the Poland, Ohio, Academy. In 1861 he volunteered in the Union army, and entered the 23rd Ohio infantry as a private. He served four years, rising by merit and faithfulness to the captaincy of his company, and to the rank of major when mustered out in 1865. He then at once began the study of law; in 1867 he was admitted to the bar, and commenced practice at Canton, Ohio, where he afterward had his residence. Elected to congress in 1876, and for six successive terms. In 1882 his election was contested, and he was unseated, but triumphantly returned at the next election. His reputation in congress rests chiefly on the tariff bill that bears his name. It was drawn by him as chairman of the ways and means committee, and passed by the fifty-first congress. In 1891 he was elected governor of Ohio by a large plurality over former Governor James E. Campbell, a very popular democrat, and re-elected in 1893 in the reactionary tidal wave of politics, following a contrary tariff policy, that carried the republican party back to power in congress. By this time his name was frequently mentioned as future candidate for the presidency. He was nominated and elected by an electoral majority of ninety-five, after a campaign of more intense interest than was displayed in any election since the Civil War. President McKinley's first term is memorable chiefly for the occurrence of the Spanish-American war and its unexpected results. That his policies during 1896-1900 were acceptable was shown by his unanimous renomination and reëlection in 1900 by an electoral majority of 137. His second term began most auspiciously and ended tragically. On September 5, 1901, he visited the Pan-American exposition in Buffalo, N. Y., that day having been set apart in his honor and called the "President's Day." On the afternoon of the following day, while holding a public reception in the temple of music, he was shot twice by Leon F. Czolgosz, an anarchist, who was at once arrested. The wounded president was taken first to the emergency hospital on the exposition grounds for immediate treatment, and then removed to the residence of John G. Milburn, president of the exposition. Hopes of his recovery were entertained for several days, but on September 13 he began to sink rapidly and died at 2.15 A. M., September 14. His remains were removed to Washington on September 16, lay in state in the capitol on the 17th, and were taken to his home city, Canton, Ohio, where they were interred on the 18th.

Mackintosh, Sir James, Scotch philosopher and politician, was born in Inverness-shire, 1765. He was recorder at Bombay, 1803; judge of admiralty, Bombay, 1806; returned to England, 1811, and entered parliament, 1813. Contributed a masterly preliminary *Disertation on Ethics* to the *Encyclopædia Britannica;* wrote the *History of the Revolution in England in* 1688, etc. Died at London, 1832.

Maclaren, Ian, pseudonym of John Watson, Scotch preacher and writer, was born at Manningtree, Essex, 1850, of Scottish parents. He was educated at Edinburgh University and at Tübingen. In 1893 he acquired great distinction and a wide fame by a series of Scottish prose idylls, written for the *British Weekly*, and afterward published under the title of *Beside the Bonnie Brier Bush.* This work won deserved praise for the fidelity with which he portrayed humble and reverent Scottish life and scenes. The volume was followed by *The Days of Auld Lang Syne.* Died, 1907.

McLaughlin (*mak-lôf'lin*), **Andrew Cunningham,** American historian and educator, was born at Beardstown, Ill., 1861. He was graduated at the University of Michigan, 1882; law department, 1885; A.M., 1895. Professor of American history, 1891-1906, University of Michigan, and professor of history, University of Chicago, since 1906. He was director of the bureau of historical research, Carnegie Institution, Washington, 1903-05. Author: *Lewis Cass,* in American Statesmen series. Editor: Cooley's *Principles of Constitutional Law; The Study of History in Schools,* etc.

MacLean, George Edwin, American educator, was born at Rockville, Conn., 1850. He was graduated at Williams College, 1871; Yale theological seminary, 1874; University of Leipzig, Ph.D., 1883. Chancellor University of Nebraska, 1895-99; and president of the University of Iowa, 1899-1911. Author: *A Chart of English Literature; Old and Middle English Reader; A Decade of Development in American State Universities.*

MacMahon (*mak'ma'ôn'*), **Marie Edme Patrice Maurice de,** French general and statesman, was born at Sully near Autun, 1808. In 1859 was made marshal and duke of Magenta. In the Franco-Prussian war, 1870-71, he commanded the first army corps, but was defeated at Worth, and captured at Sedan. After the war, as commander of the army at Versailles, he suppressed the commune. In 1873 he was elected president of France for seven years, and was suspected, perhaps not unjustly, of reactionary and monarchical leanings. He resigned in 1879, and died at Châtteau la Foret, 1893.

McMaster, John Bach, American Historian, professor of American history in the University of Pennsylvania since 1883, was born in Brooklyn, N. Y., 1852. He was graduated at the College of the city of New York, 1872; Ph.D., Litt.D., LL.D., was a civil engineer, 1873-77, and instructor in civil engineering at Princeton, 1877-83. Author: *A School History of the United States; A Primary School History of the United States.*

MacMillan, Donald Baxter, explorer and ethnologist, was born in 1874 and educated at Bowdoin College. He taught for several years, then joined the Peary expedition to the North Pole, 1909. In 1910 he went with Cabot, remaining for two years to study among the Esquimos. He led the Crocker land expedition, 1913-1917; the Baffin land expedition, 1920-1922; the North Greenland expedition, 1923-1924; the Polar expedition, 1925; and the Labrador expedition, 1926. He has written many scientific articles and a book, *Four Years in the White North.*

MacMonnies (*mak-mun'iz*), **Frederick William,** American sculptor, was born in Brooklyn, N. Y., 1863. He studied under Augustus St. Gaudens at the Academy of Design and Art Students' League, and completed his art education at Munich. He has received many prizes and decorations, and executed the following works, among others: Sir Henry Vane, Boston Public Library, 1893, central bronze doors and statue of Shakespeare, Congressional library; etc.

McMurry, Charles Alexander, educator, was born at Crawfordsville, Ind., 1857, graduate of Illinois Normal University, 1876; University of Michigan, 1876-80; Ph.D., University of Halle, 1887. Principal of practice school, Illinois State Normal University and lecturer Teachers' College, University of Chicago, 1899, 1900; Principal Practice School, Northern Illinois Normal School, 1900-01; professor of elementary education, George Peabody College of Teachers, Nashville, Tenn., since 1915.

McReynolds, James Clark, Associate Justice U. S. Supreme Court, lawyer, was born at Elkton, Kentucky, February 3, 1862; son of Dr. John O. and Ellen (Reeves) McReynolds. He was graduated from Vanderbilt University, 1882; and from the law department of University of Virginia, 1884. He practiced at Nashville, Tennessee, many years; was professor of law at Vanderbilt University, 1900-3; Assistant Attorney-General of the United States, 1903-07; Attorney-General, 1913; engaged in private practice in New York until 1914; then made an Associate Justice of U. S. Supreme Court. He was long especially retained by the Government in matters relating to enforcement of anti-trust laws, particularly in proceedings against the tobacco trust and the combination of the anthracite coal railroads.

MacSwiney, Terence, Lord Mayor of Cork, assumed that office upon the death of Lord Mayor MacCurtain, who was murdered by the constabulary. After he became prominent in the Sinn-Fein movement, his life consisted mainly of arrests, his first being in May 1916. Deported without trial, released without explanation only to be re-arrested, re-deported and re-released without explanation, he was arrested on August 12, 1920, and for the fourth time deported to England where he died after a sixty-four day hunger strike.

McVeagh, Franklin, merchant, secretary of the treasury, was born in Chester county, Pa. He was graduated from Yale, 1862, Columbia Law School, New York, 1864; abandoned the practice of law because of ill health and went to Chicago, 1866; established firm of Franklin MacVeagh & Co., wholesale grocers of which he remained head until 1909; again president since 1925. He was president of the bureau of charities and municipal art league; member of the executive committee, national civic federation, and vice-president of the American Civic Association, 1905. He was secretary of the treasury, 1909-1913.

McVeagh, Wayne, American lawyer, was born near Phoenixville, Chester country, Pa., 1833, He was graduated from Yale, 1853, and was admitted to the bar, 1856. United States minister to Turkey, 1870-71; member of Pennsylvania constitutional convention, 1872-74; head of "McVeagh commission" sent to Louisiana, 1877, by President Hayes amicably to adjust disputes of contending parties there; United States attorney general in cabinet of President Garfield, 1871, was ambassador to Italy, 1893-97, and chief counsel of the United States in the Venezuelan arbitration before the Hague tribunal, 1903. Died in 1917.

Madison, James, fourth president of the United States, was born in King George county, Va., 1751. He was graduated at Princeton, N. J., 1771, and studied law. He was sent to the federal congress, 1780; in 1784, to the legislature of Virginia, in which he supported the measures of Jefferson in the revision of the laws, and placing all religious denominations on an equality of freedom without state support. He supported the adoption of the constitution, but opposed the financial policy of Hamilton, and became a leader of the republican, or Jeffersonian party. In 1801, Jefferson having been elected president, Madison was made secretary of state, which post he held during the eight years of Jefferson's administration. In 1809 he was elected president of the United States. The European wars of that period, with their blockades and orders in council, were destructive to American commerce. The claim of the English government to impress seamen from American vessels was violently resisted. Madison vainly endeavored to avoid a war with England, which, nevertheless, was declared in 1812, and continued for two years, at a cost of 30,000 lives and $100,000,000. In 1817 he retired to his seat at Montpelier, Va., where he served as a rector of the University of Virginia, and a promotor of agriculture and public improvements. Died at Montpelier, 1836.

Maecenas (*mē-sē'nas'*), **Gaius Cilnius,** Roman statesman, was born about 70 B. C. He was the friend of Vergil and Horace, and was celebrated for his patronage of letters. In 31 B. C. Maecenas proved himself an able and vigilant governor of Rome by crushing a conspiracy of the younger Lepidus, and thereby preventing a second civil war. Died, 8 B. C.

Materlinck (*mā'tĕr-lingk*), **Maurice,** Belgian author, was born at Ghent, 1862. He was greatly influenced in his thought by Novalis and Emerson, and his first writings were poetical. The following is a list of his chief works, some of which have been translated into English and have attracted considerable attention: *La Princesse Maleine; Pélleas et Mélisande; Alladine et Palomides; Aglavaine et Selysette; Douze Chansons; Le Trésor des Humbles.*

Magellan, Ferdinand, Protuguese navigator, was born about 148.. Under Charles V.'s patronage he and Ruy Falero set out to reach the Moluccas by the west in 1519, reached the Philippines, and died in battle in Matan. On this voyage he discovered the Magellan strait, 375 miles long and 15 miles wide, between the South American mainland and Tierra del Fuego. Died, 1521.

Mahan (*ma-han'*), **Alfred Thayer,** American naval officer and writer, was born at West Point, N. Y., 1840. He was graduated at the United States naval academy, 1859; served in the Civil War; visited Europe in command of the *Chicago*, 1893, receiving many honors, among them degrees from both Oxford and Cambridge. He was retired at his own request in 1896. During the war with Spain he was a member of the naval board of strategy; and in 1899 was appointed by President McKinley one of the American delegates to the universal peace conference at The Hague. Author: *The Gulf and Inland Waters; Influence of Sea Power Upon History; Life of Nelson,* 2 vols.; *Lessons of Spanish War; Retrospect and Prospect; Sea Power in Its Relations to the War of* 1812; *From Sail to Steam.* Died, 1914.

Mahomet (*ma-hom'et*), See **Mohammed.**

Maine, Sir Henry James Sumner, celebrated English lawyer and writer, was born in 1822. He was educated at Cambridge University, where, in 1847, he became regius professor of comparative jurisprudence at Oxford. In 1847 he was elected Whewell professor of international law at Cambridge. He introduced wise reforms into Indian law, but his work in the origin and growth of legal and social institutions is the work on which his fame mostly rests. His publications include: *International Law; Dissertations on Early Law and Custom,* etc. He died at Cannes, France, 1888.

Major, Charles, American lawyer, author, was born in Indianapolis, Ind., 1856. He was educated in the common schools at Shelbyville and Indianapolis; studed law and practiced at Shelbyville. Author: *When Knighthood Was in Flower; Dorothy Vernon of Hadden Hall,* etc. Died, 1913.

Malebranche (*mäl'brănsh'*), **Nicholas,** French philosopher, was born in Paris, 1638. At the age of twenty-two he entered into the congregation of the Oratory, and he devoted himself to the study of Bible History and of the fathers of the church. He subsequently devoted much attention to Descartes' *Traite de l' Homme,* which led him to the study of philosophy, and called forth his famous work, *De la Recherche de la Verite.* Died at Paris, 1715.

Malherbe (*mäl-erb'*), **Francoi de,** French poet, was born at Caen, 1555. In 1605 he became court poet, and is called the founder of classic poetry in France. Died in Paris, 1826.

Malibran (*mal'i-bran*), **Maria Felicita,** celebrated mezzo-soprano singer, was born at Paris, 1808. She very early showed extraordinary talent, and made her debut in Italian opera, 1628, in London. In New York she married M. Malibran, a French banker. After her husband's failure in business she returned to the stage, and was recieved with great enthusiasm in France, England, Germany and Italy. She was one of the most popular and successful prima donnas of modern times. Died 1836.

Malpighi (*mäl-pē'hē*), **Marcello,** Italian anatomist, was born near Bologna, Italy, 1628. He lectured in Bologna, Pisa and other places, and wrote works on the anatomy of plants, the physiology of the silkworm and medical subjects. His name was given to the Malpighian genus. In 1691 he became physician to Pope Innocent XII., but died in 1694.

Malthus (*mal'thus*), **Thomas Robert,** English political economist, was born near Guilford, England, 1766. He was graduated at Cambridge, 1788; was for some time fellow of Jesus College, Cambridge; published in 1798, his *Essay on Population,* in which he maintained that population tends to increase out of porportion to the increase of means of subsistence. Died, 1834.

Mann, Albert Russel, educator, agricultural writer, was born at Hawkins, Pa., 1880, and graduated from the College of Agriculture, Cornell University, 1904; assistant superintendent Boston Farm School, 1904-5; assistant on Bailey's *Cyclopedia of American Agriculture,* 1905-8; successively assistant professor of dairy industry, secretary and professor of agricultural editing, New York State College of Agriculture, Cornell University, since 1908. Author: *Beginnings in Agriculture,* etc.

Mann, Horace, American statesman and educator, was born at Franklin, Mass., 1796. He was graduated at Brown University, 1819, studied law, and was admitted to the bar, 1823. Member of congress, 1840-53; and from 1853 to 1859 president of Antioch College, Ohio. He wrote: *Lectures on Education; Report of an Educational Tour of Germany, Great Britain, and Ireland;* and was untiring in his efforts in the cause of educational extension and reform, in the suppression of slavery and in the promotion of temperance. Died, 1859.

Mannering, Mary, actress, was born in London, England, 1878, daughter of Richard and Florence Firend. She was educated in private schools; studied for the stage under Herman Vezin; went on the stage at the age of fifteen. She came to the United States under management of Daniel Frohman; made her American debut at Parsons' theater, Hartford, Conn., 1896, in *The Courtship of Leoni;* New York debut, Lyceum theater, four days later. She has since appeared in leading roles in modern drama.

Manning, Edward Henry, English prelate, was born in Hertfordshire, England, 1808. He was graduated at Oxford in 1830, studied theology, and was appointed rector of Lavington and Graffham, Sussex, 1834. He became archdeacon of Chicester, 1840; in 1851 resigned his preferments in the church of England, and joined the Roman Catholic Church; was ordained a priest in 1857; nominated archbishop of Westminster, 1865, and created cardinal, 1875. Died, 1892.

Mansfield, Richard, American actor, was born in Heligoland, Germany, 1857. He studied in England for the East Indian Civil Service; came to Boston and opened a studio, and later entered theatrical profession. He was very successful in a wide repertoire, from *Koko* in *Mikado* to *Richard III*, Was head of his own company, and created such parts as *Beau Brummel, Baron Chevrial,* and the titular roles in *Dr. Jekyll and Mr. Hyde.* Appeared as *Cyranno de Bergerec* in 1899, and played *Shylock, Henry V., Beaucaire,* and *Brutus* in *Julius Cæsar.* Died, 1907.

Mantegna (*mān-ān'yä*), **Andrea,** Italian painter, was born in or near Padua, 1431. A precocious genius, he set up a studio of his own when only seventeen years old. His greatest works were nine pictures representing the *Triumph of Cæsar,* now at Hampton Court, England. He did not aim at grace and beauty in his pictures, but his technical excellences greatly influenced Italian art. Died, 1506.

Mantell (*man'tel*), **Robert Bruce,** actor, was born in Irvine, Ayrshire, Scotland, 1854. He made his professional debut at Rochdale, England, as the Sergeant in *Arrah-na-Pogue,* 1876; came to the United States and played juvenile roles with Mme. Modjeska, 1878; returned to England, and for three years supported Miss Wallis as leading man. Later appeared in New York as *Lord Ippanhoff* in *Fedora* with Fanny Davenport; afterward became a star, and has since been at the head of his own company in classic and romantic plays. Died, 1928.

Manzoni (*mān-dzō'nē*), **Alexandro,** Italian novelist and poet, was born at Milan, 1785. He published his first poems in 1806, married happily in 1810, and spent the next few years in writing sacred lyrics and a treatise on the religious basis of morality. His noble ode, *Il Cinque Maggio,* was inspired by the death of Napoleon. In spite of his Catholic devotedness, he was a strong advocate of a united Italy. Died at Milan, 1873, leaving the memory of a great writer and singularly nobleman.

March, Francis Andrew, American physiologist, professor of English language and comparative philology, Lafayette College, 1856-1911, was born at Millbury, Mass., 1825. He was graduated at Amherst, 1845; LL.D., Princeton, 1870; Amherst, 1871; L.H.D., Columbia, 1887; D.C.L., Oxford, England, 1896; Litt.D., Cambridge, England, and Princeton, 1896. Author: *Method of Philological Study of the English Language; Comparative Grammar of the Anglo-Saxon Language.* Died, 1911.

Marconi (*mär-kō'nē*), **Gugliemo,** electrical engineer and pioneer of wireless telegraphy, was born in Girffone, near Bologna, 1874. His father was an Italian, his mother an Irish woman. He was educated at Leghorn and Bologna Universities; LL.D., Glasgow, Aberdeen, and University of Pennsylvania; D.SC., Oxford. He began in 1890, on his father's estate, experiments to test the theory that the electric current is capable of passing through any substance, and, if started in any given direction, of following an undeviating course without need for a wire or other conductor. Soon afterward he succeeded in sending messages from Spezia to a steamer fifteen kilometers distant; also sent messages from Queen Victoria ashore to the prince of Wales on royal yacht, 1897; came to the United States, 1899; used his method in reporting election, 1900; succeeded in establishing wireless telegraphic communication across the Atlantic ocean, 1902; daily ocean news service by wireless telegraphy inaugurated by him on trans-Atlantic liners, 1904.

Marcus Aurelius Antoninus, son of Annius Verus and Domitia Cavilla, was born at Rome, 121 A. D. His qualities attracted the notice of the emperor, Hadrian, who used to term him not *Verus*, but *Verissimus*, and who conferred high honors on him, even while a child. When only seventeen years of age he was adopted, with Lucius C. Commodus, by Antoninus Pius, the successor of Hadrian; and Faustina, daughter of Pius, was selected for his wife. He was made consul in 140 A. D., and from this period to the death of Pius, 161 A. D., he continued to discharge the duties of his various offices with the greatest promptitude and fidelity. He studied oratory under Herodes Atticus and Cornelius Fronto, and his love of learning was insatiable. Even after he had attained to the highest dignity of the state he did not disdain to attend the school of Sextus of Cheronea. Men of letters were his most intimate friends, and he received the highest honors both when alive and dead. His death in 180 A. D., was felt to be a national calamity; he was deified, and for more than a hundred years his image was found among the household gods of the Romans.

Margaret of Angouleme (*ȧn'gōō'lȧm'*), queen of Navarre, and daughter of Charles of Orleans, was born in 1492. In 1527 she was married to Henri d'Albert, king of Navarre, to whom she bore a son, who died in infancy, and a daughter, Jeanne d'Albert, mother of the great French monarch, Henry IV. She encouraged agriculture, the arts and learning, and to a certain extent embraced the cause of the reformation. She died at Odos, 1549.

Margaret of Anjou (*ȧn'zhōō'*), daughter of René of Anjou, was born in 1430. In 1445 she was married to Henry VI. of England. In the wars of the Roses, Margaret, after a brave struggle of nearly twenty years, was finally defeated at Tewkesbury, in 1471, and was kept in the Tower four years, until ransomed by Louis XI. She then retired to France, and died at the castle of Dampierre near Saumur, 1482.

Margaret of Austria, daughter of the emperor Maximilian and Mary of Burgundy, was born at Ghent, Belgium, 1480. She married first John of Castile, and second Philibert of Savoy; was made governor of the Netherlands in 1507, and negotiated both the league of Cambria, in 1508, and the "pair des dames," in 1529. She died at Mechlin, Belgium, 1530.

Margaret of Denmark, daughter of Waldemar IV. of Denmark, was born in 1353. She succeeded her father, became queen also of Norway on the death of her husband, Hakon VIII., but was soon expelled. She recovered Norway in 1387, and, having defeated Albert of Mecklenburg in 1389, united the three Scandinavian kingdoms by the union of Kalmar in 1397. Died, 1412.

Maria Christina, queen-dowager of Spain, was born at Naples, 1806, daughter of Francis I., king of the Two Sicilies. In 1829 she became the fourth wife of Ferdinand VII. of Spain. In 1854 a revolution expelled her from the country, and she took refuge in France, but returned to Spain in 1864, only to retire again in 1868. Died, 1878.

Maria Theresa (*mȧ-rī'ȧ te-rē'sȧ*), daughter of the emperor Charles VI. of Germany, was born at Vienna, 1717. By the "pragmatic sanction," for which the principal European powers became sureties, her father appointed her heir to his hereditary thrones. Frederick II. of Prussia claimed Silesia, and poured his armies into it; Spain demanded the Austrian dominions in Italy, and the Bavarians, assisted by the French, invaded Bohemia, the elector of Bavaria being crowned emperor as Charles VII., in 1742. The young queen was saved by the chivalrous fidelity of the Hungarians, supported by Great Britain. The empress-queen lost Silesia to Prussia, Parma and Piacenza to Spain, and some Milanese districts to Sardinia. She joined with Russia and Prussia in the first partition of Poland, 1772, securing Galicia and Lodomeria; while from the porte she obtained Bukowina, 1777, and from Bavaria several districts. She died in 1780. A woman of majestic figure and an undaunted spirit, she combined feminine tact with masculine energy; and not merely won the affection and even enthusiastic admiration of her subjects, but raised Austria from a wretched condition to a position of assured power. Of her ten surviving children, the eldest son, Joseph II., succeeded her.

Mariana (*mȧ'rē-ȧ'nȧ*), **Juan,** Spanish historian, was born in 1536. He was a Jesuit, taught theology in Rome, Sicily, and Paris, and finally lived in retirement in Toledo. In 1609 he published at Cologne *Seven Theological and Historical Treatises*, two of which were censured by the inquisition, and the author was subjected to imprisonment and penance. His chief work is his *History of Spain*, which extends to the accession of Charles V. with a summary of later events down to 1621. Died, 1623.

Marie Antoinette (*mȧ'rē' ȧn'twȧ'net'*), **Josephe Jeanne,** wife of Louis XVI. of France, youngest daughter of Francis I., emperor of Germany, was born at Vienna, 1755. Soon after the accession of Louis XVI. libels were circulated by her enemies, accusing her of constant intrigues, not one of which has ever been proved. From the first hour of the revolution she was an object of fanatical hatred to the mob of Paris. At last she resolved on flight. Her husband long refused to abandon his country, and she would not go without him. A dim sense of kingly duty and honor was not wanting in Louis, but after the mob stopped his coach in 1791, and would not let him go to St. Cloud, he consented. The flight took place on the night of the 20th of June. Unfortunately the royal fugitives were recognized and captured at Varennes. From this time Marie's attitude became heroic, but the French people could not rid themselves of the suspicion that she was secretly plotting with enemies for the invasion of the country. On August 1, 1793, she was removed to the conciergerie by order of the convention, condemned by the revolutionary tribunal October 16, and guillotined next day.

Marie de'Medici (*mȧ'rē' dā mȧ'dē-chē*), queen of France, daughter of Francis of Tuscany, was born in 1573. She married Henry IV. of France in 1600, and became the mother of Louis XIII., during whose minority she was regent. She was overthrown by Richelieu after a long contest, and left France in 1631. Died, 1642.

Mario (*mȧ'rē-ō*) **Giuseppe,** famous Italian opera-singer, was born at Cagliari, Italy, 1810, son of General di Candia. In 1838 he made his first appearance in opera as *Robert* in *Robert le Diable*. In this he achieved the first of many successes in Paris, London, St. Petersburg, and America. Mario married the famous singer, Giulia Grisi, and retired from the stage in 1867. Died, 1883.

Marion, Francis, American general and patriot, was born near Georgetown, S. C., 1732. He received a scanty education, and, after a trial of seafaring life, in which he was wrecked and with difficulty rescued, engaged in farming. His first active service was in Charleston harbor, and later in the defense of Fort Moultrie, 1776. He was present at the siege of Charleston, 1780, raised several companies of volunteers among the country lads, or "cowboys" as the British called them, and with this force marched to the relief of General Gates, at that time in North Carolina. Among the most noted engagements in which he took part may be named Fort Moste, Fort Wilson, Granby, Parker's Ferry and Eutaw. At the close of the war Marion resumed his former occupation and remained on his plantation until his death, 1795.

Marion Harland. See **Terhune, Mary V.**

Marius (*mā'ri-us*), **Caius,** Roman general, was born near Arpinum, 157 B. C. He served with distinction at Numantia under the younger Scipio Africanus, and in 119 B. C. was tribune of the plebs. Meanwhile an immense horde of Cimbri and Teutons had burst into Gaul and repeatedly defeated the Roman forces. Marius, consul for the second third, fourth and fifth times, 104-101 B. C., annihilated them after two years' fighting in a terrible two days' battle near Aix, in Provence, where 100,000 Teutons were slain. Marius was declared the saviour of the state, the third founder of Rome, and was made consul for the sixth time in 100 B. C. Marius and Cinna were elected consuls for the year 86 B. C., but Marius died a fortnight afterward.

Mark, Edward Laurens, American naturalist and educator, professor of anatomy, Harvard, was born at Hamlet, Chautauqua county, N. Y., 1847. He was graduated at the University of Michigan, 1871; Ph.D., University of Leipzig, Germany, 1876; LL.D., University of Michigan, 1897, University of Wisconsin, 1904. Hersey professor of anatomy since 1885, director of zoölogical laboratory since 1900, Harvard University.

Markham, Edwin, American poet, writer, lecturer, was born in Oregon City, Ore., 1852. He went to California, 1857, worked at farming, blacksmithing, herded cattle and sheep during his boyhood, and earned his way through the common school. He wrote poems, since early boyhood, for California papers and received recognition of best Eastern magazines; was principal and superintendent of schools in California until 1899. Author: *The Man with the Hoe, and Other Poems; Lincoln, and Other Poems.*

Marlborough, John Churchill, first Duke of, soldier and diplomat, was born in 1650. He obtained a commission, through the influence of his sister, with the duke of York, and first served under Turenne; deserted James II. at the revolution, but, though created earl and commander-in-chief by William III., intrigued with his former master; was appointed captain-general and duke under Queen Anne, and won the victories of Blenheim, 1704, Ramillies, 1706, Oudenarde, 1708, and Malplaquet, 1709, but was recalled in 1710, and dismissed on a charge of peculation. Died, 1722.

Marlowe, Christopher, British dramatic writer, was born about 1564. He belonged to the generation immediately preceding that of Shakespeare, and is considered by many to be second only to Shakespeare among the dramatists of the time. His chief plays are: *Tamerlane the Great; The Tragical History of Dr. Faustus*, to which Goethe acknowledged his obligations; *The Jew of Malta*; and *Edward the Second*. He died in a tavern brawl at the age of twenty-nine, in 1593.

Marlowe, Julia, American actress, was born in England, in the village of Caldbeck, Cumberlandshire, 1870. She came to the United States with her parents at the age of five; lived in Kansas two years; moved to Ohio, locating finally in Cincinnati; attended public schools until her twelfth year, then joined juvenile opera company which gave *Pinafore, Chimes of Normandy*, and other light operas. She then retired from the stage and studied three years in New York. Married Robert Taber, who has been leading man in her company; married E. H. Sothern, 1911. Metropolitan debut as *Parthenia* in *Ingomar*, and since 1888 has starred in Shakespearean and other tragic and romantic roles.

Marmontel (*mär'mōn'tel'*), **Jean Francois,** French writer, was born at Bort, 1723. He wrote *Les Incas; Bélesaire*, and *Contes Moraux*, and made his way into Parisian society by gentleness, wit and a dainty and candid literary power. He was elected to the French Academy in 1763. Died, 1799.

Marquette (*mär'ket'*), **Jacques,** French Jesuit missionary and American explorer, was born at Laon, France, 1637. He founded Sault Ste. Marie and Kaskaskia Missions; accompanied Joliet in his exploration of the Mississippi, and died while attempting to establish a mission among the Illinois Indians, 1675.

Marryat (*mar'i-at*), **Frederick,** English author, was born in Westminster, 1792. He served in the navy for many years, becoming a post captain, and wrote many novels, including: *Frank Mildway; Midshipman Easy; Peter Simple; Snarleyyow; The Little Savage;* and *Valerie*. He also published a *Code of Signals for Vessels Employed in the Merchant Service*, adopted in England and other countries, and *Dairy in America*, in 6 vols. Died, 1848.

Marsh, George Perkins, American diplomat and philologist, was born at Woodstock, Vt., 1801. He studied law, was elected to congress in 1842, was United States minister to Turkey, 1849-53, and to Italy, 1861-82. He was made LL.D. by Harvard in 1859. He died at Vallonbrosa in Italy, 1882.

Marshall, Alfred, English economist, was born in London, 1842. He was educated at Merchant Taylors' and St. John's, Cambridge; D.Sc., Oxford and Cambridge; honorary LL.D., Edinburgh; hon. Dr. Jur., Cracow University; professor of political economy, Cambridge University, 1885-1908; member of royal commission on labor, 1891; vice-president of the royal economic society; fellow of the British Academy, 1902, and member correspondent de l'Institut de France, 1908. Author: *Economics of Industry; Curriculum in Economics*, etc. Died, 1924.

Marshall, Henry Rutgers, American architect and author, was born in New York, 1852. He was graduated at Columbia in 1873; L.H.D., Rutgers, 1904; in practice as architect since 1878. *Pain, Pleasure, and Æsthetics; Æsthetic Principles, Instinct and Reason*, etc. He was a contributor to art, psychological and philosophical journals and literary magazines and reviews, and was the principal speaker on æsthetics at the congress of arts and sciences, St. Louis Exposition.

Marshall, John, American jurist, chief-justice of the United States, was born in Fauquier county, Va., 1755. He was privately educated, and his law studies were interrupted by the revolution, in which he served under his father, Colonel Marshall, 1775-79, rising to the rank of captain. In 1781 he began to practice law in Fauquier county, Va. He was sent to France with Pinckney and Gerry as an envoy in 1797, and with Pinckney was ordered to leave the country when they had declined Tallyrand's request for a loan. In 1799 he was elected to congress, and in 1800 became secretary of state. He was made chief justice of the United States in 1801 by President John Adams, and held this position until his death, which occurred at Philadelphia, Pa., 1835. His great legal learning and judicial poise dominated the supreme court for thirty-four years, during which his decisions on constitutional questions established precedents in the interpretation of the constitution that have been accepted ever since.

Marshall, Thomas Riley, Vice-President of the United States, lawyer, was born at North Manchester, Ind., March 14, 1854, son of David M. and Martha A. (Patterson) Marshall. He was graduated from Wabash College, 1873, and subsequently received the degree LL.D. from Wabash, Notre Dame and University of Pennsylvania. He was admitted to the bar, 1875; 1876-92, was member of the law firm, Marshall & McNagny of Columbia City, Ind.; and, 1892-1909, of Marshall, McNagny & Clugston. He was governor of Indiana, 1909-13; July 3, 1912, received the Democratic nomination for vice-president at the Baltimore convention; and was elected at the ensuing election. He took his seat as vice-president, March 4, 1913. On Oct. 2, 1895, he married Lois I. Kinsey, of Angola, Ind. Died, 1925.

Martel, Charles. See **Charles Martell.**

Martens (*mär'tenz*), **Frederic de,** Russian diplomat and international lawyer, late professor of international law, University of St. Petersburg, 1871-1907, was born at Pernau, in the Russian Baltic provinces, 1845. He was graduated at the University of St. Petersburg, 1867; doctor of international law, 1873; LL.D., Edinburgh, Cambridge and Yale Universities; D.C.L., Oxford. He was Russian delegate at the peace conference at The Hague, 1899, and president of the second commission; Russian delegate at the peace negotiations between Russia and Japan in Washington, 1905. Author: *La Paix et la Guerre; On Consular Jurisdiction in the East*, etc. Died, 1909.

Martin (*mär'tăN'*), **Bon Louis Henri,** French historian, was born in 1810, at Saint Quentin. He studied law, but later abandoned it, and, after publishing a series of historical novels, gained celebrity by his *Histoire de France.* In 1870 he became mayor of Paris, and in 1871, a member of the national assembly. In 1876 he was elected a senator, and in 1878 a member of the French Academy. Died, 1883.

Martin, William Alexander Parsons, American missionary and Chinese scholar, was born at Livonia, Ind., 1827. He was graduated at the Indiana University, studied theology at Presbyterian Seminary, New Albany, Ind.; D.D., Lafayette, 1860; LL.D., University City of New York, 1870. Went to Peking, China, and Yeddo, Japan, with John E. Ward, United States minister, 1859. Missionary at Peking, 1863-68; president and professor of international law at Tung Wen College, thirty years. Was adviser Chinese authorities on matters of international law in several disputes with European powers; and was made a mandarin of the third class, 1885, and of the second class, 1898. Author: *Lore of Cathay; Siege in Peking; A Cycle of Cathay; Chinese Legends; Awakening of China.* Died, 1916.

Martineau (*mär'ti-nō*), **Harriet,** English writer of Huguenot descent, was born at Norwich, in 1802. She visited the United States in 1834, and the East in 1846, publishing descriptive works on her return. She wrote *Deerbrook, The Hour and the Man,* and other novels, and many tales for children. She was also author of a condensation of Comte, and *History of England During the Thirty Years' Peace.* Died, 1876.

Martineau, James, English theologian, brother of the preceding, was born at Norwich, 1805. In 1841 he was appointed professor of mental and moral philosophy at Manchester new college. He was principal of the college, 1868-85. As one of the profoundest thinkers and most effective writers of his day, he received degrees from Harvard, Leyden and Edinburgh. Died, 1900.

Marx, Heinrich Karl, German socialist, was born in Trèves, 1818, son of a lawyer. He was educated at Bonn and Berlin, took an active part in the liberal movement of 1840, and, after the suppression of the *Rhenish Gazette,* edited by him, he went to Paris. Later he settled in London, where he engaged in literary work, and took an active part in the international working men's association. After the secession of the anarchist section in 1873, he took but little part in affairs, and died at Hampstead ten years later, 1883. His chief work was *Das Kapital.*

Mary, Queen of England, 1553-58, was born at Greenwich, 1516. She was the daughter of Henry VIII. and Catharine of Aragon, and succeeded to the throne on the death of her half-brother, Edward VI. In 1554 she was married to Philip II. of Spain; and in the following year, having already repealed all the laws enacted in favor of Protestantism, and reëstablished Catholicism, she began, probably reluctantly, that series of persecutions of the Protestants which have earned for her the title of the "bloody Mary." During her short reign of four years, no fewer than 284 persons, of all ages, and sexes, were put to death. She died 1558, succeeded by her half-sister, Elizabeth.

Mary, Queen of Scots, daughter of James V. and Mary of Lorraine, was born at Linlithgow, Scotland, 1542. She became, by her father's death, queen before she was a week old. She was educated in France, and married the dauphin, Henry II., 1558, who died, 1560. In 1561 she returned to Scotland, her Kingdom, and, in 1565, married her cousin, Lord Darnley. Refraining from interference with the Protestant movement she retained her own Catholic faith, but chose Protestant advisers. Her only son, afterward James VI., was born in 1566. Darnley was murdered by Hepburn, Earl of Bothwell, almost certainly with Mary's connivance, and her marriage with Bothwell, in May, alienated the nobles. They rose, took the queen prisoner at Carberry, carried her to Edinburgh, then to Loch Leven, where they forced her to abdicate in July. Next year, escaping, she fled to England, and was there for many years a prisoner. Catholic plots were formed to liberate her and put her in place of Elizabeth on the English throne, by virtue of the fact that she was next in order of succession, being great-granddaughter of Henry VII. At last she was accused of complicity in Babbington's conspiracy, tried, found guilty, and executed in Fotheringhay castle, 1587.

Masaryk, Thomas Garrigue, president of the Republic of Czecho-Slovakia, was born in Moravia, 1850. He was educated at the University of Leipzig and in 1882 was made professor of philosophy at the University of Prague. In 1893 he came to the United States, where he was for a time a member of the faculty at the University of Chicago. After his return to Bohemia in 1907 he became a leader in the effort to free Bohemia from the dominance of Austria. Through his efforts the republic of Czecho-Slovakia was recognized by European powers, just before the close of the war in 1918 he was elected life president.

Mascagni, Pietro, Italian operatic composer, was born at Leghorn. While he was studying for the law he took secret music lessons and had a symphony and other compositions produced at the Instituto Luigi Cherubini and through the attention he aroused became endowed to study at the Milan Conservatoire. He soon abandoned his work at the conservatoire and after a haphazard time suddenly achieved a brilliant success by the production of *Cavalleria Rusticana.* But his fame was to live by this alone, for none of his later work was successful. He became the director of the Pesaro Conservatoire from 1895 to 1903.

Masefield, John, poet and playwriter, was born at Ledbury, England, in 1874. While still quite young he ran away to sea, where he worked as a common sailor for many years, visiting numerous countries. This fact probably accounts for the vividness of his *Salt Water Poems and Ballads.* But fame came to him through *The Everlasting Mercy* (awarded the Edmond de Polignac prize in 1912), *The Widow in the Bye Street, Dauber,* and *The Daffodil Fields.*

Mason, George, American statesman, was born at Doeg's Neck, Va., 1725. In 1775 the Virginia convention made him a member of the committee of safety, which was charged with the government of the colony. In 1777 he became a member of the continental congress. In 1787 he was one of the foremost men in the convention which drew up the constitution of the United States, and took firm ground against making slavery permanent in the country. He was chosen Virginia's first United States senator, but refused to serve. Died in Fairfax county, Va., 1792.

Mason, James Murray, American jurist and statesman, was born in Fairfax county, Va., 1798. He was elected senator from Virginia in 1847, and retained that place until the breaking out of the Civil War, when he withdrew from the senate and cast in his lot with the seceding states. He was captured, with John Slidell, on the steamer *Trent,* in 1861, when on his way to Europe to represent the confederacy abroad, and was held prisoner by the federal authorities until January 1, 1862, when, upon the demand of the English government, he was released. He died near Alexandria, Va., 1871.

Maspero (*más'pē-rō'*), **Gaston Camille Charles,** French Egyptologist, was born at Paris, 1846, of Italian parents. In 1874 he became professor of Egyptology at the Collège de France, and after 1881 keeper of the Boulaq museum and director of explorations in Egypt. Author: *Egyptian Archæology; Life in Ancient Egypt and Assyria; Dawn of Civilization; The Struggle of the Nations; The Passing of the Empires,* etc. Died, 1916.

Massasoit (*mas'a-soit'*), chief of the Pokanoket, or Wampanoag Indians, ruled over most of south Massachusetts from Cape Cod to Narragansett Bay. In 1621, three months after Plymouth had been founded, Massasoit and sixty warriers, armed and painted, came to the settlement and made a treaty of peace. His home was where now stands the town of Warren, R. I., and here he entertained Roger Williams for several weeks, when on his way to Providence after being banished from Massachusetts. Massasoit was honest, kept his word and loved peace. He died in 1661.

Massena (*mā'sā'nā'*), **Andre,** prince of Essling, and duke of Rivoli, one of the most celebrated of Napoleon's marshals, was born at Nice, 1758. He entered the army in 1775, and retired from it after having served for fourteen years. The revolution, however, again roused his military ardor. His rise was rapid, and he attained the rank of general of division, 1793. In 1810 he was appointed to command the army which invaded Portugal, but was foiled by Wellington, and compelled to abandon the Portuguese territory. After this period Masséna did not again appear in the field. Died, 1817.

Massenet (*mā's'nē'*), **Jules Emile Frederic,** French composer, was born at Montaud, 1842. He was educated at Lycée, Saint-Louis, and Le Paris conservatoire, under Laurent, Reber, Savard, and Ambroise Thomas. He was professor of composition at the conservatoire, 1878-96. He wrote the following operas: *La Grande Tante; Werther; Thais; Le Portrait de Manon; Le Jongleur de Notre Dame,* etc. Died, 1912.

Massillon (*mā'sē'yôN'*), **Jean Baptiste,** one of the most eloquent of French pulpit orators, was born at Hijères, 1663. He entered at the age of eighteen into the congregation of the oratory, and became so celebrated as a preacher that he was summoned to court to display his powers. His success there was complete. Louis XIV. complimented him in the strongest terms. His sermons and other theological works form fifteen volumes. Died, 1782.

Massinger (*mas'in-jĕr*), **Philip,** English dramatist, was born at Salisbury, England, 1583. He studied at Oxford, 1602, and in 1606 went to London. Eighteen of his plays are still extant. Notwithstanding his genius and the popularity of his plays, he lived in obscurity; and the course of his life in London is not easily traced. Among his best-known works are: *Duke of Milan; Fatal Dowry,* and *A New Way to Pay Old Debts,* which latter is still in use upon the stage. He was found dead in his bed in 1640, and was entered upon the book of the parish church simply as "a stranger."

Masters, Edgar Lee, American poet, was born in Garnet, Kansas, in 1869. After graduating from Knox College, he studied law in his father's office, and was admitted to the bar in 1891. Although he published *A Book of Verses* in 1898, his first notable work was *Spoon River Anthology,* a series of over two hundred epitaphs purporting to be a frank revelation of village history. Its success was immediate and permanent. Other writings include *Songs and Satire, Starved Rock, Domesday Book,* and *Althea,* a play.

Mather (*math'ẽr*), **Cotton,** American colonial divine, was born in Boston, 1663. The phenomenon termed "Salem witchcraft" having appeared in the colony, he investigated it, and wrote, in 1689, his *Memorable Providences Relating to Witchcraft and Possessions.* He found that devils or possessed persons were familiar with dead and foreign languages, etc., and eagerly advocated the adoption of desperate remedies for the diabolical disease. Despite his bitter bigotry and narrow-mindedness, he was an able man, and, with remarkable industry, wrote 382 works. Died, 1728.

Mather, Increase, American colonial divine, father of the preceding, was born at Dorchester, 1639. He was for about sixty years pastor of the North church, Boston. In 1684 he was also chosen president of Harvard College, for which he obtained the right to confer the degrees of B. D. and D.D. His influence was so great in the colony that he was sent to England in 1688 to secure a new charter, and had the appointment of all offices under it. Died, 1723.

Mathew, Theobald, "Father Mathew," apostle of temperance, was born at Thomastown in Tipperary, Ireland, 1790. He took priest's orders in the Capuchin order in 1814; and in his ceaseless labors at Cork, seeing how much of the degradation of his people was due to drink, became in 1838 an ardent advocate of total abstinence. His success was marvelous, and everywhere he roused enthusiasm and secured warm affection. But overwork ruined his health, and he died in 1856.

Mathews, Shailer, theologian, editor, was born at Portland, Me., 1863; graduated from Colby College, 1884; graduate of Newton Theological Institution, 1887; University of Berlin, 1890-01, D.D., Colby, 1901, Oberlin College, 1908. Has been associate professor of New Testament history and interpretation, 1894-7, professor, 1897-1905, professor systematic theology, 1905-6, history and comparative theology since, 1906; junior dean divinity school, 1899-1908, dean since 1908, University of Chicago. Editor: *The World To-Day,* 1903-1912. Author: *The Social Teaching of Jesus; A History of New Testament Times in Palestine; Constructive Studies in the Life of Christ* (with E. D. Burton), *The French Revolution—A Sketch; The Church and the Changing Order; The Social Gospel; The Gospel and the Modern Man,* etc.

Matsukata (*mät'sōō-kä'tä*), **Marquis Masayoshi,** Japanese statesman, was born at Kagoshima, 1835. He received a military and literary education, and naval training from foreigners in Nagasaki. He visited Europe as president of the Japanese section of the Paris exposition of 1878; was appointed minister of home affairs, 1880; minister of finance, 1881. The redemption of inconvertible notes was the most important work accomplished during his more than ten years' service as minister of finance. He was created count, 1884; premier, 1891-92, and 1896-98; minister of finance in October of the latter year until October, 1900. The adoption of the gold standard, for which the count was mainly responsible, has been the most important incident in the history of Japan in recent years. He visited America and Europe, 1902; received an honorary D.C.L. from Oxford, 1902. Author: *Report on the Adjustment of Paper Currency.* Died, 1924.

Matthews, Franklin, American journalist, editor of the *New York Sun* beginning 1890, was born at St. Joseph, Mich., 1858. He was graduated at Cornell University, 1883. He was reporter and editor of *Philadelphia Press,* 1886-90. Author: *Philadelphia; Our Navy in Time of War; The Newborn Cuba.* Died, 1917.

Matthews, James Brander, American author, professor of dramatic literature, Columbia, was born at New Orleans, 1852. He was graduated at Columbia College, 1871; LL.B., 1873; D.C.L., University of the South, 1899, Litt.D., Yale, 1901; LL.D., Columbia, 1904. He was admitted to the New York bar, but turned to literature. Author: *The Theatres of Paris; French Dramatists of the Nineteenth Century; Introduction to the Study of American Literature; A Confident To-Morrow; The Action and the Word; The Historical Novel; Parts of Speech, Essays in English; Development of the Drama.* Died, 1929.

Matthias (*mä-thī'as*), **Corvinus,** king of Hungary, was born in 1443. He was proclaimed king in 1458, soon after his release from imprisonment at Prague; maintained the throne against the emperor, Frederick III., and, after having engaged in successful wars with the Turks, received the Bohemian crown from the pope on condition of extirpating the Hussites. After this he engaged in two wars with the emperor, and captured Vienna in 1485, living there until his death in 1490.

Maupassant, Henri Rene Albert Guy De, French novelist and short story writer, was born in 1850 at the Chateau of Miromesnil. Under the severe tutorship of Flaubert he became a master of short story writing. Strength and simplicity in both substance and style are characteristic of all

Maupassant's writings. In 1891 his reason began to give way, and he died in 1893. Among his best known stories are *The Necklace, The Piece of String; Sisters of Randoli*, and *Tales of Day and Night*. His very first story, *Boule de Suif*, was a masterpiece. His best known novels are *Pierre and Jean* and *Strong as Death*.

Mauperтuis (*mō'per'twē'*), **Pierre Louis Moreau de,** French geometrician and astronomer, was born at St. Malo, 1698. He studied at the college of La Marche, at Paris, and, after having served for four years in the army, devoted himself to science and literature. In 1745, invited by Frederick the Great, he settled at Berlin, and was made president of the royal academy there. Died, 1759.

Maurice (*mō'ris*), prince of Orange and count of Nassau, one of the most skillful and distinguished generals of his age, was born at Dillenburg, 1567, son of William I. In 1597, with the help of some English auxiliaries, he defeated the Spaniards at Turnhout in Brabant, and in 1600 won a splendid victory at Nieuwport. Finally, in 1609, Spain was compelled to acknowledge the united provinces as a free republic. Died, 1625.

Maxim, Sir Hiram Stevens, American inventor, was born at Sangerville, Me., 1840. He received a common school education, and his sicentific knowledge was obtained by study and attending lectures. He was for four years an apprentice to coach-building; worked in various iron works; patented numerous inventions in the United States and went to England in 1881, where he became a naturalized citizen. He has patented many electrical inventions, including incandescent lamps, self-regulating current machines, etc.; invented the Mexim gun, automatic system of firearms, which makes the recoil of the gun serve as the power for reloading. Chevalier légion d'honneur. France, and knighted by Queen Victoria in 1900, Died, 1916.

Maximilian I., German emperor, was born in 1459, son of Frederick III. In his nineteenth year he married Maria, only child and heiress of Charles the Bold, duke of Burgundy, and was soon involved in a war with Louis XI. of France, who attempted to seize some of her possessions. Subsequently he married the daughter of the duke of Milan, and, although inclined to peace, he became involved in war with the Swiss, the Venetians and the French. Died, 1519.

Maximilian, Ferdinand Maximilian Joseph, archduke of Austria and emperor of Mexico, was born in Vienna, 1832. He was the brother of the former emperor of Austria-Hungary. In 1863 Napoleon III. had it in mind to conquer Mexico and set up an empire, and he offered the crown to Maximilian, who went to Mexico in 1864. But he pleased no one, and in 1866, when the French troops left the country, the empire fell to pieces. Maximilian tried to form a native army for his own defense, but he was captured by the republicans, and, after a trial, shot near Queretaro, in his thirty-fifth year, 1867.

Max O'Rell. See **Blouet, Paul.**

Maxwell, James Clerk-, British physicist, was born at Edinburgh, 1831. He was educated at the University of Edinburgh. In the great work of his life, *Electricity and Magnetism*, 2 volumes, he constructed a theory of electricity in which "action at a distance" should have no place. He was the first to make color-sensation the subject of actual measurement. But he was best known to the public by his investigations on the kinetic theory of gases. In 1879 he edited Cavendish's *Electrical Researches*, and died in the same year.

Maxwell, William Henry, American educator, superintendent of schools of Greater New York beginning 1898, was born at Stewartstown, Ireland, 1852. He was educated at royal academical institution, Belfast, and Queen's Colleges, Galway and Belfast. He was teacher in the public schools, Brooklyn, N. Y., 1880-82; assistant superintendent of schools, Brooklyn, N. Y., 1882-87, and superintendent, 1887-98; superintendent, public schools, Greater New York, 1898, then emeritus. He was author of a series of text-books on English grammar and composition, etc. Died, 1920.

May, Sir Thomas Erskine, English jurist and writer, was born in London, 1815. He was educated at Bedford school. He was created successively C. B. and K.C.B., and was on his retirement, in 1886, created Baron Farnborough. His *Treatise on the Law, Privileges, Proceedings, and Usage of Parliament* has been translated into various languages; his *Constitutional History of England*, 1760-1860 is a continuation of Hallam; and his *Democracy in Europe* shows great learning and impartiality. Died, 1886.

Mayer, Henry ("Hy Mayer"), caricaturist, was born at Worms-on-Rhine, 1868. He was educated in England and Germany, and came to the United States, 1886. He began his career as an artist in Cincinnati, 1887, and has resided in New York since 1893. He has been illustrator for *Fliegende Blaetter; Figaro Illustré: Le Rire; Pall-Mall Magazine; Punch; Life, New York Times, Herald*, etc. Author: *Autobiography of a Monkey; A Trip to Toyland; Alphabet of Little People*, etc.

Mayo Brothers, William James (1861—) and **Clarence Horace** (1865—), American surgeons, were born in Minnesota. In 1889 they organized the Mayo Clinic, in St. Mary's Hospital, Rochester, Minn., which has become famous throughout the world for the number and success of its operations. Beginning in 1912, graduate courses in medicine were offered in this clinic. In 1915, the Mayo Foundation for Medical Education and Research was established, to which the brothers contributed $1,500,000. In 1917 the foundation became a department of the University of Rochester.

Mazarin (*mà'zà'raN'*), **Jules,** cardinal and chief minister of France during the minority of Louis XIV., was born at Rome, 1602. Having accompanied a papal legate to the court of France, he became known to Richelieu about 1628. The latter perceived his great political talents, and engaged him to maintain the French interests in Italy, which he did while still employed by the pope as vice-legate to Avignon, in 1632, and nuncio to the French court. Under him the influence of France among the nations was increased, and in the internal government of the country those principles of despotism were established on which Louis XIV. afterward acted. The administration of justice, however, became very corrupt, and the commerce and finances of the country sunk into deep depression. Died, 1661.

Mazzini (*mät-sē'nē*), **Guiseppe,** Italian patriot and revolutionist, was born at Genoa, 1805. The organization of a new liberal league, "Young Italy," was Mazzini's first work. A new association, entitled "New Europe," and based on principles of European rights and enfranchisement, was inaugurated by the exertions of Mazzini in Switzerland. In 1837 he quitted Switzerland and finally took up his abode in London. From there his labors in the Italian revolutionary cause were unremitting. After an ineffective scheme for a republican rising, he ventured to enter Italy, and was arrested at Gaeta, where he remained a prisoner until Rome was taken by the Italian army. On his death, 1872, the government honored him with a public funeral.

Mead, Larkin Goldsmith, American sculptor, was born at Chesterfield, N. H., 1835. His early years were spent in Vermont. He studied art at Brooklyn, N. Y., and in Italy. The colossal statue of "Vermont" on the dome of the statehouse, and of "Ethan Allen" in the portico of the same building in Vermont, and one of the same hero, given by the state of Vermont to the hall of representatives at Washington, are all his work, also a colossal statue, "The Mississippi River"; colossal marble group representing Columbus appealing to Isabella, Sacramento, Cal., high relief portraits in bronze of Henry James, William D. Howells, and John Hay. Died, 1910.

Meade, George Gordon, American general, was born in Cadiz, Spain, where his father was an agent of the United States navy, 1815. He was graduated at West Point, 1835, and, after serving one year in the army, resigned to begin practice as a civil engineer. At the outbreak of the Civil War he was placed in command of a brigade of volunteers, soon rose to the command of a division, and joined his fortunes permanently to those of the army of the Potomac. At Chancellorsville he commanded the fifth corps; and when Hooker resigned the command of the army, and while the army itself was in hasty movement northward to check Lee's invasion of the North in 1863, Meade was appointed to the command. He accepted it with the greatest reluctance, and altogether from a sense of duty. He had inclined to fight on the line of Pipe creek, to the south of Gettysburg; but Reynolds fell into collision with Lee's support, and Gettysburg became historical. At the close of the war he was made major-general in the regular army, and commanded the military division of the Atlantic at the time of his death, 1872.

Medici (*mà'dē-chē*), **Lorenzo de',** surnamed "the magnificent," was born in 1448. He was a member of an illustrious Florentine family, which for centuries exerted great influence in Italy and in Europe. In 1478 a conspiracy was formed against him and his brother Giuliano, by the Pazzi, another distinguished family of Florence, who were instigated by Pope Sixtus IV., and aided by Salviati, archbishop of Pisa. The result was that Giuliano was assassinated and Lorenzo wounded; whereupon Salviati was hung out of his palace window in his archiepiscopal robes, and Giacopo de Pazzi, with one of his nephews, shared the same fate. The pope now excommunicated Lorenzo and the magistrates of Florence laid an interdict upon the whole territory, and, forming a league with the king of Naples, prepared to invade the Florentine dominions. Hostilities followed, and were carried on with varying success during two campaigns. The remainder of Lorenzo's administration was unmarked by any great public events; but his regard for literature was manifested by the extraordinary attention he paid to the augmentation of the Laurentian library, which had been founded by his grandfather. Died, 1492.

Meighan, Thomas, actor, born in Pittsburg, 1879. Played on the New York stage and in London. Since 1916 he has been appearing in moving pictures, starring in *Out of a Clear Sky, The Miracle Man, Male and Female, Don't Change Your Wife*, and many other films. He is a past president of the Lambs Club, New York.

Meissonier (*me'sō-nyā'*), **Jean Louis Ernest,** French painter, was born in Lyons, 1815. He was a pupil of Cogniet, and became a member of the Beaux Arts in 1861. His best pictures distinguished for minute detail are probably the "*Napoleon Cycle*," among which the picture called "*1814*" was sold, in 1887, for the highest price ever obtained during an artist's lifetime, $170,000. He served in the Italian campaign and the early part of the Franco-Prussian war, and was colonel at the siege of Paris. Died, 1891.

Melanchthon (*mē-langk'thun*), **Philip,** Luther's fellow-laborer, in the reformation, was born at Bretten, in the palatinate of the Rhine, 1497. In 1521 he published his *Loci Communes Rerum Theologicarum*, the first great Protestant work on dogmatic theology. In 1530 he made a most important contribution to the cause of Protestantism in the Augsburg confession. After Luther's death, he lost in some measure, the confidence of some of the Protestants, by those concessions to the Roman Catholics which his anxiety for peace led him to make. Died, 1560.

Melba, Madame, nee Helen Porter Mitchell, operatic vocalist, was born in Melbourne, Australia, 1865. She studied under Madame Marchesi in Paris, and made her stage début in 1887 in *Rigoletto*, at the théâtre de la Monnaie, Brussels. Next year she appeared as *Lucia* at Covent Garden. In 1889 played *Ophelia* at Paris grand opera. For her Bemberg specially wrote *Elaine*, produced in London in 1892. She has taken a prominent part in opera in London and New York, and proved herself equally successful in concert. In 1925 she published *Melodies and Memories*.

Mellen, Charles Sanger, American railway official, was born in Lowell, Mass., 1851. He was in the railway service, 1869, beginning as clerk in the cashier's office of the Northern New Hampshire railroad, general manager of New York and New England railroad at Boston, 1892; second vice-president New York, New Haven and Hartford railroad, 1892-96; president of Northern Pacific railway company, 1896-1903; president, New York, New Haven and Hartford railroad company, 1903-13; president B. & M. R. R. Co., 1910-13. Died, 1925.

Mellon, Andrew William, born Pittsburgh, Pa., 1852. Banker and director of numerous financial institutions. Trustee Carnegie Institute. Secretary of the Treasury under Harding, Coolidge and Hoover.

Mencius (*men'shi-us*), **Meng-tse,** Chinese sage, was born in Shan-tung, about 371 B. C. He founded a school on the model of that of his great predecessor Confucius. After his death his disciples collected his conversations and exhortations and published them as the *Book of Mengtse*. The philosophic root of his system is belief in the ethical goodness of man's nature. In his liberal and enlightened system of political economy, he advocated freedom of trade, the deposition of unworthy rulers, division of labor, inspection of work by government, maintenance of good roads and bridges, poor-laws, education and the abolition of war. Chinese ethics are based on his writings. Died about 287 B. C.

Mendelssohn-Bartholdy (*men'del-sōn bär'tōl'dē*), **Felix,** German composer, was born at Hamburg, 1809. In 1835 he accepted the directorship of the Leipzig concerts. Here he was in the center of the musical world of Germany and was stimulated to his highest and most brilliant efforts. His oratorios, *St. Paul* and *Elijah*, are his two best works. Died, 1847.

Mengs (*mengks*), **Anton Raphael,** modern German artist, was born in Aussig, Bohemia, 1728. From his sixth year he was compelled to exercise himself in drawing daily and hourly, and a few years later was instructed by his father in oil, miniature and enamel painting. In 1761 Charles III. invited him to Spain, where his principal works at this time were an *Assembly of the Gods*, and a *Descent from the Cross*. In 1776 he returned once more to Rome, where he died in 1779.

Menzies, Wilfrid Granbrook, university professor, was born in Edinburgh, Scotland, 1877. M.A., Edinburgh, 1897, B.Sc., 1898; studied at Leipzig and Aberdeen; Ph.D., Chicago, 1910. Assistant professor chemistry, Heriot-Watt College, Edinburgh, 1898-1901; professor of chemistry, St. Mungo's College, Glasgow, 1902-08; secretary Medicial Faculty, 1907-08; research associate instructor, Chicago University since 1908. Fellow Royal Society Edinburgh. Author: *Sensitiveness of a Thermoregulator; Phosphoric Acid Hydrates; Molecular Weight Determination of Dissolved Substances; New Methods for Measuring Vapor Pressure; Vapor Pressure of Mercury, and of Sulphur; Vapor Density Apparatus; Constitution of Calomel Vapor; Calomel and Abegg's Anomaly; Critical Temperature of Mercury; Calculation of Critical Temperatures; Physical Constants Formic Acid; Pure Lithiumand Its Coeff. of Expansion; High Temperature Oven*, etc.

Mercator (*mēr-kā'tēr*), **Gerardus,** Flemish geographer of the sixteenth century, was born at Rupelmonde, Flanders, 1512, his real name being Kraemer, "merchant," of which Mercator is the Latinized form. He took his degree as bachelor of philosophy at Louvain, but devoted his later years to the study of geography. He published several important works, including maps and descriptions of France, Germany, and Great Britain. Some of his later works were of a religious character and were supposed to favor the reformed doctrines. He died in Prussia, 1594.

Meredith, George, English poet and novelist, a native of Hampshire, was born in 1828. After studying for some time in Germany he commenced his literary career with the publication of a volume of poems. This was followed by the *Shaving of Shagpat*, an Arabian entertainment; *Farina*, a legend of Cologne; *The Ordeal of Richard Feverel; Poems of the English Roadside; Emilia in England; Rhoda Fleming; Vittoria; Beauchamp's Career; Diana of the Crossways; A Reading of Earth; One of Our Conquerors; Empty Purse; Jump to Glory Jane; The Amazing Marriage; The House on the Beach; Comedy, and the Uses of the Comic Spirit; Selected Poems*, etc. Died, 1909.

Meredith, Owen. See **Lytton, Edward Robert, Earl of.**

Mergenthaler (*mer'gen-tä-ler*), **Ottmar**, inventor of the type-setting machine bearing his name, was born in Wurtemberg, Germany, 1854. He came to the United States in 1872, and received a government position in Washington, D. C., to care for the mechanism of bells, clocks and signal service apparatus. Died at Baltimore, Md., 1899.

Merimee (*mā-rē-mā'*), **Prosper,** French novelist, historian and archaeologist, was born at Paris, 1803. After several anonymous efforts, wrote *Clara Gazul*, and *La Guzla*, Spanish comedies and Illyrian songs; *La Chronique du Règne de Charles IX.*, his most famous historical novel; *Colomba; Carmen; Tamango*. He became a member of the French academy in 1844, was made a senator in 1853, president of the commission for reorganizing the bibliotheque inperiale in 1858, and commander of the legion of honor, 1860. Died at Cannes, 1870.

Merivale (*mer'i-vāl*), **Charles,** English historian, dean of Ely, was born in Exeter, 1808. He was graduated at Cambridge. He wrote a history of Rome from its foundation in 752 B. C. to the fall of Augustus in 476 A. D., but his chief work is the *History of the Romans Under the Empire*, indispensable as an introduction to Gibbon. Died, 1893.

Merle d'Aubigne (*merl-dō-bēn'yā*), **Jean Henri,** ecclesiastical historian, was born near Geneva, Switzerland, 1794. In 1823 he was appointed court preacher at Brussels; but after the revolution of 1830 he declined the post of tutor to the prince of Orange; returning to Geneva, he took part in the institution of the new Evangelical College, and filled its chair of church history until his sudden death in 1872. His *History of the Reformation in the 16th Century* has enjoyed immense popularity.

Merrill, George Perkins, American geologist and educator, was born at Auburn, Me., 1854. He was graduated at the Maine State University, B.S., 1879; Ph.D., professor of geology and mineralogy, George Washington University, 1893-1915; curator dept. geol. U. S. Nat. Mus. beginning 1897. Author: *Stones for Building and Decoration; Rocks, Rock-weathering and Soils; The Non-Metallic Minerals; The Non-Metallic Minerals—Their Occurrence and Uses*, etc. Died, 1929.

Merritt, Wesley, American general, was born in New York, 1836. He was graduated from West Point in 1860; was commissioned brigadier-general of the United States volunteers, 1863; major-general of United States volunteers, 1865; and since the Civil War regularly promoted from lieutenant-colonel to major-general, United States army. He served in the army of the Potomac until June, 1864; was superintendent of United States military academy, 1882-87; assigned, May, 1898, to command of United States forces in the Philippine islands; was in command of department of the East, Governor's island, until retirement in 1900. Died, 1919.

Merry del Val (*mer'rē del väl'*), **Raphael,** pontifical secretary of state, was born in London, of Spanish parents, in 1865. He was at first attached to the diocese of Westminster, acted for many years as *Camerieri Segreto* to Pope Leo XIII., and was appointed president of the Accademia Pontificia in 1899, and Italian archbishop of Nicoeia in 1900. He visited England as papal envoy on the occasions of Queen Victoria's jubilee and King Edward's coronation, and was sent to Canada on an educational mission. He celebrated the twenty-fifth anniversary of his entry into the college of Cardinals in 1928 and was secretary of state under Pope Pius X. Died, 1930.

Mesmer, Friedrich Anton, or Franz, founder of mesmerism, was born near Constance, Switzerland, 1733. About 1772 he took up the opinion that there existed a power of extraordinary medicinal influence on the human body, which he called animal magnetism. In 1778 he went to Paris, where he created a great sensation. He refused an annual pension of 20,000 livres to reveal his secret; but in 1785 a commission of physicians and scientists reported on him unfavorably. He fell into disrepute, and after a visit to England spent the rest of his life in obscurity at Meersburg in Switzerland. Died, 1815.

Metastasio (*mā-täs-tä'zē-ō*), **Pietro Bonaventura,** Italian poet whose real name was Trapassi, was born in Rome, 1698. His tragedy of *Giustino* was produced when he was only fourteen. In 1724 he published one of his most celebrated dramas, *La Didone*, which, with *Il Catone* and *Il Siroe*, conferred on the poet a European name. In 1730 he accepted the post of poet laureate to the imperial court of Vienna. During his sojourn in Vienna he composed his *Giuseppe Riconosciuto, Il Demofoonte*, and the *Attilio Regolo*, his masterpiece. Died at Vienna, 1782.

Metchnikoff (*mech'nē-kōf*), **Iliya,** Russian physiologist and cytologist, was born at Livanovka, Russia, 1845. He studied at Kharkov, and afterward at Giessen and at Munich. He became chief assistant to Pasteur in 1892, and, at the latter's death in 1895, succeeded him as director of the Pasteur Institute at Paris. He is the author of *The Nature of Man; Immunity in Infective Diseases; The Prolongation of Human Life; Optimistic Essays*, etc. Died, 1916.

Metternich (*met'ter-nik*), **Clemens Wenzel, Prince von,** Austrian diplomat and statesman, was born in Coblentz, 1773. After a distinguished diplomatic career he became foreign minister of the empire in 1809. This high office he held with consummate ability for a period of thirty years, exercising, almost without control, the highest authority in Austria. Died, 1859.

Meyer, Adolf, pathologist, alienist, was born in Niederweningen, near Zürich, Switzerland, 1866. LL.D., Glasgow, 1901. He came to the United States in 1892, became a fellow and later docent in neurology, University of Chicago, 1892-95. He is now director of pathology, New York state hospitals; professor of psychiatry, Cornell Medical College, and has been an extensive contributor on neurology, pathology, psychiatry, etc.

Meyer, George von Lengerke, American diplomat and cabinet officer, was born in Boston, Mass., 1858. He was graduated at Harvard, 1879, and then engaged in business as merchant and trustee of Provident Institution for Savings. He was United States ambassador to Italy, 1900-05; ambassador to Russia, 1905-07; postmaster-general, 1907-09; secretary of the navy under President Taft, 1909-13. Died, 1918.

Meyerbeer, Giacomo, German composer, was born in Berlin, 1791. He began to study dramatic composition under Bernhard Anselm Weber; and in 1806 entered the school of Vogler at Darmstadt, where he formed an intimate friendship with Carl Maria von Weber. He subsequently composed an opera, *Jephtha's Vow*, produced at Munich in 1812. His subsequent works include: *Romilda e Costanza; L'esule di Granata; Il Crociato in Egitto; Robert le Diable; Les Huguenots*, in which he reached the climax of his fame; *Le Prophète; Pierre le Grand; Dinorah*. Died, 1864.

Michelangelo Buonarotti, (*mī'kel-ăn'je-lō bwō-när-rōt'tē*), in an age when Christian art had reached its zenith, stood almost unrivaled as a painter, sculptor and architect. He was born in 1475 at Chiusi, in Italy. He learned the rudiments of painting from Bertoldo, a pupil of Domenico Ghirlandaio, and having been admitted as a student into the school which was established by Lorenzo the Magnificent for the study of ancient art, in connection with the collections of statuary, in the Medicean Gardens, he attracted the attention of Lorenzo by the artistic skill with which he had restored the mutilated head of a laughing faun, and was received into the palace of the Medici, where he spent several years.

Pope Julius II. called him to Rome, and commissioned him to make his monument, which was to be erected within St. Peters'. Although this work was never completed on the scale on which it had been designed, and was ultimately erected in the Church of St. Pietro ad Vincula, it is a magnificent composition, and is memorable for having given occasion to the reconstruction of St. Peter's on its present sublime plan, in order the better to adapt it to the colossal dimensions of the proposed monument.

The pope insisted upon Michelangelo painting with his own hand the ceiling of the Sistine Chapel, and he began in 1508 and completed within less than two years his task, which proved one of the most marvelous of his works. The subjects of these cartoons are taken from the book of *Genesis*, while between these and the representations of the persons of the Savior's genealogy are colossal figures of prophets and sibyls.

His great picture of the *Last Judgment* was painted for the altar of the Sistine Chapel. This immense fresco, nearly 70 feet in height, which was completed in 1541, was regarded by contemporary critics as having surpassed all his other works. After its completion Michelangelo turned to the perfecting of St. Peter's, which, by the touch of his genius, was converted from a mere Saracenic hall into the most superb model of a Christian church. He refused all remuneration for his labor, which he regarded as a service for the glory of God. Michelangelo died in 1563 in Rome, but his remains were removed to Florence.

References.—*The Life of Michelangelo*, by J. A. Symonds; *Sonnets of Michelangelo and Campanella*, by J. A. Symonds; *Life and Works of Michelangelo Buonarroti*, by C. Heath Wilson; *Life of Michel Angelo Buonarroti*, by John Harford; *Illustrations, Architectural and Pictorial, of the Genius of Michel Angelo*, by Canina, C. R. Cockerell, and John Harford.

Michelet (*mēsh-le'*), **Jules,** French historian, was born in Paris, 1798. In 1843-45 he became widely known, not only in his own country, but also in England, by his attacks upon the Jesuits in his three works: *The Jesuits; Priests, Women, and Families*, and *The People*. He was the writer of many other works, several of them of considerable interest. Died, 1874.

Michelson (*mī'kel-sun*), **Albert Abraham,** scientist, educator, was born at Strelno, Germany, 1852. He was graduated at the United States naval academy, 1873; was midshipman of United States navy, 1873; instructor of physics and chemistry, United States naval academy, 1875-79; Sc.D., University of Cambridge, 1899; LL.D., Yale, 1901; University of Pennsylvania, 1906. He was professor of physics at the Case school, Cleveland, Ohio, 1883-89; Clark University, 1889-92, and professor and head of the department of physics, University of Chicago, beginning 1892. Was awarded the Nobel prize for physics ($40,000) by the Swedish academy of sciences, 1907.

Mifflin, Thomas, American general and statesman, was born in Philadelphia, 1744; was originally a merchant of his native city. He was elected to the continental congress of 1774, joined the revolutionary forces, and rose to be major-general in 1777, but was removed for his connection with the Conway cabal, 1778. In 1782 he was sent to the federal congress, and in 1783 became its president; governor of Pennsylvania, 1790-99. Died, 1800.

Milburn, John George, American lawyer, was born near Sunderland, England, 1851. Was admitted to the bar, 1874, and practiced in Buffalo. Member of the firm of Carter, Ledyard & Milburn since 1904. He was president of the Pan-American exposition, 1901. He was a trustee of the New York life insurance company and member of the board of commissioners of statutory consolidation.

Miles, Nelson Appleton, American general, was born in Westminster, Mass., 1839. At the outbreak of the Civil War he was engaged in mercantile pursuits in Boston, Mass.; entered the service as first lieutenant of the 22d Massachusetts regiment in 1861. In 1862 he was commissioned colonel of the 61st New York regiment, which he led at Fredericksburg and Chancellorsville, where he was severely wounded. He was promoted brigadier-general, 1864, and breveted major-general for gallantry at Ream's station in December, 1864. At the close of the war he was commissioned colonel of the 40th United States infantry. He was promoted brigadier-general in 1880; major-general in 1890 and succeeded Lieutenant-General John M. Schofield as commander of the army in 1895. On the reorganization of the army in 1901, the grade of lieutenant-general was revived and he was promoted to it. Retired 1903. Died, 1925.

Mill, James, British historian and political economist, was born near Montrose, Scotland, 1773. He studied at the University of Edinburgh, where he distinguished himself in Greek and in moral and metaphysical philosophy. He wrote much of standard value, including *History of British India; Liberty of the Press; Law of Nations; Elements of Political Economy*; and *Analysis of the Phenomena of the Human Mind*. Died, 1836.

Mill, John Stuart, English philosopher and economist, son of the preceding, was born in 1806. He was educated at home by his father. In 1820 he went to France, where he made himself master of the French language and occasionally attended public lectures on science. In 1823 he entered the India house as a clerk in the examiner's office, where his father was assistant examiner. His first publication consisted of articles in the *Westminster Review*. He established his reputation, in 1843, by the publication of *A System of Logic, Ratiocinative and Inductive*, a work the success of which paved the way for *The Principles of Political Economy*. He was a member of parliament, 1865-68. Died, 1873.

Millais (*mi-lā'*), **Sir John Everett,** English painter, was born of Jersey parentage, at Southampton, 1829. He studied at the royal academy, and at seventeen exhibited a notable historical work. He then early associated with Rossetti and Hanolm Hunt, and remained for over twenty years under their influence. His chief subsequent work, in which technical interest predominates, was mostly portraiture, including Gladstone and Beaconsfield. He was made R. A. in 1863, a baronet in 1885, and became president of the royal academy in 1896. Died, 1896.

Millay, Edna St. Vincent, was born at Rockland, Maine in 1892. She was graduated from Vassar College in 1917 and since then has lived in New York City. Probably her greatest poem and one

of the most remarkable of modern times is "*Renascence*," written when she was but nineteen years old. She has published two volumes of poetry, *Figs from Thistles* and *Second April*, and a poetic play, *Aria da Capo*, first performed by the Provincetown Players in New York City.

Miller, Hugh, Scottish geologist, was born at Cromarty, 1802. In 1829 he published *Poems Written in the Leisure Hours of a Journeyman Mason*, followed by *Scenes and Legends of the North of Scotland*, in 1835. His editorial labors, during the heat of the religious disruption struggle were immense, and, worn out by overwork, he shot himself dead in 1856.

Miller, Joaquin, pen-name of Cincinnatus Heine Miller, American poet. He was born in Indiana, 1841, became a miner in California, fought in the Indian wars, was an express messenger, practiced law in Oregon, edited a paper suppressed for disloyalty, in 1866-70 was a county judge in Oregon, was a Washington journalist, and in 1887 settled in California as a fruit-grower. His works include: *Songs of the Sierras; Songs of the Sunlands; Songs of Italy; Songs of the Mexican Seas; '49 or the Goldseekers of the Sierras.* Died, 1913.

Millet (*mē'le'*), **Jean Francois,** French painter, was born in the village of Gruchy, France, 1814. He first worked as a farm laborer, but his taste for painting was so evident that he was sent to study with Mouchel, a painter in Cherbourg. He painted small pictures, portraits and signboards in his first efforts to support himself. Some of his best known works are: *The Gleaners; Waiting; The Angelus; The Man With the Hoe.* His most celebrated picture, *The Angelus*, sold for over $100,000. He died in 1875 at Barbizon, which, under his influence, had become an artist colony.

Millikan, Robert Andrews, American physicist, was born at Morrison, Illinois, in 1868. He studied at Oberlin College, and at Columbia, Berlin and Gottingen universities. He was on the faculty of the University of Chicago from 1896 to 1921, when he was appointed director of the laboratory of physics at the California Institute of Technology, trical theory of atoms has been put on a sound experimental basis. He was awarded the Nobel prize for physics in 1923.

Mills, Clarke, American sculptor, was born in Onondaga county, New York, 1815. In 1850 he completed a model of an equestrian statue of Jackson, for Lafayette square, Washington. He produced a perfect cast in 1852, and the statue was set up the following year. He made also the equestrian statue of Washington, dedicated in Washington on February 22, 1860, and the colossal statue of Liberty, from a design by Crawford, which crowns the dome of the capitol, finished in 1863. He died at Washington, D. C., 1883.

Mills, Roger Quarles, American lawyer, ex-United States senator, was born in Todd county, Ky., 1832; was admitted to the bar at twenty years of age. He was elected to the Texas house of representatives, 1859. After the fall of General James Deshler, he took command of the brigade at the battles of Missionary Ridge, 1863; New Hope church, and Atlanta, 1864, where he was twice wounded. He was a member of congress, 1873-92; United States senator, 1892-93, and 1893-99, and was author of the Mills' tariff bill. Died, 1911.

Mills, William Lennox, bishop of Ontario since 1901, was born at Woodstock, Ontario, and was graduated at the Western University, London, 1872; D.C.L., LL.D., Queen's University, Kingston; rector of the crown rectory of St. John's, province of Quebec, 1875; rector of Trinity church, Montreal, 1882; archdeacon of St. Andrew's, diocese of Montreal, 1896; bishop coadjutor of Ontario, with title of bishop of Kingston, 1900.

Milman, Henry Hart, poet and church historian, was born in London, 1791. He was educated at Greenwich, Eton, and Brasenose College, Oxford, where in 1812 he won the Newdigate prize with his *Belvidere Apollo*, best of Oxford prize poems; 1849, dean of St. Paul's. His *Poems an Dramatic Works* comprise *Fazio, a Tragedy; Samor;* and—his masterpiece—*The History of Latin Christianity to the Pontificate of Nicholas V.* Died, 1868.

Miltiades (*mil-ti'ā-dēz*), Athenian general, "tyrant of the Chersonese," yet, as Byron sings, "freedom's best and bravest friend," was born about 540 B. C. He particularly distinguished himself by the great victory which he gained at Marathon with a small body of Athenians and 1,000 Plateans, 490 B. C., over the Persians. He failed in an expedition against Paros, was fined fifty talents, which he was unable to pay, and consequently died in prison, 489 B. C.

Milton, John, English poet, was born in London 1608. He took his degree of M.A. at Cambridge, and, having relinquished the idea of following divinity or law, he left in 1632, and went to live at his father's house at Horton, in Buckinghamshire. There, he lived five years, reading the Greek and Latin poets, and composing *Comus, Lycidas, Arcades, L'Allegro*, and *Il Penseroso*. On the death of his mother, in 1637, he went abroad, visiting the chief Italian cities, and making the acquaintance of Grotius and Galileo.

the times, and in the course of that and the following year he issued the treatise *Of Reformation; The Reason of Church Government Urged against Prelacy; Prelatical Episcopacy;* and *An Apology for Smectymnuus.* After the execution of Charles he was appointed Latin secretary to the council of state. In his new position his pen was as terrible as Cromwell's sword. In *Eikonoklastes*, he made a savage but effective reply to the famous *Eikon Basilike;* and in his *Pro Populo Anglicano Defensio* he assailed his opponent, Claude de Saumaire, better known as *Salmasius*, with such a storm of eloquence and abuse, that the latter, who died in Spain 1653, is believed to have lost his life through chagrin. Milton at least flattered himself with having "killed his man."

In 1643 he married Mary Powell, who left him in a few weeks, which led to his writing four treatises on divorce, although he afterward became reconciled to her. His second wife, whom he married in 1656, was a daughter of Captain Woodcock, of Hackney. She died, 1658, and her husband has enshrined her memory in an exquisitely pure and tender sonnet.

Unceasing study had affected his eyesight, and about 1654 Milton became totally blind. After the restoration, he retired from affairs; he was obnoxious to the reigning power, and it is said that he was once in custody of the sergeant-at-arms. On the publication of the Act of Oblivion, he married his third wife, Elizabeth Minshull, and shortly after removed to a house in Artillery Walk, London, where he was busy with *Paradise Lost.*

This great poem was originally planned as a mystery, then some idea of treating it as a drama haunted the author's mind; finally however, he resolved to write an epic poem on the *Fall of Man.* The poem was published in 1667. He received five pounds from his publisher, and a promise of five pounds more when 1,300 copies should have been sold. In 1670 he published his *History of England.* Next year he printed *Paradise Regained* and *Samson Agonistes.* He died 1674, and was buried in St. Giles Church, London.

References.—Masson's *Life of Milton* and his edition of the *Poems;* also the *Life* by Mark Pattison; concordance to the *Poems* by Dr. Bradshaw; Trent's *A Short Study;* and Raleigh's *Study.*

Mirabeau (*mē'rà'bō'*), **Gabriel Honora Riquetti, Comte de,** French orator, was born at Bignon, near Nemours, 1749. He wrote many effective political pamphlets, particularly against the financial administration of Calonne. When the states-general was convened, he sought to be elected a representative of the nobles of Provence, but was rejected, and left them with the threat that, like Marius, he would overthrow the aristocracy. To suppress insurrection, he effected in 1789 the institution of the national guard. In 1790 he was elected president of the club of the Jacobins, and, in 1791, of the national assembly. Both in the club and in the assembly he displayed great boldness and energy; but soon after his appointment as president of the latter he died, 1791.

Mitchell, Donald Grant, "Ik Marvel," American novelist and essayist, was born at Norwich, Conn., 1822. He was graduated at Yale College, and pursued law studies in New York City. In 1853 he was appointed United States consul at Venice, and in 1868 became editor of the *Atlantic Monthly.* His best known works are: *Dream Life; Reveries of a Bachelor; My Farm at Edgewood; English Lands, Letters, and Kings;* and *American Lands and Letters.* Died, 1909.

Mitchell, John, American labor leader, was born at Braidwood, Ill., 1870. He began work in coal mines, 1882, and later, as worker or labor leader, was identified with mines and mining. His official connection with the United Mine Workers of America began in 1895, and from 1899 to 1908 he served as president of that organization. He directed the strikes of the anthracite miners in 1900 and 1902, and was vice-president of the American Federation of Labor in 1898, and reelected in 1900. He was the author of a book, *Organized Labor, Its Problems, Purposes.* Died, 1919.

Mitchell, Maria, American astronomer, was born at Nantucket, Mass., 1818. In 1847 she was awarded a gold medal by the king of Denmark for the discovery of a comet. She was employed in observations connected with the coast survey, and in compiling the nautical almanacs. In 1865 she became professor of astronomy at Vassar College, and held that position until the year before her death at Lynn, Mass., 1889.

Mitchell, Silas Weir, American physician, poet and novelist, was born at Philadelphia, Pa., 1830. He studied at the University of Pennsylvania,

was graduated at Jefferson Me
LL.D., Harvard, Edinburgh, P
lished a practice in Philadelphia
as a physiologist and especially
stood at the head of the profes
ment of medical science. A
Neurology; Serpent Poisons;
Guinnes; Adventures of Francois
of a Quack. Died, 1914.

Mitford, Mary Russell, Englis
at Alresford, Hants, 1786. She
in Chelsea, and her first volum
in 1810, and was followed by t
Her charming sketches of
scenery, and character were
editors, but at length found a
Magazine, and were collected
volumes. She died in 1855 at

Mithridates (*mith'ri dā'tēz*), "
B. C., King of Pontus, Armen
became king when about 13
quered the Roman provinces
armies against the Greeks,
treaty with Sulla. In desper
suicide. Though a despot he
art.

Mix, Tom, movie actor, is a
order. Brought up on the
best work is in cowboy roles
by Otis Turner, and sprang
inence.

Modjeska (*mo-jes'kà*), **Helena**
née Opido), actress, was bor
1844. She made her début
1861; soon became leading
country; married G. O. Mo
in 1868, Charles Bozenta Ch
Her first appearance in Engl
cisco, 1877, in *Adrienne Leco*
here after two London enge
leading Shakespearean parts,
etc. She retired from the st
1909.

Mohammed, (*mō-ham'ed*),
founder of the Mussulma
in Mecca in 570 or 571, d
His family (Hashem), o
tribe of Koreish, were her
the Caaba, yet his pare
father Abdallah, a mercha
after his birth. At the
lost his mother, and was
father Abd-el-Mottalib.
lost also his grandfath
adopted by his uncle, A
the key of the Caaba.

With his uncle, young
ninth or twelfth year) m
Syria and other countr
quainted with a Christi
Nestorian), who predict
his twenty-fifth year he
Mecca, and then joined t
trader named Saib. At
six days' journey south o
entered the service of
Khadijah, whom he fina
she was sixteen years l
four daughters and two
young.

From his thirtieth to
hammed frequently reso
of Mt. Hara for reli
There, amid spasmodic
his first vision, in whi
commanded him to reci
said. The revelations
to the end of his life,
Mohammed to several
his death collected.

His wife was his firs
first three years of his
tives and friends ack
prophet. In the fourth
claimed himself a prop
imprecations. To prote
by his uncle Abu Tal
outside of Mecca, wh
years. The Koreishites
disciples. When the
he returned to Mecca
expulsion from Mecca
brated journey to hea

Some pilgrims fro
verted in 621, and th
lished on a firm basis
lems begins with the
the Hegira. The n
changed into Medine
the prophet" (Medi
year of the Hegira
Medina, and procla
unbelievers. In an e

tween 314 Moslems and 600 Meccans, under the chief of Mecca, the Moslems were victors. In the following years Mohammed was defeated by the Koreishites in the battle of Mt. Ohod, and besieged for a time in Medina. Failing to gain admittance into Mecca with his followers as pilgrims, he led them against several Jewish tribes, with some success. He now sent written demands to Chosroes II. of Persia, the Abyssinian king, the Byzantine emperor Heraclius, the governor of Egypt, and the chiefs of several Arab tribes. He punished the Meccans, who had broken faith with him and compelled them to acknowledge him as a sovereign and a prophet. The possession of Mecca decided the victory of the new religion in Arabia, and the subjection of a majority of the inhabitants of Arabia to Mohammed's rule and religion became complete.

In 631 he proclaimed a holy war against the Byzantine empire, which proved a complete failure. In the following year Mohammed made his last pilgrimage to Mecca at the head of at least 40,000 pilgrims. Three months after his return to Medina he was taken seriously ill. He himself announced in the mosque the approach of his death, and he expired in the arms of Ayesha, his favorite wife. His only surviving child was Fatima, the wife of Ali, and the ancestress of all the sherifs or nobles of the Mohammedan world. Mohammed possessed natural eloquence, a keen intellect, an overwhelming fluency and great courage.

References.—Muir's *Life of Mahomet*, and *Mahomet and Islam;* Ameer Ali's *The Life and Teachings of Mohammed;* and Margoliouth's *Mohammed and the Rise of Islam.*

Moliere (*mo-lyār*), the assumed name of Jean Baptiste Poquelin, French dramatist, was born at Paris in 1622. His father was a tradesman connected with the court, and he received a good education. He studied law but gave it up for the career of an actor, assuming the name of Molière.

After gaining great success in the provinces he settled in Paris in 1658, having previously produced his two comedies *L'Etourdi* and *Le Depit Amoureux.* In the following year his reputation was greatly advanced by the production of the *Precieuses Ridicules*, a delicate satire on the prevailing affectation of the character of *bel esprit*, on the pedantry of learned females, and on affectation in language, thoughts and dress. It produced a general reform when it was brought forward in Paris. Continuing to produce new plays and performing the chief comic parts himself he became a great favorite both with the court and the people, though his enemies, rival actors and authors, were numerous. Louis XIV. was so well pleased with the performances of Moliere's company that he made it specially the royal company, and gave its director a pension.

In 1662 Moliere made an ill-assorted marriage with Armande Béjart, upward of twenty years younger than himself, a union that embittered the latter part of his life. Among his works, other than those mentioned, may be noted: *L'Ecole des Maris, L'Ecole des Femmes, Le Mariage Force, Don Juan, Le Misanthrope, Le Medecin Malgre lui, Le Tartuffe, L'Avare, George Dandin, Les Fourberies de Scapin, Le Bourgeois Gentilhomme,* and *Le Malade Imaginaire.*

Moliere died in 1673 of an apoplectic stroke, a few hours after playing in *Le Malade Imaginaire.* As a player he was unsurpassed in high comic parts; and in the literature of comedy he bears the greatest name among the moderns, after Shakespeare. He borrowed freely from Latin, Spanish and Italian writers, but whatever materials he appropriated he so treated them as to make the result entirely his own and original. The archbishop of Paris at first refused him burial as being an actor and a reviler of the clergy; but the king himself insisted on it.

References.—*Life* by Despois and Mesnard prefixed to his works; and also those of Taschereau, Trollope, and Hatton.

Moltke (*mōlt'kė*), **Hellmuth Karl Bernhard, Count von,** chief marshal of the German empire, was born in Parchim, in Mecklenburg, 1800. He was graduated from the military academy at Copenhagen, 1818, and entered the Prussian service in 1822. He became lieutenant-general of the Prussian army in 1859, and sketched the plans of the campaigns against Denmark, 1864, and Austria, 1866. He was the commander-in-chief in the Franco-German war, 1870-71, and to his brilliant strategy are ascribed the splendid victories of the German arms. He was generally regarded as the first strategist of his day; was created a count in 1870, and chief marshal of the German empire in 1871. Died at Berlin, 1891.

Mommsen (*mōm'zen*), **Theodor,** German historian, was born at Garding in Sleswick, 1817, son of a pastor. In 1852 he became professor of Roman law at Zürich, in 1854 at Breslau, and in 1858 of ancient history at Berlin. He edited the monumental *Corpus Inscriptionum Latinarum,* helped to edit the *Monumenta Germaniae Historica,* and from 1873 to 1895 was secretary of the academy of science. His fine library was burned in 1880. His greatest work, the *History of Rome,* was followed by *The Roman Provinces.* Died, 1903.

Monet, Claude, French painter, was born in Paris, 1840. He did little at school but draw in the margins of his books. At twenty he joined the regiment of the Chasseurs d'Afrique and spent two years in the desert, till he was sent home with fever. He entered the studio of the classical painter Gleyre, but soon left and associated with "impressionists," painters who were striving to catch fleeting aspects rather than to record in detail. He became a "plein air" painter, producing remarkable effects of light in his works, and a recognized leader of the Impressionistic School. Among his works are views of cathedrals (Rouen under different lights), "*Le Bassin des Nympheas,*" "*Saule Pleureur,*" and a view of the Seine at Giverny. Died, 1926.

Money, Hernando De Soto, lawyer, ex-United States senator, was born in Holmes county, Miss., 1839. He was educated at the University of Mississippi, Oxford, Miss.; served in the confederate army from the beginning of the war until 1864. In 1897 was appointed to the United States senate to fill a vacancy caused by the death of Hon. J. Z. George. In 1898 he was elected to fill out the unexpired term ending 1899, and was then elected to succeed himself, 1899-1911. Died, 1912.

Monge (*mōnzh*), **Gaspard,** French mathematician and physicist, was born at Beaune, 1746. After he had helped to found the Ecole Polytechnique, he was sent by the directory to Italy. Here he formed a close friendship with Bonaparte, followed him to Egypt, and was made successively professor in the Ecole Polytechnique, a senator and count of Pelusium. He died at Paris, 1818.

Monk, George, duke of Albemarle, English general, was born in County Devon, 1608. After a brief service in Holland he fought at first on the side of Charles I. during the English civil war; then, changing to the other side, he commanded a republican army in Ireland, 1646-50, and in 1651 reduced Scotland to submission to Cromwell. After the death of the protector in 1658, Monk proclaimed the former's son, Richard Cromwell, his successor, and himself retained command of the army in Scotland. With that army, in 1660, he marched upon London, and declared for the restoration of Charles II. After gaining a great victory at sea over the Dutch in 1666, Monk died in 1670.

Monmouth, James Fitzroy, Duke of, English general, was born at Rotterdam, 1649. He was a natural son of Charles II. and Lucy Walters, and as such was loaded with rank and honors. In time he became the idol of the English nonconformists. In 1684 he went to Antwerp, and remained abroad until the death of the king, when he resolved to embark for England. He landed, in 1685, with a small force, at Lyme-Regis, and issued a manifesto declaring James to be a murderer and usurper, and asserting his own legitimacy and right by blood to be king of England. On the fifth day, however, his force consisted only of a rabble of some 2,000 rudely armed peasants and farmers. He was completely defeated at the battle of Sedgemoor, the last great fight on English soil, was taken prisoner, and, on July 15, 1685, was brought to the scaffold and beheaded on Tower hill.

Monroe, James, fifth president of the United States, was born in Westmoreland county, Va., 1758. He was graduated at William and Mary College, served in the revolutionary army, was present at several battles, and in 1783 entered the general congress as a delegate from his native state. During the years 1799-1802, he filled the office of governor of Virginia. In 1802, as the associate of Livingston, he was dispatched on a special mission to negotiate for the purchase of Louisiana. In 1803, in England, and in 1805, in Spain, he performed special diplomatic services for his country. In 1816 he was elected president of the United States by the republican (democratic) party, and made himself very popular. His most noteworthy acts, perhaps, were the recognition of the independence of Mexico and the South American republics, and the promulgation of what has since been called the "Monroe doctrine." After being twice president, he was justice of the peace, a visitor of the University of Virginia, and member of a state convention. He died in 1831—like his predecessors, Adams and Jefferson—on the 4th of July.

Montagu, Lady Mary Wortley, English beauty, wit and writer, was born at Thoresby, in Nottinghamshire, about 1689, eldest daughter of Evelyn Pierrepont, duke of Kingston. She was carefully educated, and manifested precocious talents. Pope was among her friends, but he at length quarreled with and libeled her. In 1739 her declining health induced her to settle on the continent, whence, however, she returned in 1761. She died in the following year. Her *Letters* place her at the head of feminine epistolary writers in Great Britain, and leave her few rivals in other countries.

Montaigne (*mon-tān'* Fr. pron. *mon-tan-y'*), **Michel Eyquem de,** famous French essayist, was born in 1533 at the castle of Montaigne, in Périgord. He learned Latin conversationally before he could speak French, and Greek was also an early acquisition. At the age of six he became a pupil at the Collége de Guienne at Bordeaux, and at thirteen he began to study law. Little is known of his youth and early manhood.

He was a parliamentary counsellor from 1554 till 1567; he seems to have seen some military service in 1556; he married the daughter of a fellow counsellor; and at some period was appointed a gentleman of the chamber to the king. In 1571, however, he retired to his ancestral chateau and devoted himself to peaceful study and meditation. In 1580 he published the first two books of his *Essais,* and immediately afterward set out on a journey through Germany, Switzerland and Italy to restore his health, which had been shattered by the attacks of a hereditary disease.

In 1582 and 1584 he was chosen mayor of Bordeaux. In 1588 he republished his *Essais,* with the addition of a third book. After a last visit to Paris (in the course of which he was thrown into the Bastille for a short time by the Leaguers) Montaigne seems to have dwelt quietly in his chateau. He died of quinsy in 1592.

Montaigne's *Essais* have at all times been one of the most popular books in the French language. They embrace an extraordinary variety of topics, which are touched upon in a lively entertaining manner, with all the raciness of strong native good sense, careless of system or regularity. Sentences and anecdotes from the ancients are interspersed with his own remarks and opinions, and with stories of himself in a pleasant strain of egotism, and with an occasional license, to which severer moralists can with some difficulty reconcile themselves.

His *Voyages,* a diary of his journeys in 1580-82 were published in 1774.

References.—See *Life,* by Alphonse Grun and Bonnefon; and Dowden's *Montaigne.*

Montalembert (*mōN'tà'lāN'bār'*), **Charles Forbes, Comte de,** French historian, orator and publicist, was born in London, 1810, his mother being a Scotchwoman. He became a peer of France on the death of his father. In 1858 he published a pamphlet entitled, *Un Dèbat sur l'Inde,* eulogising English institutions, and depreciating those then existing in France. For this pamphlet he was summoned before the bar of the correctional police, and was sentenced to imprisonment for six months, and to pay a fine of 3,000 francs; and, though this penalty was immediately remitted by the emperor, Montalembert appealed against the decision of the court, was again condemned, and once more pardoned, very much to his own disgust. He died at Paris, 1870.

Montcalm (*mont-kām'*), **Louis Joseph St. Veran, Marquis de,** commander-in-chief of the French troops in Canada, 1756-59, was born near Nimes, France, 1712. He captured Fort Ontario at Oswego, 1756; Fort William Henry in 1757; repulsed the British under Abercrombie at Ticonderoga in 1758; repelled Wolfe's attack on Quebec, 1759; and was defeated and mortally wounded in the battle of Quebec, September 13 of the same year.

Montesquieu (*mon'tes-ku'*; Fr. *mon'tes'ke-u*) **Charles de Secondat, Baron de la Brede et de,** French philosophical writer was born in the Chateau de la Bréde, near Bordeaux, 1689. In 1716 he became president of the Parlement of Bordeaux. His first published work, the *Lettres Persanes,* was a daring and subtle satire on the follies of the day, disguised in the form of letters from a Persian noble.

He gave up his president's office in 1726, and then visited Germany, Hungary, Italy, Holland and England. In England he stayed for eighteen months, and imbibed a deep admiration for its social and political insti-

tutions. He returned to France in 1731, and in 1734 he published his *Considerations sur les Causes de la Grandeur et la Decadence des Romains.* In 1748, *L'Esprit des Lois,* the result of twenty years of labor, was published, and at once placed its author among the greatest writers of his country. Among his lesser works are *Dialogue de Sylla et d'Eucrate; Le Voyage de Paphos; Essai sur le Gout* (unfinished); *Arsace et Ismenie* (probably a work of his youth); and *Lettres Familieres.* He died 1755.

References.—Ilbert's *Montesquieu* (Romances Lecture, 1904), and Vian's *Hist. de Montesquieu, sa Vie et ses Wuvres;* Lowell's *Eve of the French Revolution.*

Montessori, Maria, Italian educator, was born in 1870. She was so successful in her teaching of feeble-minded children that she determined to apply the same method to the education of normal children. The central idea of her system is "self education," allowing the child to choose those activities in which he is most interested. The system is widely used throughout the United States.

Montfort, Simon de, English general and statesman, was born in France about 1208, son of a French count. He went to England in 1230. He here attached himself to Henry III., married the king's sister, and was sent to govern Gascony in 1248. He returned in 1253, and passed over to the side of the barons, whom he ultimately led in the struggle against the king. He sketched a constitution for the country, and summoned the most representative parliament that had yet met, but as he aimed at the welfare not of the barons only, but of the common people as well, the barons began to distrust him. He was slain at Evesham, 1265.

Montgolfier (*mōn'gōl'fyā'*), **Jacques Etienne,** and **Joseph Michel,** two brothers, distinguished as the inventors of balloons, were the sons of a celebrated paper manufacturer at Annonay, France. The former was born in 1745, and the latter in 1740. Joseph was a man of much genius and little education; but the two brothers were fitted to supplement each other's deficiencies, and together they made many discoveries, and were both received as members of the French academy. Joseph invented the hydraulic screw, the calorimeter, etc., and in the latter part of his life filled a post in the department of arts and manufactures. He died at Paris in 1810, eleven years after his brother.

Montgomery, James, British poet, was born in Scotland, 1771. He was intended for a Moravian preacher, but, showing little aptitude, became a shop boy. In 1797 he published a small volume of poems, *Prison Amusements,* followed by *The Wanderer of Switzerland.* Died, 1854.

Montgomery, Richard, American general, was born in Ireland, 1736. In 1772 he resigned his commission in the British service, and settled in Dutchess county, N. Y., representing it in the continental congress, 1775. As brigadier in the colonial army he took Montreal, and was killed in the assault on Quebec, December, 1775.

Moody, Dwight Lyman, American preacher and revivalist, was born in Massachusetts, 1837. He renounced Unitarianism, became a Congregationalist, served during the Civil War on the Christian commission, and from 1865 entirely abandoned business and devoted himself to religious work in Chicago and elsewhere. His church and schoolhouse at Chicago having burned down in 1871, he went to England to raise funds for rebuilding them, and was successful in his object. He established a school for Christian workers at Northfield, Mass., and a Bible institute at Chicago. Died, 1899.

Moody, William Vaughn, American poet and playwright, was born at Spencer, Indiana, in 1869. He was educated at Harvard, and taught English there in 1894-5, leaving to become instructor and later assistant professor in the University of Chicago. *The Fire Bringer,* a lyrical drama, *The Masque of Judgment,* and *Poems* place him among the foremost American poets. *The Great Divide,* 1907, is among the best American plays. Moody died in 1910.

Moore, George Foot, American scholar and educator, professor in Harvard University since 1902, was born at West Chester, Pa., 1851. He was graduated at Yale College, 1872; D.D., 1897; Union theological seminary, N. Y.; Tübingen, LL.D., Western Reserve, 1903; Harvard, 1906. Author: *The Book of Judges in Hebrew, Index to the Journal of the American Oriental Society.* He was appointed Roosevelt lecturer at Berlin University, 1909.

Moore, Sir John, British general, was born in Glasgow, Scotland, 1761. He served in the British army during the American war; became a member of parliament in 1784; served in Corsica, 1793-94. In 1798 he was made major-general. On his return from an expedition in aid of Sweden, he was sent to Portugal to command an army to coöperate with the Spaniards, 1808. He was obliged to retreat from Salamanca to the sea, won the victory of Corunna in 1809, but fell in the battle.

Moore, John Bassett, American publicist, was born in Smyrna, Del., 1860. He was graduated at the University of Virginia, 1880; LL.D., Yale, 1901. He studied law at Wilmington, Del., and in 1885, was appointed law clerk in the state department at Washington, D. C. In 1886 he became third assistant secretary of state, and was retained in that position until he resigned, 1891, to become professor of international law and diplomacy at Columbia University. In 1913, appointed counsellor of the department of state by President Wilson. He is an authority on international law. Author: *Report of Extra-territorial Crime; Report on Extradition; Extradition and Interstate Rendition.*

Moore, Thomas, Irish poet, was born in 1779. He was graduated at Trinity College, Dublin, 1798, and in 1799 went to London to study law, taking with him a translation of the *Odes of Anacreon* which he published in 1800. In 1801 he published *The Poetical Works of the Late Thomas Little, Esq.,* a pseudonym suggested by his diminutive stature. His *Irish Melodies* have enjoyed a popularity surpassing that of any similar poems in the language. In 1817 he completed *Lalla Rookh,* the most elaborate of his works. His most important prose work was his *Notices of the Life of Lord Byron.* His remaining works comprise: *The Summer Fête,* a poem; *Memoirs of Lord Fitzgerald.* Died, 1852.

Moran, Thomas, American artist, was born at Bolton, in Lancashire, England, 1837. His early life was spent at Philadelphia, where he learned engraving. He then studied painting in England, France, and Italy. His large paintings, the *Grand Canon of the Yellowstone,* and the *Chasm of the Colorado,* were bought by congress for $20,000. His other works are mostly of the same class. Died, 1926

More, Hannah, English writer, daughter of the village schoolmaster of Stapleton, near Bristol, was born in 1745. In 1774 she was introduced to the Garricks, Johnson, Burke, Reynolds and the best literary society of London. Led by her religious views to withdraw from society, she retired, on the publication of her *Sacred Dramas,* to Cowslip Green near Bristol, where she did much to improve the condition of the poor, and still helped by her writings to raise the tone of English society. In 1828 she settled at Clifton, where she died in 1833.

More, Sir Thomas, English statesman, was born at London, 1478. He was educated at Oxford, and at Lincoln's Inn. In 1514 and 1515 he was sent on commercial embassies to the Netherlands, and after his return became a privy councillor. In 1521 he was knighted and made treasurer of the exchequer. In 1523 he was chosen speaker of the house of commons. He constantly refused to lend his authority to Henry VIII.'s project of divorce and second marriage. In 1534 he refused to swear allegiance to the act of succession for securing the throne to the offspring of Anne Boleyn, and was committed to the Tower. In July, 1535, he was brought to the bar of the high commission charged with traitorously attempting to deprive the king of his title as supreme head of the church, and was condemned. He was executed July 6th. He wrote *Utopia,* and several other works, most of them in Latin.

Moreau (*mō'rō'*), **Jean Victor,** celebrated French general, was born at Morlaix, 1763, and educated for the bar. He entered the army before he was eighteen, but was taken from it by his father. The revolution enabled him to gratify his wishes, and he made his first campaign under Dumouriez, 1792. He gained the rank of brigadier-general in 1793, and that of general of division in 1794. In the latter year he commanded the right wing of Pichegru's army, and obtained great successes in the Netherlands. Having engaged with Pichegru, Georges, and other royalists in a plot against the consular government, he was brought to trial, 1804, and sentenced to two years' imprisonment, but was allowed to come to America. Here he remained until 1813, when he was prevailed upon to join the allied sovereigns, and appear in arms against his country. He was, however, mortally wounded at the battle of Dresden, and died September 1, 1813.

Morgagni (*mōr-gän'yē*), **Giovanni Battista,** Italian anatomist, was born at Forli, Italy, 1682. He was professor at Padua from 1715, and is the reputed founder of pathological anatomy, to which his most celebrated works refer. His chief book is *On the Seats and Causes of Diseases Investigated by Anatomy.* He died at Padua, 1771.

Morgan, John Pierpont, American banker, financier, and art collector, was born in Hartford, Conn., 1837. He was graduated at English high school, Boston; studied at the University of Göttingen, Germany, and entered the bank of Duncan, Sherman and Company, 1857. Became a member, 1871, of the firm Drexel, Morgan and Company, now J. P. Morgan and Company, leading private bankers of the United States, with important branch houses in London and Paris. Gave site, buildings and funds amounting to about $1,500,000 to Lying-in hospital, New York, and large donations to the New York trade schools, the cathedral of St. John the Divine, Harvard Medical College, and many other institutions. He made valuable gifts to the American museum of natural history, Metropolitan museum of art, and New York public library, and owned famous collections of pictures, books, manuscripts, curios, etc. He was president of the Metropolitan museum of art, and member of many societies, clubs, etc. Died in Rome, Italy, 1913.

Morgan, John Tyler, American soldier, lawyer and statesman, was born at Athens, Tenn., 1824. He removed to Alabama in 1833; was admitted to the bar in 1845. After the Civil War he resumed practice of law at Selma, Ala.; was a presidential elector, 1876; and from 1877 to 1907 was one of the ablest members of the United States senate. He was appointed by President Harrison as arbitrator on Behring sea fisheries, 1892, and was appointed by President McKinley, in 1898, one of the commissioners to organize government in Hawaii, after passage of annexation bill. Died, 1907.

Morley, Christopher, American author and editor, was born at Haverford, Pa., in 1890. He was an undergraduate at Haverford College, and Rhodes scholar at Oxford from 1910 to 1913. He edited successively *The Ladies Home Journal, The Philadelphia Public Ledger,* and *The New York Evening Post.* He wrote essays, travel notes, poetry, short stories and novels. Among his works are *Hide and Seek, Parnassus on Wheels, Chimney Smoke, Where the Blue Begins,* and *Thunder on the Left.*

Morley, John, British statesman and writer, was born in Blackburn in 1838, and educated at Cheltenham and Oxford. He edited, among other publications, the *Fortnightly Review,* from 1867 to 1882; the *Pall Mall Gazette,* from 1880 to 1883, and *Macmillan* in 1883-85, and, after two unsuccessful candidatures, in 1869 and 1880, entered parliament in 1883, as member for Newcastle. From the first, he advocated home rule for Ireland, and his articles in favor of it, followed up by speeches in 1885, made him Gladstone's most conspicuous supporter. His best known books are: *Edmund Burke; Critical Miscellanies; Voltaire,* and an authoritative *Life of Mr. Gladstone.* He was created a viscount, 1908. Died, 1923.

Morrill, Justin Smith, American legislator was born in Strafford, Vt., 1810, and devoted himself to mercantile pursuits until his election to congress. He sat in the house of representatives from 1855 to 1867, and in the senate from 1867 until his death, the longest term of service up to that time. In 1861 he succeeded in securing President Lincoln's approval of a bill, previously vetoed by Buchanan, for the reëstablishment through public land grants of state colleges for the teaching especially of agriculture and the mechanic arts. By virtue of this bill there had been established up to 1899 in the various states sixty-four institutions giving instruction to 36,000 students. Senator Morrill was also the author of the famous Morrill tariff bill of 1861. He died in 1898.

Morris, Clara, American actress, was born in Toronto, Canada, 1849. She was taken to Cleveland when a child, and grew up there; became a member of the ballet in academy of music, Cleveland, 1861, and rapidly advanced to leading lady. Soon became prominent in emotional rôles and appeared as a star in the principal American theaters. Leading rôles: *Camille, Alixe, Miss Multon, Mercy Merrick* in *The New Magdalene, Cora* in *L'Article 47,* etc. She married Frederick C. Harriott in 1874. Author: *A Silent Singer; Life on the Stage; The Trouble Woman; Life of a Star,* etc. Died, 1925.

Morris, George Pope, American journalist and poet, was born in Philadelphia, 1802. He edited *American Melodies,* and, with N. P. Willis, *The Prose and Poetry of America.* His best known poem is *Woodman, Spare That Tree.* In 1837 he produced a drama entitled *Briarcliff,* which ran forty nights. Died, 1864.

Morris, Gouverneur, American statesman, was born in 1752. He became a member of the provincial congress of New York, and was one of those who drew up the state constitution in 1776. He was also a prominent member of the continental congress in 1777-80, the colleague of Robert Morris as superintendent of finance, and the organization of the bank of North America was largely due to him. In 1787 he was one of the committee to draft the federal constitution; was minister to France during the revolution, and became United States senator on his return. Died, 1816.

Morris, Robert, American financier, was born in Liverpool, England, 1734. He came to America at an early age and settled in Philadelphia, becoming a partner in the counting-house of C. Willing. Signed the declaration of independence, and greatly helped the American cause from his own purse, both during the revolution and afterward. He founded the bank of North America, was superintendent of finance from 1781 to 1784, but declined the secretaryship of the treasury. Died, 1806.

Morris, William, English poet and artist, was born near London, 1834. He was educated at Marlborough school and at Oxford. In an artistic capacity he did much to elevate the taste of the public in domestic decoration, designing wallpapers, fabrics and furniture. He published *The Earthly Paradise* and many other works, and rendered into English the Anglo-Saxon *Beowulf,* the *Odyssey, Æneid,* etc. He also carried on for a time the *Kelmscott Press,* which reprinted various choice works. His works include, besides the above: *Defense of Guenevere and Other Poems; The Life and Death of Jason,* etc. He died at London, 1896.

Morse, Samuel Finley Breese, American painter and inventor, was born at Charlestown, Mass., 1791. After graduating at Yale college in 1810, he studied painting under Washington Allston and Benjamin West. He is one of the best of our earlier American portrait painters, and was one of the founders and the first president of the national academy of design. In 1835 he was appointed professor of the history of art at the university of New York.

It was while returning from Europe in 1832, on board the *Sully*, that Morse worked out roughly a plan for employing electromagnetism in telegraphy. It was not until 1835, however, that he was able to exhibit an instrument that was found to work well. Thereafter he associated with him in his work Prof. Leonard Gale and Alfred Vail, and was assisted by the published discoveries of Prof. Joseph Henry. Credit should be given to these three men in particular, and to others for material assistance in bringing the telegraph to practical success, but Morse was the inventor in the only true meaning of the word.

In 1843, after many discouragements Congress voted $30,000 for an experimental line between Washington and Baltimore. More hardships were encountered before the line was finally completed, but at last, on May 24, 1844, the first public message was sent over the line, the now historic words, "What hath God wrought?"

Morse died 1872, in New York City, after successfully defending his rights through a long series of lawsuits and after many honors had been bestowed upon him by his own countrymen and by foreign nations. It seems not unlikely that the idea of the submarine Atlantic cable originated with Morse; at all events, he laid in New York harbor the first submarine telegraph line, in 1842. With Prof. John Draper he also took the first daguerreotype to be made in this country.

References.—Prime's *Life of S. F. B. Morse;* Jeans' *Lives of Electricians;* Hubert's *Inventors;* Denslow and Porter's *World's Workers.*

Morton, Oliver Perry, American statesman and jurist, was born in Wayne county, Ind., 1823. He was graduated at Miami University in 1843; was admitted to the bar in 1847, United States senator from Indiana, 1867-77. He declined the post of United States minister to England in 1870. In 1877 he was a member of the United States electoral commission, and died the same year.

Moscheles (*mŏsh'e-lās*), **Ignaz,** German pianist and composer for the piano, was born at Prague, 1794, of Jewish parents. He made frequent tours throughout Europe from 1815; from 1844 he was a professor at the Leipzig conservatory until his death, 1870. He edited in English Schindler's *Life of Beethoven,* and wrote numerous concertos, sonatas, and studies for the piano.

Moses, Hebrew leader, prophet, and legislator was born in Egypt about 1600 B. C., during the time of the oppression of the Hebrews. His father, Amram, and mother, Jochebed, both of the race of Levi, were obliged to expose him in obedience to a royal edict, but placed him in a basket of bulrushes on the river border, where he was found by the daughter of the Egyptian king as she went to bathe. She adopted him as her son, and in all probability had him educated for the duties of the priesthood, the means of instruction thus afforded him being the best which his time possessed.

His expedition into Ethiopia, in his fortieth year, as leader of the Egyptians, when he subdued the city of Saba (Meroe), won the affections of the conquered Princess Tharbis. That he married her, rests only on the tradition preserved by Josephus. An outrage committed by an Egyptian on a Hebrew excited his anger, and he secretly slew the Egyptian. The deed became known, and he escaped the vengeance of the king only by a hasty flight into Arabia. Here he took refuge with Jethro, a Midianitish prince and a priest, and espoused his daughter Zipporah.

The promises of God that his race would become a great nation occupied much of his thoughts, and at last God appointed him the chosen deliverer from the bondage in Egypt. Being slow of speech, and possessing none of the arts of an orator, God therefore gave him power to prove his mission by miracles, and joined to him his elder brother Aaron, a man of little energy, but of considerable eloquence. Thus prepared, Moses returned to Egypt at the age of eighty years to undertake the work.

At first he had the greatest obstacles to overcome, but after the visitation of ten destructive plagues upon the land, Pharaoh suffered the Hebrews to depart. Moses conveyed them safely through the Red Sea, in which Pharaoh, who pursued them, was drowned with his army. New difficulties arose however. The distress of the people in the desert, the conflicts with hostile races, the jealousies of the elders, often endangered his authority and even his life, despite the miraculous attestations of his mission.

During the term of the encampment at Sinai he received the Ten Commandments and the laws for the regulation of the lives of the Israelites. When they were already near the end of their journey toward Canaan Moses saw himself compelled, in consequence of new evidences of discontent, to lead them back into the desert, for forty years more of toilsome wandering. He was not himself permitted, however, to see the Israelites settled in their new country on account of a murmur which, in the midst of his distresses, he allowed to escape against his God.

After appointing Joshua to be the leader of the Hebrews he ascended a mountain beyond Jordan, from which he surveyed the land of promise, and so ended his life in his 120th year. All superstitious reverence for his bones or his place of sepulture was prevented by the secrecy of his burial, and its effectual concealment from the people.

References.—See, for traditional view of his life, Rawlinson's *Moses, His Life and Times;* for personality and work, W. R. Smith's *Old Testament in Jewish Church;* Schultz's *Old Testament Theology;* Kittle's *History of the Hebrews;* Rothstein's *Moses as Man and Prophet.*

Motley, John Lothrop, American historian and diplomat, was born in Massachusetts, 1814. He was graduated at Harvard College in 1831, and studied at Göttingen and Berlin; D.C.L., Oxford, 1858. After traveling for some years in Europe he returned to the United States, studied law and was admitted to the bar. In 1869 he was appointed American minister to the court of St. James, a post from which he was removed in 1871. The three great works upon which Motley built up one of the foremost literary reputations of the age are: *The Rise of the Dutch Republic*—a *History;* its sequel, *The History of the United Netherlands From the Death of William the Silent to the Synod of Dort;* and *John of Barneveld.* Died in England, 1877.

Mott, Lucretia, née Coffin, Quaker philanthropist and reformer, was born in Nantucket, 1793. She was a delegate to the world's anti-slavery convention in London, 1840, but was not allowed to take a seat as delegate because of her sex. She published a *Sermon to Medical Students* in pamphlet form, and also a *Discourse on Women,* delivered in Philadelphia, 1849. Died at Philadelphia, 1880.

Moulton, Ellen Louise Chandler, American novelist and poet, was born in Pomfret, Conn., 1835, daughter of Lucius L. Chandler. She married William U. Moulton in 1855. Author: *This, That, and the Other; Juno Clifford; My Third Book; Bed-Time Stories; More Bed-Time Stories; Some Women's Hearts; Swallow Flights; Poems.* Died, 1908.

Moulton, Forest Ray, astronomer, was born at LeRoy, Michigan, in 1872. He was educated at Albion College and at the University of Chicago, where he became professor of Astronomy in 1912. Through his extensive researches, especially in mathematical calculations, he has placed himself in the front rank of modern scientists.

Moulton, Richard Green, educator, author, was born in Preston, England, 1849. He was graduated from London University, 1869; Cambridge, 1874; Ph.D., University of Pennsylvania, 1891. Was professor of literary theory and interpretation, University of Chicago. Author: *Shakespeare as a Dramatic Artist; The Ancient Classical Drama; The Literary Study of the Bible; A Short Introduction to the Literature of the Bible;* Editor: *The Modern Reader's Bible,* in 21 volumes. Died in 1924.

Moultrie, William, American revolutionary general, was born in South Carolina, 1731. He repulsed an attack on Sullivan's island, Charleston harbor, where Fort Moultrie now stands, in 1776, for which he received the thanks of congress; defended Charleston in 1779. In 1785 and again in 1794 he became governor of his native state, and died in 1805.

Mozart (*mo-zart* "German; pron. *mōtsart*), **Johann Chrysostomus Wolfgang Amadeus,** great German composer, was born at Salzburg, 1756; died at Vienna, 1791. At the age of four years his father, Leopold Mozart, a violinist of repute, began to teach him some minutes and other small pieces on the harpsichord.

From this period he made rapid progress, and a concerto for the harpsichord, which he wrote in his fifth year, was so difficult that only the most practiced performer could play it. In his sixth year Mozart was taken by his father, along with his sister, to Münich and Vienna, where the little artists were received at court with great favor. In 1763 the family made a journey to Paris, where Mozart published his first sonatas for the harpsichord; and in the following year they proceeded to England, where the child-musician performed before the court the most difficult compositions of Bach and Handel. Returning to Salzburg, after visiting Holland, the family again went to Vienna in 1767, where the boy received a commission from the emperor to write the music of a comic opera, but owing to the opposition of the court musicians the work was never performed.

In 1769 Mozart, who had been made master of the concerts at the court orchestra at Salzburg, commenced a journey to Italy, in company with his father. In Rome he wrote down, on hearing it, the famous *Miserere,* annually sung in the Sistine chapel during the holy week. At Milan in 1770 he composed, in his fourteenth year, his first opera *Mithridates,* which was performed more than twenty times in succession. Henceforth he resided chiefly in Salzburg, but also visited Paris, Munich, and finally Vienna. In the latter city, although he was appointed composer to the court, he found it necessary to maintain himself by giving lessons in music and writing waltzes.

Notwithstanding this poverty it was here that most of his best work, such as his famous operas, *Le Nozze di Figaro* ("The Marriage of Figaro,") *Don Giovanni, La Clemenza di Tito* ("Clemency of Titus"), *Die Zauberflöte* ("The Magic Flute"), and his last work the *Requiem,* were written. It was here also that the best pianist and greatest composer of his time—perhaps of the world—died in obscurity and was buried in a pauper's grave.

The extent of work done by Mozart during his short life is almost incredible, and in every department of composition, whether vocal or instrumental, he excelled. In the history of music he stands most prominently forward as an operatic composer, his *Don Giovanni, Magic Flute,* and *Marriage of Figaro* being works previously unequaled and never since surpassed. In his character he was kind hearted, guileless, cheerful, void of envy, almost boyish to the last.

References.—See *Lives,* by Otto Jahn, which contain a summary of everything heretofore written on Mozart; Fischer, Holmes, Nohl's *Life,* translated by Lalor; *Correspondence,* edited by Nohl; article in Grove's *Dictionary of Music.*

Muhlenberg, Heinrich Melchior, clergyman, founder of the German Lutheran church in America, was born in Germany in 1711. In 1748 he was instrumental in forming the first American Lutheran synod. Died, 1787.

Muhlenberg, John Peter Gabriel, American general, son of preceding, born in Pennsylvania, 1746. He was a pastor and later became a major-general in the army. Died, 1807.

Muir, John, geologist, naturalist, inventor, explorer, was born in Scotland in 1838 and died in Martinez, California, in 1914. From his boyhood he was deeply interested in nature. In 1850 he came to America and spent four years at the University of Wisconsin. Finally he went to California and made the Yosemite his home. He lived as a hermit for years. He discovered many glaciers in the High Sierras. Author: *The Mountains of California; Our National Parks; The Yosemite;* 150 shorter articles.

Muller (*mūl'ĕr*), **Friedrich Max,** British philologist and orientalist, was born in Dessau, 1823, son of a German poet, Wilhelm Müller. He was educated at Leipzig; studied at Paris, and settled in England in 1846. He was appointed Taylorian professor at Oxford in 1854, and 1868-75 was professor of comparative philology there. Besides editing the *Rig-Veda,* he has published *Lectures on the Science of Language; The Origin and Growth of Religion; Comparative Mythology; Lectures on the Science of Language; Chips From a German Workshop.* Died, 1900.

Mulock (*mū'lok*), **Dinah Maria,** (Mrs. Craik), English author, was born at Stoke-upon-Trent, 1826. Settling in London, at twenty, she published *The Ogilvies; Olive; The Head of the Family,* and *Agatha's Husband.* She never surpassed or

even equaled her *John Halifax, Gentleman*, published in 1857. In 1856 she married George Lillie Craik, and spent a period of quiet happiness and literary industry at Corner House, Shortlands, Kent, where she died, 1887.

Mulock, Sir William, Canadian jurist, chief-justice of the exchequer division of the high court of justice for the province of Ontario since 1905, was born at Bond Head, Canada, 1843. He was graduated at the University of Toronto, 1863, barrister, 1868, and Q. C., 1888. He was first elected to the parliament of Canada, 1882; was postmaster-general of Canada, 1896-1905, and minister of labor, 1900-05; chief justice of Ontario in 1923. He also introduced and carried through the house of commons a bill establishing the Canadian department of labor, 1900. He represented the Dominion of Canada at proceedings connected with inauguration of federal parliament of Australia.

Munchhausen (*mŭngk'hou-zen*), **Hieronymus Karl Friedrich, Baron von,** member of an ancient and noble German family, who attained a remarkable celebrity by false and ridiculously exaggerated tales of his exploits, adventures. Died, 1797.

Mundelein, George William, (1872-). Graduated Manhattan College, New York City, 1889. Ordained Roman Catholic priest, 1895. Consecrated Auxiliary Bishop of Brooklyn in 1909; Consecrated Archbishop of CLicago, 1916; Consecrated Cardinal, 1924.

Munroe, Charles Edward, American chemist, educator, was born at Cambridge, Mass., 1849. He was graduated at Harvard, S.B., 1871; Ph.D., Columbian, 1894; professor of chemistry at United States naval academy, 1874-86; chemist to torpedo corps, United States Naval Torpedo Station and War College, 1886-92; head professor of chemistry 1892-1918, and dean of faculty of graduate studies, George Washington University, 1893-1913; emeritus since 1918. He is the inventor of smokeless powder and an authority on explosives.

Munsey, Frank Andrew, American publisher, was born in Mercer, Me., 1854. He was educated in the public schools of Maine, and started his business career in a country store. He became manager of the Western Union telegraph office, Augusta, Me.; went to New York, 1882, and started *The Golden Argosy*, a juvenile weekly, now the adult monthly, *The Argosy;* in 1889 he launched *Munsey's Weekly*, converted in 1891 into *Munsey's Magazine*. He was also the owner of the Baltimore *News*, Washington *Times*, and Philadelphia *Evening Times*. Died, 1925.

Munsterberg (*mŭn'ster-bĕrg*), **Hugo,** German-American psychologist, educator and author, was born at Danzig, Germany, 1863. He was graduated at Danzig gymnasium, 1882; pursued post-graduate studies in philosophy, natural sciences, and medicine in Leipzig and Heidelberg, 1882-87; Ph.D., Leipzig, 1885, M.D. Professor of psychology beginning 1892, and director of psychological laboratory, Harvard. Author: *Psychology and Life; American Traits; The Americans; Principles of Art Education*. Died, 1916.

Murat (*mū'rä'*), **Joachim,** celebrated French marshall, was born at La Bastide, near Cahors, France, 1771. He was one of the best generals of Napoleon I., by whom he was created King of Naples. In 1812 he accompanied the great army to Moscow, in command of the cavalry, and again commanded the cavalry at the battle of Leipzig, in the following year. After the return of Napoleon from Elba, he led an army against the Austrians, whom he encountered at Tolentino, in upper Italy, but was signally defeated—losing at once his army and his throne. Subsequently he landed with a few followers on the coast of Calabria, but was again defeated, captured, and, after trial by court-martial, shot at Pizzo in 1815, dying with the same bravery he had exhibited during life.

Murfree, Mary Noailles (Charles Egbert Craddock), author, was born in Murfreesboro, Tenn., 1850, daughter of William L. Murfree. For years she concealed her identity and sex under her pen-name. Author: *In the Tennessee Mountains; The Young Mountaineers; The Story of Old Fort Loudon; The Bush-whackers and Other Stories; The Champion; A Spectre of Power; Storm Centre; The Frontiersman; The Windfall*, etc. Died, 1922.

Murillo (*mōō-rēl'yō*), **Bartolome Esteban,** Spanish painter, was born in Seville, Spain, 1618. In 1646 he finished painting the little cloister of St. Francis; and the manner in which he executed it produced the greatest astonishment among his countrymen. He enriched the churches and convents of Seville and other cities with numerous works. His greatest picture is probably the "*Immaculate Conception.*" Having been invited to Cadiz to paint the grand altar of the Capuchins, he there executed his celebrated picture of the "*Marriage of St. Catherine.*" Died in Seville, 1682.

Murray, Sir James Augustus Henry, British philologist, was born at Denholm, 1837. He was graduated from the London University. His *Dialect of the Southern Counties of Scotland* established his reputation as a philologist. The great work of his life, the editing of the philological society's *New English Dictionary*, was begun at Mill Hill, 1879, and was continued at Oxford. He was knighted in 1908. Died, 1915.

Murray, John Clark, Canadian educator and writer, professor of moral philosophy, McGill University, Montreal, beginning 1872, was born in 1836. He was educated at the Universities of Glasgow, Edinburgh, Heidelberg, and Göttingen, and was appointed to the professorship of philosophy in Queen's University, Kingston, Canada, 1862. Author: *Outline of Sir W. Hamilton's Philosophy; A Handbook of Psychology; An Introduction to Ethics*. Died, 1917.

Murray, Lindley, American grammarian, was born at Swatara, Pa. 1745. He was educated at a Quaker school at Philadelphia. At first in a New York counting-house, he studied law, and was admitted to the bar; but during the revolutionary war he amassed a fortune in commerce. In 1785 he was crippled by a fever. Author: English Grammar, etc. Died, 1826.

Mussolini, Benito, born 1883 in Doria, Province of Forli, Italy. His father, Alessandro, the village blacksmith, was a socialist. While a bricklayer in Switzerland, he studied at night. After urging Italy to join the Allies in the World's War, he entered the war, served on the Italian front, and was seriously wounded. In the midst of the post-war depression he organized and led the Fascisti Party. Without the firing of a gun the Fascisti took control of Italy and Mussolini was made dictator. During his administration crime was suppressed, agriculture encouraged, business and commerce increased, an alliance with the Vatican formed, and a remarkable improvement effected throughout the whole of Italy.

Mutsuhito (*moot-soo-he'to*), emperor of Japan, was born in 1852, ascended the throne in 1867, and married Princess Haruko in 1869. His reign was marked by great reforms. Under the rule of this noted emperor, Japan entered upon an unprecedented era of prosperity. Civilization made rapid progress, and secured for Japan the foremost place among Asiatic nations. Died, 1912.

Myers, Philip Van Ness, author, historian, was born at Tribes' Hill, N. Y., 1846. He was graduated at Williams College, 1871; LL.B., Yale, 1890; L.H.D., Miami University, 1891. He was president of the Farmer's College, Ohio, 1879-90; professor of history and political economy, University of Cincinnati, 1890-1900; dean academic faculty, University of Cincinnati, 1896-97. Author: *Life and Nature Under the Tropics; Remains of Lost Empires; Ancient History; Mediæval and Modern History; General History*, etc.

Myrick, Herbert, publisher, editor, author, was born at Arlington, Mass., 1860. He was graduated at the Massachusetts Agricultural College, Amherst, Mass., 1882. He is now president and editor of Phelps publishing company; director of *Good Housekeeping*, 1901-1911; was vice-president of the Orange Judd Company and managing editor of *American Agriculturist*, and *Orange Judd Farmer*, 1888-1920. Died, 1927.

Nadir Shah (*nā'dēr shä*), Persian ruler, belonging to the Afshars, a Turkish tribe, was born near Kelat, in Khorassan, Persia, 1688. Having been degraded and punished for some real or supposed offense, he betook himself to a lawless life, and for several years was the daring leader of a band of 3,000 robbers, who levied contributions from almost the whole of Khorassan. He invaded India, took Delhi in 1739, and seized the Koh-i-noor diamond and the peacock throne. His last years were marked by rapacity and oppression, and he fell at last under the hand of an assassin, 1747. He is still reckoned by the Persians, however, as one of their great national heroes.

Nagel, Charles, lawyer, secretary of commerce and labor, 1909-13, was born in Colorado county Texas, 1849. He was graduated from the St. Louis Law School in 1872; and was admitted to the bar in 1873. President of the St. Louis city council from 1893 to 1897; was a member of the St. Louis Law School faculty beginning 1886. He took an active part in politics for many years. Member of the Taft Cabinet.

Nansen (*nän'sen*), **Fridtjof,** Arctic explorer, was born in Norway, 1861, and was graduated from the University of Christiania, Ph.D., 1888. He started on his first Arctic expedition in 1882, and in May of the same year undertook his celebrated journey across Greenland, which he accomplished in forty-six days. In 1893 Nansen sailed in the *Fram* to make an examination of the entire polar regions, and penetrated farther north than any of his predecessors. He then became professor of zoölogy at Christiania University, took an active part in the separation of Norway and Sweden in 1905, was minister for Norway at the court of St. James, 1906-08; and professor of oceanography, Christiania University, since 1908. Author: *Farthest North; Scientific Results; Norway and the Union with Sweden*.

Napier (*nāp'yĕr; nā-pēr'*), **Sir Charles,** British admiral, was born at Merchiston hall near Falkirk, 1786, cousin to the hero of Sind. Commanding the *Thames* in 1811, he inflicted great damage upon the enemy in the Mediterranean. In 1814 he led the way in the ascent of the Potomac and took part in the operations against Baltimore. He also commanded the Baltic fleet in the Russian war; but the capture of Bomarsund failed to realize expectations, and he was superseded. He twice sat in the British parliament, and, until his death at his Hampshire seat, Merchiston hall, in 1860, he labored to reform the naval administration.

Napier, Sir Charles James, British general, the conqueror of Sind, was born at London, 1782. He served during the Irish rebellion, and at the battle of Corunna was five times wounded and taken prisoner. He also took part in the Anglo-American war of 1812. From 1822-30 he was governor of Cephalonia; in 1838, a K.C.B., and in 1841 was sent to India to command the army of Bombay against the Ameers of Sind. Here he destroyed the fortifications of Emaun Ghur, 1843, followed by the battle of Meanee (Miani), where, with 2,800 English and Sepoys, he defeated 22,000 Baluchs. After the annexation he was appointed governor of Sind. He died near Portsmouth, 1853.

Napier (*nā'pĕr*), **John,** Scottish mathematician, inventor of logarithms, was born at Merchiston castle, Edinbrugh, in 1550. He made a contract with Logan of Restalrig for the discovery of treasure in Fast castle, in 1594, devised warlike machines for defense against Philip of Spain, and recommended salt as a fertilizer of land. He described his famous invention of logarithms in *Mirifici Logarithmorum Canonis Descripto*, in 1614, and the calculating apparatus called "Napier's bones" in *Rabdologiæ seu Numerationis per Virgulas libri duo*, 1617. Died at Merchiston, 1617.

Napier of Magdala, Robert Cornelis Napier, Lord, British general, was born at Colombo, Ceylon, 1810. During the Indian mutiny he was chief engineer in Sir Colin Campbell's army, distinguished himself at the siege of Lucknow, and was made K.C.B. He received the thanks of parliament for his services in the Chinese war of 1858. In 1870 he became commander-in-chief in India and a member of the Indian council, and was subsequently governor of Gibraltar, field-marshal, and constable of the Tower. He died in 1890, and was buried in St. Paul's.

Napier, Sir William Francis Patrick, brother of Sir Charles, was born near Dublin, 1785. He served in the peninsular campaign and retired as a lieutenant-general. He also wrote a famous *History of the War in the Peninsula, The Conquest of Scinde*, and the *Life of Sir Charles Napier*. He died at Clapham, London, 1860.

Napoleon I. (Napoleon Bonaparte), emperor of the French, was born at Ajaccio, 1769. He was, at the age of eleven, sent to the military school of Brienne, in Champagne, and in 1784, to the military school of Paris.

In 1785 he was appointed junior lieutenant in the army. He was in Paris on June 20, 1792, and saw the mob invade the Tuileries. He also witnessed the overthrow of the monarchy on August 10. In 1793 he took a leading part in ousting the English from Toulon, and in 1794 was appointed general of the artillery of the army of Italy, and drove back the Sardinians.

He was married to Joséphine Beauharnais in 1796, and two days later left to assume command of the army in Italy. He first overthrew the Austrians and Sardinians at Millesimo and Dego, and forced the Sardinians to make the armistice of Cherasco. He then turned against the Austrians, whom, after a severe struggle at the bridge of Lodi, he drove across the Adda. Then ensued the celebrated fights for Mantua, Castiglione Arcola, and Rivoli. Mantua fell on January 16, 1797, and the Emperor Francis II. agreed to preliminaries of peace at Leoben. Bonaparte had already organized Lombardy as a republic and had forced the Pope to make the peace of Tolentino.

On his return to Paris Bonaparte obtained leave of the directory to attempt the conquest of Egypt, which was meant to be the prelude of the restoration of the French supremacy in India. Sailing from Toulon in 1798, he captured Malta, and landed in Egypt. On July 2 he captured Alexandria, on July 21, the French won the battle of the Pyramids, and the conquest of Egypt was effected. But Nelson's victory on August 1 in the battle of the Nile (Aboukir) was a bitter reverse, destroying his fleet.

In 1799, he invaded Syria, but failed to take Acre, which was defended by Sir Sidney Smith's squadron. He then massacred 2,500 prisoners at Jaffa, and returned to Egypt, where he defeated the Turks in the battle of Aboukir. Hearing of the successes of the second coalition in Europe, of the French loss of Italy, and of the state of France, he left Kélber in command in Egypt and returned to his native land. The revolution of November 9, 1799, arranged by Siéyes, followed, and the consulate was established.

Austria and England were now the chief foes of France. Early in 1800, Bonaparte crossed the Alps, occupied Milan, and on

June 14 won the great battle of Marengo. On December 3, Moreau won the battle of Hohenlinden, and on February 9, 1801, the Emperor Francis II. agreed to the treaty of Lunéville. The terms were in the main the same as those of Campo-Formio. On March 27, 1802, the peace of Amiens was signed with Britain; on August 1 Bonaparte was proclaimed consul for life. The concordat with the pope had already been signed, and Napoleon, as he was henceforth called, gave to the nation the bank of France and the code Napoléon, reformed its educational system, conciliated many of the old nobles and instituted the Legion of Honor.

During the years 1802 and 1803, however, Napoleon made preparations for a fresh development in foreign policy. He proposed to found one colonial empire in the New World and another in India. But his schemes with regard to America were frustrated when fever destroyed his army in Haiti in 1803. In the same year he sold the territory of Louisiana to the United States for $15,000,000.

He then determined to rearrange the map of Germany and to destroy Britain's commerce. Early in June, 1802, he became President of the Italian republics, and in September and October he annexed Piedmont, Parma and Piacenza. In February, 1803, he reconstituted Switzerland, and sent secret agents to stir up rebellion in Ireland. Further, he persisted in demanding the British evacuation of Malta. On May 18, 1803, war between France and England broke out, and Hanover was occupied by French troops.

The discovery of a plot, headed by Georges Cadoudal, strengthened Napoleon's position, and on May 18, 1804, he became emperor of the French. Then he made elaborate preparations at Boulogne for conveying troops across the channel and capturing London. In 1805 he incorporated the Ligurian Republic with France, and forced Naples to make a treaty. But the defeat of Villeneuve by Calder off Cape Finisterre in July destroyed all chance of a successful invasion of England, and in September he invaded Germany.

The fall of Ulm opened the way to Vienna; and though Nelson's victory at Trafalgar, on October 21, destroyed the Spanish and French fleets, Napoleon defeated the Austrians and Russians on December 2 at Austerlitz, and on December 26 forced the Emperor Francis II. to make the treaty of Pressburg. Austria being humbled and deprived of much territory, an opportunity was given Napoleon of forming in July, 1806, the confederation of the Rhine. Bavaria, Baden, Würtemberg, Hesse-Darmstadt, and other states placed themselves under Napoleon's protection. The Holy Roman Empire ceased to exist, and on August 6, 1806, the Emperor Francis II. formally renounced his title of German Emperor.

Prussia, however, declared war on October 1, 1806; on the 14th of the same month her army was totally defeated at Jena; on the 25th the French occupied Berlin. England and Russia were alone left unsubdued. Against the former Napoelon issued the famous Berlin decree of November 21, 1806, and at the same time prepared to attack the Russians. In February, 1807, he fought the battle of Eylau, and on June 15 he won a decisive victory at Friedland. In July the Czar Alexander and Napoleon agreed to the treaties of Tilsit, which enabled them to dominate Europe. In October, 1807, France and Spain agreed to conquer Portugal, and in November Junot entered Lisbon. No sooner had Napoleon made Joseph Bonaparte king of Spain (June, 1808) than the Spanish people rose, and an English expedition landed in Portugal (August) and Wellington won the battle of Vimeiro. The peninsular war proved one of the principal causes of the fall of Napoleon. War with Austria again broke out in April, 1809; but after the battles of Aspern and Wagram, the Emperor Francis was forced to sign the humiliating treaty of Vienna (Schönbrunn), October, 1809.

In seeking to strengthen his position, Napoleon was led to divorce Joséphine, and in 1810 to marry Marie Louise of Austria. At the same time he made almost superhuman efforts to ruin England by means of his continental system. But on Decmeber 31, 1810, the czar intimated that he intended to modify his adhesion to the continental system, and Napoleon resolved to invade Russia. His disastrous campaign to Moscow in 1812, undertaken while he had the Spanish War on his hands, encouraged Europe to rise, and in 1813 the war of liberation began. Russia and Prussia joined forces, and though Napoleon won the battles of Lutzen (May 2, 1813) and Bautzen (May 20), the adhesion of Austria to the ranks of his enemies was followed by the total defeat of the French at Leipzig (October 16-19, 1813).

After showing consummate but unavailing skill in the campaign in France during the spring of 1814, Napoleon was forced to abdicate in April, and Louis XVIII. entered Paris. After a short sojourn in Elba, Napoleon escaped and landed in France on March 2, 1815, and his reign of a hundred days began. The battle of Waterloo (June 18) completed the downfall of his hopes and he ended his days on the Island of St. Helena.

That Napoleon often showed himself in his earlier days kind, generous and affectionate is undoubted; that he was patient during his last captivity is equally true. His temperament was Italian, his passionate feelings Corsican, but he was by nature neither bloodthirsty nor cruel. The code Napoléon witnesses to the boldness and clearness of his statesmanship; while, as Marbot tell us, the soldier who understands Napoleon's strategy has nothing more to learn. He waged war on a scale never before witnessed, and neither France nor any other country has produced a greater military genius. His body was conveyed to France in 1840 and laid in the Hotel des Invalides in Paris.

References.—Fournier's *Napoleon I.*; Rose's *Life of Napoleon I.*; Sloane's *Life of Napoleon Buonaparte*; Rosebery's *Napoleon: the Last Phase*; Lanfrey's *The History of Napoleon the First*; Seeley's *A Short Life of Napoleon*; Lévy's *Napoleon In Time*; and Browning's *Napoleon: the First Phase*.

Napoleon III., or **Charles Louis Napoleon Bonaparte**, emperor of the French, was born in the palace of the Tuileries, Paris, 1808. In 1830, he took part in a revolutionary movement in Italy, and in 1836 entered France; but, seeking to arouse the soldiery at Strassburg in his favor, he was taken prisoner and transported to the United States. In 1840 he landed at Boulogne, again hoping to arouse the French soldiery in his favor; for this second attempt he was tried for his high treason before the chamber of peers and received a sentence of perpetual imprisonment in the castle of Ham. In 1846 he escaped from Ham in the disguise of a workman. In 1848, on the abdication of Louis Philippe, the provisional government permitted his return to France. In June of that year he was elected to the national assembly for the department of Seine and for three other departments; and in the following December he was elected by an immense majority president of the newly-constituted republic. In December, 1852, the famous *coup d'etat* took place, and Louis Napoleon secured his election as president for ten years; but a year later he again appealed to the people, and obtained an almost unanimous vote for the restoration of the empire. In 1870 the Franco-Prussian war broke out, which led to the surrender of the emperor and his army at Sedan, and to the ultimate reëstablishment of the republic. He died at Chiselhurst, England, 1873.

Narses (*när'sēz*), statesman and general, lived in the 6th century. He was a eunuch. He led an army into Italy, took possession of Rome and completely extinguished the Gothic power in that country. Justinian appointed him exarch of Italy, which post he held until his death, 568.

Navarro (*nä-vär'rō*), **Mary Anderson de,** American actress, was born in Sacramento, Cal., 1859. She made her début as *Juliet* at McAuley's theater, Louisville, 1875. She had great success in leading legitimate roles in the United States and England until 1889, when she married Antonio de Navarro, and retired from the stage. She has since lived in England. Author: *A Few Memories*.

Nazimova, Madame Alla (1879—), Mrs. Charles Bryant, was born in Yalta, Crimea. She was a skilled violinist at 12, but preferred the drama, in which she was successful before she was 21. Appeared in New York, 1905, becoming famous in Ibsen's *A Doll's House*.

Neander (*nā-ān'dĕr*), **Johann August Wilhelm,** noted German ecclesiastical historian, was born at Göttingen, 1789, of Jewish parents, named Mendel. He received his early education at the Johanneum in Hamburg. In 1811 he took up his residence at Heidelberg University as a privat docent; in 1812 he was appointed professor of theology and the following year was called to the newly established University of Berlin as professor of church history. Here he remained until his death in 1850. The most important work of his life was his *Universal History of the Christian Religion and Church*, in 5 volumes.

Nearchus (*nē-är'kus*), Macedonian naval commander, was a native of Crete, who settled in Amphipolis during the reign of Philip, and became the companion of the young Alexander the Great. In 329 B. C. he joined Alexander in Bactria with a body of Greek mercenaries, and took part in the Indian campaigns. Having built a fleet on the Hydaspes, Alexander gave Nearchus the command. He left the Indus in November, 325 B. C., and, skirting the coast, reached Susa in 324 B. C. His narrative is preserved in the *Indica* of Arrian.

Nebuchadnezzar (*neb'ū-kad-nez'är*), king of ancient Babylon, was born about 645 B. C. In 604 B. C. he became king, took Jerusalem about 606 B. C. and made Zedekiah king as his vassal. Zedekiah soon rebelled, and Nebuchadnezzar again took Jerusalem, after a terrible siege, destroyed the temple, threw down the walls of the city, and carried the people captives to Babylon. Among the captives was the Hebrew prophet Daniel, who tells much about him in the book of *Daniel*. He died about 561 B. C.

Necker (*nĕ'kĕr'*), **Jacques,** French financier and statesman, was born at Geneva, 1732, and was for many years a banker at Paris. His *Eulogy on Colbert*, his *Treatise on the Corn Laws and Trade*, and some *Essays on the Resources of France* inspired such an estimate of his talent for finance, that in 1776, he was appointed director of the treasury, and, shortly after, comptroller-general of France. He died at Copet, in Switzerland, 1804. The whole of his works form fifteen volumes.

Nehemiah, Jewish reformer, was a Jew of the captivity, of royal degree and in high favor. He received a commission from the king to repair to Jerusalem and restore the Jewish worship, and ruled over it for twelve years, until he saw the walls of the city, amid much opposition, restored. He subsequently returned to superintend the reform of the worship, of which the book of the old testament, named after him, relates the story.

Neill, Charles P., American economist and educator, United States commissioner of labor, was born at Rock Island, Ill., 1865. He was educated at the Universaty of Notre Dame, Ind., 1885-88, instructor and associate professor and professor of political economy, Catholic University, Washington, 1897-1905, and United States commissioner of labor, 1905-1913, and member of the United States immigration commission, 1907-1910. Manager bureau of information, Southeastern Railways since 1915.

Neilson (*nēl'sun*), **Lillian Adelaide,** English actress, was born in Leeds, Yorkshire, England, 1848. She made her début as *Juliet* when only seventeen years old; appeared as *Amy Robsart* in 1870, in London, with immense success, and in 1878 stood at the head of her profession. In 1872 she came to the United States, playing in Booth's theater, New York, and in Boston, where she was equally successful. She died in Paris, France, 1880.

Nelson, Horatio, Viscount, famous English admiral, was born at Burnham Thorpe, Norfolk, 1758. He entered the navy as a midshipman in 1770, and after voyages to the West Indies, the Arctic regions, and the East Indies, was promoted to a lieutenancy in 1777. While in command of the *Boreas* on the Leeward islands station, he involved himself in trouble through his severe and arbitrary enforcement of the navigation act against American traders. His conspicuous bravery at the engagement with the Spaniards off Cape St. Vincent in 1797 brought him to the rank of rear-admiral. In the same year he lost his right arm at Santa Cruz, and in the following year, with an inferior force, annihilated the French fleet in the bay of Aboukir, for which he was raised to the peerage as Baron Nelson, and created duke of Bronte by the king of Naples. During the scare of a Napoleonic invasion he kept a vigilant watch in the channel, and, on the resumption of war, he in 1805, crowned his great career by a memorable victory off Trafalgar over the French fleet commanded by Villeneuve, but was himself mortally wounded at the very height of the battle, dying in 1805.

Nelson, Knute, lawyer, United States senator, was born in Norway, 1843. He came to the United States in 1849, and resided in Chicago, Ill., until the fall of 1850; removed to the state of Wisconsin, and from there to Minnesota, 1871. He was admitted to the bar in the spring of 1867; was a member of the assembly in the Wisconsin legislature, 1868 and 1869; member of the forty-eighth, forty-ninth, and fiftieth congresses for the 5th district of Minnesota; elected governor of Minnesota in the fall of 1892 and reëlected in the fall of 1894; elected United States senator for Minnesota, 1895, and reëlected 1901, 1907 and 1912. Died, 1923.

Nepos (*nē'pos*), **Cornelius,** Roman historian, was born probably at Verona, Italy, and flourished during the time of Julius Cæsar and the first six years of the reign of Augustus. He enjoyed the friendship of Cicero, and his only extant work, *Vitae Excellentium Imperatorum*, is held in high esteem as an educational classbook.

Nernst (*nernst*), **Walther,** German chemist and physicist, was born at Briesen, Prussia, 1864. He was educated at Zürich, Berlin, and Würzburg; appointed professor of physics at Göttingen in 1891, where in 1895 he organized the institute for physical and electro-chemistry, of which he became director in 1905. Inventor Nernst electric lamp. Won Nobel prize in chemistry, 1920.

Nero, Claudius Cæsar Drusus Germanicus, Roman emperor, was born at Antium, in Latium, A. D. 37. He was adopted by the emperor Claudius, who married Agrippina, A. D. 50, and four years later he succeeded Claudius on the throne, which he occupied for fourteen years. Nero's whole reign was characterized by licentiousness, brutality, and cruelty. The great fire in Rome happened in Nero's reign, and it is asserted by some writers that the city was set on fire by the order of Nero, who attributed the fire to the Christians and persecuted them with the most unrelenting cruelty. The philosopher Seneca, who had been his tutor, and the poet Lucan were put to death by his order. At length a formidable conspiracy was raised against him, and he fled to a house about four miles from Rome, where he put an end to his own life on hearing the trampling of the horses on which his pursuers were mounted, 68 A. D.

Nesselrode (*nes'el-rō-dye*), **Karl Robert, Count,** Russian diplomat, was born at Lisbon, Portugal, 1780, son of a Russian ambassador. He gained the confidence of Emperor Alexander, took a principal part in the negotiations which ended in the peace of Paris and in the congress of Vienna, and was one of the most active diplomats of the holy alliance. Died, 1862.

Nestorius (*nes-tō'ri-us*), celebrated heresiarch, was born in Syria. He was made patriarch of Constantinople in 428, deposed for heresy by the council of Ephesus, 431, and banished to the Lybian desert, where he died after 439.

Nethersole (*neтн'ẽr-sōl*), **Olga,** English actress, was born in London, 1870, daughter of Henry Nethersole. She joined the Garrick theater under John Hare's management in 1889; visited Australia on starring tour, 1890; several times visited the United States on starring tours, and as manager of her own company; was manager of Her Majesty's theater, London, 1898, when she produced *The Termagant,* and was manager of the Adelphi theater, London, during 1902, where she produced *Sapho,* and also of the Shaftesbury theater, 1904. 1904. Made her own debut in Paris under her own management, 1907; joined British Red Cross, 1916; on nursing staff of Hampstead military hospital as V. A. D., 1916-19.

Nevada (*ne-vä'dä*), **Emma,** née Emma Wixon, prima donna, was born at Austin, Nev., 1861. She studied under Mme. Marchesi, Paris: and made her début at Her Majesty's theater, London, 1880, as *Amina* in *La Somnambula.* She subsequently sang here and in Europe. In 1885 she married Dr. Raymond Palmer, and now lives in Paris.

Nevin, Ethelbert, American composer, was born at Edgeworth, Pa., 1862. From 1887 to 1893 he taught in Boston, then went to southern Europe to study until 1900, when he returned and associated himself with H. N. Parker at Yale. *Narcissus,* among a group entitled *Water Scenes,* and a song, *The Rosary,* are perhaps his most popular productions. He died in 1901 at New Haven.

Newcomb (*nū'kum*), **Simon,** American astronomer and mathematician, was born in Wallace, N. S., 1835. He came to the United States in 1853; was graduated at Lawrence Scientific School, Harvard, 1858; LL.D., Columbian, Yale, Harvard, Columbia. He was assigned to duty at United States naval observatory; professor of mathematics and astronomy, Johns Hopkins, 1884-94, and editor of *American Journal of Mathematics.* In 1874 he was made correspondent, and after 1893 was one of the eight foreign associates of the Institute of France; made officer of legion of honor of France, 1893. Author: *Secular Variations and Mutual Relations of the Orbits of the Asteroids; Investigation of the Orbit of Neptune; Researches on the Motion of the Moon.* Died, 1909.

Newlands, Francis Griffith, lawyer, United States senator, was born in Natchez, Miss., 1848. Was admitted to the bar by the supreme court of the District of Columbia and went to San Francisco, where he entered upon the practice of law and continued in the active practice of his profession until 1888. He was elected to the fifty-third, fifty-fourth, fifty-fifth, fifty-sixth, and fifty-seventh congresses; and the United States senate from Nevada, in 1903 and 1908 Died, 1917.

Newman, John Henry, English prelate and author, was born at London, 1801, son of a London banker. He was graduated from Trinity College, Oxford, 1820, and took orders in 1824. He took a leading part in the tractarian movement, and in 1841 wrote *Tract XC.,* which was severely condemned. After living at Littlemore for some years in seclusion, he was received into the Roman Catholic church, 1845. He was created cardinal in 1879. Chief among his works are *Apologia pro Vitâ suâ;* and *The Dream of Gerontius.* Died, 1890.

Newton, Sir Isaac, English natural philosopher, was born at Woolsthorpe, Lincolnshire, 1642. In 1665-7 he invented the binomial theorem, the method of tangents, and the fluxional calculus.

The story seems to be authentic that the fall of an apple in the garden at Woolsthorpe late in 1665, started the train of thought which led him to the discovery of universal gravitation. He certainly then deduced the rule of inverse squares from Kepler's third law, and attempted to verify it by the observed motion of the moon. It was not, however, until 1685, when Picard's improved value for the terrestrial radius was at his disposal, and he had overcome the difficulty of calculating the attraction of a sphere upon an adjacent particle, that he ascertained the agreement to be exact.

The great work embodying his conclusions was published in 1687, with the title *Philosophiae Naturalis Principia Mathematica.* The first book expounded generally the dynamical results of the law. The second treated of motion in a resisting medium, hydrostatics, hydrodynamics, and the theory of the tides. Finally, Book III. showed the working of the attractive principle in the solar system and demonstrated the subjection to it of comets.

Newton's optical researches began in 1666, when he resolved white light into its constituent colors. Two years later he constructed the first reflecting telescope, and in papers communicated to the Royal Society, in 1672 and 1675, described his prismatic experiments and the phenomena of thin plates. His results were collected in a volume on *Optics,* in which the emission theory of light was advocated. Newton was made Lucasian professor of mathematics at Cambridge in 1669.

He represented the university in the convention of 1689; but though again elected to parliament in the Whig interest in 1701, he was rejected at the polls in 1705. He was knighted by Queen Anne in 1705, and acted as president of the Royal society from 1703 until his death. The controversy between Newton and Leibniz regarding their respective claims to priority in the discovery of the differential calculus dragged on for a score of years, from 1705. The facts elicited left no room for doubt of Newton's originality.

He was engaged in 1694-5 on the laborious task of perfecting his lunar theory, for which purpose Flamsteed's observations were indispensable. They were communicated partially and reluctantly, and the annoyances involved caused Newton to abandon his pursuit of the moon's inequalities. This contest embittered seven years of his life. He died at Kensington, 1727, and was buried in Westminster abbey.

References.—See *Lives,* by Sir David Brewster, and A. de Morgan; also Lodge's *Pioneers of Science;* and Hawthorne's *True Stories.*

Ney (*nā*), **Michel,** French marshal, was born in Saarlouis, now in Prussia, 1769, the son of a cooper. He entered the army as a private hussar in 1788; became a general of brigade in 1796, and distinguished himself by his bravery. When Napoleon abdicated in 1814 he attached himself to Louis XVIII., but on the former's return from Elba he joined his old master, and stood by him during the hundred days. He was defeated by Wellington at Quatre-Bras, in 1815, and commanded the Old Guard at Waterloo on June 18th. On the second restoration he was arrested, tried by his peers, and shot, December 7, 1815.

Nicholas I., emperor of Russia, third son of Paul I., was born at St. Petersburg, 1796. In 1828 the war with Persia began, and on its close occurred the war with Turkey. This was followed by the rising of Poland, which he subdued, and reduced the kingdom to a mere province. His rule now became despotic and fierce. Died, 1855.

Nicholas II., czar of Russia, was born in St. Petersburg, 1868, son of Alexander III., whom he succeeded in 1894. During the famine of 1891, he was, at his own request, made president of the committee of succor, and worked hard in the organization of relief. He married Princess Alix of Hesse-Darmstadt in 1894. The coronation of the czar took place with impressive ceremonial at Moscow in May, 1896, and in August of the same year he commenced a tour which included visits to the emperor of Austria and Germany, to the king of Denmark, to Queen Victoria and to the president of France. His reign was marked by the construction of the trans-Siberian railroad to the Pacific coast, by the Russo-Japanese war, by adroit diplomacy with China, by a strong and conservative attitude toward Turkey, as well as toward the European powers, and by the granting of a constitution in 1905. Assassinated, 1918.

Nicholas V., pope, Tommaso Parentucelli, was born near Pisa, Italy, 1397. He was educated at Bologna and Florence, went to Rome in 1426 and entered the ecclesiastical service. He was chosen pope in 1447. A liberal patron of scholars, he despatched agents east and west to purchase or to copy important Greek and Latin manuscripts, and may almost be said to have founded the Vatican library. Died, 1455.

Nicias (*nish'i-as*), Athenian statesman and general of the Peloponnesian war, was the son of the wealthy Niceratus. In 427 B. C. he defeated the Spartans and Corinthians, and ravaged Minoa, Melos and Locris. In 415 B.C. he was appointed one of the commanders against Sicily, and in the autumn laid siege to Syracuse. At first successful, later his fleet was destroyed, his army began a retreat and he was captured and put to death in 413 B. C.

Nicoll (*nik'ul*), **De Lancey,** American lawyer, was born at Bayside, L. I., N. Y., 1854. He was graduated at Princeton, 1874; Columbia Law School, 1876; was admitted to the bar, and practiced law in New York City. He was nominated by the Tammany organization for district attorney, 1887; was elected and served three years. Is now senior member of the firm of Nicoll, Anable, Fuller & Sullivan, and has appeared in numerous corporation cases.

Niebuhr (*nē'bōor*). **Barthold George,** German historian and critic, was born in Copenhagen, 1776, where his parents then resided. He was educated at Kiel and Edinbrugh, held several appointments under the Danish government, and entered the Prussian civil service in 1806. At the opening of the University of Berlin, in 1810, he became connected with that institution. His great work is his *History of Rome,* upon which he was engaged for many years. His *Lecturers on Roman History,* and several other works, were published after his death by Dr. Schmitz and others, from notes on Niebuhr's *viva voce* lectures. Died, 1831.

Niehaus (*nē'hous*), **Charles Henry,** American sculptor, was born at Cincinnati, Ohio, 1855. He was educated in the Cincinnati schools, and at the Royal Academy, Munich, Germany. Among his works are: equestrian statue of General Forrest, Memphis, Tenn.; statue of McKinley and lunette for tomb at Canton, Ohio; Benjamin Harrison monument, Indianapolis; pediment, state capitol, Frankfort, Ky., etc.

Nielsen (*nēl'sen*), **Alice,** American opera singer, was born at Nashville, Tenn., daughter of Erasmus Ivarius. She received her musical education in San Francisco, under Mlle. Ida Valerga, and made her first stage appearance with an opera company at Oakland, Cal., 1893, as *Yum Yum* in *Mikado.* She studied grand opera in Rome, and made her first appearance in grand opera at Bellini theater, Naples, Italy, as *Marguerite* in *Faust;* appeared at San Carlo opera house, Naples, in *La Traviata,* and at Covent Garden, London, in *Don Giovanni, The Marriage of Figaro, La Boheme,* and *Rigoletto.* She toured the United States in grand opera from 1906-11, successively with the Don Pasquale Co., San Carlo Co. and Boston Opera Co.; then for several years with Metropolitan Opera Co.

Nietzsche, Friedrich, German philosopher, was born near Leipzig, 1844. When thirty-five, he was forced on account of illness to leave Basle, where he was professor of classical philology. Owing as much to his abnormal mind and poor digestion as to the contemporary thought of several German writers, he became the classical exponent of the Superman theory, attacking Christianity, marriage and the general idea of democracy. Among his works are *Beyond Good and Evil, Thus Spoke Zarathustra, The Will To Power,* and *The Geneology of Morals.* He died insane in 1900.

Nightingale, Florence, a famous philanthropic nurse, was born at Florence, Italy, 1820, of wealthy English parentage. At the age of twenty-two she entered the institution of Protestant deaconesses at Kaiserswerth, to be trained as a nurse, and afterward studied the methods of nursing and hopsital management with the sisters of St. Vincent de Paul, Paris. In 1854 she volunteered to organize a staff of nurses during the Crimean war, and, during the terrible winter of 1854-55, she ministered with unwearied devotion to the suffering soldiers. Died, 1910.

Nikisch (*nik'ish*), **Arthur,** noted Hungarian orchestral conductor, was born in Lébény Szent-Miklos, 1855, and at an early age disclosed extraordinary musical talent. He remained at the Vienna conservatory for eight years; was appointed first violinist at the royal opera; and, in 1878, went with Neumann to Leipzig, where he was made assistant conductor and conductor in the Old opera house. In 1889 he succeeded Herr Gericke as conductor of the Boston symphony orchestra, and in 1895 accepted the post of director of the royal opera at Budapest. He was one of the greatest conductors of our time. Died, 1922.

Nilsson (*nil'sun*), **Christine** (Comtesse de Miranda) Swedish operatic singer, was born at Wexiö, Sweden, 1843, daughter of a peasant. She made her début at Paris in 1864, in London, 1867. She repeatedly visited the United States. In 1872 she married M. Rouzand, who died in 1882; and in 1887, at Paris, she became the wife of the Count de Miranda, and retired. Died, 1922.

Nixon, Lewis, shipbuilder, was born in Leesburg, Va., 1861. He was graduated at the United States Naval College, 1882. He was sent to the Royal Naval College, Greenwich, England, by navy department, and transferred to construction corps of navy, 1884. In 1890 he designed the battle-ships *Oregon, Indiana* and *Massachu-*

setts, and then resigned from navy to become superintending constructor of the Cramp shipyard, Philadelphia, Pa., and in 1895 founded the Crescent shipyard, Elizabeth, N. J. He was appointed by Mayor Van Wyck, president of East river bridge commission, 1898; appointed, 1902, New York commissioner to Louisiana Purchase exposition, St. Louis. He succeeded Richard Croker as leader of Tammany Hall, 1901-02.

Nobel (*nō-bel'*), **Alfred Bernhard,** Swedish chemist and engineer, was born at Stockholm, 1833. His father, a mechanician, settled in 1837-59 in St. Petersburg, and in 1862 began to manufacture nitroglycerine. In 1867 Alfred, who assisted him, discovered through the accidental escape of some nitroglycerine from a cask into the siliceous sand of the packing, how to make a safe and manageable explosive—dynamite. He also invented blasting-jelly and several kinds of smokeless powder. At his death at St. Remo, Italy, in 1896, he left a fortune of over 2,000,000 pounds, most of which he destined to go for annual prizes for those making the most important discoveries in physics, chemistry, physiology, writing the best literature, and accomplishing the most for humanity and peace.

Nodzu (*nō'dzŭ*), **Michitsura, Count,** Japanese general, was born in Satsuma, 1840. He fought on the side of the mikado in the war of restoration, and with imperialists in the Satsuma rebellion. During the war with China he captured Pinyang; was placed in command of the 5th division; later on appointed commander-in-chief of the first army, and, during the Japanese and Russian war, commander-in-chief of the fourth army. He was created a baron, 1895. Died in 1908.

Nogi (*nō'gē*), **Kiten, Baron,** Japanese general, was born in Choshu, Japan, 1849. He served in the Satsuma rebellion of 1877, and was twice severely wounded. He commanded the third army in the Russo-Japanese war, capturing Port Arthur, 1905. Suicided, 1912, on death of Emperor.

Nordau (*nōr'dou*), **Max Simon,** German physician and writer, of Jewish descent, was born at Budapest, 1849, but is a Prussian subject. He received his university education at Budapest, Berlin, and Paris. He was co-founder and for many years vice-president of the Association Litteraire et Artistique Internationale, Paris; a member of the Hellenic National Academy, Athens. His first book on Paris appeared in 1878; others, more especially two in English translation, *Conventional Lies of the Children of Culture*, and *Degeneration*, were much criticised and led to considerable discussions. Died, 1922.

Nordenskjold (*nō'ren-shûl'*), **Nils Adolf Eric, Baron,** Swedish explorer, geologist, was born at Helsingfors, Finland, 1832. In 1858 he was appointed state mineralogist at Stockholm, obtained letters of naturalization as a Swedish subject, and was a member of the chamber of nobles during the last two assemblies of the Swedish states. After several successive voyages and explorations in the Arctic sea, he, in 1878-79, discovered the northeast passage. He was created baron in 1880. Died, 1901.

Nordhoff (*nōrd'hof*), **Charles,** American author, was born at Erwitte, Prussia, 1830. He came to the United States with his parents when a child of five years. From 1861 to 1871 he was editorial writer for the *New York Evening Post*. The next two years he spent in travel through California and the Hawaiian islands. He then became Washington correspondent for the *New York Herald*. His principal works are: *A Man of War Life; The Merchant Vessel*. Died, 1901.

Nordica (*nōr'di-ka*), **Lillian,** née Lillian Norton, stage name of Mrs. Zoltan F. Döme, American prima donna, was born at Farmington, Me., 1859. Her earlier education was pursued at the New England conservatory, Boston, and her later studies at Milan, Italy. She made her début as an opera singer at Brescia, Italy, in *La Traviata*. She sang leading soprano parts in forty operas and in all the standard oratorios, but she was best known in Wagnerian parts. She appeared in grand opera in the United States several seasons. Died, 1914.

Norman, Sir Henry (1858—), English journalist, author and traveler, graduated from Harvard in 1881. He was given important commissions abroad, largely because of his proficiency in modern languages. Made extensive reports upon the Armenian massacres, and the status of the Monroe doctrine. Elected to parliament, 1900.

North, Frederick, eighth Lord North and second earl of Guilford, English statesman, was born in 1732, and educated at Oxford. He entered the house of commons at the age of twenty-two, and was made junior lord of the treasury in 1759. In 1770 he became prime minister, and his course, to a large extent, caused England to lose America. He resigned in 1782, and became blind five years before his death, which occurred in 1792.

Norton, Charles Eliot, American educator, critic and scholar, professor of art at Harvard, 1874-98, was born at Cambridge, Mass., 1827. He was graduated at Harvard, 1846; Litt.D., Cambridge, 1884; L.H.D., Columbia, 1885; LL.D., Harvard, 1887, Yale, 1901; honorary D.C.L., Oxford, 1900. In 1864-68 he was joint editor with Lowell of the *North American Review*. In 1874 he was appointed professor of the history of art at Harvard, and in 1879 became president of the Archæological Institute of America, holding that office for eleven years. Editor: *Letters of James Russell Lowell; Correspondence of Carlyle and Emerson; Correspondence of Goethe and Carlyle; Reminiscences and Letters of Thomas Carlyle; Letters of John Ruskin;* and translator of Dante's *Vita Nuova* and *Divina Commedia*. Died, 1908.

Novalis (*no-vā'lis*), German lyric poet and philosopher, was born in Saxony, 1772. His real name was Friedrich Ludwig von Hardenberg. His principal works are *Lehrlinge zu Sais, Hymnen an die Nacht* and an unfinished art romance entitled *Heinrich von Ofterdingen*. He died of consumption, 1801.

Noyes, Alfred, English poet, was born at Staffordshire in 1880 and was educated at Oxford. In 1914 he became Professor of Modern English Literature at Princeton University. His most pretentious work is an epic in blank verse, *Drake* (1908). It is the dramatic story of England's struggle upon the sea, interspersed with lyrics and songs. Of his numerous poems and ballads perhaps the best known are *The Barrel Organ* and *Forty Singing Seamen*, both extremely lilting in their quality.

Noyes, George Rapall, American biblical scholar, was born in Massachusetts, 1798. He was graduated at Harvard College, 1818, and studied theology at Cambridge Divinity School. In 1840 he was made professor of Hebrew and oriental languages and Dexter lecturer on biblical literature at Harvard University. Died, 1868.

Nye, Edgar Wilson, American writer and humorist, who wrote largely under the pseudonym of "Bill Nye," was born at Shirley, Me., 1850. He studied law and later went to Wyoming, where he was admitted to the bar and elected to the legislature. On account of ill health he returned to the East and settled in New York, having already achieved wide popularity through his humorous contributions to the press. In connection with James Whitcomb Riley, he made frequent tours of the country, giving entertainments consisting of lectures and readings. Died, 1896.

Oberlin (*ō'bĕr-lĭn*), **Jean Friederic,** German clergyman and philanthropist, was born in Strassburg, 1740. He was educated at Strassburg University, studied theology, became a German Lutheran clergyman, and was celebrated for his philanthropy. Oberlin College, Ohio, is named after him. Died at Waldbach, 1826.

Obregon, Alvaro (1880-1928), Mexican statesman, born in the State of Sonora. After many years spent as a farmer and stockraiser, he took up arms to assist Carranza in 1913. Two years later he lost an arm fighting against Villa. He was minister of war under President Carranza. In 1920 Obregon was chosen President, serving until 1924. In 1928 he was again elected President but was assassinated before taking office.

O'Brien, Morgan Joseph, American lawyer and jurist, born in New York, 1852. Senior member of firm O'Brien, Boardman, Parker & Fox, trustee of Equitable life assurance society.

O'Brien, Thomas J., American lawyer and diplomat, was born at Jackson, Mich., 1842. He was graduated from the law department, University of Michigan, 1865, and was admitted to the bar, 1864. Candidate for judge of the supreme court of Michigan, 1883; E.E. and M.P. to Denmark, 1905-07, American ambassador to Japan, 1907-11 and to Italy, 1911-13.

Ocam (*ok'am*), or **Ockham, William of,** English scholastic, was born at Ockham in Surrey, between 1270 and 1280. He entered the Franciscan order, studied at Oxford and Paris, and headed the Franciscans' revolt against Pope John XXII.'s denunciation of evangelical poverty. His views on civil government are expounded in his *Dialogues;* his philosophical views in *Summa Logicæ*, in his commentaries on Porphyry and Aristotle, and the commentary on the *Sententiæ* of Peter the Lombard; and his theological views in this last, and the *Tractatus de Sacramento Altaris*.

Ochs (*oks*), **Adolph S.,** newspaper publisher, was born in Cincinnati, Ohio, 1858. He received a common school education at Knoxville, Tenn., established *The Tradesman*, 1879, of which he is still principal owner. He became publisher and principal owner of the *New York Times*, 1896.

Ochs, George Washington, journalist, was born at Cincinnati, Ohio, 1861. He was educated at the University of Tennessee, Knoxville; was twice mayor of Chattanooga, Tenn., was decorated chevalier of legion of honor by French government. Became general manager of *Philadelphia Times*, 1901; in 1902 the *Public Ledger* and the *Philadelphia Times* consolidated under the name of *Public Ledger*, and he was its publisher and general manager, 1901-2; editor-in-chief, *Public Ledger*, 1902-15; editor *Current History Magazine*, etc., since 1915.

O'Connell, Daniel, Irish orator and "liberator," was born in County Kerry, Ireland, 1775. Was admitted to the Irish bar in 1798. His large practice, worth, he said, $35,000 a year, was sacrificed for his country, when he took a leading part in Irish politics. He was head of the Catholic party and contended for the admission of Catholics to parliament, and himself entered parliament in 1829. In 1844 he, with his son and five others, was tried for sedition and sentenced to imprisonment for one year, and a fine of $10,000, and, though the house of lords soon set aside the verdict, the fourteen weeks he was in prison brought on the ailment of which he died. Worn out with the struggle, he left Ireland for Rome, but only reached Genoa, where he died in 1847.

O'Connell, Dennis J., American educator, was born at Charleston, S. C. He was educated at St. Charles' Seminary and St. Mary's College, Charleston; S.T.D., Propaganda, Rome, 1877. He was for some time secretary to Cardinal Gibbons; was head of the American College in Rome sity of America, 1903-09. Appointed Bishop of Richmond, 1912.

O'Connell, William Henry, R. C. cardinal, was born at Lowell, Mass., 1859. He was graduated from Boston College, 1881; studied at the American College, Rome, 1881-84; ordained priest at Rome, 1884; rector American College, Rome, 1895; bishop of Portland, Me., 1901; assistant at pontifical throne, Rome, and special envoy to the emperor of Japan, 1905; and archbishop of Boston, 1907-1911. In 1911 he was made cardinal by Pius X.

O'Connor, Thomas Power, journalist and parliamentary leader, popularly known as "Tay Pay," was born at Athlone, Ireland, 1848. He took up journalism in Dublin and went to London later, where he was appointed a sub-editor on the *Daily Telegraph*. He was afterward employed in the London office of the *New York Herald*, and entered parliament as member for Galway, 1880. He was returned for both Galway and Liverpool, 1885; chose the latter, and was again returned in 1886, 1892, 1895, 1900. Author: *Lord Beaconsfield, a Biography; Gladstone's House of Commons*. Died, 1929.

O'Conor, Charles, American lawyer, was born in New York City, 1804. At the age of twenty he was admitted to the bar of New York, and soon gained high rank in the profession. He was counsel in many important cases; was prosecuting lawyer in the "Tweed ring" cases; and in 1872 was nominated, in the face of his absolute refusal, for the presidency by the labor reform party, and by a convention of democrats, dissatisfied with the nomination of Horace Greeley. Died, 1884.

Octavia (*ok-tā'vi-ā*), sister of the Roman emperor Augustus, and wife of Mark Antony, was born about 70 B. C. Her first husband was C. Marcellus, to whom she was married, 50 B. C. He died in 41 B. C., shortly after which she consented to marry Antony, to make secure the reconciliation between him and her brother. In 32 B. C. war, long inevitable, broke out between Antony and Octavian, and the former crowned his insults by sending Octavia a bill of divorcement. But no injury was too great to be forgiven, and after her husband's death she brought up with maternal care not only her own children, but Cleopatra's also. Her death took place 11 B. C.

Odoacer (*ō'-dō-ā'sēr*), king of the Germanic tribe of the Heruli, ruler of Italy from 476 to 493, was the son of Ædico, a secretary of Attila, and one of his ambassadors to the court of Constantinople. He entered the military service of the Western Roman empire, rapidly rose to eminence, and took part in the revolution by which Orestes, in 475 drove the emperor Julius Nepos from the throne. He extinguished the Western Roman empire, and showed himself to be a wise and politic ruler. But on March 5th, 493, Odoacer was assassinated at a feast, either by Theodoric himself or by his command.

Œhlenschlager (*ā'len-shlā'gĕr*), **Adam Gottlob,** Danish poet and dramatist, was born at Copenhagen, 1779. In 1803 appeared his first collection of poems, including one longer dramatic piece, *The Play of St. John's Eve*, which attracted favorable notice for the lively fancy with which national habits and local characteristics were portrayed. His poetical works comprise over thirty volumes. He ranks among the Danes as does Goethe among the Germans, and his death in 1850 was felt by the whole nation.

Oersted (*ûr'stĕTH*), **Hans Christian,** Danish physicist, was born at Rudkjöbing, in the island of Langeland, 1777. He studied at the University of Copenhagen and received the degree of Ph.D. there in 1799. In 1819 he published his famous essay entitled *Experiments on the Effect of Opposing Electricity Upon the Magnetic Needle*, in which he showed the identity of the forces of magnetism, electricity, and galvanism, and thus opened the way for the wonderful development of knowledge in respect to those forces, which was one of the chief scientific glories of the nineteenth century. Died at Copenhagen, 1851.

Offenbach (*ôf'en-bak*), **Jacques,** French composer of comic operas, was born in Cologne, 1819, of German-Jewish parents. In 1835-37 studied at the Paris conservatory. He was installed manager of the Gaité theater in 1873, and sank some millions of francs in the experiment. He afterward visited the United States. Died at Paris, 1880.

Oglethorpe (*ō'g'l-thôrp*), **James Edward,** English general and founder of Georgia, was born at London, 1696. He served in the British army, and was thirty years in parliament. He planned a colony in America, as a refuge for debtors, who were then imprisoned in English jails, and also for persecuted German Protestants. George II.

gave the land, which was named Georgia, after him, and parliament contributed $50,000, and in 1733 he took out 130 persons, and founded the city of Savannah, in 1733. He left the colony in 1743, and surrendered the charter to the British government in 1752. Died in England, 1785.

Ohm (*ōm*), **Georg Simon,** German physicist, was born at Erlangen, Bavaria, 1787. He was educated at the University of Erlangen, held the chair of physics at Cologne from 1817 to 1826. "Ohm's law" was a result of his researches in electricity, and the measure of resistance, called the *ohm*, was so named in honor of his achievements by the Paris congress of physicists in 1881. Died, 1854.

Ohnet (*ō'nĕ'*), **Georges,** French novelist of great popularity, was born in Paris, 1848. He was educated at Sainte Barbe, and at the Lycee Bonaparte. Under the general title of *Les Batailles de la Vie* he published a series of novels, some of which have reached a hundredth edition. Chief of these are: *Serge Panine; Le Maître des Forges; La Comtesse Sarah; Lise Fleuron.* Died, 1918.

Oken (*ō'kĕn*), **Lorenz,** German naturalist, was born at Bohlsbach, Swabia, 1779. He became professor of medicine at Jena in 1807, and in 1816 issued a journal called *Isis*, which led to government interference and his resignation. Died, 1851.

Oku (*ō'kōō*), **General Hokyo, Count,** Japanese soldier, a Samurai of Ko-Kura, was born in 1845. He entered the army in 1871; was major in the imperial forces during the Satsuma rebellion of 1877. He was commander of the second army during the Russo-Japanese war, 1904-05, which landed on the east coast of the Liao-tung peninsula in May, 1904, won the brilliant victory at Kinchau, and did splendid service in the subsequent fighting in Manchuria. He was made chief of general staff, 1906, and count, 1907. Chief of general staff, 1906-12; field marshal, 1911.

Okuma (*ō'-kōō-mä*), **Count Shigenobu,** Japanese statesman, was born at Saga, Hizen, 1838. He was a retainer of Lord Nabeshima; was one of the founders of the new government; finance minister, 1869-81; foreign minister, 1888-89; minister of agriculture and commerce, 1896-97; prime minister and foreign minister, 1898. Died, 1922.

Olaf (*ō'läf*), **Saint,** king of Norway, was born in 995, and, having made his name a terror on the coasts of Normandy and England, succeeded, in 1015, in securing the throne of Norway. He died in 1030, fighting for Christianity, and his body, laid in the cathedral of Trondhjem, was said to have wrought many miracles, Olaf was later proclaimed patron saint of Norway.

Olcott, Chauncey, otherwise Chancellor John Olcott, singer and actor, was born in Buffalo, N. Y., 1860. He was educated in the Buffalo public schools; was brought out as a singer by late R. M. Hooley, 1880. He was with Hooley's company for two years, sang two years in England in comic opera, then succeeded W. J. Scanlan as star in Irish musical dramas. He has since appeared in various leading roles in the United States and England.

Oliphant, Laurence, English traveler, diplomat, and writer, was born at Cape Town in 1829. He was called to the Scottish bar; later to the English bar. He became private secretary to the earl of Elgin, then governor-general of Canada. He died at Twickenham, 1888. His later mystical views he published in *Sympenumata* and *Scientific Religion.* He also wrote: *The Transcaucasian Campaign Under Omar Pasha.* Died, 1914.

Oliphant, Margaret (née Wilson), British novelist and biographical writer, was born at Wallyford, Midlothian, 1828. In 1849 she published her first work, *Passages in the Life of Mrs. Margaret Maitland of Sunnyside,* which instantly won attention and approval. It is, however, on the *Chronicles of Carlingford* that her reputation as a novelist most securely rests. Died, 1897.

Oliver, George Tener, manufacturer, newspaper publisher, United States senator, was born in County Tyrone, Ireland, 1848, while his parents were visiting in that country, they at the time being residents of Allegheny City, Pa. He was graduated at Bethany College, West Virginia, 1868; studied law and was admitted to the bar of Allegheny county, 1871. In 1900 he purchased the *Pittsburg Gazette,* and acquired the controlling interest in the *Pittsburg Chronicle-Telegraph,* and in 1906 merged the former with the *Pittsburg Times,* under the name of the *Gazette-Times.* He was elected in 1909 to the United States senate to fill the unexpired term of Hon. P. C. Knox, who resigned to accept the office of secretary of state. Died, 1919.

Olney, Richard, American lawyer and statesman, was born at Oxford, Mass., 1835. He was graduated at Brown, 1856, and at Harvard Law School, 1858; LL.D., Harvard, 1893, Brown, 1894, Yale, 1901. He was admitted to the bar in 1859. He was a regent of the Smithsonian Institution, Washington; member of American philosophical society, etc. While secretary of state in Cleveland's cabinet he evinced great ability, and his state papers are among the most vigorous documents of those offices. Died, 1917.

Oman, Charles William Chadwick, British historian, Chichele professor of modern history at Oxford, since 1905, was born at Mozufferpore, India, 1860. He was graduated at Oxford, has been a fellow of All Souls College since 1883, and is author of the following works: *A History of Greece; Warwick the King-maker; Short History of the Byzantine Empire,* etc.

Omar (*ō'mär*), **Abu-Hafsa-ibn-al-Khettab,** second caliph of the Moslems, was born about 581. After Mohammed's death he caused Abu-Bekr to be proclaimed caliph, and was himself appointed prime minister. On the death of Abu-Bekr, Omar succeeded as caliph, and pushed on the wars of conquest with increased vigor. He was summoned to Jerusalem, in 637, to receive the keys of that city, and before leaving gave orders to build a mosque, now called by his name, on the site of the temple of Solomon. He instituted the practice of dating from the hegira. He died in 644.

Omar Khayyam (*ō'mär ki-yäm'*), astronomer-poet of Persia, was born at Nishapur about 1050, and is said to have died there in 1123, or 1124. Omar was the poet of agnosticism, though some see nothing in his poetry save the wine cup and roses, and others read into it that sufi mysticism with which it was largely adulterated long after Omar's death. He was a true poet; yet Fitz-Gerald's translation is far finer than the original.

Omer Pasha (*ō'mĕr pä-shä'*), Turkish general, was born at Fiaski, in Croatia, a province of Austria, 1806. When Medjid became sultan, he made Omer Pasha governor of Lebanon. When the Russians invaded the European dominions of Turkey, he was sent with an army of 60,000 men against them, and successfully held his ground at Kalafat, and, after their withdrawal from the country, entered Bucharest in triumph, August, 1854. He was governor-general of Bagdad, and also minister of war at different periods. Died, 1871.

Ontario, Bishop, of. See **Mills, William Lenox.**

Oppenheim, Nathan, American physician, medical author, was born at Albany, N. Y., 1865. He was graduated at Harvard, 1888, and from the College of Physicians and Surgeons, New York, 1891. Attending physician, children's department, Lebanon hospital. Author: *The Development of the Child; The Medical Diseases of Childhood; The Care of the Child in Health; Mental Growth and Control;* and various scientific essays. Died, 1916.

Opper, Frederick Burr, American artist, was born at Madison, Ohio, 1857. He left school at fourteen. He was on the art staff of *Frank Leslie's* three years; an artist on *Puck* for eighteen years, and severed his connection with *Puck,* to accept an offer from Hearst's *New York Journal,* 1899. Illustrator for Bill Nye, Mark Twain, Hobart (Dinkelspiel), Dunne (Dooley) etc.

Optic, Oliver, American writer of books for young folks, was born in Medway, Mass., 1822. His real name was William T. Adams, and he was for several years a public school teacher in Boston. He wrote a large number of books which are published in several series, *Oliver Optic's Magazine for Boys and Girls* was edited by him for many years, but it was discontinued in 1875. He died at Boston, 1897.

Orange, Prince of. See **William I., the Silent**; **William III.,** king of England.

Orcagna (*ōr-kän'yä*), **Andrea di Cione,** Italian painter, sculptor, architect and poet, was born at Florence about 1308. He was chief architect of the cathedral at Orvieto. The frescoes of the *Last Judgment* and *Christ and the Virgin,* in the church of Santa Maria at Florence, still survive as examples of his painting. His work was studied by succeeding painters, especially by Michelangelo and Raphael. He died about 1376.

O'Reilly, John Boyle, Irish-American poet, was born at Dowth, Ireland, 1844. He passed through the various stages of journalism from type-setting to the writing of editorials. He was tried for treason, convicted, and banished to Australia in 1866. Escaping from that country, he reached the United States in 1869, and became the editor of the *Boston Pilot.* Died, 1890.

Origen (*or'i-jen*), Greek church father, was born at Alexandria, about 185. Much of his life was spent in Alexandria, in which city he obtained great reputation as a teacher, but, which he was compelled, by persecution, to leave finally in 321. His writings are said to have amounted to six thousand, but by far the greater number are lost. As to the learning of Origen and his ability as a teacher, we possess the most ample testimony. He died at Tyre, 254.

Osler (*os'lĕr*), **William,** Canadian physician, educator, and author, was born at Bond Head, Ontario, 1849. He was graduated at McGill University, Montreal, 1872; LL.D., McGill, Toronto, University of Edinburgh. He was professor of the institutes of medicine, McGill University, 1874-84, professor of clinical medicine, University of Pennsylvania, 1884-89, and at Johns Hopkins University, 1889-1905; was regius professor of medicine, Oxford University, beginning 1905. Author: *The Cerebral Palsies of Children; Chorea and Chreiform Affections; Lectures on Abdominal Tumors; Angina Pectoris and Allied Stages;* etc. Died, 1919.

Osman I. (*ōs'män*) or **Othman** (*ōth'män*), surnamed "the conqueror," was born in Bithynia, 1259. When the Mongols overthrew the sultanate of Iconium, 1299, he seized a portion of Bithynia. From his name the terms Ottoman and Osmanli are derived. He died in 1326.

Ossian (*osh'an*), Celtic bard, supposed to have lived in Scotland or Ireland about fifteen hundred years ago. He was the son of Fingal, king of Morven, a famous hero, and was blind. His poems are remarkable for their grandeur and wild beauty, and are very different from all other poetry. They have been published in nearly all European languages.

Ossoli (*ōs'ō-lē*), **Marchioness.** See **Fuller, Sarah Margaret.**

Otho I., the Great, emperor of the West, son of the emperor Henry I., of Germany, was born in 912, and in 936 formally crowned king of the Germans. He consolidated the disjointed power of the German emperors, and established Christianity at many different points in the Scandinavian and Slavonic lands which lay beyond the circuit of his own jurisdiction. Died, 973.

Otis, James, American patriot and orator, was born at West Barnstable, Mass., 1725, and became a leader of the Boston bar. He was advocate-general in 1760. In 1761, elected to the Massachusetts assembly, he was prominent in resistance to the revenue acts. In 1769 he was savagely beaten by revenue officers and others, and lost his reason. In 1783 he was killed by lightning. His fame chiefly rests on *The Rights of the Colonies Asserted,* published by him in 1764.

Ottawa, Bishop of. See **Hamilton, Charles.**

Otter, William Dillon, Canadian general, chief of the general staff, Canada, was born in 1843. He was educated at Upper Canada College, Toronto; served for twenty-two years in active militia; beginning 1883 in the permanent militia, and saw active service during Fenian raids of 1866 and 1870, Northwest rebellion of 1885, and during the Boer war of 1899-1900; commanded Western Ontario district, 1905-08; chief of general staff headquarters, 1908-10; inspector general, 1910-12; director, Internment Operations since 1914. He is the author of *The Guide, a Manual of Interior Economy, etc., for Canadian Infantry.* Died, 1929.

Oudinot (*ōō'dē'nō*), **Charles Nicolas,** duke of Reggio, French marshal, was born at Bar-le-Duc, 1767. He served in the revolutionary wars, and in 1805 obtained the grand cross of the legion of honor and the command of ten reserve battalions, the "grenadiers Oudinot." In 1810 he was charged with the occupation of Holland, and took part in the Russian campaign and in the battles of 1813 with Russians and Austrians. In 1823 he commanded in Spain; became grand chancellor of the legion of honor in 1839, and succeeded Marshal Moncey as gov. of the Invalides, 1842. Died, 1847.

Ouida (*wē'da*). See **De la Ramee, Louise.**

Overbeck, Johann Friedrich, German painter, was born at Lübeck, 1789. He studied art at Vienna, 1806-10, and settled in Rome, where he allied himself with the like-minded Cornelius, Schadow, Schnorr, and Veit, who, from the stress they laid on religion and moral significance, were scoffed at as church-romanticists, pre-Raphaelites, etc. His oil-pictures are inferior to his frescoes. Died, 1869.

Overman, Lee Slater, lawyer, United States senator, was born in Salisbury, N. C., 1854. He was graduated at Trinity College, N. C., 1874; member of North Carolina legislature, 1883, 1885, 1887, 1893, 1900; and speaker, 1893. He was elected United States senator, 4 terms, 1903-27.

Ovid (*ov'id*), or **Publius Ovidius Naso,** Roman poet and writer, was born at Sulmo, Italy, 43 B. C. He belonged to a noble family, and was brought up to the law; but his love for poetry and his natural indolence led him to desert the practice of the law, though he occupied one or two judicial positions. He died in banishment at Tomi, 18 A. D. Besides the *Metamorphoses,* consisting of all the transformations recorded in legend from the creation of the world to the time of Julius Cæsar, he was the author of a poem called *Ars Amatoria,* or the "Art of Love."

Owen, Sir Richard, British naturalist, was born at Lancaster, England, 1804. He studied medicine at Edinburgh and London, but soon began his work in zoölogy and comparative anatomy by preparing catalogues of the collections in the museum of the Royal College of Surgeons and lecturing on comparative anatomy. Owen's researches in zoölogy number nearly 400; they are largely devoted to structure, and embrace every class of animals from a sponge to man. Among his voluminous writings are: *Comparative Anatomy of Invertebrates; Comparative Anatomy and Physiology of Vertebrates.* Died, 1892.

Owen, Robert, English social reformer, was born in Wales, 1771. In 1799 he married the daughter of David Dale, from whom, with others, he bought the village and cotton mills of New Lanark, Scotland. Here he introduced a system of reform, which proved for a time highly successful. He came to the United States in 1824, and tried to found a communist society at New Harmony, Ind.; but the scheme failed, and in 1827 he returned to Great Britain, where experiments of a similar nature, attended by a similar result, were made at Orbiston in Lanarkshire, and at Tytherley in Hampshire. He finally became a spiritualist. Died, 1858.

Owen, Robert Latham, lawyer, United States senator, was born at Lynchburg, Va., 1856. Began practice of law, 1880; United States Indian agent for the five civilized tribes, 1885-89. He is the owner of extensive banking, real estate, farming and cattle interests. As attorney for Choctaws and Cherokees he recovered from the United States government, in money, nearly $9,000,000; drew up the act of congress of 1891, giving United States citizenship to every Indian in Indian territory. He was elected United States senator from Oklahoma for the terms 1907-1925.

Oxenstjerna (*ŏk'sen-sher'nȧ*), **Axel, Count,** Swedish statesman, was born at Fano, in Upland, 1583. He was made chancellor by Gustavus Adolphus in 1611; succeeded him as leader of the Protestant party in Germany, 1632-35; acted as regent throughout the minority of Christina, and became her chief minister when she assumed the government in 1644. Died, 1654.

Oyama (*ō'yȧ-mȧ*), **Iwao, Prince,** Japanese field-marshal, was born in Kagoshima, 1844. He entered the Japanese army, was appointed colonel in 1871, promoted major-general in the same year, lieutenant-general in 1877, general in 1891, and in 1898 was raised to the rank of field-marshal. Having served as military attaché during the Franco-Prussian war, upon his return to Japan, he entered the ministry of war, and assisted in the work of reorganizing the army. In 1904 he was chief of the general staff, and when war broke out with Russia he was appointed commander-in-chief in Manchuria, defeating the Russians at the three great battles of Liau-Yang, the Shaho and Mukden. He received the order of merit, 1906, and resigned his post as chief of the general staff in April. Created prince in 1907. Died, 1916.

Packard, Alpheus Spring, American naturalist, was born at Brunswick, Maine, 1839, was graduated from Bowdoin in 1861, and became assistant to Agassiz at Cambridge. After taking part in several scientific expeditions, he became state entomologist of Massachusetts, and professor of zoölogy and geology at Brown University. Besides many technical papers, he published *Guide to the Study of Insects; Our Common Insects; Zoölogy; Entomology for Beginners; Text-Book of Entomology*, etc. Died, 1905.

Paderewski (*pȧ'de-ref'skē*), **Ignace Jan,** Polish pianist and composer, was born in Podolia, Russian Poland, 1860. In 1872 he went to Warsaw, studied under Roguski, and subsequently pursued his studies under the late Frederick Kiel of Berlin. In 1884 he resolved to adopt the career of a virtuoso, removed to Vienna, placed himself under his fellow-countryman, Theador Leschetizky, and at the expiration of three years' hard study made his début. Afterward he visited Germany, and in the autumn of 1889 made his first appearance before a Parisian audience. His first appearance in England took place at St. James' hall, London, 1890. He has written *Manru*, an opera; *Suits for Orchestra in G*, etc. Premier of Poland, 1918-1919.

Paganini (*pȧ'gȧ-nē'nē*), **Nicolo,** Italian violinist, son of a commission broker at Genoa, was born in 1782. His musical talent showed itself in his childhood; in his ninth year he had instructions from Costa at Genoa, and afterward from Rolla at Parma, and from Ghiretti. In 1831 his violin playing created an equal furor in Paris and London. His mastery over the violin has never been excelled. He died at Nice, 1840.

Page, Thomas Nelson, American author, was born on Oakland plantation, Hanover county, Virginia, 1853. He was educated at Washington and Lee University; LL.B., University of Virginia, 1874; Litt.D., Washington and Lee, 1887, Yale, 1901; LL.D., Tulane University, 1899. He practiced law at Richmond, Va., 1875-93, but subsequently turned to literature and lecturing. Author: *In Ole Virginia; Two Little Confederates; On Newfound River; The Old South; Among the Camps: Elsket and Other Stories*. Died, 1923.

Page, Walter Hines, American journalist and writer, editor of *The World's Work* beginning 1900, was born at Cary, N. C., 1855. He was educated at Randolph-Macon College, Virginia, and Johns Hopkins University; LL.D., Randolph-Macon, and Tulane. He was literary adviser to Houghton, Mifflin and Company, 1895-99; editor of *The Atlantic Monthly*, 1896-99. Ambassador to Great Britain, 1913-1918. Author: *The Rebuilding of Old Commonwealths*, etc. Died, 1918.

Paget (*paj'it*), **Sir James,** English surgeon, was born at Yarmouth, England, in 1814. He entered the Royal College of Surgeons in 1836, became member of the council in 1865, president in 1875, and Bradshawe lecturer in 1882. He was made a baronet in 1871, and also an LL.D. by the University of Edinburgh. His works are *Lectures on Surgical Pathology, Clinical Lectures*, etc. Died at London, 1899.

Paine, John Knowles, American composer and organist, professor of music, Harvard, from 1875, was born in Portland, Maine, 1839. He studied music under Herman Kotzschmar there; made his first appearance as organist, 1857; studied in Germany under Haupt and others, 1858-61; and made an artistic tour there, 1866-67. He was instructor in music, Harvard, 1862-73 and became professor there in 1876; A.M., Mus.D. He composed the music for the *Œdipus Tyrannus* of Sophocles performed in Greek at Cambridge, 1881; *Hymn of the West*, words by Stedman, sung at the opening of the St. Louis exposition, 1904; the oratorio, *St. Peter*; cantatas, *Realm of Fancy, Phœbus Arise*, etc. Died, 1906.

Paine, Thomas, Anglo-American writer, was born, 1737, at Thetford, England. In 1774 he came to America, was favorably received by a bookseller in Philadelphia, and in 1776 published a pamphlet entitled *Common Sense*, in which he maintained the cause of the colonies against the mother country. The success and influence of this publication were extraordinary, and it won him the friendship of Washington, Franklin and other distinguished American leaders. In 1791 he published *The Rights of Man*, the most famous of all the replies to Burke's *Reflections Upon the French Revolution*. In 1792 the department of Pas-de-Calais elected him a deputy to the national convention, where he usually voted with the Girondists. At the trial of Louis XVI. he proposed that the king should be spared and afforded an opportunity of seeking an asylum in America. In 1802 returned to the United States, and died, 1809.

Palestrina (*pȧ'lās-trē'nȧ*), **Giovanni Pierluigi da,** distinguished Italian composer, was born near Rome about 1514. In 1581 he was made master of the Julian chapel, Rome, and in 1554 published a collection of masses, so highly approved by Pope Julius III., to whom they were dedicated, that he appointed their author one of the singers of the pontifical chapel. During the remaining years of his life the number and the quality of the works of Palestrina were remarkable. He died in 1594.

Paley (*pā'li*), **William,** English divine and writer, was born at Peterborough in 1743. He was educated at Christ's College, Cambridge, of which he became a fellow in 1766, and for ten subsequent years he resided at the University. In 1785 he at once attained high reputation by his *Principles of Moral and Political Philosophy*. He was successively made vicar of Stanwix, a prebendary of St. Paul's, subdean of Lincoln, a doctor of divinity, and rector of Bishop's Wearmouth. Died, 1805.

Palissy (*pȧ'lē'se*), **Bernard,** French artist and philosopher, was born about 1510. He was apprenticed in a glass work at Agen, where he learned the art of painting on glass. Having completed his apprenticeship he set out on a tour of France and Germany, in 1528, maintaining himself by practicing his craft of glass painter and by land surveying. During his travels he studied attentively all the books within his reach, and acquired an extensive knowledge of natural science.

In 1535 he returned to France, married and settled at Saintes. Shortly after his return his attention was attracted by a fine specimen of enameled pottery, and he thereupon resolved to discover for himself the secret of the enamel. Being ignorant of the potter's art he had to grope his way, and labored on year after year without success, almost starving, and reducing his family to the depths of poverty. At length, after sixteen years of unremunerated labor (1538-54), he obtained a pure white enamel, affording a perfect ground for the application of decorative art.

He was now able to produce works in which he represented natural objects grouped and portrayed with consummate skill, and his enameled pottery and sculptures in clay became recognized as works of art.

In 1562 he went to establish himself at Paris, where he continued to work at his art, and also delivered scientific lectures, which were attended by the most distinguished men in Paris, and contained views far ahead of his time. He suffered persecution as a Huguenot, and was arrested in 1589 and thrown into the Bastille, where he is said to have died in 1590. He left several philosophical works.

References.—Morley's *Palissy the Potter*, and *Lives* in French by Burty and Dupuy; Lamartine's *Celebrated Characters*; Hood's *Peerage of Poverty*.

Palladio (*pȧl-lȧ'dyō*), **Andrea,** famous Italian architect, was born at Vicenza, 1518. After having studied with the greatest care the writings of Vitruvius and the monuments of antiquity at Rome, he settled in his native city, and first acquired a reputation by his restoration of the basilica of Vicenza. He died at Vicenza, 1580.

Palma (*pȧl'mȧ*), **Tomas Estrada,** Cuban patriot, was born about 1836 in Bayomo, Cuba; studied law at University of Seville, but never practiced; took part in the Cuban revolution of 1868-78. He became president of the Cuban republic, but was captured, 1877, and imprisoned until hostilities ceased, 1878. During the last Cuban revolution he was delegate-at-large and minister plenipotentiary for Cuban republic, and subsequently president of Cuba, 1902-06. He died 1908.

Palmer, Edward Henry, English explorer and orientalist, was born, 1840, at Cambridge. He graduated from Cambridge in 1867. In 1881 he turned journalist, writing principally for the *Standard*. In 1882, on the eve of Arabi's Egyptian rebellion, sent by government to win over the Sinai tribes, he, Captain Gill and Lieutenant Charrington were on August 11th murdered in the ravine of Wady Sadr. Among Palmer's works are the *Desert of the Exodus; Persian Dictionary*.

Palmer, Erastus Dow, American sulptor, was born at Pompey, N. Y., 1817. He was a joiner by trade, and made carvings first of animals and leaves in wood. Seeing a cameo head, he cut on a shell a portrait of his wife, and his success induced him to try working in marble. He executed busts of Alexander Hamilton, Washington Irving, Commodore Perry and others. *The Landing of the Pilgrims*, in the capitol at Washington, is one of his largest works. Died, 1904.

Palmer, George Herbert, American educator and scholar, Alford professor of natural religion, moral philosophy and civil polity, Harvard, since 1889, was born in Boston, 1842. He graduated at Harvard, 1864; LL.D., University of Michigan, 1894, Union, 1895, Harvard, 1906; Litt.D., Western Reserve, 1897. He was tutor in Greek at Harvard, 1870; assistant professor, 1873-83, and professor of philosophy, 1883-89. Author: *The Odyssey*, an English translation in rhythmic prose; *The Life and Works of George Herbert; Life of Alice Freeman Palmer*, etc.

Palmerston (*pȧm'-ėr-stun*), **Henry John Temple,** Viscount (1784-1865), British statesman, was elected to parliament in 1807, and in 1811 became member of the University of Cambridge, which he represented until 1831. In 1852 he was appointed home secretary and was made first lord of the treasury in 1855. In 1858 he was defeated and compelled to resign office owing to a conspiracy bill arising out of Orsini's attempt to assassinate Napoleon III. The following year he returned to power, and remained prime minister until his death.

Pankhurst, Mrs. Emmeline (1854-1928), English "suffragette" leader, began in 1908 the "militant" movement for promoting woman suffrage in England. She and her small group of followers were a great annoyance to the government; repeated arrests and imprisonments failed to curb the movement; the "hunger strike" was their best weapon.

Paoli (*pȧ'ō-lē*), **Pasquale,** famous Corsican patriot, was born in 1725 at Morosaglia, in Corsica. In 1755 he was elected captain-general of the island. In 1794, he joined the British in driving out the French. He then surrendered the island to George III., but, becoming dissatisfied with the government, he quarreled with the British viceroy. He therefore retired from the island in 1796, and spent the remainder of his life in the neighborhood of London. Died, 1807.

Pape, Eric, American artist, illustrator, was born in San Francisco, 1870. He received his art education in Paris. He exhibited at Paris salon, 1890-1900, World's Columbian exposition, 1893, Munich Kunst Austellung, 1897, Omaha exposition, 1899, Paris exposition, 1900, Pan-American exposition 1901, St. Louis exposition, 1904, and at various art museums and exhibitions in the United States and abroad, and has illustrated many important works.

Papin (*pȧ'paN'*), **Denis,** French physicist, was born at Blois, 1647. He studied medicine in Paris, where, after receiving his degree, he practiced for some time as a physician. To Papin undoubtedly belongs the high honor of having first applied steam to produce motion by raising a piston. Papin's sagacity led him to many other discoveries, among which was the principle of action of the siphon. Died at Marburg, Germany, 1712.

Papinianus (*pȧ-pin-i-ā'nus*), **Emilius,** Roman jurist, was born about 146. He held offices at Rome under Septimus Severus, but was put to death by Caracalla in 212. He was remarkable for his juridical genius, the lucidity of his decisions and his high sense of right and morality. Nearly 600 excerpts from his legal works were incorporated in Justinian's *Pandects*.

Pappenheim (*pȧp'en-him*), **Gottfried Heibrich, Count von,** a great imperialist general in the Thirty Years' war, was born, 1594, at Pappenheim, Bavaria, of an old and distinguished Swabian family. He served under the king of Poland against the Russians and the Turks, and then joined the Catholic league, defeating the Bohemians at Prague in 1620. At Lützen, in 1632, he arrived in time to save Wallenstein from defeat by the Swedes, but was mortally wounded in the second charge and died at Leipzig, 1632.

Paracelsus (*par-a-sel'sus*), otherwise **Theophrastus Bombastus von Hohenheim,** German-Swiss physician and alchemist, was born in Switzerland in 1493. He entered Basel University at sixteen, studied alchemy and chemistry with Withemina, bishop of Wurzburg, and next at the mines in Tyrol learned the properties of metals and minerals. He acquired fame as a medical practitioner, was made town physician at Basel, and lectured on medicine at the University, but flouted at Galen and Avicenna, and justified the furious enmities that pursued him by his own vanity, arrogance, aggressiveness and intem-

perate habits. Of some 250 works attributed to him, the critics admit only from ten to twenty-four as genuine, the others being by his followers the "Paracelsists." In spite of his attraction to alchemy and mysticism, he made new chemical compounds, and improved pharmacy and therapeutics. Died, 1541.

Paris (*pá'rē'*), **Comte de, Louis Philippe Albert d'Orleans,** grandson of King Louis Philippe, was born in Paris, 1838. He was educated in England. In 1862 he returned to France, entered the national assembly, but was expelled in 1886, and went to England, where he occupied himself in writing a *History of the American Civil War*. He was the head of the Orleans family and a claimant to the French throne. Died, 1894.

Park, Roswell, American physician, was born at Pomfret, Conn., 1852. He was graduated from Racine College; A.M., Harvard; M.D., medical department of Northwestern University, 1876; honorary M.D., Lake Forest University; LL.D., Yale, 1902. 1883 professor of surgery, medical department, University of Buffalo, and surgeon to Buffalo general hospital. He was a member of all national and several foreign surgical societies; and was director of the New York state pathological laboratory in Buffalo. Died, 1914.

Parker, Alton Brooks, American lawyer, jurist, was born in Cortland, N. Y., 1852. He was educated at the Cortland Academy, Cortland Normal School, and graduated at the Albany Law School; LL.D., Union University. Appointed justice of supreme court of New York, 1885, elected, 1886; justice court of appeals, second division, 1889-92. Chief justice of court of appeals, 1898-1904. He resigned to accept democratic nomination for the presidency, made on first ballot, July 9, 1904. He was president of the American bar association, 1906-07, and practiced law as a member of the firm of Parker, Hatch and Sheehan. Died, 1926.

Parker, Edward Wheeler, statistician, was born at Point Deposit, Md., 1860; was educated at Baltimore, and in City College, Baltimore. Statistician United States Geological Survey since 1891, in charge Division of Mineral Resources, 1907-1915. Expert special agent twelfth United States Census; member Anthracite Coal Strike commission, 1902; expert in charge of history of mining in United States for department of economics and sociology, Carnegie Institute. Author: *Annual Reports on Production of Coal in United States; Production of Coke in United States;* also reports on coal mining, coke manufacture and petroleum refining for United States Census, etc.

Parker, Sir Horatio Gilbert, Anglo-Canadian novelist, was born in Canada, 1862. He was educated at Trinity College, Toronto; D.C.L., Toronto. He was trained to journalism in Australia, and there first began his literary and dramatic works: *When Valmond Came to Pontiac; The Seats of the Mighty; The Battle of the Strong; The Lane That Had No Turning; The Right of Way; History of Old Quebec; The Weavers*, etc. He was returned to parliament for Gravesend as a Unionist in 1900, and was knighted in 1902.

Parker, Horatio William, American composer and, organist, professor of the theory of music, Yale, beginning 1894, was born at Auburndale, Mass., 1863. He was educated at Auburndale and in Europe; graduated at Royal Conservatcire, Munich, 1885; M.A., Yale, 1892; Mus.D., Cambridge University, England, 1902. Organist at Trinity church, Boston beginning 1893. His *Hora Novissima* was performed at the Chester (England) festival July, 1899, and, in September, 1899, at festival of the three choirs, Worcester, England. He was author of the cantatas, *King Trojan* and *The Kobolds;* and of the oratorios, *Hora Novissima* and *St. Christopher*. Died, 1919.

Parker, Joseph, English preacher and author, the son of a stonecutter, was born at Hexham, 1830. He studied at University College, London, and became pastor of Congregational chapels at Banbury, Manchester, and, in 1869, of that now represented by the City Temple in London. *Ecce Deus* is his most noted work. Died, 1902.

Parker, Matthew, second Protestant archbishop of Canterbury, was born at Norwich, England, 1504. He studied at Corpus Christi College, Cambridge, and was ordained a priest in 1527. On the accession of Queen Mary he refused to conform to the reëstablished order of things, and was deprived of his preferments, and even obliged to conceal himself. The death of Mary, and the accession of Elizabeth called him from his compulsory retirement, when he was appointed by the queen archbishop of Canterbury. "The subsequent history of Archbishop Parker," it has been justly remarked, "is that of the church of England." It was under his presidency that the thirty-nine articles were finally reviewed and subscribed to by the clergy. Died, 1575.

Parker, Theodore, American clergyman and scholar, was born at Lexington, Mass., 1810. He entered Harvard College in 1830, and during his collegiate course supported himself by teaching private classes and schools. He then graduated from Harvard Divinity School in 1836 and the next year became a Unitarian minister at West Roxbury. His complete works, in twelve volumes, edited by F. P. Cobbe, were published in 1863-65. After a trip to Europe for his health, he returned in 1844 and for years preached to immense congregations at Melodeon and Music halls, Boston. His health compelled him to go to Mexico, thence to Italy, where he died at Florence, 1860.

Parkhurst, Charles Henry, American Presbyterian clergyman, was born in Framingham, Mass., LL.D., Amherst. Pastor of Madison Square Presbyterian church, New York, 1880-1918. He Square Presbyterian church, New York. He became president in 1891 of the society for prevention of crime, and his assertion of partnership of police with criminals led to an investigation of the New York police by the New York legislature. Author: *What Would the World Be Without Religion? The Swiss Guide; Our Fight With Tammany; The Sunny Side of Christianity*, etc.

Parkman, Francis, American historical writer, was born in Boston in 1823, and graduated at Harvard, 1844. He then began the study of law, but abandoned it to devote himself to historical literature. He lived some time among the Indians of the Rocky Mountains, and wrote *The Conspiracy of Pontiac; The Old Regime in Canada; Count Frontenac and New France under Louis XIV.; Montcalm and Wolfe; A Half Century of Conflict; The California and Oregon Trail*, etc. He died at Jamaica Plain, Mass., 1893.

Parmenides (*pär-men'i-dez*), Greek philosopher, and greatest member of the Eleatic school, was born at Elea, and flourished about the fifth century B. C. In his didactic poem *On Nature* he sought to demonstrate the reality of absolute being.

Parnell (*pär'nel*), **Charles Stewart,** Irish statesman, was born in 1846, in Avondale, Ireland, and was educated at Cambridge. He entered public life as member for Meath in 1875. At the general election he was elected for three constituencies, but chose Cork, and as the head of the land league was prosecuted in 1880, by the Gladstone government, the result being a disagreement of the jury. At the general election of 1885, he nominated every home rule candidate, and subsequently entered into an alliance with the followers of Gladstone. In the next parliament he proposed a bill to suspend evictions and reduce rent, after the rejection of which the agitation continued. In 1888 a special commission was appointed to examine the charges made against Parnell and others by the *London Times*, the result being his acquittal. He then brought suit for libel against the *Times* and recovered 5,000 pounds damages. Died, 1891.

Parrhasius (*pa-rā'shi-us*), celebrated Greek painter, was the son of Evenor, also an artist, and was born at Ephesus in the fifth century B. C. According to Pliny, he was the first to establish a true proportion between the different parts of a picture, and delineated with elegance and precision all the minutiæ of the features.

Parrish, Maxfield, American painter and illustrator, was born in 1870 at Philadelphia. He studied at the Pennsylvania Academy of Arts, and with Howard Pyle. In 1900 he received honorable mention at the Paris Exposition, and in 1901 a silver medal at the Pan American. He became a member of the National Academy in 1906.

Parrott, Robert Parker, American inventor, was born in New Hampshire in 1804, graduated at West Point in 1824. He became captain in the ordnance corps in 1836, and soon afterward superintendent of the West Point iron and cannon foundry. Here he invented the Parrott system of rifled guns and projectiles, which were first introduced into actual use at the battle of Bull Run, 1861. Died, 1877.

Parsons, Alfred William, English landscape painter, was born at Beckington, Somersetshire, 1847. He was educated in private schools; was a clerk in the savings bank department of a London post office, 1865-67, after which he has devoted himself to painting. He executed illustrations for *Harper's Magazine* and other publications; with E. A. Abbey, illustrations for *Herrick's Poems; She Stoops to Conquer;* etc. Died, 1920.

Parsons, William Barclay, American engineer, was born in New York, 1859. He was graduated at Columbia University, 1879; as chief engineer of the New York rapid transit commission, designed and constructed underground railway system in New York; was a member of the Isthmian canal commission.

Partridge, William Ordway, American sculptor, author, was born at Paris, France, 1861. He studied at Columbia College, and received his art education in Rome, Florence and Paris. His works include statue of Shakespeare, Lincoln park, Chicago; equestrian statue General Grant for Union League club, Brooklyn; *Pocahontas*, Jamestown exposition, 1907, etc. He has been an exhibitor at the salon, Paris: Royal Academy, London, and Berlin.

Pascal (*pás'kál'*), **Blaise,** French philosopher and scholar, was born at Clermont, in Auvergne, 1623. When he was in his thirty-fourth year he devoted himself wholly to religious meditation, mortification and prayer. The last five years of his life were spent in retirement at Port Royal, near Paris. But his retirement did not prevent his noticing what was passing in the world and he took an interest in the controversy between the Jesuits and the Jansenists, which led to the publication of the *Provincial Letters*, in favor of the latter. His *Thoughts on Religion* has been translated into most European languages, and has been many times republished. Died at Port Royal, 1662.

Pasteur (*pás'tûr'*), **Louis,** distinguished French chemist and bacteriologist, born in 1822 at Dôle. He received the degree of doctor of science in 1847; in 1857 director of the Ecole Normale Supérieure, Paris; in 1863 professor of geology, physics and chemistry at the School of Fine Arts; and 1867-75 professor of chemistry at the Sorbonne, Paris. From 1886 on, his researches were made in connection with the Pasteur Institute. At a very early date he became celebrated for researches on isomeric crystals and their behavior in polarized light, which obtained for him the London royal society's Rumford medal in 1856. He subsequently spent four years in studying and successfully combating the contagious silkworm disease; then the diseases of fowl-cholera and anthrax, which he successfully treated by vaccine of diluted virus. In 1882 he was elected to the French Academy. His latest work was connected with a vaccine treatment for hydrophobia. Pasteur must be regarded as the parent of the whole modern science of bacteriology. Died, 1895.

Pater (*pā'tēr*), **Walter Horatio,** English essayist and critic, was born near London, 1839, educated at Oxford, and became a fellow at Brasenose College. He came early under the influence of Keble, Jowett and Ruskin, and succeeded the latter as the high priest of æsthetic thought. His *Studies in the History of the Renaissance* in 1873 revealed him as a penetrating critic with a beautiful prose style. Among his other works are: *Marius the Epicurean; Imaginary Portraits; Plato and Platonism; The Child in the House;* and *Greek Studies*. Died, 1894.

Paton (*pā'tun*), **Sir Joseph Noel,** British painter, was born at Dunfermline, Scotland, 1821. He studied art at the Royal Academy, London. Scenes from fairyland and legend and religious allegory have made his work familiar and have often been engraved. Among his works are: *Home From the Crimea; Luther at Erfurt; The Fairy Raid; Gethsemane; Christ and Mary at the Sepulchre; The Man of Sorrows;* and *Thy Will Be Done*. Died, 1901.

Patten (*pat''n*), **Simon Nelson,** American economist and writer, professor of political economy, University of Pennsylvania, beginning 1888, was born at Sandwich, Ill., 1852. He graduated at Halle, Germany, 1878, with the degree of Ph.D. Author: *Premises of Political Economy; Economic Basis of Protection; Heredity and Social Progress; The New Basis of Civilization*, etc. Died, 1922.

Patterson, Thomas Macdonald, lawyer, journalist, United States senator, was born in Ireland, 1840. He was brought to the United States in childhood, and received his education at Asbury (now De Pauw) University, and Wabash College; was admitted to the bar, and practiced at Denver, Colorado. He was elected United States senator from Colorado, 1901-07. Died, 1916.

Patti (*pat'é*), **Adelina Maria Clorinda** (Baroness Rolf Cederström), noted operatic singer, was born at Madrid, Spain, 1843. She studied under Ettore Barili, and made her début at the Academy of Music, New York, 1859. Her voice was a high soprano, of rich bell-like quality and remarkable evenness of tone. Her greatest success is generally considered to have been in the part of *Marguerite* in Gounod's *Faust*. She appeared in the United States, South America and Mexico at various times. Died, 1919.

Pattison, Mark, English writer and scholar, was born at Hornby, in Yorkshire, England, in 1813. He studied at Oxford and became a fellow of Lincoln College in 1839. He contributed articles to the *Quarterly*, the *Westminster*, and the *Saturday Review*, and wrote biographies of Isaac Casaubon and Milton, the latter one of the best lives in the *English Men of Letters* series. In 1861 he was made rector of Lincoln College. He died at Harrowgate, 1884.

Patton, Francis Landey, American educator, theologian, was born in Warwick Parish, Bermuda, 1843. He was educated at Knox College, Toronto, and Univeristy of Toronto; graduated from Princeton theological seminary, 1865; LL.D., Wooster University, 1878, Harvard, 1889, Toronto, 1894, Yale, 1901, Johns Hopkins, 1902 He was professor in McCormick theological Seminary, Chicago, 1872-81; pastor of Jefferson Park Presbyterian church, Chicago, 1874-81; and beginning 1888 professor of ethics, Princeton University. He was president of Princeton University, 1888-1902, and president of Princeton Theological Seminary, 1902-13.

Paul, the apostle, commonly called Saint Paul, was born of Jewish parents at Tarsus, in Cilicia, and inherited the rights of a Roman citizen. He was highly educated and early went to Jerusalem to study under Gamaliel, one of the most celebrated Jewish rabbis.

Thus prepared for the office of teacher, he joined the sect of the Pharisees, and became a persecutor of the Christians, to crush whom

the sanhedrin employed him in and out of Jerusalem. He was present at and encouraged the stoning of Stephen, and it was only when he was overtaken by a vision on his way to Damascus that he became a convert to Christianity.

His sudden conversion was indicated by the change of his name from *Saul* to *Paul*, and he engaged in the work of an apostle with an ardor that overcame every difficulty. Arabia, Syria, Asia Minor, Greece and the islands of the Mediterranean were the scenes of his labors. The churches of Philippi in Macedonia, of Corinth, Galatia and Thessalonica, honored him as their founder; and he wrote epistles to these churches and to the churches in the chief cities of Greece and Asia Minor.

By admitting the gentiles to the church he incurred the hatred of the Jews, who persecuted him as an apostate. Undismayed, the apostle went to Jerusalem and was there arrested and brought to Cæsarea, where he was kept a prisoner for two years by the Roman governors Festus and Felix. He appealed, as a Roman citizen, to the emperor; and on his way to Rome, where he arrived in the year 62, he was shipwrecked on the island of Melita. At Rome he was treated with respectful kindness, and there is reason to believe that he for some time regained his liberty. According to the tradition of the early church the apostle suffered martyrdom during the reign of Nero.

References.—Conybeare and Howson's *Life and Epistles of St. Paul;* Baur's *Paul, His Life and Works;* Pfleiderer's *Paulinismus;* Lewin's *Life and Epistles of St. Paul;* Sabatier's *L'Apôtre Paul;* Bruce's *St. Paul's Conception of Christianity;* Steven's *The Pauline Theology;* Ramsay's *St. Paul the Traveller and the Roman Citizen;* Cone's *Paul the Man, the Missionary, and the Teacher;* Weinel's *St. Paul: the Man and his Work.*

Paul III. (Alessandro Farnese), pope from 1534 to 1549, was born in Tuscany in 1468. Though ambitious to advance his family, making cardinals of two grandsons while they were yet boys, he was, however, a wise ruler and surrounded himself with good cardinals. His bull, or decree of excommunication against Henry VIII. of England, issued in 1538, and the one forming the order of the Jesuits, 1540, are the most important edicts of his reign. He died suddenly, 1549.

Paulding, James Kirke, American author, was born at Pleasant Valley, N. Y., 1779. He was self-educated, early developed a tendency to literature, was a friend of Washington Irving, and wrote a portion of *Salmagundi.* He held at one period the post of navy agent at New York, and was appointed by President Van Buren secretary of the navy. At the close of Van Buren's presidency, in 1841, Paulding retired to a country residence at Hyde Park, N. Y., where he wrote *The Old Continental,* a novel; *The Puritan and His Daughter.* Died, 1860.

Paur (*pour*), **Emil,** German musical director, director of New York philharmonic society, was born in Austria, 1855. He was appointed first violin of Vienna imperial opera house; court conductor at Cassel, Hanover, 1876-80; conductor of Boston symphony, 1893-98; 1898 to 1900 leader of philharmonic society, New York. He has also appeared with leading concert organizations, and as solo pianist, and was conductor of the Pittsburg orchestra, 1904-10.

Paxton, Sir Joseph, English architect, was born in Bedfordshire, England, 1801. He began life as a gardener in the service of the duke of Devonshire. His care of the great glass conservatories of the duke at Chatsworth suggested to him the use of glass and iron for the building, in Hyde Park, London, for the great exhibition of 1851. Paxton was knighted for his successful design. He sat in parliament for nine years, and died at Sydenham, near London, 1865.

Payne, John Howard, American dramatist, was born at New York, 1792. His first appearance as an actor was in that city in 1809. He was a successful actor for thirty years and also wrote several plays, of which the best known are *Brutus, Charles II.,* and *Clari.* The song, *Home Sweet Home,* for which he is remembered, is in *Clari,* which was produced as an opera. Died, 1852.

Payne, Sereno Elisha, lawyer, congressman, was born at Hamilton, N. Y., 1843. He graduated at the University of Rochester, 1864; LL.D. Colgate, 1902, University of Rochester, 1903. He was admitted to the bar, 1866 and practiced at Auburn, N. Y. Member of congress for 26th New York district, 1883-85, 27th district, 1885-87, and again, 1889-1900, 31st New York district. He was chairman of the committee on ways and means. He was a member of the high joint commission to negotiate a treaty with Canada, 1898. Died, 1914.

Paynter, Thomas H., lawyer, United States senator, was born in Lewis county, Ky., 1851. He was educated at Rand's Academy, and at Center College, Danville, Ky.; studied law and was admitted to the bar in 1872. Elected judge of the court of appeals of Kentucky in 1894 for an eight-year term which he resigned, in 1895; was elected to the United States senate for the term 1907-13.

Peabody, Elizabeth Palmer, American educator, was born at Billerica, Mass., 1804. She taught in the celebrated school of Bronson Alcott and was one of the first to introduce the methods of Frœbel into American schools and to use object lessons in teaching. Among her best known works are: *The Kindergarten in Italy; Letters to Kindergartners; Guide to the Kindergarten,* etc. She died at Jamiaca Plain, Mass., 1894.

Peabody, Francis Greenwood, American clergyman and educator, Plummer professor of Christian morals, Harvard, 1886-1913; was born at Boston, 1847. He graduated at Harvard, 1869; Harvard Divinity School, 1872; D.D., Yale; LL.D., Harvard. Author: *Mornings in the College Chapel; Afternoons in the College Chapel; Jesus Christ and the Social Question,* etc.

Peabody, George, American merchant and philanthropist, was born at South Danvers, Mass. 1795. In 1827 he first visited England, where he settled permanently ten years later. In 1851 he supplied the sum required to fit up the American department at the great exhibition in London. He contributed £1,400,000 to the city of Baltimore for an institute of science, literature and the fine arts; and $8,000,000 for the promotion of education, endowment of libraries, etc., in the United States. He died in London, 1869.

Peabody, George Foster, American banker, was born at Columbus, Ga., 1852. He was educated in private schools there, and subsequently engaged in banking in New York. Member of board of managers of American Bible society; trustee of Hampton Normal and Agricultural Institute, Colorado College; general vice-president of American civic federation, 1905, etc.

Peale, Charles Wilson, American portrait-painter, was born at Chestertown, Maryland, 1741. He received his art education from Copley and Benjamin West. In 1785 he formed a collection of natural curiosities, and founded Peale's museum at Philadelphia. During the revolutionary war he commanded a company of soldiers at Trenton and at Germantown. Died, 1827.

Peale, Rembrandt, American painter, the son of Charles W. Peale, was born in Pennsylvania, 1778. Besides his many portraits, he painted several historical pictures, among them the well-known *Roman Daughter,* and *The Court of Death.* He published *Notes on Italy,* and *Portfolio of Art and Artists.* He died at Philadelphia, 1860.

Pearsons, Daniel Kimball, American philanthropist, was born at Bedford, Vt., 1820. He graduated in medicine at Woodstock, Vt., and practiced in Chickopee, Mass., until 1857. He then became a farmer in Ogle county, Illinois, in 1857, but in 1860 he removed to Chicago, where he rapidly accumulated a large fortune in real estate. He is best known through his large gifts to educational and eleemosynary institutions, the Presbyterian hospital of Chicago and the Chicago Theological Seminary being especially favored. There are but few of the smaller colleges to which he did not give from $25,000 to $250,000, and his gifts run well up into the millions. Died, 1912.

Peary, Robert Edwin, Arctic explorer, officer of United States navy, born at Cresson, Pa., 1856. Graduated at Bowdoin, 1877; entered United States navy as civil engineer, 1881; Chief of Arctic expedition of Academy of natural sciences of Philadelphia; 1891-92, to northeast angle of Greenland; discovered and named Melville Land and Heilprin Land, lying beyond Greenland. Commander of Arctic expedition under auspices of Peary Arctic club of New York City, 1898-1902, and attained latitude 84° 17′ north. In 1908-09 made an eighth expedition, and reached the pole in April, 1909. Promoted to Rear Admiral and given thanks of congress by special act of congress, March, 1911. Made Grand Officer of Legion of Honor by President of France, June, 1913. Author: *Northward Over the Great Ice, Nearest the Pole, The North Pole.* Died, 1920.

Peck, Harry Thurston, American educator, scholar and writer, professor of Latin, Columbia University, 1888-1912, was born at Stamford, Conn., 1856. He graduated at Columbia, 1881; Ph.D., L.H.D.; LL.D.; and studied in Berlin, Paris and Rome. He was literary editor of *The Commercial Advertiser,* 1897-1901; and editor of *The Bookman,* 1895-1907. Author: *The Personal Equation; The Semitic Theory of Creation; Latin Pronunciation,* etc. Died, 1914.

Peckham, Rufus Wheeler, American jurist, was born at Albany, N. Y., 1838. He was educated at the Albany Academy and in Philadelphia; studied law, and was admitted to the bar, 1859; LL.D., Union College, 1894, Yale, 1896, Columbia, 1901. Justice of supreme court of New York, 1883-86; associate justice of court of appeals, New York, 1886-95; and associate justice of United States supreme court from 1895 until his death in 1909.

Pedro I. (*pā'drō*), emperor of Brazil, was the second son of John VI. of Portugal, and was born in 1798. He declared for Brazilian independence in 1822, and was crowned as Pedro I. The new empire did not prove successful under his rule, and Pedro in 1831 abdicated, withdrew to Portugal, where, after securing the throne for his daughter, he died, 1834.

Pedro II., son of the preceding, was born, 1825, became emperor of Brazil on his father's abdication, and, distinguished by his love of learning and scholarly tastes, reigned in peace until the revolution of 1889 drove him to Europe. He died at Paris, 1891.

Peel, Sir Robert, English statesman, was born near Bury, Lancashire, 1788. He graduated at Oxford in 1808, and next year entered parliament as tory member for Cashel; afterward sat for Oxford University, and after 1832 for Tamworth. Opposed to reform, he became leader of the conservative opposition in the parliament of 1833, and was called to the premiership in 1834. He could not maintain his administration, however, and it was not until 1841 that the victory of protection over the free-trade agitation gave him a stable majority in the house of commons. His "conversion" split the tory party and he retired from office, becoming a supporter of the whig ministry in its economical and ecclesiastical policy. His death, in 1850, was the result of a fall from horse back.

Peelle, Stanton Judkins, American jurist, was born in Wayne county, Indiana, 1843. He was educated at Indiana University; served in the Civil War; judge of the United States court of claims, 1892-1905; and chief justice, 1906-12, of United States court of claims. He was professor of the law partnership, and bailment in the law department of George Washington University, 1901-11, and a trustee of Howard University. Died, 1928.

Peirce, Benjamin, American mathematician, was born at Salem, Mass., 1809. He graduated at Harvard in 1829; in 1833 became professor at Harvard; in 1849 astronomer to the American *Nautical Almanac;* and in 1867-74 was superintendent of the United States coast survey. His papers on the discovery of Neptune, in 1848, and on Saturn's rings brought him membership in many learned societies in Europe and America. He died at Cambridge, Mass., 1880.

Pelagius (*pē-lā'ji-us*), author or systematiser of the doctrine known as Pelagianism, was born about the middle of the fourth century, in Britain, or, according to some authorities, in Bretagne. He settled in Rome; at the end of the fourth century had already acquired a considerable reputation for sanctity and for knowledge of the scriptures and the spiritual life. Of his after life nothing is known in detail.

Pelissier (*pā'lē'syā*)', **Amable Jean Jacques,** a marshal of France, was born at Maromme, near Rouen, 1794. He entered the French army at the age of twenty; and after thirty-six years' service attained the rank of general, in 1850. On the 8th of September he stormed the Malakoff, for which he was rewarded with a marshal's baton, and after the fall of Sebastopol he also was created Duc de Malakoff, and rewarded with a grant of $20,000. He became governor-general of Algiers in 1860 and died there in 1864.

Pellico (*pel'lē-kō*), **Silvio,** Italian patriot and poet, was born at Saluzzo, in Piedmont, 1789. In 1819 he became connected with a liberal periodical which was published in Milan under the title of *Il Conciliatore.* Arrested in the following year on a charge of conspiracy against the Austrian government, he was imprisoned from 1822 to 1830 in the subterranean dungeons of the fortress of Spielberg, near Brunn, being at last liberated by the command of the emperor. He died at Turin, 1854.

Pelopidas (*pē-lop'i-das*), Theban general of noble descent, was noted among his fellow citizens for his disinterested patriotism. In 382 B. C. he was driven from Thebes by the oligarchic party, who were supported by the Spartans, and forced to seek refuge at Athens, whence he returned secretly with a few associates, 379 B. C., and recovered possession of the Kadmeia, or citadel, slaying the Spartan leader, Leontiades, with his own hand. In 364 B. C., he won the battle of Cynoscephalæ, but was himself killed.

Pelz, Paul Johannes, German-American architect, was born in Seitendorf, Germany, 1841. He studied architecture, 1859-66, in New York, under Detlef Lienau; was connected with United States lighthouse board as architect and civil engineer, during which service he designed many lighthouses. He was one of the architects of the Congressional library building, Washington, D. C.; architect of Georgetown College Academic building and many other structures.

Penn, William, celebrated Quaker, and the founder of Pennsylvania, was born in London, 1644. He studied at Oxford, early gave evidence of strong religious impulses, and adopted the new doctrines of the so-called society of Friends. In 1681, Penn, who had inherited from his father a claim against the government of 16,000 pounds, obtained from the king in satisfaction therefor a grant of an extensive tract of country lying west of the Delaware river and north of Maryland, in the American plantations, and which in the royal patent was called *Pennsylvania.* This territory Penn resolved to form into a commonwealth based upon perfect religious toleration, and accordingly set sail

thither, arriving in Delaware bay on the 27th of October, 1682. In November he entered into a league with the Indians, and next founded the city of Philadelphia. In 1684 he returned to England, where he enjoyed the confidence of James II. In 1699 he paid a second visit to Pennsylvania, and his stay, which lasted two years, was marked by many useful measures, and by efforts to ameliorate the condition, both of the Indians and the negroes. In 1701 he returned to England, and died, 1718.

Pennell (*pen'el*), **Joseph,** American artist, illustrator, author, was born in Philadelphia, 1860. He was a pupil of the Pennsylvania Academy of fine arts and Pennsylvania School of Industrial Art. His works are represented in the national collections of France, at Dresden, Budapest, Melbourne, Perth, Adelaide, and in many state and municipal collections in Europe and America. He was chairman of the international jury of awards, St. Louis exposition, 1904. Author: *The Illustration of Books; The Alhambra; The Work of Charles Keene; Lithography and Lithographers; The Life of James M' Neill Whistler*, etc. Died in 1926.

Penrose, Boies, politician, United States senator, was born in Philadelphia, 1860. He graduated from Harvard College in 1881, and was admitted to the bar in 1883. He practiced his profession in Philadelphia for several years; was elected to the Pennsylvania house of representatives in 1884; to the Pennsylvania state senate in 1886, 1890, and 1894; and to the United States senate, 1897, and reëlected in 1903 and 1909. Died, 1921.

Pepin le Bref (*pā'paN' le bref'*), king of the Franks and father of Charlemagne, was born in 714, the youngest son of Charles Martel. On the death of his father in 741, he received Neustria and Burgundy; deposed Childeric III., and founded the Carlovingian dynasty in 751. He was the first Frankish monarch whose election received the sanction of the Pope, and who was consecrated to his high dignity. He died, 768.

Pepper, Charles M., American journalist, was born in Ohio, 1859. He graduated at Wooster University, 1881. Appointed by President Roosevelt a delegate to the Pan-American congress at the city of Mexico, 1901; and foreign trade commissioner, department of commerce and labor, 1906-07. He was correspondent from Hawaii to the *Chicago Tribune* and *New York Herald*, 1897. Author: *Tomorrow in Cuba; Panama to Patagonia*, etc.

Pepper, William, 1843-1898, physician, benefactor, was born at Philadelphia, and educated at U. of Pa. He was elected provost of the University in 1881, and during his incumbency it became a new institution. On account of ill health he retired and moved to California, where he died, 1898. He edited *Pepper's System of Medicine by American Authors.*

Pepperell, Sir William, American general, was born in Maine in 1696. He was a member of the British council for the province of Massachusetts for thirty-two years from 1727, and in 1730 was appointed chief-justice of the court of common pleas. He commanded the successful expedition against Louisburg in 1745, and was made a baronet. He published an account of a *Conference With the Penobscot Tribe.* Died, 1759.

Pepys (*pēps, pep'is, peps*), **Samuel,** English politician and diarist, officer of the English admiralty during the reigns of Charles II. and James II., was born, 1632. For two years he was president of the Royal society. He wrote *Memoirs of the Royal Navy*, 1690; left to Magdalen College, Cambridge, his large collection of books, manuscripts and prints, including about 2,000 ancient English ballads, forming five folio volumes; but his reputation is founded on his *Diary* from 1659 to 1669, which affords a curious insight into the manners and court life of his day. Died, 1703.

Pericles (*per'i-klēz*), greatest of Athenian statesmen, and a general and orator, was born at Athens, 495 B. C. He soon gained the position of head of the more democratic party in the state, in opposition to Cimon, the son of Miltiades, who was at the head of the aristocratic party. He led the Athenians against Samos in 440 B. C., and was their principal adviser and commander during the first two years of the Peloponnesian war. Phidias was the friend of Pericles, and the public buildings erected by the latter during the administration of Pericles made Athens the admiration of Greece. To Pericles Athens was indebted for the Parthenon. He died, 429 B. C.

Perkins, George Walbridge, financier, was born at Chicago, 1862. He received a common school education, and started business career in the Chicago office of the New York life insurance company, 1877. Second vice-president, 1898; chairman of the finance committee, New York Life, 1900; and vice-president, 1903. He became partner in the banking firm of J. Pierpont Morgan and company, 1901. Died, 1921.

Perry, Bliss, editor, author, educator, editor of the *Atlantic Monthly* 1899-1909, was born in Williamstown, Mass., 1860. He graduated at Williams, 1881; L.H.D., Princeton, 1900; Williams, 1902; Litt.D., Bowdoin, 1904; LL.D., Lake Forest, 1906. He was professor of English at Williams, 1886-93; at Princeton, 1893-1900; and is now professor of English literature at Harvard. General editor of Cambridge editions of the poets. Author: *The Broughton House; Salem Kittredge, and Other Stories; The Plated City; The Powers at Play; A Study of Prose Fiction; The Amateur Spirit; Walt Whitman; Whittier.*

Perry, Oliver Hazard, American naval commander, was born in South Kingston, Rhode Island, 1785. During the war of 1812 fitted out a fleet on Lake Erie. With nine vessels he sailed against the British fleet. The English attacked the *Lawrence*, Perry's flag ship, so fiercely that out of 101 men on it only eighteen were uninjured. Perry left the *Lawrence* in a small boat and was rowed to the *Niagara*. He captured all the English ships. In 1819 he commanded a fleet which sailed to Columbia and ascended the Orinoco river. Died, 1819, Trinidad. In 1860 a marble statue of him was erected at Cleveland, Ohio.

Pershing, Gen. John Joseph, Commander-in-Chief, Americans in France. b. Linn Co., Mo., 1860; m. d. Senator Warren of Wyoming. Lost wife and three daughters in Presidio fire, 1915. Educa. Kirksville Normal; West Point, served Apache Indian campaign, 1886; Sioux campaign, 1890-91; miltary instructor Nebr. 1891-95; instructor in tactics West Point, 1897-98; Santiago campaign, 1898; Philippines 1899-1903; general staff, 1903-6; miltary attache Tokio, 1905-6; with Kuroki's army in Manchuria, 1905; duty in Philippines, 1909-13 as military governor of Moro Province; command border troops in 1914-16; sent into Mexico pursuit Villa, 1916. Commanded American forces at the St. Mihiel drive, took many prisoners and threatened the German fortress Metz. His vigorous pressure here and in the Argonne were strong factors in bringing the Great War to an abrupt close. His soldiers in the army of occupation on the Rhine set an example to the world of fulfilling their duty as masters of a conquered people with firmness, courtesy and consideration.

Pestalozzi (*pes'tā-lōt'sē*), **Johann Heinrich,** Swiss educationist, born at Zürich, 1746. He studied at Zürich; in 1775, established on his estate, Neuhof, a school. The idea of his system was that nothing should be treated except in a concrete way. Almost all Pestalozzi's methods are now substantially adopted by the instructors of elementary teachers in the schools of Europe and America, and to no other man has primary instruction been so largely indebted. His chief works were *How Gertrude Instructs Her Children* and his *Leonard and Gertrude.* During the last two years of his life he wrote also his autobiography. He died at Brugg, Switzerland, 1827.

Petain, Henri Philippe, French general, was born in 1856. Though only a colonel at the beginning of the world war, his services were so meritorious during the early months of that struggle that he was promoted to the command of an army corps in 1914. In 1916, after the Germans had taken the outer defenses of Verdun, through his energy and new methods of defense, he saved that stronghold. For this he was made grand officer of the Legion of Honor. In April, 1917, he was appointed chief of the General Staff of the army, and in May of the same year, Commander-in-Chief of the French armies. During the subsequent allied offensive directed by Foch, Petain was most successful in co-ordinating the movements of his troops with those of England and America. At the conclusion of the war he was created Marshall of France, and has received many high honors from allied governments.

Peter I., The Great, Alexelevitch, emperor of Russia, was born 1672. In 1682 Ivan renounced the crown, and Peter was declared czar, with his mother, the Czarina Natalia Kirilovna, as regent. Sophia, third daughter of Alexis, succeeded in having Ivan proclaimed czar jointly with Peter, and herself regent. Peter was relegated to private life, his education purposely neglected and his bad habits encouraged.

In 1689 Peter became virtually sole emperor. He now determined to raise his country out of its barbarism, and to place its people in the ranks of civilized nations. He journeyed to Holland and England (1796-98), worked in shipyards, and the knowledge he there gained was amply profited by on his return.

Peter not only created a navy, but gave Russia a sea-board and sea-ports by wresting the Baltic provinces from Charles XII. of Sweden. Young Russian nobles were obliged to travel; schools of navigation were founded; agriculture was improved. Peter established manufactories and distributed metallurgicists through the mining districts of Russia; roads and canals were built.

In 1703 he laid the foundation of St. Petersburg, and twenty years later of its academy of sciences. Laws and institutions which in any way interfered with his projects, he either abolished or altered. In his zeal to do good he was too frequently injudicious in choosing times and seasons, and the least show of opposition irritated him into ferocity. He repudiated his wife a few years after marriage for her reactionary leanings; for the same reason his son Alexis was ill treated, compelled to renounce the succession, and condemned to death, but died suddenly before sentence could be carried out.

Peter died in 1725, the immediate cause being inflammation, contracted while assisting in the rescue of some soldiers in Lake Ladoga.

References.—Oscar Browning's *Life of Peter the Great* and Schuyler's *Peter the Great.*

Peter, St., one of the foremost of the twelve apostles, originally called Simon, was the son of Jona, and a resident at Bethsaida. Peter was a man of ardent temperament, affectionate and generous. He was favored with special manifestations of his Master's confidence, and performed a more prominent part in the sacred history than any other of the twelve disciples. He was crucified with his head downward, in the persecution under Nero, about A. D. 64.

Peter the Hermit, French monk and preacher, was born at Amiens, about the middle of the eleventh century. He made a pilgrimage to the holy land about 1093, and having witnessed the cruelties there inflicted upon the Christians by the Mohammedans, communicated on his return with Pope Urban II., by whom he was authorized to preach the first crusade for the recovery of Jerusalem from the hands of the Turks. His last years were spent in obscurity, in a monastery which he had founded at Huy. Died, 1115.

Peters, John Punnett, American clergyman and orientalist, was born in New York, 1852. He graduated from Yale, 1873; studied philology and theology, Yale; Ph.D., 1876; D.D., 1895; Sc.D., University of Pennsylvania, 1895; rector of St. Michael's church, New York, 1893-1904; canon residentiary, cathedral of St. John the Divine beginning 1904. Author: *Scriptures, Hebrew and Christian.* Translator of *Political History of Recent Times*, and editor of *Diary of David McClure.* Died, 1921.

Peters, Madison Clinton, Baptist clergyman, was born in Lehigh county, Pennsylvania, 1859. D.D., Heidelberg University and Ursinus College. He was ordained to the ministry of the Reformed church, 1880. He preached as an independent in the Majestic theater, New York. Author: *Justice to the Jew; Will Our Republic Live; The Man Who Wins; The Love Affairs of Great Poets; The True St. Patrick;* etc. Died, 1918.

Peterson, William, Canadian educator, principal of McGill University, was born in Edinburgh, 1856. He was educated at the University, Edinburgh. LL.D., St. Andrews; Princeton, New Jersey; University of New Brunswick; Yale; Johns Hopkins, Pennsylvania. Principal of University College, Dundee, 1882-95. Author: *Quintilian's Institutes of Oratory; The Dialogues of Tacitus*, etc.

Petrach (*pē'trärk*), **Francis,** Italian poet, was born in 1304 at Arezzo in Tuscany. Having settled at Avignon, he became deeply attached, in 1327, to the beautiful Laura de Noves, in whose honor were written those sonnets and odes which have rendered his name immortal. He was invited to Naples, to Paris and to Rome; and received the laureate crown in the capitol of the latter city. Among his warmest friends and patrons was the Colonna family. In 1348 his feelings were deeply grieved by the death of Laura. He survived her, however, nearly thirty years, during which period he was admired and honored by his own countrymen, and by foreign princes. He died, 1374.

Petrie (*pē'tri*), **William Matthew Flinders,** English Egyptologist, was born at Charlton, 1853. He was educated privately, and his earliest explorations bore fruit in his *Stonehenge*, 1880. He next turned his attention to the pyramids and temples of Gizeh, and subsequently, with the aid of the Egypt exploration fund, to the mounds of Said and Naukratis, and founded the Egyptian research account, 1894, enlarged as the British school of archæology in Egypt, 1905. Author: *Pyramids and Temples of Gizeh; Racial Portraits; Ten Years' Digging; History of Egypt; Egyptian Tales*, etc.

Pfleiderer (*pflī'der-er*), **Otto,** German theologian, was born at Steeten in Wurtemberg, 1839. He studied at Tübingen, 1857-61. In new testament criticism Pfleiderer belongs to the younger critical school which has grown out of the impulse given by Baur. He was an independent thinker, acute, suggestive and profoundly learned, and made his name as well known in England and America as in Germany. His chief works are: *The Philosophy and Development of Religion; Evolution and Theology*, etc. Died, 1909.

Phelps, Edward J., American jurist and diplomat, was born at Middlebury, Vt., 1822. He studied at Middlebury College, graduated in law at Yale in 1843, and was admitted to the bar in the same year. President of the American bar association in 1880. He became a professor in the law School of Yale in 1881, where he served until appointed minister to Great Britain in 1885. Phelps remained at the court of St. James until 1889. He died at New Haven, Conn., 1900.

Phelps, William Lyon, American educator and writer, was born in 1865, at New Haven, Conn. He was educated at Yale and Harvard, and has been instructor and professor of English at Yale since 1892. He is popular as a lecturer. Besides editing

many books, he has written volumes of criticism, including *Essays on Modern Novelists, A Dash at the Pole, Human Nature in the Bible, The Twentieth Century Theatre.*

Phelps-Ward, Elizabeth Stuart, American author, was born at Andover, Mass., in 1844. Besides lecturing, writing for magazines and engaging in various kinds of work for the advancement of women, she has written: *Gates Ajar; The Silent Partner; Poetic Studies; An Old Maid's Paradise; Beyond the Gates; The Madonna of the Tube; A Singular Life; The Story of Jesus Christ; The Man in the Case*; etc. In 1888, she married Rev. Herbert D. Ward. Died, 1911.

Phidias, Greek sculptor, was born about 490 B. C. He is said to have studied painting before he devoted himself to statuary. He became famous probably about 460 B. C., when he produced the bronze statue of Athena Promachos, the Lemnian Athena, and other works. From 444 B. C. to 438 B. C. he was superintendent of the building of the Parthenon at Athens, and the production of the statue of Athena for that temple. From about 437 B. C. to 433 B. C. he was in Elis, working on the statue of Zeus for the temple at Olympia.

On his return to Athens in 432 B. C. he was charged with embezzling money entrusted to him in connection with the building of the Parthenon, or, as other stories say, for impiety in introducing his own likeness and that of Pericles in the battle of the Amazons on the shield of Athena. In any case, it was as a friend of Pericles that he was attacked; condemned, and died in prison, 432 B. C.

By the general consent of antiquity Phidias was the greatest of Greek sculptors. His chief characteristics were largeness, dignity and magnificence; all his work was marked by a certain repose; he realized that violent action cannot be represented in sculpture. His principal works were what are called chryselephantine statues—that is, there was an inner core of wood or stone, which was covered with plates of polished ivory, for the parts representing flesh, while the gold was used for the drapery.

The Emperor Theodosius I. took the statue of Zeus to Constantinople about 390 A. D. and it perished there in a fire in 475. It is only the remains of the external sculptures of the Parthenon, especially the frieze (of which the Elgin marbles are a part), that survive to give us an idea of Phidias' skill; but it is not certain that they are actually his own work.

References.—Waldstein's *Essays on the Art of Phidias;* Collignon's *Phidias;* Mitchell's *History of Ancient Sculpture;* and *Phidias,* in Masters in Art series.

Philip II., king of Macedon, father of Alexander the Great, was born in 382 B. C., and came to the throne in 359 B. C. He first undertook the thorough union of his kingdom, and then speedily entered upon a policy of aggression, his object being to reduce all the Grecian states to his supremacy. In 339 B. C., the Amphictyonic council, composed of several Grecian states, declared war against the Locrians, and the next year appointed Philip commander-in-chief of all their forces. The Athenians were at last alarmed at his approach into Greece in this capacity, and formed a league with the Thebans against him; but their united forces were utterly defeated at the battle of Chærones, 338 B. C.; and Philip was now master of all Greece. Philip was faithless in the observance of treaty obligations, and utterly unscrupulous as to the means by which he gained his end; but his great ability both as a king and a soldier is conceded by all historians. Assassinated, 336 B. C.

Philip II., of France, called Philip Augustus, on account of his great abilities and successful administration, was born, 1165. He was crowned joint king with his father, Louis VII., in 1179, and on the death of the latter, in the year following, he came into full possession of the kingdom. He was one of the greatest monarchs of the Capet dynasty. The crusade against the Albigenses occurred in his reign, and he granted the first charter to the University of Paris. He died at Nantes, 1223.

Philip II., king of Spain, only son of the emperor Charles V., was born in 1527 at Valladolid. His first wife was Mary of Portugal; he then married Mary Tudor in 1554; spent over a year in England, and in 1555 succeeded his father in the sovereignty of Spain, Sicily, Milan, the Netherlands, Franche Comtè, Mexico and Peru. He greatly injured Spain by crushing her chivalrous spirit, by persecuting the industrious Moors and by destroying her commerce by heavy taxation. He died, 1598.

Philip IV., "the fair," king of France, was born at Fontainebleau in 1268. He succeeded to the throne in 1285, and by his marriage with Queen Joanna of Navarre obtained Navarre, Champagne and Brie. The chief feature of his reign was his contest with Pope Boniface VIII., which grew out of his attempt to levy taxes upon the clergy, which the pope directed them not to pay. In 1305 Philip obtained the elevation of one of his own creatures to the papal chair as Clement V., and seated him at Avignon, which place was the residence of the head of the church for seventy years thereafter. This period of papal history is often called "the seventy years' captivity." Philip suppressed the order of the Templars and confiscated their lands. He died, 1314.

Philip VI., of Valois, king of France, was born, 1293, and succeeded Charles IV., in 1328. Edward III. of England contested his claim, contending that the Salic law, though it excluded females, did not exclude their male heirs. Edward was son of a daughter, Philip son of a brother, of Philip IV.; thus began the Hundred Years' war between France and England, 1337. The king afterward purchased Majorca. Died, 1350.

Philip, King, sachem of the Wampanoag tribe of Indians, was the second son of Massasoit, who for nearly thirty years had been the stanch ally of the pilgrim settlers. In 1662 Philip succeeded his elder brother and kept the treaties of his father for several years. But, at length, goaded by the encroachments of the whites, he formed a confederation of tribes, amounting to nearly 10,000 warriors, and in 1670 the war known as "King Philip's war," broke out. The Indians surprised and murdered a great many colonists, but were eventually overcome, and in 1676 Philip himself was captured and slain in Rhode Island.

Philips, Andrew Wheeler, American educator, professor of mathematics and dean of the graduate school of Yale University, was born at Griswold, Conn., 1844. He graduated at Yale, 1873; PhD., 1877; and dean of the graduate school at Yale. Joint author: *Transcendental Curves; Graphic Algebra; The Elements of Geometry; Trigonometry and Tables; The Orbit of Swift's Comet,* etc. Died, 1915.

Phillips, Stephen, English poet, was born at Somertown, near Oxford, 1868; studied for the civil service, but abandoned this and went on the stage, playing various parts with Frank Benson's company. Author: *Marpessa; Eremus; Christ in Hades; Poems; Paolo and Francesca; Herod; Ulysses; The Sin of David; Nero; The Last Heir,* drama, etc. Died, 1915.

Phillips, Wendell, American orator and abolitionist, was born in Boston, Mass., 1811. He was graduated at Harvard in 1831, studied law there and was admitted to the bar in 1834. A timely speech in Faneuil hall in 1837 made him at once the principal orator of the anti-slavery party; and henceforth, until President Lincoln's proclamation of January 1, 1863, he was William Lloyd Garrison's loyal and valued ally in the struggle for abolition. He died in Boston, Mass., 1884.

Phillpotts (*fil'pots*), **Eden,** English novelist, was born at Mount Aboo, India, 1862. He was educated at Plymouth, England; went to London and studied for the stage, but abandoned it on finding his ability did not justify perseverance, and adopted literature. Author: *Some Everyday Folks; Down Dartmoor Way; Lying Prophets; Children of the Mist; The Human Boy; Sons of the Morning; The Striking Hours.*

Philo Judæus (*fi'lō jōō-dē'us*), philosopher of the first century, born in Alexandria; studied the Greek philosophy, and found in it, particularly in the teaching of Plato, the rationalist explanation of the religion of Moses, which he regarded as the revelation to which philosophy was but the key. He died about 54 A. D.

Phipps, Henry, American manufacturer and philanthropist, was born in Philadelphia, 1839. He worked in stores in Pittsburg, 1852-56; later associated with Thomas M. and Andrew Carnegie in iron and steel manufacture, building up large fortune, and having, next to Carnegie, largest interest in United States steel corporation. He was a director of United States steel corporation, Carnegie company. He gave $1,000,000 to the Johns Hopkins University endowment fund in 1909.

Phocion (*fō'shi-on*), an Athenian general and statesman, born about 402 B. C., studied under Plato and Xenocrates. As a soldier he was several times sent against Philip of Macedon, though in politics he sided with him against Demosthenes. Forty-five times he was elected strategus. Implicated in a plot to hand over the Piræus to the enemy, he was sentenced to death by the Athenians, 317 B. C. A revulsion of feeling later led to the erection of a statue in his honor.

Piccolomini (*pēk'kō-lō'mē-nē*), **Octavio,** German general, was born in Italy, 1599, died in Vienna in 1656. He was a favorite of Wallenstein, who intrusted him with a knowledge of his projects, when he purposed to attack the emperor. In spite of this he made himself the chief instrument of Wallenstein's overthrow, and, after the latter's assassination in 1634, was rewarded with a portion of his estates. He was defeated by Torstensohn at Leipsig in 1642.

Pickering, Edward Charles, American astronomer was born at Boston, 1846. He graduated at the Lawrence Scientific School, Harvard, 1865; LL.D., University of California, 1886, Michigan, 1887, Chicago, 1901, Harvard, 1903, Pennsylvania, 1906; PhD.; Thayer professor of physics, Massachusetts Institute of Technology, 1867-76; and professor of astronomy and director of the Harvard College observatory. He established the first physical laboratory in the United States, and under his administration the work of the observatory was devoted mostly to the new fields of photometry and photography as applied to astronomical observation. Author: *Elements of Physical Manipulation,* and various volumes of annals and other publications of Harvard College observatory. Died, 1919.

Pickering, Timothy, American statesman, was born in Massachusetts, 1745. He served as colonel in the American revolution; became Washington's adjutant-general in 1777; he was a delegate to the Pennsylvania constitutional convention of 1787 and 1789. Secretary of war, 1795; secretary of state, 1795-1800; United States senator, 1803-11. He was the author of several political pamphlets, and paid much attention to agriculture. He died in 1829.

Pickett, George Edward (1825-1875,) American soldier, was born at Richmond, Va., graduated at West Point, and entered army during war with Mexico. At outbreak of the Civil War he resigned his commission in the United States Army and entered the Confederate as Colonel. Fought under Lee and won special distinction at Gettysburg.

Pickford, Mary (1893——), actress, first public appearance at 5; initial success in pictures as "*Hearts Adrift.*" Since 1920, member United Artists Corporation. Some of her best performances are *Tess of the Storm Country, Cinderella, Poor Little Rich Girl, Rebecca of Sunnybrook Farm, Sparrows.* Married Douglas Fairbanks, 1920.

Pierce, Franklin, fourteenth president of the United States, was born in Hillsborough, N. H., 1804. Franklin Pierce was educated at Bowdoin College, Maine, and was an officer in the college military company, in which his biographer, Nathaniel Hawthorne, was a private. In 1837 he was elected to the United States senate, of which he was the youngest member. In 1852, in consequence of the conflicting claims of the leaders of the democratic party at the Baltimore convention, he was nominated as a compromise candidate for the presidency against General Scott, the whig nominee, and received the votes of all but four states. He appointed an able cabinet, including Jefferson Davis as secretary of war. During his administration the Missouri compromise was repealed, the treaty for reciprocity of trade with the British American colonies was made, and a treaty with Japan negotiated. He died in 1869.

Pillow, Gideon Johnson, American soldier, was born in Williamson county, Tennessee, 1806. He graduated at the University of Nashville in 1827, was admitted to the bar. He practiced law in his own state until the beginning of the Civil War, to avert which he had proposed various compromises. But having entered the confederate service in 1861, he was rapidly advanced to the command of a brigade, and took part in the battles of Belmont and Fort Donnelson. He was second in command when the latter was taken by the federal troops. He died in Lee county, Arkansas, 1878.

Pinchot (*pin'shō*), **Gifford,** American forester, was born in Simsbury, Conn., 1865. He graduated from Yale, 1889; M.A., Yale, 1901, Princeton, 1904; LL.D., McGill, 1909. He is a member of the committee on organization of government scientific work and commission on public lands since 1903, and has been very active in a policy to protect the natural resources of the United States.

Pinckney (*pingk'nī*), **Charles Cotesworth,** American statesman, was born in South Carolina, 1746. He fought during the revolution; assisted in framing the constitution of the United States; was special envoy to France, 1796-97. He was a lawyer of eminence, and author of the famous sentiment, "Millions for defense, but not one cent for tribute." He died, 1825.

Pindar (*pin'dăr*), greatest Greek lyric poet, was born at Cynoscephalæ, a village in the territory of Thebes, about 522 B. C. He commenced his career as a poet at an early age, and was employed for many years in various courts and by many of the princes of Greece to compose for them choral songs for special occasions. Of his many works—which consisted of hymns, poems, odes, songs, dirges, and encomiums on princes—only his *Epinicia,* or *Odes,* have come down to us entire. These were composed in commemoration of victories in the public games. Died at Thebes, 442 B. C.

Pinero (*pi-nēr'ō*), **Sir Arthur Wing,** English dramatist, was born in London, 1855. He was educated in private schools; was an actor from 1874-81; and from that time until the present, a dramatic author. Author: *The Magistrate; The School-mistress; The Profligate; The Second Mrs. Tanquery; Trelawny of the Wells; The Gay Lord Quex; His House in Order,* and many other plays.

Pinkerton, Allan, Scottish-American detective, was born in Glasgow, 1819, and emigrated to America in 1842. He located in Illinois, where he captured a gang of counterfeiters and became a deputy sheriff four years later. In 1850 he opened a detective agency in Chicago; recovered $40,000 for the Adams express company, and, discovering a plot to murder Abraham Lincoln on his inaugural journey to Washington, was authorized to protect the president-elect. He then organized the United States secret service, of which he became the head, and conducted it until the close of the Civil War. He wrote several books connected with his work before his death in 1884.

Pinkney, William, American lawyer and diplomat, was born at Annapolis, Maryland, 1764. He was admitted to the bar in 1786. In 1806 he was sent to England as minister extraordinary, and remained as minister resident, 1807-11. He was attorney-general of the United States, 1811-18; served in the war of 1812 as commander of a volunteer corps; was elected to congress in 1815; was a member of the United States senate, 1820-22. Died, 1822.

Pisistratus (*pi-sis'tra-tus*), tyrant, or ruler of Athens, was born about 612 B. C., the son of Hippocrates, who left him a large fortune. He usurped the throne in 560 B. C., and although he was twice expelled, he regained it and ruled with mildness and justice. He enforced the laws of Solon, who was his friend and relative; founded the first public library at Athens, and collected and arranged the poems of Homer. He died about 527 B. C.

Pitman, Benn, Anglo-American stenographer, was born at Trowbridge, Wilts, England, 1822. He settled in the United States, 1853, and founded the phonographic institute, Cincinnati. He was inventor of the electro-process of relief engraving, 1856; military recorder of state trials during the Civil War. Author: *The Reporter's Companion; Manual of Phonography*, etc. Died, 1910.

Pitney, Mahlon, Jurist, Associate Justice U. S. Supreme Court from 1912 to 1922, was born at Morristown, N. J., 1858. He was graduated from Princeton University, 1879; LL.D., 1908; admitted to the bar, 1882; practiced law, 1882-1901; member of Congress, 1895-9, when he resigned and became State Senator; served in latter body, 1899-1901, being president of Senate in latter year. He was Associate Justice N. J. Supreme Court, 1901-08, and Chief Justice of the N. J. Court of Chancery, 1908-12. Died, 1924.

Pitt, William, first earl of Chatham, a famous English statesman, often referred to as the elder Pitt, was born in Westminster, 1708. Educated at Oxford, he entered parliament in 1735. He later became a member of the privy council, and was called upon to form a new cabinet in 1756, of which the duke of Devonshire was prime minister. He resigned in 1761, but five years later was called upon to form another cabinet, in which he became Viscount Pitt and earl of Chatham. Ill health forced his retirement in 1768, but he kept up an active interest in public affairs, opposed Lord North's policy of taxing the colonies, and, upon the alliance of the colonies and France, protested, in a last great effort, against the proposal to make peace. At the close of his speech, he fell into the arms of his friends, and died a few days later, 1778.

Pitt, William, British statesman, son of the preceding, was born at Hayes, England, 1759. He was educated at Cambridge, studied for the bar at Lincoln's Inn, and entered parliament in 1781. At the age of twenty-three he became chancellor of the exchequer, and at twenty-five was regarded as one of England's most powerful ministers. For seventeen years he held his great position without a break. In 1784 he established a new constitution for the East India company. In 1788-89 he maintained against Fox the right of parliament to supply the temporary defect of royal authority occasioned by the incapacity of the king. Until 1801 he continued to hold the reins of government during one of the most stormy periods of British history; and his admirers have conferred on him the title of "the pilot that weathered the storm." In 1799 he effected the union with Ireland. It was part of his scheme to relieve the Roman Catholic laity from civil disabilities, and to grant a public maintenance to their clergy; but the obstinacy of the king frustrated his design. Chagrined by this failure, Pitt resigned office in 1801. In 1804 he returned again to the head of the treasury, which position he continued to hold until his death in 1806.

Pius VI., Giovanni Angelo Braschi, pope, 1775-99, was born at Cesena, Italy, 1717. He was elected pope in succession to Clement XIV. Soon after came the French revolution and the confiscation of church property in France. The pope launched his thunders in vain, and ere long the murder of the French agent at Rome in 1793, gave the Directory an excuse for an attack. Bonaparte took possession of the legations, and afterward of the march of Ancona, and extorted in 1797 the surrender of these provinces from Pius. Pius was called on to renounce his temporal sovereignty, and on his refusal was seized, carried to Siena, and later to Certosa, Grenoble, and finally Valence, where he died, 1799.

Pius IX., Giovanni Mastai Ferretti, pope, 1846-78, was born near Ancona, Italy, 1792. He was elected in 1846, and his pontificate covers one of the most eventful periods of the papacy. After the insurrection at Rome, 1848, he fled to Gæta, but was restored by French aid two years later. The same year he established a Catholic hierarchy in England, and in 1854 defined the doctrine of the immaculate conception. In 1870 the infallibility dogma was promulgated by the ecumenical council held at Rome. In that year, when the French left the city, it was declared the capital of Italy, occupied by the troops of Victor Emmanuel and the Pope was practically held a captive in the vatican until his death in 1878.

Pius X., 258th Roman pontiff, was born in 1835 at Riese, near Treviso, Italy. His name was Giuseppe Sarto, and he was the son of a minor municipal official. He was educated at Castelfranco and the Diocesan Seminary of Padua, and ordained priest, 1858. In 1884 he was appointed bishop of Mantua, and Leo XIII. made him a cardinal and patriarch of Venice in 1893. His charity and tact brought him unbounded popularity, and he was more than once instrumental in settling serious strikes and labor disputes. On the death of Leo XIII., 1903, the conclave met, and, at the seventh scrutiny, elected him pope, and he chose to be known as Pope Pius X. As priest and bishop his life was spent in the pastoral and episcopal service of the church rather than in diplomatic and official service. He was constantly zealous in the reform of church music and in other matters of ecclesiastical discipline. In 1907 he issued a decree intrusting the revision of the *Vulgate Bible* to the Benedictine Order, and later an encyclical against the modernist movement in the church. Died, 1914.

Pius XI—Achill Ratti, born at Desio near Milan, March 31, 1857. His father, Francesco Ratti, director of silk factory. The son was thoroughly educated and prepared for the priesthood. His scholarly tastes led to teaching; became Professor in Seminary at Milan; director of the Ambrosian Library; director of the Vatican Library; papal nuncio to Poland in 1918; archbishop of Milan in 1921; elected Pope, February 6, 1922.

Pizarro (*pē-thär'rō*), **Francisco,** Spanish conqueror of Peru, was born at Trujillo, Spain, about 1470. He received little education, was of an adventurous spirit, entered the army, and embarked with other adventurers for America.

Plato, who, with Aristotle, represents to modern times the whole compass of Greek philosophy, was born at Athens in the year 429 B. C. When he was twenty years old the political troubles, of which the death of Socrates was only one terrible symptom, forced him to leave Athens for a season, and he resided at Megara, with Euclid, the founder of the Megaric sect. That he visited Italy is extremely probable; at all events, he was most closely connected with Archytas and the Pythagorean philosophers.

After returning from his first visit to Sicily, being then in his fortieth year, he began teaching philosophy publicly in the Academia, a pleasant garden in the most beautiful suburb of Athens, and there gathered around him a large school of distinguished followers, who maintained a regular succession after his death under the name of the philosophers of the academy. He lived to the age of eighty-two; was never married and must have possessed some independent property, as he expressed himself strongly against teaching philosophy for fees, and we nowhere read of his having held any public office from which he could have derived emolument.

The distinctive character of the Platonic philosophy is expressed by the word idealism, as opposed to realism, materialism, or sensationalism, using these words in their most general and least technical sense. We should err greatly, however, if we looked on Plato as a man of mere speculation and a writer of metaphysical books. Neither Plato nor any of the great Greeks looked on their intellectual exercises and recreations as an end in themselves. With them, philosophy did not mean mere knowledge or mere speculation, but it meant wisdom, and wisdom meant wise action, and wise action meant virtue.

References.—Jowett's translation of the *Dialogues of Plato;* Ritchie's *Plato;* Nettleship's *Lectures on the "Republic";* Grote's *Plato;* histories of philosophy by Zeller and Gompers; Lutoslawski's *Origin and Growth of Plato's Logic;* and also Emerson's essay in *Representative Men.*

Platt, Thomas Collier, American politician, was born in Oswego, N. Y., 1833. He was a member of class of 1853, Yale, but was compelled to give up his course because of ill health; M.A., 1876. Member of congress, 1873-77; elected United States senator, 1881. President of board of quarantine commissioners, New York, 1880-88; was president of Southern Central railroad and of Addison and Northern Pennsylvania railroad; and was the recognized leader in New York republican politics for years. He was again United States senator from 1897 to 1909. Died, 1910.

Plautus (*plô'tus*), **Titus Maccius,** the greatest comic poet of ancient Rome, was born about 254 B. C. at Sarsina in Umbria. Of the twenty-one comedies legitimately assigned him twenty are still extant. They present great vivacity, well-constructed plots and humorous, life-like characters and situations. He has found noteworthy imitators in Shakespeare, Molière, Dryden, Addison, and Lessing. His literary career continued uninterrupted until his death in 184 B. C.

Pliny (*plin'i*), the name of two famous Romans, usually distinguished as Pliny the Elder and Pliny the Younger. Pliny the Elder, Caius Plinius Secundus, was born probably at Como, Italy, A. D. 23, and was a famous naturalist. Of his many works, his *Historia Naturalis* is the only one that has come down to us. He perished in the great eruption of Vesuvius, which overwhelmed Herculaneum and Pompeii, 79 A. D.

Pliny the Younger, Caius Plinius Cæcilius Secundus, was born at Como, A. D. 61, was the nephew of the elder Pliny, and is celebrated chiefly for his *Letters,* of which ten books are extant. In 103 he was appointed governor of the provinces known as Bithynia and Pontus; and in this capacity he wrote his well-known letter to the emperor Trajan respecting the Christians in his province, which called forth the emperor's equally well-known reply. He died about 116 A. D.

Plutarch (*plu'tark*), celebrated Greek biographer and moralist, was a native of Chæronea, in Boeotia. In A. D. 66 he was a pupil of the philosopher Ammonius at Delphi. He visited Italy, and spent some time at Rome, lecturing there on philosophy as early as the reign of Domitian; but his name is not mentioned by any of the eminent Roman writers, his contemporaries. He returned to his native town, where he held various magistracies, and was appointed priest of Apollo. He was still living in 120, but the time of his death is not known.

His great work is entitled *Parallel Lives,* and consisted of biographies of forty-six eminent Greeks and Romans, arranged in pairs, each pair accompanied by a comparison of characters. They are written with a moral purpose and present not orderly narratives of events, but portraitures of men, drawn with much graphic power, with great good sense, honesty and kindheartedness.

Few books of ancient or modern times have been so widely read, so generally admired, as these *Lives.*

The English translation by the Langhornes is well known; less known, but more spirited is that by North. A new edition of the translation called Dryden's, revised by Clough, appeared in 1859. Most of Plutarch's other writings are ethical, and are entitled *Moralia.*

References.—Trench's *Four Lectures on Plutarch;* Volkmann's *Leben, Schriften und Philosophie von Plutarch.*

Pobyedonostsev (*pô-bye-dô-nôs'tsef*), **Konstantin Petrovich,** Russian jurist and statesman, was born at Moscow, 1827. He studied at St. Petersburg, became an official of the senate in Moscow, and in 1858 a professor of civil law there. In 1872 he was made a member of the council of the empire, and as procurator of the holy synod, from 1880 to 1905, was the most uncompromising champion of the autocracy and of the supremacy of the orthodox Greek church. He died in 1907.

Pocahontas (*pō'ka-hon'tas*), the celebrated Princess Pocahontas, of American colonial history, was born about 1595, the daughter of Powhatan, an Indian chief of Virginia. In 1613 she married John Rolfe, one of the settlers of Jamestown, afterward secretary and recorder-general of Virginia. She died in England in 1617, leaving a son, Thomas Rolfe. Her descendants include some of the leading families of Virginia, the celebrated John Randolph being one of them.

Poe, Edgar Allan, famous American poet and romancer, was born in Boston, Mass., 1809. He was adopted by John Allan of Richmond; entered the University of Virginia in 1826, but left after a term and spent two years as a private in the regular army. He expressed a wish to remain in the army, and Mr. Allan secured him a cadetship in the Military Academy at West Point. Here he neglected his studies and was cashiered in 1831. In 1833, the publisher of a Baltimore magazine having offered prizes for the best prose story and the best poem, Poe competed and won both prizes. In 1835 he married Virginia Clemm. In 1837 he removed to New York, where he lived by contributing to the *New York Quarterly Review* and other periodicals, and where in 1838 he pub-

lished *The Narrative of Arthur Gordon Pym.* In 1839 he became the editor of *The Gentleman's Magazine* at Philadelphia, and published a collection of his best stories, with the title *Tales of the Arabesque and Grotesque.* The year 1845 was marked by the appearance of his famous poem, *The Raven.* In 1847, after the death of his wife, he began to deteriorate, and died at Baltimore, Md., in 1849. His was perhaps the most original poetical genius which America has produced.

Polk (*pōk*), **James Knox,** eleventh president of the United States, was born in North Carolina, 1795. He was educated at the University of North Carolina, and was admitted to the bar at Columbia, Tenn., in 1820. Governor of Tennesee, 1839-41; and was elected as a democrat to the presidency in 1844. The principal feature of Polk's administration, which extended from 1845 to 1849, was the Mexican war, by which the United States acquired the great states of Texas and California and the territory of New Mexico. On the expiration of Polk's term he retired to Nashville, Tenn., where he died a few months afterward, 1849.

Polk, Leonidas, general in the Confederate army, and bishop of the Protestant Episcopal church, was born at Raliegh, N. C., 1806. He graduated at West Point in 1827, and received a commission in the artillery, but resigned and studied for the ministry. Soon after the outbreak of the Civil War, Polk tendered his services to the confederate government, and was appointed major-general by Jefferson Davis. He commanded an army corps at the battle of Shiloh, and in October following was made lieutenant-general. He was killed by a cannon-shot while reconnoitering on Pine mountain, 1864.

Pollock, Sir Frederick, English legal writer and educator, was born in London, 1845. He was graduated at Trinity College, Cambridge, and was admitted to the bar in 1871. LL.D., Cambridge; D.C.L., Oxford. Corpus professor of jurisprudence, University of Oxford, 1883-1903; and honorary fellow of Corpus Christi College, Oxford, 1906. Author: *Principles of Contract; The Law of Torts; The Land Laws; Essays in Jurisprudence and Ethics; Introduction to the History of the Science of Politics; Indian Contract Act,* etc.

Polo (*pō'lō*), **Marco,** Italian traveler, was born in Venice, of a noble family, about 1255. In 1271 he accompanied his father and uncle to the court of the Tartar emperor of China, by whom he was received with favor and employed on several embassies. He was then captured by the Genoese, put in prison, and dictated to another captive, *Rusticiano,* the story of his adventures, which proved to be the first account that opened up to wondering Europe the magnificence of the eastern world. He died about 1323.

Polybius (*pō-lib'i-us*), Greek historian, was born at Megalopolis, in Arcadia, about 204 B. C. He was educated and trained for a public career, was one of the thousand distinguished Archæans who were carried as prisoners to Rome, 168 B. C. After his return to Greece, he undertook numerous journeys into foreign countries, and wrote his celebrated *History.* His death was caused by a fall from his horse, about 122 B. C.

Polycarp (*pol'i-kärp*), bishop of Smyrna and, Christian martyr, was born about 69 A. D. He was brought up at Smyrna, was taught the doctrine of christianity by the apostles, particularly by John, with whom he had "familiar intercourse." He was burned alive. Polycarp wrote several *Epistolæ,* of which only one has been preserved, the *Epistola ad Philippenses,* valuable for its numerous quotations from the new testament.

Polygnotus (*pol'ig-nō'tus*), early Greek painter, was born in Thasos, and settled in Athens 463 B. C. He is considered the founder of historical painting, and is praised especially by Aristotle, who pays a high tribute to him. He was the first to attempt portrait painting and to exhibit character by his art. He was identified with Cimon in the reconstruction of Athens, and his school did much to adorn Athens' famous temples.

Pombal (*pōm-bäl'*), **Marquis of, Dom Sebastiano Jose de Carvalho,** one of the greatest of Portuguese statesmen and one of the ablest men of his time, was born in 1699. On the accession of Maria, he was, under Jesuit influence, dispossessed of power, and died in poverty, 1782.

Pompey, Cneius Pompeius Magnus, called the Great, famous Roman general, was born 106 B. C. He early evinced his military talents by siding with Sulla against Marius, and defeating Brutus, in 83 B. C. In 72 B. C. he reduced Spain to subjection, and on his return was elected to the consulship, with Crassus as his colleague. In this capacity, he restored the power of the tribunes and exterminated the Mediterranean pirates. He next successfully put an end to the Mithridatic war, occupied Syria, besieged and took Jerusalem, and subjugated Pontus and Bithynia. In 59 B. C. he, with Cæsar and Crassus, formed the triumvirate; and, in 51 B. C. identified himself with the aristocratic party, which brought him into armed antagonism with Cæsar. He was overthrown by Cæsar on the field of Pharsalia, 48 B. C., escaped to Egypt and was assassinated.

Ponce de Leon (*pōn'thā dā lā-ōn'*), **Juan,** Spanish explorer, was born in Leon, Spain, 1460. Having heard of the existence of a fountain that could restore youth and beauty, he set out in search of it in 1512, and discovered and named Florida on an Easter Sunday. At the end of a subsequent voyage he died, 1521.

Poniatowski, Joseph Antony, born at Warsaw, 1762, was trained in the Austrian army. When the duchy of Warsaw was constituted, in 1807, he was appointed minister of war and commander-in-chief. Five years later, with a large body of Poles, he joined Napoleon in his invasion of Russia, and distinguished himself at Smolensk, at Borodino, and at Leipzig, where, in covering the French retreat, he was drowned in the Elster, 1813.

Poniatowski (*pō'nyā-tôf'skē*), **Stanislaus Augustus,** last king of Poland, was born at Wolczyn, Lithuania, 1732. He tried, too late, to introduce reforms. The intrigues of discontented nobles led to Russian and Prussian intervention, and King Stanislaus resigned his crown and died at St. Petersburg, 1798.

Pontiac (*pon'ti-ak*), chief of the Ottawa Indians, was born about 1720. After the French had surrendered Canada, his hatred of the English prompted him to organize a combined attack upon all the English garrisons and settlements, with a view to the extermination of what he called "those dogs dressed in red." Pontiac resorted to every means familiar to savages to reduce Detroit, but was unsuccessful. Peace was finally made in 1766, Pontiac being forced to submit to British rule. He was killed at Cahokia, Illinois, by a drunken Indian in 1769.

Pope, Alexander, celebrated English poet, was born, 1688, in Lombard Street, London. Pope was deformed, small in size and delicate in constitution. The groundwork of learning he acquired at two private schools, and from two priests, who were employed as his tutors; for the rest he was indebted to his own persevering studies. He was a poet almost from infancy. His pastorals and some translations appeared in Tonson's *Miscellany* in 1709, but were written three or four years earlier. These were followed by the *Essay on Criticism,* 1711, and *Rape of the Lock,* 1712-17. From 1715-26 Pope was chiefly engaged on his translations of the *Iliad* and the *Odyssey.* In 1728-29 he published his greatest satire, the *Dunciad,* an attack on all poetasters and pretended wits. Died, 1744.

Pope, John, American general, was born at Louisville, Ky., 1822. He graduated at West Point in 1842, entered the engineer corps of the United States army, served in the Florida war of 1842-44 and afterward in the Mexican war. During the Civil War he was appointed brigadier-general of volunteers, and in 1862 highly distinguished himself by the capture of New Madrid, Mo., and "Island No. 10," in the Mississippi river. On account of these signal successes he was transferred to the east and placed in command. In 1882 Pope was made a major-general in the regular army, and retired in 1886. He died at Sandusky, Ohio, 1892.

Porson (*pōr's'n*), **Richard,** eminent English Greek scholar, was born in Norfolk, England, 1759. He was graduated at Cambridge, held a professorship of Greek there, and proved to be a prodigy of learning and critical acumen. After his death, several of his works left in manuscript were published. Died, 1808.

Porter, David D., American admiral, born at Chester, Pa., 1813; entered navy as midshipman, 1829; stationed at naval base during Mexican war. As commander of the *Powhatan* in Civil War won great honors at capture of New Orleans; cooperated with Farragut in attack on Vicksburg; raised to rank of rear admiral, 1862; head of naval academy, 1865; vice-admiral, 1866; admiral, 1870. Died, 1891.

Porter, Gene Stratton, author and naturalist, born in Wabash County, Ind., 1868; married C. D. Porter, 1886. Novels popular for their idealistic treatment of characters in close association with nature. Author: *The Song of the Cardinal, Freckles, What I Have Done With Birds, At the Foot of the Rainbow, A Girl of the Limberlost, Birds of the Bible, Music of the Wild, The Harvester, Moths of the Limberlost, Laddie, Michael O' Halloran.* Died, 1924.

Porter, Horace, American diplomat and soldier, was born at Huntingdon, Pa., 1837. He graduated at West Point, 1860; LL.D., Union, 1894, Princeton, 1906. He served in the Civil War; was lieutenant colonel and aide-de-camp to General Grant, 1864. He was assistant secretary of war, 1866; and executive secretary to President Grant, 1869-73. United States ambassador to France, 1897-1905; Author: *West Point Life; Campaigning With Grant,* etc. Died, 1920.

Porter, Jane, English novelist, was born at Durham, England, 1776. Her first novel was *Thaddeus of Warsaw,* which was translated into several languages. In 1810 she published *The Scottish Chiefs,* which was also very popular. In 1841 she visited St. Petersburg, and died, 1850, at Bristol, England.

Porter, Noah, American educator and philosophical writer, was born at Farmington, Conn., 1811. He graduated at Yale college in 1831, and, after teaching for a number of years, studied theology and became pastor of a Congregational church at New Milford, Conn. He was professor of metaphysics and moral philosophy at Yale college, 1846-71; president of Yale, 1871-86; and died at New Haven, Conn., 1892. Among Dr. Porter's numerous works are: *The Human Intellect; Books and Reading; Elements of Intellectual Science; Elements of Moral Science.* He was the editor of Webster's *Unabridged* and of the *International* Dictionaries.

Porter, William Sydney (1862-1910), known as "O. Henry," after varied years of journalism and travel, settled down in New York in 1901, where he became one of the most popular short story writers in America. Author: *The Four Million; Roads of Destiny,* etc.

Portes Gil, Emilio, was born in Victoria, State of Tamaulipas, Mexico, in 1891. He received a legal training. He was war secretary under Obregon. He became governor of Tamaulipas in 1920. In 1922-24 he sat in congress. He was secretary of state under Calles. In 1928 he was elected by congress as provisional President for the period Nov. 30, 1928 to Feb. 4, 1930.

Potter, Henry Codman (1834-1908), American protestant Episcopal prelate, was born in Schenectady, N. Y. After various pastorates, he became bishop of New York in 1887. Author: *Thirty Years Reviewed; Our Threefold Victory; The Church and Her Children; The Religion of Today.*

Potter, Paul, celebrated Dutch animal-painter, was born, a painter's son, at Enkhuizen in 1625. He left Amsterdam and established himself at The Hague at an early age, where he studied painting under Jacob de Weth. Here he resided until 1653, when he returned to Amsterdam. His best pictures are pastoral scenes with animal figures, the *Young Bull* being especially celebrated. The Rijks museum at Amsterdam possesses the *Bear-hunt* and seven other pictures, and England is rich in his works. Died, 1654.

Poussin (*pōō'sanʼ*), **Nicholas,** French painter, was born in Normandy in 1594. He was a pupil of Varin, Lallemont, and others, and in 1624 went to Rome, where he studied with Dufresnoy the sculptor. His reputation mainly rests on his success in the classic style. Upward of two hundred prints have been engraved from his works. The national gallery in London has several of Poussin's pictures. Died, 1665.

Powell, Edward Payson, American journalist and author, was born at Clinton, N. Y., 1833. He graduated at Hamilton College, 1853, and from the Union theological seminary, 1858. He was editorial writer on the *St. Louis Globe-Democrat* for several years; and editorial writer of *The Independent.* Author: *Our Heredity From God; Liberty and Life.* Died, 1915.

Powers, Hiram, American sculptor, was born at Woodstock, Vt., 1805. While still a boy he went to Cincinnati, Ohio, where he became an apprentice to a clockmaker, and about the same time formed the acquaintance of a German sculptor, who taught him to model in plaster. In 1835 he went to Washington, where he executed the busts of the most distinguished persons of his day. In 1837 he went to Italy to study his art, and resided in Florence until his death. In 1838 he produced his statue of *Eve,* which excited the admiration of Thorwaldsen, and in 1839 the still more popular *Greek Slave.* Died, 1873.

Poynter, Sir Edward John, English painter, was born of Huguenot ancestry in Paris, 1836. Was educated at Westminster and Ipswich; studied, 1853-54, at Rome and, 1856-60, in Paris and elsewhere. His water colors are numerous, and he was elected to the royal water color society in 1883, was R. A. from 1876. In 1871 he became Slade professor of art, University of London; in 1876-81 was director of art at South Kensington; from 1894 to 1905 was director of the national gallery, London; and beginning 1896 president of the Royal academy. In 1869-70 he designed the cartoons for a mosaic of St. George in the British house of parliament. He was knighted, 1897, and created a baronet in 1902. Died, 1919.

Praxiteles (*prak-sit'ē-lēz*), famous Grecian sculptor, is believed to have been a native of Athens, to have flourished early in the fourth century B. C. and to have died at the age of eighty. He executed statues in both bronze and marble, and was unrivaled in the exhibition of the softer beauties of the human form, especially the female figure, his most celebrated being the marble statue of Aphrodite at Cnidus.

Prentice, George D., American journalist, was born at Preston, Conn., 1802, and graduated at Brown University in 1823. After studying law he edited the *New England Review* for two years, and in 1831 became editor of the *Louisville Journal,* which position he continued to hold until his death in 1870. He also achieved considerable reputation as a public lecturer and was the author of a number of poems.

Prescott, William Hickling, American historian, was born at Salem, Mass., 1796. During his college course he lost the sight of an eye by being struck by a piece of bread playfully thrown at him by a fellow student, and his studies so affected the other eye, that he became nearly blind. He was then sent abroad for his health, and traveled in England, France and Italy. On his return to America he turned his attention to literature, and, in 1825, selected materials for his *History of Ferdinand and Isabella,* which appeared in 1837. He

next devoted six years to the *History of the Conquest of Mexico* and four years to the *Conquest of Peru*. From 1855 to 1858 he published three volumes of his *History of Philip II*, but left it unfinished. He was made D.C.L. at Oxford in 1850. Died, 1859.

Price, Sterling, American general, was born in Virginia, 1809. He was a democratic member of congress, 1845-46; was made brigadier-general in the Mexican war; was governor of Missouri, 1853-57; became a noted leader of the secession party; was appointed major-general in the confederate service in 1862, and rendered distinguished service to the confederacy in the southwest throughout the Civil War. Died, 1867.

Priestly, Joseph, eminent English clergyman and experimental philosopher, was born in 1733, at Fieldhead, in Yorkshire, England. In 1774 he announced his discovery of oxygen. At Birmingham he proceeded actively with philosophical and theological researches, became the associate of Boulton, Watt, and Dr. Darwin, grandfather of Charles Darwin, and was also appointed pastor of a Unitarian congregation. In 1791, however, the scene changed. His religious principles and his avowed partiality to the French revolution excited the hatred of the high church and tory party, and, in the riots which took place in July, his house, library, manuscripts and apparatus were committed to the flames by the infuriated mob and he was exposed to great personal danger. He fled to Northumberland, Pennsylvania, at which place he died, 1804. His works include between seventy and eighty volumes. Among them are: *Lectures on General History; Theory and History of Language; Principles of Oratory and Criticism; Charts of Biography and History; Disquisitions Relating to Matter and Spirit*, etc.

Prim (*prēm*), **Juan,** Spanish general and statesman, was born, 1814. Entered Spanish army very young; colonel in 1837; aided Navaraez, 1843, overthrow Espartero in effecting the return of Queen Maria Christina, was banished, 1864, after helping overthrow Isabella; welcomed back to Spain and occupied high posts. He furnished the pretext for the Franco-Prussian war by offer of the Spanish crown to Prince Leopold. Assassinated in 1870 for having procured election of Amadeus to the Spanish throne.

Prinzip Gavriola, Serbian assassin of Austrian Archduke Francis Ferdinand, June 28, 1914. Died in Austrian fortress, 1918.

Pritchett, Henry Smith, American educator, was born at Fayette, Mo., 1857. He graduated at Pritchett College, Glasgow, Mo., 1875; Ph.D., Munich, 1894; LL.D., Hamilton, 1900; Pennsylvania, Harvard, Yale, 1901; Johns Hopkins, 1902; Williams, Michigan, 1905; Sc.D., Tufts, 1906. Professor of astronomy and director of observatory, Washington University, St. Louis, 1883-97; superintendent of United States coast and geodetic survey, 1897-1900; president of the Massachusetts Institute of Technology, 1900-06; and president of the Carnegie foundation for advancement of teaching, 1906. Author of various scientific papers.

Proctor, Richard Anthony, English astronomer and mathematician, was born at Chelsea, England, 1837. He was a graduate at St. John's College, Cambridge, in 1860. About 1885 he settled in St. Louis, and later moved to Florida, leaving there just before he was seized with his fatal illness in New York. His principal popular books were: *Saturn and Its System; Gnomonic Star Atlas; Half-hours with the Telescope; Half-hours with Stars; Other Worlds Than Ours; Light Science for Leisure Hours; Elementary Astronomy; Border Land of Science*. Died, 1888.

Protagoras (*prō'-tag'ō-ras*), the first of the Greek sophists, was born about 480 B. C., and died about 411 B. C. A native of Abders, he settled in Athens, and gained a reputation as a paid teacher of philosophy. His doctrine was a form of agnosticism; his favorite saying was that "man is the measure of all things."

Proudhon (*prōō'dôN'*), **Pierre Joseph,** French socialist, was born at Besançon, 1809. By his vigorous advocacy of extreme and democratic opinions he became one of the leading figures of his day. His economic views are expounded in his *Qu'est-ce que la propriété* and his *Système des contradictions économiqus*. He died at Passy, 1865.

Ptolemy I. (*tol'ē-mi*), king of Egypt, known by his surname Soter, or "the preserver," was born, 307 B. C. Ptolemy acted as one of Alexander's generals in his eastern campaigns; and when the possessions of the latter were divided, after his death at Babylon, 323 B. C., Egypt fell to Ptolemy. Two years before his death, which occurred in 283 B. C., he abdicated in favor of his son, Ptolemy Philadelphus. Ptolemy's reign extended from 323 B. C. to 285 B. C.

Ptolemy II., surnamed Philadelphus, son of Ptolemy I., was born, 309 B. C., in the island of Cos. His reign is remarkable for the successful cultivation of the arts of peace rather than the practice of war. He enriched the library of Alexandria with all the literary treasures of his own and of earlier times, and the museum was crowded with the learned from all countries. He also expended large amounts on public works; was the builder of the famous lighthouse on the island of Pharos and constructed a royal mausoleum, to which he removed the remains of Alexander from Memphis. Altogether, under Ptolemy Philadelphus Egypt rose to a high rank among the nations in power and wealth. He reigned from 285 B. C. to 247 B. C.

Ptolemy, celebrated astronomer and geographer, whose proper name is Claudius Ptolemaeus, was a native of Egypt, though it is uncertain whether he was born at Pelusium or at Ptolemais in the Thebaid; flourished 139-161 B. C. Ptolemy, both as an astronomer and geographer, held supreme sway over the minds of almost all the scientific men from his own time down until about the fifteenth century; and in astronomy especially he seems to have been not so much an independent investigator as a corrector and improver of the work of his predecessors.

Puccini, Giacomo, composer of operas, was born at Lucca, Italy, in 1858, of a family known for generations for musical accomplishment. He studied at Milan Conservatory and became a professor there. In that year he brought out his first opera, *Manon Lescaut*. Following this, with three and four year regularity, came *La Boheme, La Tosca, Madame Butterfly* and a number of other operas less well known. Puccini has several times visited the United States. His recent works include *The Girl of the Golden West, Le Rondine, Il Tabarro* and *Suor Angelica*. Died, 1924.

Pugin (*pū'jin*), **Augustus Welby,** English architect, was born in London, 1812, the son of a French architect, Augustin Pugin, in whose office he was trained, chiefly by making drawings for his father's books on Gothic buildings. He was associated with Sir Charles Barry, architect of the British houses of parliament, and designed and modeled a large part of the decorations and sculpture for those structures.

Pulaski (*poo-lás'kē*), **Casimir,** Polish count and general, who fell in the American revolutionary war, was born in Podolia, 1748. On account of the active part he took in the Polish war against Russia, he was stripped of his estates and outlawed in the partition of Poland in 1772. In 1777 he offered his services to the American colonies in their contest against England, and for his gallant conduct at the battle of Brandywine was given a brigade of cavalry, which he commanded until March, 1778. At the siege of Savannah, in October, 1779, he fell in an assault at the head of the cavalry, and died on board the brig *Wasp* two days later.

Pulitzer (*pū'lit-sēr*), **Joseph,** American journalist, proprietor of *New York World* 1883-1911, was born at Budapest, Hungary, 1847. He was educated by private tutor; came to United States, 1864; served until end of Civil War in a cavalry regiment. In 1878 he bought the *St. Louis Dispatch* and united it with *The Evening Post*, as the *Post-Dispatch*, which he still owned at the time of his death. He sat in the Missouri legislature, 1869; Missouri state constitutional convention, 1874; was elected to congress in New York for term 1885-87, but resigned after a few months' service. In 1903 he endowed with $1,000,000 Columbia University school of journalism, with agreement to give an additional $1,000,000 when the school should be in successful operation. Mr. Pulitzer died in 1911. His will ratified the previous gift to Columbia of $7,000,000 and also ratified the agreement that the additional $1,000,000 be paid.

Pullman, George M., American inventor and business man, was born at Brocton, Chautauqua county, N. Y., 1831. He made his home in Chicago in 1859, and in the same year prepared models of sleeping cars, which became the foundation of his fortune. In 1863 he began building the coaches that are called by his name the world over. A few years later he organized the Pullman palace car company which was to build them. In 1880 he founded the town of Pullman, near Chicago, where the coaches are built. He died in 1897, having amassed a large fortune from his inventions and his various business enterprises.

Pupin (*pū-pēn'*), **Michael Idvorsky,** physicist, electrician, professor of electro-mechanics, Columbia, beginning 1889, was born in Ivard Banat, Hungary, 1858. He graduated at Columbia University, 1883; Ph.D., Berlin. His researches in electrical resonance and wave propagation have made possible long-distance telephony and multiplex telegraphy.

Purcell (*pūr'sel*), **Henry,** noted English composer, was born at Westminster in 1658, and in 1664 became a chorister in the Chapel Royal. He wrote many anthems and other church music and many dramatic and chamber compositions. Among them are his opera *Dido and Æneas*, written at seventeen; his music to the *Tempest*, his songs in Dryden's *King Arthur*, his music to Howard's and Dryden's *Indian Queen*. His greatest work is the *Te Deum* and *Jubilate*. His church music was edited from the original manuscript by Vincent Novello in 1829-32, with an essay on his life and works. Purcell died, 1695, and was buried in Westminster abbey.

Pusey (*pū'zi*), **Edward Bouverie,** English divine, was born at Pusey, in Berkshire, in 1800 and graduated at Oxford in 1822. In 1828 he was appointed professor of Hebrew at Oxford, a position he held until his death. In private life, Pusey was a man of warm affection and was widely known for his gentleness, sincerity and humility. His charity was limited only by his income; besides abundant gifts to the poor, he spent large sums in helping to provide churches in East London and in founding and supporting sisterhoods. He died at Oxford, 1882.

Pushkin (*poosh'kin*), **Alexander Sergeyevitch,** Russian poet, was born in 1799. He was the son of a nobleman and when quite young became a government clerk. Among his writings are the poems: *The Gypsies; Poltava; Dubrovski*; and *The Captain's Daughter*, a novel. Pushkin was killed in a duel at St. Petersburg when thirty-seven years old, 1837.

Putnam, George Haven, publisher, head of G. P. Putnam's Sons, was born in London, England, 1844. He was educated at the Sorbonne, Paris, and University of Göttingen; A.M., Bowdoin College; Litt.D., Western Pennsylvania. He left Göttingen without graduating to enter 176th New York volunteers, 1862; served from private to major, until 1865. President, G. P. Putnams Sons, publishers, New York.

Putnam, Herbert, librarian of congress since 1899, was born at New York, 1861. He graduated at Harvard, 1883; Litt.D., Bowdoin, 1898; LL.D., Columbian, 1903; Illinois, 1903; Wisconsin, 1904; Yale, 1907. He took a partial course at Columbia law school, and was admitted to the Minnesota bar, 1886; to the bar of Suffolk county, Mass., 1892; and practiced law, Boston, 1892-95. Minneapolis public library, 1887-91, and Boston public library, 1895-99. He was president of the American library association, 1898, 1904, and overseer of Harvard, 1902.

Putnam, Israel, American general, born at Danvers, Mass., 1718. In 1755 he helped as a captain to repel a French invasion of New York and was present at the battle of Lake George. In 1759 he received a regiment, in 1762 went on the west India campaign and in 1764 helped to relieve Detroit, then besieged by Pontiac. In 1775, after the battle of Concord, he was given command of the forces of Connecticut, was at Bunker Hill, held the command at New York, and in August 1776, at Brooklyn Heights, where he was defeated by Howe. Died, 1790.

Pyle, Howard, American artist, author, was born at Wilmington, Del., 1853. He was educated in private schools and at the art students' league, New York. Author and illustrator: *The Merry Adventures of Robin Hood; Pepper and Salt, or Seasoning for Young Folks; Within the Capes; The Wonder Clock; The Story of Sir Launcelot and His Companions*. Died, 1911.

Pym (*pim*), **John,** English orator and statesman, was born at Brymore, in Somersetshire, in 1584. He was for many years member of parliament for Tavistock. In 1641 he led the impeachment of the earl of Strafford; and in the following year he was one of the "five members" the attempt to seize whom, on the part of Charles I., immediately preceded the English civil war. Scarcely had the great conflict begun, however, when toil and anxiety brought his career to a close. He died at Derby House, 1643, and was buried in state in Westminster abbey.

Pyrrhus (*pir'us*), Greek general, king of Epirus, was born about 318 B. C.; came to the throne in 306 B. C. He was expelled a few years later, but restored by the help of Ptolemy Soter in 296 B. C.; held the kingdom of Macedonia for a short time, and, in 281 B. C., went to Italy to help Tarentum against the Romans. He was at first successful, through his elephants and the phalanx, but was finally defeated in 275 B. C. Died, 272 B. C.

Pythagoras (*pi-thag'ō-ras*), celebrated Greek philosopher, was born about 586 B. C., at Samos. He began to travel at the age of eighteen. On his return he taught geometry at Samos, after which he settled at Crotona, in Magna Græcia, and established a school of philosophy, which became famous. Persecution at length drove him thence, and he took refuge in the temple of the Muses at Metapontum, where he is said to have been starved to death, about 497 B. C. Besides being an illustrious metaphysical philosopher. Phthagoras was a great geometrician and astronomer, discovered the numerical relations in music and propounded the theory of the "harmony of the spheres."

Quatrefages de Breau (*ka'tr'-fâzh' dē brā'ō'*), **Jean Louis Armand de,** French naturalist, was born at Berthezème, France, 1810. In 1850 he was elected professor in the *Lycee Napoleon* and in 1855 at the natural history museum, Paris. His chief works are: *Souveniers d'un Naturaliste; Unité de l'Espèce Humaine; L'Espèce Humaine; Crania Ethnica; Les Pygmées; Darwin et ses Precureurs Francais;* and *Théories Transformistes*. Died, 1892.

Quay, Matthew Stanley, United States senator and republican politician, was born at Dillsburg, Pa., 1833. He entered the state legislature in 1865, was twice state secretary, state treasurer; chairman of the republican national committee during the Harrison campaign of 1888. In 1887 he was made United States senator for Pennsylvania, reëlected in 1893, and two years later was tried for alleged misappropriation of public funds, but was acquitted. He was again elected in 1901, but died in 1904.

Quesnay (*ke'ne'*), **Francois,** French economist and physician, was born at Méré, France, 1694. He studied medicine at Paris, and at his death was first physician to the king. But the fame of the "European Confucius" depends on his essays in

political economy. Quesnay's principles are well known from his contributions to the *Encyclopedie*, and from his *Maximes du Gouvernement Economique*, *Le Droit Naturel*, etc. He died in 1774.

Quesnel (*kĕ'nĕl*), **Pasquier,** French Roman Catholic theologian, was born in Paris, 1634. He studied at the Sorbonne, became in 1662 director of the Paris oratory, and here wrote *Réflexions Morales sur le Nouveau Testament.* Having refused to condemn Jansenism in 1684, he fled to Brussels, where his *Réflexions* were published 1687-94. His book was condemned in the bull *Unigenitus* in 1713. He spent his last years at Amsterdam, and died there in 1719.

Quigley, James Edward, Roman Catholic archbishop of Chicago beginning 1893, was born at Oshawa, Canada, 1854, and moved with his parents to Lima, N. Y. He was educated at St. Joseph's College, Buffalo, N. Y., and at the University of Innspruck and the College Propaganda, Rome. Bishop of Buffalo, 1897-1903, when he was installed in Chicago. Died, 1915.

Quiller-Couch, Arthur Thomas, British novelist and essayist, was born in Cornwall, 1863. He was graduated at Trinity College, Oxford. Author: *Dead Man's Rock; The Blue Pavilions; The Warwickshire Avon; The Delectable Duchy; Verses and Parodies; Shakespeare's Christmas; From a Cornish Window,* etc. In 1897 he was commissioned to finish R. L. Stevenson's uncompleted novel, *St. Ives.*

Quincy, Josiah, American statesman, was born in Boston, Mass., 1772. He was graduated at Harvard, 1790, and adopted the law as a profession. In 1805-13 he was a member of congress. In 1813 he was elected to the Massachusetts state senate, and joined in the protest of the legislature against the war and the admission of Louisiana. He was mayor of Boston, 1823-28, and president of Harvard, 1829-45. He published *History of Harvard University; The Municipal History of the Town and City of Boston During Two Centuries; The Life of John Quincy Adams;* and other works. Died, 1864.

Quinet (*kē'nĕ'*), **Edgar,** French philosopher and author, was born at Bourg, France, 1803, and first studied at Lyons and at Paris. From this early period he formed an intimate friendship with Michelet. He then became a contributor to the *Revue des Deux Mondes,* in which *Ahasvérus,* perhaps his finest work, first appeared. From 1839 to 1842 he held the chair of foreign literature at Lyons. From here he passed to a chair at the Collège de France. He threw himself eagerly into the reform agitation that brought about the revolution of 1848, and was elected a member of the constitution and legislative assemblies, but was expelled from France. On the fall of the empire he returned to France, and was reïnstalled in his chair at the Collège de France, 1870. In 1871 he was elected a member of the assembly, and died in 1875.

Quintilian (*kwin-til'i-an*), or **Marcus Fabius Quintilianus,** Latin rhetorician, was born at Calagurris, now Calahorra, in Spain, about 35 A. D. The work by which he is known is entitled *De Institutione Oratoria,* or sometimes *Institutione Oratoria,* and is comprised in twelve books. This work, which contains all that Quintilian considered most valuable in the earlier treatises, both Greek and Latin, on the subject, was discovered by Poggio Bracciolini in the monastery of St. Gall in 1417. Quintilian died probably in Rome about 97 A. D.

Rabelais (*rà'b'-lē'*), **Francois,** the great French humorist, was born at Chinon, in Touraine, about 1490. In 1530 he settled at Montpellier and, taking a medical degree at the university was appointed lecturer. His romance, in which are narrated the wonderful adventures of Gargantua and Pantagruel, continues to take rank as one of the world's masterpieces of humor and grotesque invention. Lord Bacon called Rabelais "the great jester of France"; others have called him a "comic Homer." Died in Paris, 1553.

Rachel (*rà'shel'*), or **Elisa Rachel Felix,** celebrated actress, was born at Munf, in the canton of Aargau, Switzerland, 1821, daughter of poor parents, of the Jewish race. She began her career by singing in the streets of Lyons, and subsequently of Paris. Although her life was spent chiefly in Paris, she visited London, St. Petersburg, Amsterdam and many other European cities, and in all of them her genius for tragedy was recognized as of the highest order. She died, near Toulon, France, 1858.

Rachmaninoff, Sergei Vasilievich, Russian composer and pianist, was born in 1873 in the province of Novgorod. He received his musical education at Petrograd and Moscow, and won a gold medal for his opera *Aleka* in 1892. Besides being a skillful pianist and conductor, he has been a prolific composer. His works include concertos, symphonies, preludes, sonatas, devotional music and the operas *Aleka, The Miser Knight, Francesca da Rimini.* He visited the United States in 1909-1910, appearing as pianist and conductor of his own works. In 1912 he wrote *The Bells,* produced in Liverpool in 1921. He is probably most popularly known through his preludes.

Racine (*rà'sēn'*), **Jean Baptiste,** distinguished French dramatist, was born at La Fertè Milon, 1639, and completed his education at the seminary of Port Royal. His first dramatic efforts *The Thebaid,* and *Alexander the Great,* gave but faint indications of superior talent, but his tragedy of *Andromache* placed him far above all his contemporaries except Corneille. He increased his fame by the production of *Britannicus, Berenice, Iphigenia* and other tragedies, and by his comedy, *The Pleaders.* After a lapse of twelve years, he wrote, by desire of Madame de Maintenon and Louis XIV., the dramas of *Esther* and *Athalie,* to be performed at the Seminary of St. Cyr. The latter is now considered, very generally, to be his finest play. Died, 1699.

Radcliffe, Ann (née Ward), noted English novelist, was born in London, 1764. In her twenty-third year she married William Radcliffe, a student of law, who became proprietor and editor of a weekly newspaper, the *English Chronicle.* Among her works are: *The Castles of Athlin and Dunbayne; A Sicilian Romance; The Romance of the Forest; Mysteries of Udolpho,* etc. She died in 1823.

Radcliffe, John, English physician and the founder of the Radcliffe library at Oxford, was born at Wakefield, Yorkshire, England, 1650. To University college he left his estate in Yorkshire. He left 40,000 pounds for the erection of a public library in Oxford, since known as the Radcliffe library, which he endowed with 150 pounds per annum for a librarian. The Radcliffe infirmary and Radcliffe observatory, at Oxford, were both erected out of this fund. Died, 1714.

Rae, John, British author and journalist, was born in Wick, Scotland, 1845. He was graduated at Edinburgh University; M.A., Edinburgh; honorary LL.D., Edinburgh. He did much writing for the leading reviews, especially on social and economic subjects, and is the author of *Contemporary Socialism; Eight Hours for Work; Life of Adam Smith,* etc. Died, 1915.

Raeburn, Sir Henry, Scottish portrait painter, was born at Stockbridge, near Edinburgh, 1756. At twenty-two he married the widow of Count Leslie, a lady of means, studied two years in Rome, 1785-87, then settled in Edinburgh, and soon attained preëminence among Scottish artists. In 1814 he was elected A.R.A., in 1815, R.A.; was knighted by George IV. in 1822, and appointed king's painter for Scotland a few days before his death, 1823. His style was to some extent founded on that of Reynolds.

Raff (*räf*), **Joachim,** German composer, was born at Lachen on the lake of Zürich, 1822. In 1850-56 he lived near Liszt in Weimar, taught music at Wiesbaden until 1877, and was then director of the conservatory at Frankfort-on-Main. Among his operas the chief are *König Alfred* and *Dame Kobold.* Died, 1882.

Raglan (*rag'lan*), **Lord** (Fitzroy James Henry Somerset), British general, was born in 1788. He entered the army in his sixteenth year, and after serving on the staff of Sir Arthur Wellesley in the Copenhagen expedition and the peninsular war, became his secretary in 1812. In 1852 he was made master-general of the ordnance, and entered the house of lords as Baron Raglan. When war was declared against Russia, in 1854, Lord Raglan was appointed commander of the English forces in the Crimea, and, at the desperate battle of Inkerman, he won the baton of a field-marshal. Raglan died before Sebastopol, 1855.

Raikes (*rāks*), **Robert,** English publisher and philanthropist, founder of the modern Sunday schools, was born at Gloucester, England, 1735. He early interested himself in the pitiable condition of prisoners in the jails; and then his consideration for the misery and ignorance of many children in his native city led him, in 1780, to start a Sunday school where they might learn to read and understand the Bible. Died, 1811.

Raleigh (*rô'li; ral'i*), or **Ralegh, Sir Walter,** English courtier, colonizer and man of letters, was born at Budleigh, in Devonshire, 1552, and was educated at Oriel College, Oxford. Shortly after returning from a voyage to America he seems to have attracted the attention of Queen Elizabeth, with whom he speedily rose high in favor. In 1584 a patent having been granted him to take possession of lands to be discovered by him on the continent of North America, he fitted out two ships at his own expense and shortly achieved the discovery and occupation of the territory known as Virginia. It was through him that the potato and tobacco were introduced into England at this time. With the death of Elizabeth in 1603 ends the brilliant and successful portion of his career. Her successor, James, from the first regarded him with a suspicion and dislike, which he was at no pains to conceal. He was accused of complicity in a plot against the king. Sentence of death was passed, but James did not venture to execute him, and he was sent to the Tower, where for thirteen years he remained a prisoner. During his imprisonment he wrote his *History of the World,* a noble fragment, still notable to the student as one of the finest models of the quaint and stately old English style. In 1615 he procured his release and sailed for Guiana. After his return, in 1618, he was infamously executed, nominally on the sentence passed on him sixteen years before, but really there is reason to suppose in base compliance on James' part with the urgenices of the king of Spain, who resented Raleigh's persistent hostility.

Rambaud (*rän'bō'*), **Alfred Nicolas,** French historian, was born at Besançon, 1842. He was a member of the French cabinet, 1879-80, and in 1896 became minister of public instruction. He was appointed, in 1883, professor of history in the University of Paris, and became a member of the academy of moral and political sciences in 1897. He wrote works on Russia, French civilization, colonial France, etc., and, with Lavisse, *Histoire Générale du IVme Siecle,* in 12 volumes. Died, 1905.

Rameses I. (*răm'ē-sēz*), ruled about 1355 B. C., and was king during the nineteenth Egyptian dynasty, formed a treaty with the Hittites and maintained the conquests of Egypt as far as Wady Halfa. He subjected Ethiopia, which had revolted, established a fleet in the Mediterranean and erected some of the largest of the Egyptian edifices. It is usual to identify the warrier king Rameses II. with the Pharaoh of the oppression, and Merenptah, his son, as the Pharaoh of the Exodus.

Ramsay, Sir William, British chemist, was born at Glasgow, 1852. He was educated at Glasgow University, and at Tübingen; M.D., Ph.D., LL.D., D.Sc. In 1887 accepted the chemistry chair at University College, London. In conjunction with Lord Rayleigh, he discovered argon in 1894, and in 1895 obtained helium from clèveite. In 1904 he was awarded the Nobel prize for chemistry. He is the author of numerous papers, the most important of which are perhaps *The Molecular Surface-Energy of Liquids; Argon, A New Constituent of the Atmosphere* (in conjunction with Lord Rayleigh), and *Helium, A Constituent of Certain Minerals.* Died, 1916.

Ramsay, Sir William Mitchell, professor of humanity at Aberdeen University, 1886-1911, was born at Glasgow, 1851. He was educated at the Universities of Aberdeen, Oxford and Göttingen; honorary D.C.L., Oxford; LL.D., St. Andrews and Glasgow; Litt.D., Cambridge. Author: *The Historical Geography of Asia Minor; The Church in the Roman Empire; St. Paul the Traveler and the Roman Citizen; Impressions of Turkey; Was Christ Born at Bethlehem?*

Randall, Samuel J., American statesman, was born at Philadelphia, Pa., 1828. After spending a number of years in mercantile business in his native city, he was elected to congress as a democrat, in 1862. He held this position up to the time of his death at Washington, D. C., 1890. He was elected speaker of the house of representatives, 1876, 1877 and 1879. Throughout his congressional career his ability and integrity were conceded by men of all parties, and he was held in the highest esteem by his fellow-congressmen.

Randolph, Edmund Jennings, American statesman, was born at Williamsburg, Va., 1753, and was admitted to the Virginia bar. Was governor of Virginia from 1786 to 1788, and a member of the convention which framed the constitution of the United States. In 1789 he entered Washington's cabinet as attorney-general, and in 1794 was appointed secretary of state, to succeed Jefferson. He died in Virginia, 1813.

Randolph, John, of Roanoke, American orator and statesman, was born in Chesterfield county, Va., 1773. He was United States senator, 1825-27; United States minister to Russia in 1830; and again elected to congress in 1832. Randolph prided himself on his descent from Pocahontas, and his marked Indian features bore witness to his origin. He died in Philadelphia, Pa., 1833.

Ranke (*răn'kĕ*), **Leopold von,** eminent German historian, was born at Wiehe, Thuringia, 1795. He was educated at Leipzig, and at twenty-three became head master of the gymnasium at Frankfort-on-the-Oder, where he devoted his leisure to historical studies. Six years later he published *A Critique Upon the Later Historians,* and the *History of the Roman and Germanic Peoples From 1495 to 1535,* which attracted wide attention and won him the chair of history at Berlin in 1825; this he retained until 1871. His most complete and elaborate effort, however, is his *German History in the Time of the Reformation.* In 1880, in his eighty-fourth year, he published the first volume of his *Welt-Geschichte,* or *History of the World,* writing a volume annually. Probably no man of his time, even in his own land, toiled more indefatigably or laid up greater stores of knowledge. Died, 1886.

Raphael, Santi or Raffaello Sanzio (*raf'ā-el*) the greatest Italian painter of the Roman school, was born at Urbino, 1483. Timoteo Viti was his first master, and he entered Perugino's atelier in 1499 or 1500, where he was also under Pinturicchio's influence. To his Urbino period belong *The Vision of a Knight* and *St. Michael.* To the Peruginesque period belong, among other paintings, two madonnas in Berlin and one in the Hermitage, St. Petersburg, and *The Marriage of the Virgin,* in the Brera at Milan.

He went to Florence in 1504, and came under the influence of Leonardo da Vinci and

Michelangelo. His extraordinary talents developed rapidly. With an eager power of assimiliation, he put one master after another under contribution for some special power of drawing, grace of design, use of color. He carried the efforts of his predecessors to perfection rather than introducing anything new.

His distinguishing qualities were mastery of workmanship, perfection of design and of form, harmonious beauty and serenity of expression, balanced by refinement of taste and purity of color. To his Florentine period belong *The Ansidei Madonna*, the Madonnas called *Del Granduca, Del Cardellino, La Belle Jardinière, St. Catherine*, and *The Entombment of Christ.*

In 1508 he was summoned to Rome by Pope Julius II. to decorate the state apartments in the vatican. The proximity of Michelangelo, working in the Sistine Chapel, and the world of classical antiquity around him, gave a noble direction to his mind and ripened his powers to full perfection. Works by older masters were destroyed to give him wall-space; he collected a school of artists to aid him. Prominent among these pupil-assistants were Giulio Romano, Gianfrancesco Penni, "Il Fattore"; Perino del Vaga; and Giovanni da Udine.

He decorated the ceilings and walls of four apartments, and received 1,200 gold scud for each wall painting. The subjects testify to the range and fertility of his creative genius—(1). *Poetry, or the Parnassus; The Dispute of the Sacrament; Philosophy, or the School of Athens; Jurisprudence.* (2). *Expulsion of Heliodorus from the Temple; The Mass of Bolsena; Attila at the Head of His Army; The Deliverance of Peter from Prison* (3). *L'Incendio del Borgo; Victory at Ostia Over the Saracens; Charlemagne Crowned by Leo III.; Oath of Leo III.* (4). *Victory of Constantine Over Maxentius at Ponte Molle.* The famous loggia in the vatican were decorated with biblical scenes and arabesque ornamentations designed by Raphael.

To his Roman period also belong the various cartoons for tapestries, the Chigi *Sibyls*, the graceful and beautiful paintings in the Chigi chapel, the Farnesina designs, and the superb *Galatea*, full of the sense of life and enjoyment. Of his many madonnas the finest are, exclusive of those mentioned above, the *Garvagh, Di Casa d' Alba, Di Foligno*, and the magnificent *San Sisto* at Dresden. His madonnas were conceived with a graceful freedom delicately controlled, guided by a fine feeling for the laws of art and the sacred relationships of life, and were painted in a spirit of dreamy fancy or a cheerful outlook on life.

Among his finest portraits are *Julius II. La Donna Velata* and *Joanna of Aragon.* So beloved was he that all classes mourned his death. His body lay in state with his unfinished *Transfiguration* suspended above it, and he was buried in the Pantheon at Rome

References.—Vasari's *Life;* Eugene Muntz's *Raphael: His Life, Work and Times;* Crowe and Cavalcaselle's *Raphael; His Life and Work;* Minghetti's *Raffaello;* Julia Cartwright's *Early Work of Raphael;* and *The Works of Raphael in the Royal Library at Windsor;* and Berenson's *Central Italian Painters.*

Rauch (*rouk*), **Christian Daniel,** noted German sculptor, was born at Arolsen, in the principality of Waldeck, 1777. He was a pupil of Canova and of Thorwaldsen. His greatest effort was the colossal monument to Frederick the Great, which was dedicated in the city of Berlin in 1851. The greater portion of his long life was spent in Berlin, but he died at Dresden, 1857.

Rawlinson, George, English historian and orientalist, brother of Henry Rawlinson, was born at Chadlington, Oxfordshire, 1815. He was graduated at Oxford; was elected a fellow and tutor of Exeter College; canon of Canterbury cathedral in 1872; and rector of All Hallows, London, 1888. In 1860 he published his notable Bampton lectures on the *Historic Evidence for the Truth of the Christian Records.* He died at Canterbury, 1902.

Rawlinson, Sir Henry Creswicke, 1810-1895; entered the East India military service in 1827; served in the Bombay presidency until 1833; then appointed to assist in reorganizing Persian army. During six years spent in Persia, he studied the cuneiform inscriptions, and translated the famous Behistun inscription of Darius. His principal works are: *England and Russia in the East; The Cuneiform Inscriptions of Western Asia; Outline History of Assyria*, etc.

Rayleigh (*rā'lī*), **John William Strutt, Lord,** distinguished English physicist, was born in 1842, graduated at Trinity College, Cambridge, in 1865, and became a fellow in the following year. He succeeded to the title of baron in 1873, was professor of experimental physics at Cambridge, 1879-84, and of natural history at the royal institution, London, 1887-1905. Died, 1919.

Raymond, Henry J., American journalist, was born at Lima, N. Y., 1830. He was graduated at the University of Vermont in 1840, and after serving for a number of years on the staff of the *New York Tribune* and other papers, he in 1851 founded the *New York Times*, which speedily took rank among the leading journals of the country. Died, 1869.

Rayner, Isidor, lawyer, United States senator, was born in Baltimore, Md., 1850. He was educated at the University of Maryland and at the University of Virginia, where he completed the academic and law courses. He was admitted to the Baltimore bar in 1871; member of congress, 1886-92, and attorney-general of Maryland in 1899. He was council for Rear Admiral Schley before invesitgation commission in 1901, and United States senator from Maryland, beginning 1904. He was recognized as one of the leading lawyers of the senate, was a finished orator, and an authority on constitutional law. Died, 1912.

Read, Thomas Buchanan, American poet and painter, was born in Chester county, Pa., 1822. He entered a sculptor's studio in Cincinnati, afterward studied painting, and in 1841 settled in Boston, where he began to paint portraits. In 1846 he returned to Philadelphia, and in 1850 went to Florence, where he spent most of the rest of his life. He died at New York, 1872.

Reade, Charles, distinguished English novelist, was born in Oxfordshire, England, 1814. Was graduated at Oxford, secured a fellowship there, and in 1847 was admitted to the bar as a member of Lincoln's Inn. He began his literary career by play-writing; studied the art of fiction for fifteen years and first made his mark as novelist in 1852, when he was nearly forty, by the publication of *Peg Woffington.* This was followed in 1856 by *It Is Never Too Late to Mend*, and 1861 by *The Cloister and the Hearth*, the last, his best, and the most popular. He died in London in 1884.

Reaumur (*rā'ō'mūr'*), **Rene Antoine Ferchault de,** French naturalist and physicist, was born at La Rochelle, France, 1863. He was educated at Poitiers, Bourges and Paris, and was elected a member of the academy of sciences in 1708. He discovered the method of tinning iron and invented the Réaumur thermometor. He died in 1757. leaving behind him a voluminous array of works, the most important of which is the *Mémoires pour servir à l' Historie des Insectes.*

Recamier (*rā'kā'myā*), **Mme.** (née Jeanne Francoise Julie Adelaid Bernard), French woman of society, was born at Lyons, France, 1777. At fifteen she was married to Jacques Récamier, and attracted to her salon at Paris a brilliant circle during the consulate and empire. A record of the splendid social triumphs of Mme. Récamier would involve notice of nearly all who were distinguished in Paris during a space of about fifty years. She became a power in the whole of France, and so continued in spite of changes of fortune which ordinarily would have involved the extinction of even more solid celebrity. Died, 1849.

Reclus (*rē'klü'*), **Jean Jacques Elisee,** French geographer, was born at Ste-Foix-la-Grande, France, 1830. He was educated at Montauban and Berlin. An extreme democrat, he left France after the *coup d' état* of 1851. In Switzerland he began his masterpiece, *Nouvelle Géographie Universelle;* wrote also a physical geography, *La Terre; Histoire d'un Ruisseau; Les Phénomènes Terrestres,* In 1983 he became a professor at Brussels. Died, 1905.

Redfield, William Cox, Secretary of Commerce, manufacturer, was born in Albany, N. Y., June 18, 1858. His parents removed to Pittsfield, Mass., in 1867, where he was educated in the grammar and high schools of that city. He removed to New York City in 1877, thence to Brooklyn in 1883, engaging in the manufacture of iron and steel forgings, tools, etc., and in the manufacture of ventilating, heating and dry apparatus, engines, etc. He was vice-president of the American Blower Co., 1907-11. In 1902 and 1903 he was commissioner of public works for the Borough of Brooklyn, New York City. He was a member of the Sixty-second Congress, and appointed Secretary of Commerce by President Wilson, 1913-1919, retired.

Red Jacket, or **Sa-go-ye-wat'-ha,** "He keeps them awake," a noted chief of the Seneca tribe of Indians, was born at Old Castle, on Seneca lake, New York, about 1751. He was a friend of the whites, though he wished to have the Indians keep their own lands; and, when the six nations made a treaty to sell theirs, he opposed the treaty in an eloquent speech, 1784. Some years after this he visited General Washington, who gave him a silver medal. In later life he visited New York and Washington, and the speeches that he made there are among the finest specimens of Indian eloquence. He died at Seneca village, near Buffalo, N. Y., 1830.

Reed, Thomas Brackett, American lawyer and legislator, was born at Portland, Me., 1839, and was graduated from Bowdoin College in 1860. He was a member of the Maine legislature; attorney-general of the state; and was elected to congress in 1876. His ability was so clearly recognized that he soon become the acknowledged leader of the republican party on the floor; and when his party secured a majority of the house of representatives in the fifty-first congress, Reed was chosen speaker. His name was presented to the Republican National Convention in 1896, but he was defeated by McKinley. He served in congress until 1899, and was elected speaker of the fifty-fourth and fifty-fifth congresses. Died, 1902.

Reed, Walter, American surgeon and bacteriologist, was born in Virginia, 1851. Received his medical education at University of Virginia and at Bellevue hostpital in New York. Reed demonstrated that typhoid fever is spread in camps through flies and personal contact, rather than by infected water, and that yellow fever is caused only by the bite of a certain kind of mosquito. By means of the precautions he urged after the Spanish war, yellow fever was practically exterminated in Cuba. He died, 1902.

Reeves, John Sims, English tenor, was born at Shooter's Hill, Kent, 1822. He went to Paris, 1843, in order to perfect his voice and style, and on his return to England, 1847, was recognized as the first tenor in that country, a position which he maintained for a number of years. In 1892 he became professor of the Guildhall school of Music, London, and retired from the stage, returning to concert work, however, in 1896. He died at Worthing, Sussex, 1900.

Reglomontanus (*rē-ji-ō-mon-tā'nus*), the name given from his birthplace at Königsberg (*Mons Regius*) to the mathematician and astronomer Johann Müller. He was born in 1436, studied at Vienna, and in 1461 accompanied Cardinal Bessarion to Italy to learn Greek. In 1471 he settled in Nuremberg, where, with Bernard Walther, he labored at the "Alphonsine tables," and published *Ephemerides 1475-1506*, in 1473. Died, 1476.

Regnard (*re'nyär'*), **Jean Francois,** French dramatist, was born at Paris, France, 1655. After a roving and adventurous life in various countries, he returned to France about 1683, and became prominently connected with the ministry of finance. Regnard was one of the best followers of Molière, and is regarded as second only to that great master as an exponent of French comedy. Died, 1709.

Regnault (*rē'nyō'*), **Henri,** French figure and genre painter, was born in Paris, 1843. He studied there and at Rome, later making a study of Velasquez in Madrid. His equestrian portrait of Marshall Prim was one of the finest of the century. Regnault enlisted in the army during the Franco-Prussian war and was killed at Buzevenal, 1871.

Regnault, Henri Victor, French chemist and physicist, was born at Aix-la-Chapelle, 1810. In 1841 he succeeded Dulong as professor of physics in the Collège de France; in 1847 he became chief engineer of mines, and in 1854 director of the porcelain factory at Sevres. He rendered distinguished service to science by his exact determination of physico-chemical constants, and his criticism of the law of Boyle and Mariotte. Died, 1878.

Regnier (*rā'nyā*), **Mathurin,** French poet, was born at Chartres, 1573. After a life of dissipation he became, in 1609, canon of the cathedral of Chartres, and was called "the good Régnier," on account of his amiability. Boileau called him the best satirical poet before Moilère. He died at Rouen, 1613.

Regulus (*reg'ū-lus*), **Marcus Atilius,** Roman general, was consul in 267 B. C., when he took Brundusium, and received a triumph. In 256 B. C. he was a second time consul, and in conjunction with his colleague, Manlius, defeated the Carthaginian fleet of 350 ships under Hanno and Hemilcar, landed at Clypea, and ravaged the enemy's territory. The Carthaginians at last defeated him and took him prisoner. After five years' captivity he was sent in 250 B. C. to Rome as an ambassador. In the same year he returned to Carthage, where he was put to death about 250 B. C.

Reid, Sir James, British physician, physician-in ordinary to King Edward and to the prince of Wales, was born at Scotland, 1849. He was graduated at Aberdeen University, M.A., 1869; M.D., 1875; LL.D., 1895; honorary LL.D., Glasgow, 1901. He studied at Vienna, 1876-77; practiced in Scotland, 1877-81; resident physician to Queen Victoria, 1881-1901; physician extraordinary, 1887-89; physician-in-ordinary, 1889-1901. Died, 1923.

Reid, Robert Gillespie, Canadian railway builder and capitalist, was born in Scotland, 1840. In 1871 he came to America and had charge of the construction of the international railway bridge at Niagara Falls, the international bridge over the Rio Grande and the Lachine bridge over the St. Lawrence.

Reid, Thomas, 1710-1796, Scottish philosopher, was born at Strachen, Scotland. Professor of moral philosophy in the University of Glasgow, 1763-1781. Author: *Inquiry Into the Human Mind*, and *Active Powers of the Human Mind.*

Reid, Wallace (1892-1923), motion picture actor, son of a playwright, gave up newspaper work to enter

motion pictures in 1910. He played with Geraldine Farrar in *Carmen*. His athletic, happy-go-lucky personality quickly made him popular. His best star parts have been *The Valley of the Giants*, *Hawthorne of the U. S. A.*

Reid, Whitelaw, American diplomat and journalist, was born at Xenia, Ohio, 1837. He was graduated at Miami University, 1856; LL.D., Miami, 1890, Princeton, 1899, Yale, 1901, Cambridge, 1902; D.C.L., Oxford, 1907; aide-de-camp on the staffs of Generals Thomas A. Morris and W. S. Rosecrans in West Virginia. In 1868 he was attached to the editorial staff of *New York Tribune;* managing editor, 1869, editor-in-chief and chief proprietor, 1872-1905; was United States minister to France, 1889-92; special ambassador of the United States to Queen Victoria's jubilee, 1897; member of peace commission to Paris, 1898, special ambassador for coronation of Edward VII., 1902, and United States ambassador to England in 1905. Author: *After the War, A Southern Tour; Ohio in the War; Schools of Journalism; Newspaper Tendencies; Town Hall Suggestions; Two Speeches at the Queen's Jubilee; Some Consequences of the Last Treaty of Paris*, etc. Died, 1912.

Reinsch (*rinsh*), **Paul Samuel,** American educator and author, professor of political science, University of Wisconsin, beginning 1899, was born at Milwaukee, Wis., 1869; was graduated at the University of Wisconsin, 1892; PhD., 1898. Author: *The Common Law in the Early American Colonies; World Politics at the End of the Nineteenth Century as Influenced by the Oriental Situation; Colonial Government; Colonial Administration* and *American Legislatures*. Died, 1923.

Rejane (*rā'zhän'*), **Madame** (Gabrielle Reju), French actress, was born in Paris, 1857. She married M. Porel, Director of the Vaudeville theater, Paris. She was educated at the Paris Conservatoire, under Regnier, and made her début at the Vaudeville theater in *Revue des Deux Mondes*, 1875. She toured in America in 1895, and obtained an enormous success. She afterwards managed her own theater in Paris, the Théâtre Rèjane. Died, 1920.

Rembrandt (*ram'bränt*), **Van Ryn, Paul Harmens,** a Dutch painter, was born in Leyden, 1607, and died 1669. He studied in Leyden and Amsterdam, and about 1623 fitted up a studio in his father's windmill on the bank of The Rhine. In 1628 he executed his first great work, a portrait of his mother, and in 1630 settled in Amsterdam, where he gained great celebrity, and founded a school of art based on the natural style.

His paintings and etchings, exhibiting the most powerful effects of light and shade, brought great prices, and he taught a large number of pupils. He preferred the imitation of vulgar nature to the cultivation of ideal beauty; and his manner depends upon the elaboration of a single element of art, that of chiaroscuro.

Among his historical pictures are *The Sacrifice of Abraham, The Woman Taken in Adultry,* and *The Descent from the Cross;* his portraits include *The Jew Merchant* and the *Night Watch*. His pecular style is perhaps most strikingly displayed in his etchings, especially in his *Christ Healing the Sick*. He was twice married; his second marriage involved him in difficulties, and he became bankrupt in 1656. He executed over 600 paintings, now variously valued at from $500 to $31,000.

References.—Bell's *Rembrandt; His Work, His Life, His Time;* Middelton's *Decriptive Catalogue of the Etched Work of Rembrandt;* Memphis' *Rembrandt;* and *Study of His Work*, by E. Michel.

Remington, Frederic, American artist, illustrator, sculptor and author, was born in St. Lawrence county, N. Y., 1861. He early studied at Yale art school, and at the art students' league of New York, after which he led the life of a cowboy and stockman on ranches in Montana and Wyoming, where he became notable as an animal painter and illustrator of western scenes and modes of life on the plains. He subsequently came into note as an illustrator for magazines, treating of military subjects and of ranching life, and, after the Spanish-American war, of Cuban scenes and characteristics. Died, 1909.

Remsen, Ira, American chemist and educator, president, 1901-1912; and professor of chemistry 1876-1913; Johns Hopkins University, was born in New York, 1846. He was graduated at the college of the city of New York, 1865; M.D., Ph.D., Göttingen; LL.D., Columbia. He was professor of chemistry, Williams College, 1872-76; founder, 1879, and editor of the *American Chemical Journal*; president of national academy of sciences, 1907-08. Author: *The Principles of Theoretical Chemistry; Inorganic Chemistry*. Died, 1927.

Renan (*rē-nän'*), **Joseph Ernest,** French philologist, historian and critic, was born at Trèguier, in Brittany, 1823. At twenty-five he received his doctorate at the University of Paris, and in 1850 obtained a post in the Bibliothèque Nationale. In 1862 he was chosen professor of Hebrew in the Collège de France; but the emperor, inspired by the clerical party, refused to ratify the appointment; and it was not until 1870 that he was established in the chair. In 1878 he was elected to the academy. His first work of importance was published in 1854, but his European reputation dates from the publication of the *Life of Jesus*, in 1863. None of the other volumes excited the extraordinary interest of the first. Of the volumes that followed, those on St. Paul, 1869, and Marcus Aurelius, 1882, are specially noteworthy. He died in 1892.

Rennie (*ren'i*), **John,** British civil engineer, was born at Phantassie farm, East Lothian, 1761. After working as a millwright he studied at Edinburgh University. In 1780 he entered the employ of Boulton and Watt, and in 1791 started in London on his own account as an engineer and bridge-builder, at which he won great fame. He died in 1821 and was buried in St. Paul's.

Repplier, Agnes, American essayist, was born in Philadelphia in 1858. She was educated at Sacred Heart Convent, Torresdale, Pa. Besides critical essays on contemporary life, published in various magazines, she is the author of *Americans and Others, Points of Friction, Essays in Miniature, Essays in Idleness, Books and Men*.

Reuter (*roi'tĕr*), **Baron Paul Julius,** German journalist, was born in Cassel in 1821. In 1849 he established an office at Aix-la-Chapelle for supplying news by telegraph, and thereby revolutionized the press of Europe. He laid several important telegraphic cables. Died, 1899.

Revere (*rē-vēr'*), **Paul,** American patriot, was born in Boston, Mass., 1735, and learned the business of a goldsmith. He was conspicuous for his zeal against the mother country, and one of the first actors in the revolt. He became famous in history and song for his ride from Boston to Lexington to arouse the minute-men, April 18-19, 1775. He died at Boston, 1818.

Reynolds, John Fulton, American general, was born in Lancaster, Pa., 1820. He was graduated at West Point, 1841, and entered the artillery; served in the Mexican war and on the frontier; in 1861 took command of a brigade of the Pennsylvania reserve corps, and led them in McClellan's peninsular campaign in 1862 until he was taken prisoner at Glendale, June 30. Encountering the ban of the confederate army at Gettysburg, he had already selected the ground for the impending battle, when at the opening of the fight he was killed by a rifle-shot, July 1, 1863. A monument was erected to him at Gettysburg, and a bronze equestrian statue of him by Rogers stands in Philadelphia in front of the city hall.

Reynolds, Sir Joshua, eminent English painter, was born at Plympton, in Devonshire, 1723. He studied under Thomas Hudson, a portrait painter, and when about twenty years old began his career as a portrait-painter, at Plymouth Dock, now Devonport. On the institution of the royal academy in 1769, he became president and was knighted by George III. His works are very numerous. He was especially famous for his portraits, though his historical paintings, of which upward of sixty are catalogued, show him to have been qualified to excel in both departments of his art. He was the friend of Johnson, Burke, Goldsmith, and the most eminent literary men of his time. He died at London, 1792, and was buried in St. Paul's cathedral.

Rhees, Rush, American educator, president of University of Rochester since 1900, was born at Chicago, 1860. He was graduated at Amherst, 1883; LL.D., 1900; Hartford Theological Seminary, 1888; D.D., Colgate University, 1901. Associate professor of new testament interpretation, Newton Theological Institution, Newton Centre, Mass., 1892-94, and professor in the same, 1894-1900. Author: *The Life of Jesus of Nazareth, a Study; St. Paul's Experience as a Factor in His Theology*.

Rhodes, Cecil John, South African statesman, was born at Bishop Stortford, England, 1853. He was sent for his health to Natal, and subsequently made a fortune at the Kimberly diamond mines. He entered the Cape Colony house of assembly as member for Barkly, and in 1884 occupied a place in the Cape Colony cabinet. In 1890 he became prime-minister of Cape Colony; but even before this he had become a ruling spirit in the extension of British territory, and secured, in 1889, the charter for the British South Africa company, of which until 1896 he was managing director. This territory is now known as Rhodesia. In 1896 he resigned the Cape premiership in consequence of complications arising from the raid of Dr. Jameson, the chartered company's administrator, into the Transvaal, in aid of the Uitlanders' claims. In 1899 he was made D.C.L. at Oxford. He was a conspicuous figure during the war of 1899-1902. Died, 1902, and was buried in the Matoppo hills, leaving a remarkable will which, besides making great benefactions to Cape Colony, founded rich scholarships at Oxford.

Rhodes, James Ford, American historian and essayist, was born at Cleveland, Ohio, 1848. He was educated in the public schools, at the University of New York and the University of Chicago, but was not graduated; LL.D., Western Reserve University, 1893, Harvard, 1901, Yale, 1901, Wisconsin, 1904; Litt.D., Kenyon, 1903. He received the Loubet prize of the Berlin Academy of Science in 1901. Author: *History of the United States from the Compromise of 1850*, in 7 volumes, *Historical Essays*, etc. Died, 1927.

Ricardo (*ri-kär'dō*), **David,** British political economist, of Jewish extraction, was born in London, 1772, and entered upon a mercantile life, after having received a common school education. He gained a large fortune by commerce, obtained a seat in parliament for Portarlington, 1819, and acquired a high reputation as an economist and writer. Died, 1823.

Ricciarelli (*rē'chä-rel'lē*), **Daniele,** known also by the name of Daniele da Volterra, Italian painter, was born at Volterra, 1509. He studied painting at Siena, and afterward repaired to Rome, where he was much indebted to the friendship of Michelangelo, who not only instructed him, but gave him designs for some of his most celebrated works. His fame rests chiefly on a series of frescoes in the church of La Trinitá de' Monti, Rome; and of these the "*Descent From the Cross*" is well known by Toschi's admirable engraving. He died at Rome in 1566 or 1567.

Rice, Alice Hegan, American author, was born at Shelbyville, Ky., 1870, daughter of Samuel W. Hegan. She was educated at Hampton College, Louisville, and in 1902 married Cale Young Rice. Author: *Mrs. Wiggs of the Cabbage Patch; Lovey Mary; Sandy; Captain June*, etc., and a number of short magazine stories.

Richard I., surnamed Cœur de Lion, king of England from 1189 to 1199, was born at Oxford, 1157. He was the third son and successor of Henry II. He spent his early years in Poitou and Aquitaine, in 1190 joined his forces with Philip Augustus of France in the third crusade; captured Cyprus, and won great renown in the holy land, particularly by his defeat of Saladin. After shipwreck on the coast, on his way home, he was captured by the archduke of Austria, and handed over to the emperor Henry VI. in 1193. He was ransomed at a heavy price by his subjects, and landed in England in 1194. He died of an arrow wound at the siege of Chalus in 1199.

Richard II., king of England, was born at Bordeaux, France, in 1367. He was the son of Edward the Black Prince, and the grandson of Edward III., whom he succeeded. Being only eleven years old at his accession, a council of regency was appointed to govern the kingdom during his minority. Quarrels with his uncles, with the commons and with his parliaments, on behalf of worthless favorites with whom he was surrounded, fill up the years of Richard's reign. The noted John of Gaunt, duke of Lancaster, and Thomas, duke of Gloucester, tried to bend their royal nephew to their own purposes. He resisted them successfully, but the murder of Gloucester, who was arrested near London, and slain at Calais in 1397, fixes an indelible stain upon his memory. Two years afterward he was defeated and deposed by his cousin, Henry of Bolingbroke, duke of Hereford, who succeeded him. He is believed to have been murdered in Pontefract castle, Yorkshire, in the following year.

Richard III., king of England 1483-85, surnamed Crookback, was born at Fotheringay castle, 1452, youngest son of Richard, duke of York, a brother of Edward IV., and uncle of Edward V., whom he murdered. Scarcely had he placed himself securely, as he thought, upon the throne, than a plot broke out, in which the duke of Buckingham took a leading share, in favor of Henry Tudor, earl of Richmond. The plot disastrously failed so far as Buckingham was concerned, for he was apprehended, condemned and executed at Salisbury, 1483; but in 1485 the earl of Richmond landed at Milford Haven with a force of a few thousand men, and a few days later defeated the king in the battle of Bosworth field, in Leicestershire. In this battle Richard was killed. He was buried in Grey Friars' church, Leicester. The house of York and the Plantagenet line of kings ended with the death of Richard, who was succeeded by Henry VII., the first of the Tudor line.

Richardson, Samuel, English novelist, was born in Derbyshire, 1689. He was early apprenticed to a printer in London. It was not until he was more than fifty years of age that he published his first novel, *Pamela, or Virtue Rewarded*. In 1749 appeared his second work, *The History of Clarissa Harlowe*, which greatly increased his reputation; and in 1753 he published *The History of Sir Charles Grandison*. All his novels are in the epistolary style. He may be said to be the originator, after De Foe, of the English novel. He died in 1761.

Richelieu (*rē'shē-lyú'*), **Armand Jean Duplessis, Duc de,** celebrated French statesman and cardinal, was born of a noble family at Paris, 1585. He pursued ecclesiastical studies, and underwent the preliminary examination for his degree at the Sorbonne. In 1607 he was consecrated bishop of Lucon at Rome in the presence of Pope Paul V., and for some time devoted himself zealously to the discharge of his duties in his diocese. In 1622 he became a cardinal, and from 1624 to 1642 was the principal minister of Louis XIII. The administration of Richelieu forms an epoch in the history of France and her relations with other countries. It is memorable for several great measures, or series of measures. Of these the first and most

lasting in its results was that by which the absolute authority of the sovereign was established. By a succession of vigorous and energetic, and, it must be added, not unfrequently unscrupulous measures, Richelieu succeeded in breaking down the political power and subduing the arrogant assumptions of the great families, the heads of several among which were brought to the scaffold, while not a few were condemned to life imprisonment. Another of the great enterprises of his ministry was the overthrow of the Huguenot party as a political power and a rival of the throne in France. The siege and capture of Rochelle, which he conducted in person in 1628, was followed by the submission of the other Huguenot strongholds. In the external relations of France the great object of all his measures was the overthrow of the preponderance of Austria. He died at Paris in 1642.

Richter (*rik'tẽr*), **Johann Paul Friedrich** or "Jean Paul," German humorist and sentimentalist, was born at Wunsiedel, in Bavaria, 1763. He studied at Leipsig, and began his literary career in 1783 with *The Greenland Lawsuits*. In 1789 appeared *Selections From the Papers of the Devil*, and, in 1793, *The Invisible Lodge*. This was followed by *Hesperus*, the work by which he is perhaps best known outside of Germany. He died at Bayreuth, 1825.

Ridder, Herman, American journalist, was born in New York, 1851, of German parentage. He attended the New York schools, and began business at eleven as errand boy. He was an insurance agent at twenty; president, 1907, of the *New York Staats-Zeitung*. As an independent democrat he was active in Cleveland campaigns and reform movements, especially in German-American reform union. Member of the chamber of commerce, American museum of natural history, Metropolitan museum of art; director of the associated press and treasurer of New York publishers' association. Died, 1915.

Ridley, Nicholas, English reformer, was born in Northumberland, about 1500. He was appointed bishop of Rochester in 1547, and of London in 1550; took a leading part in composing the liturgy and drawing up the thirty-nine articles; favored the attempt to place Lady Jane Grey on the throne, and was imprisoned in the Tower. He was condemned to death for heresy and burned, with Latimer, at Oxford, 1555.

Ridpath (*rid'pȧth*), **John Clark,** American historian and educator, was born in Putnam county, Indiana, 1840. He was graduated at Asbury, now De Pauw University, 1863, and in 1869 was appointed professor of literature at Asbury and ten years later became vice-president of that university. He was editor of *The Arena*, 1897-98. Author of an academic history and a popular history of the United States; *A Cyclopædia of Universal History* and a compendious treatise on *The Great Races of Mankind*. Died at New York, 1900.

Rienzi (*ri-en'zē*), **Nicola Gabrini,** Italian patroit, commonly called "the last of the Roman tribunes," was born in Rome about 1313. He proved an excellent leader at first, but soon became elated by success, caused himself to be crowned with seven crowns and lived in great splendor and extravagance. In a few months the people became tired of him and he was obliged to escape from the city in the dress of a monk. He was afterward recalled to Rome and was assassinated in 1354, while making a speech to the people.

Riggs, Mrs. George C. See **Wiggin, Kate Douglas.**

Riis (*rēs*), **Jacob August,** American journalist, author, was born in Ribe, Denmark, 1839. He was educated at the Latin school there; came to New York, and was subsequently active in the small parks and play grounds movement and in tenement house and school reform. He was secretary of the New York small parks commission, 1897, and executive officer of Good Government clubs, 1896-97. Author: *How the Other Half Lives; The Children of the Poor; The Making of an American; The Battle With the Slum; Children of the Tenements;* and magazine articles on social and economic subjects. Died, 1914.

Riley, James Whitcomb, American poet, writer, and lecturer, was born at Greenfield, Ind., 1853. He received a public school education; M.A., Yale, 1902; Litt.D., Pennsylvania, 1904; ML.D., Indiana, 1907. He began contributing poems to Indiana papers, 1873. For a number of years he appeared on the lecture platform throughout the country and gave readings from his works. Author: *The Old Swimmin' Hole and 'Leven Other Poems; The Boss Girl and Other Sketches; Afterwhiles; Old-Fashioned Roses; Pipes o' Pan at Zekesburg; Rhymes of Childhood*, etc. Died 1916.

Rimsky-Korsakoff, Nicholas Andreyevitch, Russian composer, was born in the province of Novgorod in 1844. Although he showed an unusual talent for music at an early age, he was sent to the naval academy at Petrograd, where he remained until he completed his course. During a world tour as midshipman he composed his first symphony, which was produced upon his return. He then devoted himself entirely to music, basing many of his works on Russian folk melodies. Besides symphonies, overtures and piano compositions, he wrote thirteen operas. The best known are *Coq d'Or, The Snow Maiden, Sadko, The Czar's Betrothed*, and *Pan Voyevoda*. In 1871 he became professor of composition in the conservatory at Petrograd, where he remained until his death in 1908.

Rinehart, Mary Roberts, American novelist, was born in Pittsburgh, 1876, educated in Pittsburgh High School and Pittsburgh Training School of Nurses. Visited western battle front, under protection of Allies, 1915, and after the United States entry into war, volunteered as a nurse. Author: *Circular Staircase; Window at the White Ca; Street of Seven Stars; Altars of Freedom; The Amazing Interlude, Dangerous Days*, etc.

Rinehart, William Henry (1825-1874), American sculptor, began his carer as a marble worker in Baltimore in 1846. In 1855 he studied in Italy. He completed Crawford's bronze doors for the capitolat Washington, and executed a fine bronze statue of Chief-Justice Taney, 1872. He died in Rome, leaving his property as a fund for needy students of art.

Ripley, George (1802-1880), American scholar and critic, graduated from Harvard, 1823. During his pastorate of a Unitarian Church at Boston, which he held until 1841, he became one of the leading spirits in the transcendental movement. The first meeting of the club was held at his home in 1836. He was the originator of the Brook Farm experiment, and co-editor of the *New American Cyclopedia*.

Ristori (*rēs-tō'rē*), **Adelaide,** Italian actress, was born in 1821, the child of strolling players. In America she played with Edwin Booth. Her leading parts were: *Francesca da Rimini, Marie Stuart, Phædra, Lady Macbeth, Judith*, etc. She retired from the stage in 1885 and died in 1906.

Ritter, Karl, German geographer, was born at Quedlinburg, Prussia, 1779. He studied at Halle, became professor of geography at Berlin in 1820, and afterward member of the academy and director of studies in the military school. With Ritter as the founder of comparative geography, began a new epoch in the history of geographical science. He died at Berlin, 1859.

Rives (*rēvz*), **Amelia,** Princess Amélie Troubetzkoy, American novelist, was born at Richmond, Va., 1863. Her earliest production was a series of stories entitled *A Brother to Dragons*. This was followed by a sensational work called *The Quick or the Dead?* which met with considerable popularity. Died, 1917.

Riviere (*rē'vyȧr'*), **Briton,** English painter, was born in London, 1840, of Huguenot ancestry. He was graduated at Oxford in 1867, M.A., D.C.L. He had exhibited at the royal academy in 1858, and from the appearance of *The Poacher's Widow*, 1866, he was regularly represented there and at various international exhibitions. He became A.R.A. in 1878, R.A. in 1881. Died, 1920.

Robbia (*rōb'byȧ*), **Lucca della,** Italian sculptor, was born at Florence, about 1400. He decorated the campanile of the cathedral at Florence; made a bronze door for the sacristy of the same and was famous for his work in enameled terra cotta, since known as "della Robbia" ware. Died, 1482.

Robert I., king of Scotland. See **Bruce, Robert.**

Roberts, Charles George Douglas, Canadian author, was born at Douglas, N. B., Canada, 1860. He was graduated at the University of New Brunswick, 1879; was editor of the *Week*, Toronto, 1883-84; editor of the *Illustrated American*, in New York, 1897. Author: *New York Nocturnes; The Book of the Rose; The Heart of the Ancient Wood; The Kindred of the Wild; Barbara Ladd; The Prisoner of Mademoiselle; The Heart That Knows; In the Deep of the Snow; The Young Acadian*, etc.

Roberts, Frederick Sleigh, baron of Kandahar and Waterford, distinguished British general, was born at Cawnpore, India, 1832. He was educated at Eton College, at Addiscombe and at Sandhurst; D.C.L., Oxford, LL.D., Cambridge. At the age of nineteen he joined the Bengal artillery and served through the Indian mutiny. For his heroism he received the Victoria cross. In 1868 he took part in the Abyssinian war and was made a C.B. In the Afghan war of 1878 he commanded the Kuram field force and in this affair he made his famous march from Kabul to Kandahar, effecting the relief of the latter place. For his great military feat in this war he was created a baronet, and earned from his soldiers the familiar sobriquet of "Little Bobs" or Bobs Bahadur. In 1892 he was raised to the peerage. In 1895 he was made field-marshal and commander of the forces in Ireland. In 1899 he proceeded to South Africa to take supreme command during the Boer war, where he invaded the Orange Free State and the Transvaal and turned the fortunes of that struggle in favor of the British. In the autumn of 1900 he returned to England to succeed Lord Wolseley as commander-in-chief of the army, retiring in 1904. He is the author of the *Rise of Wellington* and *Forty-one Years in India*. Died, 1914.

Roberts, Morley, English novelist and journalist, was born in London, 1857. He was educated at Owens College, served before the mast on Australian sheep-runs, worked on Texan ranches, on California railways and British Columbian sawmills, and multiplied his experiences in the South Seas, the Transvaal, Rhodesia and Corsica. Between 1887 and 1904 he published some forty works, mostly novels and has written continuously since then.

Roberts, Theodore, actor; born San Francisco, 1861, married Clyde Harron. First appeared in *Richelieu*, and in 1881 in New York in *Our Bachelors*, in London at the Adelphi Theatre, Feb. 3, 1902, in *Arizona;* later in many well-known plays, including *"The Right of Way."* Died, 1929.

Roberts, William Henry (1844-1920), Presbyterian clergyman, graduated from the College of the City of New York, 1863, and Princeton Theological Seminary, 1873. He was statistician of the Treasury Department at Washington, 1863-65, and assistant librarian of Congress, 1866-71. After twenty years' connection with divinity institutions he was made acting pastor at Fourth Church, Trenton, N. J., 1895-1900. He occupied many important church organization offices, was moderator of the general assembly in 1907, and as its secretary edited its minutes, 1884-1914. Author: *History of the Presbyterian Church, Laws Relating to Religious Corporations*, etc.

Robertson, Frederick William, English pulpit orator and writer, was born in London, 1816. He was educated for the army at Tours and Edinburgh, but subsequently studied at Oxford, 1837-40, and devoted himself to the church. In 1842 he was settled at Cheltenham; in 1847 became incumbent of Trinity chapel, Brighton, where his earnestness, originality and wide sympathy arrested attention, but provoked suspicion. He resigned in 1853 because his vicar had refused to confirm his nomination of a curate, and died the same year. His *Sermons* were published complete in 1870.

Robertson, William, British historian, was born in Borthwick, Midlothian, 1721. He distinguished himself in the general assembly of the church and became leader of the moderate party. He was one of the ministers of Greyfriars church, Edinburgh, and principal of the university from 1762. He wrote *History of Scotland During the Reigns of Mary and James VI.; History of the Reign of the Emperor Charles V.;* and *History of America*. He died near Edinburgh when nearly seventy-two years old, 1793.

Robespierre (*rō'bes-pyȧr'*), **Maximilien Marie Isidore,** noted French revolutionist, was born at Arras, France, 1758. He was elected to the national convention as head of the Paris deputies, and as recognized chief of the extreme party he was one of the main agents in procuring the execution of the king, which took place in December, 1792. A period of terror followed; Marie Antoinette and the infamous duke of Orleans were the first victims; Pètion, Danton and Camille Desmoulins were next immolated, on a suspicion of having favored a reactionary policy; and for months, under the so-called committee of public safety, Paris became the scene of an indiscriminate quasi-judicial slaughter, in which some thousands of lives were sacrificed. A conspiracy was organised against "the tyrant," and after a scene of fierce tumult in the convention his arrest was accomplished. A rescue by the populace followed, but he lacked the courage and promptitude to turn the opportunity to account; while he hesitated his enemies acted, and in July, 1794, he closed his career on the scaffold.

Robie, Virginia Huntington, author and editor, was born at Salmon Falls, N. H., of an old colonial family, and educated in Boston, Mass.; has specialized as a writer on furniture, ceramics and interior decoration; associate editor of *The House Beautiful*. Author of *Interior Decorations; Shamrock and Thistle; Historic Styles in Furniture;* etc.

Robinson, Edward Arlington, American poet, was born at Head Tide, Maine, in 1869. He was educated at Harvard University and is a member of the National Institute of Arts and Letters. His poems include *The Children of the Night, The Town Down the River, Merlin, The Three Taverns*, and *Collected Poems*. He is a shrewd analyst of character and a master of technique.

Robinson, James Harvey, American historian and educator, professor of history, Columbia University, 1895-1919, was born at Bloomington, Ill., 1863. He was graduated at Harvard, 1887; Ph. D. Freiburg, 1890. Acting dean, Barnard College, 1900-01; an organizer and lecturer, New School for Social Research, 1919-21. Author: *The German Bundesrath; Petrarch, The First Modern Scholar and Man of Letters*, with Rolfe; *Mind in the Making*.

Robinson, William Callyhan, American educator, and legal writer, dean of law school, Catholic University of America, beginning 1895, was born at Norwich, Conn., 1834. He was graduated at Dartmouth College, 1854; graduated in divinity, General Theological Seminary, Protestant Episcopal church, 1857; studied law, and was admitted to the bar in 1864; LL.D., Dartmouth, 1879. He practiced law at New Haven, Conn., 1865-95; judge of city court, New Haven, Conn., 1869-71; judge of court of common pleas, New Haven county, Conn., 1874-76; member of the legislature of Connecticut, 1874. Author: *Notes of Elementary Laws; Elementary Law; Clavis Rerum; Law of Patents; Forensic Oratory; Elements of American Jurisprudence*. Died, 1911.

Robson, Eleanor Elsie, American actress, was born at Wigan, Lancashire, England, daughter of Charles Robson. She was graduated at St. Peter's Academy, Staten Island, New York, 1897, and made her professional debut at California theater, 1897. She played *Juliet* to the *Romeo* of Kyrle Bellew, 1903; starred in *Merely Mary Ann*, 1903-05, and headed an "all-star" cast in a special production of *She Stoops to Conquer*, at the New Amsterdam theater, New York, under Liebler and company, 1905. Married August Belmont, 1910, and retired from stage.

Rochambeau (*rō'shaN'bō'*), **Jean Baptiste Donatien de Vimeur, Comte de,** marshal of France, was born in 1725. He served in the war of the Austrian succession; distinguished himself in the

Seven Years' war, coöperated with Washington at the siege and capture of Yorktown, during the American war of independence. In 1791 he became commander of the French army of the north, but resigned in 1792, and narrowly escaped execution during the reign of terror. Died, 1807.

Rochefoucauld. See **La Rochefoucauld Francois Duc de.**

Rockefeller, John Davison, American capitalist and philanthropist, was born at Richford, N. Y., 1839, and moved to Cleveland, Ohio, 1853. He received a public school education; was clerk in a forwarding and commission house, and at nineteen a partner in the firm of Clark and Rockefeller, commission merchants. Subsequently the firm became Andrews, Clark and Company, and engaged in the oil business. In 1865 the firm, then William Rockefeller and Company, built the Standard Oil works at Cleveland, and this was consolidated with others in the Standard Oil Company, 1870. Other interests were later acquired and the Standard Oil trust was formed, 1882, but dissolved, 1892. The various Standard oil companies were then operated separately, with Rockefeller at the head of the entire business until 1911, when he retired. He has given a total of more than $500,000,000 to philanthropies.

Rockefeller, John Davison, Jr., capitalist, son of preceding, was born in 1877. He was graduated at Brown University, and married in 1901, Abby Green Aldrich, daughter of Nelson W. Aldrich, United States senator from Rhode Island. He is associated with his father in his various business enterprises, and is a trustee of the University of Chicago.

Rockefeller, William, capitalist, brother of John Davison, was born at Richford, N. Y., 1841. He was educated at Owego, N. Y., and Cleveland, Ohio; was bookkeeper and late partner in produce commission trade; soon after joined his brother John Davison, in oil business. Died, 1922.

Rodin (*rō'dan'*), **Auguste,** French sculptor, was born at Paris, 1840. He studied under Barye, and began to exhibit in the salon in 1875. He produced a number of great scriptural and symbolical groups, but is best known by his portrait busts and statues, notably the bust and the monument of Victor Hugo. Acknowledged greatest sculptor of his time. Died, 1917.

Rodney, George Brydges, Lord, English admiral, was born in 1719. In 1759, after twenty-eight years of active service, he was made rear admiral. In 1762 he became vice admiral and in 1764 was made a baronet. During the Seven Years' war he accomplished the relief of Cibraltar and Minorca and defeated, near Martinique, the French fleet, under Count de Guichen; took Eustatia from the Dutch, with 250 ships and other booty. He was elevated to the peerage as Baron Rodney, and received a pension of 2,000 pounds per annum for himself and his successors. Died, 1792.

Roebling (*rōb'ling*), **John Augustus,** American civil engineer, was born in Mühlhausen, Prussia, 1806. He emigrated to the United States in 1831, and in course of years became the designer and constructor of many great public works, among them the canal aqueduct across the Allegheny river, and the Monongahela suspension bridge, both at Pittsburg; the suspension bridge at Niagara; the Ohio bridge at Cincinnati, etc. He died in 1869, having just before projected the Brooklyn Bridge.

Roebling, Washington Augustus, American engineer, was born at Saxonburg, Pa., 1837. He was graduated at Rensselaer Polytechnic Institute, 1857; joined his father in construction of Pittsburg suspension bridge across Allegheny river. The Brooklyn bridge, was undertaken by his father, but the latter's death in 1869 left the entire construction in his hands, and he directed it to completion. He was president and director of the John A. Roebling's Sons Company, Trenton, N. J. Died in 1926.

Roentgen (*rûnt'gen*), **Wilhelm Konrad,** eminent German scientist, distinguished investigator of physical problems and discoverer of the "X" or Rœntgen rays, was born in the province of Dusseldorf, Prussia, 1845. In December, 1895, he communicated to the Würzburg physico-medical society his remarkable discovery of the new and powerful "X-rays," since known by his name, and in the following month he described his discovery at the celebration of the semi-centennial of the founding of the Berlin physical society. Later he demonstrated the rays in the presence of the emperor of Germany, who decorated him, and Prince Ludwig of Bavaria created him a baron. In 1901 he received the Nobel prize for physics. Died, 1923.

Rogers, Henry Wade, American educator, dean of the law department of Yale University, 1903-16, was born at Holland Patent, N. Y., 1853. He was graduated at the University of Michigan, 1874; LL.D., Wesleyan University, Conn. He was admitted to the bar, 1877; was professor of law, University of Michigan, 1883-85; dean of same, 1885-90; president of Northwestern University, 1890-1901, and professor of law at Yale, 1901-03. U. S. Circuit Judge, beginning 1913. Author *Illinois Citations; Expert Testimony.* Died, 1926.

Rogers, Randolph (1825-1892), American sculptor, studied the art in Rome. He is distinguished for many memorial statues throughout the country.

Rogers, Will, motion picture actor, first played on the vaudeville stage, then in Ziegfeld's "Follies," finally entering motion pictures with the Goldwyn Company. His perfect ease, spontaneity and humor, are shown in *Almost a Husband, Laughing Bill Hyde,* and *Jubilo.* Writer of daily articles.

Roland (*rō'lan'*), **Marie Jeanne,** wife of Jean Marie Roland de la Platiére, daughter of Pierre Gratien Philpon, was born at Paris, France, 1754. Her husband was obliged to flee from Paris, May 31, 1793, and the same night she was arrested and imprisoned in the Abbaye. Summoned before the revolutionary tribunal in the beginning of November, she was condemned, and on the 9th was guillotined amid the shoutings of an insensate mob. Most celebrated is her apostrophe to the statue of Liberty, at the foot of which the scaffold was erected: "O Liberty, what crimes are committed in thy name!"

Rolland, Romain, French writer, born in 1868 at Clamecy, Burgundy, which province he has celebrated in *Colas Breugnon,* 1919. He was educated in Paris, where he developed a passion for music. He was professor of the History of Music at the Sorbonne from 1903-1910. *Jean-Christophe,* 1904-1912, a ten volume novel, is his masterpiece. It is the biography of a German musician, depicting the artistic temperament against a panorama of modern civilization. *Au-dessus de la Melée,* 1915, made Rolland unpopular in France, as the book was too international and pacifistic for the patriotic spirit of the time. After its publication, Rolland retired to Switzerland, where he is still living. Other works include *L'Ame Enchanéte* (The Soul Enchanted), 1922; several studies of musicians, and a number of plays. He was awarded the Nobel prize in literature, 1915.

Rollin (*rō'lan'*), **Charles,** French historian, was born at Paris, 1661. He studied at the College of Duplessis; acquired there a knowledge of languages and philosophy, and studied theology for three years at the Sorbonne. In 1694 he was appointed rector of the University of Paris, and in 1696, coadjutor of the College of Beauvais; but was at length driven from it by the intrigues of the Jesuits. Thenceforth he gave his time wholly to literature. His principal works are: *Ancient History; Roman History;* and *Treatise on the Mode of Studying.* Died, 1741.

Romanes (*rō-mā'nes*). **George John,** naturalist, was born at Kingston, Canada, 1848, and was graduated in 1870 from Caius College, Cambridge. While still at the university he formed a friendship with Darwin, and he powerfully re-inforced his master's arguments in his Croonian, Fullerian and other lectures. He wrote: *Animal Intelligence; Scientific Evidences of Organic Evolution; Mental Evolution in Animals; Jelly-fish, Star-fish, and Sea-urchins; Mental Evolution in Man,* etc. Died, 1894.

Romney (*rum'nī*), **George,** English painter, was born at Dalton, in Lancashire, 1734. After receiving some lessons from a country artist, he studied art in London in 1762; visited France in 1764, and Italy, 1773-75; and on his return to England became the rival of Reynolds as a portrait painter. He also gained distinction as a painter of historical pictures; assisted in preparing the Boydell Shakespeare gallery. Died at Kendal, 1802.

Ronsard (*rôN'sar'*), **Pierre de,** French poet, was born at the Château de la Poissonnière in Vendôme, 1524. Becoming deaf, he abandoned arms for letters, and at the Collège Coqueret studied with Du Bellay and other members of the famous Pléiade. His seven years of study bore its first fruit in his *Odes,* 1550, which excited violent opposition from the older national school. In 1552 appeared his *Amours* and the fifth book of his *Odes,* his *Hymns* in 1555, the conclusion of the *Amours* in 1556, in 1560, *Complete Works.* He died at his priory of St. Cosme at Tours, in 1585.

Roosa, Daniel Bennett St. John, American physician, was born at Bethel, N. Y., 1838. He was graduated, M.D., University Medical College, New York, 1860, after an academic education in Boston and New York; M.A., Yale; LL.D., University of Vermont. He was assistant surgeon of 5th New York volunteers, among the three months' troops called out by President Lincoln; professor in the University of the city of New York, and University of Vermont. Author: *The Old Hospital and Other Papers; A Pocket Medical Lexicon; Treatise on the Ear; Treatise on the Eye: A Doctor's Suggestions.* Died, 1908.

Roosevelt, Franklin D., lawyer, fifth cousin of Theodore Roosevelt. Member of New York senate, assistant secretary of navy under Wilson, democratic nominee for vice president, 1920. Governor of New York, 1929—

Roosevelt (*rōz'velt*), **Theodore,** American soldier, writer, statesman, twenty-sixth president of the United States, was born in New York City, 1858, son of Theodore and Martha (Bullock) Roosevelt. He entered Harvard University at eighteen, and was graduated in 1880; LL.D., Harvard, Yale, etc. The year following he began the study of law, but in the same year was elected to the New York legislature. In 1884 he was chosen a delegate to the republican national convention, and later in the year went to North Dakota, where he spent two years on a ranch, raising cattle. President Harrison appointed him a member of the United States civil service commission in 1889, in which capacity he served until 1895, when he resigned to accept the presidency of the police commission of New York city, under Mayor Strong. President McKinley appointed him assistant secretary of the navy in April, 1897, and upon the outbreak of the Spanish-American war, in 1898, he resigned the post to assist in organizing the 1st United States volunteer cavalry. In September, 1898, he was mustered out, with his regiment, at Montauk, L. I. Shortly following he was nominated for governor of New York, and elected November, 1898. Two years later he was unanimously nominated for vice-president of the United States by the republican national convention, at Philadelphia, and elected. He succeeded to the presidency September 14, 1901, upon the death of President McKinley, and at the close of the term was unanimously nominated by his party to succeed himself, and elected for the term 1904-09. He had long been an advocate of administrative, political, and social reforms, and contributed widely to periodicals and general literature. Among his important publications are: *The Winning of the West; History of the Naval War of 1812; Hunting Trips of a Ranchman; Life of Gouverneur Morris; American Ideals and Other Essays; The Rough Riders; Life of Oliver Cromwell; The Strenuous Life.* His efforts in bringing about the treaty of peace between Japan and Russia in 1905 were important and effective; and, in 1906 he was awarded the Nobel peace prize of $40,000. Was an enthusiastic hunter of big game, and after his retirement from the presidency on March 4, 1909, he led a scientific expedition to East Africa for the purpose of adding rare faunal specimens to the Smithsonian and national museums at Washington. Unsuccessful candidate of the Progressive party for President in 1912. Died, 1919.

Root (*rōōt*), **Elihu,** American statesman and lawyer, was born in Clinton, N. Y., 1845. He was graduated at Hamilton College in 1864; was graduated at the law school of New York University, 1867; LL.D., Yale, Harvard, etc. He was appointed by President Arthur United States attorney for the southern district of New York, 1883-85. On August 1, 1899, he was appointed secretary of war by President McKinley, and on March 5, 1901, was re-appointed. In August, 1903, he resigned the office of secretary of war, his resignation to take effect in January, 1904, and during 1903 he was a member of the Alaskan boundary tribunal. In 1905 President Roosevelt appointed him secretary of state, and while discharging the duties of that office he did much to unify the Pan-American countries. In 1908 he was elected United States senator from New York for the term 1909-15. He is probably the ablest lawyer at the American bar.

Root, George Frederick, American musical composer, was born at Sheffield, Mass., 1820. After studying music a year in Paris, he returned to write numerous popular songs, among which are: *Music in the Air; Battle Cry of Freedom; Just Before the Battle, Mother; Tramp, Tramp, Tramp, the Boys are Marching.* He died in 1895.

Rosa (*rō'zä*), **Salvator,** Italian painter, was born at Arenella near Naples, 1615. At Rome his social talents—he was a skillful musician, improvisatore, actor, and poet—and his princely generosity rendered him a great favorite. But he made powerful enemies by his satires, and withdrew to Florence for nine years. After that he returned to Rome, and died in 1673. Salvator owes his reputation mainly to his landscapes of wild and savage scenes, though his masterpiece is considered to be the "Conspiracy of Catiline."

Roscoe, Sir Henry Enfield, noted English chemist, was born at London, 1833. He was graduated at University College, London, and received his Ph.D. from Heidelberg University, 1853. He was professor of chemistry at Owens College, Manchester, 1857-87; member of parliament for Manchester, 1885-95; vice-chancellor of the University of London, 1896-1902; officer of the legion of honor. Author: *Lessons in Elementary Chemistry; Treatise on Chemistry; Primer of Chemistry,* etc. Died, 1915.

Rose, John Holland, English educator and historian, was born at Bedford, 1855. He was educated at Owens College, Manchester, and at Christ's College, Cambridge; Litt.D., Cambridge. For many years he was lecturer on modern history to the Cambridge University local lectures syndicate, and to the London University's board for the extension of university teaching. Author of numerous historical works.

Rosebery, Archibald Philip Primrose, fifth Earl of, was born in 1847. He was graduated from Oxford; under-secretary for home affairs, 1881-83; lord privy seal, 1885; secretary for foreign affairs, 1886 and 1892-94; prime minister and lord president of council, 1894-95, and lord rector of Glasgow University, 1899. He retired from the leadership of the liberal party, 1896, and then supported Lord Salisbury; delivered many notable speeches on literary and social subjects. Author: *Appreciations and Addresses; Sir Robert Peel; Napoleon; The Last Phase; Oliver Cromwell,* etc. Died, 1929.

Rosecrans, William Starke, American general, was born at Kingston, Ohio, 1819. He was trained as an engineer, and had settled down to coal-mining when the Civil War broke out; joined the army in 1861; highly distinguished himself during

the campaigns of 1862-63. He was afterward minister to Mexico, a member of congress, and, 1885-93, register of the United States treasury. He died near Los Angeles, Cal., 1898.

Ross, George William, Canadian educator, was born near Nair, Middlesex county, Ontario, 1841. He was educated at the Normal School, Toronto, and at the law department of the Albert University, LL.B., 1883; LL.D., St. Andrews, Toronto, Victoria, McMaster, and Queen's Universities. He was admitted to the bar in 1887; was member of parliament for West Middlesex, 1872-74-78-82; minister of education, 1883-99; premier and treasurer of the province of Ontario, 1899-1905, and a member of the senate of Canada. Died in 1914.

Ross, James Clark, English Arctic and Antarctic explorer, was born in 1800. He made five successive voyages to the Arctic regions, made himself famous by his sledge journeys, and determined the position of the north magnetic pole, 1831. He was knighted in 1844, commanded an expedition in search of Sir John Franklin in 1848, and was made rear-admiral in 1856. Died, 1862.

Rossetti (*rō-set'ē*), **Dante Gabriel,** British painter and poet, was born in London in 1828. His name was first brought prominently forward by his association with Millais and Holman Hunt in the pre-Raphaelite brotherhood. As an author he is well known by his *Early Italian Poets, Ballads and Sonnets, The Blessed Damozel,* etc. He played a distinguished part in the resuscitation of Gothic art in England. Died, 1882.

Rossini (*rōs-sē'nē*), **Gioacchino Antonio,** celebrated Italian composer, was born at Pesaro, Italy, 1792. He was the son of a strolling musician. When little more than twenty-one, he produced his opera of *Tancredi,* which was performed for the first time in Venice. Three years later he produced *The Barber of Seville.* After *Guillaume Tell,* which appeared in 1829, he published only his *Stabat Mater.* He died in 1868.

Rostand (*rōs'tāN'*), **Edmond,** French poet and dramatist, member of the Académie Francaise beginning 1901, was born at Marseilles, 1868. He was educated at the Lycée de Marseilles, and at the College Stanislass. His first successful drama was *Les Romanesques,* which was produced in 1894. It was followed by *La Princesse Lointaine: La Samaritaine; Cyrano de Bergerac; L'Aiglon,* and during 1917 by the remarkable *Chantecler,* etc. His poetical works include: *Les Musardises; Pour la Grèce: Un Soir à Hernani; Les Mots;* etc. Great modern dramatist. Died, 1918.

Rothschild (*roths'child'*), the name of a celebrated Jewish family of bankers and financiers. The founder of the family, Mayer Anselm, named from his father's signboard, the "Red Shield," was born at Frankfort-on-the-Main, 1743. He was educated for a Jewish rabbi, but founded a business as a money-lender and became the financial adviser of the landgrave of Hesse. At his death, in 1812, the founder left five sons, all of whom were made barons of the Austrian empire in 1822. Mayer Anselm, 1773-1855; eldest son, Solomon, 1774-1855; Nathan, 1777-1836; Karl, 1788-1855; and Jacob, or James, 1792-1868. They negotiated many of the greatest government loans of Europe in the nineteenth century, and Nathan raised the house to be first among the banking-houses of the world. His son Lionel, 1808-79, did much for the civil and political emancipation of the Jews in Great Britain. Lionel's son, Nathan, born in 1840, succeeded to the baronetcy conferred in 1847 on his uncle Anthony, and was made Baron Rothschild in 1885. Died, 1915. His niece Hannah (1851-90), in 1878 married the earl of Rosebery.

Rouget de Lisle (*rōō'zhe' dē lēl'*), **Claude Joseph,** French soldier and poet, was born at Lons-le-Saunier, France, 1760, and wrote the *Marseillaise* when stationed in 1792 as captain of engineers at Strassburg. In 1796 he published a volume of *Essais en Vers et en Prose.* The *Marseillaise,* by its author called *Chant de l'Armee du Rhin,* was made known in Paris by troops from Marseilles. He died at Choisy-le-Roi, near Paris, 1836.

Roussaeu (*rōō'sō'*), **Jean Jacques,** French philosopher and prose writer, was born in 1712, son of a watchmaker at Geneva. In 1750 he gained a prize, offered by the academy of Dijon for an essay attacking the influence of the arts and sciences on society. The main significance of Rousseau was as a renewer of the force of the imagination and the feelings in an artificial time. He loved nature and praised its beauties; he broke with the arid traditions of the past, and formed a new ideal of the future with an eloquence and a warmth that had great influence on the French revolution. He wrote on education and modified its narrowing tendencies, and in literature led the way to the romantic reaction against classicism. The most famous of his productions are: *Discourse sur l'Origine et les Fondements de l' Inegalite parmi les Hommes; Julie, ou la Nouvelle Héloise; Du Contrat Social, ou Principes du Droit Politique; Émile, ou de l'Education; Les Confessions;* and *Réveries d'un Promeneur Solitaire.* Died, 1778.

Rowe, Leo S., American economist, educator, was born at McGregor, Iowa, 1871. He was graduated from the University of Pennsylvania, 1890; LL.B., 1895; Ph.D., University of Halle; LL.D., National University of La Plata, Argentine, 1906; head professor of political science, since 1903, in the University of Pennsylvania. In 1906 he was United States delegate to the third international conference of American states, Rio Janeiro Author: *Report of the United States Commission to Revise the Laws of Porto Rico; The United States and Porto Rico.*

Royce, Josiah, American philosophical writer, professor of the history of philosophy at Harvard beginning 1892, was born at Grass Valley, Cal., 1855. He was graduated at the University of California, 1875; Ph.D., Johns Hopkins, 1878; LL.D., University of Aberdeen, Scotland, 1900; LL.D., Johns Hopkins, 1902. Author: *Religious Aspect of Philosophy; The Conception of Immortality; Studies of Good and Evil; Outlines of Psychology; Herbert Spencer.* Died, 1916.

Rubens, Peter Paul, greatest of Flemish painters, was born probably at Siegen, in Westphalia, 1577. His parents settled in Cologne in 1578, where they remained till 1587, when Rubens' father died, and his mother removed with her family to Antwerp.

He was first placed under Verhaagt, a landscape painter; however, inclining more to historical painting, he became a pupil of Van Noort, but soon quitted his school for that of Otho Van Veen, or Venius, who then enjoyed a high reputation; and after studying four years with that painter went to Italy, in 1600.

Recommended to Vincenzo Gonzago, Duke of Mantua, he was sent on a mission by the duke to Philip III. of Spain, and on that occasion painted several portraits of Spanish noblemen. He also spent considerable time at Venice and Rome making copies for the duke, and executing independent works, which added largely to his reputation. In 1608, after an absence of eight years, Rubens returned to Antwerp on account of the illness of his mother, but she died before he had accomplished the journey. He intended to return to Mantua, but was induced to remain by the Archduke Albert, governor of the Netherlands.

In 1621 he visited Paris by invitation of Maria d' Medici; and in 1625 completed the series of sketches for the pictures destined to adorn the palace of the Luxembourg. Rubens was sent by the Infanta Isabella, widow of the Archduke Albert, on a diplomatic mission to Philip IV. of Spain in 1628; and in the following year on a similar mission to Charles I. of England, by whom he was knighted in 1630. He died very rich in 1640.

References.—Stevenson's *Peter Paul Rubens;* article in *North American Review* (November, 1900) by Benjamin Constant; *Early Flemish Painters,* by Sir J. A. Crowe; and *Original Unpublished Papers, Illustrative of the Life of Sir Peter Paul Rubens,* by W. Noel Saintsbury.

Rubinstein (*rōō'bin-stīn*), **Anton Gregor,** Russian composer and pianist, was born at Wechwotynetz, near Jassy, in Russian Bessarabia, 1829. At Berlin he studied composition under Dehn. In 1872-73 he visited America, and after 1867 he spent his time in traveling and composing. As a pianist he was the only rival, technically, that Liszt ever had, and as a composer his works are characterized by the most wonderful fertility of imagination, and many of them by a gorgeous oriental coloring. Died, 1894.

Rudolf, or **Rudolph I.,** founder of the Hapsburg imperial dynasty, was born at Schloss Limburg in the Breisgau, 1218, and, becoming a warm partisan of Frederick II., increased his possessions by inheritance and marriage, until he was the most powerful prince in Swabia. In 1273 the electors chose him German king. Rudolf did much to suppress the robber knights. He died at Spires in 1291.

Rudolf, or **Rudolph II.,** born at Vienna, 1552, eldest son of the emperor, Maximilian II., became king of Hungary in 1572; king of Bohemia, with the title "king of the Romans," in 1575; and emperor on his father's death in 1576. He died in 1612 after an inefficient reign.

Runeberg (*rōō'ne-ber'y'*), **Johan Ludwig,** national poet of Finland, was born at Jacobstad, 1804. He was educated at the University of Abo, where he afterward lectured. His epic idylls, *The Elk Hunters, Christmas Eve,* his epic *King Fjalar, Fänrik Stals Sagner,* etc., are the finest poems in the Swedish language, and are characterized by reprose, simplicity, artistic finish and the warmth of national life. He died in 1877.

Rupert, Prince, British general, third son of the elector palatine Frederick V., and Elizabeth, daughter of James I. of England, was born at Prague, 1619. In 1642 he returned to England, and for the next three years the "mad cavalier" was the life and soul of the royalist cause, winning many a battle by his resistless charges, to lose it as often by a too headlong pursuit. In 1645 his surrender of Bristol so irritated Charles, who in 1644 had created him duke of Cumberland and generalissimo, that he dismissed him. A court martial, however, cleared him, and he resumed his duties, only to surrender at Oxford to Fairfax in 1646. He now took service with France, but in 1648 accepted the command of that portion of the English fleet which had espoused the king's cause, and acquitted himself with all his old daring and somewhat more caution. He died in 1682.

Rush, Benjamin, American physician, was born near Philadelphia, Pa., 1745. He was graduated at Princeton in 1760, studied medicine at Edinburgh and at Paris, and became professor of chemistry in the Philadelphia Medical College. He was a founder of the Philadelphia dispensary, the first in America, and of the college of physicians, and was given several medical professorships besides the one he already held at Philadelphia. Among his medical writings are: *Medical Inquiries and Observations; Essays;* and *Diseases of the Mind.* He died at Philadelphia, 1813.

Ruskin, John, distinguished English critic and writer on art, was born in London, 1819. He studied at Christ Church, Oxford, where he gained the Newdigate prize for English poetry in 1839, and took his degree in 1842. The year following appeared the first volume of his *Modern Painters,* the primary design of which was to prove the superiority of modern landscape painters, especially Turner, to the old masters. In 1849 appeared *The Seven Lamps of Architecture,* and in 1851 to 1853 *The Stones of Venice,* both being efforts to introduce a new and loftier conception of the significance of domestic architecture. About 1860 he became deeply interested in the social problems of the age, and published *Unto This Last* and *Munera Pulveris.* Among his later works are: *Sesame and Lilies; The Ethics of the Dust; The Crown of Wild Olives;* and *Præterita,* a charming autobiography, completed in 1888. He was also selected Slade professor of fine arts at Oxford, being thrice reëlected. He was obliged to resign the post in 1884 on account of failing health. For several years prior to his death he lived in retirement at Brantwood, Coniston. Died, 1900.

Russell, Annie, actress, was born in Liverpool, England, 1869, and made her first stage appearance at Montreal when seven. She afterward appeared at New York in *Pinafore,* went to South America and West Indies in varied repertory. She has since appeared as a star in *Miss Hobbs; A Royal Family; The Girl and the Judge; Mice and Men; Jimmy the Carrier; Brother Jacques; Major Barbara; Midsummer Night's Dream,* etc. She married Oswald Yorke, an English actor, 1904.

Russell, James Earl, American educator, dean of Teachers College, Columbia University, since 1898, was born at Hamden, N. Y., 1864. He was graduated at Cornell in 1887; Ph.D., Leipzig, 1894; professor of education, Teachers' College, since 1897; and Barnard professor of education, Columbia, since 1904. Author: *The Extension of University Teaching in England and America; German Higher Schools.*

Russell, John Earl, British statesman, third son of the sixth duke of Bedford, was born in 1792. He was educated at Westminster and Edinburgh; entered parliament as a whig in 1813; became an advocate of parliamentary reform; was instrumental in the repeal of the test and corporation acts in 1828, and the passing of the Catholic relief act in 1829; led the opposition, 1841-46; was prime minister, 1846-52; went as British plenipotentiary to the Vienna conference, 1855; was foreign secretary under Lord Palmerston, 1859-65; again became prime minister in 1865 but resigned on the defeat of his reform bill in 1866. Died, 1878.

Ruth, George (*Babe*), born in Baltimore and educated in an orphanage there. The record holder in the national game of baseball as a batter.

Ruyter (*roi'tĕr; ri'tĕr*), **Michael Adriaanszoon de,** Dutch admiral, was born at Vlissingen in 1607, of poor parents, who sent him to sea as a cabin-boy when only eleven years old. He became a warrant officer, and in 1637 rose to be captain in the Dutch navy. After serving several years in the Indian seas he was, in 1641, made rear admiral. He had his legs shattered in an engagement off the coast of Sicily, and died of his wounds in 1676.

Ryan, Patrick John, American prelate, Roman Catholic archbishop, was born at Thurles, County Tipperary Ireland, 1831. He was graduated at Carlow College, 1852; LL.D., University of New York and University of Pennsylvania. He was chaplain of the Gratiot state military prison and hospital, St. Louis, during the Civil War; and while rector of Annunciation church, delivered lenten lectures in English at Rome, 1868, on invitation of Pope Pius IX. He was consecrated, 1872, titular bishop of Tricomia in Palestine and made coadjutor bishop of St. Louis; was promoted to archbishop, 1883, and in June, 1884, was transferred to the see of Philadelphia. Died, 1911.

Ryan, Thomas Fortune, American financier, was born in Nelson county, Va., 1851. He began business life, 1868, in a Baltimore dry goods house; entered Wall street, 1870, and became a member of the New York stock exchange, 1874; been identified with the Morton Trust company, the Seaboard Air Line railway, American Tobacco company, Fifth Avenue Trust company, Industrial Trust company of Providence and many other

corporations and purchased a controlling interest of the stock of the Equitable Life Assurance Society of the United States in 1905. Died, 1928.

Sachs (*zäks*), **Hans,** noted German poet, was born at Nürnberg, 1494. He was the son of a tailor, and by trade a shoemaker. He learned "the mystery of song" from a weaver. He wrote over 6,000 pieces, among them 208 tragedies and comedies. Died 1576.

Sachs, Julius von, botanist, was born at Breslau, 1832. In 1867 he became professor of botany at Freiburg, and in 1868 at Würzburg. There he carried on important experiments, especially as to the influence of light and heat upon plants, and the organic activities of vegetable growth. He wrote extensively on botany, and is considered the founder of experimental vegetable physiology. Died at Würzburg, 1897.

Sacy (*sa'sē'*), **Antoine Isaac, Baron Silvestre de,** French orientalist, was born at Paris, 1758. Was appointed in 1795 professor of Arabic in the school of oriental languages, and in 1806 of Persian in College de France, besides which he held various other appointments. He founded the Asiatic society in 1822; was created a baron by Napoleon I., and entered the chamber of peers in 1832. His writings gave a stimulus to oriental research throughout Europe. He died in 1838.

Sadi-Carnot. See **Carnot.**

Sadi (*sä-dē'*), Persian poet, was born at Shirza, about 1184. He studied science and theology at Bagdad, and from there made the first of fourteen pilgrimages to Mecca. He is called the "nightingale of a thousand songs," and the catalogue of his works contains twenty-two different kinds of writing in prose and poetry, in Arabic and Persian. Died, 1291.

Sagasta (*sä-gäs'tä*), **Praxedes Mateo,** Spanish statesman, was born in 1827. He was obliged to leave the country for his share in the rising of 1856, and again, ten years later, to seek refuge in France. After the accession of Alfonso XII., he became president of the cortes, formed a liberal constitutionalist party, and having, in 1880, joined a new liberal combination, formed a coalition with Campos, which lasted until 1883. Died, 1903.

Sage, Margaret Olivia Slocum, philanthropist, was born at Syracuse, N. Y., 1828, daughter of Joseph Slocum; in 1869 married Russel Sage, at Watervlict, N. Y. Gave many millions of dollars to charitable and educational institutions. Died, 1918.

Sage, Russell, American capitalist, was born in Oneida county, New York, 1816. Educated in the public schools, he became a grocer's clerk and established himself as a wholesale grocer in Troy, 1839. He was a member of congress, 1852-56, removed to New York in 1863, purchased a seat on the stock exchange and associated himself with Jay Gould in extensive railway operations, gaining a wide reputation by his close bargaining and successful speculation. His fortune was variously estimated at from $50,000,000 to $100,000,000. Died, 1906.

Saint Ambrose. See **Ambrose.**

Saint Augustine. See **Augustine St.**

Saint Basil. See **Basil.**

Saint Benedict. See **Benedict.**

Saint Bernard. See **Bernard.**

Saint Clair, Arthur, American general, was born in Scotland, 1735. In 1777 he became major-general, and entered congress in 1785, of which body he was elected president two years later. In 1789 he was made governor of the Northwest territory, and two years afterward suffered a defeat with heavy loss, at the hands of the Miami Indians. Died, 1818.

Saint Columba. See **Columba.**

Saint Francis of Assisi. See **Francis St.**

Saint Gaudens (*sānt gô'denz*), **Augustus,** American sculptor, was born in Ireland in 1848, and was brought to the United States in infancy. During 1861-66 he was a student at Cooper institute, and at the academy of design, New York; went to Paris and studied at the Ecole des Beaux Arts under Jouffroy. He executed a number of notable works, of which the most important are: *The Puritan; Farragut; Lincoln; Peter Cooper,* New York; *Colonel R. G. Shaw,* Boston. He was awarded medals at the Paris, Buffalo and St. Louis expositions, and made an officer of the French legion of honor. Died, 1907.

Saint Jerome. See **Jerome.**

Saint Louis IX. See **Louis IX.**

Saint Paul. See **Paul.**

Saint Pierre (*saN' pâr'*) **Jacques Henri Bernardin de,** French writer, was born in Havre, France, 1737. He is best known for his beautiful story, *Paul and Virginia,* which has been translated into many languages. He died at Eragny-sur-Oise, 1814.

Saint-Saens (*saN'sāNs'*), **Charles Camille,** French composer and pianist, was born at Paris, 1835. He wrote his first symphony at the age of sixteen, and studied at the Paris conservatoire under Benoit, Halévy, and Gounod; LL.D., Cambridge; Mus.D., Oxford. His works include the operas: *La Princesse Jaune; Le Timbre d'Argent; L'Anctere;* the sacred drama, *Samson and Delila.* The strongest originality, sometimes becoming eccentricity, pervades his music, which is of the most modern school. Died, 1921.

Saintsbury (*sānts'bēr-i*), **George Edward Bateman,** English critic, was born at Southampton, 1845. He was educated at Merton College, Oxford. In 1868-76 he was a schoolmaster at Manchester, Guernsey, and Elgin, but soon after established himself as one of the most active critics of the day; professor of English literature at Edinburgh University, 1895-1915. Among his books are: *Short History of French Literature; History of Elizabethan Literature; Essays in English Literature, 1780-1860; History of Nineteenth-Century Literature; History of Criticism; The Earlier Renaissance; Minor Caroline Poets; A History of English Prosody, A History of the French Novel,* etc.

Saint Simon, Claude Henri, Comte de, French social philosopher, was born at Paris, 1760. At sixteen he entered the army, served in America, and distinguished himself. In 1817-18 he published *L'Industrie ou Discussions Politiques, Morales et Philosophiques.* The third volume is the work of Auguste Comte. The last and by far the most remarkable work of Simon is his *Nouveau Christianisme,* which contains his final and matured convictions. Died, 1825.

Saint Thomas Aquinas. See **Aquinas.**

Sainte-Beuve (*sanT'bûv'*), **Charles Augustin,** French literary critic, was born at Boulogne-sur-Mer, 1804. In 1827 he became acquainted with Victor Hugo, whose commanding influence drew him into the romantic movements, and determined for him a literary career. In 1837 he lectured at Lausanne on Port-Royal, and these lectures contain some of his finest writings; was elected in 1845 to the academy; and three years later lectured for a session at Liege University. During 1849-69 he contributed to the *Constitutionel.* These contributions form his famous *Causeries du Lundi* and *Nouveaux Lundis,* which, for variety of human interest, critical insight and breadth of sympathy, remain unsurpassed. He was elected a senator in 1865, and his popularity revived by his eloquent advocacy of freedom of thought. In precision, in subtlety and in delicacy, his works, fifty-three volumes in all, stand alone in the literature of criticism. Died, 1869.

Saionji (*sī'ōn-jē*), **Marquis,** Japanese statesman, was born at Kioto in 1849. At the age of eighteen he gathered volunteers and fought for the emperor in the revolution of 1868. Subsequently he became minister to Austria-Hungary and then to Germany. On his return to Japan he joined the first Ito cabinet as minister of education, a post which he again occupied in the second Ito cabinet, having been minister of foreign affairs in the interval. He assisted Ito in forming the constitutional association of 1900, and became its leader in 1903. At three difficult crises the mikado called him to be prime-minister, his last term of office being from 1906 to 1908.

Saladin (*sal'ä-din*) or **Salah-ed-Din,** celebrated sultan of Egypt, flourished between 1137 and 1193. He was one of the great conquerors of his time; and in 1187 defeated the Christians in a great battle near Tiberias, afterward storming and capturing Jerusalem. He was, however, defeated by Richard Coeur-de-Lion in 1191, and died, broken down by disease and toil, in the spring of 1193.

Salisbury (*sôlz'bēr-i*), **Robert Arthur Talbot Gascoyne-Cecil, Marquis of,** British statesman, was born at Hatfield, 1830. He was graduated from Christ Church, Oxford, 1853, and sat in parliament for Stamford, 1853-68. In 1878 he was appointed foreign secretary, and, with Lord Beaconsfield, took a prominent part in the congress of Berlin. After the latter's death he became the principal leader of the conservatives in the house of lords, and was prime-minister in 1885-1886, 1886-1892, and 1895-1902. Died, 1903.

Sallust (*sal'ust*) or **Sallustius, Caius Crispus,** Roman historian, of equal talents and profligacy, was born at Amitermium, 86 B. C. He rose from a plebeian to a senator. Cæsar successively made him quæstor and prætor, and governor of Numidia. In the last of these offices he amassed an enormous fortune by acts of rapine. His *History of the Roman Republic* is lost, with the exception of some fragments; but his masterly *Histories of the Jugurthine War,* and the *Conspiracy of Catiline* are extant, and bear ample testimony to his genius. Died, 34 B. C.

Salmon (*sal'mun*), **George,** British mathematician and theological writer, was born in Dublin, 1819. He was graduated at Trinity College in 1839, and became a fellow in 1841, regius professor of divinity in 1866, and provost in 1888; also F.R.S., D.D., LL.D. and D.C.L. Died, 1904.

Sampson, William Thomas, rear admiral of United States navy, was born at Palmyra, N. Y., 1840. He was graduated at Annapolis in 1861. He served six years as instructor at Annapolis, then became chief of bureau of ordinance and gained an international reputation by his work in building up the new navy. On the outbreak of the war with Spain he was appointed acting rear admiral, 1898, and placed in command of the North Atlantic squadron operating against Spain in Cuban waters. When the Spanish fleet under Cervera took refuge in the harbor of Santiago de Cuba, Sampson established a close blockade of that port, resulting in the destruction of the Spanish fleet when it attempted to escape from the harbor, July 3, 1898. At the close of the war he was made rear admiral. Died, 1902.

Sand, George, pseudonym of Amantine Lucile Aurore Dudevant, French author, was born at Paris, 1804. She was descended on her father's side from the famous Marshal Saxe, and her maiden name was Dupin. After receiving a strict conventual education, she married M. Dudevant in 1822, but separated from him in 1831. Her best known works are: *Indiana; Valentine; Rose et Blanche; Lelia; La Comtesse de Rudolstadt; Consuelo; Jacques; Mauprat,* etc. Died, 1876.

Sandburg, Carl, American poet, born in 1878 at Galesburg, Illinois. His early life was such as to especially fit him to become the poet of industrial America. He was from time to time milk-driver, porter, scene shifter, truckman, dish-washer, harvest hand, advertising manager, salesman, newspaper man. His first volume of verse appeared in 1904, but he was unknown to the literary world until 1914, when one of his poems, *Chicago,* was awarded the Levinson prize of $200. *Cornhuskers* appeared in 1918.

Sankey, Ira David, American evangelist and singer, was born at Edinburgh, Pa., 1840. He united with the Methodist Episcopal church at fifteen; became choir leader, Sunday school superintendent, and president of the Y. M. C. A. at New Castle, Pa. In 1870 he met Dwight L. Moody, and became associated with him as a solo singer in evangelistic work in the United States and abroad. He composed many of the most popular gospel songs of his day. He lost his sight in 1903, and died in 1908.

Santa Anna (*sän'tä ä'nä*), **Antonio Lopez de,** Mexican general, was born in Jalapa, 1795. The separation of Texas from the Mexican union was vigorously but unavailingly opposed by him, but he recognized the independence of Texas, and defended Vera Cruz against the French in 1839. In 1847, war having been declared by Mexico against the United States, he took command of the Mexican forces, and when the war came to an end, he retired from Mexico. He afterward resided on Staten Island, N. Y. After the death of Juarez in 1872, he returned to Mexico, where he died in 1876.

Sappho (*saf'ō*), celebrated lyric poetess of Greece, was a native, probably, of Mitylene, in Lesbos. She flourished about 600 B. C., and was a contemporary and friend of Alcæus. Except some fragments, only two of her compositions have come down to us, the *Ode to a Young Female,* and *Hymn to Venus.*

Sardou (*sär'dōō'*), **Victorien,** French dramatist, was born in Paris, 1831. He studied medicine at the College Henri IV., but subsequently turned to literature. He won a reputation by *M. Garatt* and other pieces, produced at the Déjazet theater and was admitted to the academy in 1877. Among his best known plays are: *Les Pattes de Mouche; La Taverne; Les gens Nerveux; Candide; La Famille Benoiton; Theodora; Cleopâtra; Thermidor; Pamela; Robespierre; Dante,* etc. Died, 1908.

Sargent (*sär'jent*), **Dudley Allen,** former director Hemenway gymnasium, Harvard, was born at Belfast, Me., 1849. He was graduated at Bowdoin, 1875, A.M., 1887, Sc.D., 1894; M.D., Yale, 1878. He invented the modern system of gymnasium apparatus; was director of the normal school of physical training, Cambridge, Mass., and president of the American association for the promotion of physical education. Died, 1924.

Sargent, John Singer, American artist, was born in Florence, Italy, 1856, of American parents. He was educated in Italy and Germany; studied painting at the academy of fine arts, Florence, Italy, and in Paris, under Carolus Duran; removed to London in 1884. R.A., 1897; officer of legion of honor. He painted many portraits, English and American, one of recent note being that of ex-President Roosevelt, painted in 1903; also various other pictures, of which his "Japanese Dancing Girl" was awarded a grand medal at the Paris exposition, 1889. Died, 1925.

Sarto (*sär'tō*), **Andrea del,** Italian painter, was born in Florence, Italy, 1487. He painted two series of frescoes in Florence, the best of the first series being *Nativity of the Virgin* and *Journey of the Three Kings.* The most celebrated of his single pictures are the *Last Supper,* the *Madonna with the Harpies,* and *Fathers of the Church Disputing.* He was a rapid worker, and excelled in accurate drawing. He died at Florence in 1531.

Saul, the first king of Israel, was the son of Kish, and began his reign about 1050 B. C. His victories over the Philistines were unmistakable proof of his vigorous military capacity; but gradually there showed itself a wild perversity, culminating in paroxyms of insane rage, which led him to commit frightful deeds. Nothing availed to stay his downward career, and at last he fell in a disastrous and bloody battle with the Philistines on Mount Gilboa. He was succeeded by David.

Savigny (*sä-vēny'e*), **Frederick Karl von,** 1779-1861, one of the most distinguished of modern European jurists, the founder of the modern historical school of jurisprudence, was born at Frankfort-on-the-Main.

Savonarola (*sav'ō-na-rō-la*), **Girolamo,** 1452-1498, Italian monk and reformer, was born at Ferrara. He became a Dominician Monk in 1475, and later prior of St. Mark's. He inveighed against the

corruption of the church, for which he was excommunicated in 1497, and arrested and put to death, 1498.

Saxe, Maurice, French marshal, natural son of Augustus II., elector of Saxony and king of Poland, was born at Goslar, 1696. He took a brilliant part in the siege of Philippsburg, 1734, and in the war of the Austrian succession he invaded Bohemia and took Prague by storm. In 1744, now marshal of France, he commanded the French army in Flanders, showed splendid tactical skill, and took several fortresses. For the third time, at Laffeld, 1747, he defeated Cumberland and captured Bergen-op-zoom. He then retired to his estate of Chambord, and died in 1750. His work on the art of war, *Mes Rèveries*, was published in 1751.

Say, Jean Baptiste, eminent French economist, was born at Lyons, 1767. In 1819 he became professor of industrial economy at the Conservatoire des Arts et Métiers, and in 1830 professor of political economy at the College de France. His chief work was his *Traite d'economie politique*. Say died in 1832.

Sayce (*sās*), **Archibald Henry,** English philologist, was born at Shirehampton, near Bristol, 1846. He was graduated from Queen's college, Oxford, 1869. He was deputy-professor of comparative philology, 1876-90, and professor of Assyriology, 1891-1919. Among his works are *Comparative Philology; The Science of Language; The Ancient Empires of the East; Herodotus; Patriarchal Palestine; Assyrian Grammar; Israel and the Surrounding Nations; Egyptian and Babylonian Religion; The Archæology of Cuneiform Inscriptions*, etc.

Scaliger (*skal'i-jĕr*), **Joseph Justus,** French scholar was born in Guienne, 1540, and educated at Bordeau. In large part, however, he educated himself, mastering Latin, Greek, Syrian, Hebrew, Persian and most of the modern European languages, and at his death, in 1609, was recognized as the greatest scholar of his time. From 1793 until his death he was professor of literature at Leyden.

Schaeffer, Nathan C., American educator, state superintendent of public instruction, Pennsylvania, beginning 1893, was born in Berks county, Pa., 1849. Ph.D., D.D., LL.D. He was professor at Franklin and Marshall College, 1875-77, and principal of Keystone state normal school, 1877-93; president of National educational association, 1905-07. Died, 1919.

Scheele (*shā'le*), **Carl William,** Swedish chemist—was born at Stralsund, in the Prussian province of Pomerania, 1742. Although by profession only an apothecary, and to a large extent self-taught, he made many important chemical discoveries, with which his name will always be associated. He discovered oxygen gas, independently of Priestly, in 1774, and in the same year discovered the element chlorine. Died, 1786.

Scheffer (*shef'ĕr*), **Ary,** French painter, was born at Dordrecht, Holland, 1795, and studied under Guérin of Paris. He first made a reputation as a painter of genre pieces, which have been popularized in France by engravings. It was not until the romantic movement reached art, however, that he began to feel conscious of his peculiar power. The influence of Goethe and Byron became conspicuous in his choice of subjects. Toward the year 1836 his art underwent its third and final phase—the religious. He also executed some remarkable portraits; among others those of Lafayette, Béranger and Lamartine. Died, 1858.

Schelling (*shel'ing*), **Friedrich Wilhelm Joseph,** German philosopher, was born in Würtemburg, 1775. He studied theology and philosophy at Tübingen and science and mathematics at Leipzig. He began as a follower in philosophy of Fichte and Hegel, with whom he ranks among German philosophers, but later was influenced by Spinosa and Boehme. The large number of his philosophical works include the *Enquiry Into the Nature of Human Freedom; On the Possibility of Any Form of Philosophy; Philosophy of Nature.* He died in Switzerland, 1854.

Schiller, von, Johann Christoph Friedrich, great German poet and dramatist, was born at Marbach, Würtemberg, 1759. In 1773 the duke of Würtemberg, who had formed a favorable opinion of Schiller, educated the boy, free of expense, at the military academy founded by him, under the name of Karls-schule. In 1780 he passed as a military surgeon, but meanwhile, in 1778, had completed the first sketch of his memorable drama, *Die Räuber*, ("The Robbers"). In October, 1782, Schiller fled from the harsh service of the duke into Franconia, and lived for a year under a feigned name at Baurbach, near Meiningen, where he completed his *Fiesco* and *Cabale und Liebe*. *Don Carlos* was also sketched in outline here.

In 1783 he went to Mannheim, and was for some time closely connected with actors and theatrical life. To this period belong several of his lesser poems. With the *Cabale und Liebe* above mentioned ended the first poetic period in Schiller's career, otherwise known as the *sturm und drang* period. In 1785 he left Mannheim, and proceeded to Leipzig, where he wrote *Lied an die Freude;* whence after a few months he went to Dresden, where he began the practice of composing during the night, which so fatally assisted in shortening his life. *Der Geister-seher* was written here, and the drama of *Don Carlos* was completed.

In 1787 he was invited to Weimar, where Goethe and he became the closest friends. Henceforth Schiller owed more to Goethe than to all other men. His *History of the Thirty Years' War* originally appeared in the *Taschenkalender fur Damen*. On the occasion of the poet's marriage in 1790 with Charlotte von Lengefeld, the Duke of Meiningen made him a privy-councilor; the French republic also conferred on him the right of citizenship; and in 1802 the emperor raised him to the rank of nobility.

While staying for a year with his relatives in Würtemberg, he wrote his exquisite letters on aesthetic culture. After 1795 the finest of his lyrics and dramas were produced—as *Der Spaziergang* and the *Lied von der Glocke* (Song of the Bell), *Wallenstein, Maria Stuart, Die Jungfrau von Orleans, Braut von Messina* and finally his *Wilhelm Tell*. He died, 1805.

References.—In English we have the famous biography by T. Carlyle, and those by Lord Lytton, James Sime, H. Nevinson, and T. Calvin. For criticism the following are of importance—E. Dowden's *Schiller's Friendship With Goethe;* F. Werner's *The Characteristics of Schiller's Dramas;* E. Fischer's *Schiller's Works Illustrated by the Greatest German Artist.*

Schlegel (*shlā'gel*), **August Wilhelm von,** German critic, poet and scholar, was born at Hanover, 1767. In 1800 he published his first volume of poems; and, in company with his brother, the *Charakteristiken und Kritiken*. His most valuable and most widely popular work was his *Lectures on Dramatic Art and Literature*, originally delivered at Vienna, in the spring of 1808, and translated into most European languages. In 1818 Schlegel, now ennobled, was appointed professor of history in the University of Bonn, and devoted himself to the history of the fine arts and to philological research. He was one of the first students of Sanskrit in Germany, established a Sanskrit printing office at Bonn, and an *Indische Bibliothek*. Died, 1845.

Schlegel, Karl Wilhelm Friedrich, German critic and author, brother of the preceding, was born at Hanover in 1772. He studied at Göttingen and Leipzig, and in 1797 published his first work, *The Greeks and Romans*, followed in the course of a year by his *History of Greek and Roman Poetry*. In 1808 he went to Vienna, where, in 1811, appeared his *Lectures on Modern History*, and in 1815 his *History of Ancient and Modern Literature*. Died, 1829.

Schleiermacher (*shlī'ĕr-mäĸĕr*), **Friedrich Ernst Daniel,** German philosopher and theologian, was born at Breslau, 1768. In 1794 he became assistant clergyman at Landsberg-on-the-Warthe, where he remained for two years. The first work that won for him general celebrity was his *Discourses on Religion*, which startled Germany from its spiritual torpor. He was professor at Halle, 1804-06, and in 1810 was called to a theological chair in the new University of Berlin. In 1811 appeared his *Brief Outline of the Study of Theology;* in 1817 his *Critical Essay on the Writings of Luke;* and in 1821-22 his greatest work, *An Exhibition of the Christian Faith, According to the Principles of the Evangelical Church*. Died, 1834.

Schley (*shli*), **Winfield Scott,** American admiral, was born near Frederick, Md., 1839. He was graduated from the United States Naval Academy, 1860; served in West Gulf blockading squadron from 1861. In 1872 he was placed at the head of the department of modern languages at Annapolis. In 1884 took command of Greeley relief expedition and rescued Lieutenant Greeley and six survivors at Cape Sabine. He was placed in command of the "flying squadron" on duty in Cuban waters in war with Spain; was in immediate command at the destruction of Cervera's fleet off Santiago, July 3, 1898. Promoted to rear-admiral, August, 1898; was presented with a gold sword by the people of Pennsylvania; a silver sword by the Royal Arcanum; a gold and jeweled medal, with the thanks of the Maryland legislature. He retired at the age limit in 1901. Author: *Rescue of Greeley, Forty-five Years Under the Flag*, etc. Died, 1911.

Schliemann (*slē'män*), **Heinrich,** German traveler and archæologist, was born at Mechlenburg-Schwerin, 1822. He excavated the ancient city of Troy in 1870, and in 1876 he began excavations on the side of the ancient city of Mycenæ, in Greece, and the treasures found there are now preserved at Athens. He wrote an account of his work in *Mycenæ, Tiryns, Ilios, Troja*, and other volumes. He died at Naples, 1890, and was buried at Athens.

Schofield (*skō'feld*), **John McAllister,** American general, was born in Gerry, N. Y., 1831. He was graduated at West Point, 1853, and was made a professor there in 1855; LL.D., Chicago University. When the Civil War broke out he entered the army as major of the 1st Missouri volunteers. He shared Sherman's southern campaign, and was in most of the battles which ended with the taking of Atlanta, when he returned to Tennessee, defeating Hood at Franklin, and was with General Thomas at the battle of Nashville. In 1868 he became secretary of war, and major-general in the regular army. Upon the death of General Sheridan, 1888, he succeeded to the command of the United States army. Previous to his retirement, he was, by act of congress, made lieutenant-general, 1895. He published a biographical narrative entitled *Forty-six Years in the Army*. Died, 1906.

Schoolcraft, Henry Rowe, American ethnologist and explorer, was born at Watervliet, N. Y., 1793. After studying at Union College, he visited the mining region west of the Mississippi, and also acted as geologist in an exploring expedition to Lake Superior and the upper Mississippi, under General Cass. While Indian agent he made treaties that gave the United States 16,000,000 acres. As a member of the legislature of Michigan territory, from 1828-32, he founded its historical society. An expedition which he commanded in 1832 discovered the sources of the Mississippi. His works include narratives of his journeys: *Notes on the Iroquois; The Red Race of America; Thirty Years With the Indian Tribes;* and *The Indian in His Wigwam*. He died at Washington, D. C., 1864.

Schopenhauer (*shō'pen-hou'ĕr*), **Arthur,** German philosopher, was born at Dantzig, Germany, 1788. He studied first at Göttingen and afterward at Berlin and Jena. He then proceeded to Dresden, where he published a treatise, *Sight and Color*, which was followed three years later by his great work, *The World as Will and Idea*. Died, 1860.

Schouler (*skōō'lĕr*), **James,** American lawyer and historian, was born at Arlington, Mass., 1839. He was graduated at Harvard, 1859; LL.D., National University, 1891, Johns Hopkins, 1902. He was admitted to the Massachusetts bar, 1862, and to the supreme court of the United States, 1867; and lecturer, Johns Hopkins, Baltimore. Author: *The Law of Domestic Relations; The Law of Bailments*. Died, 1920.

Schubert (*shōō'bĕrt*), **Franz Peter,** Austrian composer, was born at Vienna, 1797. His talent for composition soon revealed itself, and by 1813 his supreme gift of lyric melody showed itself in the song *The Erlking*, the *Mass in F*, etc. His output of work was remarkable for its variety and quantity, embracing some 500 songs, ten symphonies, six masses, operas, sonatas, etc.; but his fame rests on his songs, which are infused by an intensity of poetic feeling. Died, 1828.

Schumann (*shōō'män*), **Robert,** German composer, was born in Zwickau, 1810. He studied at Heidelberg, 1828-30, and then at Leipzig, under Wieck. Up to 1840 nearly all his compositions had been for the piano, but he subsequently produced 138 songs, many of which have become classic. In 1850-53 he was director of music at Dusseldorf. Died, 1856.

Schumann-Heink (*shōō'män hingk'*), **Ernestine,** née **Roessler,** German dramatic contralto, was born at Lieben, 1861. She studied at Gratz, and made her début at Dresden, 1878. In 1883 she went to Hamburg; in 1896 sang at Bayreuth. She married Heink in 1883, and Paul Schumann in 1893. She made her American début in 1898; since then she has devoted herself largely to concert work. In 1905 she bought a large estate at Montclair, N. J.

Schurman (*shōōrman*), **Jacob Gould,** American educator, ex-president of Cornell University, 1892-1920, was born at Freetown, Prince Edward island, 1854. He was graduated at the University of London, 1877, studied at Paris and the University of Edinburgh, 1877-78; D.Sc., Edinburgh; LL.D., Columbia University, 1892, Yale University, 1901, University of Edinburgh, 1902, and 1886-92 Sage professor of philosophy, and later part of time dean, of Sage school of philosophy, Cornell. Envoy extraordinary and minister plenipotentiary to China, 1921-25, similar post in Germany since 1925. Author: *Kantian Ethics and the Ethics of Evolution; The Ethical Import of Darwinism; Belief in God Agnosticism and Religion; A Generation of Cornell; Report of the Philippine Commission*. Ambassador to China.

Schurz (*shōōrts*), **Carl,** American publicist, was born in Liblar, near Cologne, Germany, 1829. He was educated at the gymnasium, Cologne, and University of Bonn; LL.D., Harvard; took part, in a revolutionary movement in 1848-49; joined the revolutionary army, but finally had to flee to Switzerland. Came to the United States, 1852; settled in Watertown, Wis.; United States minister to Spain, 1861; resigned to enter the Union army; appointed brigadier-general, 1862; major-general, 1863; and commanded a division at the second battle of Bull Run and at Chancellorsville, and a corps at Gettysburg. After the war he was Washington correspondent of the *New York Tribune*, 1865-66; and United States senator from Missouri, 1869-75. He was one of the organizers of the liberal party, 1872; supported Hayes, 1876; was secretary of the interior, 1877-81. Author: *Speeches; Life of Henry Clay; Abraham Lincoln, an Essay*,

and an autobiography published in *McClure's Magazine*, interrupted by his death in 1906.

Schwab (*shwäb*), **Charles M.,** American capitalist, ex-president of the United States steel corporation, was born in Williamsburg, Pa., 1862. He was educated in the village school and at St. Francis College; entered service of Carnegie Company as stake-driver in engineering corps of Edgar Thompson steel works; became superintendent of Homestead works and finally president of Carnegie Steel Company, limited. He built a new Catholic church, costing $150,000, at Loretto, Pa.; established an industrial school at Homestead, Pa., etc.

Schwanthaler (*shvän'tä-lĕr*), **Ludwig von,** German sculptor, was born at Munich, 1802. He studied under his father, and after a visit to Rome was charged by King Louis of Bavaria to execute basreliefs and figures for the public buildings of Munich. Among his works are the colossal statue of *Bavaria;* statues of Goethe, Jean Paul Richter, Mozart, etc. Died, 1848.

Scipio (*sip'i-ō*), **Æmilianus Publius,** surnamed Africanus Minor, was born about 185 B. C. After distinguishing himself in Spain, he proceeded to Africa to take part in the third Punic war. Here he laid siege to Carthage, took it by storm, and leveled it with the ground in 146 B. C. He was afterward sent to Spain, where he captured Numantia, after a stubborn resistance, to the extension of the sway of Rome. Died, 129 B. C.

Scipio, Publius Cornelius, surnamed Africanus Major, celebrated Roman general, was born about 237 B. C. In 212 B. C. he was elected ædile, and in the following year proconsul, with command of the Roman forces in Spain. He defeated Hasdrubal at Baesula, with heavy loss. In 205 B. C. he returned to Rome, where he was elected consul, and in the following year sailed from Lilybæum, in Sicily, at the head of a large army, for the invasion of Africa. His success compelled the Carthaginian senate to recall Hannibal from Italy. Peace was concluded the following year, when Scipio returned to Rome, and enjoyed a triumph. His laurels, however, did not protect him from the intrigues of his enemies in Rome. Various charges were brought against him, and he at length retired in disgust to his country seat at Liternum, where he died, 183 or 185 B. C.

Scott, Sir George Gilbert, British architect, was born at Gawcott, near Buckingham, England, 1811. He was indentured to a London architect, 1827-30, and eventually became the leading architect of the Gothic restoration in England. He was elected A.R.A. in 1855, R.A. in 1861; held the professorship of architecture at the London Academy; and was knighted in 1872. He died in 1878, and was buried in Westminster abbey.

Scott, James Brown, American lawyer and educator, was born at Kincardine, Ontario, 1866. He was graduated at Harvard, and studied international law, 1891-94; J.U.D., Heidelberg, 1894. He practiced law at Los Angeles, Cal., 1894-99; professor of law, Columbia Law School, 1903-06; professor of law, 1905-06, and of international law, 1906-11, in George Washington University. He was solicitor for the department of state, 1906-11. Editor-in-chief American Journal of International Law, 1907-24. Author: *Cases on International Law; Cases on Quasi-contracts; Cases on Equity Jurisdiction; Cases on Equity Pleading.*

Scott, Richard William, Canadian senator and Dominion secretary of state beginning 1896, was born at Prescott, Canada, 1825. He was educated at Prescott, became member of parliament for Ottawa, 1857-63; speaker of the house of commons, 1871; appointed to senate, 1873; secretary of state, 1873-78; and leader of the opposition in the senate, 1879-96. He carried through parliament the school bill giving the Roman Catholics right to establish separate schools, 1863, and the Canada temperance (local option) act, 1875. Died, 1913.

Scott, Sir Walter, Scotch novelist and poet, was born in Edinburgh, 1771. He came of the old border family. Though he matured into a man of robust health, as a child he was feeble and sickly, and was smitten with a lameness which remained with him through life. In 1783 he entered Edinburgh University, and remained there three years. In 1786 he was articled apprentice to his father, in whose office he worked as a clerk till 1792; in the same year he was called to the bar.

In his profession he had fair success, and in 1797 he was married to Charlotte Margaret Carpenter, a lady of French birth and parentage. Toward the end of 1799, through the interest of his friends Lord Melville and the Duke of Buccleuch, he was made sheriff-deputy of Selkirkshire, an appointment which brought him 300 pounds a year, with not very much to do for it. Meantime, in a tentative and intermittent way, his leisure had been occupied with literature, which more and more distinctly announced itself as the main business of his life.

His first publication, a translation of Burger's ballads, *Lenore* and *The Wild Huntsman*, was issued in 1796. In 1798 appeared his translation of Goethe's drama of *Goetz von Berlichingen;* and in the year following he wrote the fine ballads, *Glenfinlas*, the *Eve of St. John*, and the *Gray Brother*. In the year 1802 he published the first two volumes of his *Border Minstrelsy*, which were followed in 1803 by a third and final one. This work at once won for him a prominent place among the literary men of his time. In 1804 he issued an edition of the old poem *Sir Tristram*. By the publication in 1805 of *The Lay of the Last Minstrel* Scott became at a bound the most popular author of his day.

During the next ten years, besides a massof miscellaneous work, he gave to the world the poems *Marmion*, *The Lady of the Lake*, *The Vision of Don Roderick*, *Rokeby*, *The Bridal of Triermain* (anonymously published), *The Lord of the Isles*, and *The Field of Waterloo*. In *Waverly*, which appeared without his name in 1814, he achieved the first of a new and more splendid series of triumphs. *Guy Mannering*, *The Antiquary*, *The Black Dwarf*, *Old Mortality*, *Rob Roy*, and *The Heart of Midlothian* rapidly followed, and the "Great Unknown," as he was called, became the idol of the hour.

In 1820, to set a seal upon all this distinction, a baronetcy was bestowed upon him as a special mark of the royal favor. Financial misfortune led him to redouble his efforts, and he literally wrote for money. He produced upward of twenty novels in the next ten years, and the strain was terrific. In 1830 he was smitten down with paralysis, from which he never thoroughly rallied. It was hoped that the climate of Italy might benefit him; and by the government of the day a frigate was placed at his disposal in which to proceed thither. But in Italy he pined for his home. He died at Abbotsford, 1832, and was buried beside his wife in the old Abbey of Dryburgh.

References.—Lockhart's *Life* is the main source for Scott's biography. See also Hutton's *English Men of Letters;* Lang's *Sir Walter Scott;* Norgate's *Life;* and Crockett's *The Scott Country*.

Scott, William Amasa, university professor, was born at Clarkson, Monroe County, N. Y., 1862; graduated at University of Rochester, 1886; Ph. D., Johns Hopkins, 1892. Professor of history and political science, University of South Dakota, 1887-90; graduate student and instructor of history, Johns Hopkins, 1890-2; assistant professor politicaleconomy, 1892-3, associate professor, 1893-7, professor since 1897; director School of Commerce since 1900, University of Wisconsin. Author: *Repudiation of State Debts; Money and Banking.* Translator: Bohm-Bawerk's *Recent Literature on Interest*, etc.

Scott, Winfield, American general, was born near Petersburg, Va., 1786. He studied at William and Mary College, and first became a lawyer, but in 1808 entered the army as captain. In the war of 1812 he was sent to the Canadian border, where he fought at Queenstown and at Lundy's Lane. He was wounded in both the battles, having two horses shot under him at Lundy's Lane. He was made a major-general for his services. As commander-in-chief of the Unitcd States army, 1841-47, he took command of the invasion of Mexico. He captured Vera Cruz, and defeated Santa Anna at Cerro Gordo, taking Jalapa and Puebla; took the castle of Chapultepec by storm, and September 14, 1847, marched into the City of Mexico, where he commanded until the treaty of peace was signed in February, 1848. At the beginning of the Civil War he was in charge of the army, but soon yielded his position to younger men. He died at West Point, 1866.

Seamen, Owen, English humorist and editor of *Punch* since 1907, was born in 1861. He was educated at Shrewsbury and at Clare College, Cambridge; was professor of literature at Durham College of science at Newcastle-on-Tyne, 1890; and began writing for *Punch*, 1894. He was made a barrister of Inner Temple, 1897, joined the staff of *Punch* in the same year, and was assistant editor in 1902.

Seawell, Molly Elliot, American author, was born in Gloucester county, Va., 1860, daughter of John Tyler Seawell. She was educated privately, and began writing sketches and stories in 1886. In 1890 her *Little Jarvis* took a prize of $500, offered by the *Youth's Companion*, for the best story for boys, and in 1895 her *Sprightly Romance of Marsac* took a prize of $3,000 offered by the *New York Herald*. Died, 1916.

Seegar, Alan, American poet, was born in New York City in 1888. He entered Harvard in 1906, and became an editor of the Harvard monthly. After graduation he spent the years 1910 to 1914 in Paris. At the very beginning of the world war he enlisted in the foreign legion of France, serving on various fronts until he was killed in 1916. He showed great literary promise, though his fame rests almost entirely on his poem *"I Have a Rendezvous with Death,"* published in 1916. His letters from the front, published in 1917, show developing power.

Seeley, Sir John Robert, English historian, was born in London, 1834. He was educated at Christ's College, Cambridge, and was elected a fellow of his college in 1858. His *Ecce Homo* appeared anonymously in 1865, and excited an extraordinary commotion in the religious world. It was followed by *Natural Religion*, 1882. He was created a K.C.M.G. in 1894 and died, 1895.

Seerley, Homer Horatio, college president, was born near Indianapolis, Indiana, 1848; graduated at the State University of Iowa, 1873, Bachelor of Didactics, 1875, M.A., 1876; LL.D., Pennsylvania College, 1898, State University of Iowa, 1901. Was teacher, 1873-5, and superintendent city schools, 1875-86, Oskaloosa; president of Iowa State Teacher's College beginning 1886; president department normal schools, N.E.A., 1898; etc. Author: *History and Civil Government of Iowa; The Common Schools*, etc.

Seligman (*sel'ig-man*), **Edwin Robert Anderson,** American economist, McVickar professor of political economy, Columbia University, since 1904, was born in New York, 1861. He was graduated at Columbia, 1879. He was adjunct professor at Columbia, 1888-91; president of the American economic association, 1902-04, and was president of the Tenement house building company. He is editor of the *Political Science Quarterly*. Author: *Railway Tariffs; Finance Statistics of American Commonwealth; Economic Interpretation of History; Principles of Economics*, etc.

Selous (*se-lōōs'*, or *lōō*), **Frederick Courtney,** English traveler and writer, was born in London, 1851, and was educated at Rugby, in Switzerland and in Germany. He first visited South Africa in 1871, and published *A Hunter's Wanderings in Africa; Travel and Adventure in Southeast Africa*. Died, 1917.

Sembrich (*zem'briĸ*), **Marcella,** Austrian soprano, was born in 1858. She studied under Stengel, whom she afterward married; Epstein, and Rokitansky in Vienna, and made her début at Athens in 1877, in *I Puritani*. In 1879 she sang in Dresden and afterward at Vienna, Dresden, London and New York. Besides possessing a voice of high quality, she is also an excellent actress.

Semmes (*semz*), **Raphael,** American naval officer, was born in Maryland, 1809. He served in the Mexican war; in 1861 joined the naval service of the confederate states, and was appointed to the command of the war steamer, *Sumter*. He also commanded the famous *Alabama* during her destructive cruise. After the war he practiced law at Mobile, Ala. Died, 1877.

Seneca, Lucius Annaeus, Roman stoic philosopher, was born at Corduba, Spain, about 3 B. C. On the accession of Emperor Claudius, A. D. 41, he was banished to the island of Corsica. On the marriage of Claudius to his second wife, Agrippina, Seneca was through her influence recalled, and was appointed tutor to her son Domitius, afterward the emperor Nero. Five years later his pupil ascended the throne, and Seneca became one of the chief advisers of the young emperor. All his influence failed, however, to restrain the vicious propensities of Nero; and, after the murder of Agrippina by the latter, A. D. 59, Seneca asked permission to retire from court. He now wholly avoided public life, and devoted himself to his philosophical studies; but the emperor, who both disliked and feared him, followed him into his retirement, and is said to have sought to compass his death by poison. After the conspiracy of Piso, A. D. 65, Seneca was mentioned by one of the conspirators as having shared in the plot, and without further proof, was ordered to put himself to death. He died with all the courage of a stoic, and his wife, Pompeia Paulina, attempted, though vainly, to die with him. Of Seneca's writings which have come down to us, the greater part are on moral and philosophical subjects.

Sennacherib (*se-nak'ĕr-ib*), celebrated king of ancient Assyria, reigned from 705 to 681 B. C. He seems to have been the first who fixed the seat of government permanently at Nineveh, which he adorned with splendid buildings.

Septimius Severus. See **Severus.**

Sergel (*ser'gel*), **John Tobias,** eminent Swedish sculptor, was born at Stockholm, 1740. He was a pupil of L'Archevecque, and subsequently completed his studies at Rome; rose to great eminence, and was ennobled after his return to Sweden. Died, 1814.

Servetus (*sĕr-vē'tus*), **Michael,** Spanish physician and controversialist, was born in Spain, about 1511. He studied law at Saragossa and Toulouse, was graduated in medicine at Paris, and afterward studied theology at Louvain. He maintained a vigorous correspondence with Calvin, who endeavored for sixteen years to convince him of his errors; and the failure of the endeavor irritated Calvin, whose anger was doubtless increased by the trenchant styles in which Servetus replied to his argument. Was so imprudent as to pass through Geneva, where Calvin obtained intelligence of his arrival, and gave

information of it to the magistrates. He was thereupon seized, imprisoned, tried for heresy, and ultimately burned by a slow fire, 1553.

Service, Robert William, Canadian poet and novelist, was born at Preston, England, in 1876. He came to Canada in 1907, where he traveled extensively in British Columbia and in the Yukon country. His first success, *Songs of a Sourdough*, was followed by *The Spell of the Yukon, Ballads of a Cheechako, Rhymes of a Rolling Stone, The Pretender,* and *Rhymes of a Red Cross Man.* He was a war correspondent and ambulance driver during the world war.

Seton (*sē'tun*), **Ernst Thompson,** artist, author, lecturer, was born at South Shields, England, 1860. He lived in the back woods of Canada, 1866-70; on western plains, 1882-87. He was educated at Toronto Collegiate Institute and the Royal Academy, London, England, and studied art in Paris, 1890-96. He was one of the chief illustrators of *The Century Dictionary.* Author and illustrator: *Wild Animals I Have Known; The Trail of the Sandhill Stag; The Biography of a Grizzly; Krag and Johnny Bear; Two Little Savages; Monarch, the Big Bear.*

Severus (*sē-vē'rus*), **Lucius Septimius,** Roman emperor, was born near Leptis Magna, in Africa, 146. He rose to be prætor in 178, and commander of the army in Pannonia and Illyria. After the murder of Pertinax in 193, he was proclaimed emperor, marched upon Rome, utterly defeated his two rivals in 195 and 197, and between these dates made a splendid campaign in the East, and took Byzantium. To protect south Britain from the Caledonian invasions, he repaired Hadrian's wall, sometimes called after Severus, and died soon after at Eboracum (York), 211.

Sevigne (*sā'vēn'yā'*), **Madame de,** née **Marie de Rabutin Chantal,** one of the most charming of letter writers, was born at Paris, 1626. At eighteen she married the dissolute Marquis de Sévigné, who left her a widow at twenty-five. Her fame rests on her *Letters,* written chiefly to her daughter in Provence, which reflect the brightest and purest side of Parisian life, and contain the tender outpourings of her mother's heart in language of unstudied grace. Died, 1696.

Seward, William Henry, American statesman, was born in Florida, N. Y., 1801. He was graduated at Union College in 1820, was admitted to the bar in 1822, and settled at Auburn, N. Y. He was elected to the state senate in 1830; was elected governor of New York in 1838, and in 1849 was elected to the United States senate, where he became the acknowledged leader of his party. In 1860 he was the most prominent candidate of the republican party for nomination for the presidency, but personal and local interests finally secured the election of Abraham Lincoln. Seward afterward accepted the important post of secretary of state, in Lincoln's cabinet, in which he guided the diplomacy of the federal government through the perils of the Civil War. He resigned in 1869, on the accession of U. S. Grant. He published *Speeches and Orations* (in 4 volumes), *Life of John Quincy Adams,* and *Life of De Witt Clinton.* Died, 1872.

Seymour, Sir Edward Hobart, English admiral, was born in 1840. He was educated at Radley, and entered the British navy in 1852. He served through the Crimean war in the Black sea; the China war, 1857-60; operations against Chinese rebels and in the Egyptian war of 1882, taking part in most of the naval fighting in connection with those wars. As commander he was badly wounded in action on the river Congo. He became captain in 1873, rear-admiral, 1889, and vice-admiral, 1895, and was commander-in-chief of the China station, 1898-1901. Commander-in-chief, Devonport, 1903-05. Author: *My Naval Career and Travels.*

Seymour, Horatio, American statesman, was born at Pompey, N. Y., 1810. He studied at a military school; was admitted to the bar, 1832; entered New York legislature, 1841; and was chosen speaker, 1845. He was elected governor in 1852 and 1862, and came into great prominence as one of New York's "war governors." He was Democratic candidate for President, in 1868. Died, 1886.

Shaftesbury, Anthony Ashley Cooper, Earl of, British statesman, was born at Winborne, in Dorsetshire, 1621. He was educated at Exeter College, Oxford, and studied law at Lincoln's Inn. He entered parliament in 1640. He was chancellor of the exchequer in 1661, and in 1672 was created an earl and lord chancellor, but, hoodwinked by Charles in the secret treaty of Dover, he went over to the opposition and lost his chancellorship. His virulent attacks on James and espousal of Monmouth's cause brought about his arrest on a charge of high treason in 1681, and although released he retired to Holland, where he died in 1683. He is the *Achitophel* of Dryden's great satire.

Shaftesbury, Anthony Ashley Cooper, seventh Earl of, English statesman and philanthropist, was born in London, 1801. He was graduated at Oxford, and entered parliament as a conservative in 1826. His name lives, by virtue of his noble and lifelong philanthropy, which took shape in numerous acts of parliament, such as the mines and collieries act of 1842, excluding women and boys under thirteen working in mines; the better treatment of lunatics act, 1845, called the *magna charta* of the insane; the factory acts, 1867, and the workshop regulation act, 1878. Died, 1885.

Shahan, Thomas Joseph, American educator, rector of the Catholic University of America, since 1909, was born at Manchester, N. H., 1857. He was educated at Montreal College, Canada, 1872, American College, Rome, 1878-82; D.D., College of the Propaganda, Rome, 1882; J.U.L., Roman Seminary, 1889. He was ordained to the Roman Catholic priesthood in the cathedral of St. John Lateran, Rome, 1882; professor of church history and patrology, Catholic University of America, beginning 1891. Author: *The Blessed Virgin in the Catacombs; The Middle Ages; The House of God, and Other Addresses and Studies,* etc.

Shah Jehan (*shä' je-hän'*), fifth of the Mogul emperors of Delhi, was born about 1592, and succeeded his father in 1627. He was a man of great administrative ability and a skilled warrior. He founded the modern city of Delhi, built the Taj Mahal and other magnificent buildings at Agra. Died in prison in 1666, a victim to the perfidy of his usurping son, Aurungzebe.

Shakespeare, William, the chief literary glory of England, was born at Stratford-on-Avon, in Warwickshire, 1564. His father, John Shakespeare, seems to have belonged by birth to the class of yeoman. His mother, Mary Arden, was of more distinguished origin, and came of a good old Warwickshire family. Of a family of four sons and four daughters born to them, William was the third child. At the free grammar school of Stratford there can be little doubt the young Shakespeare received his entire education.

In 1582 Shakespeare, a lad of nineteen, was married to Anne Hathaway of Shottery, a girl about eight years older than himself. The children born of the marriage were a girl, and twins, a boy and a girl. The boy Hamnet died in his twelfth year.

At the age of twenty-two, Shakespeare went to London. No certain details have come down to us as to his earlier relations with the London theater. According to one tradition, he was content at first to turn a penny by holding horses at the door. According to another—which seems a natural sequence with the foregoing—we find him admitted inside on his promotion, though as yet only in the humble capacity of prompter's attendant. If at any time he was thus occupied it could have been only for a brief period, as very speedily we have note of him as a man of some importance, at once dramatist, actor and shareholder in the Blackfriars theater.

In the year 1592 we find a contemporary and brother dramatist, Henry Chettle, apologizing to Shakespeare for an offense given, in terms most respectfully appreciatory of his excellences at once as a man and an author, and in 1698 Francis Meres, in his *Wits, Treasury,* writes of him as the "most excellent among the English for both kinds of tragedy and comedy." We have ample evidence of the unrivaled acceptance his works obtained from all classes; they brought him special marks of favor and approval from Queen Elizabeth and her successor James, and procured him the patronage and friendship of some of the most accomplished men of rank of his time, more notably, Henry Wriothesly, earl of Southampton, to whom he dedicated his *Venus and Adonis,* and *Rape of Lucrece,* and William Herbert, earl of Pembroke, to whom his *Sonnets* are addressed.

His visits to Stratford now became more and more frequent; and prior to the year 1613 he had ceased to reside in London, and finally established himself at Stratford. Of his last years there spent, further than that they lapsed peacefully in honor, and the exercise of a liberal and kindly hospitality, nearly nothing is known. There is a good reason to believe that, though withdrawn from other active concernment with the stage, he still continued to write for it. His death took place on his fifty-third birthday, 1616, and he was buried in Stratford church-yard.

He was essentially a man of noble and estimable character, and was obviously of most kindly and lovable disposition; his pleasurable wit and good nature made him delightful as a companion; and it was as "gentle Will Shakespeare" that he was familiarly known to his contemporaries. The lofty eulogy of Dryden, "he was the man who, of all modern and perhaps ancient poets, had the largest and most comprehensive soul," has been generally acquiesced in. As dramatist, he is admittedly in the world without a peer; as poet, there are but one or two names in literature even to be named beside his; and dismissing his claims in either kind, we have in his works such a treasury of gnomic wisdom on all matters of human concernment as no other writer has ever left to the world.

References.—Halliwell-Philipp's *Outlines of the Life of Shakespeare;* Sidney Lee's *Life;* Hazlitt's *Characters of Shakespeare's Plays;* Ulrici's *Shakespeare's Dramatic Art;* Hudson's *Shakespeare: His Life, Art and Characters;* Dowden's *Shakespeare, His Mind and Art;* Bayne's *Shakespeare Studies;* Swinburne's *Study of Shakespeare;* White's *Studies in Shakespeare;* Moulton's *Shakespeare as a Dramatic Artist;* Brandes' *William Shakespeare;* Smith's, *Eighteenth Century Essays on Shakespeare;* Stopford Brooke's *Ten Plays of Shakespeare;* Gervinus's *Shakespeare.*

Shaler (*shā'ler*), **Nathaniel Southgate,** American scientist, author, was born in Newport, Ky., 1841. He was graduated at Lawrence Scientific School, Harvard, 1862; Sc.D., 1865; served two years as artillery officer in Union army during the Civil War. Professor of palæontology, 1868-87, and afterward professor of geology, Harvard; and from 1884 to 1906 was geologist in charge of the Atlantic division of the United States geological survey. Author: *A First Book in Geology; Kentucky, a Pioneer Commonwealth; Sea and Land; The United States of America; A Study of the American Commonwealth; American Highways; Features of Coasts and Oceans; Domesticated Animals: Their Relation to Man; The Individual; Study of Life and Death;* etc. Died, 1906.

Sharpless, Isaac, American educator, president of Haverford College beginning 1887, was born in Chester county, Pa., 1848. He was graduated at the Lawrence Scientific School, Harvard, 1873; Sc.D., University of Pennsylvania; LL.D., Swarthmore College; professor of mathematics and astronomy, 1879-84, and dean, 1884-87, of Haverford College. Author: *Astronomy; Geometry.* Died, 1920.

Shaughnessy, Sir Thomas George, Canadian railway president, was born at Milwaukee, Wis., 1853. He received a common school education; entered the railway service in 1869, in the purchasing department of the Chicago, Milwaukee and St. Paul railroad. Vice-president and director, 1891-98, and president beginning 1898 of the Canadian Pacific railway. He was knighted by Queen Victoria, 1901. Died, 1923.

Shaw, Albert, editor of the *American Review of Reviews,* was born in Shandon, Ohio, 1857. He was graduated at Iowa College, Grinnel, Ia. 1879; Ph.D., Johns Hopkins, 1884; LL.D., University of Wisconsin, 1904. He is a member of numerous learned societies, and has lectured in many Universities and colleges. Is president, Review of Reviews Corporation. Author: *Icaria—A Chapter in the History of Communism; Municipal Government in Continental Europe,* etc.

Shaw, George Bernard, British dramatist, critic and novelist, was born in Dublin, Ireland, 1856, and went to London in 1876, where he engaged in newspaper work. He published a few novels, wrote musical critiques in the *London Star,* 1888-90, and in the *World,* 1890-94; and, in 1895, began his work as a dramatic critic, writing in the *Saturday Review.* In 1898 he published *Plays, Pleasant and Unpleasant.* Since then his chief literary work has been writing for the stage. His plays include *Man and Superman; John Bull's Other Island; Major Barbara; The Doctor's Dilemma; Cæsar and Cleopatra; Getting Married,* etc.

Shaw, Henry Wheeler, American humorist, was born in Lanesborough, Mass., 1818. In 1859 he began to write, and, in 1860, sent *An Essa on the Muel, bi Josh Billings* to a New York paper. It was reprinted in several comic journals, and extensively copied. His most successful literary venture, however, was his *Farmer's-Alminax* a travesty on the *Old Farmer's Almanac.* He began to lecture in 1863, and, for twenty years previous to his death, contributed regularly to the *New York World.* Died in Monterey, Cal., 1885.

Shaw, Leslie Mortimer, American financier and lecturer, was born at Morristown, Vt., 1848. He was graduated at Cornell College, Mt. Vernon, Ia., M.S., 1874; LL.D. He was admitted to the Iowa bar in 1876, and began practice at Denison, Ia.; subsequently engaged in banking at Denison, Manilla, and Charter Oak, Ia. Was twice elected governor of Iowa, 1898-1900, 1900-02; secretary of the treasury, 1902-07, and president of the Carnegie trust company, New York, 1907-08.

Shays, Daniel, American insurgent, was born in Hopkinton, Mass., 1747. He served as ensign at the battle of Bunker Hill; attained the rank of captain in the continental army, and took a leading part in the popular movement in western Massachusetts for the redress of alleged grievances due to misgovernment. In 1786 he appeared before Springfield, Mass., at the head of 1,000 men, to prevent the session of the supreme court at that place. He died in Sparta, N. Y., 1825.

Shelley, Mary Wollstonecraft Godwin, wife of the poet, was born in London in 1798, and married

Shelley in 1816. In 1818 she produced a remarkable novel entitled *Frankenstein*. She likewise wrote *Rambles in Germany and Italy*, etc., and carefully edited her husband's poems. Died, 1851.

Shelley, Percy Bysshe, famous English poet, was born at Field Place, near Horsham, England, 1792. In 1808 he left school, and after two years passed at home was sent to Oxford. A pamphlet entitled *The Necessity of Atheism*, which circulated during the second year of his college course, led to his expulsion from Oxford. In 1811 he married Harriet Westbrook, daughter of a retired innkeeper, but in 1814 a separation took place between him and his wife. His second wife was Mary Godwin. In 1813 appeared his poem *Queen Mab*, which was printed only for private circulation. In 1818 he left England for Italy, and during that and the following year, chiefly while a resident at Rome, he produced what may rank as his two finest poems—the grand lyrical drama of *Prometheus Unbound* and the tragedy of *The Cenci*. His other works of chief importance are *Rosalind and Helen*, *The Witch of Atlas*, written in 1819; *Epipsychidion*, *Adonais*, on the death of Keats, and *Hellas*—all produced in 1821. He perished in 1822 by the capsizing of his boat, while sailing in the gulf of Leghorn.

Shepard, Edward Morse, American lawyer and publicist, was born in New York, 1850. He was graduated at the college of the city of New York, 1869, studied law and was admitted to the bar. He was civil service commissioner of Brooklyn, 1883-85; New York state forestry commissioner, 1884-85, and democratic candidate for mayor of Greater New York, 1901. Author: *Martin Van Buren*, in American statesmen series; *Memoirs of Dugdale*; and many review, magazine and other articles and addresses on political, industrial and educational topics. Died, 1911.

Shepherd, F. J., Canadian physician, professor of anatomy, 1883-1913, and dean of the medical faculty, McGill University, Montreal, 1908-1914, was born at Cavagnol, province of Quebec, 1851. LL.D., Edinburgh and Harvard. He was demonstrator of anatomy in McGill University, 1875; president of the Montreal medico-chirurgical society, and vice-president of the international dermatological congress, 1894 and 1907. Author: *American Text-Book of Surgery; Retrospect of Surgery, 1881-94*, etc.

Sheridan, Philip Henry, American general, was born at Albany, N. Y., 1831. He was graduated at West Point in 1853. At the beginning of the Civil War he was a captain in the 13th infantry, was made quartermaster of the federal army in Missouri, and rapidly passed up through the various grades to major-general in 1863 for brilliant service in the battles of Perryville and Stone river. For his decisive victory over Early at Cedar Creek—the occasion of his famous ride—he was promoted to major-general in the regular army, and received the thanks of congress. Returning to the army of the Potomac, in 1865, he was conspicuous under Grant in the operations before Petersburg, and in the final battles preceding Lee's surrender. When Sherman was made general, Sheridan was made lieutenant-general, and when Sherman was retired, a special act of congress conferred the further rank of general upon Sheridan, who became commander-in-chief of the army. He died at Nonquitt, Mass., 1888.

Sheridan, Richard Brinsley, British dramatist and politician, was born in Dublin, 1751. He was educated at Harrow, and became a student of the Middle Temple, London, though he was never called to the bar. In 1775, produced *The Rivals* successfully at Covent Garden. In 1777 he became part proprietor of Drury English theater, in which he produced *The School for Scandal* and also *The Critic*, one of the wittiest farces. During the whole time of Pitt's ascendancy the talents of Sheridan were displayed in combating that great statesman, by whom however, his eloquence was acknowledged, and especially his eloquence on the occasion of the Warren Hastings' trial. He died in 1816, and was buried in Westminster abbey.

Sherman, James Schoolcraft, lawyer, banker, vice-president of the United States beginning 1909, was born in Utica, N. Y., 1855. He was graduated from Hamilton College in 1878, and was admitted to the bar in 1880; LL.D., Hamilton, 1903. Was mayor of Utica, 1884; chairman of New York state republican convention in 1895 and again in 1900; and chairman of the national republican congressional committee, 1906-09. He was a member of congress, 1887-91, 1893-1903, and 1903-09; elected vice-president of the United States, 1908, taking his seat, March 4, 1909. Died, 1912.

Sherman, John, American statesman, brother of William Tecumseh, was born at Lancaster, Ohio, 1823. He was employed for a time at surveying, and was admitted to the bar in 1844, entering into partnership with his brother. He became an anti-slavery whig, and as such entered congress in 1855. He was reëlected to congress and continued in the house until 1861, the recognized leader of the republicans. He was then United States senator, 1861-77, and 1881-97; secretary of the treasury under President Hayes, 1877-81; and secretary of state under President McKinley, 1897-98. He supported the reconstruction measures, defended the protective tariff, and took a leading part in the legislation for the restoration of specie payments and the refunding of the national debt, and was author of the famous Sherman anti-trust law. Died, 1900.

Sherman, Roger, American statesman, was born at Newton, Mass., 1721. He was a shoemaker by trade, then a surveyor of lands, and finally a lawyer and judge; served in both the continental and the United States congresses from 1774 to 1791; was one of the committee that drafted the declaration of independence, one of the signers of it. He was United States senator, 1791-93. Died, 1793.

Sherman, William Tecumseh, American general, was born in Lancaster, Ohio, 1820. He was graduated at West Point in 1840, and received a commission as first lieutenant in the United States army in 1841. During the war with Mexico he was promoted to the rank of captain. In 1861, was appointed colonel of infantry. Raised to the rank of brigadier-general. He distinguished himself at the battle of Shiloh, and as major-general in the siege of Vicksburg. Raised to an independent command, he marched across the state of Mississippi, took command of the army of Georgia, forced General Hood to evacuate Atlanta, and captured Savannah and Charleston, from which point he moved north, and, by cutting off the resources of General Lee, compelled the evacuation of Richmond, and the surrender of General Lee to General Grant, April 9, 1865. No Northern general acquired greater popularity than Sherman. He was appointed lieutenant-general in 1866, and in 1869 became general and commander-in-chief. In point of daring originality of design, fertility of resource, brilliant strategy, and untiring energy, General Grant pronounced him "the best field officer the war had produced." He retired from the command of the army of the United States, 1884. Died, 1891.

Shorey, Paul, university professor, was born at Davenport, Ia., 1857; graduated from Harvard, 1878; University of Leipzig, 1881-2, University of Bonn, 1882, American School of Classical Studies, Athens, 1882-3; Ph.D., University of Munich, 1884; LL.D., Iowa College, 1905; admitted to bar, Chicago, 1880. Professor of Greek, Bryn Mawr College, 1885-92; professor of Greek beginning 1892, head department since 1896, University of Chicago. Annual associate director of American School Classical Studies, Athens, 1901-2; president American Philological Association, 1910. Author: *De Platonis Idearum Doctrina; The Idea of Good in Plato's Republic; The Odes and Epodes of Horace; The Unity of Plato's Thought*, etc.

Siddons, Sarah, noted English tragic actress, was born at Brecon, 1755, daughter of Roger Kemble, manager of a company of itinerant players. In her eighteenth year she married William Siddons, an actor, and in 1775 made her first appearance in London as *Portia*. She appeared at Drury Lane, 1782, in the character of *Isabella* in *The Fatal Marriage*. In 1785 she appeared as *Lady Macbeth*, her greatest rôle, and in 1788 as *Queen Catherine*. Thenceforth her course was a continual triumph. She died in 1831. In 1783 Sir Joshua Reynolds painted her as *The Tragic Muse*.

Sidgwick, Henry, English moralist and economist, was born in Yorkshire, 1838, and educated at Trinity College, Cambridge, where he lectured from 1859 to 1875, becoming professor of moral and political philosophy in the latter year and professor of moral philosophy in 1883. His chief works comprise *The Methods of Ethics; The Principles of Political Economy; History of Ethics*, and *The Elements of Politics*. Died, 1901.

Sidney, Sir Philip, English writer and soldier, was born in Kent, 1554. He was educated at Oxford, traveled throughout Europe and returned to become a favorite at the court of Elizabeth, who called him "the jewel of her dominions." For her entertainment he wrote his celebrated *Arcadia* and several minor poems. Among his works are also his *Apologie for Poetrie* and *Defense of Poetrie*. He was killed at the battle of Zutphen, 1586.

Siemens, Ernst Werner von, German engineer and electrician, was born at Lenthe, in Hanover, 1816. In 1838 he entered the Prussian artillery, and in 1844 took charge of the artillery workshops at Berlin. He developed the telegraphic system in Prussia, and discovered the insulating property of gutta-percha, and was the first to explode a submarine mine by electricity. Besides devising numerous forms of galvanometers and other electrical instruments, Siemens was one of the discoverers of the self-acting dynamo. He determined the electrical resistance of different substances, the Siemens unit being called after him. He died at Berlin in 1892.

Siemens, Sir William (Karl Wilhelm), German scientist, was born at Lenthe, Hanover, 1823, brother of the preceding. He studied at Göttingen, giving special attention to science. As manager of the house of Siemens Brothers, he was engaged in constructing telegraph lines, the steamship *Faraday* being designed by him for cable laying. He invented a water meter, a bathometer for measuring ocean depths, an electrical thermometer, and a process of hastening the growth of plants by electric light. He was president of the three principal telegraphic societies of Great Britain, and of the British association, and in 1883 was knighted. Died, 1883.

Sienkiewicz (*shen-kyā'vich*), **Henryk,** Polish novelist, was born at Wola Okrzejska, in Lithuania, 1846, and was educated at the University of Warsaw. In 1876 he came to the United States, and for a time, in company with Madame Modjeska, his countrywoman, he resided in California, where he designed to establish a Polish colony. He returned to Poland and in 1880 wrote a work on *Tartar Slavery*, following this, a few years later, by his masterly novel, *With Fire and Sword*. To this succeeded *The Deluge*, *Pan Michael*, *Without Dogma* and *Children of the Soil*. In 1895 appeared his masterpiece, *Quo Vadis*—a tale of the time of Nero. His later works include *The Knights of the Cross*, *Monte Carlo*, etc. In 1905 he received the Nobel prize for literature. Died, 1916.

Sieyes (*syā'yes'*), **Emmanuel Joseph,** better known as the Abbé Sieyès, French revolutionist, was born in Frejus, France, 1748. He studied for the church at Paris; during the reign of terror he withdrew into the country; but after Robespierre's downfall returned to the convention, took an active part in affairs, and became president of the national assembly in 1790. He retired with the title of Count, and obtained grants of land and property to the value of at least $250,000. He was exiled at the restoration, but returned to Paris during the revolution of 1830, and died there in 1836.

Sifton, Sir Clifford, Canadian statesman, born in Middlesex county, Ontario. He was graduated at Victoria University, Coburg, 1880; was admitted to the Manitoba Bar, 1882; practiced in Brandon; was created queen's counsel by Dominion patent, 1895. He was a member of the Manitoba legislature, 1888-96. He was first elected to the Dominion house of commons for Brandon, Manitoba, 1896, and reelected in 1900 and 1907. Member Alaskan Boundary Commission. Died, 1929.

Sigel (*sē'gel*), **Franz,** American general, was born in Germany, 1824. He was in the service of the grand-duke of Baden, and became minister of war in the revolution of 1848, but was obliged to flee, and came to the United States. He entered the federal army as colonel in 1861, during the Civil War, and by gallant service rose to the rank of major-general. He was register of New York city, 1871-74. Died, 1902.

Sigismund (*sij'is-mund*), emperor of Germany was born about 1368. He was terribly defeated in an expedition against the Turks at Nicopolis in 1396. Some years later he conquered Bosnia, Herzegovina and Servia, and became emperor of Germany in 1411. Died, 1437.

Silliman, Benjamin, American physicist, was born at Trumbull, Conn., 1779. He was educated at Yale College, and admitted to the bar in 1802, but soon after received from the college the appointment of professor of chemistry, and help that chair over half a century. In 1818 he founded the *American Journal of Science*, better known as *Silliman's Journal*, of which he was for twenty years editor. Died, 1864.

Simon (*sē'mōn'*), **Jules Francois,** French statesman and publicist, was born at Lorient, France, 1814. He was educated at Lorient and at Vannes, and in 1839 became professor of philosophy at the Sorbonne, Paris. He was then member of the corps législatif, 1863-70; minister of public instruction, 1871-73; senator and member of the French Academy, 1875, and prime minister, 1876-77. Amidst the general corruption he remained poor, supporting his family by his pen, and preserving an absolutely stainless character to the last. Died, 1896.

Simpson, Sir James Young, noted Scottish physician, was born at Bathgate, Scotland, 1811. He was graduated at the University of Edinburgh as doctor in medicine in 1832, and in 1840 was appointed to the chair of obstetrics there. In this field he introduced the use of chloroform and other anæsthetics, and made improvements in the old methods of practice. Died, 1870.

Simpson, Matthew, 1811-1884, American Methodist Episcopal clergyman, was born in Cadiz, Ohio. President Indiana Asbury University; editor *Western Christian Advocate*; author: *A Hundred Years of Methodism*, and *Cyclopedia of Methodism*. Was an eminent orator.

Sims, William Sowden (1858——), graduate U. S. Naval Academy, 1880, commissioned Commander, 1907, Captain, 1911, and Rear Admiral, 1917, Admiral, 1918, reverting to permanent rank upon relinquishment of command U. S. naval forces operating in European waters, 1919; pres. Naval War College, since 1919; retired 1922.

Sinclair, May, English author, was born in Cheshire and educated at the Ladies College, Cheltenham. Her first novel, *Audrey Craven*, appeared in 1896, followed by *Mr. and Mrs. Neville Tyson* (1898) and *Two Sides of a Question* (1900). But it was through her novel, *The Divine Fire* (1904), that she became widely known. Other works are: *The Helpmate*, *Kitty Tailleur*, *The Creators*, *The Combined Maze*, *The Tree of Heaven*, *Mary Olivier*, and *The Romantic*. She also wrote *Journal of Impressions in Belgium*, a story of her experiences as a member of an advance field ambulance in 1914.

Sinclair, Upton, author, was born in Baltimore, 1878, and graduated from the College of the City of New York, 1897. He assisted the government in the stockyard investigation in Chicago, and has taken a leading part in socialist movements. Author: *Springtime and Harvest; Prince Hagen*.

a Phantasy; Manassas; The Jungle; The Industrial Republic; The Oversman, etc.

Sinclair, William Macdonald, English prelate, archdeacon of London and canon of St. Paul's beginning 1889, was born at Leeds, 1850. He was graduated at Balliol College, Oxford, and became assistant minister of Quebec chapel, 1876. He was resident chaplain to the bishop of London, 1877; chaplain to the order of St. John of Jerusalem, 1900, and chaplain-in-ordinary to Queen Victoria. Hon. chaplain to King Edward VII. Author: *The Servant of Christ; Simplicity in Christ*, etc. Died, 1917.

Sismondi (*sis-mon'dē*), **Jean Charles Leonard Simonde de,** distinguished Swiss historian of Italian descent, was born at Geneva, 1773. Before he had completed his education the pecuniary reverses of his father made it necessary for him to enter a counting-house. In 1803 appeared a work on political economy, followed by his *History of the Italian Republics*. In 1813 appeared his *Literature of Southern Europe*, and in 1819 he began his greatest work, the *History of the French*, with which he was occupied until his death, in 1842.

Sixtus IV., Pope, Francesco della Rovere, was born in a small village near Savona, Italy, 1414. He had a great reputation as a preacher throughout Italy, and became pope in 1471. Learning, and especially the improvement of the city, owed much to him. He built the Sistine chapel and the Sistine bridge across the Tiber, increased the vatican library, and patronized the great painters of his time. Died, 1484.

Sixtus V., Felice Peretti, one of the ablest of the Popes, was born near Montalto, Italy, 1521. He was a professor of theology at Rimini and Siena, an eloquent preacher, vicar-general and cardinal, and succeeded Gregory XIII. His pontificate was notable for vigorous administration. He also fixed the number of cardinals at seventy. Died, 1590.

Skeat (*skēt*), **Walter William,** English philologist, was born in London, 1835. He was graduated from Christ's College, Cambridge, 1858, became a fellow in 1860, and in 1878 professor of Anglo-Saxon; Litt.D., LL.D., Ph.D., D.C.L. He was the first director of the dialect society, established in 1873, and contributed more than any scholar of his time to a sound knowledge of Middle English and English philology generally. His works include: *Piers Plowman:* Barbour's *Bruce:* Chaucer's *Treatise on the Astrolabe*, etc; editions of Chatterton's *Poems;* Chaucer's *Minor Poems;* his admirable *Etymological English Dictionary; Principles of English Etymology;* his great edition of Chaucer, in 6 volumes, etc. Died, 1912.

Skinner, Otis, American actor, was born in Cambridge, Mass., in 1858. He made his professional début as *Jim* in *Woodleigh*. He has played important roles with Booth, Modjeska, Barrett and Daly. His later plays include *Kismet, Sire, A Celebrated Case, The Honor of the Family*, and sundry character sketches in dialect, such as *Mr. Antonio*. Almost the last survivor of the school of clean romantic comedy.

Skobelev (*skō'be-lyef*), **Mikhail Dimitrievich,** Russian general, was born in 1844. He fought against the Polish insurgents in 1863, and in 1875-71 was at the conquest of Khiva and Khokand. In 1881 he stormed the Turkoman stronghold Geok-Tepe. He died near Moscow, in 1882. He was an ardent Panslavist.

Slicer, Thomas Roberts, Unitarian clergyman, was born at Washington, 1847. He was educated in Baltimore; A.M., Dickinson College; D.D., Harvard. He was a Methodist Episcopal minister ten years in Maryland, Colorado and New York; entered Unitarian ministry, 1881; held pastorates in Providence, R. I., and Buffalo, N. Y.; and beginning 1897 was pastor of the church of All Souls, New York. Died, 1916.

Slidell (*sli-del'*), **John,** American lawyer and politician, was born in New York city about 1793. From 1853 to 1861, was a member of the United States senate; and in the Civil War, when Louisiana seceded, he withdrew, and was appointed confederate minister to France. In company with James M. Mason, who was named minister to England, he was taken on the high seas by Captain Wilkes, of the United States navy, and both brought as prisoners to the United States, where they were confined in Fort Warren. On the demand of England, they were released, however, and proceeded on their respective missions. After the war closed he settled in England and resided there until his death in 1871.

Sloane, William Milligan, American historian, Seth Low professor of history, Columbia, beginning 1896, was born at Richmond, Ohio, 1850. He graduated at Columbia, 1868; Ph.D., Leipzig 1876; L.H.D., Columbia; professor at Princeton University, 1876-96; and editor *Princeton Review*, 1886-89. Author: *Life of James McCosh; The French War and the Revolution; Napoleon Bonaparte, A History* (4 volumes); *French Revolution and Religious Reform*, etc. Died, 1928.

Slocum, Henry W., American general, was born 1827, at Delphi, N. Y. He graduated from West Point in 1852. On the outbreak of the Civil War, he was commissioned colonel of the 27th New York volunteers and took part in the first battle of Bull Run, where he was wounded. In 1861 he was made brigadier-general. He distinguished himself at the battles of Gaines' Mill, Glendale and Malvern Hill and was promoted to major-general of volunteers. Later he was transferred, with his corps, to the army of the Cumberland, succeeded to the command of the 20th corps and was the first to enter Atlanta. In Sherman's march to the sea and through the Carolinas he commanded the left wing, taking part in the action of that campaign. After the war he took up the practice of law at Brooklyn, was elected to congress in 1870, and again in 1884. Died, 1894.

Smeaton, John, English civil engineer, was born near Leeds, England, 1724. He began his career as a maker of mathematical instruments, but continued his studies and experiments, inventing, in 1751, a machine for measuring a ship's path at sea. He was also the builder of the famous Eddystone light-house. He died, 1792.

Smiles, Samuel, Scottish writer, was born at Haddington, Scotland, 1812. He was graduated in medicine at Edinburgh, at twenty, and practiced in Haddington. He wrote *Life of George Stephenson; Self-Help*, which had an extraordinary success, and was translated into a score of languages; *Character; Thrift; Duty; Life and Labor; Lives of the Engineers*. He died at London, 1904.

Smith, Adam, Scottish political economist, founder of the modern science of political economy, was born at Kirkcaldy, in Fifeshire, 1723. In 1764 he accompanied the duke of Buccleuch to the continent as traveling tutor and governor, and this engagement occupied him for two years; but at the end of that time he returned to Kirkcaldy, where he lived until he was appointed a commissioner of customs in 1778, when he took up his residence in Edinburgh. In 1776 he produced his great work, *An Inquiry Into the Nature and Causes of the Wealth of Nations*, and upon this work his reputation rests. In 1787 he was elected lord rector of the University of Glasgow, and died, 1790.

Smith, Alexander, chemist, was born at Edinburgh, Scotland, 1865; graduated from the University of Edinburgh, 1886; Ph.D., University of Munich, 1889. Assistant in chemistry, University of Edinburgh, 1889-90; professor chemistry and mineralogy, Wabash College, 1890-4; assistant professor chemistry, 1894-8; associate professor, 1898-1903; professor and director of general and physical chemistry, 1903-11, University of Chicago, and professor of chemistry, Columbia University, beginning 1911. Author: Lassar-Cohn *Laboratory Manual of Organic Chemistry: Laboratory Outline of General Chemistry; The Teaching of Chemistry and Physics* (with E. H. Hall); *Introduction to General Inorganic Chemistry; General Chemistry for College*, etc. Died, 1928.

Smith, Alfred Emanuel, American politician, was born in New York City in 1873. His father's death compelled him to leave school at thirteen, and he is therefore a marked example of the self-made man. He was a member of the New York assembly from 1903 to 1915, speaker of the assembly in 1913, sheriff of New York county, 1915-17, president of the board of aldermen of Greater New York in 1917, and governor of New York State for four terms. He was the Democratic nominee for President in 1928.

Smith, Benjamin Eli, American editor, was born in Beirut, Syria, 1857. He graduated at Amherst College, 1887; A.M., L.H.D. Died, 1913. Editor and translator: Schwegler's *History of Philosophy; Century Cyclopædia of Names; Century Atlas;* Cicero's *De Amicitia;* Franklin's *Poor Richard's Almanac; Selections From Marcus Aurelius; Epictetus*, etc.

Smith, Charles Emory, American journalist, was born at Mansfield, Conn., 1842. He removed to Albany, N. Y., with parents, in 1849; graduated at Union College, 1861. He was actively engaged during the Civil War in raising and organizing Union volunteer regiment. He was United States minister to Russia, 1890-92; postmaster-general of United States, 1898-1902. Died, 1908.

Smith, Ellison DuRant, United States senator, was born, 1866, at Lynchburg, S. C. He graduated at Wofford College, Spartanburg, S. C., in 1889; was a member of the South Carolina legislature, 1896-1900. He became a national figure on account of addresses on the cotton industry at New Orleans, Birmingham, Dallas, and Shreveport, and was elected to the United States senate, for the terms 1909-27.

Smith, Francis Hopkinson, American artist, author and engineer, was born at Baltimore, 1838. When quite young he was clerk in iron works, and was later educated as a mechanical engineer; L.H.D., Yale, 1907. He built the government sea-wall around Governor's island; another at Tompkinsville, S. I.; the Race Rock lighthouse off New London; foundation for Bartholdi statue of Liberty, etc. Author: *A Gentleman Vagabond and Some Others; Tom Grogan; Gondola Days; Venice of To-day; Caleb West: At Close Range; The Wood Fire in No. 3; The Tides of Barnegat; The Veiled Lady; The Romance of an Old-Fashioned Gentleman; Peter*, etc. Died, 1915.

Smith, Goldwin, English author and educator, was born in Reading, England, 1823; graduated from Magdalen College, Oxford, 1845; D.C.L., Oxford, 1882; LL.D., Princeton, 1896; and was called to the English bar, 1847. He was regius professor of modern history, Oxford, 1858-66; was an active champion of the North during the American Civil War; visited United States, 1864; was lecturer, 1868-71, and later honorary professor of English and constitutional history, Cornell; he resided in Toronto, Ont., 1871-1910. Author: *Irish History and Irish Character; Lectures on Modern History; Rational Religion and the Rationalistic Objections of the Bampton Lectures for 1858; Shakespeare, the Man; Commonwealth or Empire; In the Court of History; The Founder of Christendom; Lines of Religious Inquiry; My Memory of Gladstone; Labor and Capitol*, etc., and numerous articles in magazines. Died, 1910.

Smith, Captain John, English adventurer and colonist, founder of Virginia, was born in Lincolnshire, England, in 1580. He traveled in France and Holland, and, when on his way to join the Christian army fighting against the Turks in Hungary, was robbed by four adventurers. In 1605 he joined an expedition of three vessels and one hundred five men, to found a colony in Virginia. On one of his journeys into the country for corn he was captured by the Indians, under the chief Powhatan, and his life saved by the chief's daughter Pocahontas. On his return to Jamestown he found the colony reduced to about forty men, who were anxious to return to England, but were induced by Smith to remain until others arrived. He then explored the coasts of the Chesapeake bay in two voyages, and made a map of the country. In 1614 he explored the coast of New England, and undertook the founding of a colony in New England in 1615, but his vessel was captured by a French warship and he was carried to La Rochelle. After his escape, he wrote an account of his voyages to New England. He died in London, 1631.

Smith, Munroe, American educator, was born in Brooklyn, N. Y., 1854. He graduated at Amherst College, 1874; Columbia Law School, 1877; J.U.D., Göttingen, 1880; LL.D., Columbia, 1904. Professor of Roman law and comparative jurisprudence, at Columbia, 1891-1922; Bryce professor of European legal history, 1922-24, emeritus, 1924. Author: *Bismarck and German Unity; Selections from Cicero*.

Smith, Sydney, English clergyman and essayist, was born at Woodford, England, 1771. He graduated from Oxford, and entered the church; in 1802 resided in Edinburgh, and joined Brougham, Jeffrey, and others, in establishing the *Edinburgh Review*, of which he was the first editor. From 1831 until his death in 1845 he was a canon of St. Paul's, London. He was a universal favorite in society and distinguished for brilliant wit and graceful and forcible English.

Smith, William Alden, lawyer, United States senator, was born at Dowagiac, Mich., 1859. Was a newsboy, and messenger boy in Western Union telegraph office; appointed page in the Michigan house of representatives, 1879; studied law, and was admitted to the bar, 1883; A. M., Dartmouth, 1901; was a member of congress, 1895-1907, fifth Michigan district; and was elected United States senator, 1907, and in 1913 for term expiring 1919.

Smith, William Robertson, British theologian and orientalist, was born at Keig, Scotland, 1846, and graduated at Aberdeen in 1865. He afterward studied theology at Edinburgh, Bonn, and Göttingen; and in 1870 became professor of Hebrew and old testament exegesis in the Free Church College, Aberdeen. In 1881 he became associated with Professor Baynes in the editorship of the *Encyclopædia Britannica*, and in 1887 succeeded him as editor-in-chief. At Cambridge he was successively Lord Almoner's professor of Arabic, in 1883; university librarian, 1886, and Adams professor of Arabic, 1889. He died at Cambridge, 1894.

Smollett, Tobias George, English novelist, was born, 1721. He was educated at the University of Glasgow, and was afterward apprenticed to a surgeon. In 1748 he produced his *Roderick Random*. In 1751 appeared *Peregrine Pickle*, a more ambitious and not less successful work; and in 1753 *Ferdinand Count Fathom*. In 1758 he published his *History of England*. Another novel appeared in 1760-1, *The Adventures of Sir Launcelott Greaves*, in 1766; two volumes of *Travels in France and Italy*; in 1771 *The Expedition of Humphrey Clinker*, the best of all his novels. Died at Leghorn, 1771.

Smoot, Reed, United States senator, banker, Mormon apostle, was born at Salt Lake City, 1862. He graduated at Brigham Young Academy, Provo, Utah, 1879. He was appointed one of the presidency of the church of Jesus Christ of Latter Day Saints, 1895, and apostle, 1900. He was elected by Utah legislature, 1903, United States senator since 1903.

Snorri Sturluson (*snor'rē stōōr'lōō-sun*), Icelandic poet and historian, born in 1179. Tracing his descent from the kings of Norway, he early turned his attention to the history of their doings, and made a collection of sagas entitled the *Heimskringla*, or the "Ring of the World," in which are interspersed songs of his own composing. Snorri became chief judge of Iceland, but his ambitious and intriguing character led to his assassination in 1241.

Snow, Francis Huntington, American educator, was born at Fitchburg, Mass., 1840. He graduated at Williams College, 1862; Ph.D., 1881. He was president of the faculties, 1889-90, chancellor, 1890-1901, and professor of organic evolution,

systematic entomology and meteorology in the University of Kansas. Died in 1908.

Sobieski (*sō-byes'kē*). See **John III.**, king of Poland.

Socinus (*sō-sī'nus*), **Faustus,** Italian theologian, was born at Siena, Italy, 1539; in 1574 took up his residence at Basel, where he busied himself in elaborating into a system the scattered hints and views in the writings of his uncle. In 1577 he appeared in open debate, maintaining that the Trinity was a pagan doctrine, and that Christ was a created and inferior being. The Socinians were long a powerful religious body in Poland, Hungary, and Transylvania; their peculiar catechism is known as Racovian, from its place of publication, Rakow in Poland. He died near Cracow, 1604.

Socrates, celebrated Greek philosopher, was born at Athens, 469 B. C. His father, Sophroniscus, was a sculptor, and he followed the same profession in the early part of his life. His physical constitution was robust to an extraordinary degree, enabling him to endure the hardest military service and to live his own chosen life of superiority to all wants above the barest necessaries of life.

He had the usual education of an Athenian citizen, which included not only readings in the Greek poets, but also the elements of arithmetic, geometry and astronomy, as then known. As a young man, he frequented the society of the physical philosopher, Archelaus, a disciple of Anaxagoras.

Excepting in connection with his philosophical career, few circumstances of his life are known. He served as a foot-soldier at Potidæa, at Delium and at Amphipolis and his bravery and endurance were extolled. Somewhere about the middle period of his life he gave himself up to the career that made him famous. Deservedly styled a philosopher, he neither secluded himself for study nor opened a school for the regular instruction of pupils. He disclaimed the appellation of teacher; his practice was to talk or converse.

Early in the morning he frequented the public walks, the gymnasia for bodily training and the schools where youths were receiving instruction; he was to be seen in the market-place at the hour when it was most crowded, among the booths and tables where goods were exposed for sale. He talked with any one, young or old, rich or poor, that sought to address him, and in the hearing of all who stood by. He died 399 B.C. Socrates was not a writer, and what we know of his teaching is derived from the representations of his pupils, Xenophon (in his *Memorabilia*) and Plato (in his *Dialogues*, in the majority of which Socrates is the chief interlocutor). The relation of these two divergent representations to the original has been a problem for historical criticism.

References.—Zeller's *Socrates and the Socratic Schools;* Forbes' *Socrates;* Gildersleeve's *Essays and Studies; Lamartine's Homer and Socrates.*

Solomon, king of Israel, born about 1033 B. C., was the son of David and Bathsheba. By his remarkable judicial decisions and his completion of the political institutions of David, Solomon gained the respect and admiration of his people; while by the building of the temple, which gave to the Hebrew worship a magnificence it had not hitherto possessed, he bound the nation more strongly to his throne. Toward the close of his reign troubles arose and the growing discontent, coming to a head after his death, resulted in the division of the kingdom, which his feeble son Reheboam could not prevent. The writings attributed to Solomon are *The Book of Proverbs, Ecclesiastes,* and the *Song of Solomon,* with the apocryphal book, the *Wisdom of Solomon.*

Solon (*sō'lun*), famous legislator of Athens, and one of the seven sages of Greece, was born, about 638 B. C., at Salamis, of an ancient family. As archon, he framed a new code of laws, and, having obtained from the citizens an oath that they would observe them for ten years, he departed from Greece, and visited Egypt and Cyprus, and, perhaps, Lydia. On his return he found the tyranny of Pisistratus established, and he withdrew to Cyprus, where he is said to have died at the age of eighty, about 559 B. C.

Solyman, or **Soliman II.,** surnamed The Magnificent, greatest of the Turkish sultans, was born about 1496, and succeeded in 1520 his father Selim I., who had carefully initiated him into the Ottoman policy. He drove the knights of St. John from Rhodes, 1522; and for three years following devoted himself to improvements in the administration. By 1541 the long and desultory contest between the Turks and the imperialists for Hungary was ended in favor of the former, who took complete possession of the country. A brilliant naval victory, 1561, over the knights of Malta and their allies, the Spaniards, and an expedition to Hungary, 1566, were the chief events of the remainder of his reign. Died, 1566.

Somerville, Mary Fairfax, Scotch scientist, was born at Jedburgh, Scotland, 1780. In 1812 she attracted attention by some experiments on the violet rays of the solar spectrum. She was granted a pension in 1835 and made a member of the royal astronomical society of England and of many foreign societies. She died at Naples, 1872.

Sonnino (*sōn-nē'nō*), **Baron Sidney,** Italian statesman, was born at Florence, 1847, and educated at the University of Pisa. In 1887 he joined the Crispi administration as under-secretary for the treasury, and first as finance minister, 1893, and then as minister of the treasury, he worked a great reform in the country's finances. After Crispi's fall in 1896, he became one of the opposition leaders, and in 1906 was prime minister of Italy. Died in 1922.

Sophocles (*sof'o-klez*), Greek tragic poet, was born in the Attic demus, or village of Colonus, B. C. 495, thirty years later than Æschylus. He received a good education and at an early age gained the prize in music and gymnastics. He was fifteen when the battle of Salamis was fought, and for his remarkable beauty and skill in music, he was chosen to lead the chorus which sang the pæan of victory.

His first appearance as a dramatist was in 468, B.C. when, under memorable circumstances he had Æschylus for his rival, and won the victory. Of the next twenty-eight years of his life nothing is recorded; but it is known that he made poetry his vocation and that he composed a great many plays during that period.

The *Antigone,* the earliest of his extant tragedies, was brought out in 440 B.C. and won the prize. The number of plays attributed to him, without question, was one hundred and thirteen, of which eighty-one were probably produced after the *Antigone.* Seven only are extant, viz., *Antigone, Electra, Trachinian Women, King Oedipus, Ajax, Philoctetes,* and *Oedipus at Colonus.*

These exhibit his art in its maturity and sustain the verdict of ancient and modern critics that Sophocles carried the Greek drama to its highest perfection. He effected a complete change in the constitution of tragedy as Æschylus left it; loosening the connection between the parts of the trilogy and the satyric drama, and making them not one great poem, but four distinct ones; introducing a third actor; and for subject selecting, not a series of heroic and mythical actions, but for each play one leading fact of real human interest and lasting significance.

Sophocles lived to be nearly ninety and in his latest years most probably wrote the *Oedipus at Colonus,* so full of sweetness and tender melancholy, and consoling hopes, which was not presented on the stage till five years after the poet's death. He died 406 B. C.

References.—Campbell *Life of Sophocles;* His translators are Web, Whitelaw and Campbell.

Sorley, William Ritchie, British educator and philosophical writer, Knightbridge professor of moral philosophy, University of Cambridge, since 1900, was born at Selkirk, 1855. He was educated at Edinburgh, and Trinity College, Cambridge; professor of logic and philosophy at University College, Cardiff, 1888-94; and professor of moral philosophy, Aberdeen, 1894-1900. Edited: *Development of Modern Philosophy; Recent Tendencies in Ethics,* etc.

Sothern (*suth'ėrn*), **Edward Hugh,** actor, was born in New Orleans, 1859. He received an academic education in England; first appeared, 1879, in small part at Abbey's Park theater, New York. He first took leading rôle, Lyceum theater, New York, 1887, as *Jack Hammerton* in *The Highest Bidder,* and starred with his own company in *Lord Chumley; An Enemy to the King; The Adventures of Lady Ursula; The Song of the Sword; The Sunken Bell; Hamlet; Richard Lovelace; If I Were King,* etc.

Soult (*sōōlt*), **Nicholas Jean de Dieu,** duke of Dalmatia and marshal of France, was born at Saint-Amans-la-Bastide in 1769. In 1785 he entered the army. He achieved brilliant success in the campaign against the Austrians, closed by the battle of Austerlitz. In 1809 he became commander-in-chief in Spain, gained a brilliant victory at Ocaña, and overran and subdued Andalusia; on his return from Elba he abandoned Louis XVIII., and became major-general of the imperial army. After Waterloo he rallied the army at Laon, and on July 3d, at the council of war, coincided with Carnot as to the uselessness of further resistance. He died, 1851

Sousa (*sōō'zȧ*), **John Philip,** American musician, was born at Washington, 1856. He studied music, was a conductor at seventeen, and one of the first violins of Jacques Offenbach's orchestra when the latter was in the United States. He was then music director of the United States marine corps, 1880-92, and since 1892 director of Sousa's band. Composed: *Washington Post; Stars and Stripes Forever; Hands Across the Sea; The Bride-Elect; El Capitan; Three Quotations; At the King's Court; Looking Upward; The Chariot Race;* and the operas: *The Smugglers; Desire; The Queen of Hearts; El Capitan; The Free Lance,* etc. Author: *The Fifth String; Pipetown Sandy,* etc.

Southey, Robert, English poet and writer, was born, 1774, at Bristol, England. He was educated at Oxford, but left without a degree in 1794, and during the next two years traveled in Spain and Portugal. In 1804 he settled at Greta Hall, in Cumberland, where he spent the remainder of his life, happy in his family relations and his unremitting daily round of congenial, though continuous, toil. In 1813, on the death of Pye, he succeeded him as poet-laureate. His chief poetical works are *Madoc; Thalaba; The Curse of Kehama;* and *Don Roderick.* Of all his writings his *Life of Nelson* seems most likely to survive as a classic. He died, 1843.

Spargo, John, socialist author, was born at Stithians Cornwall, England, 1876. He publicly opposed the Boer war; came to the United States, 1901, and has been active as socialistic lecturer, writer and worker; and was one of the founders of the Prospect House social settlement, Yonkers, N. Y.

Sparks, Edwin Erle, American educator, historian, president of Pennsylvania State College, 1908-1920, was born in Licking county, Ohio, 1860. He graduated from the Ohio State University, 1884, Ph.D., LL.D. He was a member of the American historical association; Illinois historical association and councilor of the American institution of civics. Author: *The Men Who Made the Nation; Formative Incidents in American Diplomacy; Foundations of National Development,* etc. Died in 1924.

Sparks, Jared, American historian, was born at Willington, Conn., 1789. He graduated at Harvard in 1815; settled as a Unitarian minister at Baltimore, and finally became editor of the *North American Review.* He was ten years a professor at Harvard, and for four years president. His writings include *Life of John Ledyard; Life of Gouverneur Morris.* He died at Cambridge, Mass., 1866.

Spencer, Herbert, English philosopher, was born at Derby, 1820. He was educated by his father, a teacher of mathematics, and his uncle, a clergyman; was apprenticed as a civil engineer, and worked several years on railways. In 1842 he contributed several professional papers to the *Civil Engineer and Architect's Journal,* besides a series of letters, on the *Proper Sphere of Government,* to *The Nonconformist.* In 1848 he became sub-editor of *The Economist* and published *Social Statistics,* 1850.

About the year 1859 he projected his scheme of philosophy, based on the principle of evolution in its relation to life, mind, society and morals. This extensive scheme was latterly completely expounded in the following works: *First Principles; Principles of Biology; Principles of Psychology;* a revised form of a work published in 1855; *Principles of Sociology;* and *Principles of Ethics.*

Portions of this great work are known under separate titles, as *Data of Ethics; Ceremonial Institutions; Political Institutions; Ecclesiastical Institutions,* etc. His other works include *Education; Essays, Scientific, Political and Speculative; Classification of the Sciences; The Study of Sociology; Man versus the State; Facts and Comments;* and an *Autobiography.* He published also an elaborate *Descriptive Sociology* compiled by other writers, but classified and arranged by himself. He died in 1903.

References.—Spencer's *Autobiography;* Hudson's *Herbert Spencer;* Collier's *Epitome of the Synthetic Philosophy;* and Macpherson's *Herbert Spencer—the Man and His Work.*

Spenser, Edmund, English poet, was born in London, about 1552. He was of humble origin, studied at Pembroke College, Cambridge, and was brought under the notice of Queen Elizabeth by the earl of Leicester. In 1579 he published *The Shepherd's Calendar,* sounding the note of the Elizabethan outburst. Through the influence of Leicester he was then appointed chief secretary to Lord Grey de Wilton, the lord-lieutenant of Ireland; and Queen Elizabeth conferred on him an estate at Kilcolman, near Cork. It was while he was at Kilcolman that he wrote *The Faërie Queene,* his greatest work. The first part was published in 1589-90, the second part about six years later; and on the publication of the first part the queen conferred on the poet a pension of fifty pounds a year. In 1598 a rebellion broke out; the castle of Kilcolman was burned, an infant child of the poet

perished in the flames, and Spenser returned to London, impoverished and broken-hearted, to die within three months after his arrival. He was buried near Chaucer in Westminster abbey.

Speyer (*spīr*), **James,** American banker, was born in New York, 1861. He was one of the founders and ex-president of the Provident loan society; now senior member Speyer & Co., New York; trustee, Central Savings bank; and director numerous corporations.

Spinoza, (*spi-no'za*), **Benedict,** celebrated philosopher, was born at Amsterdam, 1632. He was the son of a Portuguese Jew, and was early remarkable for an ardent love of truth, and a keen and logical intellect. His first serious studies were the Bible and the Talmud. He made no secret of the doubts which grew up in his mind, and was exposed to much persecution on account of them.

He was at last excommunicated, and being driven from Amsterdam, lived for a time near Leyden, and afterward at The Hague. He devoted himself wholly to philosophy, earning such a livehood as contented him by the trade of polishing glasses for optical instruments. His character was most estimable and endeared him to his personal friends.

His system of philosophy has been made odious by the vulgar accusation of atheism, which is the very reverse of the truth. To his thought God is the only being, the only substance, infinite, eternal—before whom all things else have but a phenomenal existence. And his aim was to build up, on the knowledge of God as a foundation, a system of morals by a rigorously mathematical method. With more reason, Spinoza has been called the father of modern Pantheism. Spinoza has of late been more fairly judged, and both his merits and errors impartially discussed. His influence on the mind of Goethe was overpowering.

His works are: *Renati Des Cartes Principiorum Philosophiae, pars Prima et Secunda more Geometrico Demonstratae; Cogitata Metaphysica; Tractatus Theologico—Politicus, Ethica* (perhaps the most important of his treatises); *Tractatus Politicus; De Intellectus Emendatione;* and *Epistolae.* The last four form his *Opera Posthuma.* The works written in defence and refutation of the system of Spinoza are very numerous. Died, 1677.

References.—Translations of the Works by Elwes, and of the *Ethica* and *De Intell. Emend,* by Hale White; expositions by Caird; Martineau, Pollock, Joachim, and of his ethico-political doctrine by Duff. See also Fullerton's *The Philosophy of Spinoza* and Fullerton's *On Spinozistic Immortality.*

Spohr (*shpōr*), **Ludwig,** German composer and violinist, was born at Brunswick, 1784. In 1804 he became music director at the court of Saxe-Gotha, and held afterward for several years the office of music director of a theater in Vienna. In 1823 he became chapelmaster at the court of Hesse-Cassel. He wrote *The Violin School,* a standard book of instruction. Died, 1859.

Spooner, John Coit, American lawyer ex-United States senator, was born at Lawrenceburg, Ind., 1843, and removed to Madison, Wis., 1859. He graduated at the University of Wisconsin, 1864; LL.D., Wisconsin, etc. He served as captain and brevet major 50th Wisconsin infantry. He was admitted to the bar, 1867; was regent of the University of Wisconsin, 1882-85; member of the Wisconsin assembly, 1872; United States senator, 1885-91, and 1897-1907. Died, 1919.

Spreckles, Rudolph, civic reformer, banker, sugar king, was born in San Francisco, 1872. At 22 became president Hawaii Sugar Co. Organized and financed San Francisco graft prosecution in 1906. President, United Bank & Trust Co. of California and of other financial corporations.

Spurgeon, Charles Haddon, 1834-1892, was born at Kelvedon. When twenty years of age he became pastor of the New Park Street Chapel, London. His followers built for him the great London Tabernacle in 1861, wherein he continued to preach to thousands, until 1891.

Squair, John, Canadian educator, professor of French, University of Toronto, was born at Bowmanville, Ontario, 1850. He graduated from the University of Toronto, 1883, and has been fellow ,lecturer, associate professor and professor of French in University College, Toronto; Emeritus, 1916; president of the higher education section of the Dominion educational association. He is joint author with W. H. Fraser of *French Grammar;* joint author with J. H. Cameron of *Exercises in French Prose.*

Stael (*stäl*), **Madame de,** or **Anne Louise Germaine de Stael-Holstein,** celebrated French writer, was born in Paris, 1766. In 1788 she published *Letters on the Works and Character of Rousseau;* and in 1793, having been compelled by the revolution to leave France, she published a defense of Marie Antoinette, then upon trial. In Italy she gathered the materials for her novel of *Corinne* and in Germany she gathered the materials for her celebrated work entitled *De l' Allemagne,* a description of the habits, literature and political tendencies of the German people, which was printed in Paris in 1810, but by the order of Bonaparte was immediately suppressed. Soon afterward she visited England, where she wrote her *Ten Years of Exile,* an impassioned denunciation of Bonaparte and his arbitrary rule. After the fall of the empire she returned to Paris, but never again interferred in politics. Died, 1817.

Stafford, Wendell Phillips, American jurist and publicist, was born at Barre, Vt., 1861. He graduated at St. Johnsbury Academy, 1880; graduated from the law department of Boston University, 1883. He was judge of the supreme court, Vermont, 1900-04; associate justice of the supreme court of the District of Columbia, since 1904; and professor of equity jurisprudence in the George Washington University since 1908. Author: *North Flowers,* poems; and a contributor of poems and articles to magazines.

Standish, Miles, early New England colonist, was born in Lancashire, England, about 1584. He served in the army in the Netherlands and sailed with the pilgrims in the *Mayflower* in 1620. On reaching Massachusetts he was chosen captain by the Pilgrims and commanded expeditions against the Indians. Died, 1656.

Stanford, Leland, American capitalist and philanthropist, was born at Watervliet, N. Y., 1824. He was one of the organizers of the Central Pacific Railroad Company, and, entering political life, was republican governor of California, 1861-63; and from 1885 to 1893 United States senator from California. Out of his large fortune he gave property to the value of $20,000,000 to found, in memory of a deceased son, a University at Palo Alto, to be known as the Leland Stanford Junior University. He died at Palo Alto, California, 1893.

Stanley, Arthur Penrhyn, English scholar and divine, was born at Alderley, England, 1815. He graduated at Oxford. From 1856 to 1863 he was professor of ecclesiastical history at Oxford, canon of Christ church, and chaplain to the bishop of London. In 1864 he succeeded Archbishop Trench as dean of Westminster. Stanley was one of the most accomplished and liberal theologians of his age, and may be regarded as the leader of the "broad church" party. His principal writings are: *The Unity of Evangelical and Apostolical Teaching; Lectures on the Eastern Church; Lectures on the Jewish Church; Historical Memorials of Westminster Abbey,* etc. Died, 1881.

Stanley, Sir Henry Morton, African explorer, was born near Denbigh, Wales, in 1840. He reached Zanzibar early in 1871; there organized a large expedition, and found Livingstone, November 10, 1871. In 1874 he set out on a second African expedition for the New York *Herald* and London *Daily Telegraph.* He reached Victoria Nyanza in February, 1875; was the first to circumnavigate Victoria lake, and discovered the Shimeeyu river; and reached England again in February, 1878. Near the close of 1886 Stanley, under the auspices of the Egyptian government and of English societies and individuals, undertook an expedition for the relief of Emin Pasha. He wrote *How I Found Livingstone; Through the Dark Continent; Congo and the Founding of Its Free State;* and *In Darkest Africa.* He was made a D.C.L. by Oxford University in 1890. He was a member of parliament, 1895-1900, and was knighted, 1899. Died, 1904.

Stanton, Edwin McMasters, American statesman, was born in Steubenville, Ohio, in 1814. He practiced law with success in his native town until 1847, when he settled in Pittsburg, Pa., and there became leader of the bar. In 1857 he took up his abode in Washington, in 1860 was made attorney-general of the United States, and, in 1862, secretary of war; he was suspended by President Johnson, who appointed General Grant in his place *ad interim.* In May he definitely retired from the secretaryship. In December, 1869, he was appointed an associate justice of the supreme court of the United States, and died during the same month.

Stanton, Elizabeth Cady, reformer and suffragist, was born at Johnstown, N. Y., 1815. She signed the call for the first woman's rights convention, at Seneca Falls, 1848, and became president of the national woman's suffrage association there formed, retaining the office until 1893; was the author of *A History of Woman Suffrage.* Died, 1902.

Stark, John, American soldier, was born at Londonderry, N. H., 1728. At Bunker Hill he was colonel of a regiment in which he had enlisted. On August 16, 1777, he fought the battle of Bennington, which brought him the thanks of congress and the rank of general; he cut off Burgoyne's retreat from Saratoga, and, after serving in Rhode Island and New Jersey, had charge, in 1781, of the northern department, with headquarters at Saratoga. He died, 1822.

Starr, Frederick, anthropologist, was born at Auburn, N. Y., 1858; graduated from Lafayette College, 1882; Ph.D., 1885; Sc.D., 1907; professor of biological sciences, Coe College, 1884-5; in charge of ethnology, American Museum of Natural History, 1889-91; assistant professor anthropology, 1892-5. Associate professor and curator anthropology section, Walker Museum, University of Chicago, 1895-1923. Has done extensive anthropological work in Japan, Africa, Mexico and other parts of the world. Author: *On the Hills; Some First Steps in Human Progress; American Indians; Indians of Southern Mexico; Strange Peoples; Readings From Modern Mexican Authors; The Truth About the Congo; In Indian Mexico,* etc.

Stead, William Thomas, English journalist and writer, was born at Embleton, England, 1849, and educated at Wakefield. He was editor of the *Northern Echo* at Darlington, 1871-80; assistant editor of the *Pall Mall Gazette* until 1889, and editor from 1883 to 1889. In 1890 he founded the English *Review of Reviews,* of which he was editor. Author: *Her Majesty the Queen; Satan's Invisible World; A Study of Despairing Democracy; The Conference at The Hague; The Americanization of the World,* etc. Died on Titanic, 1912.

Stedman, Edmund Clarence, American poet and critic, was born in Hartford, Conn., in 1833. He graduated at Yale, 1853; L.H.D., Columbia; LL.D., Yale. He was editor of the *Norwich Tribune,* 1852-53; *Winsted Herald,* 1854-55; on staff of *New York Tribune,* 1859-61; war correspondent for the *New York World,* 1861-63; and was a member of the New York stock exchange, 1869-1900. Author: *Poems Lyric and Idyllic; The Nature and Elements of Poetry,* etc. Editor: *A Victorian Anthology; An American Anthology* co-editor, *History of New York Stock Exchange,* etc. Died in New York in 1908.

Steele, Sir Richard, British man of letters, was born in Dublin, 1672. He was educated at the Charterhouse with Addison, and at Oxford. In 1709 he founded the *Tatler,* a periodical published thrice a week, succeeded by *The Spectator,* a daily literary journal of a higher tone and character. He was then elected to parliament, was expelled for libel, but afterward re-instated. Died, 1729.

Stefansson, Vilhjalmur, Canadian explorer, was born at Arnes, Manitoba, in 1879, of Icelandic parentage. He studied at the universities of North Dakota and Iowa, and later at Harvard, where he became instructor in anthropology. In 1904 and 1905 he made archeological expeditions into Iceland. In 1906 and 1907 he studied the Esquimo of northern Alaska, and from 1908 to 1912 he explored the Arctic shores of Canada. Since that date, he has conducted various expeditions into northern Canada and Alaska, crossing moving ice fields and discovering new lands. Besides many scientific articles and anthropological reports, he has published *My Life With the Esquimo* and *The Friendly Arctic.*

Stein (*shtin*), **Heinrich Friedrich Carl, Baron von,** Prussian statesman, was born at Nassau, 1757. As Superintendent of the Prussian excise he abolished the last relics of serfdom, did away with the privileges of caste, created peasant proprietors, extirpated monopolies and hindrances to free trade, promoted municipal government. Napoleon insisted upon his dismissal, and Stein withdrew, 1808, to Austria, but not before issuing his *Political Testament.* From the battle of Leipzig to the congress of Vienna he was the ruling spirit of the opposition to the emperor. He died in 1831.

Steinmetz (*shtin'mets*), **Charles Proteus,** electrician, General Electric Company, was born in Breslau, Germany, 1865, and educated at Breslau, Berlin, Zürich, and in Switzerland. He was the consulting engineer for the General Electric Company, and a leading authority in mathematics and engineering. Died, 1923.

Stelwagon, Henry Weightman, American physician, was born at Philadelphia, 1853. He graduated at Andalusia College, Pennsylvania, 1872; was dermatologist to Philadelphia hospital since 1888, to Northern dispensary since 1882; Howard hospital since 1885. Author: *Essentials of Diseases of the Skin; Treatise on Diseases of the Skin.* Died, 1919.

Stephen, Sir James Fitzjames, British jurist, was born at Kensington, England, 1829. He graduated at Trinity College, Cambridge, 1852; was admitted to the bar in 1854; professor of common law at the Inns of Court, 1875-79; and judge of the high court of justice, 1879-91. On his retirement he was created a baronet. Died, 1894.

Stephen, Sir Leslie, English man of letters, was born at Kensington, 1832. He was educated at Eton, King's College, London, and at Trinity Hall, Cambridge, where he was fellow and tutor. He was editor of the *Cornhill Magazine,* 1871-82, and of the first twenty-six volumes of the *Dictionary of National Biography.* His works include: *History of English Thought in the Eighteenth Century; Johnson; Pope; Swift; The Science of Ethics; Life of Henry Fawcett; Studies of a Biographer.* Died, 1904.

Stephens, Alexander Hamilton, American statesman, was born in Georgia in 1812. He graduated at the University of Georgia, 1832. Was admitted to the bar in 1834 and sat in Congress, 1843-59. In 1860 he opposed the secession of his state, but in the Confederate States of America. After the collapse of the latter, Stephens suffered a brief imprisonment at Fort Warren, and in 1866, after being reëlected United States senator, was not allowed to take his seat. He was, however, member of the house of representatives, 1873-

82, and governor of Georgia, 1882-83. In 1869hepub lished *A History of the War of Secession*. Died, 1883.

Stephens, Henry Morse, British historical writer and educator, was born at Edinburgh, Scotland, 1857. He graduated at Balliol College, Oxford, 1880; M.A., 1892. Lecturer on Indian history, Cambridge, England, 1892-94; and professor of history and director of University extension at University of California beginning 1902. Died, 1919. Author: *History of the French Revolution; Albuquerque; Revolutionary Europe; Colonial Civil Service*, etc.

Stephenson, George, the founder of the steam railway system of Great Britain, and perfecter of the locomotive engine, was born in Northumberland, 1781. At the age of 14, he joined his father in his work as fireman in a colliery, where, by a close attention to all he saw and a constant study of every piece of mechanism that came in his way, he acquired a large amount of sound practical knowledge; while by mending boots, clothes and cleaning clocks he was enabled to add a trifle to his weekly earnings.

In 1812 he was appointed engineer to the colliery, at a salary of $500 a year. Soon after this he built his first traveling engine to draw the wagons along the tramway, which, though clumsy and weak in power, was immensely superior to any engine then in use. The following year he constructed a second, as superior to his first as that had been to all others before it.

From this time improvement followed on improvement in rapid succession, not only in the form of the locomotive, but in the rails and in every department to which steam was applicable, till, from mere tramways, the whole beautiful system of railway locomotion, with all its complications of stations, signals, tenders, and carriages, was at last completed by the opening of the Liverpool and Manchester railway in 1830.

From that time the name of Stephenson became one of the most popular among men of science in Europe. In 1845 he retired from all railway undertakings and devoted his time to his collieries and other sources of business and, after having been instrumental in establishing all the foreign and home lines, he died in 1848, leaving his fortune and his fame to his only son, Robert.

References.—Smiles' *Lives of the Engineers*, and his *Life of George Stephenson;* Allen's *Biographies of Working Men;* Lewis' *Heroes of Science.*

Stepniak (*styep-nyäk'*), pseudonym of Sergius Michaelevitch Kravtchinski, Russian revolutionary leader and writer, born, 1841. Among his works were: *Underground Russia; Russia Under the Tzars; Nihilism as It Is; King Stork and King Log.* He was run over by a train in a London suburb, and killed, 1895.

Sternberg, George Miller, American physician, surgeon-general of the United States, 1893-1902, was born at Hartwick seminary, Otsego county, N. Y., 1838. He graduated at the College of Physicians and Surgeons, New York, 1860; LL. D., Michigan, 1894; and was a member of many medical societies and president, 1898, of the American Medical Association. Died, 1915. Author: *Photo-Micrographs, and How to Make Them; Bacteria;* and many government reports, etc.

Sterne, Laurence, British novelist, was born at Clonmel, Ireland, 1713. He studied at Cambridge and became a clergyman. In 1759 he wrote the first two volumes of the *Life and Opinions of Tristram Shandy.* The rest of the work, which reached nine volumes, was written at Coxwold. *The Sentimental Journey Through France and Italy,* published in 1768, was the result of a tour through those countries in 1765. Died, 1768.

Steuart, William Mott, statistician, was born at Corpus Christi, Texas, 1861; graduated, LL.B., LL.B., Columbian (now George Washington) university 1884, LL.M., 1885. Admitted to bar, 1884; practiced in D. C., Md., and Detroit; became connected with Census of Manufactures, 1880, chief of division, 1890 and 1900, chief statistician for manufactures, since 1902-17, assistant director of the census, 1919-21, and director since 1921, Bureau of Census. Supervised the canvass and preparation of reports of various censuses.

Steuben, Frederic William Augustus, Baron, general in the American revolutionary army, was born at Magdeburg, Prussia, 1730. He came to America in 1778 and offered his services to Washington, who gladly accepted them during the dark days of Valley Forge. He was appointed inspector-general; remodeled the army; took part in the siege of Yorktown. Congress in 1790 voted him $2,400 yearly and a township of land near Utica, N. Y., where he died, 1794.

Stevens, John F., American civil engineer, was born at West Gardiner, Maine, 1853. He was assistant engineer Spokane Falls and Northern Railway, 1889; assistant chief engineer, second vice-president, 1904-05, Chicago, Rock Island and Pacific Railway Company; chief engineer of Panama Canal, 1905-07; chairman of isthmian canal commission, 1907; and vice-president of New York, New Haven and Hartford Railroad, in charge of operation, beginning 1907.

Stevens, Thaddeus, American statesman, was born at Peacham, Vt., 1792. He graduated in 1814 at Dartmouth College. He served in congress, 1849-53 and 1859-68, and meanwhile rose to a prominent position at the bar. He took an active part in the unsuccessful impeachment of President Johnson. Died at Washington, 1868.

Stevenson, Adlai Ewing, American lawyer and politician, was born in Kentucky, 1835. He was educated at Centre College, Kentucky; admitted to the bar of Illinois in 1859. Member of congress, 1875-77 and 1879-81. He was vice-president of the United States, 1893-97. After his term as vice-president he was appointed, 1897, a member of the commission to Europe to try to secure international bimetallism. Died, 1914.

Stevenson, Robert, Scottish engineer, was born at Glasgow, 1772. In 1796 he became engineer and inspector of lighthouses, and, during his forty-seven years' tenure of that office planned and constructed twenty-three lighthouses. He built the Britannia tubular bridge over Menai strait, Victoria tubular bridge near Montreal, etc. Died, 1850.

Stevenson, Robert Louis Balfour, Scottish novelist and essayist, born at Edinburgh, 1850. He was educated at Edinburgh University, and in 1875 was admitted to the bar; but soon abandoned law for the profession of letters. In 1878 appeared his first book, *An Inland Voyage*, quickly followed by *Travels With a Donkey, Virginibus Puerisque, Familiar Studies,* and *Treasure Island.* As a writer of adventure and romance, he established himself permanently in the public favor with *Kidnapped, The Master of Ballantrae, Dr. Jekyll and Mr. Hyde,* etc. His versatility in letters was further revealed in his charming, *A Child's Garden of Verse, Ballads, Memories and Portraits,* and *A Footnote to History.* In 1890 failing health induced him to make his home in the island of Samoa, where he died and was buried, 1894.

Stewart, Alexander Turney, American merchant and capitalist, was born at Lisburn near Belfast, Ireland, 1800. He settled in New York in 1823. He was a leader in the building of street railways and other municipal improvements. Died, 1876.

Stewart, Balfour, British physicist, was born at Edinburgh, 1828. He became director of Kew observatory, 1859, and professor of physics at Owens College, Manchester, 1870. He made his first reputation by his work on *Radiant Heat* in 1858. With Professor Tait, he published *The Unseen Universe* in 1875. He died, 1887.

Stewart, Dugald, eminent Scottish philosopher and writer, was born, in 1753, at Edinburgh. In 1780 he began to receive pupils into his house, and many young noblemen, who afterward became celebrated, received their knowledge under his roof. In 1792 he published the first volume of the *Philosophy of the Human Mind.* Among his other works are: *Outlines of Moral Philosophy; Philosophical Essays.* He died, 1828.

Stimson, Henry Lewis, American lawyer and statesman, was born in New York City, 1867. He was educated at Yale and at Harvard and entered the practice of law. He was secretary of war under Taft. He represented the President in Nicaragua in 1927. Governor-general of the Philippines 1927-8. In 1929 he became secretary of state under Hoover. Author: *American Policy in Nicaragua.*

Still, Andrew Taylor, osteopath: founder of new school of therapeutics. Born, Aug. 6, 1828; died, Dec. 12, 1917.

Stirling, James Hutchison, Scottish philosophical writer, was born at Glasgow, 1820, and was educated at the University of Glasgow, and in France and Germany; LL.D., Edinburgh and Glasgow. He was the first appointed Gifford lecturer at the University of Edinburgh, 1888-90. Author: *The Secret of Hegel; The Community of Property; Thomas Carlyle's Counsels; Darwinianism; What Is Thought?* etc. Died, 1909.

Stockton, Francis Richard, American novelist, was born at Philadelphia, 1834. He was an engraver and journalist, became assistant editor of *St. Nicholas,* and first attracted notice by his stories for children. He is now best known as author of *Rudder Grange; The Lady, or the Tiger; The Squirrel Inn; The Hundredth Man; Personally Conducted,* etc. He died at Washington, D. C., 1902.

Stoddard, Richard Henry, American poet, critic, and man of letters, was born at Hingham, Mass., 1825. His chief published volumes embrace; *The Book of the East; Poems; The Lion's Cub and Other Verse; The King's Bell.* He also edited *The Bric-à-Brac,* and the *Sans Souci* series. Died in New York, 1903.

Stokes, George Gabriel, British mathematician and natural philosopher, was born at Skreen, Ireland, 1819. He graduated at Cambridge in 1841; and was elected in 1849 to fill the Lucasian chair of mathematics at Cambridge. In 1854 he was appointed secretary to the Royal Society, of which he became president in 1885. To mathematicians and natural philosophers he is known by a number of admirable papers in the *Cambridge Philosophical Transactions.* He was made baronet, 1889. Died at Cambridge, 1903.

Stolypin (*sto-lī'pin*), **Peter Arkadievitch,** Russian prime minister, was born in 1863. He graduated at the University of St. Petersburg, in 1884. He served as marshal of the district nobility; was president of the arbitration board; justice of the peace. He was appointed vice-governor of Grodno in 1902. When Goremykin resigned in 1906, Stolypin succeeded him as premier, and was thanked by the czar for his services and appointed a member of the council of the empire, January, 1907. He suppressed the second duma. Assassinated, 1911.

Stone, Lucy Blackwell, American reformer and advocate of woman's rights, was born at West Brookfield, Mass., 1818. She graduated at Oberlin College in 1847. She aided in organizing, in 1850, the first national woman's rights convention, at Worcester, Mass., and was always zealous in that cause. She died at Dorchester, Mass., 1893.

Stone, Melville Elijah, American journalist, general manager of the associated press, was born at Hudson, Ill., 1848; was editor of several Chicago dailies, 1871-74; and established, with a partner, the *Chicago Daily News,* in 1875. Stone's health failing in 1888, he sold out his entire interest and spent three years in Europe; was general manager of the associated press, 1893-1921; counselor, 1921 until his death in 1929.

Stone, William Joel, lawyer, United States senator, was born in Madison county, Kentucky, 1848. He graduated at the University of Missouri, and was admitted to bar, 1869; governor of Missouri, 1893-97; member and vice-chairman of the democratic national committee, 1896-1904; and was elected United States senator for terms 1903-09 and 1909-15. Died, 1918.

Storey, Moorfield, American lawyer, was born at Roxbury, Mass., 1845. He graduated at Harvard, 1866; studied at the Harvard Law School; and was admitted to the bar, 1869; overseer of Harvard College, 1877-78 and 1892-1910; and president of the American bar association, 1896. Author: *Life of Charles Sumner; Politics as a Duty and as a Career; The American Legislature; A Year's Legislation; The Government of Cities.* Died, 1929.

Story, Emma Eames, American operatic prima donna, was born in Shanghai, China, 1867, of American parentage. Her childhood was spent in Boston, where she studied music, and sang in choirs and concerts. She subsequently studied in Paris, and mader her début at the Paris grand opera house, 1889. She has sung in regular opera seasons in London and the United States. She was made an officer of the French academy and received an English jubilee medal. Has lived in Paris since 1923.

Story, Joseph, distinguished American jurist and legal writer, was born at Marblehead, Mass., in 1779. He graduated at Harvard College in 1798; was an associate justice of the United States supreme court, 1811-45. He was professor of law at Harvard, 1829-45, and attained unusual eminence as a law lecturer and writer. Died, 1845.

Stowe, Harriet Elizabeth Beecher, was born at Litchfield, Conn., 1811. She married Professor Calvin Ellis Stowe in 1836. In 1851 she commenced in *The National Era,* an antislavery paper at Washington, D. C., a serial tale entitled *Uncle Tom's Cabin.* In 1856 she published *Dred, a Tale of the Great Dismal Swamp,* followed in 1859 by *The Minister's Wooing,* a story of New England life in the eighteenth century. In 1868-70 she was joint ecitor of *Hearth and Home.* Died, 1896.

Strabo (*strā'bō*), noted Greek geographer, was born at Amasia, in Pontus, about 63 B. C. He does not appear to have followed any professional calling, but to have spent his life in travel and study. He died about 21 A. D.

Stradivari (*strä'dē-vä're*) or **Stradivarius, Antonio,** celebrated Italian violin maker, was born at Cremona, Italy, in 1644. His instruments are known for their finish and fine tone. He was the first to finish them neatly on the inside. They are carefully preserved by those possessing them, and bring great prices, ranging from $1,000 to $15,000. He died at Cremona, 1737.

Strafford, Thomas Wentworth, Earl of, English statesman, was born in London, 1593. In 1622 he felt compelled to side with the king, and strove to put down with a firm hand all opposition to the royal authority. After the meeting of the long parliament he was impeached for high treason, and as a result was beheaded on Tower hill, 1641.

Strathcona (*strath-kō'na*), **Baron, Donald Alexander Smith,** high commissioner for Canada, 1896-1914 was born in Scotland, 1820. He was educated in Scotland; Hon. LL.D., Cambridge. He was special commissioner during first rebellion in Red River settlements, 1869-70; member of parliament for Selkirk in Dominion house of commons, 1871-72, 1874, and 1878; for Montreal West, 1877-96. He was governor of the Hudson Bay Company, director of the St. Paul, Minneapolis and Manitoba Railway. He was also chancellor of McGill University, and was lord rector of Aberdeen University, 1899. He was raised to the peerage in 1897. Died, 1914.

Straus (*strous*), **Oscar Solomon,** American merchant, diplomat and publicist, was born at Otterberg, Germany, 1850. Graduated at Columbia University, 1871; LL.B. He practiced law, 1872-

81; entered the mercantile life as a member of L. Straus and Sons, importers of pottery and glassware; was United States minister to Turkey, 1887-89, 1898-1901; appointed, 1902, by president Roosevelt, a member of the permanent court of arbitration at The Hague; and was secretary of commerce and labor, 1906-09. Author: *The Origin of Republican Form of Government in the United States; United States Doctrine of Citizenship; Our Diplomacy with Reference to our Foreign Service*, etc. Died, 1926.

Strauss, Johann, Austrian composer and conductor, was born at Vienna, 1825. In 1872 he conducted an orchestra of 1,000 performers at the Boston peace jubilee; he was for a time also musical director to the emperor Joseph at Vienna. His most famous waltz pieces are *Wiener Blut, Künstlerleben,* and *An der schönen blauen Donau.* Of his operettas, the following are best known: *Cagliostra; La Tsigane; Die Fledermaus; Eine Nacht in Venedig.* Died, 1899.

Strauss, Richard, German composer, conductor at the royal opera house, Berlin, was born, 1864, at Munich. From 1889 to 1894 he was chapelmaster, with Eduard Lassen, at Weimar, later conductor at the Munich opera house; and since 1898 conductor of the royal opera, Berlin. Works: *Salome; Tod und Verklarung; Don Juan; Till Eulenspiegel; Don Quixote,* etc. He was made chevalier of the legion of honor, 1907.

Strong, Charles Augustus, American psychologist, educator, was born at Haverhill, Mass., 1862. He graduated at Harvard, 1885; lecturer in psychology, 1895-1903, and professor of psychology, 1903-1910, Columbia University. Author: *Why the Mind Has a Body,* etc.

Stuart, Gilbert Charles, American portrait painter, was born at Narragansett, R. I., 1755. In 1778 he made his way to London, where his talent was recognized by Benjamin West, president of the Royal Academy, who took him into his family, and whose full length portrait he painted for the national gallery. In 1792, in the fullness of his powers and fame, he returned to America and painted portraits of Washington, Jefferson and many of the distinguished men of the period. Died at Boston, Mass., 1828.

Stuart, James Ewell Brown, confederate cavalry general, was born in Patrick county, Virginia, 1833. When the Civil War broke out, he held a captaincy in the Union army, but resigned this to enter the confederate service. He was mortally woundedat Ashland, anddied, 1864, at Richmond, Va.

Stubbs, William, English historian, was born Knaresborough, England, 1825. In 1866 he was appointed professor of modern history at Oxford, changed to the see of Oxford in 1889. He edited a large number of ancient histories and chronicles. His historical works include *Constitutional History of England; The Early Plantagenets.* Died, 1901.

Stuyvesant (*sti've-sant*)**, Peter,** director-general of the New Netherlands, 1647-64, and last Dutch governor of New York, was born in Holland, 1592. Forced to surrender the city of New York to the English, 1664. He died in 1682.

Suchet (*sü'shē'*)**, Louis Gabriel,** duke of Albufera, celebrated French marshal, was born in 1770 at Lyons. In 1808 he was appointed to the command of the French forces in the southeast of Spain, and this command he retained until the termination of the war. When Napoleon returned from Elba, he intrusted Suchet with the defense of the departments bordering on the frontier of Savoy. Died, 1826.

Sudermann (*zōō'dĕr-măn*)**, Herman,** German dramatist and novelist, was born in Matziken, Prussia, 1857. He published a series of tales of which *Frau Sorge, Der Katzensteg,* and *Es War* are the most impressive. The drama *Sodom's Ende* was produced in 1890, and was followed by *Die Heimath.* In 1906 *Das Blümerbott* was produced in Berlin, and *Rosen* at Vienna in 1907. Other plays are *Es Leben das Leben, Stein unter Steinen, Die Raschoffs,* etc. Died, 1928.

Sue (*sü*)**, Marie-Joseph Eugene,** French novelist, was born in Paris, 1804. In 1850 he was elected to the legislative assembly, as one of the deputies for the department of Seine. His writings extend over many volumes. His reputation as a writer rests mainly on *The Wandering Jew* and *The Mysteries of Paris.* He died in Savoy, in exile, 1857.

Sulla, Lucius Cornelius, Roman general and dictator, was born, 138 B. C. After holding the dictatorship for about two years, he resigned his office in 79 B. C., and retired to an estate he possessed at Puteoli, where he died in the following year.

Sullivan, Sir Arthur Seymour, English composer, was born in London, 1842. He studied in London and at Leipzig, and in 1862 composed incidental music for *The Tempest; Pirates of Penzance; Patience; Iolanthe; The Mikado; The Yeomen of the Guard; The Gondoliers,* etc. He also wrote cantatas, overtures, oratorios, church music and ballads. He became a member of the legion of honor, 1878, and was knighted in 1883. Died, 1900.

Sully, James, English educator and philosophical writer, Grote professor of philosophy of mind and logic, University College, London, was born at Bridgewater, 1842. Wrote on psychology and pessimism. Died, 1923. Author *Sensation and Intuition; Pessimism; Illusions; Outlines of Psychology; Children's Ways; An Essay on Laughter,* etc.

Sully, Maximilien de Bethune, Duke of, French soldier and statesman, noted minister of Henry IV., of France, was born at Rosny, near Nantes, 1560. In 1601 he was sent on a confidential mission to Queen Elisabeth of England. He was created duke of Sully in 1606, and was made marshal of France in 1634. He died at Villebon, near Charters, 1641.

Sully, Thomas, American painter, was born in Lincolnshire, England, in 1783. As a portrait painter he enjoyed a great reputation, Jefferson, Lafayette, Madison, Jackson, and many other of the most illustrious personages of the time being among his sitters. Died, 1872.

Sumner, Charles (1811-74), American statesman, was born in Boston and educated at Harvard. He studied law and was admitted to the bar in 1834. He entered the U. S. Senate in 1851, retaining his seat until his death. He was prominent in debate, especially on the repeal of the Missouri Compromise and on the contest in Kansas. His speech on "The Crime Against Kansas" incensed Preston S. Brooks of South Carolina, who assaulted Sumner at his desk. Author: *White Slavery in the Barbary States; Orations and Speeches,* etc.

Sumner, William Graham (1840-1910), American educator, was born in Paterson, N. J. He was educated at Yale. He was professor of political and social science at Yale, from 1872 to his death. Author: *A History of American Currency; Robert Morris,* etc.

Sunday, William ("Billy") Ashley, American evangelist, was born in Iowa in 1863. He was educated in the public schools. He was a successful baseball player in the National League, 1883-90. He was assistant secretary of the Y. M. C. A., Chicago, 1891-95. He has been an evangelist since 1896. Ordained Presbyterian minister, 1903.

Sutherland, George, lawyer, United States senator, was born in Buckinghamshire, England, 1862, attended the law department of the University of Michigan, 1882-3, and was admitted to the bar, 1883, was a member of congress, Utah, 1901-03; and was elected to the United States senate for the terms, 1905-11, 1911-17; appointed associate justice of Supreme Court of U. S., 1922.

Suvaroff (*sōō-vä'rōf*)**, Prince Alexei,** celebrated Russian field marshal, was born in 1729, at Suskoi, in Finland. In the war against the Turks, from 1787 to 1790, he gained the battle of Rymnik, took Ismail by storm, and obtained other important advantages. When Russia joined the continental coalition, in 1799, he was placed at the head of the combined army in Italy, and, after several sanguinary battles, succeeded in wresting that country from the French. Died, 1800.

Swain, Joseph, American educator, president of Swarthmore College, 1902-1921, was born at Pendleton, Ind., 1857. He graduated at Indiana University, 1883; A.M., LL.D.; professor of mathematics in Leland Stanford Jr. University 1891-93; and president of Indiana University, 1893-1902. Emeritus president, Swarthmore College, 1921. Member of the national council of education, national council of religious education, etc.

Sweatman, Arthur, archbishop of Toronto, and primate of Canada since 1907, was born in 1834. He was graduated at Christ's College, Cambridge; rector of Grace church, Brantford, Ontario, 1872-76; secretary of the diocesan synod, 1872-79; secretary to Canadian house of bishops, 1873-79; archdeacon of Brant and rector of Woodstock, Ontario, 1876-79; and bishop of Toronto, 1897 1907; primate of all Canada 1907 until he died 1909.

Swedenborg (*swē'den-borg*)**, Emanuel,** Swedish philosopher and mystic, the founder of the New church, was born in 1688, at Stockholm. In 1743 he claimed a divine commission to disclose the internal or spiritual sense of scripture by the correspondence existing between natural and spiritual things, and thereby to make known its true doctrines. He also stated that for the purpose of his mission he was intromitted as to his soul into heaven, hell, and the intermediate state between them. Of these he treats in *Heaven and Its Wonders, The Last Judgment,* and *The Earth in the Universe.* Died, 1772.

Sweet, Henry, English philologist, was born in London, 1845. Author: and Editor *Student's Dictionary of Anglo-Saxon, Primer of Spoken English, History of English Sounds, Phonetics,* and *The Practical Study of Language.* Died, 1912.

Swift, Charles Henry (1872——), packer, educated Chicago Business School, Vice-President Director, Swift & Company, Director, Libby, McNeil & Libby, etc. During World War was made Commanding Major U. S. R., 1917, and served actively in the Ordnance Department at Washington.

Swift, Jonathan, British satirist, was born in Dublin, of English parents, 1667. He was educated at Trinity College, Dublin, and then removed to London, and was admitted into the house of Sir William Temple. Before 1700 he had written the most powerful satirical work of the eighteenth century, the *Tale of a Tub,* in 1704. He then wrote papers for the *London Examiner, The Conduct of the Allies,* and innumerable pasquinades against the whigs, and became a formidable power in the state. His *Drapier Letters,* 1724, compelled the government to abandon a scheme for supplying Ireland with copper coinage. The triumphant author made his last visit to England in 1726, and published his *Gulliver's Travels,* the most popular of all his works. Died, 1745.

Swinburne, Algernon Charles, English poet and prose writer, was born in London, 1837. He was educated at Balliol College, Oxford. His first productions were the plays, *Queen Mother* and *Rosamond,* which were followed by two tragedies; *Poems and Ballads; A Song of Italy;* essay on *William Blake;* and *Songs Before Sunrise.* His subsequent works include *Bothwell, a Tragedy; Songs of Two Nations; Century of Roundels; A Study of Victor Hugo; Studies in Prose and Poetry; The Duke of Gardia,* etc. Died, 1909.

Sybel (*zē'bel*)**, Heinrich von,** German historian, born at Düsseldorf, 1817. He studied at Berlin under Ranke; became professor of history at Bonn, 1844; and in 1875 was made director of the state archives at Berlin. Then came his great work, *Geschichte der Revolutionszeit,* 1789-95, a history of the French revolution based upon official documentary evidence. He died at Marburg, 1895.

Symonds (*si'munz*)**, John Addington,** an English man of letters, was born at Bristol, England, 1840. He was graduated at Oxford. His chief writings are an *Introduction to the Study of Dante; Studies of the Greek Poets; Sketches in Italy and Greece; The Renaissance in Italy; Italian Byways; Shakespeare's Predecessors in the English Drama. The Renaissance in Italy* is his chief work. He died at Rome, 1893.

Synge, John Millington, Irish dramatist, born near Dublin in 1871. His efforts to become a literary critic in Paris were halted by William Butler Yeats, who persuaded him to return to Ireland and study his native folk-lore. For the Abbey theatre in Dublin he wrote *The Playboy of the Western World*—one of the finest comedies of a hundred years— *Riders to the Sea, The Tinker's Wedding,* and *The Well of the Saints.* Died, 1909.

Tacitus (*tas'-i-tus*)**, Gaius Cornelius** (55-120 A. D.) Roman historian, orator and author, was appointed consul of Rome and became an intimate friend of Pliny. His works are *Life of Agricola, Germania.*

Taft, Lorado, sculptor, born in Elmwood, Ill., 1860, a graduate of University of Illinois, studied at Ecole des Beaux Arts, Paris, L.H.D., Northwestern University, Instructor in Chicago Art Institute, professional lecturer on art, University of Chicago; non-resident professor of art, University of Illinois since 1909. Author: *The History of American Sculpture; Recent Tendencies in Sculpture.*

Taft, William Howard, twenty-seventh president of the United States, born at Cincinnati, Ohio, 1857; graduated at Yale, 1878; law school, Cincinnati College, 1880; solicitor general of the United States, 1890-92; first civil governor of the Philippines, 1901-04; secretary of war, 1904-08; president of the United States, 1909-13; Kent professor of law, Yale, 1913-21. Chief Justice U. S. Supreme Court, 1921-1930. Died, 1930.

Tagore, Sir Rabindranath, Hindu poet, philosopher and educator, was born at Calcutta, 1860. Completed education in Europe. Later founded a university of Bengal. His poems in Bengali and their English versions possess remarkable charm and spiritual beauty. Winner of the Nobel prize for literature in 1913. Knighted by King George in 1915. Author: *Crescent Moon; The Fugitive,* etc.

Taine, Hippolyte Adolphe, French historian and critic, was born at Vouziers, France, 1828. One of his first essays was crowned by the French academy. Among his most important works is his *History of English Literature,* a clear and valuable criticism, written in brilliant style; 1878 was elected to membership, French Academy. Died 1893.

Tait, Peter Guthrie, British mathematician and physicist, was born in 1831. He was educated at Edinburgh University, and St. Peter's College, Cambridge; was elected professor of natural philosophy at Edinburgh, 1860. He resigned his chair early in 1901, and died the same year.

Takahira (*tä'kä-hē'rä*)**, Kogoro,** Japanese diplomat, was born in Japan, 1854. He was educated in Tokyo, and entered the foreign office as student attache, 1876; acting consul-general, 1888-89 consul-general at New York, 1892; envoy extraordinary and minister plenipotentiary to Italy, 1894-95 and 1906-07, to Austria and Switzerland, 1896-99; and envoy extraordinary and minister plenipotentiary to the United States, 1900-06, and 1907-09. Made by Imperial nomination a member of House of Peers, 1917. Died, 1926.

Talleyrand-Perigord (*tä'le'rän'pä'rē'gōr'*)**, Charles Maurice, Prince de,** was born in Paris, 1754. As bishop of Auntun he was a member of the States-general which was convoked in 1789. The progress of the revolution led to his retirement to England and afterward to America; but on the fall of Robespierre he returned to Paris, and, through the influence of Madame de Staël with Barras, was appointed foreign minister. In return for his services he was made grand chamberlain, and prince of Bénévento. After the fall of Napoleon he became for a time prime minister under Louis XVIII., but ceased to hold this position subsequent to the battle of Waterloo. Died, 1838.

Talmadge, Norma (1898——), motion picture actress, stars in emotional, humorous and dramatic parts. Played since sixteen years old, successively with the Vitagraph, Triangle and Select companies. Noted for *The Isle of Conquest, The Moth.*

Talmage, Thomas De Witt (1832-1902), American Presbyterian minister and orator, edited for several years *The Christian at Work* and *Christian*

Herald. Traveled extensively, especially through Palestine. Pastor First Presbyterian Church, Washington.

Tamerlane, or **Timur** (*tē-mōōr'*), oriental conqueror, was born at Sebz, near Samarkand, about 1336. His whole career was one of conquest, though he was frequently interrupted by revolts in his own dominions, and in the provinces he had brought under his rule. He was preparing for the conquest of China, but died on his march to that country, 1405.

Taney (*tô'ni*), **Roger Brooke,** American jurist, was born in Calvert county, Md., 1777. He was graduated at Dickinson College; he succeeded John Marshall as chief-justice of the United States supreme court in 1836. His most famous decision was that in the Dred Scott case, in 1857. He died at Washington, D. C., 1864.

Tarbell, Ida Minerva, American author and editor, was born in Erie county, Pa., 1857. She was graduated from Allegheny College; editor on staff, and associate editor of *McClure's Magazine*, 1894-1906, and associate editor of the *American Magazine* beginning 1906. Author: *Early Life of Abraham Lincoln*, with J. McCan Davis; *History of the Standard Oil Company*.

Tarkington, Newton Booth, American novelist, was born in Indianapolis, Ind., 1869. He was graduated at Princeton, 1893; A.M., 1899. Author: *The Gentleman From Indiana; Monsieur Beaucaire; The Two Vanrevels; The Conquest of Canaan; His Own People*, etc.

Tarr, Ralph Stockman, American educator, was born at Gloucester, Mass., 1864. He was graduated at Lawrence scientific school, Harvard, 1891; assistant professor of geology at Harvard, 1892-97; professor of physical geography, Cornell University. Author: *Economic Geology of United States; Elementary Physical Geography; New Physical Geography*. Died, 1912.

Taschereau (*tăsh'rō'*), **Sir Henri Elzear,** Canadian jurist, chief-justice of the supreme court of Canada, 1902-06, was born in 1836. He was admitted to the Quebec bar, 1857; was appointed a judge of the Quebec superior court, 1871; judge of the supreme court of Canada, 1878. Died, 1911.

Tasso (*tăs'sō*), **Torquato,** Italian poet, was born in Sorrento, 1544. In 1565 he entered the service of cardinal Luigi d'Este, and was invited to the court of the latter's brother, Alfonso, duke of Ferrara. While there he wrote his pastoral drama, *Aminta*, and in 1575 finished his great epic, *Jerusalem Delivered*, describing the first crusade. In 1594 Pope Clement VIII. summoned him to Rome to receive a laurel crown, but he died soon after his arrival, 1595.

Taylor, Charles, H., American journalist, editor and manager of the *Boston Daily Globe* beginning 1873, was born in Boston, Mass., 1846; member of the Massachusetts legislature, 1872. He served during the Civil War in the 38th Massachusetts regiment, was wounded at Port Hudson, La., 1863; and brigadier-general of Governor Russell's staff, 1891-93. He long held a prominent place among American journalists and publicists. Died, 1921.

Taylor, Hannis, American lawyer, diplomat, was born in New Bern, N. C., 1851. He was educated at the University of North Carolina; LL.D.; professor of constitutional and international law, George Washington University, 1892-98, and was special counsel for the government of the United States before the Spanish treaty claims commission and before the Alaskan boundary commission. Died, 1922.

Taylor, James Bayard, American author and traveler, was born at Kennett Square, Pa., 1825. In 1862-63 he was connected with the embassy at St. Petersburg, and in 1874 he was in Iceland and Egypt. For several years he resided in Germany. He was appointed United States minister to Berlin in 1878, where he died the same year. He was an industrious worker and wrote many volumes. Some of his best travesties are in his *Echo Club*. Among the finest of his poems are *Bedouin Song, The Quaker Widow* and *The Old Pennsylvania Farmer*. His masterpiece is the translation of Goethe's *Faust*.

Taylor, James Monroe, American educator, professor of ethics and president of Vassar College beginning 1886, was born in Brooklyn, 1848. He was graduated at the University of Rochester, 1868; D.D.; LL.D. Author: *Psychology; New World and Old Gospel*, etc. Died, 1916.

Taylor, Jeremy, English divine, was born in Cambridge, England, 1613. He was graduated at Cambridge. He soon afterward became chaplain to Charles I., was rector of Uppingham, 1638-42. He removed to Ireland in 1657, and, after the restoration, was made bishop of Down and Connor. His chief works are: *Holy Living; Holy Dying*. Died, 1667.

Taylor, Robert Love, lawyer, United States senator, was born in Happy Valley, Tenn., 1850; was governor, 1887-91; practiced law at Chattanooga, 1891-96; again governor, 1897-99; and United States senator, 1907-12. Died, 1912.

Taylor, Zachary, American general, and twelfth president of the United States, was born in Orange county, Va., 1784. After defeating the Seminoles at Okechobee, in 1837, he was given the chief command in Florida in the following year. In 1846 he was intrusted with the command of the army which entered Mexico. There he won the battles of Palo Alto, Resaca de la Palma, and Buena Vista, and brought the campaign to a successful conclusion in 1847. In the following year he was nominated as whig candidate for the presidency, elected, and inaugurated in 1849. Died, 1850.

Tecumseh (*tē-kum'se*), famous Shawnee chief, was born on the Scioto river, Ohio, about 1775. In the war of 1812 he became an ally of the English, obtained the rank of brigadier-general in their service, and commanded the right wing in the battle of the Thames, in 1813, where he fell mortally wounded.

Tell, William, Swiss patriot, was born at Bürglen, near Altdorf, toward the close of the thirteenth century. His renown rests upon his resistance to the Austrians in 1307 and afterward. The story of Tell has been the subject of numerous poems and dramas. The most notable is the *Wilhelm Tell* of Schiller.

Temple, Sir William, English diplomat and writer, was born in London, 1628. He studied at Cambridge. His great diplomatic success was the triple alliance, in 1668, of England, Holland, and Sweden, against France. In 1677 he helped to bring about the marriage of the prince of Orange with the princess Mary. He twice refused the secretaryship of state offered him by Charles II., and gave the remainder of his days, after 1681, to letters and gardening. Died, 1699.

Teniers (*te-nērs'*), **David, the Younger,** celebrated Flemish painter, was born at Antwerp, 1610. He was the most popular of all the Flemish painters. He died at Brussels, 1690.

Tennyson, Alfred, English poet, was born in Somersby, Lincolnshire, England, 1809, of which parish his father was rector. He was educated at Louth grammar school and at Cambridge University. At Cambridge he gained the chancellor's medal by a poem in blank verse entitled *Timbuctoo;* but his literary career properly dates from 1830, in which year a volume appeared of *Poems, Chiefly Lyrical*. The publication, in 1842, of *Poems, by Alfred Tennyson*, in two volumes, raised him to the position of supremacy, which he continued to occupy until his death. In 1847 appeared *The Princess, a Medley*, and in 1850 *In Memoriam*. On the death of Wordsworth, in 1850, Tennyson succeeded him as poet laureate, in which capacity he issued, in 1852, his *Ode on the Death of the Duke of Wellington*. In 1855 appeared *Maud, and other Poems*. The *Idylls of the King* at once took rank as one of the noblest poems in the language. It was followed in 1864 by a volume containing *Enoch Arden; Aylmer's Field; Tithonus*, and a few other poems. He lived for the most part a retired life. In 1884 he was made an hereditary peer, with the title of Baron Tennyson. Died, 1892.

Terence (*ter'ens*) or **Terentius, Publius,** Latin comic writer, is believed to have been a native of Carthage, and to have been born about 185 B. C. By birth or purchase he became the slave of the Roman senator P. Terentius Lucanus, who educated him highly, and finally manumitted him. Six comedies are extant under the name of Terence, which are, perhaps, all he produced. He died about 159 B. C.

Terhune (*tĕr-hūn'*), **Mary Virginia,** "Marion Harland," was born in Amelia county, Va., 1831. In 1854 she published *Alone*, which at once created a sensation; and in 1855 she produced *The Hidden Path*. In 1857 her *Moss-Side* appeared, and this was followed in rapid succession by *Nemesis; Husks; Husbands and Homes; Sunnybank and Christmas Holly*. Died, 1922.

Terry, Ellen Alicia (Mrs. James Carew), English actress, was born at Coventry, England, 1848, and made her first appearance on the stage with Charles Kean's Shakespearean revivals, in 1858; reappeared on the stage in 1867 for the first time with Henry Irving. In 1864 she married the noted painter, G. F. Watts, and in 1868 E. A. Wardell. In 1878 she was again associated with Irving, with whom she continued throughout the greater part of his subsequent career. She produced Ibsen's *The Vikings* in 1903, and Shakespearean plays with her own company at the Imperial theater. Died, 1928.

Tesla (*tes'lă*), **Nikola,** American electrical inventor, was born in Smiljan, Austria-Hungary, 1857. He came to the United States in 1884, and for several years was employed at Edison's laboratory, near Orange, N. J. He invented many methods and appliances for the use of electricity, among them the production of efficient light from lamps without filaments, and the production and transmission of power and intelligence without wires. In 1898 he announced the discovery of, and in 1900 patented, a method of transmitting electrical energy without wires. Chiefly engaged since 1903 in development of system of telegraphy and telephony.

Tetrazzini (*Tet-trah-tzee'nee*), **Luisa,** was first brought to public notice by the management of the Tivoli Opera House, in San Francisco. Her first concert tour, through twenty of the largest cities, was a series of ovations. She met with an almost unparalleled reception during her engagements at the Manhattan and Metropolitan Opera Houses in New York. Her voice is a soprano of most remarkable beauty, purity and range. Her colorature work is extremely brilliant. She now lives in Italy.

Thackeray, William Makepeace, eminent English novelist, was born at Calcutta, India, 1811. His first profession was that of an artist; but he soon abandoned art for literature. He afterward contributed largely to *Punch*. In 1846-48 *Vanity Fair* appeared, and Thackeray's reputation was at once established. In 1849 *Pendennis* appeared; in 1852, *The History of Henry Esmond;* in 1855, *The Newcomes*. In 1851 he delivered and published his *Lectures on the English Humorists of the Eighteenth Century* and in 1856 his *Lectures on the Four Georges*. Died, 1863.

Thales (*thā'lēz*), early Greek philosopher, founder of the Ionic, or physical school of philosophy, and one of the seven wise men, was a native of Miletus, in Asia Minor, and flourished during the first half of the sixth century B. C. He is regarded by some as the first Greek that speculated on the constitution of the universe.

Themistocles (*thē-mis'tō-klēz*), Athenian statesman, was born at Athens, about 514 B. C., fought at Salamis, and devoted the succeeding years to the upbuilding of the Athenian navy. In 481 B. C. he was chief archon, and added greatly to the naval power of Athens. He later rebuilt the walls and fortified the Piræus. Being in danger of arrest on a charge of treason, in concert with Pausanias, he fled to Asia. He lived securely in Magnesia until his death, 449 B. C.

Theocritus (*thē-ok'ri-tus*), celebrated Greek poet, flourished in the time of Ptolemy Philadelphus, 285 to 247 B.C. The compositions of Theocritus bear the name of *Idyls*, of which there are thirty extant, though the genuineness of some of them is doubtful.

Theodoric (*thē-od'ō-rik*) **the Great,** founder of the monarchy of the Ostro, or East Goths, son of Theodemir, the Ostrogothic king of Pannonia, was born about 454. He was the most powerful of the Gothic kings, with an empire embracing Italy, Sicily, and Dalmatia, besides German possessions. As a ruler he proved himself as wise as he was strong; became in after years one of the great heroes of German legend, and figures in the *Nibelungenlied*. Died, 526.

Thiers (*tyâr*), **Louis Adolphe,** French statesman and historian, and president of the French republic, was born in Marseilles, 1797. Between the years 1823-27 appeared his *History of the French Revolution*, a work which stamped him as a historian of the first order. In 1871 he succeeded in effecting peace although practically on the terms dictated by Germany, and, in the same year, was elected president of the new republic. In 1873 after an adverse vote of the legislative body, he resigned, and was succeeded by Marshal MacMahon. Died, 1877.

Thomas, Ambroise, French composer, was born at Metz, 1811. He studied at the Paris conservatoire, 1828-32. His first success in opera was with *La Double Echelle*, in 1837, followed by *Mina, Betty, Le Caïd, Le Songe d'une Nuit d'Été, Le Carnaval de Venise*. He became a member of the French institute in 1851, professor of composition, 1852, director of the conservatoire, 1871, and received the grand cross of the legion of honor, 1880. Died, 1896.

Thomas, Augustus, American playwright, was born at St. Louis, Mo., 1859. He was educated in the public schools there; studied law two years. Author: *Alabama; Arizona; The Man Upstairs; The Earl of Pawtucket; Mrs. Leffingwell's Boots; The Embassy Ball; The Witching Hour*, etc.

Thomas, a Becket. See **Becket, Thomas a.**

Thomas, George Henry, American general, was born in Southampton county, Va., 1816. He was graduated at West Point. He began his career in the Civil War as cavalry colonel in the Shenandoah valley. In 1861 he was appointed brigadier-general of volunteers, and at Chickamauga rendered the victory a barren one for the confederates. In October, 1863, he was given the command of the army of the Cumberland, and in November captured Mission Ridge; in December he won the battle of Nashville, and received the thanks of congress. Died, 1870.

Thomas a Kempis. See **Kempis, Thomas a.**

Thomas, Martha Carey, American educator, was born in Baltimore in 1857. She graduated at Cornell University, 1877. She studied at Johns Hopkins and at Leipzig and received the Ph.D. degree there in 1883. She was professor of English and dean at Bryn Mawr College, 1885-95; president, 1897-1922; since, president emeritus. Author: *Sir Gawaine and the Green Knight; Education of Women; The College*, etc.

Thompson, Ernest Seton. See **Seton, Ernest Thompson.**

Thompson, Launt, American sculptor, was born in Ireland, 1833, but was brought up in Albany, N. Y. A statue of General Winfield Scott, a colossal statue of Napoleon, and a statue of the first president of Yale, on the college grounds, are some of his larger works. He died at Middletown, N. Y., 1894.

Thompson, William Oxley, American educator, president of Ohio State University, was born at Cambridge, Ohio, 1855. He was graduated from Muskingum College, 1878; LL.D. He was ordained to the Presbyterian ministry, 1882; was president of Miami University, 1891-99, and was president of Ohio State University, 1899-1925, president emeritus, 1925.

Thomson, Elihu, American electrician, was born in Manchester, England, 1853. He was graduated from Central high school, Philadelphia, 1870; Ph.D., Tufts College. He is the inventor of

electric welding, which bears his name, and many other important devices in electric lighting, power, etc.

Thomson, James, British poet, was born in Roxburgshire, Scotland, 1700. He studied six years at Edinburgh. His fame rests upon his poems, *The Seasons*, the first of which, *Winter*, appeared in 1726, followed by *Summer*, *Spring*, and *Autumn*. He died near Richmond, England, 1748.

Thomson, Joseph John, English physicist, professor of experimental physics at Cambridge University, England, 1884-1918, was born near Manchester, 1856. In 1899 he accomplished the important achievement of dividing the hydrogen atom.

Thomson, Sir William. See **Kelvin, Lord.**

Thoreau (*thō'rō, thō-rō'*), **Henry David,** American naturalist, friend of Emerson, and a member of the transcendental school of New England, was born at Concord, Mass., 1817. He was graduated at Harvard College in 1837, and became a surveyor; lived the simplest of lives in the study of nature, and in writing. He gave an account of his experiences in perhaps his finest book, *Walden*, published in 1854. Others were *Cape Cod*, *The Maine Woods*, *A Yankee in Canada*. Died, 1862.

Thorpe, Thomas Edward, English chemist, director of the government laboratories, London, was born near Manchester, 1845. He was president of the society of chemical industry, 1895. Author: *Chemical Problems; Inorganic Chemistry; Quantitative Analysis; Qualitative Analysis; Joseph Priestley*. Died, 1925.

Thorwaldsen (*tōr'wōld-sen*), **Albert Bertel,** Danish sculptor, was born at Copenhagen, 1770. He studied at the academy of Copenhagen, where he gained the first gold medal in sculpture, and was sent by that body to Rome in 1796. His masterpieces include the *Entry of Alexander Into Babylon*; *Cupid and Psyche*; the *Dying Lion* at Lucerne, and busts of Byron and the Danish poet, Oehlenschlager. Died, 1814.

Thucydides (*thū-sid'i-dēz*), great Greek historian, was born at Athens, about 471 B. C. He belonged to a noble Athenian family, and was himself a person of great influence and wealth. During exile he wrote his *History of the Peloponnesian War*. Among the Romans, Sallust is believed to have taken Thucydides for his model. He died about 401 B. C.

Thurman, Allen Granberry, American statesman, was born at Lynchburg, Va., 1813. When six years old his family moved to Ohio, where he became a lawyer and was chosen a representative in the 29th congress. He served as United States senator, 1869-81, and was one of the ablest and most prominent members of that body. Died 1895.

Thwing, Charles Franklin, university president, was born at New Sharon, Me., 1853; graduated from Harvard, 1876; graduate Andover Theological Seminary, 1879; S.T.D., Chicago Theological Seminary, 1889; LL.D., Marietta, 1894, Illinois College, 1894, Waynesburg College, 1901, Washington and Jefferson, 1902. Ordained Congregational ministry, 1879; president Western Reserve University and Adelbert College, 1890-1921; Associate editor *Bibliotheca Sacra* beginning 1884. Author: *American Colleges—Their Students and Work; Within College Walls; The American College in American Life; The Best Life; College Administration; The Youth's Dream of Life; God in His World; The Choice of a College; College Training and the Business Man; A History of Higher Education in America*, etc.

Ticknor, George, American author, was born at Boston, 1791. He was graduated at Dartmouth; in 1819 became professor of French and Spanish in Harvard College. His *History of Spanish Literature* was published in 1849, and at once took high rank, and was translated into Spanish, German and French. He was one of the founders of the Boston public library. Died, 1871.

Tiffany, Charles Louis, American merchant, was born at Killingly, Conn., 1812. In 1837 he established a stationery and fancy goods store next door to A. T. Stewart's establishment. In 1847 Tiffany began the manufacture of gold jewelry; in 1850 made immense purchases of diamonds in Europe, selling them in the United States at tremendous profit. The firm later established branches in several European centers. Died, 1902.

Tiffany, Louis Comfort, American artist, was born in New York, 1848. He studied art under George Inness and Samuel Coleman, New York, and Léon Bailly, Paris; devoted himself chiefly to oriental scenes in oil and water colors. Discovered the formulas for making decorative glass known as "Tiffany Favrile glass."

Tilden, Samuel Jones, American statesman, was born at New Lebanon, N. Y., 1814. He was educated at Yale and New York University, and admitted to the bar in 1841. By 1868 he attacked and destroyed the "Tweed Ring" and in 1876 was Democratic candidate for president, resulting in the famous contest before the Electoral Commission. He died in 1886, leaving a great part of his large fortune to found a free library in New York City.

Tilly, Johann Tserklaes, Count of, Belgian general, one of the great leaders of the Thirty Years' war, was born near Gembleaux, Belgium, 1559. He reorganized the Bavarian Army, and, devoted to the Catholic cause, was given command of the Catholic army at the outbreak of the Thirty Years' war. Tilly was mortally wounded in the battle of Lech, 1632.

Tintoretto (*tēn'tō-ret'tō*), Venetian historical painter, was born in 1518. His real name was Jacopo Robusti. He rose to high reputation and was employed by the Venetian government to paint a picture of the victory gained over the Turks in 1571. Most of his finest compositions are at Venice. He died at Venice, 1594.

Tischendorf (*tish'en-dōrf*), **Lobegott Friedrich Konstantin von,** German biblical scholar, was born at Lengenfeld in Saxony, 1815. His labors in search of the best and most ancient manuscripts of the new testament, especially those in 1844, 1853 and 1859, resulted in the discovery of the fourth century *Sinaitic Codex* at the monastery on Mount Sinai; count of the Russian empire, LL.D., D.C.L., etc. He died in Leipzig, 1874.

Tissot (*tē'sō'*), **James Joseph Jacques,** French genre painter, was born at Nantes, France, 1836. He was educated at the Ecole des Beaux Arts, in Paris, and under Lamothe and Flandrin. He made his first appearance in the Paris salon in 1859, with a number of fine water colors. He then turned his attention to his series of religious subjects illustrating the *Life of Christ*. Died, 1902.

Titchener (*tich'en-ēr*), **Edward Bradfrod,** American educator, professor of psychology at Cornell 1895-1910, was born at Chichester, England, 1867. He was graduated at Brasenose College, Oxford, 1890; Ph.D., D.Sc.; LL.D.; assistant professor of psychology, Cornell, 1892-95; professor of music, 1892-95; Sage professor psychology, in the Graduate School, 1910. American editor of *Mind;* associate editor of *American Journal of Psychology*, etc. Author: *An Outline of Psychology; A Primer of Psychology*. Died, 1927.

Titian (*tish'i-an*), or **Tiziano Vecellio** (*tit-si-ä'no ve-chel'li-ō*), great Italian painter, and head of the Venetian school, was born at Pieve de Cadore, in the Carnic Alps, in 1477. He studied under Giovanni Bellini of Venice, and in 1507 was associated with the painter Giorgione in executing certain frescoes.

In 1511 he was invited to Padua, where he executed three remarkable frescoes, still to be seen. In 1512 he completed the unfinished pictures of Giovanni Bellini in the Sala del Gran Consiglio at Venice, and the senate was so pleased that it gave him an important office. To this period are attributed his pictures of the *Tribute Money* and *Sacred and Profane Love*.

In 1514 he painted a portrait of Ariosto at Ferrara, and after his return to Venice, in 1516, he painted an *Assumption of the Virgin*, considered one of the finest pictures in the world. About 1528 he produced his magnificent picture, *The Death of St. Peter the Martyr*—"a picture," says Algarotti, "in which the great masters admitted they could not find fault"; picture was unfortunately destroyed by fire in 1867.

In 1530 the Emperor Charles V. invited him to Bologna to paint his portrait and execute various other commissions. In 1532 he again painted the emperor's portrait, and he is said to have accompanied Charles to Madrid, where he received several honors. He remained, it is said, three years in Spain, in which country many of his master-pieces, such as *The Sleeping Venus*, *Christ in the Garden*, *St. Margaret and the Dragon*, are still to be found. In 1537 he painted an *Annunciation*, and in 1541 he produced *The Descent of the Holy Ghost on the Apostles*, *The Sacrifice of Abraham*, and *David and Goliath*. In 1543 he painted his picture of *The Virgin and San Tiziano;* and in 1545 he visited Rome, where he painted the famous group of *Pope Paul III*. the *Cardinal Farnese*, and *Duke Ottavio Farnese*. He was patronized as warmly by Philip II. as by his father Charles V.

Of Titian's private life but little is known. He died of the plague in 1576, aged ninety-nine, having painted to the last with almost undiminished powers.

Titian excelled as much in landscape as in figure-painting, was equally great in sacred and profane subjects, in ideal heads and in portraits, in frescoes and in oils; and though others may have surpassed him in single points, none equaled him in general mastery. As a colorist he is almost unrivalled, and his pictures often reach the perfection of sensuous beauty.

References.—Crowe and Cavalcaselle's *Life and Times of Titian;* Claude Phillips' *The Early Work of Titian* and *The Latter Work of Titian;* Morelli's *Italian Painters;* Ruskin's *Modern Painters*.

Tittmann, Otto Hilgard, American scientist, was born at Belleville, Ill., 1850. He entered the United States coast and geodetic survey in 1867. United States delegate to international geodetic conference, Berlin, 1895; and superintendent, 1909-1915; United States Coast and geodetic survey. He was appointed to represent the United States in the demarkation of the boundary between Alaska and Canada in 1899, and was United States-Alaska boundary commissioner, 1904.

Tocqueville (*tok'vil*), **Alexis Charles Henri Clerel de,** French statesman and writer, was born at Verneuil, 1805. He studied at Metz and at Paris, was admitted to the bar in 1825. He became successively a member of the academy of moral sciences and of the French academy. After 1848 he was the most formidable opponent of the socialists and extreme republicans, and as strenuously opposed Louis Napoleon. He became vice-president of the assembly in 1849, and from June to October was minister of foreign affairs. He wrote *Democracy in America*. Died, 1859.

Todd, David P., astronomer, was born at Lake Ridge, N. Y., 1855; graduated from Amherst, 1875; Ph.D., Washington and Jefferson College, 1888; chief assistant on United States nautical almanac, 1878-81; professor astronomy and navigation and director of observations, Amherst College, 1881-1920. Astronomer in charge Lick observatory observations, transit of Venus, 1882; professor astronomy and higher mathematics, Smith College, 1882-7; astronomer in charge American eclipse expedition to Japan, 1887; chief United States scientific expedition to West Africa, 1889-90; chief Amherst eclipse expedition to Japan, 1896, to Tripoli, Barbary, 1900, to the Dutch E. Indies, 1901, and to Tripoli, 1905; chief Mars expedition to the Andes, 1907; professor, emeritus (Carnegie Foundation), 1920. Author: *A New Astronomy; Stars and Telescopes; Lessons in Astronomy;* etc. Designed and erected new observatories at Smith College, Northampton, 1886-7, and at Amherst College, 1903-5.

Togo (*tō'gō*), **Admiral Count Heihachiro,** Japanese admiral, was born at Kogoshima, 1847. He first came into prominence as commander of the *Naniwa*, which sank the transport *Kowshing* and forced on the war with China. He was then a rear-admiral and third in command of the fleet. At the close of January, 1904, he was selected to command the entire Japanese fleet in the hostilities against Russia. The battle of the sea of Japan was fought May 27-28, 1905, when of the Baltic fleet twenty ships were sunk, six captured, two demolished and six disarmed and interned. Togo was made count in 1907. Admiral of the fleet, 1912.

Tolstoi (*tol-stoi'*), **Count Lyoff Nikolayevitch,** Russian author and social reformer, was born at Yasnaia Poliana in 1828. Studied at the University or Kazan; entered the army when twenty-three, and served in the Caucasus and at Sebastopol. Leaving the army soon after the close of the Crimean war, he devoted himself to literature. His *War and Peace*, a tale of the invasion of Russia by Napoleon, in 1812, is regarded as his masterpiece; but his *Anna Karenina*, which appeared in 1876, is better appreciated. He made "Resist not evil" the keystone of the Christian faith, and insisted that the literal interpretation of the Sermon on the Mount is the only rule of the Christian life. In 1892 he deposited his *Memoirs and Diaries* with the curator of the Rumyanzoff museum on the condition that they should not be published until ten years after his death. He was excommunicated by the holy synod in 1901, and the same authority enjoined all true believers to refrain from celebrating his eightieth birthday in 1908. Died, 1910.

Toombs, Robert, American politician, was born in Wilkes county, Ga., 1810. From 1853 to 1861 he was a member of the United States senate. In 1861 he became secretary of state under the confederate government, but resigned to accept the commission of brigadier-general in the confederate army. After the war he lived abroad until 1867, and on his return to the South refused to take the oath of allegiance to the United States government. He died in 1885.

Toothaker, Charles Robinson, curator, was born at Philadelphia, 1873; graduate Central Manual Training High School, Philadelphia, 1890; special course in zoölogy under E. D. Cope; other special courses. Mineralogist, in employ of A. E. Foote, Philadelphia, 1890-7; assistant curator, 1898-1904, curator since 1904, Philadelphia museum; lecturer on commercial geography; special instructor in commercial geography, Temple University, 1907-8. Consul for Republic of Colombia in Philadelphia. Author: *Commercial Raw Materials*, etc.

Toronto, Archbishop of. See **Sweatman, Arthur.**

Torricelli (*tor'rē-chel'lē*), **Evangelista,** Italian physicist and mathematician, was born probably at Piancaldoli, in the Romagna, 1608. He is celebrated as the inventor of the barometer, and for his improvements in lenses for telescopes. He died at Florence, 1647.

Torstensson (*tōr'sten-son*), **Lennard,** count of Ortala, Swedish general, was born at the castle of Torstena, Sweden, 1603. He accompanied Adolphus to Germany in 1630, and in 1641 was appointed to the command of the Swedish army in Germany. Died, 1651.

Totleben (*tat-lye-ben*), or **Todleben, Franz Eduard Ivanovitch,** Russian general and military engineer, was born 1818. Until he was severely

wounded in 1855, he conducted with skill and energy the defense of Sebastopol. During the Turkish war of 1877-78 he was called to besiege Plevna, which he took. He died in 1884 and was buried at Sebastopol. He wrote an admirable account of the defense of Sebastopol.

Tourgee (*toor-zhā'*), **Albion Winegar,** American author, was born at Williamsfield, Ohio, 1838. Moved to North Carolina, where he was prominent in the reconstruction of the state, drawing up the constitution, and aiding in the revision of the laws. For some years prior to his death in 1905 he was United States consul at Bordeaux, France, and Halifax, Canada.

Toussaint L'Ouverture (*tōō'saN' lōō-ver'tūr*), **Francois Dominique,** Haitian general, was born in 1743, son of African slaves, in San Domingo. In 1796 he was appointed by the French directory chief of the army of San Domingo. When Bonaparte sought to restore slavery in San Domingo in 1801, Toussaint resisted, but was forced to surrender, and was sent to France, where he died in prison in 1803.

Tower, Charlemagne, American capitalist and diplomat, was born in Philadelphia, Pa., 1848. He was graduated at Harvard in 1872; LL.D. He lived in Duluth, Minn., 1882-87; was president of Duluth and Iron Range Railroad and managing director of Minneapolis Iron Company. He was United States minister to Austria-Hungary, 1897; ambassador to Russia, 1899-1902; and ambassador to Germany, 1902-08. Author: *The Marquis de La Fayette in the American Revolution.* Died, 1923.

Trajan (*trā'jan*), **Marcus Ulpius Crinitus,** Roman emperor, surnamed Optimus, was born at Italica, in Spain, about 52 A. D. On the death of Nerva, 98 A. D., Trajan was invested with the imperial purple. In his civil capacity, he ruled for the welfare of his people; in his military character, he sustained the glory of Rome. The column which bears his name was raised in the Roman capital to commemorate his victories. Died 117 A. D.

Tree, Herbert Beerbohm, English actor and manager, was born in London, 1853. His first success was as the timid curate in *The Private Secretary.* He managed the Comedy theater in 1887, and produced *The Red Lamp;* and in the autumn of the same year assumed charge of the Haymarket theater. In 1897 he opened his new theater, His Majesty's, in the Haymarket. Here he produced the greatest of his successes: *Herod; Twelfth Night; The Merry Wives of Windsor; King Richard II.; Colonel Newcome,* etc. In 1907 he produced several of Shakespeare's plays in Berlin, and was received by the emperor. Died, 1917.

Trench, Richard Chenevix, British prelate and writer, was born at Dublin, 1807. He was graduated at Trinity College, Cambridge, 1829. During 1835-46 he published six volumes of poetry, re-issued in 1865. In 1845 he became rector of Itchenstoke; in 1847 professor of theology in King's College, London; and in 1863 archbishop of Dublin, an office which he resigned in 1884. His principal works are: *Notes on the Parables; English Past and Present; Life and Genius of Calderon; Select Glossary of English Words;* and *Lectures on Mediæval Church History.* He died in 1886, and was buried in Westminster abbey.

Trent, William Peterfield, American educator and critic, professor of English literature at Columbia University beginning 1900, was born at Richmond, Va., 1862. He was graduated at the University of Virginia, A.M.; LL.D. He was professor of English, 1888-1900, and dean of the academic department, 1894-1900, University of the South, and editor of the *Sewanee Review,* 1892-1900. Author: *English Culture in Virginia; Robert E. Lee; The Progress of the United States in the Century; A History of American Literature,* 1607-1865; *Greatness in Literature; Daniel Defoe,* etc.

Tripler, Charles E., physicist, inventor, made special study of physical sciences and phenomena in his own physical laboratory. His greatest achievement was the manufacture of liquid air, at a temperature 300° (F.) below zero. Died, 1906.

Trollope, Anthony, English novelist, was born in London, 1815. He was educated at Winchester school. He produced a long series of novels, among which are: *Barchester Towers; Doctor Thorne; The Bertrams; The Claverings; Castle Richmond;* and *The Golden Lion of Granpere.* Besides these he published several volumes of travel. He also wrote the *Life of Cicero,* one of Cæsar, and sketches of Thackeray. Died, 1882.

Tromp, Martin Harpertzoon, Dutch admiral, was born at Briel, 1597. In 1652 he was worsted by an English fleet under Blake. In November he again encountered Blake in the strait of Dover, this time successfully. In June another terrific battle took place off the North Foreland, the Dutch being defeated. In the final battle with Monk, July 31, 1653, off the coast of Holland, the Dutch lost thirty men-of-war, but their greatest loss was the heroic admiral. He was buried at Delft.

Trotsky, Leon, Russian communist leader, was born of Jewish parentage at Odessa, in 1877. He was twice deported to Siberia for revolutionary activities, but escaped each time, and continued his socialistic campaigns in Germany, France, Switzerland, and finally in the United States, where he assisted in the publication of *Novy Mir,* a Russian socialistic paper in New York City. In 1917 he returned to Russia, where, in conjunction with the more moderate Lenin, he was prominent in organizing the Bolshevist party. Later, Trotsky came to represent the extreme wing of the Soviet government. He signed the treaty of Brest-Litovsk, and became commander in Chief of the red army, but was later brought into eclipse by factional struggles.

Troubetzkoy (*trōō-bets'koi*), **Princess.** See **Rives, Amelia.**

Trowbridge, John Townsend, American novelist, poet, and editor, was born at Ogden, N. Y., 1827. He removed to Boston, and there contributed to magazines and journals and took actively to authorship. His chief works are: *Neighbor Jackwood; The Silver Medal* series; *The Tide Mill* series; and *Start in Life* series. Died, 1916.

Trumbull, John, American painter, was born at Lebanon, Conn., 1756. He was graduated at Harvard College, and studied art at Boston. His first American historical pictures were *Battle of Bunker Hill,* and the *Death of Montgomery.* He painted portraits of Washington and other revolutionary characters. He died at New York, 1843.

Tschaikowsky (*chī-kōf'skē*), **Peter Ilich,** musical composer, was born in the Ural mining region, 1840. In 1866 he became teacher of harmony at the Moscow conservatory. He visited America in 1891, and died at St. Petersburg in 1893. His best work is found in his *Manfred, Roméo et Juliette, The Tempest, Francesca da Rimini,* and his remarkable symphonies. Died, 1893.

Tunney, Gene, boxer and sportsman, was born in New York in 1898. At the age of 19 he enlisted in the marines and was shortly afterwards sent to France, where he stayed until the end of the war. In 1926, by defeating "Jack" Dempsey, he became world champion heavy-weight boxer.

Tupper, Sir Charles, Canadian statesman, was born in Amherst, Nova Scotia, 1821. He studied medicine at Edinburgh University; practiced his profession in his native town; and was prime minister of Nova Scotia, 1864-67. In 1884 he was appointed high commissioner for Canada in London. In 1895 he represented Canada at the international railway conference in London. In 1896 he was prime minister of Canada. Died, 1915.

Turenne (*tū'ren'*), **Henri de la Tour d'Auvergne, Vicomte de,** French general, was born in 1611. After his conquest of Roussillon, in 1642, he was made a marshal of France and given chief command on the Rhine. In the civil wars in France, the two greatest generals of the period, Condé and Turenne, were on opposite sides, and Turenne, with inferior forces was uniformly victorious, finally driving Condé from France. Louis XIV. made him marshal-general of France, and only his Protestantism prevented his being appointed constable. He was killed at the battle of Sasbach, while viewing the preparations for the attack, 1675.

Turgenieff (*tōor-gen'yef*), **Ivan Sergyevitch,** Russian novelist, was born in Orel, Russia, 1818. On account of his liberal ideas he was banished for a period from Russia, but was finally allowed to return. Among his best known novels are: *Fathers and Sons; Liza; Smoke; Dimitri Rudin; Journal of a Useless Man.* Died, 1883.

Turgot (*tūr'gō'*), **Anne Robert Jacques,** French statesman and economist, was born in Paris, 1727. He was educated for the church, and was prior of the Sorbonne in 1749. Under Louis XVI. he was put in charge of the finances of the country, and, if his plans had been received with favor by the nobility and statesmen, France might have been spared the horrors of the revolution. Among his writings are, *Reflections Upon the Formation and Distribution of Riches,* and a work on *Usury.* He died at Paris in 1781.

Turner, Joseph Mallord William, British landscape painter, was born in London, 1775. In 1799 he was elected an associate of the Royal academy, and three years afterward attained the full dignity of academician. To the exhibitions of the Royal Academy he contributed in all 259 pictures. In 1808 he commenced the publication of his famous *Liber Studiorum,* a series of engravings from original designs. Among his finest paintings are: *Dido Building Carthage; The Sun Rising in a Mist; The Slave Ship,* etc. Died, 1851.

Twain, Mark. See **Clemens, Samuel Langhorne.**

Tycho Brahe. See **Brahe.**

Tyler, John, tenth president of the United States, was born at Greenway, Va., 1790. He was graduated at William and Mary College, 1807; studied law, and was admitted to the bar. In 1825 and again in 1827 he was chosen governor of Virginia; and in 1833 was elected United States senator. From this time he acted with the whig party, being an active partisan of Henry Clay, and in 1840 was elected by that party vice-president of the United States, with Harrison as president. The death of President Harrison, a month after his inauguration, made Tyler president in 1841. The annexation of Texas in 1845, and the passing of a protective tariff law in 1842, were among the important acts of Tyler's administration. He afterward joined the confederate cause, and was a member of the confederate congress at his death, which occurred at Richmond, Va., 1862.

Tyndale, William, English divine, was born in Gloucestershire, about 1484. He studied at both Oxford and Cambridge. Having become impressed with the importance of giving to the English people the Bible in their own language, he devoted himself to that work in private for many years; until, in 1523, finding it no longer safe to prosecute his labors in his own country, he sailed for Hamburg and from that port proceeded to Wittenberg. There he completed his version of the new testament, which was published at Antwerp, 1526. He then undertook a translation of the old testament, in which he was assisted by Miles Coverdale. Executed by Henry VIII. for heresy, 1536.

Tyndall, John, British physicist, was born in County Carlow, Ireland, 1820. He published lectures on *Light, Sound,* and *Heat, a Mode of Motion,* are well known; he also wrote on glaciers, the physics of crystals and many essays on other subjects. He was, however, best known as a popular exponent of physical science. Died, 1893.

Uhland (*ōō'lānt*), **Johann Ludwig,** German poet, was born at Tübingen, 1787, and studied at the University of his native city. He began to publish ballads and other lyrics in various periodicals, collected under the title of *Gedichte,* in 1815. It is on these and his songs, such as *Der gute Kamerad* and *Das Schloss am Meer,* that his fame rests. He died at Tübingen, 1862.

Ulfilas (*ul'fi-lās*), translator of the Bible into Gothic, was born about 311. He was made bishop in 341. Familiar with Latin, Greek and Gothic, and accustomed to write in each of them, he rendered the whole Bible, with the exception of *Kings,* into Gothic. Died, 381.

Ulrich, Edward Oscar (1857—), is perhaps the most eminent palaeontologist in America. He has assisted on many textbooks, geological journals. Geologist, U. S. Geological Survey since 1897; associate in paleontology U. S. National Museum since 1914.

Untermyer, Samuel, American lawyer, was born in Lynchburg, Va., 1858. He was educated at the college of the City of New York, and was admitted to the bar, 1879. He has since practiced in New York; member of the law firm of Guggenheimer, Untermyer and Marshall.

Urban VIII., Pope, 1623-44, the successor of Gregory XV., whose family name was Maffeo Barberini, was born at Florence in 1568. He was the founder of the celebrated College of the Propaganda and to him Rome is indebted for many public works, including large and important additions to the vatican library. He died in 1644 and was succeeded by Innocent X.

Usher (*ush'ēr*), **James,** Irish prelate, theologian and scholar, was born 1580. In 1607 he was chosen to the chair of divinity in the University of Dublin, a post which he held for thirteen years. In 1623 he was constituted privy councilor of Ireland, and two years later was raised to the highest ecclesiastical dignity in the kingdom, the archbishopric of Armagh. Died, 1656.

Valentino, Rudolph, actor, was born in Castellaneta, Italy, in 1895. He came to the United States in 1913, and began his career as a dancer. He subsequently entered musical comedy, and finally moving pictures, scoring triumphs in *The Four Horsemen, Camille, The Sheik, Blood and Sand, Monsieur Beaucaire, The Eagle's Feather.* Died, 1926.

Van Alstyne, Mrs. Frances Jane. See **Crosby, Fannie.**

Van Buren, Martin, American statesman, eighth president of the United States, was born in Kinderhook, N. Y., 1782. In 1821 Van Buren entered the United States senate, and was reëlected in 1827. In 1830 he took office as secretary of state in President Jackson's cabinet, resigning the same in April of the following year; and in 1836 became the successful democratic candidate for the presidency. During his tenure of office occurred the financial crisis of 1837, and the suspension of specie payments by the banks. Died, 1862.

Vanderbilt, Cornelius, American capitalist, was born near Stapleton, Staten Island, N. Y., 1794. He early engaged in steamboat transportation between Staten Island and New York. In 1864 he withdrew his capital from shipping and invested it in railroads. In 1861 he presented the steamship *Vanderbilt* to the U. S. government to be used for the capture of confederate privateers, and in 1872 founded Vanderbilt University at Nashville, Tenn. which he gave about $1,000,000. Died, 1877.

Vanderbilt, George Washington, capitalist, was born at New Dorp, Staten Island, N. Y., 1862; presented New York College for the training of teachers, its site on Morningside Heights, adjoining site selected for Columbia College; and presented American fine arts society of New York the room in their building known as the Vanderbilt gallery.

Vanderbilt, William Kissam, capitalist, was born in Staten Island, 1849. He received an academic education, and studied several years in Geneva, Switzerland. He subsequently learned railroading and became second vice-president of the New York Central and Hudson River Railroad, 1877-83; was chairman of the board of directors of the Lake Shore and Michigan Southern Railway, beginning 1883; and officer or director in numerous railway and financial corporations. Died, 1920.

Vanderlip, Frank Arthur, banker, president of the National City Bank, New York, beginning 1908, was born in Aurora, Ill., 1864. He studied at the University of Illinois and University of Chicago;

assistant secretary of the treasury, 1897-1901; and vice-president of National City Bank, New York, 1901-08; is trustee of Carnegie foundation; member of council of New York University. Author: *Chicago Street Railways; The American Commercial Invasion of Europe*, etc.

Vanderlyn, John, American painter, was born at Kingston, N. Y., 1775. He studied painting under Gilbert Stuart. The *Landing of Columbus*, placed in the rotunda of the national capitol and engraved on the five dollar note, was designed by Vanderlyn. He died at Kingston, N. Y., 1852.

Van Devanter, Willis, jurist, associate justice, United States Supreme court, was born at Marion, Ind., 1859; was educated at Indiana Asbury (now DePauw) University, 1875-8; LL.B., Cincinnati law school, 1881. Practiced law at Marion, 1881-4, Cheyenne, Wyoming, from 1884; commissioner to revise Wyoming Statutes, 1883; city attorney, 1887-8; member Territorial Legislature (chairman judiciary committee), 1888; chief justice Supreme Court of Wyoming, 1889-90; assistant attorney-general of United States (assigned to Dept. Interior), 1897-1903; United States circuit judge, 8th Judicial Circuit, 1903-10; associate justice United States Supreme court since 1910. Professor equity pleading and practice, 1898-1903, equity jurisprudence, 1902-3, Columbian (now George Washington) University.

Van Dyck, or **Vandyke, Sir Anthony,** Flemish painter, was born in Antwerp, 1599. In 1632 he became court painter to Charles I. of England. His *Christ on the Cross* at Antwerp is his greatest historical work, and his full-length picture of *Charles I. on Horseback*, now at Warwick castle, his best example of portraiture. Died, 1641.

Van Dyke, Henry Jackson, American educator and writer, was born in Germantown, Pa., in 1852. He was graduated at Princeton University in 1873, at the Princeton Theological Seminary in 1877; pastor of the Brick Presbyterian church, New York, 1883-1900. Professor of English literature, Princeton, 1900-13 and 1917-23; minister to Holland, 1913-17. Author: *The Reality of Religion; The Gospel for an Age of Doubt; The First Christmas Tree; The Builders, and Other Poems; Ships and Havens; Fisherman's Luck; The Poetry of the Psalms; The Friendly Year; The Blue Flower; The Open Door; The Spirit of Christmas*, etc.

Van Dyke, John Charles, author, educator, art critic, was born in New Brunswick, N. J., 1856. L.H.D., Rutgers, 1899. He was admitted to the New York bar, 1877, but turned attention to literature, and beginning 1878 became librarian of the Sage library, New Brunswick, N. J., professor of history of art, Rutgers College, beginning 1889. Editor: *The Studio*, 1883-84; *Art Review*, 1887-88. Author: *Books and How to Use Them; Modern French Masters; Nature for Its Own Sake; The Desert; The Meaning of Pictures; Studies in Pictures*, etc.

Vane, Sir Henry, English statesman, colonial governor of Massachusetts, was born in 1612; in 1635 came to America to join the Puritans in Massachusetts. The next year he was chosen governor. In 1640 he was elected to parliament and was knighted. He was always opposed to Cromwell, and, after the latter's death, was the leader of the republican party. On the restoration of the king, Charles II., Vane was arrested, tried on a charge of high treason and condemned to die, 1662.

Van Hise (*van-hīs'*), **Charles Richard,** American educator, geologist, was born in Fulton, Wis., 1857. He graduated at the University of Wisconsin, 1879; Ph.D., LL.D.; professor mineralogy, 1888-90; professor geology, 1892-1903; president beginning 1903 of the University of Wisconsin. He was a member of many scientific societies. Author: *Principles of North American Pre-Cambrian Geology; A Treatise on Metamorphism*. Died, 1918.

Van Horne, Sir William Cornelius, Canadian railway official, was born in Will county, Illinois, 1843. Southern Minnesota, general manager, 1874-77, continuing as president to 1879; Chicago and Alton, general superintendent, 1877-79; Canadian Pacific, general manager, 1882-84, vice-president and general manager, 1884-88, president, 1888-99; and was chairman of the board of the Canadian Pacific railway company beginning 1899. Died, 1915.

Vasari (*vä-zä'rē*), **Giorgio,** Italian art historian, painter and architect, was born at Arezzo, 1511. His greatest service to art is his world-renowned *Lives*, by which we gain our chief knowledge of the artists of the Italian renaissance.

Vassar, Matthew, American philanthropist and founder of Vassar College, was born in Norfolk county, England, 1792. Four years later he accompanied his father to America and amassed a fortune. In 1861 he donated $400,000 to the institution in Poughkeepsie that became known as Vassar College. On his death, in 1868, he provided in his will for a further donation of $100,000 to Vassar.

Vauban (*vō'bäN'*), **Sebastien le Prestre de,** French marshal, one of the greatest of military engineers, was born in 1633, at Saint Leger de Foucheret, in Burgundy. He died in 1707. Vauban wrote various works, principally on fortification.

Veblen, Thorstein, educator, author, was graduated at Carleton College, 1880; Ph.D., Yale, 1884. Taught at various universities and later at school for social research, New York. Author: *The Theory of the Leisure Class* and *The Theory of Business Enterprise*. Died, 1929.

Vedder (*ved'ẽr*), **Elihu,** American painter, was born at New York, 1836. He studied at Paris and in Italy, and made Rome his ultimate residence. His subjects are mostly ideal. He has illustrated Edward FitzGerald's *Omar Khayyám*, etc. Died, 1922.

Vega Carpio (*vä'gō kär'pyō*), **Lope Felix de,** noted Spanish dramatist, was born at Madrid, 1552. The mere list of Lope's works presents a picture of unparalleled mental activity. His first work of length was a poem, the *Angelica*. Then followed *Arcadia*, a story, and *Dragontea*, an expression of exultation, in ten cantos, over the death of the dragon. The more notable of his miscellaneous works are: the *Rimas; Peregrino en su Patria*, a romance; *Jerusalem Conquistada*, an epic in competition with Tasso; a collection of lighter verse, with the *Gatomaquia*, a mock-heroic; and *Dorotea*, in form a prose drama, the story of his own early love adventures. Died, 1635.

Velasquez, (*vā-lä'kath*), **Diego Rodriguez de Silva y,** greatest of Spanish painters and one of the greatest of all painters, was born in Seville. 1599. He studied under Herrera, then under Pacheco, whose daughter he married and at whose house he met Cervantes and other notables.

In 1623 Olivares, the great minister, invited him to Madrid, and persuaded the king to sit for his portrait. Velasquez then became the favorite of Philip IV.; was elected court painter, and held various offices at court. In his own country his influence was not wide; but he has become the dominating influence of schools of French, English and American artists of to-day.

In 1623 Charles I. of England, then Prince of Wales, sat to him. In 1630, by the advice of Rubens, he visited Italy, and in Venice he studied Tintoretto. In 1648 he again went to Italy, commissioned by Philip to buy pictures in order to form a Spanish academy. While in Rome he painted the magnificent portrait of *Innocent X*. On his return he was made marshal of the court. It was in fulfilment of this office during the conference at Irun, on the "Island of Pheasants," that he caught the fever from which he died, 1660.

A superb colorist, an admirable draughtsman, intensely truthful in his statements, synthetic in the approach to and handling of his subject, he selected the salient characteristics of the person or scene, and eliminated all non-essentials; he had a keen sense of the unity of impression, emphasized by a carefully realized harmony of color. His best works are to be found in Madrid; but fine examples are to be seen of him in Rome, the Louvre, and the National Gallery, London. His *Venus With a Mirror* was bought by the National Gallery in 1906 for $225,000. His most famous pictures are: *The Water Carrier; Expulsion of the Moriscos; Surrender of Breda; Maids of Honor; The Topers; Forge of Vulcan;* and *Portrait of Philip IV.*

References.—Stevenson's *Velasquez;* Stirling-Maxwell's *Velasquez and His Works;* Curtis' *Velasquez and Murillo;* Bernete's *Velasquez;* and Hinde's *Days with Velasquez.*

Vendome (*väN'dōm'*), **Louis Joseph, Duc de,** French general, was born at Paris, 1654, and saw his first service in the Dutch campaign of 1672. In 1702 he fought an undecided battle with Prince Eugene at Luzzara, then burst into the Tyrol, returning to Italy to check the united Savoyards and Austrians. The defeat at Oudenarde, 1708, cost him his command, but in 1710 he was sent to Spain to aid Philip V. His appearance turned the tide of diaster; he brought the king back to Madrid, and defeated the English at Brihuega. He died at Tinaroz, in Valencia, 1712.

Verdi (*vãr'dē*), **Giuseppe,** Italian operatic composer, was born in 1813, at Rancola, in the duchy of Parma. He was a member of the Italian parliament in 1860 and senator in 1875. He was a member of many artistic societies and was decorated by the rulers of Russia and Egypt. His works comprise a long list of popular favorites, including *Ernani, Rigoletto, Il Trovatore, La Traviata, Aida, Othello*, etc. He died at Milan, 1901.

Verestchagin (*vye-re-shchä'gin*), **Vassili,** Russian painter, was born in 1842, at Tcherepovets, in Novgorod. In 1884 he made a journey to India, Syria and Palestine; and produced a series of pictures of the life of Christ. He painted gigantic pictures of the execution of mutinous sepoys by English soldiers and of nihilists by the Russian authorities. He was blown up on Makaroff's flagship off Port Arthur, 1904.

Vergil, or **Virgil,** full name, Publius Vergilius Maro, the most distinguished epic, didactic and pastoral poet of ancient Rome, was born at Andes (probably *Pietola*), a little village near Mantua, 70 B. C. His father possessed a farm there, which he cultivated himself, and Vergil received a good education.

He appears to have gone to Rome about 41 or 40 B. C., when his estate was lost at the time of the agrarian division. It was restored to him, however, on application to Augustus, who henceforward became his patron. He also enjoyed the patronage of Mæcenas, and was intimate with Horace. His health was delicate, and his retiring nature led him to reside for the most part outside Rome, either at Tarentum or Naples.

His *Eclogues*, a series of bucolic, or pastoral poems, were written about 41-39 B. C. His *Georgics*, a poem on agriculture, was completed in B. C. 31. The *Æneid*, an epic in twelve books on the fortunes of Æneas, was probably begun about B. C. 29. It occupied the author many years and never received his finishing touches.

In B. C. 20 Vergil appears to have engaged in a tour in Greece. But Augustus, having arrived at Athens on his return from the East, Virgil determined to accompany him home, At Megara, however, he fell sick, and he died at Brundusium, B. C. 19.

His poems exhibit a remarkable command of language, and great taste and skill in the management of all the materials of poetry. He is unrivalled in beauty of vertification. He was amiable and modest, free from envy and jealousy, and of irreproachable character. Mediæval legends represent him as a benevolent enchanter, in which character many stories were current regarding him in Italy.

References.—Translations have been made into English verse by Dryden, Palmer (*Bucolics*), Bowen (*Bucolocs* and *Æneid*), Conington (*Æneid*), Morris (*Æneid*), and into English prose by Conington and Mackail. See also Nettleship's *Introduction to the Study of Vergil* and *Ancient Lives of Vergil;* Sellar's *Roman Poets of the Augustan Age;* Tunison's *Master Vergil;* Boissier's *The Country of Horace and Vergil;* and Leland's *Legends of Vergil.*

Verne (*vern*), **Jules,** French author, was born at Nantes, 1828. He studied law, but turned to literature, producing his *Cinq semaines en ballon* in 1863. Among his works are: *Twenty Thousand Leagues Under the Sea; Around the World in Eighty Days; From the Earth to the Moon.* Died, 1905.

Vernet (*ver'ne'*), **Emile Jean Horace,** French battle painter, was born in Paris, 1789. He studied under Moreau and Vincent, and achieved a success hitherto unequaled as a painter of battles. In 1842 he was made commander of the legion of honor, and declined the rank of baron. He died in 1863.

Veronese (*vā'rō-nā'sā*), **Paolo.** See **Cagliari, Paolo.**

Verrazano (*ver'rät-sä'nō*), **Giovanni da,** Florentine navigator, was born at Florence, Italy, about 1480, and died, probably, about 1527—being executed as a pirate, it is said, in New Castile. It was on a second voyage to the new world, in 1527, that it is alleged he was captured by Spaniards and hanged as a corsair.

Vesalius (*vē-sā'li-us*), **Andreas,** Belgain anatomist and physician, was born in Brussels in 1514. He died in 1564, in Zante, where he had been wrecked on his return from Jerusalem. His great work was *De Corporis Humani Fabrica.*

Vespasian (*ves-pā'zhi-an*), **Titus Flavius Vespasianus,** Roman emperor from 70 to 79, was born 9 A. D. In the reign of Claudius he was appointed to a military command in Britain, when he conquered the Isle of Wight. After the death of Vitellius he was proclaimed emperor by the soldiers; and the widsom, moderation, and firmness of his reign showed the propriety of the choice. The most important events of the reign were the destructure of Jerusalem by Titus, A. D. 70, and the conquest of North Wales and the island of Anglesea by Agricola. Died, 79.

Vespucci (*ves-pōō'chē*), **Amerigo,** Italian navigator, was born at Florence, 1451. In 1497 he embarked at Cadiz in one of a fleet of five ships commanded by Alonzo de Hojeda, and after thirty-seven days' sailing reached America, coasted along the continent for several hundred leagues, and returned to Spain the same year. In 1506 he was recalled to the court of Spain, and two years afterward was appointed chief pilot, which office he retained until his death in 1512.

Viaud (*vyō*), **Louis Marie Julien,** "Pierre Loti," French writer, was born at Rochefort, 1850. He traveled extensively and produced, in 1879, his first work of importance, *Aziyadé*, a series of pictures of life on the Bosphorus. This was followed by *Le Mariage de Loti; Le Livre de la Pitie et de la Mort; Fantôme d'Orient; L'Inde sans les Anglais; Madame Prune*, etc. Died, 1922.

Victor Emmanuel II., first king of modern Italy, was born at Turin, 1820. With the help of the French, the battles of Solferino and Magenta were fought against Austria, but the peace of Villafranca between Austria and France left Italy still distant from its hoped for unity. But Tuscany, Modena, Parma, and the Romagna voted for annexation to Sardinia, and the Prussian alliance in 1866 gave Venice to Italy. The French withdrew from Rome, and on December 31, 1870, Victor Emmanuel entered Rome and became king of a united Italy. He reigned eight years, dying at Rome, 1878.

Victoria, Alexandrina, queen of Great Britain and Ireland, empress of India, born in 1819, died in 1901; she succeeded to the throne in 1837. In 1840 she married Albert, prince of Saxe-Coburg-Gotha, who died in 1861, and by whom she had nine children. She assumed title of empress of India in 1877. The chief events of her reign were the establishment of the penny post; the repeal of the corn laws; the annexation of the Punjaub; the Crimean war; the Indian mutiny, followed by the assumption of sovereignty over India; the second and third reform bills; wars in Afghanistan, China, South Africa and Egypt; and the Fenian and home rule agitations in Ireland. Queen Victoria was strictly impartial in the party politics of her reign, and was remarkable for her wisdom, knowledge of foreign affairs, unselfishness and uprightness of character. Died, 1901.

Vigny (*vēn'yē'*), **Alfred Victor, Comte de,** French poet and novelist, was born at Loches, France, 1799. In 1822 he published anonymously a small volume of verse. After 1830 he published chiefly works in prose, including *Stello; Grandeur et Servitude Militaire;* and a drama, *Chatterton.* In 1845 he was elected to the academy. He died in 1863.

Villa, Francisco, revolutionist, born at Las Nieves, Mexico, 1877. A goatherd, of no education; later turned bandit and outlaw. Joined with Madero in revolution gainst Diaz in 1910. Served successively under Huerta and Carranza. Later led a new revolt. Remained, throughout the Mexican crisis the irrepressible and incorrigible leader of the malcontents among the lower classes. Died, 1925.

Vincent de Paul (*vaN'sāN' dē pōl'*), **Saint,** French philanthropist and ecclesiastic reformer, was born in Landes in 1576. He established a foundling hospital at Paris in 1638; organized the congregation of the Missions and instituted the order of Sisters of Charity. Died in 1660, and was canonized by Pope Clement XII. in 1737.

Vincent, John Heyl, bishop of the Methodist Episcopal church and chancellor of the Chautauqua system, was born in Tuscaloosa, Ala., in 1832. S.T.D., Ohio Wesleyan and Harvard; LL.D. He was one of the founders, in 1874, of the Chautauqua assembly; founder, 1878, of the Chautauqua literary and scientific circle, and was its chancellor; in 1900 was made resident bishop in charge of European work of Methodist Episcopal church. Author: *The Modern Sunday School; Studies in Young Life; Little Footprints in Bible Lands; Our Own Church; Outline History of England; Outline History of Greece; Family Worship for Every Day in the Year,* etc. Died, 1920.

Vinci (*dā ven'che*) **Leonardo da,** Italian painter, was born at the village of Vinci, near Florence, 1452. He was the head of the Umbrian Lombard School of painting. Was educated in Florence, where he studied painting under Verrocchio. His unfinished *Adoration of the Kings* and his *Medusa's Head* belong to his Florentine period. In 1482 he settled in Milan and to his Milanese period are ascribed his most celebrated productions—the two versions of *Our Lady of the Rocks,* and *The Last Supper.* He also founded an academy of arts, for which he wrote *Notes for a Treatise on Painting.*

Owing to the French occupation of Milan, in 1499, Leonardo returned to Florence and was commissioned, with Michelangelo, to decorate the council hall of the Signoria—paintings subsequently destroyed. The famous *Mona Lisa,* was painted in 1504. For ten years (1506-16) he spent his time between Florence, Rome and Milan, and painted his *St. Anne* and *St. John the Baptist.* Thereafter he accompanied Francis I. to France, and died 1519 in the Chateau de Cloux, Amboise, 1519.

A man of extraordinary physical beauty and of physical strength, his endless invention, his curiosity in science and his ceaseless quest after the ideal and the marvelous are reasons for the small number of pictures finished by him. Of these, the *Last Supper* is practically destroyed through his experimentation with oil methods. But he created a symbolical type of ideal female beauty, subtle, enigmatic, with the mysterious smile that has haunted and perplexed his students of succeeding generations.

References.—Brown's *The Life of Leonardo da Vinci;* Rio's *Léonard de Vinci et son Ecole;* Heaton and Black's *Léonardo da Vinci and His Works;* Houssaye's *Histoire de Léonard de Vinci;* Richter's *Literary Works of Leonardo da Vinci.*

Vinogradoff (*vē'nō-grä'dôf*), **Paul,** Russian educator and writer, professor of jurisprudence, Oxford University, beginning 1903, was born at Kostroma, Russia, 1854. He resigned his chair in consequence of a conflict with bureaucratic authorities and settled in England, where he resumed his interrupted studies in English social and legal history. He was elected Corpus professor of jurisprudence in 1903. Author: *Villainage in England; Inquiries in the Social History of England; English Society in the Eleventh Century,* etc. Died, 1925.

Virchow (*fēr'kō*), **Rudolf,** German pathologist, was born in Prussia, 1821. He was a member of the Prussian diet, 1862-1902; of the German Reichstag, 1880-93; became leader of the liberal opposition in the Prussian diet. In 1878 he retired from public life. His master work was *Cellular Pathology,* which laid the foundation of that branch of science. Died, 1902.

Virgil. See **Vergil.**

Vittoria Colonna. See **Colonna.**

Vladimir (*vlä-dyē'mēr*) **the Great,** Russian emperor, who reigned from 980 to 1015. He added largely to the kingdom by conquest, but is best known for the introduction of Christianity into the empire. He died in 1015.

Volta (*vōl'tä*), **Alessandro,** Italian physicist, was born at Como, 1745. He invented the voltaic arc, electrophore, electroscope, and condenser; discovered several new properties in electricity; and was for thirty years professor of natural philosophy at Pavia. Died, 1827.

Voltaire (*vōltar'*), the assumed name of Francois Marie Arouet, French poet, historian and philosopher, and the most celebrated writer of the eighteenth century, was born at Chatenay, near Paris, 1694; died there, 1778. His father was Francois Arouet, a notary, and he was destined for the legal profession, but abandoned the law for letters.

In 1718 a tragedy named *Oedipe* was brought out by him, and was a great success. It is said that this play was finished, and that two cantos of his epic the *Henriade* were written in the Bastille, where he was confined from May, 1717, to April, 1718, for writing certain satirical verses on the regent. It was about this time that he adopted the name of Voltaire. In 1726 he was again imprisoned in the Bastille for sending a challenge to the Chevalier Rohan, by whom he had been grossly insulted. He was liberated within a month, and went to England on the invitation of Lord Bolingbroke. Here he resided till 1729 and acquired some knowledge of English literature. His *Henriade* was completed and published by subscription in England.

After his return to France he lived chiefly at Paris till 1734. During this period he raised himself from very moderate circumstances to a condition of affluence by successful monetary speculations. From 1734 to 1749 he resided with the Marchioness de Chatelet at Cirey, in Lorraine. She died in 1749, and Voltaire then accepted the oft repeated invitations of Frederick the Great to come and live at his court at Potsdam. Here he was received with great honór, but a series of disagreements with the king ended in Voltaire's retirement from the Prussian court in 1753. He then resided for a short time at Strasburg, Colmar, and Lyons, removing at the end of 1754 to Geneva. For almost the whole of the remainder of his life he lived in Switzerland, or close to its borders.

In 1760 or 1761 he fixed his residence with his niece, Madame Denis, at Ferney, where he received a constant succession of distinguished visitors, and maintained a correspondence which included in its range most of the crowned heads of Europe. In 1778 he went to Paris, where he was received with enthusiasm by all classes. But the excitement of the occasion hastened his death.

His works embrace almost every branch of literature; poetry, the drama, romance, history, philosophy, and even science. Hatred of fanaticism and superstitution was his chief characteristic, and nearly all his works are strongly animated by a spirit of hostility to the religion of his age. He upheld theism, however, with as much zeal as he denounced Christianity and priestcraft.

Voltaire's literary fame chiefly rests on his philosophical novels: *Zadig, Candide, L'Ingénu,* etc; his histories: *Siecle de Louis XIV., Histoire de Charles XII;* his correspondence, and more than all, perhaps, on his poetical epistles, satires, and occasional light poems, which all exhibit wit, gaiety, vivacity and grace. Several of his tragedies, such as *Zaire, Alzire, Merope* and *Mahomet,* had great success in their day, but are not assigned a high place in French literature. His comedies, the best of which is *L'Enfant Prodigue,* were less successful. His *Henriade,* an epic poem, had great success, and exercised a powerful influence when it first appeared, but is not highly esteemed now.

References.—The best *Lives* are those by Desnoiresterres, James Parton and Tallentyre. See also Morley's *Voltaire;* biographies by Hamley, Espinasse, and Lounsbury's *Shakespeare and Voltaire.*

Wade, Benjamin Franklin, American statesman, was born at Springfield, Mass., 1800. He studied law in Ohio, becoming United States senator in 1851, 1857 and 1863. He opposed all the measures proposed as compromises between the North and the South, and was influential in getting the homestead bill through congress. After the death of President Lincoln, Wade was acting vice-president of the United States. Died at Jefferson, Ohio, 1878.

Wadlin, Horace Greeley, librarian of Boston public library, was born at Wakefield, Mass., 1851; Litt.D.; began practice as an architect in Boston, 1875. He was a member of the Massachusetts house of representatives, 1884-88; supervisor of United States census, 1895-1900. Author: *Annual Statistics of Manufactures of Massachusetts,* 1886-1901; *The Decennial Census of Massachusetts for* 1895, etc. Died, 1925.

Wagner, Wilhelm Richard, the most celebrated of modern composers, was born at Leipzig 1813, died at Venice, 1883. He received his education at Leipzig and Dresden. From 1834 he filled various musical engagements at Magdeburg, Riga and Königsberg. In 1839-41 he went to Paris and London, and composed his operas *Rienzi* and the *Flying Dutchman.* The brilliant success of these operas secured him the conductorship at the royal opera of Dresden in 1843.

He joined the insurrectionary movement of 1848-49, and was compelled to exile himself. Until his return to Germany in 1864 he spent most of his time in Switzerland, Italy, Paris and London. His *Tännhauser* and *Lohengrin* appeared in 1845 and 1850, respectively. The king of Bavaria, Louis II., became an enthusiastic and liberal patron of Wagner, and the theater at Baireuth, especially built for Wagner, was chiefly supported from the king's purse. Here his famous tetralogy *Der Ring des Nibelungen,* consisting of *Das Rheingold, Die Walkure, Siegfried,* and *Götterdämmerung,* was first performed in 1876 before an unusually brilliant and appreciative audience.

About a year before his death he produced his last creation, *Parsifal.* In 1870 he had married, as second wife, Cosima von Bülow, a daughter of the Abbé Liszt. Wagner labored to reform dramatic music according to the ideas of Gluck and Weber and gave his creations a national character by selecting his subjects from old German heroic legends. His theory was that in a perfect musical drama the three arts, poetry, music and dramatic representation, should be welded together into one well balanced whole. This theory he demonstrated with consummate ability and unsurpassed magnificence. His particular views on music are embodied in a well-known work entitled *Oper und Drama.*

References.—Perhaps the best *Life* is Julien's. See also the *Lives,* in German, by Glasenapp, Pohl, Tapert, and Wolzogen; Krehbiel's *Studies in Wagnerian Drama;* Newman's *A Study of Wagner;* Praeger's *Wagner as I Knew Him;* and Hueffer's *Richard Wagner and the Music of the Future.*

Wainwright, Richard, American naval officer, was born at Washington, D. C., 1849. He was graduated from the Naval academy in 1868; was executive officer on the battleship *Maine,* when destroyed in Havana harbor, February 15, 1898. After this he did good service at the battle of Santiago as commander of the gunboat *Gloucester;* was superintendent of the naval academy, 1900-02; became a captain in 1903. Died, 1926.

Waite, Morrison Remick, American jurist, chief-justice of the supreme court of the United States, 1874-88, was born at Lyme, Conn., 1816. He was graduated from Yale, 1837; studied law and practiced in Ohio. He was nominated by President Grant chief-justice of the United States

supreme court, 1874, and served until his death in 1888.

Waldersee (*väl'dĕr-zā'*), **Count Alfred von,** German general, was born in Potsdam, Prussia, 1832, and entered the German army in 1850, and was chief of the general staff in the Franco-Prussian war; succeeded Moltke as chief of staff in 1888. In 1900 he was created field-marshal, and was appointed to the chief command in China of the allied armies engaged in suppressing the Boxer disturbances. Died, 1904.

Waldstein, Charles, See **Walston, Charles.**

Walker, Francis Amasa, American political economist, was born at Boston, Mass., 1840. He was graduated from Amherst in 1860, took part in the Civil War, and in 1865 rose to the brevet rank of brigadier-general. From 1873 to 1881 he was professor of political economy in the Sheffield scientific school at Yale and in 1881 became president of the Massachusetts institute of technology at Boston. Author: *The Indian Question; The Wages Question; Money; Bimetallism;* and *History of the Second Army Corps.* Died, 1897.

Wallace, Alfred Russel, English naturalist and traveler, was born in Monmouthshire, England, 1822. He visited South America and the Malay archipelago, published the results of his observations on his return. Among his other works are: *Contributions to the Theory of Natural Selection; Geographical Distribution of Animals,* etc. Died, 1913.

Wallace, Henry Cantwell, born Rock Island, Ill., 1866. Graduate Iowa State College of Agriculture, 1892. Farmer and breeder of live stock. Editor and publisher. Secretary of Agriculture in Harding Cabinet. Died, 1924.

Wallace, John Findley, American civil engineer, was born at Fall River, Mass., 1852. He was educated at Monmouth College, C. E.; chief engineer of the Panama canal, 1904; isthmian canal commissioner, 1905; president of Electric Properties company beginning 1906. He was chairman of the board of directors of Westinghouse company. Died, 1921.

Wallace, Lewis, American general, diplomat, and author, was born at Brookville, Ind., 1827; entered the Union service during the Civil War; became a brigadier-general in 1861, and served throughout the war. He was governor of New Mexico, 1878-81, and from 1881 to 1885 was United States minister to Turkey. Author: *Ben Hur,* etc. Died, 1905.

Wallace, Sir William, Scottish patriot, was born about 1272. He headed the rising of 1297 against the English. The next year, however, he was defeated by Edward I. at Falkirk. After being imprisoned in France he was declared an outlaw, in 1304, was captured the next year, sent to London and hanged.

Wallenstein (*väl'en-shtīn*), **Albrecht Wenzel Eusebius,** duke of Friedland, celebrated German general, was born in Bohemia, 1583. At the head of a formidable army, raised by him for the service of the emperor, and paid from his own resources and from unlimited plunder, he, for several years, distinguished himself by his successes in Moravia, Bohemia and northern Germany.

Walpole, Horace, English author, was born in 1717, and in 1791 succeeded to the title of earl of Orford. In 1747 he purchased the famous estate of Strawberry Hill, Twickenham. In this house he collected works of art and curiosities of every description, and likewise established a private printing-press, at which several of his own works and some others were printed. He wrote: *Anecdotes of Painting in England; The Castle of Otranto;* and subsequently, *Reminiscences of the Courts of George I. and II.* He is now remembered chiefly for his *Letters.* Died, 1797.

Walpole, Sir Robert, English statesman, was born at Houghton, England, 1676. He was graduated from Cambridge, and entered parliament in 1701. He was secretary of war, 1708; treasurer of the navy, 1709; chancellor of the exchequer, 1715-17; and prime minister, 1721-42. He was one of the first to urge the establishment of a sinking fund for the purpose of reducing the national debt. He was an enemy of war, and a strong supporter of the Protestant succession. On his retirement in 1742 he was created earl of Orford. Died, 1745.

Walston (formerly Waldstein), **Charles,** American archæologist, was born in New York, 1856. He was educated at Columbia College and at Heidelberg. Slade professor of fine arts at Cambridge University, 1895-1901 and 1904-11, and professor, 1895-97, American school of classical studies, Athens, Greece. Author: *Excavations at the Heræon of Argos; The Surface of Things; The Jewish Question; The Argive Heræum,* etc.

Walter, Thomas Ustick, American architect, was born in Philadelphia, Pa., 1804. In 1848 his design for the extension of the capitol at Washington, D. C., was adopted. While in Washington he also designed the extensions of the patent office, treasury and post-office buildings, the dome of the capitol, and the government hospital for the insane. He died in Philadelphia, Pa., 1887.

Walton, Izaak, English writer, was born at Stafford, England, 1593. He is chiefly remembered as the author of *The Compleat Angler, or The Contemplative Man's Recreation,* which was published in 1655. He was a linendraper in the city of London, first in Cornhill, and afterward in Fleet street. He was also the author of a *Life of Dr. Donne; Life of Richard Hooker; Life of George Herbert.* Died, 1683.

Wanamaker, John, American merchant, was born at Philadelphia, Pa., 1838. He was educated in the public schools until 1852; established, 1861, with Nathan Brown, clothing house of Wanamaker and Brown, Philadelphia; established, 1876, department store in Philadelphia, and a similar business in New York in 1896, in succession to the business of A. T. Stewart, now among the largest in the country; was postmaster-general of the United States, 1889-93. Died, 1922.

"Ward, Artemus." See **Browne, Charles Farrar.**

Ward, Elizabeth Stuart Phelps. See **Phelps-Ward, Elizabeth Stuart.**

Ward, Mrs. Humphry (Mary Augusta Arnold), English novelist, and writer, was born at Hobart, in Tasmania, 1851, daughter, Thomas Arnold, second son of Dr. Arnold of Rugby. She began early to contribute to *Macmillan's Magazine.* The translation of Amiel's *Journal Intime,* prepared the way for the spiritual romance of *Robert Elsmere,* in 1888. After that she published : *The History of David Grieve; Marcella; The Marriage of William Ashe; Fenwick's Career;* etc. Died, 1920.

Ward, John Quincy Adams, American sculptor, was born at Urbana, Ohio, 1830. From 1861 he made his home in New York. His *Indian Hunter, A Private of the Seventh Regiment,* and *Shakespeare* are in Central park, New York; his colossal statue of Washington is on the steps of the sub-treasury building in Wall street. Died, 1910.

Warfield, David, American actor, was born at San Francisco, 1866. He went to New York in 1890; played in Casino theater and Weber and Field's music hall, 1895-98; was starred by David Belasco in *The Auctioneer, The Music Master, A Grand Army Man.*

Warner, Charles Dudley, American author, was born at Plainfield, Mass., 1829. He was graduated at Hamilton College, 1851. In 1884 he became coöditor of *Harper's Magazine,* in which his papers on the South, Mexico, and the great West appeared. In 1873 he wrote with "Mark Twain" *The Gilded Age.* His other works include: *My Summer in a Garden,* etc. Died, 1900.

Warren, Francis Emroy, United States senator, was born in Hinsdale, Mass., 1844; enlisted in 1862 in the 49th Massachusetts regiment of infantry, and served as private and non-commissioned officer; early in 1868 he moved to Wyoming; was appointed governor of Wyoming by President Arthur in 1885. He was elected to the United States senate in 1890, and had been regularly reelected since 1894. Died, 1929.

Warren, Henry White, senior bishop of the Methodist Episcopal church, was born at Williamsburg, Mass., 1831; graduated from Wesleyan University, Conn., 1853; D.D., Dickinson; LL.D., Ohio Wesleyan. Ordained M. E. ministry, 1855; pastor Worcester, Mass., 1855-7, Boston, 1857-61, Lynn, 1861-3, Westfield, 1863-5, Cambridge, 1865-8, Charlestown, 1868-71, Philadelphia, 1871-4, Brooklyn, 1874-7, Philadelphia, 1877-80; elected bishop 1880. Member Massachusetts House of Representatives, 1863. Author of *Sights and Insights; Studies of the Stars; Recreation in Astronomy; The Bible in the World's Education; Among the Forces,* etc. Died, 1912.

Warren, Joseph, American soldier, was born at Roxbury, Mass., 1741. He was graduated at Harvard in 1759, and became a physician in Boston, 1764. In 1774 he was a member and president of the Massachusetts congress, and chairman of the committee of public safety. He had much to do with the success at Lexington, and in 1775 was commissioned major-general; he went to Bunker Hill as a volunteer, refusing to take the chief command offered to him by both Prescott and Putnam. As he was leaving the field he was killed by a ball in the forehead, 1775.

Warren, Samuel, English novelist, was born in Denbigshire, 1807. He was recorder of Hull, 1854-74; conservative member of parliament for Midhurst, 1856-59. He is chiefly remembered by his *Passage From the Diary of a Late Physician,* and *Ten Thousand a Year.* Died, 1877.

Warwick, Richard Neville, Earl of, surnamed the "king-maker," was born about 1428. After joining the Yorkists in the commencement of the calamitous war of the Roses, and taking King Henry VI., prisoner, Warwick, following his victory of Towton, placed Edward, duke of York, on the throne, as Edward IV. He was killed in the battle of Barnet, 1471.

Washington, Booker Taliaferro, principal of Tuskegee Normal and Industrial Institute beginning 1881, was born near Hale's Ford, Va., about 1859, the son of a mulatto slave and a white man. He was graduated from Hampton Institute, Virginia, 1875; A.M., Harvard, 1896; LL.D., Dartmouth, 1901. He was a teacher at Hampton institute until elected by the state authorities head of Tuskegee Institute. Author: *Sowing and Reaping; Up From Slavery; Future of the American Negro; Character Building; Story of My Life and Work; Working With Hands; Tuskegee and Its People,* etc. Died, 1915.

Washington, George, hero of American independence and first president of the United States, was born in Westmoreland county, Virginia, 1732; died at Mount Vernon, 1799. He was the great-grandson of John Washington, an Englishman, who emigrated in 1657; and the son of Augustine Washington, a substantial farmer, being the eldest of a second family.

His education was limited to the elementary subjects, but he acquired a fair knowledge of mathematics and surveying, chiefly by self-study, and when his widowed mother prevailed upon him to abandon the idea of entering the British navy, he adopted surveying as a profession.

His military career commenced at the age of nineteen, when he was appointed adjutant-general of Virginia militia; and before long he showed in operations against the French that he united in an eminent degree the qualities belonging to a successful commander, though in 1754, when in command of his regiment, he had to capitulate to a superior French force. In 1755 he accompanied General Braddock as a volunteer, and was almost the only officer who returned safe from the disastrous expedition. In 1758 he took an important part in the expedition that captured Fort Du Quesne, where, Pittsburg now stands.

In the meantime extensive estates and plantations at Mount Vernon had come into his possession through the death of his half-brother. To these possessions he added largely by marrying, in 1759, Mrs. Martha Custis, a wealthy young widow. He also sat for some years in the Virginia assembly.

Shortly after the outbreak of the war of independence, Washington was elected commander-in-chief of the American forces and hastened to the camp. His career henceforth is part of American history. He was compelled by superior forces at times to retreat, and reduced to the most desperate straits by disaffection, lack of men and supplies, and even cabals against his authority; but by his mildness, calm courage, prudence, firmness and perseverance he brought the war, with the aid of powerful allies, to a successful termination. After the independence of the thirteen colonies was achieved, he retired from the army to Mount Vernon, which he had, during the eight years of war, but once visited. He refused to accept pay, but kept a minute account of his personal expenses, which were reimbursed by Congress.

In 1784 he crossed the Alleghenies to see his lands in West Virginia, and planned the James river and Potomac canals. The shares voted him by the state he gave to endow Washington college, at Lexington, Virginia, and for a university. The early federation of states having failed to give an efficient government, Washington proposed conventions for commercial purposes, which led to the convention of 1787, of which he was a member. This body formed the present federal constitution, considered by him as the only alternative to anarchy and civil war.

Under this constitution he was chosen president, and inaugurated at New York, April 30, 1789. At the second presidential election in 1792 he desired to retire, but yielded to the solicitations of the people, and served for four years longer. In 1796 he positively declined a reelection, and on March 4, 1797, returned to Mount Vernon for the quiet of home life. In 1798, when war was threatened with France, the illustrious chief yielded to the demands of his country, and accepted the post of commanding general of the United States forces, with the rank of lieutenant-general, but a treaty of peace rendered his services unnecessary, and he again returned to his Mt. Vernon home.

On December 12, 1799, he was exposed in the saddle for several hours to cold and snow, and attacked with acute laryngitis, sunk rapidly, and died December 14. His last words were characteristic. He said: "I die hard, but I am not afraid to go." After some instructions to his secretary about his burial he became easier, felt his own pulse, and died without a struggle. He was mourned by the whole nation, and amply deserved the immortal epitaph: "First in peace, first in war, and first in the hearts of his countrymen."

References.—The most important biographies of Washington are those of Marshall, Ramsay, Irving and Lodge. Editions of his collected

writings have been issued by Sparks, and W. G. Ford. See also Guizot's *Character and Influence of Washington;* and Parker's *Historic Americans.*

Watson, John. See **Maclaren, Ian.**

Watson, Thomas E., American lawyer and politician, was born in Georgia, 1856. He was a member of the Georgia legislature, 1882-83; member of congress, 1891-93; began the publication of *Tom Watson's Magazine,* in New York, 1905. U. S. Senator, 1921. Author: *The Story of France.* Died, 1923.

Watson, William, English poet, was born at Burley-in-Whartedale, 1858; honorary LL.D., Aberdeen, 1904. His early poems were published in the *Liverpool Argus* in 1875, and his first book, *The Prince's Quest,* appeared in 1880. Since then have appeared: *Epigrams of Art, Life, and Nature; Odes, and Other Poems; The Purple East; Ode on the Coronation of King Edward VII.; For England;* etc.

Watt, James, Scotch engineer and, generally accredited inventor of the steam engine, was born at Greenock, 1736; and died at his seat of Heathfield, Staffordshire, 1819. His father was a merchant and magistrate of Greenock and James received a good education there. Having determined to adopt the trade of mathematical-instrument maker, he went to London in 1754, for instruction, but ill-health compelled him to return after a year's apprenticeship. Shortly after he endeavored to establish himself in Glasgow, was appointed in 1757 mathematical-instrument maker to the university and resided within its walls till 1763.

From this time till 1774 he acted as a civil engineer—made surveys for canals and harbors, and some of his plans were afterward carried out. It was during this period that he gave shape to his chief improvements on the steam engine. In order to produce the improved machine he associated himself (1775) in business with Mathew Boulton—the firm of Boulton and Watt having their engine works at Soho, Birmingham. He retired from business in 1800.

Watt was a fellow of the Royal societies of London and Edinburgh and member of the national institute of France. He was twice married, and was survived by one son, who carried on the establishment at Soho, in partnership with a son of Mr. Boulton's. Besides improving the steam engine, Watt invented or improved a variety of mechanical appliances, including a letter-copying press. Was an ardent student of chemistry, and it was long maintained on his behalf that he discovered the composition of water. He was a man of high mental powers generally and possessed a wide and varied knowledge of literature and science.

References.—Smiles' *Lives of Boulton and Watt;* Muirhead's *Mechanical Inventions of James Watt;* Thurston's *The Growth of the Steam Engine;* and Pemberton's *James Watt.*

Watterson, Henry, American journalist and orator, was born at Washington, D. C., 1840. He served with distinction in the confederate army as chief of scouts under General Joseph E. Johnston. He subsequently settled at Louisville, Ky., where he founded and edited the *Courier-Journal,* which he made one of the foremost democrat newspapers. At Chicago, in 1893, he delivered the dedicatory oration at the opening of the World's Columbian exposition. He published a *History of the Spanish-American War; Oddities of Southern Life and Character; Abraham Lincoln,* etc. Died, 1921.

Watts, George Frederick, English artist, sculptor, portrait painter, and delineator of historical subjects, was born at London, 1820. He first exhibited at the Royal academy in 1837, and gained a reputation for the size, artistic excellence and beauty of coloring of his pictures. His chief exhibits included: *Caractacus; Cymbeline; Fata Morgana; Life's Allusions; Sir Galahad.* Died, 1904.

Watts, Isaac, English hymn writer and theologian, was born at Southampton, England, 1674. His theological works were numerous, and his treatise on *Logic* had a considerable reputation. His reputation has been chiefly perpetuated by his well known hymns. Died, 1748.

Wayne, Anthony, famous general in the war of the revolution, was born in Pennsylvania, 1745. Led the attack at Germantown; captured supplies for the distressed at Valley Forge; achieved a brilliant victory in the storming of Stony Point, 1779. His courage and skill saved Lafayette in Virginia, 1780. By his dash and audacity he acquired the sobriquet of "Mad Anthony." He became major-general and commander-in-chief in 1792. Died, 1796.

Weber (*vā'bĕr*), **Karl Maria von,** German composer, was born at Eutin near Lübeck, 1786, of a famed musical family. His first great production was *Der Freischütz,* which established his fame, and was followed by *Oberon,* his masterpiece; *Das Waldmädchen,* etc. Died, 1826.

Webster, Daniel, great American statesmen and orator, was born at Salisbury, New Hampshire, 1782. Daniel was the second son of Ebenezer Webster, a small farmer and justice of the county court. He entered Dartmouth College in 1797, and taught school in winter to pay his expenses. He graduated in 1801, and in 1804, went to Boston, and entered the law office of Mr. Gore. In 1805 he was admitted to the Boston bar, passed one year in the practice of his profession at Boscawen and, on the death of his father, established himself at Portsmouth, N. H., and married in 1808.

Having engaged in politics as a member of the federalist party, he was elected to congress, where he immediately took rank with the foremost men of the country. He took his seat in the special session of May, 1813, and on June 10, delivered his maiden speech on the repeal of the Berlin and Milan decrees. This, and his mastery of the question of currency and finance, secured him a high position. At the close of the session, however, Webster removed to Boston, where, during a period of seven years, he devoted himself exclusively to the practice of his profession, and occupied a preeminent position as a counsellor and advocate.

In 1822, he was a member of the Massachusetts constitutional convention; and on December 22, 1822, he pronounced at Plymouth, on the anniversary of the landing of the Pilgrims, the first of that remarkable series of discourses, or orations, which put him in the first rank among American orators. In 1825, he delivered an oration at the laying of the corner stone of the Bunker Hill monument; in 1843, one on its completion. In 1826, he pronounced the eulogy of John Adams and Thomas Jefferson, two fathers and presidents of the American republic, who died on the same semi-century anniversary of the declaration of independence; and in 1851, a patriotic discourse on the laying of the corner stone for the extension of the capitol at Washington.

In 1822 he was elected to Congress from Boston and distinguished himself by his speeches on the holy alliance and the Greek revolution and his labors in the revision of the criminal laws of the United States. In 1826 he was chosen United States senator; and in 1830 rose to the height of his forensic renown in a speech of two days, in the debate with Mr. Hayne, of South Carolina, on the right of "nullification." Webster and Clay were the leaders of the opposition during the administrations of Jackson and Van Buren.

In 1841 he became secretary of state under President Harrison; remained in the administration of President Tyler until 1843; and was a third time secretary of state in 1850, in the cabinet of Mr. Fillmore. On various occasions Webster had been an unsuccessful candidate for the presidency. He aspired again to that position in 1852, but his advocacy of compromises on the slavery question had given offense to the abolitionists, and the choice of the convention assembled at Baltimore fell upon General Scott. The great orator died a few months after, October 24, 1852.

Webster's figure was commanding; his countenance was remarkable even in repose, but when animated by the excitement of debate, it "spake no less audibly than his words." His gestures were vehement, without being undignified; and his voice was unrivalled in power, in clearness and in modulated variety of tone.

References.—The *Writings and Speeches of Daniel Webster* have been published in 18 volumes and his *Works* in 6 volumes. See also Curtis' *Life of Daniel Webster;* Harvey's *Reminiscences of Daniel Webster;* Lodge's *Daniel Webster;* McMaster's *Daniel Webster;* Wheeler's *Daniel Webster, the Expounder of the Constitution.*

Webster, John, English dramatist, was born about 1580. He collaborated with a number of writers of the period, and then produced the tragedy of *The White Devil,* one of his two great masterpieces, about 1610; and about 1616 his famous *Duchess of Malfy.* He died about 1625.

Webster, Noah, author and philologist, was born at Hartford, Conn., 1758, and was educated at Yale College; admitted to the bar in 1781. While employed in teaching at Goshen, N. Y., he prepared his *Grammatical Institutes of the English Language.* In 1807 he published *A Philosophical and Practical Grammar of the English Language,* and commenced his American *Dictionary of the English Language;* but finding difficulties in etymology, he devoted ten years to its study, and prepared a *Synopsis of Words in Twenty Languages;* then began his dictionary anew, and in seven years completed it. Died in New Haven, Conn., 1843.

Weed, Thurlow, American journalist, was born at Cairo, N. Y., 1797. He served as a volunteer in the war of 1812. In 1865 he moved to New York city and became editor of the *New York Times,* and afterward of the *Commercial Advertiser.* In 1861-62 he was sent to Europe on a special mission by President Lincoln. Died at New York in 1882.

Weeks, John Wingate, born Lancaster, N. H., 1860. Graduate U. S. Naval Academy, 1881. Member 59th to 62nd Congresses. U. S. Senator, 1915-1919. Member Society of the Cincinnati. Secretary of War in Harding Cabinet. Died, 1926.

Weismann (*vīs'mȧn*), **August,** German biologist, was born at Frankfort, 1834. He contended that natural selection was the dominant factor in evolution. He published, besides the Romanes lectures of 1894, *The Evolution Theory* and works on kindred problems. Died, 1914.

Welch, William Henry, American physician and pathologist, professor of pathology at Johns Hopkins, was born at Norfolk, Conn., 1850. He was graduated from Yale in 1870; M.D.; LL.D.; professor of pathology, Johns Hopkins, 1884-1916; director, School of Hygiene and Public Health beginning 1916, and pathologist to the Johns Hopkins hospital, 1889-1916. Author of *General Pathology of Fever.*

Wellington, Arthur Wellesley, Duke of, celebrated British general, was born at Dangan Castle, Ireland, 1769; entered the army as ensign in 1787, and became lieutenant-colonel in 1793. He was then appointed commander of the British forces on the continent of Europe, and from Vienna joined the army at Brussels. The battles of Ligny and Quatre Bras were succeeded on June 18, 1815, by the great battle of Waterloo. In 1827 he succeeded the duke of York as commander-in-chief of the British army, and from 1828 to 1830 was prime minister. Died, at Walmer Castle, in 1852.

Wells, Carolyn, author, was born at Rahway, N. J., daughter of William E. Wells; and has been engaged in literary work beginning 1895. Author: *At the Sign of the Sphinx; The Gordon Elopement; Marjorie's Vacation; Rainy Day Diversions,* etc.

Wells, David Ames, American economist, was born at Springfield, Mass., 1828. He was graduated from Williams College. Among his published works are text-books on *Science of Common Things; Recent Economic Changes; The Principles of Taxation; Our Merchant Marine.* Died at Norwich, Conn., 1898.

Wells, Herbert George, English novelist, was born at Bromley, Kent, 1866. He was graduated at the Royal college of science, 1888. Author: *The Time Machine; The Stolen Bacillus and Other Stories; The Invisible Man; The Food of the Gods; In the Days of the Comet; The War in the Air,* etc.

Wendell, Barrett, American educator, writer, and critic, professor of English at Harvard, was born at Boston, 1855. He was graduated at Harvard, 1877; professor beginning 1898, and lecturer at the Sorbonne and other French Universities, 1904-05. Author: *English Composition; Life of Cotton Mather; Stelligeri and Other Essays Concerning America; The Temper of the Seventeenth Century in English Literature; History of Literature in America; The France of To-day,* etc. Died, 1921.

Wenley, Robert Mark, American educator, head of philosophical department, University of Michigan, since 1896, was born at Edinburgh, Scotland, 1861. He was graduated at the University of Glasgow, M.A., 1884; Ph.D., Sc.D., LL.D. Author: *Socrates and Christ; Aspects of Pessimism;* co-editor *Dictionary of Philosophy,* etc. Joint editor: *The Psychological Review.* Died, 1929.

Werner (*ver'nĕr*), **Abraham Gottlob,** German mineralogist and geologist, was born at Wehrau, in upper Lusatia, 1750. In 1792 he was appointed councilor of mines in Saxony, and his lectures soon extended his reputation throughout Europe. In his mineralogical system minerals were distinguished and arranged chiefly according to their external characters. He died at Dresden in 1817.

Wesley, Charles, English hymn writer, was born at Epworth, England, 1708, and was associated with his brother John in the whole Methodist movement. He is the author of a great number of hymns, many of which are among the best and most admired in the English language. He died in 1788.

Wesley, John, English divine, who, with Whitefield, founded Methodism, was born at Epworth, 1703. In 1730, while at Oxford University, he and his brother, with a few other students, formed themselves into a society for the purpose of mutual edification in religious exercises. So singular an association excited considerable notice, and, among other names bestowed upon the members, that of *Methodists* was applied to them. Wesley with some others, chiefly Moravians, came to Georgia in 1735, but the strictness of discipline which he attempted to introduce proved

very distasteful to the colonists. After a residence of less than two years in America he returned to England, preaching to open air meetings, and gathered many followers. He built spacious meeting houses in London, Bristol and other places.

For some time he was associated with George Whitefield; but, differences arising on account of the doctrine of election, which was zealously espoused and preached by the latter, they separated, and the Methodists were denominated according to their respective leaders.

Wesley was indefatigable in his labors, and was almost continually engaged in traveling over England, Wales, Scotland and Ireland. No man ever labored more zealously or continuously in the cause which he had undertaken. Every moment of his life was devoted to the organization of the great sect of Methodists, and he preserved his influence over it to the last. His preaching was extemporaneous, but not vehement. He dwelt much upon practical religion, though he taught his followers to seek inspiration of the Holy Spirit, and to aspire to a state of sinless perfection. Died in London, 1791.

References.—Perhaps Wesley's best single treatises were his *Notes on the Old and New Testaments*, and his *Doctrine of Original Sin*. His complete *Works*, with a *Life* by T. Beecham, and preface by J. J. Jackson, has been published in 15 volumes. *Lives* of John Wesley have been written by Southey, Tyerman, Wedgwood, Telford, Overton, Snell and Winchester. See also *Wesley and his Century*, by Dr. Fitchett.

West, Benjamin, American painter, was born at Springfield, Pa., 1738. He began to paint at seven years of age, worked in Philadelphia and New York, studied in Italy, 1760-63, and settled in England in the latter year. Among his best paintings are: *The Death of Wolfe; Christ Healing the Sick; Death on the Pale Horse*, etc. Died in London in 1820.

Westcott, Brooke Foss, English prelate, writer and biblical scholar, was born near Birmingham in 1825; regius professor of divinity at Cambridge and in 1890 was appointed bishop of Durham. His writings embrace: *History of the Canon of the New Testament; The Gospel of Life; Social Aspects of Christianity; Characteristics of the Gospel Miracles; The New Testament in the Original Greek*. Died, 1901.

Westinghouse, George, American inventor and manufacturer, was born in New York in 1846. In 1868 invented and successfully introduced the Westinghouse air-brake, which he later greatly improved. He was the pioneer in introducing alternating current machinery in America; built the great generators at Niagara Falls and those for elevated railway and rapid transit system in New York. Died, 1914.

Weygand, M. General, French strategist; shared with Foch the glory of defending the Lorraine front. After the war he was ordered to Poland and by his distinctive strategy saved Poland from the incursions of Russia.

Wheatstone, Sir Charles, English physicist and electrician, was born at Gloucester, England, 1802. Invented the telegraph thermometer and barometer; secured first patent for an electric telegraph; and an apparatus for conveying instructions to engineers and steersmen on board large steam-vessels. He is well known for the Wheatstone bridge. Died, 1875.

Wheeler, Benjamin Ide, American educator and philologist, president of the University of California, 1899-1919, was born at Randolph, Mass., 1854. He was graduated at Brown University, 1875; Ph.D., LL.D., Harvard, 1900; professor of Greek, 1888, at Cornell. President emeritus and professor comparative philology, University of California, 1919-27. Author: *The Greek Noun-Accent; Analogy in Language; Organization of Higher Education in the United States*. Died, 1927.

Wheeler, Joseph, American general was born in Augusta, Ga., 1836. He was graduated at the United States military academy in 1859; served in the cavalry until the outbreak of the Civil War, when he entered the confederate army, in which he was later commissioned major-general and senior commander of cavalry; was made major-general of volunteers during the Spanish-American war in 1898; appointed brigadier-general in the United States army, 1900, and was retired in September. Died, 1906.

Whistler, James Abbott McNeill, noted American painter, was born in Lowell, Mass., 1834. He entered the United States military academy, but was dismissed; studied drawing and painting in Paris, France, and in 1863 settled in London, England. He gained celebrity as an etcher. His paintings include many portraits, among which are: *The White Girl; Portrait of My Mother; Nocturne in Blue and Gold*. Died, 1903.

White, Andrew Dickson, American diplomatist and educator, was born in Homer, N. Y., 1832. He was graduated at Yale in 1853. He was appointed by President Hayes, minister to Berlin, 1879-81; by President Harrison, minister to St. Petersburg, and continued under President Cleveland, 1892-94; appointed member of the Venezuelan commission, 1896-97; ambassador to Berlin under President McKinley, 1897-1902; and was president of the American delegation to the international peace congress at The Hague in 1899. He wrote *Warfare of Science With Theology; Studies in General History*, etc. Died, 1918.

White, Edward Douglas, American jurist, was born in the parish of Lafourche, La., 1845. He was educated at Mount St. Mary's College, Maryland, and at the Jesuit College in New Orleans. During the Civil War he served in the confederate army. United States senator in 1891-94; he was appointed associate justice of the United States supreme court in 1894 and chief justice, 1910. Died, 1921.

White, Henry, diplomat, was born at Baltimore, 1850. He was educated by private tutors and schools. He has represented the United States in England, Austria, Italy, Morocco, France, Argentina and Chile. Died, 1927.

White, Horace, American journalist, was born in Colebrook, N. H., 1834. He was graduated at Beloit College, Wis., 1853; from 1883 to 1903 was connected with the *New York Evening Post*, as president of the company, editorial writer and editor-in-chief. Author: *Money and Banking Illustrated by American History; The Roman History of Appian*, etc. Died, 1916.

White, Richard Grant, American author and critic, was born in New York City, 1821. He was educated at the college of the City of New York. The result of his studies and writings on music and art was a volume on *Christian Art*. His other works include: *National Hymns; Poetry of the Civil War; Life of Shakespeare; Studies in Shakespeare*, etc. Died, 1885.

White, Stewart Edward, author, was born in Grand Rapids, Mich., 1873; Ph.B., University of Michigan, 1895. He is a frequent contributor to magazines, and author of *The Westerners; The Blazed Trail; The Forest; Blazed Trail Stories; The Pass; Camp and Trail*.

White, William Allen, American journalist and author, owner and editor of the Emporia *Daily and Weekly Gazette*, was born 1868. Author: *The Real Issue, and Other Stories; Stratagems and Spoils; A Certain Rich Man*, etc.

Whitefield, George (1714-1770), born in Gloucester, and educated at Oxford, was one of the founders of Methodism. He made several visits to America, a number of which lasted two or three years.

Whitlock, Brand, lawyer, diplomat, born in Urbana, Ohio, 1869, began his career as a newspaper reporter, then as a clerk. Studied law and was admitted to the bar, 1894. Twice elected Mayor of Toledo on the Independent ticket, he secured many reforms. In 1913 was appointed U. S. Minister to Belgium, where he made a strenuous but futile intercession for Edith Cavell. Ambassador, 1919-1922. Brown University conferred a degree of LL.D. upon him in 1916, and the Ohio Wesleyan in 1917.

Whitman, Walt (1819-1892), American poet, was born at Westhills, L. I. A printer by trade, he wrote for newspapers and magazines, and later became editor of the *Brooklyn Eagle*. He wrote *Democratic Vistas; Two Rivulets;* and *Specimen Days and Collect*.

Whitney, Eli, American inventor, was born in Westborough, Mass., 1765. In 1792 he was graduated at Yale; invented the cotton gin, 1796, but owing to litigation growing out of the claims of fraudulent imitators, and despairing of obtaining his rights in the South, Whitney went to New Haven, Conn., 1798, near which city he became engaged in the manufacture of firearms. He died at New Haven, 1825.

Whitney, Josiah Dwight, American geologist was born at Northampton, Mass., 1819. He was graduated at Yale in 1839; in 1865 was made professor at Harvard. He wrote extensively on geological topics, and died in 1896.

Whitney, William Dwight, American philologist, was born at Northampton, Mass., 1827. In 1854 he became professor of Sanskrit at Yale, and in 1870 also of comparative philology. He waged war with Max Müller on fundamental questions of the science of language. Among his works were: *Material and Form in Language, Life and Growth of Language; Mixture in Language*, etc. He was editor-in-chief of the *Century Dictionary*. Died at New Haven, 1894.

Whittier, John Greenleaf, American poet, was born of Quaker parents at Haverhill, Mass., 1807. In his younger days he worked on his father's farm and learned the shoemaking trade. He carried on the farm himself for five years, and in 1835-36 was a member of the legislature of Massachusetts and always remained an ardent abolitionist. Among the numerous volumes of poetry which he published from time to time are: *Molly Pitcher; The Voices of Freedom; The Chapel of the Hermits; Snow Bound; In War-Time; Hazel Blossoms; The King's Missive; Poems of Nature*, etc. He is best known for his poems, *Barbara Frietchie, The Barefoot Boy, Maud Muller*, and *The Pipes at Lucknow*. Died, 1892.

Wickersham, George Woodward, American lawyer, attorney-general of the United States, 1909-13, was born in Pittsburg, Pa., 1858. He was graduated at the University of Pennsylvania, 1880; member firm Strong and Cadwalader, 1887-1909; attorney general of United States, 1909-13, in the cabinet of President Taft; now member firm Cadwalader, Wickersham and Taft.

Wieland (*vē'länt*), **Christoph Martin,** noted German poet, was born at Oberholzheim, near Biberach, 1733. His views on the subject of love are most fully and worthily expounded in the didactic poem *Musarion*, a work of singular grace and harmony of treatment. At Weimar in 1772 he wrote *The Choice of Hercules*. Died, 1813.

Wiggin, Kate Douglas, American author, was born in Philadelphia, Pa., 1857. She was graduated at Abbott Academy, Andover, Mass., 1878, and married Samuel Wiggin in 1880 and George C. Riggs in 1895. Author: *The Birds' Christmas Carol; The Story of Patsy; Polly Oliver's Problem; The Village Watch Tower; The Diary of a Goose Girl; Rebecca; The Affair at the Inn*. Died, 1923.

Wilberforce, William, English statesman and philanthropist, was born at Hull, England, 1759. He was educated at St. John's College, Cambridge. He entered parliament as the representative of his native town. In 1789 he first proposed in the house of commons the abolition of the slave trade, and, with the aid of Charles James Fox, this measure was carried in 1806. Died 1833 and was buried in Westminster abbey.

Wilcox, Ella Wheeler, American poet and writer, was born near Madison, Wis., 1855, and was educated at the State University in that city. For many years she was on the staff of the *New York American*. Died, 1924.

Wilde, Oscar Fingall O'Flahertie Wills, Irish author and dramatist, was born at Dublin, Ireland, 1856. Educated at Trinity College, Dublin, and at Oxford. While yet in college he became a leading exponent of the aesthetic movement, and in 1882 he toured the U. S., lecturing on this subject. By 1890 had become widely known as writer and dramatist. His chief prose work, *The Picture of Dorian Gray*, and a volume of essays, *Intentions*. Among his plays are: *Duchess of Padua; Lady Windermere's Fan; A Woman of No Importance; The Ideal Husband;* and *Importance of Being in Earnest*. His play *Salome* was produced by Bernhardt in Paris in 1894. Other books include *Ballad of Reading Gaol* and *De Profundis*, the former written while he was serving a prison sentence after conviction for immoral practices. Died, 1900.

Wiley, Harvey Washington, chemist, writer, was born at Kent, Ind., 1844. Graduated from Hanover College, 1867; M.D., Indiana Medical College; D.Sc. Lafayette College, 1912. Professor of Chemistry Purdue University and State Chemist of Indiana, 1874-83. Chief Chemist, United States Department of Agriculture, 1883-1912. Professor of Agricultural Chemistry, George Washington University, 1899-1912. Commissioned in 1906 to frame regulations for pure food in New York. Contributing editor to *Good Housekeeping*, 1912——. Author *Principles and Practice of Agricultural Chemistry; Foods and Their Adulterations* and *History of a Crime Against the Food and Drugs Act*.

Wilhelmina (*vil'hel-mē'nȧ*), **Helene Pauline Marie,** queen of the Netherlands, was born at The Hague, Holland, 1880. She succeeded to the throne of the Netherlands on the death of her father in 1890, though she only attained legal age in 1898, when she was inaugurated as queen. In 1901 she married Prince Henry, youngest son of the late grand duke of Mecklenburg-Schwerin.

Willard, Emma C., American educator, born at Berlin, Conn., 1787. In 1808 she married Dr. John Willard. In 1830 she traveled in Europe and by her efforts a school for the training of native women teachers was founded in Greece. Among her books are: *History of the United States; Universal History in Perspective*. Died, 1870.

Willard, Frances Elizabeth, temperance reformer, was born at Churchville, N. Y., 1839. After some years spent in teaching, she became professor of æsthetics in the Northwestern University, and was made dean of the Woman's College in 1871. She began her active temperance work, in 1874, as secretary of the National Woman's Christian temperance union; in 1879 was made president of that organization, and held the office until her death. She died in New York, 1898.

Willcox, Walter Francis, American educator and statistician, was born in Reading, Mass., 1861. He was graduated at Amherst, 1884; Ph.D., LL.D.; is now professor of political economy and statistics, Cornell; statistical expert for war department upon censuses of Cuba and Porto Rico, 1899-1900. Author: *The Divorce Problem—a Study in Statistics*, and numerous census bulletins.

William I., commonly called the Conqueror, was born in Normandy, 1027. He laid claim to the sovereignty of England on the death of Edward the Confessor. In 1066 he landed at Pevensey, in Sussex; defeated Harold II. at the battle of Hastings; and was crowned king of England in Westminster abbey on the Christmas day following. The Channel islands, being part of Williams' duchy of Normandy, became attached to England on his accession. He died at the abbey of St. Gervais, 1087.

William III., king of England, 1689-1702 was born at The Hague, 1650. In 1678, being then stadtholder of Holland, he went to England and

married Mary, youngest daughter of the duke of York, afterward James II. In 1688 he landed with a Dutch army at Torbay, in Devonshire, and was soon after invited by a convention parliament to accept the throne, which James had vacated. In 1690 he defeated James at the battle of the Boyne. He died at Kensington palace in 1702.

William IV., king of Great Britain and Ireland, third son of George III., was born in 1765. By the death of the Duke of York, 1827, he became heir-presumptive to the throne, to which he succeeded on the death of his brother, George IV., in June, 1830. The great event of the reign of William IV., was the passing of the reform bill. He died in 1837, and was succeeded by his niece, Queen Victoria.

William I. Friedrich Ludwig Wilhelm, king of Prussia and emperor of Germany, was born in 1797, second son of Frederick William III. of Prussia. In 1857, the king having become incapacitated for business, William was commissioned to act as regent, a commission which was renewed from time to time until his permanent installation, in 1858. In 1861 he ascended the throne, and became the head of the North German confederation in 1867. He found in Bismarck an able minister who could rule without a parliamentary majority. At Ems, in July, 1870, the memorable interviews, between William and the French ambassador, Benedetti, took place, which resulted in the Franco-Prussian war of 1870-71. William commanded at the decisive battles of Gravelottee and at Sedan. In 1871 he was proclaimed emperor of Germany in the palace of the French kings at Versailles. Died, 1888.

William II., Friedrich Wilhelm Viktor Albrecht, king of Prussia and emperor of Germany, was born in 1859, eldest son of Frederick III. and Victoria, princess royal of England. He succeeded his father in 1888. He showed his versatility as yachtsman, poet, composer, painter and war lord. His strong initiative in political matters led to the dismissal of Bismarck in 1890. His manner of prosecuting the great war of 1914-18 brought the downfall of the Hohenzollern dynasty. He was forced to abdicate Nov. 9, 1918, and took refuge in Holland.

William I., Frederik Willem, first king of the Netherlands, grand duke of Luxemburg, was born in 1772. In 1815 he was declared king, as William I., under a limited constitution. The Belgians having established their independence with the aid of France in 1830-32, he was obliged to acknowledge it in 1839. Died, 1843.

William I, called the Silent, prince of Orange, was born in Dillenburg, 1533. In 1576 the five provinces which had belonged to Spain, joined the states-general at Ghent, and formed a league under William. William formed in 1579 a league among Holland, Zealand, Utrecht, Friesland, Gelderland, Gronigen and Overyssel, which was the foundation of the Dutch republic. Two years later the united provinces declared themselves independent. William twice refused to rule the new country. He was assassinated at Delft, 1584.

Williams, George Fred, American lawyer, was born in Dedham, Mass., 1852. He was graduated at Dartmouth College, 1872. He edited *Williams' Citations of Massachusetts Cases* and volumes 10 to 17 *Annual Digest of the United States*. He was a member of the Massachusetts legislature in 1889, member of congress, 1891-93; minister to Greece, 1913-14. Resigned.

Williams, John Sharp, American legislator and publicist, was born in Memphis, Tenn., 1854. He studied law at the University of Virginia and in Memphis, Tenn., and was admitted to the Tennessee bar, 1877. He was temporary chairman of the St. Louis convention, 1904; member of congress from 5th Mississippi district, 1893-1903; United States senator from Mississippi, 1893-1923.

Williams, Roger, English colonist and founder of Rhode Island, was born probably in London, about 1604. He emigrated to New England in 1631. On account of his religious opinions he was ordered to leave the colony in 1635, and in 1636 founded Providence. He was the first president of the colony established by himself; and the uniform justice and kindness with which he treated the native Indians is frequently referred to in the records of his time. Died, 1683.

Williston, Samuel, lawyer, and legal educator, was born at Cambridge, Mass., 1861; graduated from Harvard, 1882; LL.B., 1888; LL.D., 1910. Began practice at Boston, in 1888; assistant professor of law, 1890-5, professor, 1895-1903, Weld professor 1903-1919 and Dane professor since 1919; acting dean, 1909, Harvard Law School. Lecturer, Law School, University of Chicago, 1902-3, University of California, 1909. Author: *The Law of Sales*. Editor: *Parsons on Contracts*, eighth edition; *Cases on Contracts; Cases on Sales; Stephen on Pleading; Cases on Bankruptcy; Wald's Pollock on Contracts*, etc.

Wilson, Henry, American statesman, was born of poor parents in Farmington, N. H., 1812. He was elected to the Massachusetts legislature by the whig party in 1840, and largely contributed to the formation of the free-soil party in 1848. In 1855 he succeeded Edward Everett as United States senator, and became one of the leaders of the republican party. In 1872 he was elected vice-president of the United States. Died, 1875.

Wilson, Thomas Woodrow, twenty-eighth president of the United States, educator, publicist, historian, was born in Staunton, Va., Dec. 28, 1856, son of Rev. Joseph R. and Jessie (Woodrow) Wilson. He was graduated from Princeton University, 1879; from the University of Virginia Law School, 1882; and Ph.D., Johns Hopkins, 1886. He received the degree of LL.D. from Tulane, Johns Hopkins, Harvard, University of Pennsylvania and other universities, and that of Litt.D. from Yale. On June 24, 1885, he married Helen Louise Axson of Savannah, Ga., and had three daughters, Margaret, Jessie and Eleanor. During 1882-83 he practiced law at Atlanta, Ga.; 1885-88, was professor of history and political economy at Bryn Mawr College, Pa.; 1888-90, professor of same subject at Wesleyan University, Conn.; 1890-1902, professor of Jurisprudence and politics, and 1902-10, president of Princeton University. During the latter year he was elected governor of New Jersey, for the term 1911-14, and, after a notable contest, was nominated as the Democratic candidate for president of the United States, at Baltimore, on July 2, 1912. At the succeeding presidential election, he was elected president over William H. Taft, republican, and Theodore Roosevelt, progressive, by the largest electoral plurality ever accorded any presidential candidate. He was inaugurated March 4, 1913, and shortly following called congress in special session to consider tariff and other reforms. Mrs. Wilson died August 6, 1914. On December 18, 1915, he was married to Edith Bolling Galt. Renominated for president at convention of his party held in St. Louis, June, 1916. There followed one of the most strenuous campaigns in the history of this country. At the November election, 1916, he was re-elected over Charles E. Hughes, Republican nominee, by an electoral vote of 276 to 255. Author of *Congressional Government, The State, George Washington, History of the American People, The New Freedom, When a Man Comes to Himself*. Died, 1924.

Wilson, William Bauchop, secretary of labor, 1913-1921, farmer, was born at Blantyre, Scotland, April 2, 1862; came to this country with his parents in 1870 and settled at Arnot, Tioga County, Pa. In 1871, he began working in the coal mines; in 1873, became member of the Mine Workers' Union; has taken an active part in trade-union affairs from early manhood; was international secretary-treasurer of the United Mine Workers of America, 1900 until 1908. He was a member of Congress, 1907-13.

Winsor (*win'zĕr*), **Justin,** American historian and librarian, was born at Boston, Mass., 1831. He studied at Harvard and Heidelberg, was superintendent of the Boston library, 1868-77, passing then to the librarianship of Harvard. His chief publications embrace: *The Readers' Handbook of the American Revolution; Narrative and Critical History of America*. Died at Cambridge, Mass., 1897.

Winthrop, John, governor of Massachusetts colony, was born at Gorton, Suffolk, England, 1588; was chosen governor by the Massachusett Bay company in 1629. The next year he came over, bringing with him 900 emigrants. His *Journal* is one of the most important sources of early American history. He died at Boston, 1649.

Wirt, William, American lawyer, was born at Bladensburg, Md., 1772. He was admitted to the bar in 1792, and settled to practice in Virginia; and in 1817 became attorney-general of the United States. Died, 1834.

Wise, Stephen Samuel, Jewish Rabbi, was born in Buda Pest, Hungary, in 1872. He was educated at Columbia University, receiving a Ph.D. degree in 1901. He was pastor of synagogues in New York and Portland, Oregon, from 1893 to 1907, when he established and became rabbi of the Free Synagogue of New York. He is one of the leaders in the Zionist movement, and has been a prominent figure in charitable associations, in the liberalization of dogma and in the promotion of international peace. He is head of an institution for training social and religious workers in New York City.

Wiseman, Nicholas Patrick Stephen, English cardinal and Roman Catholic archbishop of Westminster, was born at Seville, Spain, 1802. He was subsequently appointed vice-rector of the English College, and professor of oriental languages in the University of the Sapienza. In 1828 he published his *Horæ Syriacæ;* was named president of St. Mary's College of Oscott. In 1850 he was named archbishop of the see of Westminster and at the same time created cardinal. He wrote *Influence of Words on Thought and Civilization; The Real Presence*, etc. He died in London, 1865.

Wister, Owen, American author, was born in Philadelphia, Pa., 1860. He was graduated from Harvard, 1882; from Harvard Law School, 1888; was admitted to the Philadelphia bar, 1889. He engaged in literary work, 1891. Author: *The Dragon of Wantley: His Tail; U. S. Grant, a Biography; The Virginian; Philosophy 4;* and much prose and verse in magazines.

Witte (*vit'ĕ*), **Count Sergei Yulievitch,** Russian statesman, of German origin, was born at Tiflis, 1849. He was educated at Odessa. He was called to St. Petersburg for employment there in 1879, and appointed in 1886 director of the Russian southwest railways. In 1903 he was removed from the ministry of finance and made president of the committee of ministers. He was one of the Russian plenipotentiaries in the negotiations for peace with Japan in 1905, and was afterward made a count and appointed president of the new ministry. Died, 1915.

Wolfe, Charles, British clergyman and poet, was born at Dublin, 1791. In 1814 he took his B.A. at Dublin. His *Burial of Sir John Moore*, in 1817, won for itself a secure place in the heart of the British nation. Died, 1823.

Wolfe, James, English general, was born at Westerham, in Kent, England, 1727. In the effort to drive the French out of Canada, Pitt, in 1759, gave the charge of the invading army to Wolfe, who had been made major-general. The story of his attack on Quebec, how he scaled the cliffs with his army by night, and died in the moment of victory is well known. He died in 1759.

Wolseley (*wŏŏl'zĭ'lĭ*), **Garnet Joseph, Viscount,** English field-marshal, was born in County Dublin, Ireland, 1833; was governor of Natal. He commanded the Egyptian expedition, 1882; Gordon relief expedition, 1884; and while commanding in Ireland was made field-marshal in 1894, and commander-in-chief, 1895. He retired in 1906. Died, 1913.

Wolsey (*wŏŏl'zĭ*), **Thomas,** English statesman and cardinal, was born at Ipswich, about 1475. On the accession of Henry VIII. he became the king's almoner, and obtained several other preferments. In 1515 he was consecrated archbishop of York; at about the same time was appointed lord chancellor and prime minister and cardinal. From this time he was one of the foremost men in Europe, and, as his revenues were immense, his pride and ostentation were carried to the greatest height. In 1530 he was arrested on a charge of high treason, and was ordered to be conveyed to London for trial. He reached Leicester abbey and died there a few days afterward, in 1530.

Wood, Leonard, army officer, was born at Winchester, N. H., 1860. He was graduated from the Harvard Medical School, 1884; LL.D., Harvard. He became assistant surgeon in the United States army in 1886, captain in 1891; major-general, December 7, 1898; brigadier-general, United States regular army, 1901; major-general, 1903; commander of Philippines division, 1906-08; governor general Philippine Islands beginning 1921 and until his death in 1927.

Woodberry, George Edward, American author and critic, was born at Beverly, Mass., 1855. He was graduated at Harvard in 1877. He was professor of English at Nebraska University, 1877-78, 1880-82, and professor of comparative literature, Columbia, 1891-1904. Author: *History of Wood Engraving; Edgar Allen Poe; Nathaniel Hawthorne; America in Literature; Ralph Waldo Emerson; The Appreciation of Literature; Great Writers*.

Woodhull, John Francis, University professor, was born at Westport, N. Y., 1857; graduated from Yale, 1880; Ph.D., Columbia, 1899; professor natural science, N. Y. State Normal School, 1887; professor physical science, Teachers' College (Columbia); became professor emeritus, 1922. Author: *Simple Experiments for the School Room; First Course in Science; Chemical Experiments, a Laboratory Manual; Physical Experiments, Physics, a Text-book; Simple Experiments in Chemistry*, etc.

Woodward, Calvin Milton, educator, was born at Fitchburg, Mass., 1837; graduated from Harvard, 1830; Ph.D., 1883, LL.D., 1905, Washington University; LL.D., University of Wisconsin, 1908. Professor descriptive geometry, 1870-1, dean School of Engraving, 1871-96, dean School of Engraving and Architecture, 1901-10; professor mathematics and applied mechanics beginning 1871, Washington University. Originator and director after organization, 1879, of St. Louis Manual training school. Author: *The Manual Training School; Manual Training in Education*, etc. Died, 1914.

Woodward, Robert Simpson, American physicist and educator, was born at Rochester, Mich., 1849. He was graduated at the University of Michigan, C.E., Ph. D.; LL.D.; Sc.D.; assistant United States coast and geodetic survey in 1890-93; professor of mechanics and mathematical physics, 1893-1905, and dean of the school of pure science, 1895-1905, Columbia, and director of the Carnegie Institution of Washington beginning 1905. Died, 1924.

Woolley, Mary E., American educator, president of Mt. Holyoke College beginning 1900, was born at South Norwalk, Conn., 1863. She was graduated at Wheaton seminary, 1884; Litt.D., L.H.D., Amherst, 1900. She was head of the department of biblical history and literature of Wellesley College, 1895-1900.

Woolman, John, American Quaker preacher, was born at Northampton, N. J., 1720. He was a famer's son, and was for some time a tailor. He spoke and wrote against slavery and published *The Journal of the Life and Travels of John Woolman in the Service of the Gospel*. He died at York on a visit to England, 1772.

Woolsey, Theodore Dwight, American scholar, was born at New York city, 1801. He was graduated at Yale in 1820, studied at Princeton and for three years in Germany; from 1846 to 1871 was the president of Yale. He was an authority on questions of international law. Died, 1889.

Among his works are: *Introduction to the Study of International Law; Divorce and Divorce Legislation*, etc.

Worcester (*wŏŏs'tĕr*), **Joseph Emerson,** American lexicographer, was born at Bedford, N. H., 1784. He taught at Salem, Mass., and then turned to authorship. His works were gazetteers, manuals of geography and history, etc. He abridged Webster's *Dictionary* in 1829; printed his own *English Dictionary* in 1830, and quarto *Dictionary of the English Language*, 1860. Died, 1865.

Wordsworth, William, celebrated English poet, was born at Cockermouth, Cumberland, 1770, and died, 1850. In 1787 he was sent to St. John's college, Cambridge. He left the university after taking his degree, but without having otherwise distinguished himself, and lived aimlessly in London and elsewhere.

He crossed to France in 1791, and exhibited vehement sympathy with the revolution, remaining in France for nearly a year. After his return, disregarding all entreaties to enter upon a professional career, he published his *Evening Walk* and *Descriptive Sketches* (1793). Two years afterwards he received a legacy of 900 pounds from Raisley Calvert, a friend, whom he had nursed in his last illness. With this sum and the consecrated helpfulness of his sister Dorothy, he contrived to keep house for eight years, while he gave himself to poetic effort as his high "office upon earth."

For the first two years they lived at Racedown in Dorset, where the poet among other experiments began his tragedy of *The Borderers*. In this retreat they were visited by Coleridge, who had already recognized an original poetic genius in the author of *Descriptive Sketches*. Coleridge was at this time living at Nether Stowey, in Somerset, and during this visit he induced the Wordsworths to go into residence at Alfoxden, in his immediate neighborhood. Here the two poets held daily intercourse, and after a year they published *Lyrical Ballads* in literary copartnership. Although this volume was received with almost complete public indifference, yet Wordsworth felt that he had found his mission, and after a winter spent in Germany, he and his sister settled at Grasmere, in 1799, where he proposed to write a great philosophical poem on man, nature and society.

Thenceforth his life was marked by few incidents. Those worth noting are his marriage, in 1802, with his cousin, Mary Hutchinson; a removal from Grasmere to Allan Bank in 1808; his appointment in 1813 to an inspectorship of stamps, and his removal to Rydal Mount; several journeys into Scotland and to the continent; his acceptance of a D.C.L. degree, conferred upon him in 1839 by the University of Oxford; and his accession in 1843 to the laureateship on the death of Southey.

Wordsworth's great philosophic poem, which, in his own phrase, was to be the Gothic cathedral of his labor, received only a fragmentary accomplishment in *The Prelude, The Excursion*, and *The Recluse*. Yet enough was achieved in his smaller poems to justify his own conception of himself as a "dedicated spirit," and to set him apart among the greatest of England's poets.

References.—The principal *Lives* are those of Christopher Wordsworth; F. W. H. Myers, J. M. Sutherland, Elizabeth Wordsworth and Professor Knight. See also Knight's *English Lake District;* and *Through the Wordsworth Country;* Stopford Brooke's *Theology in the English Poets;* Hudson's *Studies in Wordsworth;* Masson's *Wordsworth, Shelley*, etc. J. R. Tutin's *Wordsworth Dictionary of Persons and Places;* and Raleigh's *Wordsworth*.

Wrangel, Lieut. Gen. Baron Peter, the Russian Anti-Bolshevist leader, rose to distinction in 1914. Later became commander-in-chief in the Crimea, but was finally defeated by the overwhelming Bolshevist army in November, 1920. Died, 1928.

Wren, Sir Christopher, noted English architect, born in 1632, built St. Paul's Cathedral, Royal Exchange, Temple Bar, Buckingham Palace, Greenwich hospital; Marlborough house; the towers at the west front of Westminster Abbey, etc. In 1672 he was knighted. Died, 1723.

Wright, Sir Almroth Edward, English physician and bacteriologist, was born at Middleton Tyas, Yorks., in 1861. He was trained at Dublin University, and at the Universities of Leipzig, Strassburg and Marburg. In 1877 he was demonstrator of pathology at Cambridge. In 1889 he became lecturer in physiology at Sydney, Australia. From 1892 to 1902 he was professor at the Army Medical School at Netly; then professor of experimental pathology in the University of London. He gained great prominence through his researches in parasitic diseases. He perfected a method of typhoid inoculation, and made extensive studies of other toxins. He was consulting physician to the army in France from 1914 to 1919. His published works include *System of Anti-Typhoid Inoculation, Principles of Microscopy, Studies in Immigration, and The Unexpurgated Case Against Woman Suffrage.*

Wright, Harold Bell, author; born Rome, N. Y., May 14, 1872; student two years preparatory department, Hiram College, Ohio; married Frances E. Long, 1899. Author: *The Shepherd of the Hills; The Calling of Dan Matthews; Their Yesterdays; The Eyes of the World; When a Man's a Man*, etc.

Wright, Orville, American aëronaut and inventor, was born at Dayton, Ohio, 1871. With his brother Wilbur (1867-1912) he was the first to fly with a heavier-than-air machine, 1903, and with his brother was the inventor of the system of control used in all flying machines today. Has made flights at home and abroad.

Wright, Wilbur, aëronaut, brother of Orville, was born near Millville, Ind., 1867. From 1903, with his brother Orville, he devoted his time to the heavier-than-air flying machine, patented by the Wright Brothers in leading countries of the world. Died, 1912.

Wundt (*wōōnt*), **Wilhelm Max,** German physiologist and psychologist, was born at Neckarau in Baden, Germany, 1832. He studied at Tübingen, Heidelberg, and Berlin; in 1875 became professor of physiology at Leipzig. He became distinguished in the field of experimental psychology, and wrote on the nerves and the senses, the relations of physiology and psychology, etc. Died, 1920.

Wu Ting-Fang (*wōō'tĭng'fäng'*), Chinese diplomat, was born at Hsin-hui district, Kwangtung, China; LL.D., University of Pennsylvania, 1900; was appointed by the imperial government codirector in the railway bureau, constructing railways in north China; assisted in negotiating, at Peking, the Chino-Japanese treaty of commerce and navigation, ratified in 1896; was minister of China to the United States, Spain, and Peru, 1897-1902.

Wycliffe (*wĭk'lĭf*), **John,** English religious reformer, was born at Wycliffe, near Richmond, in Yorkshire, about 1320. He is frequently called "the morning star of the reformation." His last years were spent as rector of Lutterworth, in Leicestershire, where, a short time before his death, in 1384, he completed his translation of the Bible. He also wrote a large number of tracts in exposition or defense of the doctrines he preached.

Xavier (*zav'i-ĕr*), **St. Francis,** Jesuit missionary styled usually the "apostle of the Indies," was born in 1506, of a noble family, in the north of Spain. He visited Malacca, the Banda islands, Amboyna, the Moluccas and Cylon, where he converted the king of Kandy. The mission he next founded in Japan flourished for a hundred years. He died, 1552, soon after reaching the island of Sanchian near Canton. His body was ultimately buried in Goa. He was canonized in 1622.

Xenophon (*zen'ō-fon*), Greek historian, philosopher and military commander, born at Athens, about 434 B. C. He was a pupil and friend of Socrates; joined the expedition of Cyrus against his brother, Artaxerxes, and on its failure conducted the ten thousand Greeks. His principal works are the *Anabasis*, an account of the expedition of Cyrus and his own conduct of the reteat; the *Memorabilia*, an account of the life and teaching and a defense of his master Socrates. He died about 355 B. C.

Xerxes (*zûrk'zēz*), king of Persia, son of Darius I., whom he succeeded on the throne in 485 B. C., was born about 519 B. C. In 481 B. C., he attempted to subdue Greece both by sea and land; checked for a time at Thermophylæ by Leonidas and his five hundred; advanced to Athens to see his fleet destroyed at Salamis by Themistocles; was assassinated in 465 B. C. by Artabanus, the captain of his bodyguard.

Ximenes (*zi-mē'nēz*), **Francis de Cisneros,** Spanish cardinal and statesman, was born at Torrelaguna, in Castile, in 1437. His reputation for piety and learning led Queen Isabella to choose him, in 1492, for her confessor. As confessor, Ximenes was the guiding spirit of Spanish affairs. In 1506-07 he was provisional regent of Castile, and was regent of Spain, 1516-17. Died, 1517.

Yale, Elihu, English colonial official, was born at or near Boston, Mass., 1648. When four years old he was taken to England by his father, and never returned to America. Yale College received his name in the charter of 1745. Previously the building and, before that, the school at Saybrook, had been called by the name. He died in England, 1721, and is buried at Wrexham, Wales.

Yamagata (*yä'mō-gä'tä*), **Aritomo,** Japanese field-marshal, president of the privy council of Japan, was born at Choshu, 1838; commanded first army in the China-Japan war; was prime minister, 1889; became field-marshal, 1898; chief of general staff, 1904; and was created prince, 1907.

Yancey (*yan'sĭ*), **William Lowndes,** American politician and lawyer, was born in Georgia, 1814; was greatly instrumental in bringing about the Civil War. Died near Montgomery, Ala., 1863.

Yeats, William Butler, Irish poet and dramatist, was born in Dublin, 1865. He attended Erasmus Smith school in Dublin. At twenty-one, he turned from painting to a study of ancient Irish life and became the chief writer of the new school of Irish poetry. Several of his plays were produced at the Abbey Theatre. His works include *The Countess Kathleen, The King's Threshold, and Deidre. The Cutting of the Agate* and *The Trembling of the Veil* are among his best reminiscent and critical works.

Youmans (*yōō'manz*), **Edward L.,** American scientist, was born at Coeymans, N. Y., 1821. Although suffering for some years from almost total blindness, he pursued his studies in physics and chemistry with marked zeal and proficiency, his sister conducting experiments for him. In 1872 he established, and until his death, edited *The Popular Science Monthly*. Died at New York, 1887.

Young, Brigham, founder of Utah, and president of the Church of Jesus Christ of Latter-Day Saints, called "Mormon" Church because of a belief in the Book of Mormon, was born at Whittingham, Vt., 1801. In 1832 he joined the "Mormons" and was made an elder and began to preach. He was later chosen one of the Twelve Apostles of the Church and after the death of Joseph Smith became president. He led his people from Nauvoo, Ill., to Utah, having been forced out of Illinois by people antagonistic to their faith, and crossing the plains and the Rocky Mountains under many difficulties and hardships founded Salt Lake City. He was the first Governor of Utah and was succeeded by Alfred Cumming during the administration of President James Buchannan. Died, 1877.

Young, Edward, English poet, was born at Upham rectory near Bishops Waltham, 1683. He was educated at All Souls, Oxford, and in 1730 became rector of Welwyn, in Hertfordshire. His chief poetical work is *Night Thoughts*. He also wrote *Love of Fame, the Universal Passion;* the dramas, *Busiris, The Revenge*, etc. Died, 1765.

Young, Ella Flagg, American educator, was born at Buffalo, N. Y., 1845, daughter of Theodore Flagg. She was graduated at the Chicago high school and Chicago Normal school; Ph.D., University of Chicago. She was professor of education, University of Chicago, 1899-1905; principal of the Chicago Normal school, 1905-08; and superintendent of the Chicago public schools, 1908. Died, 1918.

Young, Owen, American lawyer and administrator, member Dawes reparation commission to Germany, was born in Hornesville, New York, in 1874. He was educated at St. Lawrence University and Boston University Law school, and until 1913 was connected with the law firm of Tyler and Young in Boston. In 1918 he was chosen chairman of the board of the General Electric Company at Schenectady, N. Y., and when the Radio Corporation of American was organized, he became chairman of the international trusteeship for the control of radio patents. He was a member of the first committee of experts on reparation in 1924. His business sagacity has led to his appointment as director in many important enterprises.

Younghusband, Sir Francis Edward, English soldier, explorer and writer, was born at Murree, India, 1863. He traveled in Manchuria, 1886; from Peking to India *via* Chinese Turkestan, 1887; on the Pamirs and in Hunza, 1889; and was British commissioner to Tibet, 1903-04. In the latter year he headed the expedition which forced its way into Lhassa, sacred city of Tibet. Author: *Heart of a Continent.*

Zahm (*zäm*), **John Augustine,** provincial of order of Holy Cross in United States beginning 1897, was born at New Lexington, Ohio, 1851; was president of the board of trustees, Notre Dame University. He was a member of numerous scientific societies and lectured widely on scientific and allied topics. Author: *Evolution and Dogma; Scientific Theory and Catholic Doctrine; Science and the Church*, etc. Died in 1921.

Zangwill (*sang'wĭl*), **Israel,** British man of letters, was born in London, 1864. He received the degree of B.A. from London University; wrote many novels, essays, poems and plays; lectured in Great Britain and Ireland, Jerusalem, Holland and the United States, and was president of the international Jewish territorial organization, or Zionist movement. Author: *The Premier and the Painter; Merely Mary Ann; The Master; They That Walk in Darkness.* Died, 1926.

Zeno, founder of the stoic philosophy, was born at Citium, in Cyprus, the date of his birth and death both being uncertain. He flourished in the early part of the third century B. C., and was a contemporary of Epicurus. The Athenians honored Zeno's memory with a golden crown and a public burial, and his countrymen erected a monumental pillar in his honor. He is supposed to have died about 264 B. C.

Zeno, Greek philosopher of Elea, in Italy, was born about 490 B. C. He was a favorite disciple of Parmenides, visited Athens, and the illustrious Pericles was one of his pupils. He devoted his great powers of argumentation to enforce the doctrines first broached by Xenophanes, and more systematically developed by Parmenides.

Zenobia (*ze-nō'bi-ä*), **Septimia,** queen of Palmyra 267 A. D., succeeded her husband Odenathus. Aurelian marched against her with a large army, and after defeating her in several battles besieged her in Palmyra. She attempted to escape by flight, but was captured and brought to Rome to adorn the triumph of her conqueror. She was a

woman of great courage, high spirit and remarkable beauty.

Ziegfeld, Florenz, Jr. (1869——), theatrical producer, married Anna Held, the actress, and for his second wife, Billie Burke. He entered the theatrical business in Chicago in 1892, but is most famous for his productions of Ziegfeld's Follies since 1907. His most noted productions are: *Papa's Wife; The French Maid; The Little Duchess; The Parisian Model; Miss Innocence; The Pink Lady; Sally; Kid Boots, Louis XIV*, etc.

Zimbalist, Efrem, violinist; born, Rostow-on-Don, Russia, April 9, 1889. Pupil of Auer. M. Alma Gluck, 1914. Début, U. S., 1911. Composer.

Zinzendorf (*tsin'tsen-dôrf*), **Nicolaus Ludwig, Count von,** founder of the Moravian brethren, was born at Dresden, 1700. He accidentally met a wandering carpenter named Christian David, a member of the old sect of Moravian brethren, who described the persecutions to which the sect was exposed; and Zinzendorf invited him and his friends to settle on his estate. They accepted the proposal, and the colony received the name of "Herrnhut." In 1737, at the request of King Frederick William I. of Prussia, he was ordained bishop of the Moravians. In 1741 he went to America and founded the celebrated Moravian colony at Bethlehem, Pa. Died, 1760.

Ziska (*zis'kà*), or **Zizka** (*zhish'kà*), **Jan,** leader of the Hussites, was born at Treeznoy, Bohemia, about 1360. He was an adherent of the Hussite doctrine. Died, 1424.

Zola (*zō'là;* Fr. *zō-là'*), **Emile,** French novelist, was born at Paris, 1840. He was educated at the Lycée, St. Louis. His first important venture in fiction was *Les Mystères de Marseille.* Soon after this he formed with Flaubert, Daudet and the Goncourts, the naturalistic school of fiction. The fruit in part of this was the series known as *Les Rougon-Macquart Family.* His latest work, written in exile, occasioned by his courageous advocacy of the famous Dreyfus case, was entitled *Fecondité.* He was a knight of the French legion of honor. Died, 1902.

Zoroaster (Old Persian *Zarathustra*, later Per. *Zerdusht*), was one of the great religious teachers of the east, the founder of the Persian religion, now known as Zoroastrianism. He has been represented by eminent authorities as purely mythical, but it seems more reasonable to believe that he was a real historical personage. If this view be accepted, he was probably a native of the east of Iran, but there is great uncertainty as to the time in which he appeared as a religious teacher. He is supposed by some to have been a contemporary of Moses, by others his date is assigned to the tenth century before Christ.

His doctrines are to be found in the Parsee scriptures, called the *Zend-Avesta*, and the *Gothâs*, which is the oldest part of that work; these are declared to contain his authentic utterances. The fundamental idea of his doctrine was the existence, since the beginning, of a spirit of good, Ahuro Mazdao (Ormuzd), and a spirit of evil, Angro Mainyush (Ahriman). These two are in perpetual conflict, and the soul of man is the great object of the war. Ormuzd created man free, so that if he allows himself to fall under the sway of Ahriman he is held to be justly punishable. When he dies his good and evil deeds will be weighed against each other, and accordingly as the balance is struck he will be sent to heaven or to hell. If they are exactly equal, the soul passes into an intermediate state, and remains there until the day of judgment. Ormuzd is to triumph ultimately, and then there will be one undivided kingdom of God in heaven and on earth.

The religion of Zoroaster, when it became that of Iran, was expounded by a widely spread priesthood, and these provided for it a ritual and ceremonial. Minutely elaborated laws for the purification of soul and body were laid down. They included a prohibition of the burning or the burying of the dead bodies of believers, which, by the Parsees in Bombay and elsewhere, are still left to be devoured by vultures.

References.—Jackson's *Zoroaster, the Prophet of Ancient Iran;* Windischmann's *Zoroastrische Studien;* and *Die Iranische Religion;* Max Müeller's series of translations of books of the orient, especially the *Zend-Avesta.*

Zwingli (*tsving'lē*), **Ulrich,** Swiss reformer, was born at Wildhaus, 1484. In 1519 he was appointed to the cathedral at Zürich, having previously opposed the sale of indulgences by Sansom. Attempts were made to prohibit his preaching, but the reformation grew at Zürich. In 1529 Zwingli met Luther and Melanchthon at Marburg, but two years later he fell in the battle of Kappel in the war with Berne. Died, 1531.

HALL OF FAME FOR GREAT AMERICANS

The building known by the above title stands on University Heights, New York, and is affiliated with New York University. It was erected from a fund of $350,000 given for that purpose by an unknown donor. The structure is a semicircular colonnade connecting the Hall of Philosophy with the Hall of Languages, containing 150 panels for inscriptions and six compartments for mementoes of those persons whose names are inscribed upon the panels.

The terms of the gift prescribed that fifty panels were to be filled in 1900, and five at the close of each half decade thereafter. Only names of native Americans who have been deceased at least ten years may be chosen. Later provisions included suitable commemoration of great Americans of foreign birth, as well as a hall of fame for women.

In 1900 nominations were invited from the public, and submitted to a committee of 100 distinguished citizens for designation. The action of that committee, and subsequent committees, resulted in the choice of the following persons:

Name	Where Born	Dates of Birth and Death	Educated	Vocation
John Adams	Quincy, Mass.	1735–1826	Harvard	Statesman.
John Quincy Adams	Quincy, Mass.	1767–1848	Harvard	Statesman.
Louis J. R. Agassiz	Switzerland	1807–1873	University of Munich	Naturalist.
John James Audubon	nr. New Orleans, La.	1780–1851	In France	Ornithologist.
George Bancroft	nr. Worcester, Mass.	1800–1891	Harvard	Historian.
Henry Ward Beecher	Litchfield, Conn.	1813–1887	Amherst	Preacher, Orator.
Phillips Brooks	Boston, Mass.	1835–1893	Harvard	Preacher.
William Cullen Bryant	Cumington, Mass.	1794–1878	Williams College	Poet.
William Ellery Channing	Newport, R. I.	1780–1842	Harvard	Preacher, Essayist.
Henry Clay	Hanover Co., Va.	1777–1852	Elementary	Statesman.
James Fenimore Cooper	Burlington, N. J.	1789–1851	Yale	Novelist.
Peter Cooper	New York City	1791–1883	Elementary	Philanthropist.
Jonathan Edwards	Windsor, Conn.	1703–1758	Yale	Theologian, Preacher.
Ralph Waldo Emerson	Boston, Mass.	1803–1882	Harvard	Essayist, Philosopher.
David Glasgoe Farragut	nr. Knoxville, Tenn.	1801–1870	United States Navy	Admiral.
Benjamin Franklin	Boston, Mass.	1706–1790	Elementary	Statesman, Writer.
Robert Fulton	Little Britain, Pa.	1765–1815	Polytechnic	Inventor.
Ulysses Simpson Grant	Point Pleasant, Ohio	1822–1885	West Point	Soldier, Statesman.
Asa Gray	Paris, N. Y.	1810–1888	Fairfield College	Botanist.
Alexander Hamilton	Nevis Island, W. I.	1757–1804	Columbia	Statesman.
Nathaniel Hawthorne	Salem, Mass.	1804–1864	Bowdoin College	Novelist.
Oliver Wendell Holmes	Cambridge, Mass.	1809–1894	Harvard	Poet, Physician.
Washington Irving	New York City	1783–1859	Academic and Legal	Novelist, Diplomat.
Andrew Jackson	North Carolina	1767–1845	Elementary	Soldier, Statesman.
Thomas Jefferson	Shadwell, Va.	1743–1826	William and Mary	Statesman.
John Paul Jones	Arbigland, Scotland	1747–1792	Elementary and Naval	Naval Officer.
James Kent	Philippi, N. Y.	1763–1847	Yale	Lawyer, Jurist.
Robert Edward Lee	Westmoreland Co., Va.	1807–1870	West Point	Soldier.
Abraham Lincoln	Hardin Co., Ky.	1809–1865	Self-educated	Statesman.
Henry Wadsworth Longfellow	Portland, Me.	1807–1882	Bowdoin College	Poet.
James Russell Lowell	Boston, Mass.	1819–1891	Harvard	Poet, Diplomat.
Mary Lyon	Buckland, Mass.	1797–1849	Academic, Private	Educator.
James Madison	King George Co., Va.	1751–1836	Princeton	Statesman.
Horace Mann	Franklin, Mass.	1796–1859	Brown University	Educator.
John Marshall	Fauquier Co., Va.	1753–1835	Privately	Jurist.
Maria Mitchell	Nantucket, Mass.	1818–1889	Privately	Astronomer.
Samuel Finley Breese Morse	Charlestown, Mass.	1791–1872	Yale	Inventor, Artist.
John Lothrop Motley	Dorchester, Mass.	1814–1877	Harvard	Historian, Diplomat.
George Peabody	South Danvers, Mass.	1795–1869	Self-educated	Merchant, Philanthropist
Edgar Allan Poe	Boston, Mass.	1809–1849	West Point	Poet, Romancer.
William Tecumseh Sherman	Lancaster, Ohio	1820–1891	West Point	Soldier.
Joseph Story	Marblehead, Mass.	1779–1845	Harvard	Jurist, Law Writer.
Harriet Beecher Stowe	Litchfield, Conn.	1811–1896	Litchfield Academy	Novelist.
Gilbert Stuart	Narragansett, R. I.	1755–1828	London, with West	Portrait Painter.
George Washington	Westmoreland Co., Va.	1732–1799	Academic	Soldier, Statesman.
Daniel Webster	Salisbury, N. H.	1782–1852	Dartmouth College	Orator, Statesman.
Eli Whitney	Westboro, Mass.	1765–1825	Yale	Inventor.
John Greenleaf Whittier	Haverhill, Mass.	1807–1892	Haverhill Academy	Poet.
Emma Willard	Berlin, Conn.	1787–1870	Hartford Academy	Educator.
Frances Elizabeth Willard	Churchville, N. Y.	1839–1898	Northwestern Female College	Temperance Reformer
Roger Williams	London, Eng.	1604(?)–1683	Cambridge, Eng.	Religious Reformer.
Francis Parkman	Boston, Mass.	1823–1893	Harvard	Historian.
Mark Hopkins	Waterbury, Conn.	1802–1887	Williams	Educator.
Elias Howe	Spencer, Mass.	1819–1867	Elementary	Inventor.
Joseph Henry	Albany, N. Y.	1799–1878	Albany Academy	Scientist.
Charlotte Cushman	Boston, Mass.	1815–1876	Private Musical	Actress.
Rufus Choate	Ipswich, Mass.	1799–1859	Dartmouth	Jurist.
Daniel Boone	Near Reading, Pa.	1734–1820	Elementary	Pioneer.
Samuel Langhorne Clemens (Mark Twain)	Florida, Mo.	1835–1910	Common Schools	Author.
James Buchanan Eads	Lawrenceburg, Ind.	1830–1887	Self-educated	Engineer.
Patrick Henry	Virginia	1736–1799	Common School	Lawyer.
William Thomas Green Morton	Charlton, Mass.	1819–1868	Harvard Medical School	Physician.
Augustus Saint Gaudens	Ireland	1848–1907	Beaux Arts	Sculptor.
Roger Williams	London, Eng.	1604–1683	Cambridge, Eng.	Statesman.
Alice Freeman Palmer	Colesville, N. Y.	1855–1902	Univ. of Michigan	Educator.
Edwin Booth	Bel Air, Md.	1833–1893	Self-educated	Actor.

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BIRDS

1 Blue-and-Red Macaw.
2 Incomparable Bird of Paradise.
3 Golden Bird of Paradise.
4 Resplendent Trogon.
5 King Bird of Paradise.
6 Fire Weaver.
7 Paradise Flycatcher.
8 Broad-Shafted Whidah Bird.
9 Marsh Hawk.
10 Bald Eagle.
11 Barred Owl.
12 Golden Pheasant.

BOOK IX

MULTIPLEX DICTIONARY

Giving the definition, pronunciation, synonyms and antonyms of the words occurring in our common speech. Containing also the following valuable features: Proper syllabication, parts of speech, capitalization, words most often mispronounced, and a copious vocabulary of geographical, personal and curious names, with their pronunciation, origin and meaning. The cognates in other languages of personal names are also given.

KEY TO THE VOWEL SOUNDS

ā, as in farm, father; *á*, as in ask, fast; *a*, as in at, fat; *ă*, as in day, fate; *ȧ*, as in care, fare; *a*, as in final; *e*, as in met, set; *ē*, as in me, see; *ẽ*, as in her, ermine; *ĭ*, as in pin, sin; *ī*, as in pine, line; *o*, as in not, got; *ō*, as in note, old; *ô*, as in for, fought; *ọ̄*, as in sole, only; *ộ*, as in fog, orange; *ọ̈*, sound cannot be exactly represented in English. The English sound of *u* in *burn* and *burnt* is perhaps the nearest equivalent to *ọ̈*; *oo*, as in cook, look; *o͞o*, as in coon, moon; *u*, as in cup, duck; *ū*, as in use, amuse; *ů*, as in fur, urge; *ů* sound cannot be exactly represented in English. The English sound of *u* in *luke* and *duke* resembles the original sound of *ū*. The letter N represents the nasal tone of the preceding vowel, as in *encore* (*äN-kōr'*).

ABBREVIATIONS

Arab., Arabic or Arabian; A.-S., Anglo-Saxon; Boh., Bohemian; Eng., English; Fr., French; Gael., Gaelic; Ger., German; Gr., Greek; Heb., Hebrew; Hind., Hindustani; Hung., Hungarian; Ind., Indian; It., Italian; Lat., Latin; M. H. G., Middle High German; N. H. G., North High German; Nor., Norwegian; O. E., Old English; O. F. or O. Fr., Old French; O. G., Old German; O. H. G., Old High German; Pers., Persian; Port., Portuguese; Russ., Russian; Sp., Spanish; Sw., Swedish; Teut., Teutonic; Turk., Turkish.

NOTE.—Groups of synonyms are indicated thus: **Syn.** ABANDON; the word in brackets *following the groups* refers to the key word of related groups: words in brackets following *definitions* refer to the key words of the respective groups of synonyms. The *key word* is the *first word* in each group of synonyms. Words often mispronounced are marked thus: **★Aaron; ★abdomen.**

A **a** (*ā* or *á*), *indef. art.* (contraction of *an*) one; any; used before words beginning with a consonant or the sound of *h*.

★Aaron (*ār'un* or *á'run*). From the Hebrew *'Aharon*, perhaps the same as *hārōn*, "a mountaineer"; Arab., *Haroon* or *Harun;* Fr., *Aaron;* Ger., *Aaron* or *Aron;* It., *Aronne;* Lat., *Aaron;* Port., *Aarao;* Sp., *Aron.*

ab-a-ca (*ab'á-kà*), *n.* manila hemp.

ab-a-cist (*ab'á-sist*), *n.* a calculator; accountant.

a-back (*á-bak'*), *adv.* backward; pressed back against the mast; said of sails; taken by surprise.

ab-a-cus (*ab'á-kus*), *n.* a contrivance of beads or balls strung upon rods used for arithmetical computation.

a-ban-don (*á-ban'dun*), *v. t.* to give up; desert or forsake utterly: *n.* unrestraint.

Syn. ABANDON, abdicate, desert, forego, forsake, give up, leave, quit, relinquish, renounce, resign, surrender. A sinking ship is *abandoned;* a king *abdicates* his throne; a soldier *deserts;* we *forego* pleasures; a reformed man *forsakes* his evil ways; the miner *relinquishes* his claim; the monk *renounces* the world; his very name is *resigned* to oblivion. [See *leave.*]

Ant. ADOPT, claim, keep, maintain, pursue, support, vindicate.

a-ban-doned (*á-ban'dund*), *adj.* given up entirely; shamelessly profligate.

Syn. ABANDONED, depraved, dissolute, forsaken, hardened, profligate, reprobate, unprincipled, vicious, vile. We speak of *depraved* beings; *dissolute* men; the *forsaken* child; the *hardened* criminal; the *profligate* son; the *reprobate* gamester; the *unprincipled* politician; the *vicious* classes of our large cities; the *vile* wretches that plot crime. [See *corrupt, profligate, addicted.*]

Ant. CARED FOR, controlled, holy, virtuous.

a-ban-don-ment (*á-ban'dun-ment*), *n.* the act of abandoning; the state of being abandoned.

a-base (*á-bās'*) *v. t.* to humble or degrade; dishonor.

Syn. ABASE, bring low, debase, degrade, disgrace, dishonor, humble, mortify, reduce, shame. These words are usually applied to *persons* only. *Debase* and *reduce,* however, have other applications. The penitent man *humbles* himself; the vicious man *disgraces* himself; metal may be *debased;* weight may be *reduced.* [See *dishonor.*]

Ant. ADVANCE, dignify, honor, raise.

a-base-ment (*á-bās'ment*), *n.* the act of abasing or humiliating.

a-bash (*á-bash'*), *v. t.* to put to confusion; to make ashamed by consciousness of guilt or error.

Syn. ABASH, confuse, confound. To *abash* is to abase thoroughly in spirit; it expresses more than *confound,* and confound more than *confuse.* A haughty man is *abashed* when he is humbled; a modest person is *confused* in the presence of superiors; the ways of Providence *confound* us. [See *embarrass.*]

Ant. ANIMATE, embolden, reassure.

a-bat-a-ble (*á-bāt'á-bl*), *adj.* that may be abated.

a-bate (*á-bāt'*), *v. t.* to lessen; suppress: *v. i.* to decrease; moderate; subside.

Syn. ABATE, decline, decrease, diminish, lessen, recede, sink, slacken, subside, wane. With the exception of *decrease* these words are used in a transitive and an intransitive sense. A commotion *subsides;* storms *abate;* evils may *lessen;* sorrow *diminishes.* [See *abridge.*]

Ant. ANIMATE, augment, foment, rage.

a-bate-ment (*á-bāt'ment*), *n.* the act of abating; the state of being abated; diminution. [DEDUCTION.]

a-bat-toir (*á-bat-twär'*), *n.* a public slaughterhouse.

abb (*ab*), *n.* the yarn of the warp in weaving.

ab-ba-cy (*ab'bá-si*), *n.* the office and jurisdiction of an abbot.

ab-bé (*ab-bā'*), *n.* an ecclesiastic devoted to literature.

ab-bess (*ab'bes*), *n.* the lady superior of a convent or nunnery.

ab-bey (*ab'bi*), *n.* [*pl.* abbeys (*-biz*)], an establishment for religious devotees of either sex.

ab-bot (*ab'but*), *n.* the superior or head of an abbey.

ab-bre-vi-ate (*ab-brē'vi-āt*), *v. t.* to shorten, as by contraction of a word or the omission of words in a sentence; reduce a quantity to its lowest terms.

Syn. ABBREVIATE, contract, reduce, shorten. A long word is *abbreviated;* a stream in time of drought is *contracted;* the course of study is *shortened;* the size of the army is *reduced.* [See *abridge.*]

Ant. AMPLIFY, enlarge, lengthen.

ab-bre-vi-a-tion (*ab-brē-vi-ā'shun*), *n.* shortening or abbreviating; as, M. D. for doctor of medicine.

ab-di-cant (*ab'di-kant*), *adj.* renouncing; abdicating: *n.* one who renounces or abdicates.

ab-di-cate (*ab'di-kāt*), *v. t.* to renounce; relinquish the crown in favor of a successor. [ABANDON.]

ab-di-ca-tion (*ab-di-kā'shun*), *n.* the act of relinquishment or resignation.

★ab-do-men (*ab-dō'men*, not *ab'dō-men*), *n.* the belly; the cavity containing the digestive apparatus or viscera.

ab-dom-i-nal (*ab-dom'i-nal*), *adj.* pertaining to the abdomen.

ab-duct (*ab-dukt'*), *v. t.* to carry off by stealth or force; kidnap.

Syn. ABDUCT, abstract, carry off, deprive, kidnap, seize. Money may be unlawfully *abstracted;* the child was *abducted* or *kidnaped;* criminals are *deprived* of liberty; we *seize* opportunities. [See *abstract.*]

Ant. RESTORATION, restitution, replacement.

ab-duc-tion (*ab-duk'shun*), *n.* the act of abducting or kidnaping.

ab-duc-tor (*ab-duk'tẽr*), *n.* one who, or that which, abducts; a muscle moving certain parts.

a-beam (*á-bēm'*), *adv.* at right angles to the keel of a ship.

a-bed (*á-bed'*), *adv.* in bed; to bed.

Abel (*ā'bl*). From the Hebrew *Hebhel,* which St. Jerome translates "vanity" or "vapor." Gesenius renders the name "breath," and says the son of Adam was probably so called from the shortness of his life. Arab., *Habeel* or *Habil;* Fr., *Abel;* Lat., *Abel.*

★Aberdeen (*ab-ẽr-dēn'*, not *ab'ẽr-dēn*). The ancient orthography of this name was *Aberdon,* from *aber,* the mouth, and *Don,* the name of the river upon whose banks the city is built.

★ab-er-rant (*ab-ẽr'rant*), *adj.* departing from the usual path, type, or standard.

ab-er-ra-tion (*ab-ẽr-rā'shun*), *n.* the act of departing from the usual path, type, or standard; mental derangement; the unequal refraction of rays of light from a lens so that they do not converge to a single point.

a-bet (*á-bet'*), *v. t.* to encourage; to aid or assist in the performance of an act, usually criminal.

Syn. ABET, advocate, aid, assist, back, connive at, countenance, egg on, foment, second, set on, support, sustain. The bad official *abets* crime and *sanctions* law-breaking; *advocates* less restraint, *backs* gamblers, *foments* trouble, *supports* questionable policies, and *aids* his faction.

Ant. DETER, disapprove, frustrate, forbid.

a-bet-ment (*á-bet'ment*), *n.* the act of abetting or instigating to action or crime.

a-bet-ter or **abettor** (*á-bet'tẽr*), *n.* one who aids or abets in the commission of a crime. [ACCOMPLICE, ACCESSORY.]

a-bey-ance (*á-bā'ans*), *n.* state of being held, kept back, or held over; a state of suspension.

ab-hor (*ab-hôr'*), *v. t.* to hate, loathe, execrate, abominate; be strongly averse to.

Syn. ABHOR, abominate, detest, loathe. These terms equally denote a sentiment of aversion. We *abhor* what is base and ungenerous; we *detest* hypocrisy; we *abominate* profanation and open impiety; we *loathe* food when we are sick. [See *hate.*]

Ant. ADMIRE, crave, esteem, love.

ab-hor-rence (*ab-hor'rens*), *n.* detestation; extreme hatred. [ANTIPATHY, ABOMINATION.]

a-bide (*á-bīd'*), *v. t.* to await, endure, tolerate: *v. i.* to dwell, reside, continue.

Syn. ABIDE, sojourn, dwell, live, reside, inhabit. *Abide* is to make a partial stay. *Sojourn* signifies to pass the day—that is, a certain portion of one's time—in a place. *Dwell* implies a stay in a place by way of residence, which is expressed in common discourse by the word *live. Reside* conveys the full idea of a settlement. *Inhabit* signifies to have or occupy for a permanency. The length of stay implied in these terms is marked by a certain gradation. *Abide* denotes the shortest stay; to *sojourn* is of longer continuance; *dwell* comprehends the idea of perpetuity in a given place, but *reside* and *inhabit* are partial and local. [See *permanent.*]

Ant. AVOID, depart, move, reject, resist.

ab-i-gail (*ab'i-gāl*), *n.* a waiting-maid, so called from Abigail, "thine handmaid."

a-bil-i-ty (*á-bil'i-ti*), *n.* power to perform; skill to achieve; capability for carrying out; capacity to devise, receive, retain, or make use of.

Syn. ABILITY, capacity, capability, efficiency, faculty, talent. *Ability* comprehends the power of doing in general, without specifying the quality or degree; *capacity* is a particular kind of ability. *Ability* respects action, *capacity* respects thought. *Ability* always supposes something able to be done; it may vary in degree and quality with times, persons, and circumstances. *Faculty* is a gift of nature directed to a certain end, and following a certain rule. *Talent* imitates but does not originate. [See *power, acquirement.*]

Ant. FEEBLENESS, incapability, inefficiency.

ab-ject (*ab'jekt*), *adj.* worthless; mean; low; despicable; in a sunken or degraded condition.

ab-jec-tion (*ab-jek'shun*), *n.* the act of being cast down; cast away; degradation.

ab-ju-ra-tion (*ab-jū-rā'shun*), *n.* an oath of renunciation, as of allegiance; the act of renouncing.
ab-jure (*ab-jūr'*), *v. t.* to renounce upon oath; forswear allegiance to; repudiate or recant.
ab-la-tive (*ab'lā-tiv*), *n.* one of the cases of Latin nouns, expressing chiefly separation and instrumentality.
a-blaze (*ā-blāz'*). *adv.* or *adj.* on fire; well alight; in a blaze; eager; inflamed with desire; resplendent.
a-ble (*ā'bl*), *adj.* possessed of power, means, or ability; qualified, competent.
a-ble-bod-ied (*-bod'id*) *adj.* possessed of physical strength; capable or efficient for duty.
a-bloom (*ā-blōōm'*), *adv.* and *adj.* in bloom.
ab-lu-ent (*ab'lū-ent*), *adj.* cleansing: *n.* that which cleanses; a substance which purifies the blood.
ab-lu-tion (*ab-lū'shun*), *n.* a washing or cleansing of the body by water; moral purification.
ab-lu-tion-a-ry (*ab-lū'shun-ā-ri*), *adj.* pertaining to cleansing.
ab-ne-gate (*ab'nē-gāt*), *v. t.* to refuse or deny; to reject.
ab-nor-mal (*ab-nôr'mal*), *adj.* irregular; deformed; unnatural; departing from a type or standard.
ab-nor-mal-i-ty (*ab-nôr-mal'i-ti*), *n.* [*pl.* abnormalities (*-tiz*)], the state or condition of being abnormal or irregular.
a-board (*ā-bōrd'*), *adv.* on or within a vessel: *prep.* into a ship.
a-bode (*ā-bōd'*), *n.* a place of continued residence.
a-bol-ish (*ā-bol'ish*), *v. t.* do away with; put an end to.

Syn. ABOLISH, abrogate, annul, cancel, countermand, do away with, end, make void, nullify, quash, repeal, revoke, vacate. This group conveys the idea of *extinction.* Anything which is entirely done away with, so that it is as if it had never been, may be said to be abolished. The law was *abolished,* or it may have been *abrogated;* a contract may be annulled; obligations are *canceled;* orders are *countermanded;* the day is *ended;* legislation is *nullified;* an indictment is *quashed;* a legislative act is *repealed;* an edict is *revoked;* an order of court is *vacated.* [See *abate, destroy, abandon.*]

Ant. AUTHORIZE, continue, promote, restore, revive, sustain.

ab-o-li-tion (*ab-ō-lish'un*), *n.* the act of abolishing; the state of being abolished.
Abolitionists. A term denoting the antislavery party in the United States, which appeared soon after the founding of *The Liberator* by William Lloyd Garrison in 1831.
a-bom-i-na-ble (*ā-bom'i-nā-bl*), *adj.* hateful; odious; offensive; unclean.
a-bom-i-nate (*ā-bom'i-nāt*), *v. t.* to abhor; regard with feelings of disgust or hatred. [ABHOR.]
a-bom-i-na-tion (*ā-bom-i-nā'shun*), *n.* excessive hatred; the act of abominating.

Syn. ABOMINATION, abhorrence, abuse, annoyance, aversion, crime, curse, detestation, disgust, evil, execration, hatred, horror, iniquity, nuisance, offense, plague, shame. *Abomination* signifies something very much disliked, or that deserves to be. Appetizing food may be an object of *aversion* and *disgust* to the sick; vile food would be an *abomination; abomination* is used of such crimes as are especially brutal, shameful, or revolting; theft is an *offense;* infanticide is an *abomination.* [See *antipathy.*]

ab-o-rig-i-nal (*ab-ō-rij'i-nal*), *adj.* original; primitive; existing from the beginning.
★**ab-o-rig-i-nes** (*ab-ō-rij'i-nēz*), *n. pl.* the first or primitive inhabitants of a country.
a-bor-tion (*ā-bôr'shun*), *n.* untimely birth; miscarriage.
a-bor-tive (*ā-bôr'tiv*), *adj.* born imperfect; arrested in development; without issue or result.
a-bound (*ā-bound'*), *v. i.* to have in plenty or abundance.
a-bout (*ā-bout'*), *adv.* around; on every side; circuitously; near to; intending: *prep.* concerned in.
a-bove (*ā-buv'*), *adv.* overhead; in heaven; before; besides: *prep.* superior; in excess of.
a-bove-board (*ā-buv'bōrd*), *adj.* and *adv.* in open sight; without trickery.
ab-rade (*ab-rād'*), *v. t.* to wear or rub away; to remove as by friction or abrasion; to corrode.
ab-ra-sion (*ab-rā'zhun*), *n.* the act of wearing or rubbing away; a chafe.
a-breast (*ā-brest'*), *adv.* side by side; in line with; opposite to; at the same level.
a-bridge (*ā-brij'*), *v. t.* to curtail, shorten, condense, epitomize
a-bridg-ment (*ā-brij'ment*), *n.* the state of being contracted or curtailed; an epitome.

Syn. ABRIDGMENT, compendium, epitome, digest, summary, abstract. The first four terms are applied to a distinct work, the two latter to parts of a work An *abridgment* is the reduction of a work into a smaller compass. A *compendium* is a general and concise view of any science, as geography or astronomy. An *epitome* is a compressed view of all the substantial parts of a thing, or, in other words, the whole of any matter brought into a small compass. A *digest* is any materials digested in order. A *summary* comprehends the heads and subdivisions of a work. An *abstract* includes a brief but comprehensive view of any particular proceeding. It is necessary to make abstracts of deeds or judicial proceedings.

a-broad (*ā-brawd'*), *adv.* widely; expansively; beyond the limits of house or country; wide of the mark
ab-ro-gate (*ab'rō-gāt*), *v. t.* to abolish, annul, or repeal by authority. [ABOLISH.]
ab-rupt (*ab-rupt'*), *adj.* broken; terminating suddenly; steep; precipitous; rough; unceremonious.
Ab-sa-lom (*ab'sā-lom*). From the Heb. *Abshalom,* signifying "father of peace"; from *abh,* "father," and *shalom.* Fr., *Absalon.*
ab-scess (*ab'ses*), *n.* [*pl.* abscesses (*-ez*)], a collection of morbid matter or pus in the tissues of the body.
ab-scis-sion (*ab-sizh'un*), *n.* the act of severance; the breaking off in a sentence.
ab-scond (*ab-skond'*), *v. i.* to flee or retire in haste from the place of one's residence or post of duty.
ab-sence (*ab'sens*), *n.* the state of being absent; the period of being absent.
ab-sent (*ab'sent*), *adj.* not present; away; wanting; regardless; abstracted. [ABSTRACTED.]
ab-sent (*ab-sent'*), *v. t.* to retire or keep away from.
ab-sen-tee (*ab-sen-tē'*), *n.* one who is absent or absents himself purposely from home or duty.
★**ab-sinthe** (Eng. *ab'sinth,* Fr. *ab-saNt'*), *n.* a bitter aromatic liquor compounded of brandy and wormwood.
ab-so-lute (*ab'sō-lūt*), *adj.* free as to condition; perfect in itself; unlimited in power.

Syn. ABSOLUTE, despotic, arbitrary, tyrannical. Absolute power is independent of and superior to all other power; an *absolute* monarch is uncontrolled, not only by men, but things. When this absolute power is assigned to any one according to the constitution of a government, it is *despotic.* Despotic power is something less than absolute power; a prince is absolute of himself; he is despotic by the consent of others. With *arbitrariness* is associated the idea of caprice and selfishness. With *tyranny* is associated the idea of oppression and injustice.

Ant. ACCOUNTABLE, dependent, limited, submissive, yielding.

ab-so-lu-tion (*ab-sō-lū'shun*), *n.* the act of absolving from the consequences of sin.
ab-so-lu-tism (*ab'sō-lū-tizm*), *n.* the state of being absolute.
ab-so-lu-tist (*ab'sō-lū-tist*), *n.* a supporter or advocate of despotic or absolute government.
ab-solve (*ab-solv'*), *v. t.* to release or set free; clear of crime or guilt; to forgive or remit.

Syn. ABSOLVE, acquit, clear, discharge, exculpate, exempt, exonerate, forgive, free, liberate, pardon, release, set free. To *absolve* is to *set free* from any bond. One may be *absolved* from a promise by a breach of faith on the part of one to whom the promise was made. To *absolve* from sins is formally to remit their condemnation and penalty, regarded as a bond upon the soul. To *acquit* of sin or crime is to *free* from the accusation of it; the innocent are rightfully *acquitted;* the guilty may be mercifully *absolved.* [See *forgive.*]

Ant. ACCUSE, blame, condemn, impeach, to hold guilty.

ab-sorb (*ab-sôrb'*), *v. t.* to drink in; imbibe; suck or swallow up; engross or engage wholly.

Syn. ABSORB, consume, drink in, drink up, engross, exhaust, imbibe, suck up, swallow, swallow up, take in, take up. Wood *absorbs* moisture, iron *absorbs* heat; fuel is *consumed* in the fire, food in the body. A great talker *engrosses* the conversation. A credulous person *swallows* the most preposterous statements. [See *abstracted.*]

Ant. CAST OUT, disgorge, emit, radiate, vomit.

ab-sorb-ent (*ab-sôrb'ent*), *adj.* absorbing: *n.* that which has the capacity for absorbing.
ab-sorp-tion (*ab-sôrp'shun*), *n.* the act or process of absorbing.
ab-stain (*ab-stān'*), *v. t.* to forbear; refrain; hold aloof; keep away from.
★**ab-ste-mi-ous** (*ab-stē'mi-us,* not *ab-stem'i-us*), *adj.* moderate and sparing in the use of food and drink.
ab-ster-gent (*ab-stẽr'jent*), *adj.* possessing cleansing or purging properties: *n.* that which cleanses or purges.
ab-sti-nence (*ab'sti-nens*), *n.* the act or practice of abstaining: self-denial. [indulgence.
ab-sti-nent (*ab'sti-nent*), *adj.* refraining from over-
ab-stract (*ab-strakt'*), *v. t.* to take or draw away; separate; purloin or steal; epitomize.

Syn. ABSTRACT, separate, distinguish. We *abstract* what we wish to regard particularly and individually; we *separate* what we wish not to be united; we *distinguish* what we wish not to confound. The mind performs the office of *abstraction* for itself; *separating* and *distinguishing* are exerted on external objects. Arrangement, place, time, and circumstances serve to *separate;* the ideas formed of things, the outward marks attached to them, the qualities attributed to them, serve to *distinguish.* [See *abduct.*]

Ant. ADD, append, combine, restore.

ab-stract (*ab'strakt*), *n.* an epitome; a summary, or abstract, comprising the essence or principal parts of a larger work: *adj.* considered or conceived apart from its concrete or material nature. [ABRIDGMENT.]
ab-stract-ed (*ab-strakt'ed*), *p. adj.* separated; disjoined; refined; abstruse; mentally absent.

Syn. ABSTRACTED, absent, absent-minded, absorbed, inattentive, indifferent, listless, oblivious, preoccupied, thoughtless. *Absorbed, abstracted,* and *preoccupied* refer to the cause, in mental action, *absent* or *absent-minded* to the effect; a man *absorbed* in one thing will appear *absent* in others; one *preoccupied* may seem *listless* and *thoughtless,* but the really *listless* and *thoughtless* have not mental energy to be *preoccupied;* an *absent-minded* man is *oblivious* of ordinary matters; a *preoccupied* one is intensely busy in thought. [See *abstract.*]

Ant. ALERT, prompt, thoughtful, wide-awake.

ab-strac-tion (*ab-strak'shun*), *n.* the act of separating or drawing away.
★**ab-stract-ly** (*ab'strakt-li*), *adv.* in an abstract manner.
ab-stra-hent (*ab'strā-hent*), *adj.* abstract.
★**ab-struse** (*ab-strūs',* not *ab-strōōs'*), *adj.* obscure; hidden. [OBSCURE, MYSTERIOUS.]
ab-surd (*ab-sẽrd'*), *adj.* contrary to reason or sense.

Syn. ABSURD, anomalous, chimerical, erroneous, false, foolish, inconclusive, incorrect, irrational, ludicrous, monstrous, nonsensical, paradoxical, preposterous, ridiculous, senseless, stupid, unreasonable, wild. Anything is *absurd* which is contrary to the first principles of reasoning; anything *paradoxical* appears at first thought contradictory or *absurd,* while it may be really true; *irrational* is that which is clearly contrary to sound reason, *foolish* when contrary to practical good sense, *silly* when petty and contemptible in its folly, *erroneous* when containing error that vitiates the result, *unreasonable* when there seems a perverse bias or an intent to go wrong. *Monstrous* and *preposterous* refer to what is overwhelmingly *absurd.* The *ridiculous* or the *nonsensical* is worthy only to be laughed at. [See *incongruous, irrational.*]

Ant. DEMONSTRABLE, established, logical, sagacious, sound, true, wise.

ab-surd-i-ty (*ab-sẽrd'i-ti*), *n.* [*pl.* absurdities (*-tiz*)], the state of being absurd; that which is absurd.
a-bun-dance (*ā-bun'dans*), *n.* in great plenty; an overflowing quantity; affluence.
a-bun-dant (*ā-bun'dant*), *adj.* plentiful; fully sufficient; abounding.
a-buse (*ā-būz'*), *v. t.* to use ill; treat rudely or wrongfully; to defile or violate.

Syn. ABUSE, aggrieve, damage, defame, defile, disparage, harm, impose on or upon, injure, malign, maltreat, misuse, molest, oppress, persecute, pervert, prostitute, rail at, ravish, reproach, revile ruin, slander, victimize, vilify, violate, vituperate, wrong. Everything is *abused* which receives any sort of *injury;* it is *disused* if not used at all, *misused* if turned to a wrong use. It is possible to *abuse* a man without *harming* him, as when the criminal *vituperates* the judge; or to *harm* a man without *abusing* him, as when the witness tells the truth about the criminal. *Defame, malign, rail at, revile, slander, vilify,* and *vituperate* are used always in a bad sense. One may be justly *reproached.* To *impose on* or to *victimize* any one is to *injure* him by *abusing* his confidence. To *persecute* is to *ill-treat* for opinion's sake; to *oppress* is generally for political or pecuniary motives. A dissolute youth *misemploys* his time, *misuses* his money and opportunities, *harms* his associates, *perverts* his talents, *wrongs* his parents, *ruins* himself. [See *abomination.*]

Ant. APPLAUD, cherish, consider, favor, praise, protect, respect, uphold.

a-buse (*ā-būs'*), *n.* ill-treatment; the excessive or injudicious use of anything; insult; violation.
a-bu-sive (*ā-bū'siv*), *adj.* practicing or containing abuse.
a-but (*ā-but'*), *v. i.* [*p. t.* and *p. p.* abutted, *p. pr.* abutting], to border upon (used with *on, upon, against*). [ADJACENT.]
a-but-ment (*ā-but'ment*), *n.* that which borders, or abuts, upon something else.
a-buzz (*ā-buz'*), *adv.* filled with bussing sounds.
a-bysm (*ā-bizm'*), *n.* an abyss; a gulf.
a-bys-mal (*ā-biz'mal*), *adj.* pertaining to an abyss; bottomless.
a-byss (*ā-bis'*), *n.* a bottomless gulf; that which is unfathomable; hell.
★**Ab-ys-sin-i-a** (*ab-is-sin'i-ā*). A country of Africa, named from the rivers *Abai* and *Hawash,* or, according to Bruce, from *habesch,* "mixed."
ac-a-dem-ic (*ak-ā-dem'ik*) or **academical** (*'i-kal*), *adj.* belonging or appertaining to a college or university
ac-a-de-mi-cian (*ak-ā-dē-mish'an*), *n.* a member of an academy or society for promoting the arts, sciences, and literature.
a-cad-e-my (*ā-kad'ē-mi*), *n.* a private school or seminary for the teaching of the higher branches of education.
★**A-ca-di-a** (*ā-kā'di-ā*) or **Acadie** (*ā-kā-dē'*). The name originally given to Nova Scotia, but now only the poetical designation.
a-can-thus (*ā-kan'thus*), *n.* a plant having sharp-toothed leaves; ornamentation used in the capitals of the Corinthian and Composite orders.
ac-cede (*ak-sēd'*), *v. i.* to come or attain to; to agree or yield to. [AGREE.]
ac-cel-er-ate (*ak-sel'ẽr-āt*), *v. t.* to hasten; to cause to move or progress faster. [HASTEN.]
ac-cel-er-a-tion (*ak-sel-ẽr-ā'shun*), *n.* the act of accelerating; the state of being accelerated.
ac-cent (*ak'sent*), *n.* the stress laid by the voice upon a particular syllable or word, so as to render it more prominent than the rest; the emphasis placed upon certain notes of a bar of music: *v. t.* to ex-

press the accent, or note the vocal division of a word by stress or modulation of the voice.

ac-cen-tu-al (*ak-sen'tū-al*), *adj.* belonging to accent; rhythmical.

ac-cen-tu-ate (*ak-sen'tū-āt*), *v. t.* to speak, pronounce or mark with an accent.

ac-cept (*ak-sept'*), *v. t.* to take or receive with approbation; entertain; agree to.

ac-cept-a-ble (*ak-sept'ȧ-bl*), *adj.* to be accepted; pleasing; agreeable.

Syn. ACCEPTABLE, grateful, welcome. *Acceptable* signifies worthy to be accepted. *Grateful*, pleasing, signifies altogether pleasing; it is that which recommends itself. The *acceptable* is a relative good; the *grateful* is positive; the former depends upon our external condition, the latter on our feelings and taste; *welcome* signifies come well or in season for us. It refers to whatever happens according to our wishes. It is a *grateful* task to be the bearer of *welcome* intelligence to our friends.

ac-cept-ance (*ak-sept'ans*), *n.* the act of accepting; the fact of being accepted.

ac-cep-ta-tion (*ak-sep-tā'shun*), *n.* the act of accepting, or state of being accepted or acceptable.

★**ac-cess** (*ak-ses'* or *ak'ses*), *n.* admittance or approach to a person or place; means of approach or admission.

ac-cess-i-ble (*ak-ses'i-bl*), *adj.* capable of being approached; easy of access; attainable.

ac-ces-sion (*ak-sesh'un*), *n.* a coming to, as by succession or by right; entrance or attainment.

ac-ces-so-ry (*ak-ses'ō-ri*), *adj.* aiding; contributing to some result or effect: *n.* [*pl.* accessories (*-riz*)], one who aids in the commission of a felony.

Syn. ACCESSORY, abetter or abettor, accomplice, ally, assistant, associate, attendant, coadjutor, colleague, companion, confederate, follower, henchman, partner, retainer. In law, an *abettor* is always present, either actively or constructively, at the commission of the crime; an *accessory* never. An *accomplice* is usually a principal; an *accessory* never. If present, though only to stand outside and keep watch against surprise, one is an *abettor*, and not an *accessory*. An *accessory* implies a principal, and can not be convicted until after the conviction of the principal; the *accomplice* or *abettor* can be convicted as a principal. Members of Congress from the same state are *colleagues;* an *associate* is a person of equal or nearly equal rank; an *assistant* to a physician is a medical student who shares in the treatment and care of patients; his *attendant* is one who rolls bandages; *follower*, *henchman*, *retainer*, are persons especially devoted to a chief; *partner* denotes almost exclusively a business connection. [See *auxiliary*.]

Ant. ANTAGONIST, commander, foe, leader, opponent, principal, rival.

ac-ci-dent (*ak'si-dent*), *n.* an event which is unexpected, or the cause of which was unforeseen.

Syn. ACCIDENT, adventure, calamity, casualty, chance, disaster, fortuity, hap, hazard, incident, misadventure, misfortune, mishap, possibility. An *adventure* is that which may turn out ill, a *misadventure* that which does turn out ill; a slight disturbing *accident* is a *mishap;* an *accident* is that which happens without any one's direct intention; a *chance* that which happens without any known cause; an *incident* is subordinate to the main purpose, or design; the slaughter of men is an *incident* of battle; unexpected defeat, the *fortune* of war. Since the unintended is often the undesirable, *accident* tends to signify some *calamity* or *disaster*, unless the contrary is expressed, as when we say a fortunate or happy *accident*. [See *event*.]

Ant. APPOINTMENT, calculation, decree, fate, foreordination, law, plan, preparation.

ac-ci-den-tal (*ak-si-den'tal*), *adj.* happening by chance or unexpectedly; fortuitous; nonessential: *n.* that which happens unexpectedly.

ac-claim (*ak-klām'*), *v. i.* to shout applause: *n.* a shout of joy or praise; acclamation.

ac-cla-ma-tion (*ak-klȧ-mā'shun*), *n.* a shout of applause, or other demonstration of hearty approval.

★**ac-cli-mate** (*ak-klī'māt*, not *ak'klim-āt*), *v. t.* to accustom a person to a foreign climate.

ac-cli-ma-tion (*ak-kli-mā'shun*), *n.* the process of acclimatizing.

ac-com-mo-date (*ak-kom'mō-dāt*), *v. t.* to adapt or make fit or suitable; adjust, settle.

ac-com-mo-da-tion (*ak-kom-mō-dā'shun*), *n.* the act of accommodating; or the state of being accommodated.

ac-com-mo-da-tive (*ak-kom'mō-dā-tiv*), *adj.* disposed or tending to accommodate.

★**ac-com-pa-ni-ment** (*ak-kum'pȧ-ni-ment*, not *ak-kump'nim-ent*), *n.* something which is added to or attends the original or principal thing.

ac-com-pa-nist (*ak-kum'pȧ-nist*), *n.* one who plays an accompaniment.

ac-com-pa-ny (*ak-kum'pȧ-ni*), *v. t.* to keep company with; escort; join in movement or action.

ac-com-plice (*ak-kom'plis*), *n.* an associate or companion in crime. [ACCESSORY.]

ac-com-plish (*ak-kom'plish*), *v. t.* to bring to completion, or to an issue; fulfill.

Syn. ACCOMPLISH, achieve, effect, execute. To *accomplish* an object signifies more than simply to *effect* a purpose, both as to the thing aimed at and the means employed in bringing it about. Extraordinary means are requisite for *accomplishing*, and ordinary means for *effecting*. To *accomplish* is properly said of that which a person sets before himself; but to *effect*, *execute*, and *achieve* do not relate to the views of a person acting, but to the thing brought about. What is *executed* is complicated in its nature, as to *execute* a design or project; what is *achieved* is grand, as to *achieve* an enterprise.

Ant. CEASE, fail, leave, neglect, rest.

ac-com-plish-ment (*ak-kom'plish-ment*), *n.* the completion of an act or undertaking; fulfillment. [QUALIFICATION.]

ac-cord (*ak-kôrd'*), *v. t.* and *v. i.* to be in agreement with; reconcile; agree; give; grant; concede.

ac-cord-ant (*ak-kôrd'ant*), *n.* the state of being in harmony or accord. [CONSONANT.]

ac-cord-ing (*ak-kôrd'ing*), *p. adj.* agreeing, harmonious: *adv.* in accordance (*with*) or agreeably (*to*).

ac-cor-di-on (*ak-kôr'di-un*), *n.* a small wind instrument, having keys and metallic reeds.

ac-cost (*ak-kost'*), *v. t.* to draw near, or come face to face with; speak to; salute: *n.* the act of accosting; manner. [ADDRESS.]

★**ac-couche-ment** (*ȧk-kōōsh'mäɴ*), *n.* delivery in childbed; parturition; a lying-in.

ac-count (*ak-kount'*), *v. t.* to reckon or hold to be; compute; count: *v. i.* to assign an explanation: *n.* reckoning; a financial statement or memorandum.

ac-count-a-ble (*ak-kount'ȧ-bl*), *adj.* answerable; responsible; liable to be called to account.

ac-count-an-cy (*ak-kount'an-si*), *n.* the art or practice of an accountant.

ac-count-ant (*ak-kount'ant*), *n.* one skilled in the keeping or examination of accounts.

★**ac-cou-ter** (*ak-kōō'tẽr*, not *ak-kow'tẽr*), *v. t.* to dress; equip; to array in military dress.

ac-cred-it (*ak-kred'it*), *v. t.* to give credit to; have confidence in; authorize.

ac-crete (*ak-krēt'*), *v. i.* to adhere; be added: *v. t.* to cause to grow or unite.

ac-cre-tion (*ak-krē'shun*), *n.* increase by natural growth; the addition of external parts.

ac-cre-tive (*ak-krē'tiv*), *adj.* adding to or increasing by growth.

★**ac-crue** (*ak-krū'*, not *ak'krōō*), *v. i.* to come to happen or result to naturally as an increment, as of profit or loss.

ac-cru-er (*ak-krū'ẽr*), *n.* the act of accretion.

ac-cu-mu-late (*ak-kū'mū-lāt*), *v. t.* to collect or bring together; amass; heap up. [HEAP.]

ac-cu-mu-la-tion (*ak-kū-mū-lā'shun*), *n.* the act of accumulating or amassing.

ac-cu-mu-la-tive (*ak-kū'mū-lā-tiv*), *adj* tending to accumulate.

ac-cu-mu-la-tive judg-ment (*juj'ment*), a second judgment which takes effect against a person after the first sentence has expired.

ac-cu-mu-la-tor (*ak-kū'mū-lā-tẽr*), *n.* one who, or that which, accumulates; an apparatus for equalizing pressure.

ac-cu-ra-cy (*ak'kū-rȧ-si*), *n.* the quality of being accurate; exactness or correctness.

★**ac-cu-rate** (*ak'kū-rāt*, not *ak'kẽr-it*), *adj.* in exact conformity with the truth. [CORRECT.]

ac-curs-ed (*ak-kẽrs'ed*) or **ac-curst** (*ak-kẽrst'*), *p. adj.* under or subject to a curse.

ac-cu-sa-tion (*ak-kū-zā'shun*), *n.* a charge or imputation of wrongdoing. [COMPLAINT.]

ac-cu-sa-tive (*ak-kū'zȧ-tiv*), *adj.* accusing: *n.* the objective case.

ac-cuse (*ak-kūz'*), *v. t.* to charge with guilt or blame.

Syn. ACCUSE, charge, impeach, arraign. The idea of asserting something to the prejudice of another is common to these terms; but *accuse* is said of acts, *charge* of moral qualities constituting the character; we *accuse* a person of murder; we *charge* him with dishonesty. High officials are *impeached;* criminals are *arraigned*.

ac-cus-er (*ak-kūz'ẽr*), *n.* one who accuses; one who formally charges an offense against another.

ac-cus-tom (*ak-kus'tum*), *v. t.* to habituate or familiarize by custom or use. [ADDICTED.]

ace (*ās*), *n.* [*pl.* aces (*-ez*)], a unit; in playing cards or dice, a card or die marked with a single pip.

A-ceph-a-la (*ȧ-sef'ȧ-lȧ*), *n. pl.* a term applied to all bivalves, as the oyster, having no distinct head.

ace-point (*ās'point*), the single mark of the ace card and of the die marked with one spot.

a-cer-bi-ty (*ȧ-sẽr'bi-ti*), *n.* [*pl.* acerbities (*-tiz*)], sourness; sharpness. [ACRIMONY.]

★**ac-et-an-i-lide** (*as-et-an'i-lid* or *-līd*), *n.* a pungent white powder, formed by the action of acetyl chloride on aniline.

ac-e-tate (*as'ē-tāt*), *n.* a salt of acetic acid.

★**a-ce-tic acid** (*ȧ-sē'tik* or *ȧ-set'ik as'id*), a clear liquid, with a strong acid taste and peculiar sharp smell.

a-cet-i-fy (*ȧ-set'i-fī*), *v. t.* [*p. t.* and *p. p.* acetified, *p. pr.* acetifying], to turn into vinegar; make acetose.

ac-e-tin (*as'ē-tin*), *n.* a combination of acetic acid with glycerine.

ac-e-tone (*as'ē-tōn*), *n.* a clear volatile liquid, composed of carbon, hydrogen, and oxygen.

ac-e-tose (*as'ē-tōs*) or **a-ce-tous** (*ȧ-sē'tus*), *adj.* of the nature of vinegar; sour; causing acetification.

★**a-cet-y-lene** (*ȧ-set'i-lēn*), *n.* a brilliant illuminating gas.

ache (*āk*), *n.* pain, more or less continuous; *v. i.* to suffer, or be in, pain.

a-chiev-a-ble (*ȧ-chēv'ȧ-bl*), *adj.* possible to achieve; capable of being performed.

a-chieve (*ȧ-chēv'*), *v. t.* to perform, carry out, accomplish. [ACCOMPLISH.]

a-chieve-ment (*ȧ-chēv'ment*), *n.* the act of achieving; accomplishment.

ach-ing (*āk'ing*), *p. adj.* enduring or causing pain; painful: *adv.* with aching; painfully.

ach-ro-mat-ic (*ak-rō-mat'ik*), *adj.* free from coloration.

a-chro-ma-tize (*ȧ-krō'mȧ-tīz*), *v. t.* to deprive of the power of transmitting color; to render achromatic.

ac-id (*as'id*), *adj.* sour and sharp or biting to the taste, as vinegar: *n.* anything sour.

a-cid-i-fi-ca-tion (*ȧ-sid-i-fi-kā'shun*), *n.* the process of acidifying.

a-cid-i-fy (*ȧ-sid'i-fī*), *v. t.* [*p. t.* and *p. p.* acidified, *p. pr.* acidifying], to make acid.

a-cid-i-ty (*ȧ-sid'i-ti*), *n.* the quality of being acid or sour.

a-cid-u-late (*ȧ-sid'ū-lāt*), *v. t.* to render slightly acid.

★**ac-i-er-age** (*as'i-ẽr-āj*), *n.* the term given to the process of electrically depositing iron on an engraved copper plate.

ac-i-form (*as'i-fôrm*), *adj.* needle-shaped.

ac-i-na-ceous (*as-i-nā'shus*), *adj.* consisting of, or full of, kernels, as the grape, mulberry, etc.

ac-knowl-edge (*ak-nol'ej*), *v. t.* [*p. t.* and *p. p.* acknowledged, *p. pr.* acknowledging], to admit or own to be true.

ac-knowl-edg-ment (*ak-nol'ej-ment*), *n.* the act of acknowledging; the admission or recognition of a truth.

ac-me (*ak'mē*), *n.* the highest point; the utmost reach; the crisis of a disease.

ac-ne (*ak'nē*), *n.* a pustular eruption of the body.

a-cock (*ȧ-kok'*), *adv.* in a cocked or turned up manner.

a-col-o-gy (*ȧ-kol'ō-ji*), *n.* the science of remedies.

★**ac-o-lyte** (*ak'ō-līt*), or **acolyth** (*ak'ō-lith* or *-līth*), *n.* the highest of the minor orders in the Roman Catholic church.

ac-o-nite (*ak'ō-nīt*), *n.* the plant wolfsbane or monkshood; the drug prepared from the plant.

a-con-i-tine (*ȧ-kon'i-tin* or *-tīn*), *n.* the narcotic drug prepared from the roots and leaves of several species of aconite.

★**a-corn** (*ā'kẽrn*), *n.* the fruit of the oak.

a-cou-me-ter (*ȧ-kou'mē-tẽr* or *ȧ-kōō'mē-tẽr*) *n.* an instrument to test the power of hearing.

★**a-cous-tic** (*ȧ-kous'tik* or *ȧ-kōōs'tik*), *adj.* belonging to the science of sound: *n.* a remedy for deafness.

a-cous-tics (*ȧ-kous'tiks* or *ȧ-kōōs'tiks*), *n. pl.* the science of sound.

ac-quaint (*ak-kwānt'*), *v. t.* to familiarize or make one's self conversant with; furnish information.

ac-quaint-ance (*ak-kwānt'ans*), *n.* the state of being acquainted with a person or subject.

Syn. ACQUAINTANCE, association, companionship, experience, familiarity, fellowship, friendship, intimacy, knowledge. *Acquaintance* between persons supposes that each knows the other; there may be *association* in business without *intimacy* or *friendship*. *Friendship* includes *acquaintance* with some degree of *intimacy*, and ordinarily *companionship; fellowship* involves not merely *acquaintance* and *companionship*, but sympathy as well. [See *love*.]

Ant. IGNORANCE, ignoring, unfamiliarity.

ac-quaint-ed (*ak-kwānt'ed*), *p. adj.* having personal knowledge; familiar with; well known. [KNOW.]

ac-qui-esce (*ak-kwi-es'*), *v. i.* to agree; comply passively; assent (followed usually by *in*). [AGREE.]

ac-qui-es-cence (*ak-kwi-es'ens*), *n.* the act of submitting; silent assent.

ac-quire (*ak-kwīr'*), *v. t.* to gain or obtain possession of.

ac-quire-ment (*ak-kwīr'ment*), *n.* the act of acquiring; that which is acquired.

ac-qui-si-tion (*ak-kwi-zish'un*), *n.* the act of acquiring.

ac-quit (*ak-kwit'*), *v. t.* [*p. t.* and *p. p.* acquitted, *p. pr.* acquitting], to release; set free. [ABSOLVE.]

ac-quit-tal (*ak-kwit'tal*), *n.* the act of releasing or acquitting; the state of being acquitted.

ac-quit-tance (*ak-kwit'tans*), *n.* a discharge or release from debt or other liability.

a-cre (*ā'kẽr*), *n.* a superficial measure of land containing 4,840 square yards.

ac-rid (*ak'rid*), *adj.* sharp or biting to the taste; pungent; irritating; stinging.

ac-ri-mo-ni-ous (*ak-ri-mō'ni-us*), *adj.* bitter; caustic; stinging.

ac-ri-mo-ny (*ak'ri-mō-ni*), *n.* sharpness of temper.

Syn. ACRIMONY, acerbity, asperity, bitterness, malignity, severity, sharpness, unkindness, virulence. *Acrimony* in speech or temper springs from settled character or deeply rooted feeling of aversion or unkindness. One might speak with momentary *asperity* to a child, but not with *acrimony; acerbity* is *sharpness*, with a touch of *bitterness; asperity* denotes distinct irritation or vexation; in speech *asperity* is often manifested by the tone of voice; *malignity* is the extreme of settled ill-intent; *virulence* is an envenomed hostility. *Virulence* makes language seem as if exuding poison. *Virulence* is outspoken; *malignity* may be covered with smooth and courteous phrase. We say intense *virulence*, deep

malignity. *Severity* carries ordinarily the implication, true or false, of justice. [See *anger; enmity.*]

Ant. AMIABILITY, gentleness, mildness.

ac-ro-bat (*ak'rō-bat*), *n.* a performer on the tightrope; one who practices tumbling.

ac-ro-lith (*ak'rō-lith*), *n.* a sculptured figure, the head and extremities of which are of stone and the rest of wood.

★**a-crop-o-lis** (*ȧ-krop'ō-lis*), *n.* the highest part or citadel of a Grecian city.

a-cross (*ȧ-krôs'*), *adv.* and *prep.* from side to side.

a-cros-tic (*ȧ-kros'tik*), *n.* a composition, usually in verse, in which the first or last letters of the lines, or other letters taken in order, form a motto, phrase, name, or word.

act (*akt*), *n.* an action; process of doing; a decree, edict, or enactment; the judgment of a court.

ac-tin-i-um (*ak-tin'i-um*), *n.* a recently discovered radio-active element.

ac-tin-oid (*ak'tin-oid*), *adj.* having the form of rays; resembling a starfish.

ac-tion (*ak'shun*), *n.* the state of being active, as opposed to rest; the effect of one body upon another (used in *sing.*).

Syn. ACTION, gesture, gesticulation, posture, attitude. All these terms are applied to the state of the body; the three former indicating a state of motion; the two latter a state of rest. *Action* respects the movements of the body in general; *gesture* is an action indicative of some particular state of mind; *gesticulation* is a species of artificial *gesture.* Raising the arm is an *action*; bowing is a *gesture.* Actions may be ungraceful; gestures indecent. *Posture* and *attitude* both imply a mode of placing the body, but the *posture* is either natural or assumed; the *attitude* is always assumed or represented. We assume a sitting *posture* or an *attitude* of prayer.

ac-tion-a-ble (*ak'shun-ȧ-bl*), *adj.* giving grounds for an action at law.

ac-tive (*ak'tiv*), *adj.* endowed with or exercising the power or quality of action; constantly active.

Syn. ACTIVE, agile, alert, brisk, bustling, busy, diligent, energetic, expeditious, industrious, lively, mobile, nimble, officious, prompt, quick, ready, sprightly, spry, supple, vigorous. Both quickness and constancy of action are implied in *active;* in the former sense it is allied with *agile, alert, brisk,* etc.; in the latter with *busy, diligent, industrious.* The *restless* are *active* from inability to keep quiet; their activity may be without purpose, or out of all proportion to the purpose contemplated. The *officious* are undesirably *active* in the affairs of others.

Ant. DULL, idle, inert, lazy, slow, sluggish, stupid.

ac-tor (*ak'tẽr*), *n.* one who acts or performs; a stage-player.

ac-tress (*ak'tres*), *n.* a female actor.

ac-tu-al (*ak'tū-al*), *adj.* real; existing; present.

ac-tu-al-i-ty (*ak-tū-al'i-ti*), *n.* [*pl.* actualities (*-tiz*)], the state of being real or actual.

ac-tu-a-ry (*ak'tū-ā-ri*), *n.* [*pl.* actuaries (*-riz*)], a registrar or clerk of a court.

ac-tu-ate (*ak'tū-āt*), *v. t.* to move or incite to action.

a-cu-le-ate (*ȧ-kū'lē-āt*), *adj.* having sharp points; prickly.

★**a-cu-men** (*ȧ-kū'men,* not *ȧk'ū-men*), *n.* quickness of perception; penetration; discrimination.

a-cu-mi-nate (*ȧ-kū'mi-nāt*), *adj.* ending in a sharp point.

a-cute (*ȧ-kūt'*), *adj.* sharp-pointed; intellectually sharp; quick of perception; severe, as pain.

Syn. ACUTE, keen, shrewd. In the natural sense, a fitness to pierce is predominant in the word *acute,* and that of cutting, or a fitness for cutting, in the word *keen.* The *shrewd* man exposes follies. Arguments may be *acute,* reproaches *keen,* and replies or retorts *shrewd.* A *shrewd* understanding is rather quicker in discovering new truths than in distinguishing truth from falsehood. [See *sharp.*]

Ada (*ā'dȧ*). According to some, this name has been corrupted from *Adama,* feminine of Adam. Others derive it from the name *Ead,* which is from A.-S. *ead,* "happy"; or from the name *Eadith.* Littleton gives *Eada* (Saxon), *Auda, Ada,* and *Idonea,* which he translates, "fit," "meet," "proper"; also "pious," "honest," "rich."

ad-age (*ad'āj*), *n.* an ancient proverb or pithy saying.

Adam (*ad'am*). From the Hebrew *Adham,* signifying "man"; literally, "earthy," "red earth." Rudolph, however, says the name in Ethiopic means "to be fair," "beautiful." Arab., *Adam;* Danish, *Adam;* Dutch, *Adam;* Fr., *Adam;* Ger., *Adam;* It., *Adamo;* Lat., *Adamus;* Port., *Adão* (ä-downʹ); Sp., *Adan.*

ad-a-mant (*ad'ȧ-mant*), *n.* a substance of extreme hardness; the diamond: *adj.* formed of adamant.

★**ad-a-man-tine** (*ad-ȧ-man'tin,* not *ad-ȧ-man'tēn*), *adj.* made of adamant; impenetrable.

a-dapt (*ȧ-dapt'*), *v. t.* to make to correspond; fit by alteration or adaptation.

a-dapt-a-bil-i-ty (*ȧ-dapt-ȧ-bil'i-ti*), *n.* the quality of being adaptable.

ad-ap-ta-tion (*ad-ap-tā'shun*), *n.* the act of adjusting or adapting; the state of being adapted.

add (*ad*), *v. t.* to join, unite, sum up; increase; affix.

Syn. ADD, adjoin, affix, amplify, annex, append, attach, augment, cast up, enlarge, extend, increase, join on, make up, subjoin, sum up. To *add* is to *increase* by *adjoining* or *uniting;* to *augment* is to *increase* by any means; but we rather *enlarge* a house, a farm, or an empire; *extend* influence or dominion; *augment* riches, power or influence; *attach* or *annex* a building; *affix* a seal or a signature; a speaker or writer may *amplify* a subject, or may *append* or *subjoin* certain remarks; we *add up* and *make up* an account.

Ant. DEDUCT, diminish, lessen, remove.

ad-den-dum (*ad-den'dum*), *n.* [*pl.* addenda (*'dȧ*)], an appendix.

ad-der (*ad'ẽr*), *n.* the popular name for the viper.

ad-dict (*ad-dikt'*), *v. t.* to devote or give one's self up to: *adj.* addicted, devoted or abandoned to.

Syn. ADDICTED, abandoned, accustomed, attached, devoted, disposed, given, habituated, inclined, prone, wedded. *Abandoned* relates to one who has surrendered to wickedness; *addicted* may be used in a good, but more frequently is used in a bad sense, as, *addicted* to study, *addicted* to drink; *devoted* is used chiefly in the good sense, as, a mother's *devoted* affection; one may be *accustomed* to labor, *attached* to his profession, *devoted* to his religion, *given* to study or to gluttony, *inclined* to luxury, one may become *habituated* to poverty, *wedded* to science or to art. *Prone* is used only in a bad sense, as, our hearts are *prone* to evil.

Ant. AVERSE, disinclined, unaccustomed.

ad-di-tion (*ad-dish'un*), *n.* the act or process of adding together; increase; the result of addition.

ad-dle (*ad'l*), *adj.* rotten; *v. t.* to make corrupt or putrid, as eggs: *v. i.* to become addled.

ad-dle-head-ed (*ad-l-hed'ed*), or **ad-dle-pa-ted** (*ad-l-pā'ted*), *adj.* stupid; weak-brained; muddled.

★**ad-dress** (*ad-dres',* not *ad'dres*), *v. t.* to straighten; to bring into line; to arrange, redress, as wrongs, etc.; *n.* a speech, delivered or written.

Syn. ADDRESS, accost, apostrophize, appeal, approach, court, greet, hail, salute, speak to, woo. *Address* is slightly more formal than *accost* or *greet;* one may *address* another at considerable length or in writing, he *accosts* orally and briefly; to *accost* is to speak first, to friend or stranger; *greet* is not so distinctly limited, since one may return another's *greeting; greet* and *hail* may imply but a passing word; *greeting* may be altogether silent; to *hail* is to *greet* in a loud-voiced and commonly hearty and joyous way; to *salute* is to *greet* with special token of respect, as a soldier his commander; to *apostrophize* is to solemnly *address* some person or personified attribute; a poet may *apostrophize* virtue, beauty, love, or even the deity; to *appeal* is strictly to call for some form of help or support. [See *direction.*]

Ant. AVOID, ignore, overlook, shun.

ad-duce (*ad-dūs'*), *v. t.* to bring forward or cite in proof or substantiation. [ALLEGE.]

ad-du-ci-ble (*ad-dū'si-bl*), *adj.* capable of being adduced.

★**Adela** (*ad'ē-lȧ*). A female name Latinized from Old German *edel,* "noble," "noble descent or lineage."

Adelaide (*ad'ē-lād*). From the Old German male name *Adalheid* (in Middle High German *Adalhait,* North High German *Adelheid*), signifying "a noble person."

ad-e-noid (*ad'ē-noid*), *n,* a tumor affecting a gland.

★**a-dept** (*ȧ-dept',* not *ad'ept*), *adj.* well skilled.

ad-e-qua-cy (*ad'ē-kwȧ-si*), *n.* sufficiency for a particular purpose.

ad-e-quate (*ad'ē-kwāt*), *adj.* equal to requirement or occasion; fully sufficient. [PROPORTIONATE.]

ad-here (*ad-hēr'*), *v. i.* to stick fast; become firmly attached to.

ad-her-ence (*ad-hēr'ens*), *n.* the act or state of adhering.

ad-her-ent (*ad-hēr'ent*), *adj.* adhering; sticking. [FOLLOWER.]

ad-he-sion (*ad-hē'zhun*), *n.* the state or act of adhering.

★**a-dieu** (*ȧ-dū',* French *ăd-yö'*), *n.* [*pl.* adieus, adieux (*ȧ-dūz'*)], good wishes at parting. [FAREWELL.]

Adirondack (*ad-i-ron'dak*). Mountains in New York and village in Warren county of the same state. Indian word compounded from *doran,* "a people who eat bark," and *dak,* "trees," with the French article *la* prefixed.

ad-it (*ad'it*), *n.* an entrance or passage; an entrance to a mine more or less horizontal.

ad-ja-cent (*ad-jā'sent*), *adj.* near; close to.

Syn. ADJACENT, abutting, adjoining, attached, beside, bordering, close, contiguous, near, neighboring, next, nigh. *Adjacent* farms may not be connected; if *adjoining,* they meet at the boundary line; *contiguous* may be used for either *adjacent* or *adjoining; abutting* refers to the end of one building or estate; buildings may be *adjacent* or *adjoining* that are not *attached; near* is a relative word, places being called *near* upon the railroad which would elsewhere be deemed remote; *neighboring* always implies proximity; *next* views some object as the nearest of several or many.

ad-jec-ti-val (*ad-jek-tī'val*), *adj.* of the nature of an adjective.

ad-jec-tive (*ad'jek-tiv*), *n.* a word used with a substantive or noun to express a quality or attribute of the thing named. [EPITHET.]

ad-join (*ad-join'*), *v. t.* to unite or join: *v. i.* to lie next to. [ADJACENT, ADD.]

ad-journ (*ad-jẽrn'*), *v. t.* to put off to another day

ad-journ-ment (*ad-jẽrn'ment*), *n.* the act of adjourning; the postponement of a meeting.

ad-judge (*ad-juj'*), *v. t.* to determine in a controversy.

ad-ju-di-cate (*ad-jū'di-kāt*), *v. t.* to try and determine a case, as a court.

ad-ju-di-ca-tion (*ad-jū'di-kā'shun*), *n.* the act of determining judicially; a judicial sentence.

ad-ju-di-ca-tor (*ad-jū'di-kā-tẽr*), *n.* one who adjudicates.

ad-junct (*ad'jungkt*), *n.* something added to another thing, but not an essential part of it.

ad-ju-ra-tion (*ad-jū-rā'shun*), *n.* the solemn charging on oath.

ad-jure (*ad-jūr'*), *v. t.* to command on oath under pain of a penalty; to charge solemnly.

ad-just (*ad-just'*), *v. t.* to fit, or make exact, to make correspondent; to make accurate.

ad-just-ment (*ad-just'ment*), *n.* the act of adjusting.

ad-ju-tan-cy (*ad'jū-tan-si*), *n.* the office of an adjutant.

ad-ju-tant (*ad'jū-tant*), *n.* a regimental staff officer who assists the commanding officer.

ad-ju-tant gen-er-al (*jen'ẽr-al*), [*pl.* adjutants general], the chief staff officer of an army.

ad-meas-ure (*ad-mezh'ūr*), *v. t.* to measure dimensions; apportion.

ad-min-is-ter (*ad-min'is-tẽr*), *v. t.* to manage as chief agent or minister, as a king or president.

ad-min-is-tra-tion (*ad-min-is-trā'shun*), *n.* the act of administering, as government, justice, or medicine. [GOVERNMENT.]

ad-min-is-tra-tive (*ad-min'is-trā-tiv*), *adj.* pertaining to administration.

★**ad-min-is-tra-tor** (*ad-min-is-trā'tẽr*), *n.* one who administers affairs.

ad-min-is-tra-trix (*ad-min-is-trā'triks*), *n.* a female administrator.

★**ad-mi-ra-ble** (*ad'mi-rȧ-bl,* not *ad-mī'rā-bl*), *adj.* worthy of admiration; excellent.

ad-mi-ral (*ad'mi-ral*), *n.* the chief commander of a fleet.

Ad-mi-ral-ty (*ad'mi-ral-ti*), *n.* [*pl.* admiralities (*-tiz*)], the department of the English government having authority over naval affairs.

ad-mi-ra-tion (*ad-mi-rā'shun*), *n.* wonder excited by beauty or excellence.

ad-mire (*ad-mīr'*), *v. t.* to regard with strong approval.

Syn. ADMIRE, adore, applaud, approve, delight in, enjoy, esteem, extol, honor, love, respect, revere, venerate, wonder. *Admire* expresses a delight and approval, in which the element of wonder unconsciously mingles; we *admire* beauty in nature and art, *delight in* the innocent happiness of children, *enjoy* books or society; *approve* what is excellent, *applaud* heroic deeds; *esteem* the good, *love* our friends; *honor* and *respect* noble character, *revere* and *venerate* it in the aged; *extol* the goodness and *adore* the majesty of God.

Ant. ABHOR, despise, dislike, execrate, hate, ridicule, scorn.

ad-mis-si-ble (*ad-mis'i-bl*), *adj.* worthy of being admitted.

ad-mis-sion (*ad-mish'un*), *n.* the power or permission to enter.

ad-mit (*ad-mit'*), *v. t.* [*p. t.* and *p. p.* admitted, *p. pr.* admitting], to permit to enter.

Syn. ADMIT, allow, permit, suffer, tolerate. We *admit* by simply not refusing or preventing; we *allow* by positively granting or complying with; we *admit* that which concerns ourselves, or is done toward ourselves; we *allow* that which is for the convenience of others, or what they wish to do; what is *suffered* may be burdensome to the *sufferer,* if not morally wrong; what is *tolerated* is bad in itself, and *suffered* only because it cannot be prevented; no earthly power can *permit* that which divine law prohibits. [See *consent.*]

ad-mit-tance (*ad-mit'tans*), *n.* the power or permission to enter.

ad-mix (*ad-miks'*), *v. t.* to mix with something else.

ad-mix-ture (*ad-miks'tūr*), *n.* a compound of substances mixed together.

ad-mon-ish (*ad-mon'ish*), *v. t.* to reprove gently; warn; instruct.

ad-mo-ni-tion (*ad-mō-nish'un*), *n.* friendly reproof or warning.

ad-mon-i-to-ry (*ad-mon'i-tō-ri*), *adj.* conveying reproof or warning.

ad-nate (*ad'nāt*), *adj.* with organic cohesion of unlike parts.

a-do (*ȧ-dōō'*), *n.* bustle; trouble.

★**a-do-be** (*ȧ-dō'bā*) *n.* unburnt brick dried in the sun, used for building in Central America and Mexico.

ad-o-les-cence (*ad-ō-les'ens*), *n.* the period of life between puberty and maturity; youth.

ad-o-les-cent (*ad-ō-les'ent*), *adj.* growing to maturity.

Adolphus (*ȧ-dol'fus*). The same as the Old German name *Atalphus,* which Wachter renders "helper of happiness," from *od,* "happiness," and *hulf,* "help" or "helper." It is commonly defined as "noble wolf." Danish, *Adolf;* Dutch, *Adolf;* Fr., *Adolphe;* Ger., *Adolf* or *Adolph;* It., *Adolfo;* Lat., *Adolphus;* Sp., *Adolfo;* Sw., *Adolf.*

a-dopt (*ȧ-dopt'*), *v. t.* to choose or take to one's self, as a child, an opinion, or a course of action.

a-dop-tion (*ȧ-dop'shun*), *n.* the act of adopting; the state of being adopted.

a-dor-a-ble (*ă-dōr'ă-bl*), *adj.* worthy of worship.
ad-o-ra-tion (*ad-ō-rā'shun*), *n.* act of worship.
a-dore (*ă-dōr'*), *v. t.* to pay divine honors to; honor highly; love intensely. [ADMIRE.]
a-dorn (*ă-dôrn'*), *v. t.* to beautify; dignify; ornament; embellish. [tion.
a-dorn-ment (*ă-dôrn'ment*), *n.* ornament; decora-
ad-re-nal-in (*ad-rē'nal-in*), *n.* a hemostatic astringent principle of the suprarenal gland; the most powerful astringent known.
★**Adrian** (*ā'dri-an*) or **Hadrian** (*hā'dri-an*). From the German name *Adrias*, so called from the capital of the Prætutii, on the coast of the Adriatic, where the family of the Emperor Adrian, according to his own account, had its rise. Danish, *Adrian*; Dutch, *Adriaan*; Fr., *Adrien*; It., *Adriano*; Lat., *Adrianus*; Port., *Adriano*; Sp., *Adrian.*
a-drift (*ă-drift'*), *adj.* and *adv.* floating at random.
a-droit (*ă-droit'*), *adj.* exhibiting skill; dexterous. [CLEVER.]
ad-u-la-tion (*ad-ū-lā'shun*), *n.* interested praise; flattery.
★**a-dult** (*ă-dult'*, not *ad'ult*), *adj.* grown up to full age, size, and strength. [admixture.
a-dul-ter-ate (*ă-dul'tĕr-āt*), *v. t.* to corrupt by baser
a-dul-ter-a-tion (*ă-dul'tĕr-ā'shun*), *n.* the debasing by admixture; deterioration.
a-dul-ter-y (*ă-dul'tĕr-ĭ*), *n.* [*pl.* adulteries (*-ĭz*)], violation of the marriage bed.
ad-um-brate (*ad-um'brāt*), *v. t.* to shadow forth.
ad-vance (*ad-vans'*), *v. t.* to go forward: *v. t.* to further; to make a payment of beforehand: *n.* a moving forward. [ALLEGE.]
ad-vance-ment (*ad-vans'ment*), *n.* furtherance; progress; promotion.
ad-van-tage (*ad-van'tāj*), *n.* a state of advance or forwardness; a benefit.
ad-van-ta-geous (*ad-van-tā'jus*), *adj.* of advantage; beneficial.
ad-vent (*ad'vent*), *n.* a coming or arrival.
Advent, *n.* the period including the four Sundays before Christmas.
ad-ven-ti-tious (*ad-ven-tish'us*), *adj.* happening by chance; casual; fortuitous.
ad-ven-tu-al (*ad-ven'tū-al*), *adj.* relating to the season of Advent.
★**ad-ven-ture** (*ad-ven'tūr*), *n.* an event the issue of which is determined by chance. [ACCIDENT.]
ad-ven-ture-some (*ad-ven'tūr-sum*), or **adventurous** (*ad-ven'tūr-us*), *adj.* inclined to incur risk. [ENTERPRISING, FOOLHARDY.]
ad-verb (*ad'vĕrb*), *n.* a word used to modify the sense of a verb or adjective.
ad-ver-bi-al (*ad-vĕr'bi-al*), *adj.* of the nature of an adverb.
ad-ver-sa-ry (*ad'vĕr-sā-rĭ*), *n.* [*pl.* adversaries (*-rĭz*)], an opponent.
★**ad-verse** (*ad'vĕrs*), *adj.* opposed to. [verse.
ad-ver-si-ty (*ad-vĕr'si-tĭ*), *n.* a state of things ad-
ad-vert (*ad-vĕrt'*), *v. i.* to turn one's attention to; refer.
ad-vert-ence (*ad-vĕrt'ens*), *n.* attention.
ad-vert-en-cy (*ad-vĕrt'en-sĭ*), *n.* the habit of being attentive.
ad-vert-ent (*ad-vĕrt'ent*), *adj.* attentive.
★**ad-ver-tise** (*ad-vĕr-tīz'*), *v. t.* to turn the attention of others to. [ANNOUNCE.]
★**ad-ver-tise-ment** (*ad-vĕr'tiz-ment* or *ad-vĕr-tīz'-ment*), *n.* a notice in a public print.
ad-vice (*ad-vis'*), *n.* an opinion given for the practical direction of conduct. [INFORMATION.]
ad-vis-a-bil-i-ty (*ad-viz-ă-bil'i-tĭ*), *n.* the quality of being advisable.
ad-vis-a-ble (*ad-viz'ă-bl*), *adj.* fit to be advised.
ad-vise (*ad-viz'*), *v. t.* to offer an opinion to; counsel.
ad-vised (*ad-vīzd'*), *p. adj.* acting with caution.
ad-vis-ed-ly (*ad-vīz'ed-lĭ*), *adv.* with advice.
ad-vi-so-ry (*ad-vīz'ō-rĭ*), *adj.* having power to advise.
ad-vo-ca-cy (*ad'vō-kă-sĭ*), *n.* the act of pleading for.
ad-vo-cate (*ad'vō-kāt*), *n.* one called to the aid of another. [ABET.] [supporter.
ad-vo-ca-tor (*ad'vō-kā-tĕr*), *n.* an advocate; a
ad-y-na-mi-a (*ad-i-nā'mi-ă*), *n.* great debility; physical weakness.
adz or **adze** (*adz*), *n.* a cutting tool having a curved blade at right angles to the handle. *adz-plane,* a tool for modeling and rabbeting.
Æ-o-li-an harp (*ē-ō'li-an harp*), a stringed instrument, the wires of which are set in motion by air. [tion.
★**æ-on** or **eon** (*ē'on*), *n.* a period of immense dura-
★**a-ër-ate** (*ā'ĕr-āt*, not *ā-rĕ'āt*), *v. i.* to combine or charge with carbonic-acid gas, or with air.
a-ër-a-ted bread (*ā'ĕr-ā-tĕd bred*), bread raised by charging the dough with carbonic-acid gas.
a-ër-a-tion (*ā-ĕr-ā'shun*), *n.* the act of aërating.
★**a-ër-i-al** (*ā-ĕr'i-al*), *adj.* belonging to the air.
ae-rie (*ē'rĭ*), *n.* an eagle's nest; a brood of eagles or hawks.
★**a-ër-i-fi-ca-tion** (*ā-ĕr-i-fi-kā'shun*), *n.* the state of being made aëriform.
a-ër-i-form (*ā'ĕr-i-fôrm*), *adj.* having the form of air; gaseous.
a-ër-i-fy (*ā'ĕr-i-fī*), *v. t.* [*p. t.* and *p. p.* aërified, *p. pr.* aërifying], to infuse or combine with air.
a-ër-o-cyst (*ā'ĕr-o-sist*), *n.* one of the air bladders of algæ.
a-ër-o-drome (*ā'ĕr-o-drōm*), *n.* a mechanism for gliding on the air; a place for testing flying machines.
a-ër-o-dy-nam-ics (*ā-ĕr-o-di-nam'iks*), *n.* the science which treats of air in motion.
a-ër-o-gram (*ā'ĕr-o-gram*), *n.* a wireless telegraph message.
a-ër-o-lite (*ā'ĕr-o-līt*), *n.* a meteorite.
★**a-ër-om-e-ter** (*ā-ĕr-om'ĕ-tĕr*), *n.* an instrument for weighing the air.
a-ër-o-mo-tor (*ā-ĕr-o-mō'tĕr*), *n.* a flying machine driven through the air by a motor; a motor designed for use on an aëroplane.
★**a-ër-o-naut** (*ā'ĕr-o-nawt*), *n.* an aërial navigator.
a-ër-o-phone (*ā'ĕr-o-fōn*), *n.* an instrument invented by Edison for increasing the intensity of sound.
a-ër-o-phyte (*ā'ĕr-o-fīt*), *n.* an air plant; a parasitical plant.
a-ër-o-plane (*ā'ĕr-o-plān*), *n.* a flying machine, kept afloat by the force of its motor and the air.
a-ër-o-stat (*ā'ĕr-o-stat*), *n.* a balloon; a flying machine.
a-ër-o-stat-ics (*ā-ĕr-o-stat'iks*), *n.* the science which treats of the equilibrium of bodies sustained in air.
æs-the-si-om-e-ter (*es-thĕ-si-om'ĕ-tĕr*), *n.* an instrument for determining sensibility of touch.
æs-thet-ic or **esthetic** (*es-thet'ik*), *adj.* pertaining to æsthetics.
æs-thet-ics or **esthetics** (*es-thet'iks*), *n.* the science or theory of the beautiful.
a-far (*ă-fär'*), *adv.* at, to, or from, a distance.
af-fa-ble (*af'fă-bl*), *adj.* easy to be addressed; courteous.
af-fair (*af-fâr'*), *n.* that which is done, or is to be done; business.
af-fect (*af-fekt'*), *v. t.* to produce an effect upon. [MOVING.]
af-fec-ta-tion (*af-fek-tā'shun*), *n.* the assuming a manner which is not one's own. [PRETENSE.]
af-fec-tion (*af-fek'shun*), *n.* having the feelings affected; inclination; attachment; fondness. [LOVE.]
af-fec-tion-ate (*af-fek'shun-āt*), *adj.* having affection; kind.
★**af-fer-ent** (*af'fĕr-ent*, not *af-fĕr'ent*), *adj.* conveying inward or to a part.
af-fi-ance (*af-fī'ans*), *n.* trust; a marriage-contract: *v. t.* to betroth.
af-fi-da-vit (*af-fi-dā'vĭt*), *n.* a sworn statement in writing. [TESTIMONY.]
af-fil-i-ate (*af-fil'i-āt*), *v. t.* to assign a child to its father; *v. t.* to be intimately connected or associated (followed by *with*).
af-fin-i-ty (*af-fin'i-tĭ*), *n.* [*pl.* affinities (*-tiz*)], nearness of kin.
af-firm (*af-fĕrm'*), *v. t.* to confirm, as a judgment: *v. i.* to assert strongly. [ALLEGE.]
af-fir-ma-tion (*af-fĕr-mā'shun*), *n.* an averment. [TESTIMONY.
af-firm-a-tive (*af-fĕrm'ă-tiv*), *n.* that which affirms: *adj.* affirming or asserting.
af-fix (*af-fiks'*), *v. t.* to fix to; attach; *n.* a letter or syllable added to end of a word. [ADD.]
af-fla-tus (*af-flā'tus*), *n.* a breath or blast of wind; inspiration.
af-flict (*af-flikt'*), *v. t.* to cause prolonged pain to body or mind; to distress.
af-flic-tion (*af-flik'shun*), *n.* prolonged pain of body or mind; state of distress.
Syn. AFFLICTION, grief, sorrow. *Affliction* lies deeper in the soul than *grief.* It is too deep to be vehement. Continued sickness of our friends will cause *affliction;* the failure of our favorite schemes will occasion *grief;* our own mistake will cause *sorrow.* [See *grief.*]
af-flu-ence (*af'flu-ens*), *n.* an abundant supply, as of thoughts, words, riches; wealth.
★**af-flu-ent** (*af'flu-ent*, not *af-flōō'ent*), *n.* a tributary stream: *adj.* abundant.
af-flux (*af'fluks*), *n.* an increase; an influx.
af-ford (*af-fôrd'*), *v. t.* to supply; produce; yield; be capable of bearing the expense of.
af-fray (*af-frā'*), *n.* the fighting of two or more persons in a public place. [FEUD.]
af-fright (*af-frīt'*), *v. t.* to frighten; terrify; alarm; confuse.
af-front (*af-frunt'*), *v. t.* to offend; to insult.
af-ghan (*af'gan*, not *af'kan*), *n.* a crocheted or knitted soft wool blanket or carriage robe.
Afghan, *adj.* pertaining to Afghanistan: *n.* a native of Afghanistan.
a-field (*ă-fēld'*), *adv.* to, in, or on, the field; astray.
a-flame (*ă-flām'*), *adj.* and *adv.* in flames; ablaze.
a-float (*ă-flōt'*), *adj.* and *adv.* floating; in circulation.
a-foot (*ă-foot'*), *adv.* on foot; astir.
a-fraid (*ă-frād'*), *adj.* frightened.
a-fresh (*ă-fresh'*), *adv.* again; anew.
Af-ri-can (*af-ri'kan*), *adj.* pertaining to Africa.
aft (*äft*), *adj.* and *adv.* toward the stern.
af-ter (*äf'tĕr*), *adj.* next, subsequent, later: *prep.* behind in place: *adv.* behind; subsequent in time or place.
af-ter-clap (*-klap*), *n.* an untoward event happening after an affair is supposed to be at an end.
af-ter damp (*damp*), the carbonic-acid gas found in coal mines after an explosion of fire damp.
af-ter-math (*-mäth*), *n.* a second mowing; rowen.
af-ter-noon (*-nōōn'*), *n.* the part of the day between noon and evening.
af-ter-ward (*-wĕrd*), or **afterwards** (*-wĕrdz*), *adv.* at a later time; subsequently.
a-gain (*ă-gen'*), *adv.* a second time; in return; further; anew.
★**a-gainst** (*ă-genst'*, not *ă-gānst'*), *prep.* opposite to; in opposition to; contrary to one's inclinations.
★**a-gape** (*ă-gāp'* or *ă-gāp'*), *adj.* and *adv.* gaping; with the mouth wide open.
ag-ate (*ag'āt*), *n.* a precious stone, a variety of chalcedony; Scotch pebble.
age (*āj*), *n.* a particular period of time in life or in history; time. [TIME.]
aged (*ā'jed*), old. [ELDERLY.]
a-gen-cy (*ā'jen-sĭ*), *n.* that which makes action.
a-gent (*ā'jent*), *n.* one who acts, especially for another; an active power or cause. [MINISTER.]
ag-glom-er-ate (*ag-glom'ĕr-āt*), *v. t.* to gather into a heap; accumulate.
ag-glom-er-a-tion (*ag-glom-ĕr-ā'shun*), *n.* a heap.
ag-glu-ti-nate (*ag-glū ti-nāt*), *v. t.* to glue together: *adj.* glued together.
ag-glu-ti-na-tion (*ag-glū-ti-nā'shun*), *n.* the act or condition of being united or joined together.
★**ag-gran-dize** (*ag'gran-dīz*), *v. t.* to make great or greater in power.
ag-gran-dize-ment (*ag-gran'diz-ment*), *n.* exaltation; advancement.
ag-gra-vate (*ag'grā-vāt*), *v. t.* to add to a load; intensify.
Syn. AGGRAVATE, irritate, provoke, exasperate, tantalize. The crime of robbery is *aggravated* by any circumstances of cruelty; whatever comes across the feelings *irritates;* whatever awakens anger *provokes;* whatever heightens this anger extraordinarily *exasperates;* whatever raises hopes in order to frustrate them *tantalizes.*
ag-gra-va-tion (*ag-grā-vā'shun*), *n.* the act of making worse.
ag-gre-gate (*ag'grē-gāt*), *v. t.* to collect or bring together; gather into a mass or body; accumulate: *adj.* formed into a mass or total.
ag-gre-ga-tion (*ag'grē-gā'shun*), *n.* a collection of particulars.
ag-gres-sion (*ag-gresh'un*), *n.* unprovoked attack.
ag-gres-sive (*ag-gres'iv*), *adj.* unjustly attacking.
ag-gres-sor (*ag-gres'ĕr*), *n.* one who attacks.
ag-grieve (*ag-grēv'*), *v. t.* to bear heavily upon oppress. [ABUSE.]
a-ghast (*ă-gast'*), *adj.* struck with sudden astonishment, or terror.
ag-ile (*aj'il*), *adj.* easily moving about; active in body; nimble. [ACTIVE.]
ag-i-tate (*aj'i-tāt*), *v. t.* to stir violently.
ag-i-ta-tion (*aj-i-tā'shun*), *n.* the act of agitating; excitement; discussion.
ag-i-ta-tor (*aj'i-tā-tĕr*), *n.* one who starts or keeps up a political or other agitation.
a-glow (*ă-glō'*), *adj.* and *adv.* in a glow; glowing.
Agnes (*ag-nes* or *ag'nez*). From the Greek *agnos* "chaste." Danish, *Agnes* or *Agnete;* Dutch *Agnes;* Fr., *Agnes;* Ger., *Agnes;* It., *Agnese;* Lat., *Agnes.*
★**ag-nos-tic** (*ag-nos'tik*), *n.* one who denies that man possesses any knowledge of the ultimate nature of things.
a-go (*ă-gō'*), *adv.* in past time; since (as, "long ago," "some time ago").
a-gog (*ă-gog'*), *adj.* and *adv.* in agitation or expectation; eager.
a-go-ing (*ă-gō'ing*), *adv.* on the going; in motion.
ag-o-nis-tics (*ag-ō-nis'tiks*), *n.* the science of athletic combats.
ag-o-nize (*ag'ō-nīz*), *v. i.* to suffer anguish; make convulsive efforts.
ag-o-ny (*ag'ō-nĭ*), *n.* [*pl.* agonies (*-nĭz*)], extreme pain; anguish. [DISTRESS.]
Agra (*ä'grä*) or **Akberabad.** A city of India, founded by Akber. Name derived from *abad,* a dwelling or town, generally connected with the name of its founder; hence, "town of Akber."
a-gra-ri-an (*ă-grā'ri-an*), *adj.* relating to land, or to land tenure.
a-gra-ri-an-ism (*ă-grā'ri-an-izm*), *n.* the principle of a uniform division of land.
a-gree (*ă-grē'*), *v. i.* to harmonize physically, mentally, or morally; to accord.
Syn. AGREE, accede, consent, comply, acquiesce. To *agree* is the general term, meaning to fall in with. We *accede* by becoming a party to a thing; those who *accede* are on equal terms; one objects to that to which one does not *accede;* we *consent* to a thing by authorising it; we *comply* with a thing by allowing it; those who *consent* or *comply* are not on equal terms with those in whose favor the consent is given or compliance made; *consenting* is an act of authority, *complying* an act of good-nature or weakness; to *acquiesce* is quietly to admit.
a-gree-a-bil-i-ty (*ă-grē-ă-bil'i-tĭ*), *n.* agreeableness.
a-gree-a-ble (*ă-grē'ă-bl*), *adj.* pleasing to the mind or senses. [CONFORMABLE, PLEASANT.]
a-gree-ment (*ă-grē'ment*), *n.* harmony of opinions or feelings.
ag-ri-cul-ture (*ag'ri-kul-tūr*), *n.* the science and art of cultivating fields by the plow.
a-grin (*ă-grin'*), *adj.* and *adv.* in the act or state of grinning.
a-ground (*ă-ground'*), *adj.* and *adv.* on the ground: the situation of a ship whose bottom touches the ground.
a-gue (*ā'gū*), *n.* an intermittent fever; the cold fit of an intermittent fever.
ah (*ä*), *interj.* an exclamation expressive of sudden emotion.
a-head (*ă-hed'*), *adv.* in the front; forward.
a-heap (*ă-hēp'*), *adv.* in a heap.
a-hem (*ă-hem'*), *interj.* an exclamation to call attention.

a-hoy (*ȧ-hoi'*), *interj.* a term used in hailing a vessel.
a-hull (*ȧ-hul'*), *adv.* with sails furled and helm lashed alee.
aid (*ād*), *v. t.* to assist; support: *n.* help; assistance. [HELP, ABET.]
★**aid-de-camp** (*ād'du-kāN*), *n.* [*pl.* aids-de-camp (*ādz*)], an officer who assists a general.
★**ai-gret** (*ā'gret*) or **aigrette** (*ā-gret'*), *n.* the small white heron; a plume arranged in imitation of the feathers of the heron.
ail (*āl*), *v. t.* [*p. t.* and *p. p.* ailed, *p. pr.* ailing], to give or cause pain: *v. i.* to feel pain; be afflicted with pain.
★**Allean** or **Alleen** (*ā-lēn'*). An Irish female name. Some translate it "light." If so, it may be a form of *Helen*; but it is more probably from the Erse *ail*, "noble," "beautiful"; or from *aille*, "handsome," "fair"; or corrupted from *ailgean*, "noble offspring."
★**ail-ment** (*āl'ment*, not *āl'munt*), *n.* a slight disorder of the body; sickness.
aim (*ām*), *v. i.* [*p. t.* and *p. p.* aimed, *p. pr.* aiming], to endeavor after; direct at something; seek. [ENDEAVOR.]
air (*âr*), *v. t.* to expose to the air; dry, as clothes; to exhibit ostentatiously: *n.* the fluid which we breathe. [PRETENSE.]
air gas (*gas*), an illuminating gas made from air.
air gun (*gun*), a gun discharged by the elastic force of compressed air.
air-i-ness (*âr'i-nes*), *n.* the state of being airy; gayety.
air-ing (*âr'ing*), *n.* a walk, ride, or drive in the open air.
air line (*līn*), a straight line. Also called a [*bee line.*
air plant (*plant*), a plant which derives its nourishment from the air.
air pump (*pump*), a machine for exhausting the air from a receiver.
air-ship (*âr'ship*), *n.* a balloon with motor and [steering apparatus.
air-y (*âr'i*), *adj.* exposed to, or composed of, air; breezy; unsubstantial; gay.
★**aisle** (*īl*), *n.* wing of a building; passage in a church.
★**Aix-la-Chapelle** (*āks-lä-shä-pel'*) or **Aachen** (*ä'ken*). A city of Rhine province, Prussia, Germany, celebrated for its mineral springs, and for the chapel erected over the tomb of Charlemagne.
a-jar (*ȧ-jär'*), *adj.* and *adv.* slightly turned or opened, as a door; out of harmony.
a-jog (*ȧ-jog'*), *adv.* on the jog; jogging.
a-kim-bo (*ȧ-kim'bō*), *adv.* with the hands on the hips and the elbows turned outward.
a-kin (*ȧ-kin'*), *adj.* and *adv.* of kin; related by blood; allied by nature.
Akron (*ak'ron*). City in Summit county, Ohio, which occupies the highest ground in the northern part of the state, and several other places named for the same reason.
Alabama (*al-ȧ-bä'mȧ*) State of the Union and a river of that state, named from an Indian tribe. There are several explanations of the meaning of the word. Gatchet gives "burnt clearing" Others say it means "Here we rest." Haines, in his *American Indian*, gives "thicket clearers."
al-a-bas-ter (*al'ȧ-bas-tẽr*), *n.* a white, marble-like mineral; a box made of alabaster.
a-lack (*ȧ-lak'*), *interj.* an exclamation expressive of blame, sorrow, or surprise.
a-lac-ri-ty (*ȧ-lak'ri-ti*), *n.* eager readiness; joyous activity; briskness.
★**Alameda** (*ä-lȧ-mā'dȧ*). County and city in California; town in Bernalillo county, New Mexico; and post office in Clarke county, Alabama, named from the cottonwood trees growing in the vicinity. A Spanish word, meaning "grove of poplar trees."
★**Alamo** (*ä'lȧ-mō*). Post office in Contra Costa county, California, and many other places named from the old fort in Texas, which was so called from a grove of cottonwood trees.
al-a-mode (*al-ȧ-mōd'*), *adv.* in the fashion: *adj.* fashionable: *n.* a thin, light, glossy, black silk.
Alan (*al'an*). Some derive this name from Old French *alan*, *allan*, "a hunting dog," originally from the country of the *Alani* or *Alauni*, a warlike people of European Sarmatia.
★**Alaric** (*al'ar-ik*, not *al-ar'ik*). From the Gothic, *alareiks*, "noble ruler." Danish, *Alarick;* Fr., *Alaric;* Ger., *Alarich;* It., *Alarico;* Lat., *Alaricus;* Sp., *Alarico.*
a-larm (*ȧ-lärm'*), *v. t.* to arouse to a sense of danger: strike with apprehension of danger.
a-las (*ȧ-lȧs'*), *interj.* an exclamation expressive of unhappiness.
Alaska (*ȧ-las'kȧ*). Territory of the United States An Indian word, meaning "great country." It was encountered by Russian explorers as *Al-ay-es-ka* the name having since changed through *Aliaska*, *Alaksa*, *Alashka*, to its present form.
Albany (*awl'bȧ-ni*). County and city in New York, named in honor of the duke of York (from his second title, *Albany*), afterward James II. of England; *Albany*, derived from his Scotch title, originally the same as *Albyn*, the Celtic name of Scotland.
al-ba-tross (*al-bȧ-tros*), *n.* a sea bird allied to the petrel, inhabiting the Pacific and Southern oceans.
al-be-it (*awl-bē'it*), *conj.* although; even though; notwithstanding.
Albemarle (*al'bē-märl*) **sound, N. C.** After the duke of Abermarle.
al-bum (*al'bum*), *n.* a blank book in which to insert autographs, photographs, stamps, etc.

★**al-bu-men** (*al-bū'men*, not *al'bū-men*), *n.* the white of an egg.
al-bu-men-ize (*al-bū'men-iz*), *v. t.* in photography, to coat (paper) with an albuminous solution.
★**al-bu-min** (*al-bū'min*), *n.* a variant of *albumen.*
★**Albuquerque** (Sp. *äl-bōō-kẽr'kā*), **New Mexico.** Named by the Spaniards, from *Albuquerque*, a town in Spain, near the frontier of Portugal, which took its name from Alphonso d'Albuquerque.
★**Alcazar** (*al-kä'zär*). From the Arabic, *al gaer*, "the castle." The palace of the Moorish kings, and, later, of Spanish royalty at Seville.
al-che-mist (*al'kē-mist*), *n.* one who studies or practices alchemy.
al-che-my (*al'kē-mi*), *n.* the professed art of transmuting the baser metals into gold.
al-co-hol (*al'kō-hol*), *n.* pure or rectified spirits of [wine.
al-co-hol-ism (*al'kō-hol-izm*), *n.* a diseased condition produced by alcohol.
★**Al-co-ran** (*al'kō-ran* or *al-kō-rän'*), *n.* the Koran: the Mohammedan bible.
al-cove (*al-kōv'*), *n.* a recess in a room or a garden; a bower.
al-der (*awl'dẽr*), *n.* a genus of plants growing in moist land and related to the birch.
al-der-man (*awl'dẽr-man*), *n.* [*pl.* aldermen (*-men*)], in cities and boroughs a magistrate next in dignity to the mayor.
ale (*āl*), *n.* a liquor made from an infusion of malt by fermentation.
a-lee (*ȧ-lē'*), *adv.* and *adj.* on the lee or sheltered side of the ship; the opposite of *aweather.*
a-lert (*ȧ-lẽrt'*), *adj.* on the watch; active: *n.* an alarm; a sudden attack. [ACTIVE.]
★**Aleutian** (*ā-lū'shi-an*, not *ā-lū'shan*). Islands in the Pacific Ocean. A derivation of the Russian word *aleaut*, meaning "bald rock," later appearing in the name applied to the river *Olutora* on the coast of Kamchatka, the people near the mouth of the stream being called *Olutorsky.*
Alexander. From the Greek name *Alexandros*, "helper of men." Dutch, *Alexander;* Fr., *Alexandre;* Ger., *Alexander;* It., *Alessandro;* Lat., *Alexander;* Sp., *Alejandro* or *Alexandro.*
Alexandria. An Egyptian city named after Alexander the Great.
al-ex-an-drine (*al-eks-an'drin*), *n.* a kind of heroic verse of six iambic feet, or twelve syllables.
★**Alexis** (*a-leks'is*). From the Greek name *Alexis*, "help," "defense;" Fr., *Alexis;* Russ., *Alexei.*
Alfred. This name is usually translated "all peace." Neidinger derives the first syllable of the Anglo-Saxon name Alfred, Aelfred, from the word *alp*, *alf*, *elf*, "strong," "powerful." The name is rather from *alf-rad*, "help in counsel." Danish *Alfred;* Dutch, *Alfred;* Fr., *Alfred;* Ger., *Alfred;* It., *Alfredo;* Lat., *Alfredus;* Sp., *Alfredo.*
★**al-gæ** (*al'jē*), *n. pl.* one of the great divisions of cryptogamic plants, including seaweeds and kindred fresh-water plants.
★**al-ge-bra** (*al'jē-brȧ*, not *al'jē-brā*), *n.* the science of calculation by general symbols.
★**al-ge-bra-ic** (*al-jē-brā'ik*) or **al-ge-bra-i-cal** (*'i-kal*), *adj.* occurring in or dealing with algebra.
★**Algernon** (*al'jẽr-nun*). From *als* (aux) *gernons;* was originally given in the twelfth century to those who, contrary to the fashion of the time, wore their whiskers. Roquefort renders the Old French, *gernon*, *grenon*, *guernon*, *ghernon*, "*poil de la barbe, moustache*"; from Med. L. *granus*, *greno;* the latter is no doubt from L. *crinis*, "hair of the head."
Algiers (*al-jērz'*). From the Arabic, *al jezair*, "the peninsula." Seaport of northern Africa.
★**Alhambra** (*al-ham'brȧ*). From the Arabic, *al-hamra'u*, "red." A great citadel and palace founded in the thirteenth century above the city of Granada, Spain, by the Moorish kings.
★**a-li-as** (*ā'li-as*, not *al'i-as*), *adv.* otherwise (named): *n.* [*pl.* aliases (*-ez*)], an assumed name.
al-i-bi (*a'li-bī*), *n.* the plea of having been elsewhere when the alleged act was committed.
Alice (*al'is*). From the Teutonic, meaning "noble" or "noble cheer." Danish, *Else;* Dutch, *Elsie;* Fr., *Alice;* Lat., *Alicia;* Sw., *Elsa.*
★**al-ien** (*āl'yen*, not *ā'li-en*), *adj.* belonging to another: *n.* a foreign-born resident of a country.
al-ien-ate (*āl'yen-āt*), *v. t.* to estrange, as the affections; transfer to another, as property.
al-ien-a-tion (*āl-yen-ā'shun*), *n.* estrangement.
a-light (*ȧ-līt'*), *v. i.* to dismount; to descend and settle; to come upon accidentally.
a-lign (*ȧ-līn'*), same as *aline.*
a-lign-ment (*ȧ-līn'ment*), same as *alinement.*
a-like (*ȧ-līk'*), *adj.* like one another. [EQUAL.]
★**al-i-ment** (*al'i-ment*, not *ă'lim-ent*), *n.* food; the necessaries of life generally.
al-i-men-tal (*al-i-men'tal*), *adj.* having the quality of nourishing.
al-i-men-ta-ry (*al-i-men'tȧ-ri*), *adj.* pertaining to food; nutritious.
al-i-men-ta-ry ca-nal (*kȧ-nal'*), the great duct which conveys food to the stomach and carries off solid execreta.
al-i-men-ta-tion (*al-i-men-tā'shun*), *n.* the act of giving nourishment.
al-i-mon-y (*al'i-mōn-i*), *n.* means of living; an allowance made by decree of court to a wife out of her husband's estate on separation.
a-line (*ȧ-līn*), *v. t.* to lay out or adjust by a line; *v. i.* to form or fall into a line.

Alison (*al'i-son*). A Scottish female name, which in old parish registers is spelled *Alisone.* It is of French origin, and the same as *Alizon.* Roquefort gives *Alizon*, *Alieite*, *Ailexe*, *Aileye*, *Auly*, as female diminutives of *Alexis.*
a-live (*ȧ-līv'*), *adj.* having life; in a state of action; sprightly; sensitive; thronged.
al-ka-hest (*al'kȧ-hest*), *n.* the pretended universal solvent of the alchemists.
al-ka-li (*al'kȧ-lī* or *-li*), *n.* [*pl.* alkalis or alkalies], one of a class of caustic bases, as soda, potash, etc.
★**al-ka-line** (*al'kȧ-līn* or *-lin*), *adj.* pertaining to, or having the properties of, an alkali.
al-ka-loid (*al'kȧ-loid*), *n.* a body or substance containing alkaline properties.
al-ka-net (*al'kȧ-net*), *n.* a plant the root of which yields the rich red dye of commerce.
all (*awl*), *adj.* the whole quantity of, as substance, duration, extent, amount, or degree.
Al-lah (*al'lä*), *n.* the Arabic name for the supreme being, in use among the Mohammedans.
al-lay (*al-lā'*), *v. t.* to quiet or calm; assuage; appease.

Syn. ALLAY, appease, assuage, mitigate, soothe. All these terms indicate a lessening of something painful. In a physical sense an irritating pain is *allayed;* a wounded part is *soothed* by affording ease and comfort. Extreme heat or thirst is *allayed;* extreme hunger is *appeased;* a punishment or sentence is *mitigated.* In a moral sense one *allays* what is fervid and vehement; one *soothes* what is distressed or irritated; one *appeases* what is tumultuous and boisterous; one *mitigates* the pain of others, or what is rigorous and severe; one *assuages* grief or affliction.

★**Allee Verte** (*äl-lā' vẽrt*). A double avenue of limes beginning at the western end of the Boulevard d'Anvers in Brussels and extending along the bank of the Willebroeck canal.
al-le-ga-tion (*al-lē-gā'shun*), *n.* the act of alleging.
al-lege (*al-lej'*), *v. t.* to produce or adduce as argument.

Syn. ALLEGE, adduce, advance, affirm, assert, asseverate, assign, aver, cite, claim, declare, introduce, maintain, offer, plead, produce, say, state. To *allege* is to state as true or capable of proof, without proving; to *adduce* is to bring forth the evidence of what has been *alleged;* to *produce* is to bring forward, as, for instance, papers or persons; *adduce* is not used of persons; of them we say *introduce* or *produce;* when an *alleged* criminal is brought to trial, the counsel *advance* a theory, *adduce* evidence in its support, *produce* documents and witnesses, *cite* precedents, *assign* reasons, *introduce* suggestions, *offer* pleas. The accused may *assert* his innocence.

★**Alleghany** (*al'ē-gā-ni*), **Allegheny, Allegany.** County, city, and river in Pennsylvania, counties in Maryland, New York, North Carolina, West Virginia, and mountains in eastern United States. An Indian word, the origin of which is in dispute.
★**al-le-giance** (*al-lē'jans* or *al-lē'ji-ans*), *n.* the tie or obligation of a subject to his sovereign or government.
al-le-gor-ic (*al-lē-gor'ik*) or **al-le-gor-i-cal** (*'i-kal*), *adj.* pertaining to, consisting of, or in the nature of, allegory; figurative.
al-le-go-ry (*al'lē-gō-ri*), *n.* [*pl.* allegories (*-riz*)], a figurative manner of treating a subject by the use of other terms analogous in properties or circumstances. [FICTION.]
Allen. According to some, this is the same name as *Allan* and *Alan.* Lower shows that it is found written *Allayne.* It is a probable corruption of the name *Alwine.*
Allentown. City in Lehigh county, Pennsylvania, and borough in Monmouth county, New Jersey, named for William Allen of Pennsylvania, at one time chief justice of the province.
al-le-vi-ate (*al-lē'vi-āt*), *v. t.* to lighten; lessen; make easier; mitigate.
al-ley (*al'li*), *n.* [*pl.* alleys (*'liz*)], a passage; a way (generally narrow); a lane.
All-hal-lows (*awl-hal'lōz*), *n. pl.* All Saints' day, celebrated on the first of November.
al-li-ance (*al-lī'ans*), *n.* the state of being allied.
al-li-ga-tion (*al-li-gā'shun*), *n.* a rule for ascertaining the value or price of a compound.
al-li-ga-tor (*al'li-gā-tẽr*), *n.* the American crocodile.
al-lit-er-a-tion (*al-lit-ẽr-ā'shun*), *n.* the repetition of the same initial letter in closely succeeding words.
al-lit-er-a-tive (*al-lit'ẽr-ȧ-tiv*), *adj.* pertaining to, or characterized by, alliteration.
al-lo-cate (*al'lō-kāt*), *v. t.* to assign or allot; distribute.
al-lo-cu-tion (*al-lō-kū'shun*), *n.* an address of a formal nature.
★**al-lo-path** (*al'lō-path*) or **al-lop-a-thist** (*al-lop'ȧ-thist*, not *al'lō-path-ist*), *n.* one who favors or practices allopathy.
★**al-lop-a-thy** (*al-lop'ȧ-thi*), *n.* a method of treating disease by inducing an action opposite to the disease it is sought to cure.
al-lot (*al-lot'*), *v. t.* [*p. t.* and *p. p.* allotted, *p. pr.* allotting], to distribute or divide, as by lot.
al-lot-ro-py (*al-lot'rō-pi*), *n.* the capability shown by certain chemical elements to assume different forms.
al-low (*al-lou'*), *v. t.* to grant, yield; admit; deduct. [CONSENT, ADMIT.]
al-low-ance (*al-lou'ans*), *n.* the act of allowing: admission; concession.
al-loy (*al-loi'*), *v. t.* to combine; to form a compound; *n.* a compound or fusion of two or more metals.

all one (*awl wun*), *adj.* and *n.* in effect the same; quite the same.
all-round (*-round*), *adj.* versatile.
all sorts (*sôrts*), remnants of various liquors blended together.
All Souls' day (*sôlz dā*), the day, celebrated second of November by the Roman Catholic church, in honor of the departed.
all-spice (*awl'spis*), *n.* the fruit or berry of the pimento.
all told (*awl tōld*), *adv.* all counted.
al-lude (*al-lūd'*), *v. i.* to compare: *v. i.* refer or make an allusion indirectly (with *to*).
Syn. ALLUDE, hint, refer, suggest. To *allude* is not so direct as to *refer*, but it is more clear and positive than either *hint* or *suggest*. We *allude* to a circumstance by introducing something collaterally allied to it; we *refer* to an event by expressly introducing it into our discourse; we *hint* at a person's intentions by darkly insinuating what may possibly happen; we *suggest* an idea by some poetical expression relative to it.
Ant. ALLEGE, assert, prove.
al-lure (*al-lūr'*), *v. t.* to tempt by the offer of something good, real, or apparent; entice. [ATTRACT, PERSUADE.]
al-lu-sion (*al-lū'zhun*), *n.* a casual reference; by comparison or reference by symbol or metaphor.
al-lu-vi-um (*al-lū'vi-um*), *n.* [*pl.* alluvia (*-ä*)], a deposit of mingled sand and clay.
al-ly (*al-lī'*), *v. t.* [*p. t.* and *p. p.* allied, *p. pr.* allying], to unite. [ACCESSORY.]
Alma (*al'mä*). At the time of the war between England and Russia this name was introduced in the west of England, so christened after the battle of the *Alma*.
Almack's (*awl'maks*). This well-known place of assembly in King street, St. James', London, was built by one MacCall, a tavern-keeper, in 1759.
al-ma-nac (*awl'mä-nak*), *n.* a yearbook or calendar giving the order of the days of the week and month, and astronomical data.
al-might-y (*awl-mīt'i*), *adj.* possessing all power; omnipotent.
★**alm-ond** (*ä'mund*, not *al'mund*), *n.* the kernel of the fruit of the almond-tree.
al-mon-er (*al'mun-ẽr*), *n.* one who dispenses or distributes alms or charity.
al-mon-ry (*al'mun-ri*), *n.* [*pl.* almonries (*-riz*)], the residence of the almoner.
al-most (*awl'mōst*), *adv.* nearly; very nearly.
alms (*ämz*), *n. sing.* [used sometimes as *n. pl.*], the act of relieving by charitable aid.
alms-house (*'hous*), *n.* a house endowed by private or public charity and appropriated to the use of the poor.
al-oes (*al'ōz*), *n.* a drug, the inspissated juice of several species of aloe.
a-loft (*ä-lôft'*), *adv.* on high; far above the earth.
a-lone (*ä-lōn'*), *adj.* and *adv.* without or apart from another.
a-long (*ä-lông'*), *prep.* and *adv.* by the length of; lengthwise.
a-long-shore-man (*-shōr-man*), *n.* [*pl.* -men], a laborer employed at docks.
a-long-side (*'sīd*), *adv.* by the side; side by side.
Alonzo (*ä-lon'zō*) or **Alonso.** See *Alphonso*.
a-loof (*ä-lōōf'*), *adv.* at a moderate distance but within sight.
a-loud (*ä-loud'*), *adv.* with raised voice; loudly.
★**al-pac-a** (*al-pak'ä*, not *al-ä-pak'ä*), *n.* a mammal, closely allied to the llama.
al-pen-glow (*al'pen-glō*), *n.* a peculiar purple glow on the snow on the Alps seen just before sunrise and after sunset.
al-pen-horn (*-hôrn*), *n.* a long and nearly straight horn used by the mountaineers of the Alps.
al-pen-stock (*-stok*), *n.* a stout staff, furnished with an iron spike, used by mountain climbers.
al-pha-bet (*al'fä-bet*), *n.* the letters of a language.
Alphonso (*al-fon'sō, al-fon'zō*), or **Alonzo.** From the Teutonic, meaning "battle eager." Danish, *Alfons;* Fr., *Alphonse;* It., *Alfonso;* Lat., *Alphonsus;* Port., *Affonso;* Sp., *Alfonso* or *Alonso*.
Alps. The word *alp*, or *alb*, is Celtic, and signifies "white." Its application to the white tops of the mountains of the Alps is a natural one.
al-read-y (*awl-red'i*), *adj.* quite ready; fully prepared.
al-so (*awl'sō*), *adv.* and *conj.* wholly so; in addition to.
★**Altai** (*al-tī'*, not *al'ti*). A mountain, or range, in central Asia, rich in the precious metals; *Al-tai* (for *Altagh*) is the Tartaric form of the name. Hence the name *Altaic* which is applied to languages of the Mongol-Turkic class.
al-tar (*awl'tẽr*), *n.* a raised place for the offering of sacrifices or burning of incense.
al-ter (*awl'tẽr*), *v. t.* to effect some change in.
al-ter-a-tion (*awl-tẽr-ā'shun*), *n.* the act of altering or changing.
al-ter-a-tive (*awl'tẽr-ä-tiv*), *adj.* producing change.
al-ter-cate (*awl'tẽr-kāt*), *v. i.* to contend in words.
al-ter-ca-tion (*awl-tẽr-kā'shun*), *n.* the act of wrangling. [DIFFERENCE.]
★**al-ter-nate** (*al'tẽr-nāt* or *al-tẽr'nāt*), *v. t.* to perform by turns: *v. i.* to take place by turns (followed by *with*): *adj.* (*al-tẽr'nāt*), succeeding each other by turns. [SUCCESSIVE.]
al-ter-na-tion (*al-tẽr-nā'shun*), *n.* the act of alternating, or state of being alternate.
★**al-ter-na-tive** (*al-tẽr'nā-tiv*), *adj.* giving the choice of two things.
Syn. ALTERNATIVE, choice, election, option, pick, preference, resource. A *choice* may be among many things; an *alternative* is a *choice* between two things; *option* is the right or privilege of choosing; *choice* may be either the right to choose, the act of choosing, or the thing chosen. Ability and readiness to meet difficult situations indicate *resources*. *Pick* and *election* imply objects placed before one, with freedom and power to choose, as, there were horses of several colors from which I could take my *pick*. A *choice*, *pick*, *election*, or *preference* is that which suits one best; an *alternative* is that to which one is restricted; a *resource*, that to which one is glad to betake him.
Ant. COMPULSION, necessity.
al-though (*awl-thō'*), *conj.* granting that; though; even if; notwithstanding.
al-ti-tude (*al'ti-tūd*), *n.* space extended upward; height.
al-ti-tu-di-nal (*al-ti-tū'di-nal*), *adj.* of or pertaining to height.
al-to (*al'tō*), *adj.* high: *n.* the contralto.
al-to-geth-er (*awl-tōō-geth'ẽr*), *adv.* wholly.
Altoona (*al-tōō'nä*). City in Blair county, Pennsylvania, so named because of its high situation in the Alleghany mountains, and town in Polk county, Iowa, situated on the highest point between the Des Moines and Mississippi rivers. A derivative of the Latin word *altus*, "high."
★**al-tru-ism** (*al'trōō-izm*), *n.* the principles inculcated by Comte, and involving the sacrifice of self in the interests of others: opposed to *egoism*.
al-tru-ist (*al'trōō-ist*), *n.* one who advocates or practices altruism.
al-um (*al'um*), *n.* a double sulphate formed of aluminium and some other element.
a-lu-mi-na (*ä-lū'mi-nä*), *n.* the single oxide of aluminium, the most abundant of the earths.
★**al-u-min-i-um** (*al-ū-min'i-um*) or **a-lu-mi-num** (*ä-lū'mi-num*), *n.* a bluish-white, light metal.
a-lum-na (*ä-lum'nä*), *n.* [*pl.* alumnæ (*'nē*)], a female graduate or pupil of a university or college.
a-lum-nus (*ä-lum'nus*), *n.* [*pl.* alumni (*-ni*)], the graduate of a school, college, or university.
Alvin (*al'vin*). Means "winning all." Dutch, *Alewijn;* Fr., *Aluin;* Ger., *Alwin;* It., *Alvino;* Lat., *Alvinus;* Sp., *Alvino*.
al-ways (*awl'wāz*), *adv.* constantly.
★**Amadeus** (*am-ä-dē'us*). Translated a "lover of God." Fr., *Amadée;* Ger., *Amadeus;* It., *Amedeo;* Lat., *Amadeus;* Sp., *Amadeo*.
a-main (*ä-mān'*), *adv.* with force or violence; suddenly; at once.
a-mal-gam (*ä-mal'gam*), *n.* any metallic mixture or alloy of which mercury is the chief constituent.
a-mal-ga-mate (*ä-mal'gä-māt*), *v. t.* to alloy mercury with another metal.
a-mal-ga-ma-tion (*ä-mal-gä-mā'shun*), *n.* the act or process of compounding mercury with another metal.
Amanda (*ä-man'dä*). A feminine name from the Latin *amanda*, "to be loved"; *i. e.*, "worthy of being loved." It is also found as a masculine name in the parish registers of Nottingham, England.
a-man-u-en-sis (*ä-man-ū-en'sis*), *n.* [*pl.* amanuenses (*'sēz*)], one who is employed to write at the dictation or direction of another; a secretary.
am-a-ranth (*am'ä-ranth*), *n.* an imaginary flower said by poets to be unfading.
a-mass (*ä-mas'*), *v. t.* to collect into a heap. [HEAP.]
★**am-a-teur** (*am'ä-tūr*, Fr. *ä-mä-tẽr'*), *n.* one who cultivates an art or pursues a study from love or attachment, without reference to gain or emolument.
am-a-tive (*am'ä-tiv*), *adj.* amorous; full of love.
am-a-to-ri-al (*am-ä-tō'ri-al*), *adj.* pertaining to love; amatory.
am-a-to-ry (*am'ä-tō-ri*), *adj.* relating to, or expressive of, love.
am-au-ro-sis (*am-aw-rō'sis*), *n.* loss or decay of sight
a-maze (*ä-māz'*), *v. t.* to confound or stun with fear.
am-bas-sa-dor (*am-bas'ä-dẽr*), *n.* an accredited representative of a sovereign or state at the court of another.
Syn. AMBASSADOR, envoy, plenipotentiary, deputy. *Ambassadors*, *envoys*, and *plenipotentiaries* speak and act in the name of their sovereigns. An *ambassador* is invested with the highest authority, acting in all cases as the representative; the *envoy* appears simply as an authorized minister acting for another, but not always representing him; the *plenipotentiary* is a species of envoy used on the occasion of concluding peace or making treaties; *deputies* are not deputed by sovereigns, although they may be deputed to sovereigns; they have no power to act or speak but in the name of some subordinate community or particular body. The functions of the three first belong to the minister, those of the latter to the agent.
am-ber (*am'bẽr*), *n.* a yellowish fossil resin found on the shores of the Baltic.
★**am-ber-gris** (*am'bẽr-grēs*, not *am'bẽr-gris*), *n.* a morbid secretion from the intestines of the sperm-whale, usually found floating in tropical seas.
am-bi-dex-trous (*am-bi-deks'trus*), *adj.* able to use both hands alike; unusually clever.
am-bi-ent (*am'bi-ent*), *adj.* surrounding; investing.
am-bi-gu-i-ty (*am-bi-gū'i-ti*), *n.* [*pl.* ambiguities (*-tiz*)], double or dubious signification.
am-big-u-ous (*am-big'ū-us*), *adj.* doubtful. [EQUIVOCAL, OBSCURE.]
am-bi-tion (*am-bish'un*), *n.* a seeking for preferment.
am-bi-tious (*am-bish'us*), *adj.* having ambition.
am-ble (*am'bl*), *v. i.* to move with a peculiar pace, as a horse, by lifting the two feet on one side together.
am-bly-o-pi-a (*am-bli-ō'pi-ä*) or **amblyopy** (*am'bli-ō-pi*), *n.* dimness of vision.
Ambrose (*am'brōz*). From the Latin name *Ambrosius*, meaning "immortal," "divine," "godlike." Danish, *Ambrosius;* Dutch, *Ambrosius;* Fr., *Ambroise;* Ger., *Ambrosius* or *Ambros;* It., *Ambrogio;* Sp., *Ambrosio*.
am-bro-sia (*am-brō'zhä* or *'zhi-ä*), *n.* anything exquisitely pleasing to taste or smell. [delicious.
am-bro-sial (*am-brō'zhal* or *'zhi-al*), *adj.* divinely
am-bu-lance (*am'bū-lans*), *n.* a field hospital; a vehicle for the sick or wounded.
am-bu-la-tion (*am-bū-lā'shun*), *n.* the act of walking about.
am-bus-cade (*am-bus-kād'*), *n.* a strategic disposition of troops in ambush. [surprise.
am-bush (*am'boosh*), *n.* a lying in wait to attack by
★**a-meer** (*ä-mẽr'*), *n.* a prince; governor.
Amelia (*ä-mē'li-ä*). From *Aemylia*, name of a noble family in Rome; also the name of a vestal who rekindled the fire of Vesta, which had been extinguished, by putting her veil over it. The name means "gentle," "engaging," "courteous." Danish, *Amalie;* Fr., *Amélie;* Ger., *Amalie;* Sp., *Amelia*.
★**a-mel-io-rate** (*ä-mēl'yō-rāt*, not *ä-mē'li-ō-rāt*), *v. t.* to make better.
a-mel-io-ra-tion (*ä-mēl-yō-rā'shun*), *n.* the making or growing better.
a-men (*ä-men'* or *ä-men'*), *adv.* verily: *interj.* so be it.
a-me-na-bil-i-ty (*ä-mē-nä-bil'i-ti*) or **amenableness** (*ä-mē'nä-bl-nes*), *n.* tractableness; responsibility.
★**a-me-na-ble** (*ä-mē'nä-bl*, not *ä-men'ä-bl*), *adj.* easy to lead.
a-mend (*ä-mend'*), *v. t.* to free from fault.
Syn. AMEND, correct, emend, improve, mend, better. *Amend*, *emend*, and *correct* are all applied to works of the understanding, with this distinction, that *amend* signifies to remove faults or defects generally, either by adding, taking away, or altering, as to *amend* a law; to *emend* is to remove particular faults in any literary work by the alteration of letters or single words; to *correct* is to remove gross faults; *mend* is employed in respect to any work in the sense of putting that right which either is or has become faulty; to *improve* is said either of persons or things which are made better; as to *improve* the mind, morals, etc.; to *better* is mostly applied to the outward condition on familiar occasions.
a-mend-ment (*ä-mend'ment*), *n.* the removal of faults; the alteration of a bill.
a-mends (*ä-mendz'*), *n. pl.* compensation for loss. [COMPENSATION.]
a-men-i-ty (*ä-men'i-ti*), *n.* [*pl.* amenities (*-tiz*)], pleasantness, as of climate or demeanor; geniality.
a-merce (*ä-mẽrs'*), *v. t.* to punish by arbitrary fine.
America. From Amerigo Vespucci, sometimes spelled Vespucius, who landed on the western continent south of the equator in 1497. His name was given to this country by a German geographer, Martin Waldseemüller, who published an account of the four voyages of Vespucci at Frankfort, Germany, in 1507.
A-mer-i-can (*ä-mer'i-kan*), *adj.* belonging to, or characteristic of, America.
A-mer-i-can-ism (*ä-mer'i-kan-izm*), *n.* a form of expression peculiar to the United States.
am-e-thyst (*am'ẽ-thist*), *n.* a violet-purple variety of quartz or rock crystal.
Amherst (*am'ẽrst*). County in Virginia, and town in Hillsboro county, New Hampshire, and Hampshire county, Massachusetts.
a-mi-a-bil-i-ty (*ä-mi-ä-bil'i-ti*), *n.* amiableness.
a-mi-a-ble (*ä'mi-ä-bl*), *adj.* friendly.
am-i-ca-ble (*am'i-kä-bl*), *adj.* friendly; peaceable.
a-mid (*ä-mid'*) or **amidst** (*-midst'*), *prep.* in the middle of; among.
a-miss (*ä-mis'*), *adj.* wrong; faulty: *adv.* wrongly.
am-i-ty (*am'i-ti*), *n.* friendly relations; friendship.
am-mo-ni-a (*am-mō'ni-ä*), *n.* a transparent, pungent, volatile gas.
am-mu-ni-tion (*am-mū-nish'un*), *n.* powder, balls, etc., used in charging firearms of all kinds.
am-ne-si-a (*am-nē'si-ä*), *n.* loss of memory.
am-nes-ty (*am'nes-ti*), *n.* an act of oblivion for political offenses; a general pardon.
★**a-mœ-ba** (*ä-mē'bä*), *n.* [*pl.* amœbas (*'bäz*), amœbæ (*'bē*)], a genus of microscopic organisms.
★**a-mong** (*ä-mung'*) or **amongst** (*-mungst'*), *prep.* and *adv.* mixed with; surrounded by; amidst.
am-o-rous (*am'ō-rus*), *adj.* fond of the opposite sex; loving.
a-mor-phous (*ä-môr'fus*), *adj.* formless.
a-mor-tize (*ä-môr'tiz*), *v. t.* to sell and convey to a corporation having perpetual succession.
Amos (*ā'mus*). From the Hebrew, signifying a "burden." Fr., *Amos*.
a-mount (*ä-mount'*), *v. i.* to mount up to; be equivalent or equal to.
am-phib-i-ous (*am-fib'i-us*), *adj.* having the power of living both on land and in water.
am-phi-brach (*am'fi-brak*), *n.* a foot of three syllables, the middle long, the first and last short.

am-phi-the-a-ter, -tre (*am-fi-thē'ä-tēr*), *n.* a double theater; a theater with seats all around the arena; a circus.
am-ple (*am'pl*), *adj.* full; large; abundant.
am-pli-fi-ca-tion (*am-pli-fi-kā'shun*), *n.* the act of amplifying.
am-pli-fy (*am'pli-fī*), *v. t.* [*p. t.* and *p. p.* amplified, *p. pr.* amplifying], to make large. [ADD.]
am-pu-tate (*am'pū-tāt*), *v. t.* to lop off in pruning.
am-pu-ta-tion (*am-pū-tā'shun*), *n.* the operation of cutting off a limb.
a-muck (*ä-muk'*), *adj.* or *adv.* (used only in the phrase, to run amuck), running about armed, in a state of frenzy.
am-u-let (*am'ū-let*), *n.* a charm worn to protect against evil; a talisman.
a-muse (*ä-mūz'*), *v. t.* to occupy the attention of pleasantly.
Amy (*ā'mi*). Some derive this name from the French *aimée*, "beloved"; others from *amie*, "a friend." It is found Latinized both *Amata* and *Amicia*. Danish, *Amalie*; Fr., *Aimée*; It., *Amata*.
Anabella. A feminine name formed from *Hannibal*.
★**an-ach-ro-nism** (*an-ak'rō-nizm*), *n.* an error in the order of time.
an-a-con-da (*an-ä-kon'dä*), *n.* the specific name of a large South American boa.
★**a-næ-mi-a** or **anemia** (*ä-nē'mi-ä*), *n.* deficiency or low condition of the blood.
★**an-æs-the-si-a** or **anesthesia** (*an-es-thē'si-ä* or *'zhi-ä*), *n.* a condition of insensibility to pain.
an-æs-thet-ic. See *anesthetic*. [relief.
an-a-glyph (*an'ä-glif*), *n.* a work of art carved in
an-a-glyp-to-graph (*an-ä-glip'tō-grȧf*), *n.* an instrument by which a medallion engraving of any object in relief can be made.
★**an-a-gram** (*an'ä-gram*), *n.* a word or a sentence constructed out of another by the transposition of the letters contained in the second.
a-nal (*ā'nal*), *adj.* relating to the anus.
an-a-lect (*an'ä-lekt*), *n.* [*pl.* analects (*-lekts*) or analecta (*-lek'tä*)], a passage or extract from a published work.
an-al-ge-si-a (*an-al-jē'si-ä*), *n.* insensibility to pain in any part of the body.
a-nal-o-gism (*ä-nal'ō-jizm*), *n.* a reasoning from the cause to the effect.
★**a-nal-o-gous** (*ä-nal'ō-gus*), *adj.* possessing points of analogy.
an-a-logue (*an'ä-log*), *n.* an object which bears analogy to something else.
★**a-nal-o-gy** (*ä-nal'ō-ji*), *n.* [*pl.* analogies (*-jiz*)], agreement, resemblance, or correspondence in relations between different objects.
a-nal-y-sis (*ä-nal'i-sis*), *n.* [*pl.* analyses (*-sēz*)], the resolution of a compound into its constituent parts.
an-a-lyt-ic (*an-ä-lit'ik*), or **an-a-lyt-i-cal** (*'i-kal*), *adj.* relating to, or characterized by, the method of analysis.
an-a-lyze (*an'ä-līz*), *v. t.* to separate or resolve.
an-a-pest or **anapæst** (*an'ä-pest*), *n.* a foot comprising two short syllables and one long syllable.
an-a-plas-ty (*an'ä-plas-ti*), *n.* the repairing of wounds by the transplantation of adjacent healthy tissue.
★**an-arch-ist** (*an'ärk-ist*), *n.* one who supports or promotes a scheme for anarchy.
★**an-arch-y** (*an'ärk-i*), *n.* nonexistence or incapability of governmental rule.
a-nath-e-ma (*ä-nath'ē-mä*), *n.* [*pl.* anathemas (*-mäz*)], the curse accompanying excommunication.
a-nath-e-ma-tize (*ä-nath'ē-mä-tīz*), *v. t.* to pronounce a decree of excommunication against.
an-a-tom-i-cal (*an-ä-tom'i-kal*), *adj.* relating to, or according to, the laws of anatomy.
a-nat-o-mism (*ä-nat'ō-mizm*), *n.* anatomical analysis or structure.
★**a-nat-o-mist** (*ä-nat'ō-mist*), *n.* one possessing a knowledge of anatomy derived from dissection.
a-nat-o-my (*ä-nat'ō-mi*), *n.* [*pl.* anatomies (*-miz*)], separation by dissection of the various parts of a body.
an-ces-tor (*an'ses-tēr*), *n.* a forefather or progenitor. [FOREFATHER.]
an-ces-try (*an'ses-tri*), *n.* the line of one's descent traced from a period more or less remote.
★**an-chor** (*ang'kēr*), *n.* an iron implement of varying form, used to secure a floating vessel to the bottom.
an-chor-age (*ang'kēr-āj*), *n.* a suitable or customary place for the anchoring of vessels.
an-chor-et (*ang'kōr-et*) or **anchorite** (*-īt*), *n.* one who voluntarily secludes himself from society and lives a solitary life.
an-chor ice (*ang'kēr īs*), ground ice.
★**an-cho-vy** (*an-chō'vi*, not *an'chō-vī*), *n.* [*pl.* anchovies (*'viz*)], a diminutive fish abounding in the Mediterranean.
★**an-cient** (*ān'shent*), *adj.* of or pertaining to the early history of the world; of past times or remote ages. [ANTIQUE, OBSOLETE.]
an-cil-la-ry (*an'sil-lä-ri*), *adj.* attended upon; accessory; subservient.
★**Andalusia** (*an-dä-lōō'shi-ä*). Now a captaincy-general in southern Spain, comprising the modern provinces Almeria, Jaen, Granada, Cordova, Malaga, Seville, Cadiz, and Huelva.
★**Andes** (*an'dēz*) Properly *Cordilleras de los Andes*, "the chain of the Andes," is a name of uncertain meaning Garcilasso de la Vega says that it was derived from the Anti tribe near Cuzco. It has also been referred to a Peruvian word *anta*, "copper." Another proposed etymology is from *anta*, a "tapir," of which the Portuguese plural would be *antas*, so that the *Cordilleras de los Antas* would mean the "mountains of the tapirs."
and-i-rons (*and'i-ūrnz*), *n. pl.* metal standards used for open fires, to support the logs; firedogs.
Andrew. From the Greek *Andreas*, meaning "manly," "brave," "courageous." Danish, *Andreas*; Dutch, *Andries*; Fr., *André*; Ger., *Andreas*; It., *Andrea*; Lat., *Andreas*; Port., *Andre*; Sp., *Andres*.
an-drog-y-nous (*an-droj'i-nus*), *adj.* combining both sexes.
★**Androscoggin** (*an-dros-kog'gin*). River in Maine and New Hampshire, and county in Maine.
an-ec-dote (*an'ek-dōt*), *n.* a brief narrative of an entertaining character.
an-e-lec-tric (*an-ē-lek'trik*), *adj.* without the properties of electricity.
an-e-lec-trode (*an-ē-lek'trōd*), *n.* the positive pole of a galvanic battery.
a-ne-mi-a. See *anæmia*.
★**a-nem-o-ne** (*ä-nem'ō-nē*), *n.* [*pl.* anemones (*-nēz*)], the windflower or wood anemone.
an-e-roid (*an'ē-roid*), *n.* a barometer shaped like a watch.
an-es-the-si-a. See *anæsthesia*.
an-es-thet-ic or **anæsthetic** (*an-es-thet'ik*), *adj.* pertaining to loss of the sense of feeling.
an-es-the-tize (*an-es'thē-tiz*), *v. t.* to bring under the influence of an anæsthetic.
an-eu-rism (*an'ū-rizm*), *n.* a local swelling or dilatation of an artery.
a-new (*ä-nū'*), *adv.* afresh; over again.
an-gel (*ān'jel*), *n.* a messenger of God.
Angela (*an'jē-lä*). A feminine name of Italian origin, derived from *angelo*, "an angel."
an-gel-ic (*an-jel'ik*) or **an-gel-i-cal** (*'i-kal*), *adj.* belonging to or resembling an angel.
Angelica (*an-jel'i-kä*). Translated *ngelic*. Fr., *Angelique*; Ger., *Angelica*; It., *Angelica*.
★**Angelo, Sant'** (*sän-tän'jē-lō*), **Castle of.** The remodeled mausoleum of Hadrian in Rome.
an-ger (*ang'gēr*), *n.* excessive emotion or passion aroused by a sense of injury or wrong; wrath.
Syn. ANGER, resentment, wrath, ire, indignation, rage, fury. *Anger* is a sudden sentiment of displeasure; *resentment* is a continued anger; *wrath* is a heightened sentiment of anger which is poetically expressed by the word *ire; indignation* is a sentiment awakened by the unworthy and atrocious conduct of others; *rage* is a vehement ebullition of anger; and *fury* is an excess of rage. [See *displeasure*.]
Ant. CHARITY, forbearance, leniency, love, peace, self-control.
an-gi-ol-o-gy (*an-ji-ol'ō-ji*), *n.* that branch of anatomy which treats of the blood vessels and lymphatics.
an-gle (*ang'gl*), *n.* the inclosed space near the point where two lines meet.
an-gle (*ang'gl*), *v. i.* to fish with a hook and line.
an-gler (*ang'glēr*), *n.* one who fishes with rod and line.
★**an-gli-can** (*ang'gli-kan*), *adj.* pertaining to England as a nation.
★**an-gli-cism** (*ang'gli-sizm*), *n.* a principle or mannerism peculiar to England. [English.
an-gli-cize (*ang'gli-sīz*), *v. t.* to make or to render into
★**An-glo - A-mer-i-can** (*ang-glō-ä-mer'i-kan*), *adj.* pertaining to England and the United States conjointly.
An-glo - Sax-on (*-saks'un*), *adj.* pertaining to the Saxon settlers in England prior to the Conquest, or to their language.
an-go-ra (*an-gō'rä*), *n.* cloth made from angora wool.
an-go-ra cat (*kat*), a cat of the domestic kind with long, handsome hair.
an-go-ra wool (*wool*), the coat of the angora goat.
an-gos-tu-ra bark (*ang-gos-tōō'rä bärk*), a bitter aromatic bark.
an-gry (*ang'gri*), *adj.* inflamed with anger; provoked.
an-guish (*ang'gwish*), *n.* intense pain or grief. [DISTRESS, ANXIETY.]
an-gu-lar (*ang'gu-lēr*), *adj.* possessing an angle or angles.
an-gus-tate (*an-gus'tāt*), *adj.* narrow at the base and expanded at the top.
an-hy-drous (*an-hī'drus*), *adj.* without water.
an-i-line (*an'i-lin*), *n.* a base used in the formation of many rich dyes obtained from coal tar.
★**an-i-mad-ver-sion** (*an-i-mad-vēr'shun*), *n.* reproof; censure.
an-i-mad-vert (*an-i-mad-vērt'*), *v. i.* to criticise; to censure.
an-i-mal (*an'i-mal*), *n.* an organized living body, sentient, mobile, and locomotive.
an-i-mal-ism (*an'i-mal-izm*), *n.* the state of being animal.
an-i-mal mag-net-ism (*an'i-mal mag'net-izm*), magnetism inherent in animals.
an-i-mate (*an'i-māt*), *v. t.* to impart life to; to inspire with energy or action. [EAGER.]
an-i-ma-tion (*an-i-mā'shun*), *n.* the act of giving life or spirit.
an-i-mos-i-ty (*an-i-mos'i-ti*), *n.* hostility; hatred; active enmity. [ENMITY, FEUD.]
an-i-mus (*an'i-mus*), *n.* a hostile spirit or purpose.
an-ise (*an'is*), *n.* the common name for a plant (indigenous in Egypt) yielding the aniseed of commerce.
an-kle (*ang'kl*), *n.* the joint or articulation connecting the foot with the leg.
an-klet (*ang'klet*), *n.* an ornament or support for the ankle.
an-ky-lo-sis (*ang'ki-lō-sis*), *n.* the joining or consolidation of parts formerly or normally separate by means of bony growth.
Anna or **Anne.** Same origin as *Hannah*. Dan., *Anna*; Dutch, *Anna*; Fr., *Anne*; Ger., *Anne*; It., *Anna*; Lat., *Anna*.
an-nal-ist (*an'nal-ist*), *n.* a compiler of annals.
an-nals (*an'nalz*), *n. pl.* a description, history, or chronicle issued from time to time.
an-neal (*an-nēl'*), *v. t.* to heat or fix by heat.
an-nex (*an-neks'*), *v. t.* to add or affix at the end. *n.* (*an-neks'* or *an'neks*), that which is added; an addition. [ADD.]
an-nex-a-tion (*an-neks-ā'shun*), *n.* the act of annexing.
an-ni-hi-late (*an-nī'hi-lāt*), *v. t.* to reduce to nothing.
an-ni-hi-la-tion (*an-nī-hi-lā'shun*), *n.* the act of annihilating.
an-ni-ver-sa-ry (*an-ni-vēr'sä-ri*), *n* [*pl.* anniversaries (*-riz*)], the recurrence in each year of the date of an event.
an-no-tate (*an'nō-tāt*), *v. t.* to mark or note.
an-no-ta-tion (*an-nō-tā'shun*), *n.* the act of noting or commenting upon.
an-nounce (*an-nouns'*), *v. t.* to proclaim or make known formally or in a public manner.
Syn. ANNOUNCE, advertise, circulate, communicate, declare, enunciate, give notice, give out, herald, make known, notify, proclaim, promulgate, propound, publish, report, reveal, say, spread abroad, state, tell. We *announce* that which has occurred or which is to occur; *advertise* our business; *communicate* our intentions; *enunciate* our views; *notify* an individual, *give notice* to the public; *declare* war; *proclaim* peace; *propound* a question or an argument, *promulgate* views; *report* an interview; *reveal* a secret; *herald* the coming of some great event; *publish* books or magazines. [See *speak*.]
Ant. BURY, conceal, suppress, withhold.
an-nounce-ment (*an-nouns'ment*), *n.* the act of announcing.
an-noy (*an-noi'*), *v. t.* [*p. t.* and *p. p.* annoyed (*-noid'*), *p. pr.* annoying], to vex or trouble by repeated acts; harass or discompose by petty injury or opposition. [INCONVENIENCE.]
an-noy-ance (*an-noi'ans*), *n.* the act of annoying or causing vexation. [ABOMINATION.]
an-nu-al (*an'ū-al*), *adj.* once in twelve months; yearly; of or belonging to a year.
an-nu-i-tant (*an-nū'i-tant*), *n.* one who is in receipt of, or is entitled to receive, an annuity.
an-nu-i-ty (*an-nū'i-ti*), *n.* [*pl.* annuities (*-tiz*)], the payment of a sum of money by periodical or yearly installments.
an-nul (*an-nul'*), *v. t.* [*p. t.* and *p. p.* annulled, *p. pr.* annulling], to make void, abolish, or obliterate. [ABOLISH.]
an-nu-lar (*an'ū-lēr*), *adj.* ring-like.
an-nu-let (*an'ū-let*), *n.* a little ring.
an-nul-ment (*an-nul'ment*), *n.* the act of reducing to nothing.
an-nun-ci-a-tion (*an-nun-si-ā'shun*), *n.* the act of annunciating.
★**Annunciation,** *n.* the church festival (Lady-day, March 25) commemorating the intimation of the Incarnation made by the angel Gabriel to the Virgin Mary.
an-nun-ci-a-tor (*an-nun'shi-ā-tēr*), *n.* a signaling apparatus; an indicator.
an-ode (*an'ōd*), *n.* the path of the electric current from the positive to the negative pole.
an-o-dyne (*an'ō-dīn*), *adj.* assuaging pain: *n.* a drug which relieves pain.
a-noint (*ä-noint'*), *v. t.* to pour oil upon, in a religious ceremony.
★**a-nom-a-lous** (*ä-nom'ä-lus*), *adj.* deviating from the common order; abnormal. [ABSURD.]
a-nom-a-ly (*ä-nom'ä-li*), *n.* deviation from the natural order.
a-non (*ä-non'*), *adv.* soon; straightway; again.
an-o-nym-i-ty (*an-ō-nim'i-ti*), *n.* the state of being anonymous.
a-non-y-mous (*ä-non'i-mus*), *adj.* bearing no author's name; nameless.
an-oth-er (*an-uth'ēr*), *adj.* and *pron.* one more; not the same.
Anselm (*an'selm*). From the Teutonic, meaning "divine helmet," hence "a defender." Dutch, *Anselmus*; Fr., *Anselme*; Ger., *Anselm*; It., *Anselmo*; Lat., *Anselmus*; Sp., *Anselmo*.
an-swer (*an'sēr*), *v. t.* to swear in opposition to; to reply to a charge.
Syn. ANSWER, reply, rejoinder, response. An *answer* is given to a question; a *reply* is made to an assertion; a *rejoinder* is made to a reply; a *response* is made in accordance with the words of another. We *answer* either for the purpose of affirmation, information or contradiction; we always *reply*, or *rejoin*, in order to explain or confute; *responses* are made by way of assent or confirmation.
Ant. CHARGE, question.
an-swer-a-ble (*an'sēr-ä-bl*), *adj.* liable to give answer; responsible. [CORRESPOND.]
ant (*ant*), *n.* a small social insect of the hymenoptera

ant-ac-id (*ant-as'id*), *adj.* counteracting acidity.
an-tag-o-nism (*an-tag'ō-nizm*), *n.* the active opposition of two opponents or opposing forces. [ANTIPATHY.]
an-tag-o-nist (*an-tag'ō-nist*), *n.* a competitor.
an-tag-o-nize (*an-tag'ō-niz*), *v. t.* to oppose; hinder.
★**ant-arc-tic** (*ant-ärk'tik*, not *ant-är'tik*), *adj.* opposite to arctic; pertaining to the south polar regions; southern.
Antarctic Ocean. Denotes the ocean *anti*, "against" or "opposite to" the Arctic Ocean.
ant-bear (*ànt'-bâr*), *n.* the name sometimes given (from its likeness to a bear) to the great ant-eater of South America.
ant-eat-er (*ànt'-ēt-ẽr*), *n.* the name applied to a group of quadrupeds which feed upon ants.
an-te-cede (*an-tē-sēd'*), *v. t.* to precede or go before in time or space.
an-te-ced-ence (*an-tē-sēd'ens*), or **antecedency** (*'en-si*), *n.* precedence.
★**an-te-ced-ent** (*an-tē-sēd'ent*), *adj.* preceding: *n.* the substantive or noun to which a relative or other pronoun refers; *pl.* the previous events of a person's life.
an-te-cham-ber (*an'tē-chām-bẽr*), *n.* an apartment next the principal room.
an-te-date (*an'tē-dāt*), *v. t.* to carry back to an earlier period.
an-te-di-lu-vi-an (*an-tē-di-lū'vi-an*), *adj.* of or pertaining to the world before the flood.
an-te-lope (*an'tē-lōp*), *n.* the name given to numerous species of deer-like ruminants, intermediate between the deer and the goat.
an-te-me-rid-i-an (*an-tē-mē-rid'i-an*), *adj.* preceding noon.
ant-e-met-ic (*ant-ē-met'ik*), *adj.* allaying vomiting.
an-ten-na (*an-ten'nȧ*), *n.* [*pl.* antennæ (*'nē*)], the jointed horns or feelers upon the heads of insects and crustacea.
★**an-te-pe-nult** (*an-tē-pē'nult*) or **antepenultima** (*an-tē-pē-nult'i-mȧ*), *n.* the last syllable but two of a word.
an-te-pran-di-al (*an-tē-pran'di-al*), *adj.* before dinner.
an-te-ri-or (*an-tē'ri-ẽr*), *adj.* more to the front; former.
an-te-room (*an'tē-rōōm*), *n.* a room before, or forming an entrance to, another.
ant-hel-ion (*ant-hēl'yun* or *-hē'li-on*), *n.* [*pl.* anthelia (*'yȧ* or *'li-ȧ*)], a halo or a colored ring or rings, opposite the sun, formed around the shadow of the head of the observer, as projected on a cloud or moist surface.
an-them (*an'them*), *n.* a composition from the Scriptures or liturgy set to sacred music.
an-ther (*an'thẽr*), *n.* the summit of the stamen of a flower, containing the pollen or fertilizing dust.
an-tho-log-ic-al (*an-thō-loj'i-kal*), *adj.* pertaining to anthology.
an-thol-o-gist (*an-thol'ō-jist*), *n.* one who compiles an anthology.
★**an-thol-o-gy** (*an-thol'ō-ji*), *n.* a collection of choice poems.
an-thra-cite (*an'thrȧ-sīt*), *n.* a nonbituminous coal which burns without smoke.
an-thrax (*an'thraks*), *n.* [*pl.* anthraces (*'thrȧ-sēz*)], a carbuncle, or malignant boil.
★**An-thro-poid-e-a** (*an-thro-poid'ē-ȧ*), *n. pl.* a suborder of primate mammals, including man, the apes, and monkeys.
an-thro-po-log-ic-al (*an-thrō-pō-loj'i-kal*), *adj.* pertaining to anthropology.
★**an-thro-pol-o-gist** (*an-thrō-pol'ō-jist*), *n.* a student of anthropology.
an-thro-pol-o-gy (*an-thrō-pol'ō-ji*), *n.* the science of man.
an-thro-pom-e-try (*an-thrō-pom'ē-tri*), *n.* the measurement of the human body.
★**an-thro-po-mor-phism** (*an-thrō-pō-môr'fizm*), *n.* the ascription of a human form and attributes to the deity.
an-tic (*an'tik*), *adj.* grotesque: *n.* a clown.
An-ti-christ (*an'ti-krist*), *n.* an opponent of Christ, especially the great personal opponent expected to appear before the end of the world.
an-tic-i-pant (*an-tis'i-pant*), *adj.* that which operates beforehand.
an-tic-i-pate (*an-tis'i-pāt*), *v. t.* to take beforehand; use in advance; look for as certain.
Syn. ANTICIPATE, apprehend, expect, forecast, foretaste, hope, look forward to. *Anticipate* is allied with *prevent* and *expect;* as, a boy *expects* to grow to manhood. We *hope* for that which we desire and *expect; apprehend* what we both *expect* and fear; *anticipate* that which we *expect* both with confidence and pleasure. [See *abide, prevent.*]
Ant. Despair of, doubt, fear, remember.
an-tic-i-pa-tion (*an-tis-i-pā'shun*), *n.* the act of taking beforehand; expectation.
an-tic-i-pa-tive (*an-tis'i-pā-tiv*), or **anticipatory** (*-pȧ-tō-ri*), *adj.* taking beforehand; anticipating.
an-ti-cli-max (*an-ti-klī'maks*), *n.* a ludicrous descent in thought and expression; bathos.
an-ti-cy-clone (*an-ti-sī'klōn*), *n.* a meteorological condition in which the ordinary features of a cyclone are reversed.
an-ti-do-tal (*an'ti-dō-tal*), *adj.* of the nature or quality of an antidote.
an-ti-dote (*an'ti-dōt*), *n.* a substance which acts medicinally as a counteractive to the effects of poison or disease.
an-ti-fat (*an'ti-fat*), *adj.* available for preventing or reducing fatness.
an-ti-mo-ni-al (*an-ti-mō'ni-al*), *adj.* pertaining to antimony.
an-ti-mo-nite (*an'ti-mō-nīt*), *n.* native sulphide of antimony.
an-ti-mo-ny (*an'ti-mō-ni*), *n.* a white lustrous metal.
an-ti-no-mi-an-ism (*an-ti-nō'mi-an-izm*), *n.* the tenets of the Antinomian sect.
an-tin-o-my (*an-tin'ō-mi*), *n.* [*pl.* antinomies (*-miz*)], the opposition of one law or part of a law to another.
★**an-tip-a-thy** (*an-tip'ȧ-thi*), *n.* [*pl.* antipathies (*-thiz*)], natural aversion.
Syn. ANTIPATHY, abhorrence, antagonism, aversion, detestation, disgust, dislike, distaste, hatred, hostility, opposition, repugnance, repulsion. *Antipathy* is an instinctive recoil from connection or association with a person or thing; *antagonism* results from the necessity of circumstances; *opposition* springs from conflicting views or interests; *abhorrence* and *detestation* may result from religious and moral training; *distaste* and *disgust* may be acquired; *aversion* is a deep and permanent *dislike;* a natural *antipathy* may give rise to *opposition* which may result in *hatred* and *hostility.* [See *acrimony, anger, enmity, hate.*]
Ant. Affinity, agreement, congeniality, harmony, sympathy.
★**an-ti-phlo-gis-tic** (*an-ti-flō-jis'tik*), *adj.* efficacious in counteracting fever or inflammation.
an-ti-phon (*an'ti-fon*), or **antiphone** (*-fōn*), *n.* a chant or hymn rendered alternately by two choirs.
an-tiph-o-nal (*an-tif'ō-nal*), *adj.* characterized by antiphony or responsive singing.
an-tiph-o-na-ry (*an-tif'ō-nā-ri*), *n.* [*pl.* antiphonaries (*-riz*)], a book of responses used in the services.
an-tiph-o-ny (*an-tif'ō-ni*), *n.* [*pl.* antiphonies (*-niz*)], the alternate or responsive rendering of psalms or chants by a dual choir.
an-tiph-ra-sis (*an-tif'rȧ-sis*), *n.* the employment of a word, or words, in a sense contrary to its, or their, true meaning.
★**an-ti-pode** (*an'ti-pōd*), *n.* [*pl.* antipodes (*an'ti-pōdz*)], one who resides on the opposite side of the earth.
★**an-tip-o-des** (*an-tip'ō-dēz*), *n. pl.* two portions of the earth's surface which are exactly opposite to each other; the direct opposite of a person or thing.
★**an-ti-py-rine** (*an-ti-pī'rin*), *n.* a drug, obtained from coal tar, employed for the relief of neuralgia.
an-ti-qua-ri-an (*an-ti-kwā'ri-an*), *adj.* pertaining to antiquaries or to antiquity: *n.* an antiquary.
an-ti-qua-ri-an-ism (*an-ti-kwā'ri-an-izm*), *n.* the attachment to what is old or antiquated.
an-ti-qua-ry (*an'ti-kwā-ri*), *n.* one who is attached to ancient things and is learned in their history.
an-ti-qua-ted (*an'ti-kwā-ted*), *p. adj.* grown old. [ANTIQUE, OBSOLETE.]
★**an-tique** (*an-tēk'*), *adj.* of or belonging to a former age; ancient.
Syn. ANTIQUE, ancient, antiquated, old-fashioned, quaint, superannuated. *Antique* refers to *ancient, antiquated* to discarded style. We speak of *antique* architecture, and *antiquated* customs; an *old-fashioned* fireplace; a *quaint* gambrel-roofed house; a *superannuated* person, incapacitated by reason of age.
Ant. Fashionable, modern, new, stylish.
an-tiq-ui-ty (*an-tik'wi-ti*), *n.* [*pl.* antiquities (*-tiz*)], great age; ancientness; early ages.
an-ti-scor-bu-tic (*an-ti-skôr-bū'tik*), *adj.* and *n.* counteracting or a remedy for scurvy.
an-ti-Sem-it-ism (*an-ti-sem'it-izm*), *n.* antagonism to the Jewish race.
an-ti-sep-sis (*an-ti-sep'sis*), *n.* the exclusion of bacteria from wounds, etc., by the use of antiseptics.
an-ti-sep-tic (*an-ti-sep'tik*), *adj.* destructive to the germs of disease or putrefaction.
an-ti-sla-ver-y (*an-ti-slā'vẽr-i*), *adj.* opposed to slavery.
an-tis-tro-phe (*an-tis'trō-fē*), *n.* in the ancient Greek chorus, the alternating part immediately following the strophe.
★**an-tith-e-sis** (*an-tith'ē-sis*), *n.* [*pl.* antitheses (*-sēz*)], opposition; contrast.
an-ti-thet-ic (*an-ti-thet'ik*), or **an-ti-thet-i-cal** (*'i-kal*), *adj.* pertaining to antithesis.
★**an-ti-tox-in** (*an-ti-toks'in*), *n.* a serum used hypodermically as a preventive of, or cure for, diphtheria.
an-ti-trade (*an'ti-trād*), *n.* a tropical wind blowing steadily in an opposite direction to the trade wind.
an-ti-type (*an'ti-tīp*), *n.* that prefigured by the type.
an-ti-zy-mot-ic (*an-ti-zī-mot'ik*), *adj.* preventing fermentation.
ant-ler (*ant'lẽr*), *n.* an individual branch of a stag's horn.
ant-li-on (*ànt'-li-un*), *n.* a neuropterous insect whose larva constructs a pitfall for ants and other insects.
Antony (*an'tō-nē*), **Anthony.** From Latin *Antonius,* meaning "inestimable." According to Littleton, the Antonian family were descended from *Antius,* son of Hercules. Danish, *Anton;* Dutch, *Anton, Antoon,* or *Antonius;* Fr., *Antoine;* Ger., *Anton;* It., *Antonio;* Port., *Antonio;* Sp., *Antonio;* Sw., *Anton.*
★**an-to-nym** (*an'tō-nim*), *n.* a word opposed to another in meaning.
an-trum (*an'trum*), *n.* a sinus or cavity in a body.
★**Antwerp** (*ant'wẽrp*). From *andoverpum,* "at the wharf"; *werf,* a dam or wharf; literally, "what is thrown up"—*werfen.* A seaport of Belgium.
a-nus (*ā'nus*), *n.* the terminal portion of the rectum.
an-vil (*an'vil*), *n.* an iron block used for the hammering and shaping of metals.
anx-i-e-ty (*ang-zī'ē-ti*), *n.* [*pl.* anxieties (*-tiz*)], a condition of mental uneasiness arising from fear or solicitude.
Syn. ANXIETY, anguish, apprehension, care, concern, disturbance, dread, fear, foreboding, fretfulness, fretting, misgiving, perplexity, solicitude, trouble, worry. *Anxiety* is a choking *disquiet,* akin to *anguish; anxiety* is mental; *anguish* may be mental or physical; *anxiety* refers to some future event, always suggesting hopeful possibility, and thus differing from *apprehension, fear, dread, foreboding, terror,* all of which may be full of despair. *Worry* is more petty, restless, and manifest *anxiety,* communicated to all around. *Solicitude* is a milder *anxiety.* *Fretting* or *fretfulness* is weak complaint. *Perplexity* often involves *naxiety,* but may be quite free from it. [See *distress.*]
Ant. Apathy, assurance, calmness, confidence, ease, tranquillity.
anx-ious (*angk'shus*), *adj.* deeply concerned; very solicitous; apprehensive. [EAGER.]
an-y (*en'i*), *adj.* and *pron.* one, indeterminately, unlimited; some, an indefinite number, quantity.
★**a-or-ta** (*ā-ôr'tȧ*), *n.* [*pl.* aortæ (*-tē*)], the chief artery or main trunk of the arterial system.
a-pace (*ȧ-pās'*), *adv.* quickly; at a quick pace; speedily.
a-pa-che (*ȧ-pā'chā*), *n.* one of a band of lawless persons who frequent the streets, as of Paris, at night and prey upon the pedestrians; a nocturnal prowler.
★**Apalachee** (*ap-ȧ-lach'ē*) **bay, Fla.** Variously spelled *Apahlahche, Apeolatei, Palaxy, Palatcy;* the prefix is supposed to be Spanish, and the word in full is said to mean "the men."
★**Apalachicola** (*ap-ȧ-lach-i-kō'lȧ*) **river, Fla.** From an Indian town *Apalatichiokli,* "those on the other side."
a-part (*ȧ-pärt'*), *adv.* separately; aside; asunder.
a-part-ment (*ȧ-pärt'ment*), *n. pl.* a set or suite of two or more rooms of a house set apart as lodgings. [LODGINGS.]
ap-a-thet-ic (*ap-ȧ-thet'ik*), or **ap-a-thet-i-cal** (*'i-kal*), *adj.* devoid of feeling or emotion.
ap-a-thy (*ap'ȧ-thi*), *n.* [*pl.* apathies (*-thiz*)], lack of feeling; want of passion or emotion. [STUPIDITY.]
ap-a-tite (*ap'ȧ-tīt*), *n.* a crystalline phosphate of lime.
ape (*āp*), *n.* a tailless monkey having teeth the same in number and appearance as man.
a-peak (*ȧ-pēk'*), *adv.* nearly vertical in position.
★**Ap-en-nines** (*ap'en-nīnz*). Now used as the name of the central mountain chain of Italy. The Roman term *Mons Apenninus* orginally denoted the Maritime Alps near Genoa, the *Mons Peninus* signifying the Dauphiny Alps, more especially the part near the Great St. Bernard.
★**a-pe-ri-ent** (*ȧ-pē'ri-ent*), *adj.* gently laxative.
a-pe-ri-od-ic (*ȧ-pē-ri-od'ik*), *adj.* without periodicity
ap-er-ture (*ap'ẽr-tūr*), *n.* an opening; a perforation.
a-pex (*ā'peks*), *n.* [*pl.* apexes (*-ez*) and apices (*ap'i-sēz*)], the point, tip, or summit of anything
a-pha-gi-a (*ȧ-fā'ji-ȧ*), *n.* inability to swallow.
★**a-pha-si-a** (*ȧ-fā'zhi-ȧ*, not *ȧ-fā'si-ȧ*), *n.* loss of the power of speech.
a-phe-li-on (*ȧ-fēl'yun* or *ȧ-fē'li-on*), *n.* [*pl.* aphelia (*'yȧ* or *'li-ȧ*)], that point in the orbit of a planet or a comet which is farthest from the sun.
A-phis (*ā'fis*), *n.* [*pl.* Aphides (*af'i-dēz*)], the genus of plant suckers to which the aphides belong; a member of the genus.
★**aph-o-rism** (*af'ō-rizm*), *n.* a concise and pithy statement of a rule or precept; a maxim.
a-pi-a-ry (*ā'pi-ā-ri*), *n.* [*pl.* apiaries (*-riz*)], a place where bees are kept; a beehouse.
a-piece (*ȧ-pēs'*), *adv.* to or for each; each; severally.
a-plomb (*ȧ-plôɴ'*), *n.* self-possession; assurance.
A-poc-a-lypse (*ȧ-pok'ȧ-lips*), *n.* the last book of the New Testament.
a-poc-ry-pha (*ȧ-pok'ri-fȧ*), *n. pl.* used as a *sing.* with *pl.* apocryphas (*-fȧz*), certain writings received by some Christians as an authentic part of the holy Scriptures, but rejected by others.
a-poc-ry-phal (*ȧ-pok'ri-fal*), *adj.* of doubtful authority.
ap-od (*ap'od*), *n.* an animal without feet.
a-pod-o-sis (*ȧ-pod'ō-sis*), *n.* the latter portion, or consequent clause, of a conditional sentence.
ap-o-gee (*ap'ō-jē*), *n.* that point in the orbit of a planet which is most distant from the earth.
a-pol-o-get-ic (*ȧ-pol-ō-jet'ik*), or **a-pol-o-get-i-cal** (*'i-kal*), *adj.* in the way of defense or apology.
a-pol-o-get-ics (*ȧ-pol-ō-jet'iks*), *n.* the defense and vindication of the principles and laws of the Christian belief.
a-pol-o-gize (*ȧ-pol'ō-jīz*), *v. i.* to make an apology or excuse.
Syn. APOLOGIZE, defend, justify, exculpate, excuse, plead. We *apologize* for an error

by acknowledging ourselves guilty of it; we *defend* ourselves against a charge by proving its fallacy; we *justify* our conduct against any imputation by proving that it was blameless; we *exculpate* ourselves from all blame by proving that we took no part in the transaction. *Excuse* and *plea* are not grounded on any idea of innocence; a *plea* is frequently an idle or unfounded *excuse*, a frivolous attempt to lessen displeasure; we *excuse* ourselves for a neglect by alleging indisposition.

★ap-o-logue (*ap'ō-lŏg*, not *ap'ō-lōg*), *n.* a moral fable; a fiction or allegory. [FICTION.]

a-pol-o-gy (*ă-pol'ō-ji*), *n.* [*pl.* apologies (*-jiz*)], a vindication or excuse.

ap-o-phthegm. See *apothegm.*

ap-o-plec-tic (*ap-ō-plek'tik*), or **ap-o-plec-ti-cal** (*'ti-kal*), *adj.* pertaining to, or of the nature of, apoplexy; afflicted with apoplexy.

ap-o-plex-y (*ap'ō-pleks-i*), *n.* the sudden loss of consciousness and motive power.

a-port (*ă-pōrt'*), *adv.* on or toward the port or left side of a ship.

a-pos-ta-sy (*ă-pos'tă-si*), *n.* [*pl.* apostasies (*-siz*)], the forsaking or abandonment of what one has hitherto professed or adhered to.

a-pos-tate (*ă-pos'tāt*), *n.* one who has forsaken or apostatized his faith or party.

a-pos-ta-tize (*ă-pos'tă-tīz*), *v. i.* to abandon one's faith, church, or party.

★a-pos-tle (*ă-pos'l*), *n.* one charged with a high mission; one of the twelve persons specially selected by Christ to propagate his gospel.

a-pos-tles' creed (*krēd*), the shortest of the three creeds, so named as containing a summary of apostolical doctrine.

ap-os-tol-ic (*ap-os-tol'ik*) or **ap-os-tol-ic-al** (*'i-kal*), *adj.* of or pertaining to an apostle or apostles, and their age, doctrine, or practice; papal.

ap-os-tol-i-cal suc-ces-sion (*suk-sesh'un*), the regular and uninterrupted transmission of ministerial authority by bishops from the apostles.

a-pos-tro-phe (*ă-pos'trō-fē*), *n.* a breaking off in a speech to address directly a person or persons who may or may not be present.

a-pos-tro-phize (*ă-pos'trō-fīz*), *v. t.* to address by apostrophe; omit a letter or letters; mark an omission by the sign ('). [ADDRESS.]

a-poth-e-ca-ry (*ă-poth'ē-kā-ri*), *n.* [*pl.* apothecaries (*-riz*)], one who prepares and dispenses medicines and drugs for profit.

a-poth-e-ca-ries' weight (*wāt*), the weight used for dispensing drugs, and comprising the pound (12 oz.), the ounce (8 drams), the dram (3 scruples), the scruple (20 grains), and the grain.

ap-o-thegm (*ap'ō-them*), *n.* a pithy saying, embodying a wholesome truth or precept.

★ap-o-the-o-sis (*ap-ō-thē'ō-sis* not *ap-ō-thē-ō'sis*), *n.* [*pl.* apotheoses (*-sēz*)], deification.

★Ap-pa-la-chi-an (*ap-pă-lā'chi-an*, not *ap-pā-lā'chi-an*) **mountains.** From the Apalachicola river, or the ancient town called *Apalache*, found by De Soto in Florida.

ap-pall (*ap-pawl'*), *v. t.* [*p. t.* and *p. p.* appalled, *p. pr.* appalling], to fright. [DISMAY.]

★ap-pa-ra-tus (*ap-pă-rā'tus*, not *ap-pā-rā'tus*), *n. sing.* and *pl.* an outfit of tools, utensils, or instruments adapted to the accomplishment of any branch of work.

ap-par-el (*ap-par'el*), *n.* clothing; vesture; garb, *v. t.* [*p. t.* and *p. p.* appareled, *p. pr.* appareling], to clothe or adorn.

ap-par-ent (*ap-pâr'ent*), *adj.* open to view; capable of being readily perceived or understood.

Syn. Apparent, visible, clear, plain, obvious, evident, manifest. That which is simply an object of sight is *visible:* that which presents itself to our view in any form, real or otherwise, is *apparent:* the stars themselves are *visible* to us, but their size is *apparent:* what is *clear* is to be seen in all its parts and in its proper colors; what is *plain* is seen by a plain understanding; what is *obvious* presents itself readily to the mind of every one; what is *evident* is seen forcibly, and leaves no hesitation in the mind. *Manifest* is a greater degree of the *evident:* it strikes on the understanding and forces conviction.

ap-pa-ri-tion (*ap-pă-rish'un*), *n.* a visible object; a ghost or specter.

ap-peal (*ap-pēl'*), *v. t.* to transfer or refer to a superior court or judge; to address another person. [ADDRESS.]

ap-pear (*ap-pēr'*), *v. i.* to be or become visible; come before; seem. [SEEM, LOOK.]

ap-pear-ance (*ap-pēr'ans*), *n.* the act of becoming visible; the object seen.

ap-pease (*ap-pēz'*), *v. t.* to allay; assuage; quiet; satisfy; pacify. [ALLAY.]

★ap-pel-lant (*ap-pel'lant*), *n.* one who appeals to a higher court.

★ap-pel-late (*ap-pel'lāt*), *adj.* pertaining to appeals.

ap-pel-la-tion (*ap-pel-lā'shun*), *n.* the name, title, or designation by which a person or thing is called or known.

ap-pel-la-tive (*ap-pel'lă-tiv*), *adj.* serving to distinguish, as a name or denomination of a group or class; common, as a noun.

ap-pend (*ap-pend'*), *v. t.* to attach, hang, or suspend. [ADD.]

ap-pen-dage (*ap-pen'dāj*), *n.* something appended or attached as a part of.

★ap-pen-di-ci-tis (*ap-pen-di-sī'tis*), *n.* inflammation of the vermiform appendix.

ap-pen-dix (*ap-pen'diks*), *n.* [*pl.* appendixes (*-ez*) and appendices (*'di-sēz*)], that which is added as supplemental.

ap-per-tain (*ap-pĕr-tān'*), *v. i.* to belong or pertain to.

ap-pe-tite (*ap'pē-tīt*), *n.* the desire for gratification of some want, craving, or passion.

ap-pe-ti-zer (*ap'pē-tī-zĕr*), *n.* something that excites or whets the appetite.

Appian way. The *Via Appia* of ancient Rome, most famous of Roman highways. It ran from Rome to Brundisium (Brindisi), and is probably the first great Roman road which was formally undertaken as a public work.

ap-plaud (*ap-plawd'*), *v. t.* to praise. [ADMIRE.]

ap-plause (*ap-plawz'*), *n.* the expression of approval by clapping.

ap-ple (*ap'pl*), *n.* the round, fleshy fruit of the apple tree.

ap-pli-ance (*ap-plī'ans*), *n.* the act of applying.

ap-pli-ca-ble (*ap'pli-kă-bl*), *adj.* capable of being applied.

ap-pli-cant (*ap'pli-kant*), *n.* one who applies.

ap-pli-ca-tion (*ap-pli-kā'shun*), *n.* the act of applying, putting to, or on.

★ap-pli-qué (*ă-plē-kā'*), *n.* a method of ornamentation in dress or upholstery.

ap-ply (*ap-plī'*), *v. t.* [*p. t.* and *p. p.* applied, *p. pr.* applying], to place one to another; lay on; put into practice.

ap-point (*ap-point'*), *v. t.* to fix; settle; found; make fast. [CONSTITUTE.]

ap-point-ment (*ap-point'ment*), *n.* the act of appointing; the assigning to an office or trust.

★Appomattox (*ap-pō-mat'oks*). River and county in Virginia.

ap-por-tion (*ap-pōr'shun*), *v. t.* to assign by equal or proportionate division.

ap-por-tion-ment (*ap-pōr'shun-ment*), *n.* the act of apportioning.

★ap-po-site (*ap'pō-zit*), *adj.* proper; fit, pertinent.

ap-po-si-tion (*ap-pō-zish'un*), *n.* the act of adding to; the placing of a second noun in the same case in juxtaposition to the first, which it characterizes or explains.

ap-prais-al (*ap-prāz'al*), *n.* the act of appraising.

ap-praise (*ap-prāz'*), *v. t.* to set a price upon; value.

ap-pre-ci-a-ble (*ap-prē'shi-ă-bl*), *adj.* capable of being appreciated.

ap-pre-ci-ate (*ap-prē'shi-āt*), *v. t.* to value; estimate.

ap-pre-ci-a-tion (*ap-prē-shi-ā'shun*), *n.* the just valuation of worth or merit.

ap-pre-ci-a-tive (*ap-prē'shi-ă-tiv*), *adj.* exhibiting appreciation.

ap-pre-hend (*ap-prē-hend'*), *v. t.* to take or lay hold of; seize: *v. i.* to form a conception.

Syn. Apprehend, conceive, suppose, imagine. To *apprehend* is simply to take an idea into the mind; thus we may *apprehend* any object that we hear or see; to *conceive* is to form an idea in the mind, as to *conceive* the idea of doing anything, to *conceive* a design. What one *supposes* may admit of a doubt, it is frequently only conjectural; what one *imagines* may be altogether improbable or impossible, or may be too improbable to admit of being believed. [ANTICIPATE.]

ap-pre-hen-sion (*ap-prē-hen'shun*), *n.* the act of seizure or laying hold of; arrest; anticipation of evil. [ANXIETY.]

ap-pre-hen-sive (*ap-prē-hen'siv*). *adj.* suspicious; perceptive.

ap-pren-tice (*ap-prĕn'tis*), *n.* one bound or articled to learn some trade or craft.

ap-prize (*ap-prīz'*), *v. t.* to give notice to; inform.

ap-proach (*ap-prōch'*), *v. i.* to draw or grow near: *n.* the act of drawing near. [ADDRESS.]

ap-pro-bate (*ap'prō-bāt*), *v. t.* to express approval of; license or sanction.

ap-pro-ba-tion (*ap-prō-bā'shun*), *n.* the act of approving; commendation. [ASSENT.]

ap-pro-pri-a-ble (*ap-prō'pri-ă-bl*), *adj.* capable of appropriation.

ap-pro-pri-ate (*ap-prō'pri-āt*), *v. t.* to take to one's self, in exclusion of others.

ap-pro-pri-a-tion (*ap-pro-pri-ā'shun*), *n.* the act of assigning to one's self.

ap-prov-al (*ap-prōōv'al*), *n.* approbation; sanction.

ap-prove (*ap-prōōv'*), *v. t.* to prove, test, or demonstrate; be pleased or satisfied with. [ADMIRE.]

★ap-prox-i-mate (*ap-proks'i-māt*), *v. t.* to bring or carry near; cause to approach.

ap-prox-i-mate-ly (*ap-proks'i-māt-li*), *adv.* very nearly, but not absolutely.

ap-prox-i-ma-tion (*ap-proks-i-mā'shun*), *n.* the act of approximating.

ap-pulse (*ap-puls'*), or **appulsion** (*-pul'shun*), *n.* a coming toward.

ap-pur-te-nance (*ap-pûr'tē-nans*), *n.* that which belongs or relates to something else.

★a-pri-cot (*ā'pri-kot*, not *ap'ri-kot*) *n.* the fruit of a tree allied to the plum.

A-pril (*ā'pril*). From *aperio*, "I open," this being the month in which the buds shoot forth.

April fool, one who is imposed upon or deceived in a jocular manner on April 1st, or All Fools' day.

a-pron (*ā'pĕrn*), *n.* a portion of cloth, leather, or other material, worn as a protective or ornamental covering to the front of the person.

apse (*aps*), *n.* [*pl.* apses (*'ez*)], a polygonal or semicircular recess terminating the choir or other portion of a church.

apt (*apt*), *adj.* suitable; pertinent; appropriate. [FIT, READY.]

ap-ti-tude (*ap'ti-tūd*), *n.* capacity for anything.

★a-qua (*ā'kwă*), *n.* a term used in pharmacy in the abbreviated form of *aq.*, and denoting water.

★a-qua am-mo-ni-æ (*am-mō'ni-ē*), water containing an infusion of ammonia gas.

★a-qua for-tis (*fôr'tis*), (strong water) impure nitric acid.

★a-qua-ma-rine (*ă-kwă-mă-rēn'*), *n.* a pale bluish-green variety of beryl.

★a-qua re-gi-a (*ā'kwă rē'ji-ă*), (royal water) a mixture of nitric and hydrochloric acids, capable of dissolving gold.

★a-qua-ri-um (*ă-kwā'ri-um*, not *ă-kwă'ri-um*), *n.* [*pl.* aquariums (*-umz*) and aquaria (*-ă*)], a tank or globe for the keeping and cultivation of aquatic plants and animals.

a-quat-ic (*ă-kwat'ik*), *adj.* pertaining to water.

a-qua-tint (*ā'kwă-tint*), *n.* a species of etching resembling a water-color drawing in india ink or in sepia.

★a-qua vi-tæ (*ā'kwă vī'tē*), (water of life) unrectified alcohol; brandy and other ardent spirits.

★aq-ue-duct (*ak'wē-dukt*, not *ak'wē-duk*), *n.* a structure in the form of a conduit or artificial channel for conducting water from a source.

★a-que-ous (*ā'kwē-us*, not *ak'wē-us*), *adj.* of the nature of, or abounding in, water.

aq-ui-line (*ak'wi-līn* or *-lin*) *adj.* belonging to, or resembling, an eagle.

★Ar-ab (*ar'ab*), *n.* a native of Arabia; a desert dweller.

Arabella (*ar-ă-bel'lă*). Corrupted from the old name, *Orragel, Oraglee*, meaning a "fair altar." Dutch, *Arabella;* Fr., *Arabelle;* Ger., *Arabelle;* It., *Arabella;* Lat., *Arabella.*

ar-a-besque (*ar-ă-besk'*), *n.* the style of Arabic decorative art which consists of the painting, inlaying, or carving in low relief of figures of plants, fruits, flowers, and foliage, variously combined or fantastically grouped.

Arabia (*ă-rā'bi-ă*). The country of the Arabs, "men of the desert."

★Ar-a-bic nu-mer-als (*ar'ă-bik nū'mĕr-alz*), the figures 0, 1, 2, 3, etc., of Indian origin, used by the Arabs, and introduced into Europe in the twelfth century.

ar-a-ble (*ar'ă-bl*), *adj.* fit for the plow.

ar-bi-ter (*ār'bi-tĕr*), *n.* an umpire or judge.

ar-bit-ra-ment (*ār-bit'rā-ment*), *n.* the decision of arbitrators.

ar-bi-tra-ri-ly (*ār-bi-trā'ri-li*), *adv.* in a capricious manner.

ar-bi-tra-ry (*ār'bi-trā-ri*), *adj.* depending on the will of the arbiter; imperious. [ABSOLUTE.]

ar-bi-trate (*ār'bi-trāt*), *v. i.* and *v. t.* to act as arbiter; to settle, as a dispute.

ar-bi-tra-tion (*ār-bi-trā'shun*), *n.* the settlement of a dispute by an umpire.

ar-bi-tra-tor (*ār'bi-trā-tĕr*), *n.* an umpire.

ar-bor (*ār'bĕr*), *n.* a bower; a shaded nook or walk.

Ar-bor day (*ār'bĕr dā*). A day legally set apart in certain states for planting trees.

★ar-bo-re-tum (*ār-bō-rē'tum*), *n.* [*pl.* arboreta (*-tă*) and arboretums (*-tumz*)], a place in which rare trees are cultivated and exhibited.

ar-bor-i-cul-ture (*ār-bor-i-kul'tūr*), *n.* the cultivation of trees.

★ar-bor vi-tæ (*ār'bĕr vī'tē*), an evergreen tree extensively cultivated in gardens, etc.

arc (*ārk*), *n.* a curved line or any part of a curve forming the segment of a circle.

ar-cade (*ār-kād'*), *n.* an arched gallery, or promenade, lined with shops.

ar-ca-di-an (*ār-kā'di-an*), *adj.* rurally simple.

ar-ca-num (*ār-kā'num*), *n.* [*pl.* arcana (*'nă*)], a secret; a mystery.

★Arc de Triomphe de l'Etoile (*ārk du trē-ōnf' du lă-twăl'*). Meaning, "triumphal arch of the star." The largest triumphal arch in existence, at the head of the Champs Elysées, Paris.

arch (*ārch*), *n.* a structure of brick or masonry, the component wedge-shaped parts of which follow a curved line; any curvature having the form of an arch.

ar-chæ-o-log-ic (*ār-kē-ō-loj'ik*) or **ar-chæ-o-log-i-cal** (*'i-kal*), *adj.* pertaining to the study of antiquities.

★ar-chæ-ol-o-gist or **archeologist** (*ār-kē-ol'ō-jist*), *n.* one versed in the study of ancient things; an antiquary.

ar-chæ-ol-o-gy or **archeology** (*ār-kē-ol'ō-ji*, *n.* the science of antiquities.

ar-cha-ic (*ār-kā'ik*) or **ar-cha-i-cal** (*'i-kal*), *adj.* old-fashioned; antiquated. [OBSOLETE.] [use.

ar-cha-ism (*ār-kā-izm*), *n.* antiquity of style or

arch-an-gel (*ārk-ān'jel*), *n.* an angel of the highest order.

Archangel. City of Russia, named in honor of the archangel Michael.

★arch-bish-op (*ārch-bish'up*, not *arch'bish-up*), *n.* a chief bishop, one who supervises the bishops in his province.

arch-dea-con (*ārch-dē'kn*), *n.* a dignitary ranking next below a bishop.

arch-duch-ess (*ārch-duch'ss*), *n.* the wife of an archduke; a daughter of the emperor of Austria.

arch-duch-y (*ārch-duch'i*), *n.* [*pl.* archduchies (*'iz*)], the territory or rank of an archduke.

arch-duke (*ārch-dūk'*), *n.* a prince of the imperial house of Austria.

arch-en-e-my (*ärch-en'ē-mi*), *n.* a principal enemy.
arch-er (*ärch'ēr*), *n.* a bowman.
arch-er-y (*ärch'ēr-i*), *n.* the art or skill of one who uses the bow and arrow.
★**ar-che-type** (*är'kē-tip*, not *är'chē-tip*), *n.* the original type or pattern upon or after which a thing is made.
Archibald (*är'chi-bald*). From the Old German name *Ercheneals, Erchanpald*; from *erchanbald*, "bold in work or activity." Fr., *Archambaud;* Lat., *Archibaldus.* [arched work.
arch-ing (*ärch'ing*), *adj.* curving like an arch: *n.*
★**ar-chi-pe-lag-ic** (*är-ki-pē-laj'ik*), *adj.* pertaining to a collection of islands with the sea dividing them.
★**ar-chi-pel-a-go** (*är-ki-pel'a-gō*, not *är-chi-pel'a-gō*), *n.* [*pl.* archipelagoes or -gos (*-gōz*)], any sea or body of salt water interspersed with numerous islands.
★**ar-chi-tect** (*är'ki-tekt*, not *är'chi-tekt*), *n.* one versed in the art of building and the various styles of architecture.
★**ar-chi-tec-tu-ral** (*är-ki-tek'tū-ral*), *adj.* pertaining to the art of building.
★**ar-chi-tec-ture** (*är'ki-tek-tūr*), *n.* the science or art of building.
★**ar-chi-trave** (*är'ki-trāv*, not *är'chi-trāv*), *n.* the lowest division of an entablature, or that part which rests immediately on the column.
ar-chive (*är'kīv*), *n.* [*pl.* archives (*'kīvz*)], a record preserved as evidence: *pl.* the place where public or state records are kept.
arch-ly (*ärch'li*), *adv.* roguishly; waggishly; coyly.
arch-ness (*'nes*), *n.* shyness; coyness.
Arch of Constantine (*kon'stan-tīn*). An arch in Rome built 312 A. D., in honor of Constantine's triumph over Maxentius.
Arch of Septimius Severus. An arch in the Roman forum, dedicated 203 A. D., in commemoration of victories over the Parthians.
Arch of Titus. An arch in Rome, built in commemoration of the taking of Jerusalem.
Arch of Trajan. Arch over the Appian way at Benevento, Italy, dedicated 114 A. D., and one of the finest of ancient arches.
arc lamp (*ärk lamp*), a lamp having a luminous bridge or arc.
arc light (*līt*), a light produced by a current of electricity passing between two carbon points.
★**arc-tic** (*ärk'tik*, not *är'tik*). The word *arctic* is derived from the Greek name for the constellation of the Bear, *Arctos*, and means "near Arctos"; *i. e.*, "in the extreme north."
arc-tic cir-cle (*sēr'kl*), an imaginary circle parallel to the equator and distant 23° 28′ from the north pole.
ar-dent (*är'dent*), *adj.* hot; burning; fiery; warm. [HOT, EAGER.]
ar-dor (*är'dēr*), *n.* heat in a physical sense; warmth of affection or passion. [FERVOR, ZEAL.]
ar-du-ous (*är'dū-us*), *adj.* steep; hard to climb; difficult.
★**a-re-a** (*ā'rē-a*, not *ā-rē'a*), *n.* [*pl.* areas (*-az*)], any plane surface having bounds, whether natural or artificial, as the floor of a hall, etc.
a-re-na (*a-rē'na*), *n.* [*pl.* arenas (*'naz*)], the central inclosed space of a Roman amphitheater.
★**Areopagus** (*ar-ē-op'a-gus*). From the Greek *Areios pagos*, "Martial hill"; *i. e.*, "hill of Mars." A low, rocky hill at Athens continuing westward in line with the Acropolis, from which it is separated by a depression of ground.
ar-gand lamp (*är'gand lamp*), a lamp having a hollow circular wick to permit the passage of air inside and outside the flame.
ar-gent (*är'jent*), *n.* the silver of a coat of arms.
Argentina (*är-jen-tē'na*). Now the Argentine Republic, South America.
ar-gil (*är'jil*), *n.* potter's clay or earth.
ar-gol (*är'gol*), *n.* crude tartar, from which cream of tartar is prepared.
ar-gon (*är'gun*), *n.* an element associated with nitrogen, and forming one of the constituents of the air.
★**ar-go-naut** (*är'gō-nawt*), *n.* a cephalopod commonly known as the paper nautilus.
★**ar-go-sy** (*är'gō-si*), *n.* [*pl.* argosies (*-siz*)], a large, richly freighted merchant vessel.
ar-gue (*är'gū*), *v. i.* to show or offer reasons in support of, or in opposition to, a proposition.
ar-gu-ment (*är'gū-ment*), *n.* that which is advanced in support or proof with a view to persuade.
ar-gu-men-ta-tion (*är-gū-men-tā'shun*), *n.* the act of arguing.
★**ar-gu-men-ta-tive** (*är-gū-men'ta-tiv*), *adj.* consisting of, or exhibiting, a process of reasoning.
ar-gus-eyed (*är'gus-īd*), *adj.* watchful; vigilant.
★**a-ri-a** (*ā'ri-a* or *ā'ri-ä*), *n.* an air; a melody or tune for single voice with accompaniment.
★**A-ri-an** (*ā'ri-an*), *adj.* pertaining to the doctrines of the Arian sect.
ar-id (*ar'id*), *adj.* dry, parched up; barren.
a-rid-i-ty (*a-rid'i-ti*), or **aridness** (*ar'id-nes*), *n.* the state of being dry.
a-right (*a-rīt'*), *adv.* rightly; in a right way or form.
a-rise (*a-rīz'*), *v. i.* [*p. t.* arose, *p. p.* arisen, *p. pr.* arising], to mount up or ascend; to come into view.
ar-is-toc-ra-cy (*ar-is-tok'ra-si*), *n.* [*pl.* aristocracies (*-siz*)], the nobility or chief persons in a state.
a-ris-to-crat (*a-ris'tō-krat* or *ar'is-tō-krat*), *n.* a personage of rank and noble birth; a person who possesses traits supposed to characterize the nobility.
ar-is-to-crat-ic (*ar-is-tō-krat'ik*) or **aristocrat-i-cal** (*'i-kal*), *adj.* pertaining to, or consisting in, a government of the nobles.
a-rith-me-tic (*a-rith'mē-tik*), *n.* the science of numbers.
ar-ith-met-i-cal (*ar-ith-met'i-kal*), *adj.* of or pertaining to arithmetic.
Arizona (*ar-i-zō'na*). Generally accepted that the name is derived from an Indian word meaning "arid zone or desert"; but Mowry claims that the name is Aztec, from *arizuma*, signifying "silver bearing." State of the Union.
ark (*ärk*), *n.* the repository of the Covenant, or tables of the Law, in the Jewish tabernacle; the vessel in which Noah and his family were preserved during the deluge.
★**Arkansas** (*är'kan-saw*, not *är-kan'zas*). River, state, county, and town in said state, and city in Cowley county, Kansas. Marquette and other French explorers wrote the word *Alkansas* and *Akamsca*, from the Indian tribe.
★**Arles** (*ärlz*, Fr., *ärl*). A city in the department of Bouches-du-Rhone, France, situated on the left bank of the eastern arm of the Rhone near its mouth.
Arlington house. A mansion on the heights opposite Washington, District of Columbia, in the midst of the national cemetery.
arm (*ärm*), *n.* the limb of the human body which extends from the shoulder to the hand; the branch of a tree, an inlet of the sea, etc.
arm (*ärm*), *n.* a weapon; a branch of the military service: *v. t.* to furnish or equip with weapons of offense or defense.
ar-ma-da (*är-mā'da*), *n.* a fleet of armed vessels.
ar-ma-ment (*är'ma-ment*), *n.* a body of forces equipped for war, either military or naval.
ar-ma-ture (*är'ma-tūr*), *n.* armor; that which serves as a means of defense; a piece of soft iron connecting the poles of a magnet.
arm-chair (*ärm'chār*), *n.* a chair furnished with supports for the elbows.
ar-mis-tice (*är'mis-tis*), *n.* a temporary cessation of hostilities; a truce.
arm-let (*ärm'let*), *n.* a bracelet, or piece of armor for the arm.
ar-mor (*är'mēr*), *n.* defensive arms; protective covering for the body in battle.
ar-mor-clad (*-klad*), *adj.* iron-clad, as a war vessel protected by steel plating.
ar-mor-er (*är'mēr-ēr*), *n.* formerly a maker of arms or armor.
ar-mo-ri-al (*är-mō'ri-al*), *adj.* pertaining to armor or to the arms or escutcheon of a family.
ar-mo-ry (*är'mō-ri*), *n.* [*pl* -ries, (*-riz*)], a place for arms or the assembly of soldiers.
ar-mo-zeen or **armozine** (*är-mō-zēn'*), *n.* a thick plain silk, generally black, used for clerical robes.
arm-pit (*ärm'pit*), *n.* the cavity beneath the shoulder.
arms (*ärmz*), *n. pl.* weapons of offense or defense; the military service.
ar-my (*är'mi*), *n.* [*pl.* armies (*'miz*)], a body of men trained and equipped for war.
ar-ni-ca (*är'ni-ka*), *n.* a genus of perennial herbs; from the roots or flowers of a species of this herb a valuable external remedy for bruises is made.
Arnold. Bailey says the name in Saxon, *Arnhold*, signifies "faithful to his honor"; Lower says the surname *Arnulfe* is the same as *Arnold*, in mediæval records sometimes Latinized *Ernulphus*, which might be translated both "help in war" and "helping lord," all doubtless from *ern-walt*, "powerful lord." Fr., *Arnaud;* Ger., *Arnold;* It., *Arnaldo;* Lat., *Arnoldus* or *Arnaldus.*
★**a-ro-ma** (*a-rō'ma*), *n.* [*pl.* aromas (*'maz*)], perfume; fragrance.
★**ar-o-mat-ic** (*ar-ō-mat'ik*) or **ar-o-mat-i-cal** (*'i-kal*), *adj.* giving out aroma.
★**Aroostook** (*a-rōō'stook*). River and county in Maine. An Indian word meaning "good river," or "clear of obstruction."
a-round (*a-round'*), *adv.* in a circle; on every side; roundabout.
a-rou-sal (*a-rou'zal*), *n.* the act of awakening.
a-rouse (*a-rouz'*), *v. t.* to excite or stir to action.
ar-raign (*ar-rān'*), *v. t.* to summon as a prisoner at the bar of a court to answer to a charge. [ACCUSE.]
ar-raign-ment (*ar-rān'ment*), *n.* an accusation.
ar-range (*ar-rānj'*), *v. t.* to put in proper order or sequence; classify. [DISPOSE.]
ar-range-ment (*ar-rānj'ment*), *n.* the act of putting in proper form or order; that which is ordered or disposed.
ar-rant (*ar'rant*), *adj.* notorious; unmitigated.
ar-ras (*ar'ras*), *n.* tapestry.
ar-ray (*ar-rā'*), *n.* order; the grouping or arrangement of a body of men as drawn up for battle: *v. t.* [*p. t.* and *p. p.* -ed, *p. pr.* -ing], to place or dispose in order; marshal; deck or dress.
ar-rear (*ar-rēr'*), *n.* the state of being behind-hand.
ar-rear-age (*ar-rēr'āj*), *n.* the state or condition of being in arrears.
ar-rest (*ar-rest'*), *v. t.* to stop or stay; check or hinder the action or motion of; seize, take, or apprehend by legal authority. [OBSTRUCT.]
ar-ri-val (*ar-rī'val*), *n.* the act of coming to a place.
ar-rive (*ar-rīv'*), *v. i.* to come to or reach.
ar-ro-gance (*ar'rō-gans*), *n.* an undue degree of self-importance; an exorbitant claim to dignity. [HAUGHTINESS, PRIDE]
ar-ro-gant (*ar'rō-gant*), *adj.* making exorbitant claims to dignity or estimation.
ar-ro-gate (*ar'rō-gāt*), *v. t.* to assume or lay claim to unduly, or with presumptuous pride.
ar-row (*ar'rō*), *n.* a slender, pointed missile weapon, usually feathered and barbed, made to be shot from a bow. [arrow.
ar-row-head (*-hed*), *n.* the head or barb of an
ar-se-nal (*är'sē-nal*), *n.* a magazine for the storage of arms and military stores.
ar-se-nic (*är'sē-nik*), *n.* an element of steel-gray color and brilliant luster, and exceedingly brittle.
ar-se-ni-ous (*är-sē'ni-us*), *adj.* pertaining to or containing arsenic.
ar-son (*är'sn*), *n.* the malicious firing of any building, agricultural produce, ship, etc.
art (*ärt*), *n.* the employment of means to the accomplishment of some end; the skillful adaptation and application to some purpose or use of knowledge acquired from nature. [BUSINESS]
ar-te-ri-al (*är-tē'ri-al*), *adj.* pertaining to an artery or the arteries: contained in an artery.
ar-te-ri-al-ize (*är-tē'ri-al-īz*), *v. t.* to convert venous blood into arterial blood.
ar-ter-y (*är'tēr-i*), *n.* [*pl.* arteries (*-iz*)], one of a system of tubes or vessels which convey the blood from the heart to all parts of the body.
ar-te-sian well (*är-tē'zhan wel*), a well formed by boring, often to great depth.
art-ful (*ärt'ful*), *adj.* cunning; crafty.
★**Ar-tha-bas-ka** (*är-tha-bas'ka*) **lake, Me.** Indian word, meaning "swampy."
Arthur. Armstrong derives this name from Gael. *ard*, "an eminent person"; literally, "high," "lofty," "exalted," "noble," "eminent," "excellent," "proud"; others derive it from *arth*, "a bear." Fr., *Arthur* or *Artus;* It., *Arturo;* Lat., *Arthurus.*
ar-ti-choke (*är'ti-chōk*), *n.* a plant with thistle-like foliage, and bearing large terminal flower-heads.
ar-ti-cle (*är'ti-kl*), *n.* a distinct portion or member; a single clause, item, or particular, as in a formal agreement or treaty; a concise statement; a prose composition, complete, in itself, in a newspaper.
★**ar-tic-u-late** (*är-tik'ū-lāt*), *v. t.* to joint; unite by means of a joint; to form words; utter in distinct syllables. [UTTER, SPEAK.]
ar-tic-u-la-tion (*är-tik-ū-lā'shun*), *n.* the act of jointing; the act of speaking distinctly.
★**ar-ti-fice** (*är'ti-fis*), *n.* an artful or crafty device, an ingenious expedient.
★**ar-ti-fi-cial** (*är-ti-fish'al*), *adj.* made or contrived by art; produced by human skill or labor.
★**ar-ti-fi-ci-al-i-ty** (*-fish-i-al'i-ti*) or **ar-ti-fi-cial-ness** (*-fish'al-nes*), *n.* the quality of being unreal or unnatural.
ar-ti-fi-cial-ly (*-fish'al-li*), *adv.* by human skill or contrivance.
ar-til-ler-y (*är-til'lēr-i*), *n.* cannon; great guns; ordnance of all kinds. [trade.
ar-ti-san (*är'ti-zan*), *n.* one skilled in any art or
ar-tist (*är'tist*), *n.* one skilled in any branch of high art.
ar-tis-tic (*är-tis'tik*) or **ar-tis-tic-al** (*'ti-kal*), *adj.* pertaining to art or to artists; characterized by æsthetic feeling.
art-less (*ärt'les*), *adj.* lacking art; unskillful.
Ar-yan (*är'yan*), *n.* the race of mankind from which the white people of Europe and southern Asia have descended.
as (*as*), *n.* [*pl.* asses (*as'ez*)], a Roman weight equivalent to the libra or pound.
as-a-fet-i-da or **as-a-fœt-i-da** (*as-a-fet'i-da*), *n.* a fetid sap obtained from the roots of several large umbelliferous plants.
★**A-sa-ka-sa** (*ā-sā-kā'sā*) **pagoda.** A picturesque Buddhist tower in Tokio, Japan.
★**as-bes-tos** (*as-bes'tos*) or **asbestus** (*'tus*), *n.* a fibrous variety of hornblende, possessing the property of being incombustible.
as-cend (*as-send'*), *v. i.* to take an upward direction; mount; go up; rise.
as-cend-ant (*as-send'ant*) or **ascendent** (*'ent*), *adj.* rising; superior; predominant; above the horizon.
as-cend-en-cy (*as-send'en-si*) or **ascendancy** (*'an-si*), *n.* a governing or controlling power or influence; domination.
as-cen-sion (*as-sen'shun*), *n.* the act of moving upward; a rising.
As-cen-sion day (*dā*), a movable feast to commemorate Christ's ascension into heaven.
Ascension island. Was so named because discovered by the Portuguese on Ascension day, 1501. An island in the Atlantic belonging to Great Britain.
as-cent (*as-sent'*), *n.* the act of rising; an upward movement.
as-cer-tain (*as-sēr-tān'*), *v. t.* to make certain.
★**as-cet-ic** (*as-set'ik*), *adj.* exceedingly rigid in the exercise of religious duties and mortification of worldly desires.
as-cribe (*as-krīb'*), *v. t.* to attribute, impute, or refer; assign.
as-crip-tion (*as-krip'shun*), *n.* the act of attributing or imputing.
a-sep-tic (*a-sep'tik*), *adv.* free from the germs of disease or putrefaction.
a-sex-u-al (*a-seks'ū-al*), *adj.* not sexual; produced by other than sexual processes.
ash (*ash*), *n.* the name popularly applied to trees of the genus Fraxinus.

ash (*ash*), *n.* [*pl.* ashes (*'ez*)], the residue of plant or animal substance remaining after subjection to red heat. [BODY.]

a-shamed (*ȧ-shāmd'*), *p. adj.* affected or touched by shame.

ash-en (*ash'n*), *adj.* pertaining to the ash-tree; made of ash; of the color of ashes; pale.

Ashley river, S. C. From Sir Anthony Ashley Cooper. Indian name of the stream *Kiauah*.

Asia (*ā'shi-ȧ*). From the Sanskrit *ushas*, signifying "land of the dawn."

Asia Minor. Lesser Asia.

ask (*ȧsk*), *v. t.* to request; seek to obtain by words.
Syn. ASK, inquire, interrogate, question. We perform all these actions in order to get information; but we *ask* for general purposes of convenience; we *inquire* from motives of curiosity; we *question* and *interrogate* from motives of discretion. Indifferent people *ask* of each other whatever they wish to know; learners *inquire* the reasons for things which are new to them; masters *question* their servants, or parents their children, when they wish to ascertain the real state of any case; magistrates *interrogate* criminals when the latter are brought before them.

a-skance (*ȧ-skans'*) or **a-skant** (*ȧ-skant'*), *adv.* sideways; obliquely; awry.

a-skew (*ȧ-skū'*), *adv.* obliquely; awry.

asp (*ȧsp*), *n.* a small venomous snake of Egypt.

as-par-a-gus (*as-par'ȧ-gus*), *n.* a plant having tender edible shoots.

as-pect (*as'pekt*), *n.* visual or mental appearance; look; mien; air; outlook or prospect.

as-pen (*as'pen*), *n.* a species of poplar whose leaves have the property of trembling in the slightest breeze.

as-per-i-ty (*as-per'i-ti*), *n.* [*pl.* asperities (*-tiz*)], roughness of surface; bitterness of taste or temper. [ACRIMONY.]

as-per-sion (*as-pẽr'shun*), *n.* a sprinkling, as of dust or water; slander.

★**as-phalt** (*as-falt'*, not *as'falt*), *n.* a compact, brittle variety of native bitumen, employed for the purpose of paving, roofing and cementing.

as-pho-del (*as'fō-del*), *n.* the name of several plants of the liliaceous genus Asphodelus.

★**as-phyx-i-a** (*as-fiks'i-ȧ*) or **as-phyx-y** (*ȧs-fiks'i*), *n.* the condition of lifelessness occasioned by suspension or interruption of respiration.

as-phyx-i-ate (*as-fiks'i-āt*), *v. t.* to suffocate.

★**as-pir-ant** (*as-pīr'ant*), *adj.* aspiring; ambitious: *n.* one who seeks to attain.

as-pi-rate (*as'pi-rāt*), *v. t.* to pronounce with a full breathing; to prefix the sound of the letter *h*.

as-pi-ra-tion (*as-pi-rā'shun*), *n.* the act of aspirating; an aspirated sound; a breath; ambition.

as-pire (*as-pīr'*), *v. i.* to seek after or desire with longing.

ass (*ȧs*), *n.* a quadruped of the genus Equus, allied to the horse.

as-sa-fœt-i-da. See *asafetida*.

as-sail (*as-sāl'*), *v. t.* to fall upon or attack with vehemence.

★**as-sail-ant** (*as-sāl'ant*), *adj.* assaulting; attacking.

as-sas-sin (*as-sas'sin*), *n.* one who slays treacherously or by covert assault.

as-sas-si-nate (*as-sas'si-nāt*), *v. t.* to kill, or attempt to kill, by secret or treacherous means.

as-sault (*as-sawlt'*), *n.* an attack with violence by physical means; an onslaught.

as-say (*as-sā'*), *n.* the act or process of determining by analysis the quantity or proportion of any one or more metals in a metallic compound.

★**as-say-er** (*as-sā'ẽr*), *n.* one who assays.

as-sem-blage (*as-sem'blāj*), *n.* the act of assembling.

as-sem-ble (*as-sem'bl*). *v. t.* to collect or gather together in one place or body.

as-sem-bly (*as-sem'bli*), *n.* [*pl.* assemblies (*-bliz*)], a collection or company of persons brought together in one place.

as-sem-bly-man (*-man*), *n.* a member of a legislative assembly.

as-sent (*as-sent'*), *v. i.* to admit as true; concede.
Syn. ASSENT, consent, approbation, concurrence. *Assent* respects matters of judgment; *consent* respects matters of conduct. We *assent* to what we admit to be true; we *consent* to what we allow to be done. *Approbation* is a species of *assent*, *concurrence* of *consent*. To approve is not merely to *assent* to a thing as right, but to determine upon it positively to be so; *concurrence* is properly the *consent* of many. *Assent* is given by equals or inferiors; *consent* by superiors; *approbation* by equals or superiors; *concurrence* by equals.

as-sert (*as-sẽrt'*), *v. t.* to maintain; declare positively, or with assurance.
Syn. ASSERT, maintain, vindicate. We *assert* anything to be true; we *maintain* it by adducing proofs, facts, or arguments; we *vindicate* our own conduct or that of another when it is called in question. [See *allege*.]
Ant. DENY, imply, insinuate, suppose.

as-ser-tion (*as-sẽr'shun*), *n.* the act of asserting.

as-sert-ive (*as-sẽrt'iv*), *adj.* positive; dogmatical.

as-sess (*as-ses'*), *v. t.* to fix or determine, as damages.

as-sess-or (*as-ses'sẽr*), *n.* one appointed to assess property or persons for taxation.

★**as-sets** (*as'sets*), *n. pl.* the property or effects of an insolvent debtor; the entire property of a trader or company of traders.

as-sev-er-ate (*as-sev'ẽr-āt*), *v. t.* to affirm or aver positively, or with solemnity. [ALLEGE.]

as-sib-i-late (*as-sib'i-lāt*), *v. t.* to pronounce with a hissing sound; to alter to a sibilant.

as-si-du-i-ty (*as-si-dū'i-ti*), *n.* [*pl.* assiduities (*-tiz*)], close application or unremitting attention to.

as-sid-u-ous (*as-sid'ū-us*), *adj.* constant in application.

as-sign (*as-sīn'*), *v. t.* to appoint, mark out, apportion, make over; fix; designate for a specific purpose. [ALLEGE, COMMIT.]

as-sig-na-tion (*as-sig-nā'shun*), *n.* the act of assigning; an appointment to meet.

★**as-sign-ee** (*as-si-nē'*, not *as-sī'nē*), *n.* one to whom an assignment of anything is made.

as-sign-ment (*as-sīn'ment*), *n.* a setting apart, allotment, or appointment.

as-sign-or (*as-si-nôr'*), *n.* one who assigns or transfers an interest.

as-sim-i-late (*as-sim'i-lāt*), *v. t.* to bring to conformity or agreement with something else.

as-sist (*as-sist'*), *v. t.* to help; aid; give support to. [HELP, ABET.]

as-sist-ance (*as-sist'ans*), *n.* help; furtherance.

as-sist-ant (*as-sist'ant*), *adj.* helping; lending aid. [ACCESSORY.]

★**as-size** (*as-sīz'*), *n.* [*pl.* assizes (*-sī'zez*)], a court or session of justice for the trial by jury of civil or criminal cases.

as-so-ci-ate (*as-sō'shi-āt*), *v. t.* to unite; join with; connect; accompany, as a companion: *n.* a companion; a confederate; an ally. [ACCESSORY.]

as-so-ci-a-tion (*as-sō-si-ā'shun*), *n.* the act of associating or state of being associated; union. [ACQUAINTANCE, CLASS.]

★**as-so-nance** (*as'sō-nans*), *n.* resemblance of sound.

★**as-so-nant** (*as'sō-nant*), *adj.* having resemblance of sound.

as-sort (*as-sôrt'*), *v. t.* to divide or separate into lots according to arrangement.

as-sort-ment (*as-sôrt'ment*), *n.* the act of assorting.

★**as-suage** (*as-swāj'*), *v. t.* to soften; mitigate. [ALLAY.]

as-sume (*as-sūm'*), *v. t.* to take to; to take in or into; take upon one's self; arrogate.

as-sump-tion (*as-sump'shun*), *n.* the act of assuming. [PRETENSE, PRIDE.]

as-sur-ance (*ȧ-shūr'ans*), *n.* the act of assuring.

as-sure (*ȧ-shūr'*), *v. t.* to make sure or certain; to inspire confidence by declaration or promise.

as-sured (*ȧ-shūrd'*), *p. adj.* made certain; guaranteed; self-possessed; insured: *n.* a person insured.

as-sur-ed-ly (*-lĭ*), *adv.* certainly; with assurance.

As-syr-i-an (*as-sir'i-an*), *adj.* pertaining to Assyria or to its inhabitants.

as-ter (*as'tẽr*), *n.* a genus of flowering plants with rosette-shaped flowers; any plant of the genus aster.

as-te-ri-al (*as-tē'ri-al*), *adj.* connected with, or related to, the stars.

as-ter-isk (*as'tẽr-isk*), *n.* the mark (*) used in printing as a reference to a marginal passage or footnote appended to the text, or to indicate letters or words omitted (* * *).

a-stern (*ȧ-stẽrn'*), *adj.* and *adv.* at or toward the hinder part of a ship.

as-ter-oid (*as'tẽr-oid*), *adj.* star-like; star-shaped.

asth-ma (*as'mȧ, az'mȧ* or *ast'mȧ*), *n.* respiratory disease, chronically recurrent and attended by difficulty of breathing.

a-stig-ma-tism (*ȧ-stig'mȧ-tizm*), or **a-stig-mism** (*'mizm*), *n.* a defect in the structure of the eye.

a-stir (*ȧ-stẽr'*), *adv.* or *adj.* on the move; active.

as-ton-ish (*as-ton'ish*), *v. t.* to strike with sudden wonder.

as-ton-ish-ment (*as-ton'ish-ment*), *n.* the state of being astonished.

as-tound (*as-tound'*), *v. t.* to strike with amazement.

★**as-tra-khan** (*as'trȧ-kan*), *n.* the skins of young lambs with curly wool, obtained from Astrakhan.

as-tral (*as'tral*), *adj.* pertaining to the stars; starry.

a-stray (*ȧ-strā'*), *adv.* out of the right way.

a-stride (*ȧ-strīd'*), *adv.* with the legs wide apart.

as-trin-gent (*as-trin'jent*), *adj.* binding; contracting, opposed to laxative.

as-tro-labe (*as'trō-lāb*), *n.* an instrument formerly employed for taking the altitude of the sun or stars.

as-trol-o-ger (*as-trol'ō-jẽr*), *n.* one who professes to forecast events by means of the stars.

as-trol-o-gy (*as-trol'ō-ji*), *n.* predestination by the stars.

as-tron-o-mer (*as-tron'ō-mer*), *n.* one who studies, or is versed in, astronomy.

as-tro-nom-ic (*as-trō-nom'ik*) or **as-tro-nom-i-cal** (*'i-kal*), *adj.* pertaining to astronomy, or according to astronomical laws.

as-tron-o-my (*as-tron'ō-mi*), *n.* the study of the heavenly bodies.

as-tro-pho-tog-ra-phy (*as-trō-fō-tog'rȧ-fi*), *n.* photography applied to the delineation of the heavenly bodies.

as-tro-phys-i-cal (*as-trō-fiz'i-kal*), *adj.* pertaining to the physical structure of the stars.

as-tute (*as-tūt'*), *adj.* shrewd; keenly penetrating; sagacious; cunning; crafty.

a-sun-der (*ȧ-sun'dẽr*), *adv.* apart; separately.

a-sy-lum (*ȧ-sī'lum*), *n.* [*pl.* asylums (*'lumz*)], an institution for the care or relief of the aged, destitute, or afflicted.

★**as-ym-met-ri-cal** (*as-im-met'ri-kal*), *adj.* not symmetrical.

at-a-vism (*at'ȧ-vizm*), *n.* the reversion, or tendency to revert, to the ancestral type of a species.

★**a-tax-i-a** (*ȧ-taks'i-ȧ*), or **a-tax-y** (*'i*), *n.* irregularities in the functions of the body.

a-the-ism (*ā'thē-izm*), *n.* disbelief in the existence of God.

a-the-ist (*ā'thē-ist*), *n.* one who disbelieves or denies the existence of God.

ath-e-ne-um, ath-e-næ-um (*ath-e-nē'um*), *n.* [*pl.* atheneums (*'umz*) and athenæa (*'ȧ*)], an institution, club, or building devoted to study.

Athens (*ath'enz*). A name of doubtful etymology; cannot be separated from that of Athene, the tutelary goddess of the city. Athens is either the city of Athene, as the Athenians believed, or Athene may be the goddess of Athens, or both names may be independent formations from the same root. The capital of Greece.

a-thirst (*ȧ-thẽrst'*), *adj.* in want of drink.

ath-lete (*ath'lēt*), *n.* a competitor for a prize in public games; one possessed of great physical strength.

ath-let-ic (*ath-let'ik*), *adj.* pertaining to athletes, or their performances.

ath-let-ics (*ath-let'iks*), *n. pl.* any system of athletic training by gymnastic exercises or outdoor sports.

Athol (*ath'ol*). Town in Worcester county, Massachusetts, said to have been named for James Murray, second duke of Athol.

a-thwart (*ȧ-thwart'*), *prep.* across; from side to side.

Atlanta (*at-lan'tȧ*), **Ga.** Originally, Marthasville. Atlanta was suggested by the late Edgar Thomson of Philadelphia, owing to its geographical position, immediately on the dividing ridge, separating the gulf and Atlantic waters.

Atlantic Ocean. Was known to the Greeks by the name of *Atlantikos pelagos*, from the Isle of Atlantes.

at-las (*at'las*), *n.* [*pl.* atlases (*-ez*)], a collection of maps in a volume.

at-mol-o-gy (*at-mol'ō-ji*), *n.* the science of aqueous vapor.

at-mom-e-ter (*at-mom'ē-tẽr*), *n.* an instrument for measuring the rate and amount of evaporation from a moist surface.

at-mos-phere (*at'mos-fẽr*), *n.* the aëriform fluid surrounding the earth, composed of a mechanical mixture of 79 parts by volume of nitrogen with 21 parts of oxygen, and a trace of carbonic acid and argon.

at-mos-pher-ic (*at-mos-fẽr'ik*), or **at-mos-pher-i-cal** (*'i-kal*), *adj.* pertaining to, or resembling, the atmosphere.

at-mos-pher-ic pres-sure (*presh'ẽr*), the pressure exerted in every direction upon a body by the atmosphere; equivalent to 14⅗ lbs. on the sq. in.

a-toll (*ȧ-tol'*), *n.* a coral island having the form of an outer ring of coral surrounding a basin or lagoon.

at-om (*at'um*), *n.* an ultimate indivisible particle of matter.

a-tom-ic (*a-tom'ik*) or **a-tom-i-cal** (*'i-kal*), *adj.* pertaining to, or consisting of, atoms.

at-om-i-zer (*at'um-ī-zẽr*), *n.* an instrument constructed to reduce a liquid to spray.

a-tone (*ȧ-tōn'*), *v. i.* [*p. t.* and *p. p.* atoned, *p. pr.* atoning], to make reparation or amends.

a-tone-ment (*ȧ-tōn'ment*), *n.* reparation or satisfaction; the recompense for sin typified by the sufferings and death of Christ.

a-tro-cious (*ȧ-trō'shus*), *adj.* wicked in the highest degree; extremely criminal or cruel. [HEINOUS.]

a-troc-i-ty (*ȧ-tros'i-ti*), *n.* [*pl.* atrocities (*-tiz*)], enormous wickedness.

★**at-ro-phy** (*at'rō-fi*), *n.* a wasting, or diminution in bulk, of the body: *v. i.* [*p. t.* and *p. p.* atrophied, *p. pr.* atrophying], to waste away; to dwindle.

at-tach (*at-tach'*), *v. t.* to fasten, or fix, to or on. [ADD, ADJACENT, ADDICTED.]

at-tach-ment (*at-tach'ment*), *n.* the act of attaching. [LOVE.]

at-tack (*at-tak'*), *v. t.* to assault; fall upon with force; assail with intent to overcome or to damage: *n.* the act of attacking in any sense of the word. [IMPUGN.]

at-tain (*at-tān'*), *v. t.* to achieve; gain; compass.

at-tain-der (*at-tān'dẽr*), *n.* the act of attainting, or the state of being attainted.

at-tain-ment (*at-tān'ment*), *n.* the act of attaining.

at-taint (*at-tānt'*), *v. t.* to taint; corrupt.

at-tempt (*at-tempt'*), *v. t.* to make an effort to accomplish; try; endeavor to perform.

at-tend (*at-tend'*), *v. t.* [*p. t.* and *p. p.* attended, *p. pr.* attending], to wait upon; accompany or be present with.

at-ten-dance (*at-ten'dans*), *n.* the act of attending; waiting on; presence.

at-ten-dant (*at-ten'dant*), *n.* one who attends in service of another. [ACCESSORY.]

at-ten-tion (*at-ten'shun*), *n.* the act of applying the mind to anything; consideration or regard for any person or thing. [HEED.]

at-ten-tive (*at-ten'tiv*), *adj.* heedful.

at-ten-u-ate (*at-ten'ū-āt*), *v. t.* to make thin or slender; weaken or reduce; thin out by dilution; rarefy.

at-test (*at-test'*), *v. t.* to bear witness to; certify as being genuine or true.

at-tic (*at'tik*), *n.* an uppermost room in a house immediately beneath the roof; a garret.
At-tic (*at'tik*), *adj.* pertaining to Attica, in Greece; classical; elegant.
★**at-tire** (*at-tīr'*), *v. t.* to dress; clothe; array; adorn: *n.* dress; clothes; habit.
at-ti-tude (*at'ti-tūd*), *n.* bodily position or posture. [ACTION.]
★**at-tor-ney** (*at-tẽr'ni*), *n.* one legally qualified to act for another in the transaction of business.
at-tract (*at-trakt'*), *v. t.* to draw to or toward.
Syn. ATTRACT, allure, invite, engage. That is *attractive* which draws the thoughts toward itself; that is *alluring* which awakens desires; that is *inviting* which offers persuasion; that is *engaging* which takes possession of the mind.
at-trac-tion (*at-trak'shun*), *n.* the power or act of attracting. [LOVE.]
at-tract-ive (*at-trakt'iv*), *adj.* having the power or tendency to attract. [PLEASANT.]
at-trib-u-ta-ble (*at-trib'ū-tȧ-bl*), *adj.* capable of being attributed.
at-trib-ute (*at-trib'ūt*), *v. t.* to ascribe, impute, assign.
at-tri-tion (*at-trish'un*), *n.* the act of wearing by rubbing.
at-tune (*at-tūn'*), *v. t.* to put in tune.
Aubrey (*aw'bri*). A name derived from the Old German name *Amalric*, signifying "powerful without a blot," or "rich in chastity." *Amalric* has been corrupted to *Alberic*, whence *Aubrey*.
au-burn (*aw'bẽrn*), *adj.* reddish-brown.
auc-tion (*awk'shun*), *n.* a public sale of property or effects.
auc-tion-eer (*awk-shun-ēr'*), *n.* one licensed to sell property or goods by public auction.
au-da-cious (*aw-dā'shus*), *adj.* bold; daring; spirited.
au-dac-i-ty (*aw-das'i-ti*), *n.* [*pl.* audacities (*-tiz*)], boldness; daring; spirit.
au-di-ble (*aw'di-bl*), *adj.* capable of being heard.
au-di-bly (*-bli*), *adv.* so as to be heard.
★**au-di-ence** (*aw'di-ens*), *n.* the act of hearing; admittance to a hearing or formal interview.
au-dit (*aw'dit*), *n.* official examination and verification of claims or accounts.
au-di-tor (*aw'di-tẽr*) *n.* a person appointed to examine and verify accounts and claims.
au-di-to-ri-um (*aw-di-tō'ri-um*), *n.* [*pl.* auditoriums (*-umz*) and auditoria (*-ȧ*)], the space in a theater or other public building assigned to the audience.
au-di-to-ry (*aw'di-tō-ri*), *adj.* pertaining to hearing, or to the sense or organs of hearing.
Audrey or **Audrie** (*aw'dri*). A feminine name corrupted from *Etheldreda*.
au-ger (*aw'gẽr*), *n.* a tool for boring holes.
aught (*awt*), *n.* anything; any part.
★**aug-ment** (*awg-ment'*), *v. t.* to increase; to enlarge in size or extent. [ADD.]
★**aug-men-ta-tion** (*awg-men-tā'shun*), *n.* increase; the increase in time-value of the notes of a theme; the period of increase in a fever before the crisis is reached
au-gur (*aw'gẽr*), *n.* one who officially predicted events by the observation and interpretation of natural signs or omens.
Syn. AUGUR, presage, forebode, betoken, portend. *Augur* signifies either to serve or make use of as an augury; to *forebode*, and *presage*, is to form a conclusion in one's own mind; to *betoken* or *portend* is to serve as a sign. Persons or things *augur*; persons only *forebode* or *presage;* things only *betoken* or *portend*. *Auguring* is a calculation of some future event, in which the imagination seems to be as much concerned as the understanding; *presaging* is rather a conclusion or deduction of what may be from what is; it lies in the understanding more than in the imagination; *foreboding* lies altogether in the imagination. Things are said to *betoken* which present natural signs; those are said to *portend* which present extraordinary or supernatural signs.
au-gust (*aw-gust'*), *adj.* grand; invested with grandeur and dignity.
August. Named by Augustus Cæsar after himself. Before this the month was known in Rome as *Sextilis*. In Gallia, however, and in other remote parts of the empire, the ancient name for this month was *Eaust*, or *Aust;* *i. e.*, "harvest."
Augusta (*aw-gus'tȧ*). The feminine form of Augustus, meaning "venerable." Danish, *Auguste;* Dutch, *Auguste;* Fr., *Auguste;* Ger., *Auguste* or *Augusta;* It , *Augusta;* Lat. *Augusta*.
Augusta, Me. Given in 1737, after the name of the English Princess Augusta Charlotte, eldest granddaughter of George II. The Indian name of the locality was *Cushnoc*.
Augustin. See *Augustine*.
Augustine (*ô-gus'tin, ô'gus-tin*). From the Latin *augustus*, "venerable." Dutch, *Augustinus*, or *Augustijn;* Fr., *Augustin;* It., *Augustino;* Lat., *Augustinus;* Port., *Agostinho;* Sp., *Augustin*.
auk (*awk*), *n.* the name given to the members of a family of arctic diving birds.
aunt (*ȧnt*), *n.* the sister of one's father or mother.
au-re-ate (*aw'rē-āt*), *adj.* golden; gilded.
Aurelia (*aw-rē'li-ȧ*). A feminine name derived from that of *Aurelia*, mother of Cæsar, formed from *Aurelius*, name of a Roman emperor.
au-re-o-la (*aw-rē'ō-lȧ*) or **au-re-ole** (*aw'rē-ōl*), *n.* a halo, radiance, or luminous cloud encircling the figures of Christ, the Virgin, and the saints.
★**au-ri-cle** (*aw'ri-kl*), *n.* the external ear.
au-ric-u-lar (*aw-rik'ū-lẽr*), *adj.* pertaining to the ear or to the sense of hearing.
au-ri-form (*aw'ri-fôrm*), *adj.* ear-shaped.
★**au-ro-ra** (*aw-rō'rȧ*), *n.* [*pl.* auroras (*'rȧz*) and auroræ (*'rē*)], the rising light of the morning; the dawn or dayspring.
Aurora. A feminine name from Latin *aurora*, "the dawn."
★**au-ro-ra bo-re-a-lis** (*bō-rē-ā'lis*), the northern lights.
au-rous (*aw'rus*), *adj.* pertaining to gold.
aus-cul-ta-tion (*aws-kul-tā'shun*), *n.* a method of detecting chest disease by observing the sounds arising in the part.
aus-pice (*aws'pis*), *n.* [*pl.* auspices (*'pi-sez*)], an omen drawn from birds.
aus-pi-cious (*aws-pish'us*), *adj.* having promise of success or happiness.
aus-tere (*aws-tēr'*), *adj.* sour; harsh; rough to the taste; severe.
aus-ter-i-ty (*aws-ter'i-ti*), *n.* severity of manner or life.
★**Austerlitz** (*aws'tẽr-lits*). The east town of the river Littawa in Austro-Hungary; *ost*, "the east."
Austin. Corrupted from *Augustin*.
Austin. County and city in Travis county, Texas, and town in Lonoke county, Arkansas, named for Stephen Fuller Austin, the first man to establish a permanent American colony in Texas (1844).
Australasia (*aws-tral-ā'shi-ȧ*). Meaning, "southern Asia," derived from the Latin *australis*, "southern."
Australia (*aws-trā'li-ȧ*). Meaning, "the south." The first indication of Australia on any map is in a small map of the world which forms the vignette to a Dutch work, *Journael vande Nassauche Vloot*, under Admiral v'Hermitte, in 1623-4-5-6. The place indicated is to the west of Cape Carpentaria of the present map, and is marked "*Land eendracht*."
Austria (*aws'tri-ȧ*). From the German, *österreich*, "the eastern empire," in contradistinction to the western empire, founded by Charlemagne.
au-then-tic (*aw-then'tik*), or **au-then-ti-cal** (*'ti-kal*), *adj.* genuine; original; duly authorized; true.
au-then-ti-cate (*aw-then'ti-kāt*), *v. t.* to make authentic.
au-then-tic-i-ty (*aw-then-tis'i-ti*), *n.* the quality of being authentic.
au-thor (*aw'thẽr*), *n.* the beginner or prime mover of anything. [WRITER.]
au-thor-i-ta-tive (*aw-thor'i-tā-tiv*), *adj.* having due authority.
au-thor-i-ty (*aw-thor'i-ti*), *n.* [*pl.* authorities (*-tiz*)], power or right to act or command; dominion.
au-thor-ize (*aw'thẽr-īz*), *v. t.* to vest with authority. [COMMISSION.]
au-to (*aw'tō*), *n.* an abbreviation in common use for automobile.
★**au-to-bi-o-graph-ic** (*aw-tō-bī-ō-graf'ik*) or **au-to-bi-o-graph-i-cal** (*'i-kal*), *adj.* pertaining to autobiography.
★**au-to-bi-og-ra-phy** (*aw-tō-bī-og'rȧ-fi*), *n.* [*pl.* autobiographies (*-fiz*)], a biography, account, or character sketch of a person written by himself.
au-toc-ra-cy (*aw-tok'rȧ-si*), *n.* [*pl.* autocracies (*-siz*)], absolute, uncontrolled authority.
au-to-crat (*aw'tō-krat*), *n.* an absolute prince or sovereign.
au-to-crat-ic (*aw-tō-krat'ik*) or **au-to-crat-i-cal** (*'i-kal*), *adj.* pertaining to autocracy; absolute.
au-to-graph (*aw'tō-grȧf*), *n.* a person's own handwriting; an original manuscript or signature.
au-tog-ra-phy (*aw-tog'rȧ-fi*), *n.* the science or study of autographs.
au-to-hyp-no-sis (*aw-tō-hip-nō'sis*), *n.* the state or condition of self-hypnotism.
au-to-mat-ic (*aw-tō-mat'ik*) or **au-to-mat-i-cal** (*'i-kal*), *adj.* having the power of self-motion or self-action.
au-tom-a-ton (*aw-tom'ȧ-ton*), *n.* [*pl.* automatons (*-tonz*), and automata (*-tȧ*)], that which possesses the power of spontaneous movement without consciousness.
★**au-to-mo-bile** (*aw-tō-mō'bil*, Fr. *aw-tō-mō-bēl'*), *n.* a vehicle moved by a source of power within itself; a motor-carriage.
au-to-mo-bil-ist (*aw-tō-mō'bil-ist*), *n.* one who uses and controls an automobile; a chauffeur.
au-to-nom-ic (*aw-tō-nom'ik*), or **au-ton-o-mous** (*-ton'ō-mus*), *adj.* pertaining to autonomy.
au-ton-o-my (*aw-ton'ō-mi*), *n.* [*pl.* autonomies (*-miz*)], the power or right of self-government; the state of political independence.
★**au-top-sy** (*aw'top-si*), *n.* a post-mortem examination.
au-to-sug-gest-i-bil-i-ty (*aw-tō-sug-jest-i-bil'i-ti*), *n.* the state or quality of being autosuggestive; ability to hypnotise one's self.
au-to-sug-gest-ive (*aw-tō-sug-jest'iv*), *adj.* fitted or tending to stimulate thought of itself; pertaining to, or characteristic of, autosuggestion.
au-to-tox-ic (*aw-tō-toks'ik*), *adj.* self-poisoning.
au-to-truck (*aw'tō-truk*), *n.* a self-moving truck; motor-truck.
au-to-type (*aw'tō-tīp*), *n.* a facsimile.
au-to-ty-pog-ra-phy (*aw-tō-tī-pog'rȧ-fi*), *n.* a kind of nature printing.
au-tumn (*aw'tum*), *n.* the season between summer and winter.
au-tum-nal (*aw-tum'nal*), *adj.* belonging or peculiar to autumn.
★**aux-il-i-a-ry** (*awgz-il'yȧ-ri*), *adj.* helping; aiding; assisting; subsidiary.
a-vail (*ȧ-vāl'*), *v. i.* to be of use, value, or service.
a-vail-a-bil-i-ty (*ȧ-vāl'ȧ-bil-i-ti*), *n.* the state or quality of being available.
av-a-lanche (*av'ȧ-lanch*), *n.* the sudden descent of a mass of compact snow or ice from the higher parts of a mountain.
av-a-rice (*av'ȧ-ris*), *n.* an inordinate or insatiable desire of gain.
av-a-ri-cious (*av-ȧ-rish'us*), *adj.* impelled by avarice.
av-a-tar (*av-ȧ-tär'*), or **av-a-ta-ra** (*-tā'rȧ*), *n.* the descent of a deity to earth in an incarnate form.
a-vaunt (*ȧ-vawnt'* or *ȧ-vänt'*), *interj.* begone!
a-venge (*ȧ-venj'*), *v. t.* to exact punishment or satisfaction for wrong or injury done to one's self or another.
Syn. AVENGE, punish, retaliate, revenge, vindicate, visit. To *avenge* is to *visit* punishment, in order to *vindicate* the righteous; to *revenge* is to inflict harm or suffering upon another through personal anger and resentment; *avenge* is unselfish; *revenge* is selfish; to *retaliate* may be necessary for self-defense.
★**Aventine** (*av'en-tin*) **hill.** One of the seven hills of ancient Rome.
av-e-nue (*av'e-nū*), *n.* a way or means of approach to a place; a passageway; drive.
a-ver (*ȧ-vẽr'*), *v. t.* [*p. t.* and *p. p.* averred, *p. pr.* averring], to affirm positively. [ALLEGE.]
av-er-age (*av'ẽr-āj*), *v. t.* to find the mean, as of unequal sums or quantities.
a-verse (*ȧ-vẽrs'*), *adj.* unwilling; unfavorable.
a-ver-sion (*ȧ-vẽr'shun*), *n.* opposition or repugnance of mind. [ANTIPATHY, ABOMINATION.]
a-vert (*ȧ-vẽrt'*), *v. t.* to turn aside or away.
A-ves-ta (*ȧ-ves'tȧ*), *n.* the sacred writings attributed to Zoroaster.
★**a-vi-a-ry** (*ā'vi-ā-ri*), *n.* [*pl.* aviaries (*-riz*)], a house, large cage, or inclosure for the keeping of birds.
★**a-vi-a-tion** (*ā'vi-ā-shun*), *n.* the art of flying.
★**a-vi-a-tor** (*ā'vi-ā-tẽr*), *n.* one who operates an aëroplane.
a-vid-i-ty (*ȧ-vid'i-ti*), *n.* greediness; eagerness.
av-o-ca-tion (*av-ō-kā'shun*), *n.* a subordinate or occasional occupation.
a-void (*ȧ-void'*), *v. t.* to keep away; to shun.
a-void-ance (*ȧ-void'ans*), *n.* the act of annulling or making void.
★**av-oir-du-pois** (*av-ẽr-dū-poiz'*), *n.* a system of weights in which one pound contains 16 ounces.
a-vouch (*ȧ-vouch'*), *v. t.* to affirm openly; maintain.
a-vow (*ȧ-vou'*), *v. t.* to declare openly; acknowledge.
a-vow-al (*ȧ-vou'al*), *n.* an open declaration.
a-wait (*ȧ-wāt'*), *v. t.* to wait for; look for or expect.
a-wake (*ȧ-wāk'*), *v. t.* [*p. t.* and *p. p.* awoke, awaked, *p. pr.* awaking], to arouse from sleep: *adj.* not sleeping; roused from sleep or inactivity.
a-wak-en (*ȧ-wāk'en*), *v. t.* to rouse from sleep.
Syn. AWAKEN, excite, provoke, rouse, stir up. We *awaken* by a simple effort; we *excite* by repeated efforts or forcible means; we *provoke* by words, looks, or actions. The tender feelings are *awakened;* affections, or the passions in general, are *excited;* the angry passions are commonly *provoked;* we are *roused* from an extraordinary state by extraordinary means; we are *stirred up* from an ordinary to an extraordinary state.
a-ward (*ȧ-ward'*), *v. t.* to adjudge; assign by judicial sentence, or arbitration.
a-ware (*ȧ-wâr'*), *adj.* on guard; watchful; apprised.
a-way (*ȧ-wā'*), *adj.* absent; at a distance; out of.
awe (*aw*), *n.* reverential fear; the feeling or emotion inspired by the contemplation of something sublime.
aw-ful (*aw'ful*), *adj.* inspiring or impressing with profound fear.
aw-ful-ly (*-li*), *adv.* in an awful manner.
awk. See *auk*.
awk-ward (*awk'wẽrd*), *adj.* wanting dexterity; unskillful.
awl (*awl*), *n.* a pointed instrument for piercing.
awn (*awn*), *n.* the beard or bristle-like appendage of the outer glume of wheat.
awn-ing (*awn'ing*), *n.* a covering of canvas or other cloth stretched upon a frame and used as a shelter.
a-wry (*ȧ-rī'*), *adj.* or *adv.* turned or twisted toward one side.
ax or **axe** (*aks*), *n.* a tool or instrument of steel, used for the hewing of timber and chopping of wood.
ax-il (*ak'sil*), *n.* the angle formed by the upper side of an organ or branch with the stem or trunk to which it is attached.
ax-ile (*ak'sil*), *adj.* pertaining to the axis.
★**ax-i-om** (*aks'i-um*), *n.* an indisputable self-evident truth.
ax-i-o-mat-ic (*aks-i-ō-mat'ik*) or **ax-i-o-mat-i-cal** (*'i-kal*), *adj.* pertaining to, or of the nature of, an axiom.
ax-is (*aks'is*), *n.* [*pl.* axes (*'ēz*)], the straight line, real or imaginary, passing through a body, upon or around which such body revolves, or is supposed to revolve.
ax-le (*aks'l*), *n.* the spindle which is inserted in the hub of a wheel, and on which the wheel revolves.
ax-le box (*boks*), a bushing in the hub of a wheel through which the axle passes.

ax-le tree (*aks'l trē*), a bar connecting the opposite wheels of a carriage.
aye (*ā*), *adv.* always; forever; continually.
aye or **ay** (*ā* or *ī*), *adv.* or *interj.* yes; yea; even so.
Ayr-shire (*âr'shir*), *n.* a fine breed of cattle from the country of Ayr, Scotland.
a-za-le-a (*ȧ-zā'lē-ȧ*), *n.* [*pl.* azaleas (*-ȧz*)], a genus of plants belonging to the rhododendron tribe, and remarkable for their flowers.
★**Aztec** (*az'tek*). Village in San Juan county, New Mexico, named for one of the native tribes of Mexico. The word is said to mean "place of the heron." Other interpretations give "white" or "shallow land where vapors arise." Humboldt gives "land of flamingoes." The word *azcalt* means "ant," but Bushmann says that this word has no connection with the name of the tribe.
az-ure (*azh'ūr* or *ā'zhūr*), *adj.* like the blue of the sky; cerulean: *n.* the clear blue of the sky.

B

baa (*bä*), *v. i.* to cry, as a sheep; bleat: *n.* the cry or bleating of a sheep.
★**Baalbec** (*bäl'bek* or *bäl-bek'*), **Baalbek, Baalbak.** An ancient city of Syria, situated on the slope of Anti-Libanus, thirty-four miles northwest of Damascus. It is the Greek Heliopolis, "city of the sun," famous for its ruins.
bab-ble (*bab'bl*), *v. i.* to utter indistinct or imperfect sounds; prattle; talk childishly.
babe (*bāb*), *n.* [*pl.* babes (*bābz*)], an infant or young child of either sex.
ba-boon (*bȧ-bōōn'*), *n.* the popular name of a large division of monkeys which inhabit Africa and Arabia.
ba-by (*bā'bi*), *n.* [*pl.* babies (*'biz*)], an infant of either sex; a small child.
baby farm (*bā'bi färm*), a place where young children are put out for nursing.
ba-by-ish (*bā'bi-ish*), *adj.* childish.
Bab-y-lo-ni-an (*bab-i-lō'ni-an*), *adj.* pertaining to Babylonia; magnificent; luxurious. Also *Babylonish.*
★**bac-ca-lau-re-ate** (*bak-ȧ-law'rē-āt*), *n.* the degree of bachelor of arts, science, etc.: *adj.* pertaining to the degree of bachelor.
★**bac-ca-rat** (*bak-kȧ-rä'*), *n.* a French card game played between a banker and an unlimited number of bettors with one or more packs of cards.
bac-cha-nal (*bak'kȧ-nal*) or **bac-cha-na-li-an** (*bak-kȧ-nā'li-an*), *adj.* indulging in or characterized by drunken revelry.
bach-e-lor (*bach'ē-lēr*), *n.* one who has taken the lowest university degree in any faculty; an unmarried man.
bach-e-lor's but-tons (*bach'ē-lērz but'unz*), the name popularly given to several flowering plants whose blossoms somewhat resemble buttons.
★**bac-il-la-ry** (*bas'il-lā-ri*), *adj.* consisting of bacilli.
★**ba-cil-lus** (*bȧ-sil'lus*), *n.* [*pl.* bacilli (*'lī*)], a genus of microscopic vegetable organisms with rod-like, jointed bodies or filaments in constant movement, present in many ferments, active in all stages of putrefaction, and associated with the earliest stages of malignant or zymotic disease.
back or **bac** (*bak*), *n.* a flat-bottomed ferryboat.
back (*bak*), *n.* the hinder part of the body in man, or in other animals the upper portion; the whole region of the spine, extending from the base of the neck to the buttocks; the dorsal region of a fish: *v. t.* to furnish with a back or backing; get upon the back of or mount; second or support; bet. [ABET.]
back-bite (*bak'bīt*), *v. t.* [*p. t.* backbit, *p. p.* backbit and backbitten, *p. pr.* backbiting], to slander or speak evil of in absence.
back-bone (*bak'bōn*), *n.* the bone of the back; the vertebral column of animals.
backer (*bak'ēr*), *n.* one who sustains or abets another.
back-gam-mon (*bak'gam-un*), *n.* a game played by two persons upon a table or board made for the purpose.
back-ground (*bak'ground*), *n.* ground in the rear; the distant portion of a landscape.
back-hand (*bak'hand*), *n.* writing which slopes backward or to the left.
back-hand-ed (*bak'hand-ed*), *adj.* with the hand turned backward; unfair; indirect.
back-ing (*bak'ing*), *n.* something placed behind to support or strengthen.
★**back-slide** (*bak-slīd'*), *v. i.* [*p. t.* backslid, backslided, *p. p.* backslid, backslidden, backslided, *p. pr.* backsliding], to slide back; apostatize.
back-stair (*bak'stâr*) or **back-stairs** (*'stârz*), *n.* stairs in the back part of a house.
back-ward (*bak'wērd*), *adj.* directed to the back or rear; unwilling; reluctant.
back-ward or **back-wards** (*'wērdz*), *adv.* with the back foremost; toward the back.
back-wa-ter (*bak'waw-tēr*), *n.* water caused to flow backward by obstruction of its course.
back-woods (*bak'woodz*), *n. pl.* forests or partially cleared land situated far from the centers of population.
ba-con (*bā'kn*), *n.* hog's flesh salted or pickled and dried, usually in smoke.
★**bac-te-ri-a** (*bak-tē'ri-ȧ*), *n. pl.* of bacterium.
bac-te-ri-o-log-ic-al (*bak-tē-ri-ō-loj'i-kal*), *adj.* of or pertaining to bacteriology.
bac-te-ri-ol-o-gist (*bak-tē-ri-ol'ō-jist*), *n.* a student of bacteriology.
★**bac-te-ri-ol-o-gy** (*bak-tē-ri-ol'ō-ji*), *n.* the scientific investigation or study of bacteria.
★**bac-te-ri-um** (*bak-tē'ri-um*), *n.* [*pl.* bacteria (*-ȧ*)], a microscopic vegetable organism varying in form.
bad (*bad*), *adj.* [*compar.* worse, *superl.* worst], the opposite of good; evil; ill; wicked; depraved.
badge (*baj*), *n.* a mark, sign, or token, or cognizance to denote occupation, allegiance.
badg-er (*baj'ēr*), *n.* a plantigrade carnivorous mammal, of nocturnal habits: *v. t.* to worry or annoy.
★**bad-i-nage** (*bad'i-nāj* or *bȧ-dē-nȧzh'*), *n.* light or playful raillery or banter.
bad-ly (*bad'li*), *adv.* wickedly; grievously; unskillfully; defectively; ill.
Baffin (*baf'fin*) **land.** In the Arctic Ocean, named for the famous arctic navigator who discovered it.
baf-fle (*baf'l*), *v.t.* to elude or circumvent by artifice.
bag (*bag*), *n.* a sack; a pouch; a wallet; a receptacle for holding anything: *v. t.* to inclose in a bag.
★**bag-a-telle** (*bag-ȧ-tel'*), *n.* a game played on a nine-holed board, baized and cushioned.
bag-gage (*bag'gāj*), *n.* the tents, clothing, utensils, etc., of an army; the trunks, bags, and other impedimenta or baggage of a traveler.
bag-ging (*bag'ging*), *n.* the act of putting into bags; coarse cloth or other material used for bags.
bag-gy (*bag'gi*), *adj.* having a loose or flabby appearance.
★**bagn-io** (*ban'yō*, not *bag'ni-ō*), *n.* a bath-house; a brothel.
bag-pipe (*bag'pīp*), *n.* a Scottish musical instrument, of shrill tone, consisting of a leathern wind bag from which air is forced by the performer's elbow into pipes.
bail (*bāl*), *v. t.* to set free or liberate from arrest on security for reappearance.
bail (*bāl*), *v. t.* to free from water by dipping; to lade out with a bucket or other utensil.
bai-liff (*bā'lif*), *n.* a sheriff's officer who serves processes.
bait (*bāt*), *v. t.* to harass or provoke, as by the setting on of dogs.
baize (*bāz*), *n.* a coarse woolen stuff, with a nap on one side.
bake (*bāk*), *v. t.* to cook or prepare food by subjection t. dry heat in a closed place.
bak-er (*bāk'ēr*), *n.* one whose business is to make bread, biscuit, etc.
bak-er-y (*bāk'ēr-i*), *n.* [*pl.* bakeries (*-iz*)], a place used for bread-making; a baker's shop.
bak-ing (*bāk-ing*), *n.* the quantity of anything baked at the same time; a batch.
bal-ance (*bal'ans*) *n.* an instrument for determining the weight of bodies; a pair of scales; a steel-yard: *v. t.* to weigh; compare; bring to a state of equipoise; keep in equilibrium; poise; equal or make equal; counterbalance; adjust or settle. [POISE.]
bal-an-cer (*bal'an-sēr*), *n.* one who, or that which, keeps anything in equilibrium.
bal-co-nied (*bal'kō-nid*), *adj.* having a projecting exterior platform or interior gallery.
bal-co-ny (*bal'kō-ni*), *n.* [*pl.* balconies (*-niz*)], a platform or gallery projecting from the wall of a building, inclosed by a balustrade or parapet.
bald (*bawld*), *adj.* without the natural or usual covering on the head or summit.
bal-der-dash (*bawl'dēr-dash*), *n.* a nonsensical jumble of words; silly talk or writing; a worthless mixture.
bald-head (*bawld'hed*), *n.* a man bald on the head.
bal-dric or **bal-drick** (*bawl'drik*), *n.* a broad belt, often richly ornamented, worn around the waist, or over one shoulder and across the breast.
Baldwin. From the Teutonic, probably meaning a "bold winner," or "powerful warrior"; by other authorities, "prince friend"; Danish, *Balduin;* Dutch, *Boudewijn;* Fr., *Baudouin;* Ger., *Balduin;* It. *Baldovino;* Lat., *Balduinus.*
bale (*bāl*), *n.* a large bundle or package of goods: *v. t.* to make up into a bale or bales.
bale (*bāl*), *n.* woe; calamity; mischief.
★**Balearic** (*bal-ē-ar'ik*) **Islands.** From the Greek *ballein,* "to throw"; so called because their inhabitants were skillful in the use of the sling. A group of islands in the Mediterranean.
bale-fire (*bāl'fīr*), *n.* a beacon or signal fire; a bonfire; a funeral pyre.
bale-ful (*bāl'ful*), *adj.* replete with deadly or malign influence.
balk or **baulk** (*bawk*), *n.* a strip or ridge of land left unplowed; a thick, heavy piece of timber; *v. t.* to thwart, check, or disappoint.
★**Balkan** (*bawl-kan'*). From *bāla,* "high," "high ridge"; also called Mount Hæmus, meaning "the snowy mount"; *hima,* "snow"; *balkh,* "high town." A mountain system in southeastern Europe.
ball (*bawl*), *n.* a round body; any mass resembling a sphere; a dance.
bal-lad (*bal'lad*), *n.* a short narrative poem, adapted for singing.
bal-last (*bal'last*), *n.* weighty material carried by a ship to insure stability.
ball-bearing (*bawl'bâr-ing*), *n.* a bearing containing loose balls of metal to reduce friction.
bal-let (*bal'lā* or *bal'let*), *n.* a theatrical representation in which a story is told, and actions, characters, and passions represented by gestures, accompanied by music and dancing.
bal-loon (*bal-lōōn'*), *n.* a large bag of prepared silk or other material, which, when inflated by hydrogen gas or heated air, ascends and floats in the atmosphere.
bal-loon jib (*bal-lōōn' jib*), a triangular sail used by yachts in a slight breeze.
bal-lot (*bal'lot*), *n.* a ball, ticket, or paper by which a vote is registered.
★**Ballston Spa** (*bawl'stun spä*). Village in Saratoga county, New York. Named for Rev. Eliphalet Ball, an early settler, the "spa" being added in reference to the medicinal springs resembling the celebrated watering places in Belgium.
balm (*bäm*), *n.* the oily aromatic exudation of certain trees or shrubs, used for healing or soothing.
balm of gil-e-ad (*ov gil'ē-ad*), the name of various kinds of fragrant resins.
balm-y (*bäm'i*), *adj.* having the qualities of balm.
★**bal-sam** (*bawl'sam*), *n.* an oily, aromatic, resinous substance obtained from certain trees or shrubs, and used medicinally or in perfumery.
★**Balthasar** (*bäl'tä-zär*). The Greek form of Belshazzar, "king protector"; Fr., *Balthazar* or *Balthasar;* It., *Baldassare;* Lat., *Balthasar;* Sp., *Baltasar.*
Baltic Sea. Denotes, in accordance with the Swedish *balt,* "a strait," "a sea full of balts, or straits." An arm of the Atlantic.
★**Baltimore** (*bawl'ti-mōr*). County and city in Maryland, and town in Windsor county, Vermont, named for the proprietor of a large tract of land in Maryland, Cecil Calvert, Lord Baltimore, who settled the province in 1635.
bal-us-ter (*bal'us-tēr*), *n.* a small column or pilaster to support the rail of a parapet or balustrade.
bal-us-trade (*bal'us-trād*), *n.* a series of small columns or pilasters, surmounted by a top rail or coping, serving as a parapet or protective railing.
bam-boo (*bam-bōō'*), *n.* the name of certain tropical grasses having thick-jointed stems of exceeding hardness, and attaining to a height of from 20 to 120 ft.
bam-boo-zle (*bam-bōō'zl*), *v. t.* to hoax.
ban (*ban*), *n.* in feudal times a public proclamation; excommunication; curse. [BANISH.]
★**ba-na-na** (*bȧ-nä'nȧ*, not *ban-an'ä*), *n.* a tropical herbaceous plant.
Banbury (*ban'bēr-i*). A town in Oxfordshire, England, situated on the Cherwell twenty-two miles north of Oxford.
band (*band*), *n.* that which binds together; that which connects; body of soldiers; a company of musicians forming an orchestra.
band-age (*band'āj*), *n.* a roller of cotton or other material used in dressing and binding up wounds.
ban-da-la (*ban-dä'lȧ*), *n.* manila white rope.
ban-dan-na or **ban-dan-a** (*ban-dan'ä*), *n.* a large silk or cotton handkerchief.
band-box (*band'boks*), *n.* a light box of pasteboard, etc., for holding bonnets.
ban-deau (*ban-dō'*), *n.* [*pl.* bandeaux (*-dōz'*)], a ribbon worn over the forehead.
band-ed (*band'ed*), *p. adj.* allied; confederated; having bands.
ban-dit (*ban'dit*), *n.* [*pl.* bandits (*'dits*) and banditti (*-dit'ti*)], an outlaw; a brigand.
ban-do-leer (*ban-dō-lēr'*), *n.* a broad leather belt, worn over the shoulder and across the breast, for holding ammunition.
band-saw (*band'saw*), *n.* an endless steel saw running on pulleys.
ban-dy (*ban'di*), *v. t.* [*p. t.* and *p. p.* bandied, *p. pr.* bandying], to throw or beat to and fro, as a ball in play; toss from one to another.
ban-dy (*ban'di*), *n.* a kind of cart or buggy used in India, drawn by oxen.
bane (*bān*), *n.* that which causes death, ruin, or destruction.
bane-ful (*bān'ful*), *adj.* poisonous; pernicious.
bang (*bang*), *v. t.* to beat, as with a club or cudgel; thump; handle roughly; produce a loud sound by or from (as to *bang* the door).
bang (*bang*), *n.* [*pl.* bangs], hair cut straight across the forehead so as to form a fringe.
★**Bangor** (*ban'gōr*), **Me.** Named by Rev. Seth Noble, from a well-known psalm tune of that name. Previously the section was known as Sunbury; the Indian name, *Con,* or *Kenduskeag.*
ban-ian or **ban-yan** (*ban'yan* or *ban-yan'*) *n.* a Hindu trader or merchant; a Bengali native who manages money affairs for Europeans; a loose gown for men, like that worn by the Hindus.
banian tree (*trē*), the Indian fig tree, which spreads over a large area by sending down shoots from its branches; these take root and become new trunks.
ban-ish (*ban'ish*), *v. t.* to condemn to exile.

Syn. BANISH, ban, discharge, dislodge, dismiss, drive out, eject, evict, exile, expatriate, expel, ostracize, oust. One may be *banished, exiled,* or *expatriated* from a country; but *expatriated* or *exiled* only from his own; one may *expatriate* or *exile* himself; he is *banished* by others; one may *banish* disturbing thoughts; care may *banish* sleep; to *expel* is to *drive out* with violence or rudeness.

Ant. HONOR, retain, sustain.

ban-ish-ment (*ban'ish-ment*), *n.* the act of expelling or driving away.
ban-is-ter or **bannister** (*ban'is-tēr*), *n.* corrupt forms of *baluster.*
ban-jo (*ban'jō*), *n.* a musical instrument, of from five to nine strings, having a neck like a guitar, and a circular body covered in front with tightly stretched parchment.

bank (*bangk*), *n.* a heap, mound, or ridge of earth; a steep acclivity; an elevation; an establishment for the custody, loan, exchange, or issue of money.

bank-er (*bangk'ẽr*), *n.* one who keeps a bank; a vessel employed in the cod-fishery on the banks of Newfoundland; the stone bench on which masons cut and square their work; a ditcher.

bank-rupt (*bangk'rupt*), *n.* a person legally declared to be unable to discharge his liabilities.

bank-rupt-cy (*bangk'rupt-si*), *n.* the state of being legally insolvent. [INSOLVENCY.]

Banks land. So called in compliment to Sir Joseph Banks, the eminent naturalist and president of the Royal Society of Great Britain.

ban-ner (*ban'nẽr*), *n.* an ensign, standard, or flag of a country, state, or order.

ban-nock (*ban'uuk*), *n.* a thick cake made of oatmeal.

banns (*banz*), *n. pl.* the proclamation in church of an intended marriage.

★**ban-quet** (*bang'kwet*, not *ban'kwet*), *n.* a sumptuous entertainment or feast.

ban-tam (*ban'tam*), *n.* a diminutive breed of domestic fowl.

ban-ter (*ban'tẽr*), *v. t.* to rail at good-humoredly.

bap-tism (*bap'tizm*), *n.* the application of water by an authorized administrator, in the name of the Holy Trinity, to a person, by sprinkling, affusion, or immersion, constituting the sacrament or rite by which he is initiated into the visible church of Christ.

bap-tis-mal (*bap-tiz'mal*), *adj.* pertaining to the ceremonial application of water.

Bap-tist (*bap'tist*). From the Greek, meaning a "baptizer"; Fr., *Baptiste;* Ger., *Baptist;* It., *Battista;* Lat., *Baptista;* Port., *Baptista;* Sp., *Bautista.* *n.* one of a Christian denomination who baptize adult believers only, and who maintain the necessity for immersion.

bap-tis-ter-y (*bap'tis-tẽr-i*) or **bap-tis-try** (*-tri*), *n.* [*pl.* baptisteries (*-iz*), -tries (*-triz*)], a building or portion of a building in which the rite of baptism is administered.

bap-tize (*bap-tiz'*), *v. t.* to administer the rite of baptism.

bar (*bär*), *n.* a piece of wood, metal, or other solid matter; a bank of sand, gravel, etc., obstructing navigation at the entrance to a harbor or mouth of a river; the railing inclosing the space occupied by counsel in courts of justice; the place in court where prisoners are stationed for trial or sentence; the members of the legal profession collectively: *v. t.* [*p. t.* and *p. p.* barred, *p. pr.* barring], to fasten with a bar; to hinder; obstruct; exclude. [OBSTRUCT.]

barb (*bärb*), *n.* the sharp point projecting backward from the extremity of an arrow, fish-hook, etc.

★**Barbados** (*bär-bā'dōz*). From the Latin *barba,* "a beard," in allusion to the beardlike streamers of moss always hanging from the branches of the trees. An island of British West Indies.

Barbara (*bär'bá-rá*). From the Greek, meaning "foreign, strange"; Dutch, *Barbara;* Fr., *Barbe;* Ger., *Barbara;* It., *Barbara;* Lat., *Barbara.*

bar-ba-ri-an (*bär'bā'ri-an*), *n.* a foreigner; a man in a rude, savage state.

bar-bar-ic (*bär-bar'ik*), *adj.* pertaining to or characteristic of savage or uncivilized people.

bar-ba-rism (*bär'bá-rizm*), *n.* an offense against purity of style or language; an uncivilized state or condition.

bar-bar-i-ty (*bär-bar'i-ti*), *n.* [*pl.* barbarities (*-tiz*)], the state of being uncivilized; savageness; cruelty.

bar-ba-rous (*bär'bá-rus*), *adj.* uncivilized. [CRUEL.]

★**Barbary** (*bär'bá-ri*). The land of the Berbers.

bar-be-cue (*bär'bẽ-kū*), *n.* a social or political entertainment at which animals are roasted whole, with appropriate surroundings.

bar-ber (*bär'bẽr*), *n.* one whose occupation is to shave the beard and cut and dress the hair.

★**Barberini** (*bär-bá-rē'nē*) **palace.** A palace in Rome, near the Quirinal, begun by Urban VIII., whose name was Carlo Barberini, and finished in 1640.

★**Barcelona** (*bär-sẽ-lō'ná*). Named from Hamilcar Barca, who founded it. A seaport of Spain.

bard (*bärd*), *n.* a poet and singer.

bard or **barde** (*bärd*), *n.* one of the ornaments and housings of a horse.

bare (*bär*), *adj.* naked; with the head uncovered.
Syn. BARE, scanty, destitute. *Bare* respects what serves for ourselves; *scanty* that which is provided by others. A subsistence is *bare;* a supply is *scanty; destitute* is said generally of whatever one wants. One is *destitute* of friends, of resources, or of comforts.
Ant. CLOTHED, covered.

bare-faced (*bär'fāst*), *adj.* with the face uncovered. [GLARING.]

★**bar-gain** (*bär'gen*, not *bär'gun*), *n.* an agreement between two or more parties with reference to the sale or transfer of property. [BUY.]

barge (*bärj*), *n.* a flat-bottomed vessel.

Bar Harbor. A village in Hancock county, Mount Desert Island, Me., so named from a sandy bar.

Baring (*bā'ring, bär'ing*) **Island.** Discovered by Captain Penny, received the name of Sir Francis Baring, first lord of the British admiralty.

bar-i-tone. See *barytone.*

★**ba-ri-um** (*bā'ri-um*), *n.* one of the elementary metals.

bark (*bärk*), *v. i.* to utter a sharp, short sound, as the cry of a dog; to cough: *n.* the sound or cry emitted by dogs.

bark, *n.* the exterior layer or rind of woody stems or trunks; Peruvian bark.

bark or **barque** (*bärk*), *n.* a three-masted vessel having the fore and main mast square-rigged, and the mizzenmast fore-and-aft rigged.

bar-kan-tine or **bar-ken-tine** (*bär'kán-tēn*), *n.* a three-masted vessel having the foremast square-rigged, and the main and mizzen mast fore-and-aft or schooner rigged.

bark-ing (*bärk'ing*), *n.* a sharp sound like that of a dog; coughing: *n.* the process of stripping bark from trees; the process of tanning leather and of dyeing with bark.

bar-ley (*bär'li*), *n.* the grain grown and used chiefly or malting.

bar-ley-corn (*bär'li-kôrn*), *n.* a grain of barley.

barm (*bärm*), *n.* the foam rising upon beer or other malt liquors when fermenting.

barm-y (*bärm'i*), *adj.* containing or consisting of yeast; frothy.

barn (*bärn*), *n.* a covered building for the storage of grain or other farm produce; a stable for cattle or horses.

Barnabas (*bär'na-bas*) or **Barnaby** (*bär'na-bi*). From the Hebrew *Bar Nebah,* which some translate "son of exhortation," or "son of consolation." It rather means "son of prophecy," from *barnebuah.* Danish, *Barnabas;* Dutch, *Barnabas;* Fr., *Barnabe;* Ger., *Barnabas;* It., *Barnaba;* Lat., *Barnabas;* Sp., *Bernabe.*

bar-na-cle (*bär'na-kl*), *n.* a cirriped crustacean, found adhering in groups or clusters to rocks or to the bottoms of ships, etc.

★**ba-rom-e-ter** (*bá-rom'ẽ-tẽr*), *n.* an instrument for measuring the weight or pressure of the atmosphere.

bar-on (*bar'un*), *n.* the title of an English peer of the lowest rank, next below a viscount; formerly the title of the judges of the court of exchequer.

ba-ro-ni-al (*ba-rō'ni-al*), *adj.* pertaining to a baron or a barony.

bar-o-scope (*bar'ō-skōp*), *n.* an instrument for indicating variations in the pressure of the atmosphere without actual measurement of its weight.

★**ba-rouche** (*bá-rōōsh'*), *n.* a roomy four-wheeled carriage with a folding or falling top.

bar-rack (*bar'rak*), *n.* a large building, or series of buildings, for the lodgment of soldiers.

bar-ra-try (*bar'rá-tri*), *n.* the practice of vexatiously inciting and encouraging to lawsuits or litigation; the committal by a ship's master, officer, or mariner, of an act of fraud, or breach of duty, whereby the owners, freighters, or insurers of the vessel are defrauded or injured.

★**bar-rel** (*bar'rel*, not *bar'rul*), *n.* a vessel or cask.

bar-rel, *v. t.* [*p. t.* and *p. p.* barreled, *p. pr.* barreling], to put or pack in a barrel.

bar-ren (*bar'ren*), *adj.* incapable of producing its kind.

bar-ri-cade (*bar-ri-kād'*), *n.* a fortification constructed in haste of such materials as are nearest to hand. [OBSTRUCT.]

bar-ri-er (*bar'ri-ẽr*), *n.* anything which hinders or obstructs; an obstacle to progress.

bar-ris-ter (*bar'ris-tẽr*), *n.* a member of the legal profession qualified to plead at the bar.

bar-row (*bar'rō*), *n.* a frame covered with boards, and furnished with handles at both ends, or with a pair of wheels and handles or shafts at one end; a hand-barrow.

Barrow island. In Arctic Ocean, discovered by Captain Penny, in 1850, named for John Barrow, son of Sir John Barrow, the eminent British statesman.

Barrow's strait. In Arctic Ocean, so called by Captain Penny, in compliment to John Barrow.

bar-ter (*bär'tẽr*), *v. i.* to traffic or trade by exchanging one commodity for another. [CHANGE.]

★**Bartholomew** (*bär-thol'ō-mū*). From the Hebrew *Bartolomai,* which, according to some, means "son of Ptolemy," but it translates rather "son of Tolmai." Danish, *Bartholomæus;* Dutch, *Bartholomeus;* Fr., *Barthelemi;* Ger., *Bartholomaus;* It., *Bartolommeo;* Lat., *Bartholomæus;* Port., *Bartholomeu;* Russ., *Varfolomei;* Sp., *Bartolome;* Sw., *Bartholomaus.*

ba-ry-ta (*bá-ri'tá*), *n.* the oxide of barium.

★**bar-y-tone** or **bar-i-tone** (*bar'i-tōn*), *adj.* intermediate between bass and tenor, as a male voice or instrument.

ba-salt (*bá-sawlt'* or *bas'awlt*), *n.* an igneous rock of greenish black color.

base (*bās*), *adj.* worthless; spurious; of mean spirit.

base, *n.* the part of a thing on which it rests; a foundation or groundwork; that which combines with an acid to form a salt.

base-ball (*bās'bawl*), *n.* a game of ball played by nine on a side; ball used in playing baseball.

base-man (*bās'man*), *n.* [*pl.* basemen (*'men*)], a player in baseball placed at the first, second, and third bases respectively.

base-ment (*bās'ment*), *n.* the lowest part of a structure; the lowest story of a building.

bash-ful (*bash'ful*), *adj.* easily disconcerted; modest to excess; diffident; shy. [MODEST.]

★**Basil** (*bá'sil,* not *bā'zil*). From the Greek, *basileios,* meaning "kingly." Danish, *Basilius;* Dutch, *Basilius;* Fr., *Basile;* Ger., *Basilius;* It., *Basilio;* Lat., *Basilius;* Russ., *Vasilii;* Sw., *Basilius.*

★**ba-sil-i-ca** (*bá-zil'i-ká,* not *bá-sil'i-ká*), *n.* [*pl.* basilicas (*-káz*)], in ancient Rome, a public hall of rectangular shape used for judicial assemblies; a magnificent church, chapel, or cathedral.

bas-i-lisk (*baz'i-lisk*), *n.* a fabulous creature, variously conceived as a kind of serpent; a crested lizard.

ba-sin (*bā'sn*), *n.* a circular vessel for holding water or other liquid.

ba-sis (*bā'sis*), *n.* [*pl.* bases (*'sēz*)], a foundation; the groundwork or fundamental principle of anything. [FOUNDATION.]

bask (*bäsk*), *v. i.* to lie in warmth; be exposed to genial heat.

bas-ket (*bäs'ket*), *n.* a vessel made of rushes, or other flexible material.

basque (*bäsk*), *n.* a kind of a woman's jacket with a short skirt.

Basque, *adj.* of or pertaining to the Basque race or language.

★**Basque provinces.** The provinces of Vizcaya, Guipuzcoa, and Alava, in Spain, united to Castile in the thirteenth and fourteenth centuries. From *bassoco,* "a mountaineer"; or, according to Humboldt, from *basoa,* "a forest."

bas-re-lief (*bā-rē-lēf'*), *n.* low relief.

bass (*bās*), *n.* the American lime tree.

bass (*bās*), *adj.* low; deep; grave: *n.* the lowest part in the harmony of a musical composition.

bass or **basse** (*bās*), *n.* the name of various edible fishes allied to the perch.

★**bas-soon** (*bas-sōōn'*), *n.* an instrument of the reed kind.

bast (*bast*), *n.* the tough inner fibrous bark of various trees, especially of the lime.

bas-tard (*bas'tẽrd*), *n.* a child begotten and born out of wedlock.

bas-tar-dy (*bas'tẽr-di*), *n.* the state of being illegitimate, or born out of lawful wedlock.

baste (*bāst*), *v. t.* to beat with a stick; to drip or pour melted fat or butter on meat while roasting.

★**Bastille** (*bás-tēl'*), **The.** An old castle in Paris used as a state prison, demolished by the populace in 1789.

bas-ti-na-do (*bas-ti-nā'dō*), *n.* an oriental mode of punishment, consisting in beating an offender upon the soles of his feet with a stick or rod.

★**bas-tion** (*bas'chun*), *n.* an earthwork faced with brick or stone, projecting from the angles of a rampart.

bat (*bat*), *n.* a heavy stick or club; the flattened club used in cricket or similar games; a batsman.

bat (*bat*), *n.* an insectivorous mammal furnished with wings formed by a membrane stretched between the elongated fingers, legs, and tail.

batch (*bach*), *n.* a quantity of anything produced at one operation; a group or collection of similar things.

bate (*bāt*), *v. t.* to lessen or reduce; deduct.

bath (*bäth*), *n.* [*pl.* baths (*bäthz*)], the act of washing or immersing the body in water; a medium through which heat is applied to a body.

Bath, Me. Name adopted February 17, 1781, from Bath, England.

bathe (*bāth*), *v. t.* to subject to a bath.

ba-thos (*bā'thos*), *n.* a ludicrous descent from the elevated to the commonplace in writing or speech.

Baths of Caracalla (*kar-á-kal'á*). Baths in ancient Rome, begun by Severus, 206 A. D. Named for the Emperor "Caracalla," a nickname for Marcus Aurelius Antoninus.

ba-thym-e-try (*bá-thim'ẽ-tri*), *n.* the art of sounding or of measuring sea depths.

ba-tiste (*bá-tēst'*), *n.* a kind of cambric.

★**bat-on** (*bat'un,* Fr. *bá-tōn'*), *n.* a staff or truncheon used as a weapon, or as a mark or badge of office.

★**Baton Rouge** (*bat'un rōōzh,* Fr. *bá-tōn' rōōzh*). City in East Baton Rouge parish, Louisiana. It is a French name, meaning "red staff" or "stick," given because of a tall cypress tree which stood upon the spot where it was first settled. Still another theory ascribes the name to the fact that a massacre by the Indians took place upon the spot upon the arrival of the first settlers.

bat-tal-ion (*bat-tal'yun*), *n.* a body of infantry usually forming a division of a regiment.

bat-ten (*bat'tn*), *v. t.* to make fat by plenteous living; fertilize or enrich: *v. i.* to grow or become fat.

bat-ten, *n.* a strip of wood used to fasten the edges of a tarpaulin to the deck of a ship: *v. t.* to fasten or form with battens.

bat-ter (*bat'tẽr*), *v. t.* to strike with heavy, repeated blows, so as to bruise.

bat-ter, *n.* a mixture of several ingredients, as flour, eggs, etc., beaten together.

bat-ter-y (*bat'tẽr-i*), *n.* [*pl.* batteries (*-iz*)], the act of battering or beating; a body of cannon, with its complement of officers, men, and equipments.

bat-tle (*bat'tl*), *n.* a fight or encounter between opposing forces; a combat.

bat-tle-ment (*bat'tl-ment*), *n.* an indented parapet, consisting of alternate solids and openings.

bau-ble (*baw'bl*), *n.* a trifling piece of finery; anything showy or gay.

Bavaria (*bá-vā'ri-á*). The country of the Boarii, a tribe related to the Boii.

bawd-ry (*bawd'ri*), *n.* obscenity; lewdness.

bawl (*bawl*), *v. i.* to cry out with a loud, full, and sustained sound. [CALL.]

bay (*bā*), *v. i.* to bark as a dog, with a deep sound, as hounds in the chase.

bay (*bā*), *adj.* red or reddish, approaching to chestnut (applied to horses): *n.* a horse of such color.

bay (*bā*), *n.* a recess in the shore of a sea or lake; the expanse of water between two capes or headlands.

★**Bayeux** (*bä-yō'*). Named from the *Bajoccas*, a Celtic tribe, the name meaning "great conquerors."

Bayeux tapestry. A strip of linen 231 feet long and twenty inches wide, preserved in the Library at Bayeux, France, embroidered with episodes of the Norman conquest of England from the visit of Harold to the Norman court until his death at Senlac, each with its title in Latin.

bay-o-net (*bā'ō-net*), *n.* a short, dagger-like instrument constructed to fix onto the barrel of a rifle.

★**bay-ou** (*bī'ōō* or *bī'ō*), *n.* [*pl.* bayous (*'ōōz*)], in the southern United States, an inlet from a gulf, lake or river.

★**Bayreuth** (*bī'rūth*. Ger. *bī'roit*), **Baireuth.** A former German burggraviate and principality, now in the northern part of Bavaria.

Bayreuth festival. A musical festival held at Bayreuth.

bay win-dow (*bā' win'dō*), the window or windows forming a bay or recess in a room, and extending outward from the wall, usually of a rectangular, semicircular, or polygonal shape.

ba-zaar or **ba-zar** (*bȧ-zär'*), *n.* in the east, a marketplace or exchange.

bdel-lium (*del'yum*), *n.* an aromatic gum resin brought from Africa.

beach (*bēch*), *n.* [*pl.* beaches (*'ez*)], the portion of the shore of the sea or of a lake which is washed by the waves; the strand.

bea-con (*bē'kn*), *n.* a signal of warning or guidance, on sea or land.

Beacon hill. An eminence in Boston, Mass., which has become famous in history. The old beacon, shown in all the early plans of the town, which gave the name to Beacon hill, was erected in 1634-1635, to alarm the country in case of invasion. It stood near the present statehouse, the exact spot being the southeast corner of the reservoir formerly standing on Temple street.

Beacon street. A street in Boston, Mass.

bead (*bēd*), *n.* a little perforated ball of any suitable material, intended to be strung with others.

bea-dle (*bē'dl*), *n.* a messenger or crier of a court.

bea-gle (*bē'gl*), *n.* a small hound, formerly used for hunting hares.

beak (*bēk*), *n.* the bill of a bird; the horny jaws or mandibles of other animals.

beak-er (*bēk'ẽr*), *n.* a large drinking cup or vessel with a wide mouth.

beam (*bēm*), *n.* a long piece of timber or iron used horizontally or vertically in the framework of a building.

beam-y (*bēm'i*), *adj.* emitting rays of light resembling a beam.

bean (*bēn*), *n.* the smooth, kidney-shaped seed of many leguminous plants.

bear (*bȧr*), *v. t.* [*p. t.* bore, bare, *p. p.* borne, *p. pr.* bearing], to support, hold up; carry or convey; suffer or endure; be answerable for; possess, wear: *v. i.* to be fruitful; to bear.

Syn. BEAR, yield. *Bear* conveys the idea of creating within itself; *yield*, that of giving from itself. Animals *bear* their young; inanimate objects *yield* their produce.

Ant. BARREN.

bear *n.* a plantigrade carnivorous mammal, belonging to the genus Ursus, the three best known species of which are the brown or black bear of Europe, the grizzly bear of North America, and the polar bear of the arctic regions.

beard (*bērd*), *n.* the hair that grows on the chin.

bear-ing (*bȧr'ing*), *n.* the act of enduring with patience; carriage; behavior; mutual relation of the parts of a whole.

bear-ish (*bȧr'ish*), *adj.* resembling a bear in qualities; rude; surly.

beast (*bēst*), *n.* any four-footed animal.

beat (*bēt*), *v. t.* [*p. t.* beat, *p. p.* beaten, beat, *p. pr.* beating], to strike with repeated blows; thrash; knock; pound or break; flatten or spread by blows; *n.* a recurring stroke; a pulsation; a throb; a footfall.

Syn. BEAT, defeat, overpower, rout, overthrow. A general is *beaten* in important engagements; he is *defeated* and may be *routed* in partial attacks; he is *overpowered* by numbers, and *overthrown* in set engagements.

beat-en work (*wẽrk*), metal shaped by being beaten on an anvil.

be-at-if-ic (*bē-ȧ-tif'ik*), *adj.* having power to bless or render perfectly happy; blissful.

be-at-i-fi-ca-tion (*bē-at-i-fi-kā'shun*), *n.* the act of blessing or the state of being blessed.

be-at-i-fy (*bē-at'i-fi*), *v. t.* [*p. t.* and *p. p.* beatified, *p. pr.* beatifying], to make happy.

be-at-i-tude (*bē-at'i-tūd*), *n.* felicity of the highest kind; consummate bliss.

Beatrice (*bē'ȧ-tris*, Fr. *bā-ȧ-trēs'*), **Beatrix** (*bē'ȧ-triks*). Feminine names formed from Latin *beatus*, "blessed, happy." Danish, *Beatrix;* Dutch, *Beatrix;* Fr., *Beatrice;* Ger., *Beatrix*, or *Beatrice;* It., *Beatrice;* Lat., *Beatrix;* Sp., *Beatriz;* Sw., *Beatrix*.

beau (*bō*), *n.* [*pl.* beaus or beaux (*bōz*)], a ladies' man or suitor.

★**Beaufort** (*bū'fûrt*), **S. C.** In honor of Henry, duke of Beaufort.

beau-te-ous (*bū'tē-us*), *adj.* possessing beauty.

beau-ti-ful (*bū'ti-ful*), *adj.* possessing qualities which charm and delight the senses; lovely.

beau-ti-fy (*bū'ti-fī*), *v. t.* [*p. t.* and *p. p.* beautified, *p. pr.* beautifying], to make or render beautiful.

beau-ty (*bū'ti*), *n.* [*pl.* beauties (*-tiz*)], assemblage of graces or properties which command the approbation of the senses.

bea-ver (*bē'vẽr*), *n.* a rodent quadruped of amphibious habits, and valued for its fur.

bea-ver, *n.* that portion of armor which served to protect the lower part of the face, and could be raised or depressed.

be-calm (*bē-käm'*), *v. t.* to make calm or still.

beck (*bek*), *n.* a nod, or other significant gesture.

beck-et (*bek'et*), *n.* a contrivance in ships to confine small spars or loose ropes, etc.

beck-on (*bek'n*), *v. i.* to make a signal to another by a motion of the head or hand.

be-cloud. See *cloud.*

be-come (*bē-kum'*), *v. i.* [*p. t.* became, *p. p.* become, *p. pr.* becoming], to pass from one state to another; come or grow to be.

be-com-ing (*bē-kum'ing*), *p. adj.* fit; suitable; seemly; proper; appropriate; befitting.

★**becque-rel rays** (*bek-rel' rāz*), radio-active energy manifested by radium.

bed (*bed*), *n.* an article of domestic furniture upon or within which one rests or sleeps; a layer or stratum of rock; a mass or heap of anything esembling a bed: *v. t.* [*p. t.* and *p. p.* bedded, *p. pr.* bedding], to furnish with a bed; plant, as flowers.

bed-bug (*bed'bug*), *n.* a flat-bodied, reddish-colored insect infesting furniture, etc.

bed-ding (*bed'ding*), *n.* a bed and its furniture.

be-dev-il (*bē-dev'l*), *v. t.* [*p. t.* and *p. p.* bedeviled, *p. pr.* bedeviling], to throw into disorder or confusion.

be-dev-il-ment (*bē-dev'l-ment*), *n.* the state of being vexatiously and bewilderingly disordered.

be-dew (*bē-dū'*), *v. t.* to moisten with dew.

be-diz-en (*bē-diz'n* and *-dīz'n*), *v. t.* to deck or adorn.

bed-lam (*bed'lam*), *n.* a madhouse.

bed-lam-ite (*bed'lam-it*), *n.* a madman.

★**Bed-ou-in** (*bed'oo-ēn* or *bed'oo-in*, not *bed'win*), *n.* a nomadic Arab or tent-dweller of Arabia, Syria, and northern Africa: *adj.* nomad.

bed-pan (*bed'pan*), *n.* a warming pan.

bed-rid (*bed'rid*) or **bedridden** (*'rid-n*), *adj.* confined to bed by age or infirmity.

bee (*bē*), *n.* a hymenopterous insect of the genus Apis; the hive or honey-bee kept in hives for the sake of its honey and wax.

beech (*bēch*), *n.* [*pl.* beeches (*'ez*)], a tree of the genus Fagus.

beech-en (*bēch'en*), *adj.* pertaining to, or made of the wood or bark of the beech.

beef (*bēf*), *n.* the flesh of an ox, bull, or cow, when killed.

bee-hive (*bē'hīv*), *n.* a box or other covering for a swarm of bees.

bee line (*bē' līn*), the straight course pursued by a bee returning laden to the hive; hence the most direct way from one point to another.

beer (*bēr*), *n.* a fermented alcoholic liquor made from any farinaceous grain, but generally from malted barley.

beet (*bēt*), *n.* a biennial plant, cultivated for its edible, succulent root.

bee-tle (*bē'tl*), *n.* a heavy wooden mallet employed for driving wedges; any insect belonging to the order of Coleopters, having four wings.

bee-tle (*bē'tl*), *v. i.* to be prominent, jut out, overhang, as a cliff.

bee-tling (*bē'tling*), *adj.* standing out; overhanging.

be-fall or **be-fal** (*be-fawl'*), *v. t.* [*p. t.* befell, *p. p.* befallen, *p. pr.* befalling], to happen or occur to.

be-fit (*bē-fit'*), *v. t.* [*p. t.* and *p. p.* befitted, *p. pr.* befitting], to suit; to be suitable; to become.

be-fore (*bē-fōr'*), *prep.* in front of; preceding in space, time, or rank; in presence or sight of.

be-fore-hand (*bē-fōr'hand*), *adv.* in advance.

be-friend (*bē-frend'*), *v. t.* to act as a friend to; aid or shield; assist.

beg (*beg*), *v. t.* and *v. i.* [*p. t.* and *p. p.* begged, *p. pr.* begging], to ask or supplicate in charity.

Syn. BEG, beseech, solicit, entreat, supplicate, implore, crave. To *beg* denotes a state of want; to *beseech*, *entreat*, and *solicit*, a state of urgent necessity; *supplicate*, and *implore*, a state of abject distress; *crave*, the lowest state of physical want. One *begs* with importunity; *beseeches* with earnestness; *entreats* by the force of reasoning and strong representation; one *solicits* by virtue of one's interest; *supplicates* by an humble address; *implores* by every mark of dejection and humiliation.

be-get (*be-get'*), *v. t.* [*p. t.* begot, begat, *p. p.* begotten, begot, *p. pr.* begetting], to procreate, as a father or sire.

beg-gar (*beg'gẽr*), *n.* one who entreats or supplicates with humility; one who makes it his business to beg or ask for alms.

beg-gar-ly (*beg'gẽr-li*), *adj.* like, or in the condition of, a beggar; poor; mean; contemptible.

beg-gar-y (*beg'gẽr-i*), *n.* the state of a beggar; extreme poverty; beggars collectively.

be-gin (*bē-gin'*), *v. i.* [*p. t.* began, *p. p.* begun, *p. pr.* beginning], to commence existence.

be-gin-ner (*be-gin'nẽr*), *n.* one who begins or originates.

be-gin-ning (*be-gin'ning*), *n.* the first cause; origin; the initial stage of anything.

be-gone (*be-gōn*), *interj.* go away; depart.

★**be-go-ni-a** (*bē-gō'ni-ȧ*), *n.* a genus of tropical plants, cultivated for their ornamental leaves.

be-grudge. See *grudge.*

be-guile (*bē-gīl'*), *v. t.* to impose upon or delude by guile; deceive.

be-guile-ment (*be-gīl'ment*), *n.* the act of beguiling; the state of being beguiled.

be-gum (*bē'gum*), *n.* in the East Indies, a princess or lady of high rank.

be-half (*bē-hȧf'*), *n.* advantage; favor; support; defense; stead.

be-have (*bē-hāv'*), *v. t.* to conduct, comport, demean, or acquit.

be-hav-ior (*bē-hāv'yẽr*), *n.* manner of behaving.

be-head (*bē-hed'*), *v. t.* to cut off the head of.

be-hest (*bē-hest'*), *n.* a command; precept.

be-hind (*bē-hīnd'*), *prep.* at the back of; in the rear of; remaining after; inferior to.

be-hind-hand (*bē-hīnd'hand*), *adv.* or *adj.* in a state of backwardness; late; in arrear.

be-hold (*bē-hōld'*), *v. t.* [*p. t.* and *p. p.* beheld, *p. pr.* beholding], to fix the eyes upon; have in sight.

be-hold-en (*bē-hōld'n*), *p. adj.* indebted; obliged. bound in gratitude.

be-hoof (*bē-hōōf'*), *n.* advantage; interest; profit; use; behalf.

be-hoove or **be-hove** (*bē-hōōv'*), *v. t.* to be meet, necessary, or fit for.

★**Behring** (*bē'ring*, Dan. *bā'ring*) **strait, Alaska.** Named by Captain Cook, in memory of Ivan Ivanovitch or Vitus Behring (who wrote it *Bering* or *Bereng; Behring*, a German corruption), a Russian navigator, its discoverer, in 1728.

be-ing (*bē'ing*), *n.* existence, as opposed to nonexistence.

be-la-bor (*bē-lā'bẽr*), *v. t.* to beat soundly.

be-late (*bē-lāt'*), *v. t.* to make late, or retard.

be-lay (*bē-lā'*), *v. t.* to make fast, as with a rope.

belch (*belch*), *v. t.* to eject with force or violence.

be-lea-guer (*bē-lē'gẽr*), *v. t.* to besiege; surround with an army so as to preclude escape.

bel-fry (*bel'fri*), *n.* a bell tower.

Belgium (*bel'ji-um*). Literally, the land of the Belgæ. A kingdom of Europe.

Bel-gra-vi-an (*bel-grā'vi-an*), *adj.* belonging to Belgravia, a fashionable quarter of London.

be-lie (*bē-lī'*), *v. t.* to calumniate; slander by lies.

be-lief (*bē-lēf'*), *n.* assent to anything proposed or declared, and its acceptance as fact.

be-liev-a-ble (*bē-lēv'ȧ-bl*), *adj.* capable of being accepted as truth; credible.

be-lieve (*bē-lēv'*), *v. t.* to accept as true, upon the ground of authority. [THINK.]

be-liev-er (*bē-lēv'ẽr*), *n.* one who accepts as truth something not actually demonstrated.

be-like (*bē-lik'*), *adv.* probably.

Belinda (*bē-lin'dȧ*). A feminine name. It may be from Italian *Bella Linda*, or corrupted from *bellino*, a diminutive of *bello*, "beautiful."

be-lit-tle (*bē-lit'tl*), *v. t.* to lower or depreciate.

bell (*bel*), *v. i.* to bellow, as deer in rutting time.

bell (*bel*), *n.* a hollow metallic vessel, usually cup-shaped, and giving forth a clear, ringing sound when struck.

Bella (*bel'lȧ*). An abbreviation of both *Isabella* and *Arabella*.

★**bel-la-don-na** (*bel-lȧ-don'nȧ*), *n.* the deadly nightshade, a poisonous plant used as medicine.

belle (*bel*), *n.* a young and handsome lady.

★**Belle isle** (*bel īl'*). French for "beautiful island."

belles-let-tres (*bel-let'tẽr*), *n. pl.* polite or elegant literature; light literature.

★**Bellevue** (*bel-vū'*). A noted castle near Cassel in Germany.

bel-li-cose (*bel'li-kōs*), *adj.* pugnacious.

bel-lig-er-ence (*bel-lij'ẽr-ens*), or **bel-lig-er-en-cy** (*-en-si*), *n.* the act or state of warfare.

bel-lig-er-ent (*bel-lij'ẽr-ent*), *n.* a power recognized as carrying on war; a person engaged in fighting.

bel-low (*bel'lō*), *v. i.* to utter a full resonant sound, as a bull; bawl or vociferate. [CALL.]

bel-lows (*bel'lōz*), *n. sing.* and *pl.* an instrument for producing a current of air.

bell-weth-er (*bel'weth-ẽr*), *n.* a wether or sheep which leads the flock with a bell on his neck.

bel-ly (*bel'li*), *n.* [*pl.* bellies (*'liz*)], that part of the human body which extends from the breast to the thighs, and contains the bowels.

be-long (*bē-lông'*), *v. i.* to be the property (of); go along with; be a part (of); be appendant (to).

be-long-ing (*bē-lông'ing*), *n.* that which belongs to one (generally used in the *pl.*)

★**Beloochistan** (*bel-ōō-chis-tän'*) or **Baluchistan.** From the Persian, meaning "the country of the Belooches, or Baluches," a people of Asia.

be-low (*bē-lō'*), *prep.* under in place; beneath; not so high; inferior to in rank or excellence.

belt (*belt*), *n.* a girdle or band used to encircle the waist; anything resembling a belt.

belt-ed cruis-er (*belt'd krōō'zĕr*), a quick-sailing ship, having a broad band of armor plating.
belt-ing (*belt'ing*), *n.* belts collectively.
★**Belvedere** (*bel-vē-dēr'* or *bel'vē-dēr*). A portion of the Vatican palace at Rome. The word is from the Italian, meaning "fair view."
be-mire (*bē-mīr'*), *v. t.* to soil by passing through mire.
be-moan (*bē-mōn'*), *v. t.* to lament; bewail.
bench (*bench*), *n.* [*pl.* benches (*'ez*)], a long seat; the seat where judges sit in court.
bend (*bend*), *v. t.* to curve or make crooked; move or deflect out of a straight line. [TURN, LEAN.]
bend-er (*bend'ĕr*), *n.* one who, or that which, bends.
be-neath (*bē-nēth'*), *prep.* lower in place, with reference to something above.
ben-e-dict (*ben'ē-dikt*), *n.* a newly married man.
Benedict or **Bennet** (*ben'net*). From the Latin *Benedictus*, "blessed"; Danish, *Benedict;* Dutch, *Benedictus;* Fr., *Benoit;* Ger., *Benedict;* It., *Benedetto;* Sp., *Benito*, or *Benedicto;* Sw., *Bengt.*
ben-e-dic-tion (*ben-ē-dik'shun*), *n.* the act of blessing; a blessing or expression of kind wishes.
ben-e-fac-tion (*ben-ē-fak'shun*), *n.* the act of conferring a benefit.
ben-e-fac-tor (*ben-ē-fak'tĕr*), *n.* one who confers a benefit.
ben-e-fice (*ben'ē-fis*), *n.* an ecclesiastical living; the revenue to maintain it. [LIVING.]
be-nef-i-cence (*bē-nef'i-sens*), *n.* active goodness.
be-nef-i-cent (*bē-nef'i-sent*), *adj.* characterized by benevolence.

Syn. BENEFICENT, bountiful or bounteous, generous, liberal, munificent. The sincere well-wisher to fellow-creatures is *beneficent* according to his means; he is *bountiful* in providing for the comfort and happiness of others; he is *munificent* in dispensing favors; he is *generous* in imparting his property; he is *liberal* in all he does. *Beneficence* and *bounty* are characteristics of the deity as well as of his creatures.

ben-e-fi-cial (*ben-ē-fish'al*), *adj.* contributing to a valuable end.
ben-e-fi-ci-a-ry (*ben-ē-fish'i-ā'ri*), *adj.* holding office under another, connected with the receipt of benefits or profits.
ben-e-fit (*ben'ē-fit*), *n.* an act of kindness; a favor conferred.
be-nev-o-lence (*bē-nev'ō-lens*), *n.* the disposition to do good; philanthropy. [MERCY.]
be-nev-o-lent (*bē-nev'ō-lent*), *adj.* kind; charitable; philanthropic. [HUMANE.]
ben-gal light (*ben-gawl' lit*), a firework, used also for signaling at sea, giving a steady bright blue light.
be-night (*bē-nīt'*), *v. t.* to enshroud in darkness.
★**be-nign** (*bē-nin'*), *adj.* of kind or gentle disposition.
★**be-nig-nant** (*bē-nig'nant*, not' *bē-ni'nant*), *adj.* kind; gracious. [HUMANE.]
be-nig-ni-ty (*bē-nig'ni-ti*), *n.* [*pl.* benignities (*-tiz*)], kindness of nature; graciousness. [MERCY.]
ben-i-son (*ben'i-zn*), *n.* a blessing.
Benjamin. From the Hebrew, *Binyamiyn*, which, according to the Samaritan Pentateuch, means "son of days"; *i. e.*, "son of old age." Fuerstius translates it "lucky son." The name means, literally, "son of the right hand"; figuratively, "son of good fortune." Danish, *Benjamin;* Fr., *Benjamin;* Ger., *Benjamin;* It., *Beniamino;* Lat., *Benjaminus.*
Bennet. See *Benedict.*
Bennett. This occurs frequently as a feminine name in the registers of Kent, England.
Bennington. Town in Hillsboro county, New Hampshire, and county, township, and town in Vermont, named for Governor Benning Wentworth of New Hampshire, who gave grants for the original town, in 1748.
bent (*bent*), *adj.* curved; crooked; strongly inclined.
ben-zene (*ben'zēn*), *n.* a volatile, highly inflammable liquid, obtained commercially by distillation from coal tar.
ben-zine (*ben-zēn'*), *n.* a liquid compounded of the volatile hydrocarbons of petroleum, and obtained by distillation.
★**ben-zoin** or **benzoine** (*ben-zoin'*), *n.* the resinous juice of gum benjamin.
be-queath (*bē-kwēth'*), *v. t.* to give or leave by will. [DEVISE.]
be-quest (*bē-kwest'*), *n.* the act of leaving by will.
be-reave (*bē-rēv'*), *v. t.* [*p. t.* and *p. p.* bereaved, bereft, *p. pr.* bereaving], to deprive; make destitute.
be-reave-ment (*be-rēv'ment*), *n.* the act of bereaving; the state of being bereaved.
★**Berenice** (*ber-ē-ni'sē*) or **Bernice** (*bĕr'nis*). From the Latin, "bringing victory." Ger., *Berenike;* It., *Berenice.*
Berlah (*bē-ri'ä*). The Hebrew *B'riyah*, Simonis translates "in calamitate," *i. e.*, "born in calamity"; Jones, "a calamity in his house"; and Tregelles, "gift."
Berkshire (*bĕrk'shir*). This is derived from *barruc*, "a polled or pollard oak," and *scyre*, "a shire"; from the shiremotes of that county being anciently held in the shade of a large polled oak tree.
Berkshire. County in Massachusetts, named for Berkshire, England.
Berlin (*bĕr'lin*, Ger. *ber-lēn'*). The capital of Prussia. The meaning of the name has been much discussed; it is probably Wendish, from *berle*, "uncultivated ground."
Ber-mu-da grass (*bĕr-mū'dä grăs'*), a valuable variety of pasture grass.
Bermudas (*bĕr-mū'dăs*). Named for the discoverer, Juan Bermudes, in 1522. One of a group of islands in the North Atlantic.
★**Berne** (*bern*, Ger. *bĕrn*). A Swiss canton which takes its name from its chief town, which grew up around a castle built in 1192, by Duke Berchtold V. of Zahringen. The name *Berne* appears in 1224 on a seal of the town. Not improbably, Berchtold gave the place the name of Berne in memory of Dietrich of Berne (Verona), a favorite hero of Alemannic poetry.
ber-ret-ta (*bĕr-ret'tä*), *n.* a red ecclesiastical cap.
ber-ry (*bĕr'ri*), *n.* [*pl.* berries (*'riz*)], any small pulpy or succulent fruit, as the strawberry, etc.
berth (*bĕrth*), *n.* ample or adequate sea room; a station which a ship occupies at anchorage or port; a room in a vessel set apart for officers or seamen.
ber-tha (*bĕr'thä*), *n.* a kind of lady's cape.
Bertha. From the Old German name, *Berta*, "bright or famous"; Dutch, *Bertha;* Fr., *Berthe;* Ger., *Berta;* It., *Berta;* Lat., *Bertha;* Sw., *Bertha.*
Bertram (*bĕr'tram*). The Old German name, from *brecht-ram*, "renowned for strength." Fr., *Bertrand;* Ger., *Bertram.*
★**Berwick** (Eng. *ber'ik*, U. S. *bĕr'wick*). This is a contraction of *Aberwick*, the meaning of which is a town (*wick*) at the mouth (*aber*) of a river.
ber-yl (*ber'il*), *n.* a mineral of varying colors, commonly green or greenish-blue.
be-seech (*bē-sēch'*), *v. t.* [*p. t.* and *p. p.* besought, *p. pr.* beseeching], to entreat; supplicate. [BEG.]
be-seem (*bē-sēm'*), *v. i.* and *v. t.* to be suitable or seemly.
be-set (*be-set'*), *v. t.* [*p. t.* and *p. p.* beset, *p. pr.* besetting], to set or stud.
be-set-ting (*bē-set'ting*), *adj.* habitually attacking or coming upon.
be-shrew (*bē-shrōō'*), *v. t.* to wish a curse to; execrate.
be-side (*bē-sīd'*), *prep.* at the side of; near. [ADJACENT.]
be-sides (*bē-sīdz'*), *adv.* more than that; in addition.
be-siege (*bē-sēj'*), *v. t.* to encompass with armed forces.
be-slob-ber (*bē-slob'bĕr*), *v. t.* to smear with anything running from the mouth.
be-smirch (*bē-smĕrch'*), *v. t.* to soil; discolor.
be-som (*bē'zum*), *n.* a brush of twigs for sweeping.
be-sot (*bē-sot'*), *v. t.* [*p. t.* and *p. p.* besotted, *p. pr.* besotting], to bestialize, as with drink.
be-span-gle (*bē-spang'gl*), *v. t.* to adorn with spangles.
be-speak (*bē-spēk'*), *v. t.* [*p. t.* bespoke, *p. pr.* bespeaking], to speak for beforehand.
bes-se-mer steel (*bes'sē-mĕr stēl*), steel made by forcing atmospheric air into cast iron while in a molten state.
Bessie. Corrupted from *Elizabeth.*
best (*best*), *adj.* having the highest degree of goodness or excellence; of the first quality or standing; most desirable, suitable, advantageous.
be-stead (*bē-sted'*), *v. t.* to profit; to accommodate.
★**bes-tial** (*bes'chal*), *adj.* belonging to a beast; animal.
bes-tial-i-ty (*bes-chal'i-ti*), *n.* the qualities or nature of a beast.
bes-tial-ly (*bes'chal-li*), *adv.* in a beast-like manner.
be-stir (*bē-stĕr'*), *v. t.* [*p. t.* and *p. p.* bestirred, *p. pr.* bestirring], to put into brisk or vigorous action.
best man (*best' man*), the groomsman or principal attendant on a bridegroom.
be-stow (*bē-stō'*), *v. t.* to give. [GIVE, CONFER.]
be-stow-ment (*bē-stō'ment*) or **be-stow-al** (*'al*), *n.* the act of giving or conferring; that which is given.
bet (*bet*), *v. t.* [*p. t.* and *p. p.* bet and betted, *p. pr.* betting], to stake or pledge on the event of a future contingency.
be-take (*bē-tāk'*), *v. t.* [*p. t.* betook, *p. p.* betaken, *p. pr.* betaking], to have recourse to; repair.
beth-el (*beth'el*), *n.* a hallowed spot.
be-think (*bē-think'*), *v. t.* and *v. i.* [*p. t.* and *p. p.* bethought, *p. pr.* bethinking], to call to mind.
be-tide (*bē-tīd'*), *v. t.* to happen to; befall.
be-times (*bē-tīmz'*), *adv.* in good season or time.
be-to-ken (*bē-tō'kn*), *v. t.* to indicate by signs. [AUGUR.]
bet-o-ny (*bet'ō-ni*), *n.* a common name for a woodland plant, with purple flowers.
be-tray (*bē-trā'*), *v. t.* to deliver into the hands of an enemy by treachery; violate by fraud or unfaithfulness.
be-tray-al (*bē-trā'al*), *n.* the act of betraying.
★**be-troth** (*bē-trōth'* or *bē-trōth'*), *v. t.* to contract to give any one in marriage.
★**be-troth-al** (*bē-trōth'al* or *bē-trō'thal*) or **be-trothment** (*'ment*), *n.* the act of engaging to marry.
bet-ter (*bet'tĕr*), *adj.* having good qualities in a greater degree than another; preferable or more suitable: *adv.* [used as *compar.* of well], in a superior or more excellent manner; more correctly or thoroughly. [AMEND.]
bet-ting (*bet'ting*), *n.* the act of making bets.
be-tween (*bē-twēn'*), *prep.* in the space or interval which separates.
be-twixt (*bē-twikst'*), *prep.* between, in the space which separates.
bev-el (*bev'el*), *v. t.* [*p. t.* and *p. p.* beveled (*'eld*), *p. pr.* beveling], to cut to a bevel angle: *v. i.* to slant or incline off to a bevel angle: *adj.* sloping.
bev-er-age (*bev'ĕr-āj*), *n.* drink of any description.
bev-y (*bev'i*), *n.* a flock of birds; a company.
be-wail (*bē-wāl'*), *v. t.* to mourn or weep aloud for.
be-ware (*bē-wār'*), *v. i.* to be on one's guard.
be-wil-der (*bē-wil'dĕr*), *v. t.* to lead into perplexity or confusion; puzzle.
be-wil-der-ment (*bē-wil'dĕr-ment*), *n.* the state of being greatly puzzled or perplexed.
be-witch (*bē-wich'*), *v. t.* to cast a spell over; subject to witchcraft.
★**bey** (*bā*), *n.* a governor of a province or district in the Turkish dominions.
be-yond (*bē-yond'*), *prep.* on the farther side of; before; past; out of reach of; later than.
bez-el (*bez'el*), *n.* the part of a finger ring which surrounds and holds fast the stone.
bi-an-nu-al (*bī-an'ū-al*), *adj.* occurring twice a year; semiannual.
★**bi-as** (*bī'ăs*), *n.* [*pl.* biases (*-ez*)], a cut oblique to the texture of the fabric; oblique; slanting; prejudice; a leaning of the mind. [PREJUDICE.]
bi-au-ric-u-late (*bī-aw-rik'ū-lāt*), *adj.* having two auricles, as the heart of the higher vertebrates.
bib (*bib*), *n.* a piece of cloth placed under an infant's chin to protect its clothes.
Bi-ble (*bī'bl*), *n.* the writings of the Old and New Testament.
Bib-li-cal (*bib'li-kal*), *adj.* of or pertaining to the Bible; scriptural.
bib-li-og-ra-pher (*bib-li-og'rä-fĕr*), *n.* one who is versed in bibliography
bib-li-og-ra-phy (*bib-li-og'rä-fi*), *n.* the science or description of books.
bib-li-ol-o-gy (*bib-li-ol'ō-ji*), *n.* an account of books; biblical literature; bibliography.
bib-li-o-ma-ni-a (*bib-li-ō-mā'ni-ä*), *n.* a mania for acquiring rare and curious books.
bib-li-o-ma-ni-ac (*bib-li-ō-mā'ni-ak*), *n.* one who has a mania for acquiring books.
★**bib-li-o-phile** (*bib'li-ō-fil*), *n.* a lover of books.
bib-li-o-the-ca (*bib-li-ō-thē'kä*), *n.* a library.
★**Bibliothèque Nationale** (*bē-blē-ō-tāk' nä-syŏN-näl'*). That is, "national library," the great French library, the largest in the world.
bib-u-lous (*bib'ū-lus*), *adj.* readily absorbing or imbibing fluids.
bi-cam-er-al (*bī-kam'ĕr-al*), *adj.* pertaining to or consisting of two legislative chambers.
bi-cen-te-na-ry (*bī-sen'tē-nā-ri*), *n.* the two hundredth anniversary of an event.
bi-ceps (*bī'seps*), *n.* the large flexor muscle of the arm and thigh.
bi-cip-i-tal (*bī-sip'i-tal*, or **bicipitous** (*-tus*), *adj.* having two heads.
bick-er (*bik'ĕr*), *v. i.* to engage in petty altercation.
bi-con-cave (*bī-kon'kāv*), *adj.* hollow on both sides.
bi-cus-pid (*bī-kus'pid*) or **bicuspidate** (*-āt*), *adj.* having two points or prominences.
★**bi-cy-cle** (*bī'si-kl*, not *bī'si-kl*), *n.* a vehicle for human propulsion, the machine being propelled by the feet by means of treadles attached to cranks or levers.
bid (*bid*), *v. t.* [*p. t.* bade (*bad*) or bid, *p. p.* bidden, bid, *p. pr.* bidding], to make an offer of; propose as a price; offer for; invite; request; ask.
bid-ding (*bid'ding*), *n.* an order; command; proclamation; the act of offering a price at auction.
bid-dy (*bid'di*), *n.* a fowl or chicken.
bide (*bid*), *v. i.* [*p. t.* and *p. p.* bided, *p. pr.* biding], inhabit; reside: *v. t.* to endure; suffer; wait for.
bi-en-ni-al (*bi-en'ni-al*), *adj.* happening once in two years; continuing or existing for two years.
bi-en-ni-al-ly (*-li*), *adv.* once in two years.
bier (*bēr*), *n.* a frame or carriage on which a corpse is placed, or conveyed to the grave.
bi-fur-ca-tion (*bī-fĕr-kā'shun*), *n.* a forking or division into two branches.
big (*big*), *adj.* [*compar.* bigger, *superl.* biggest], of great bulk or magnitude; grown up; pregnant. [GREAT.]
big-a-mist (*big'ä-mist*), *n.* one guilty of bigamy.
big-a-mous (*big'ä-mus*), *adj.* pertaining to and involving bigamy.
big-a-my (*big'ä-mi*), *n.* the offense of contracting a second marriage during the existence of a former marriage.
bight (*bīt*), *n.* a loop or bend of a rope; an open bay of the sea.
big-ot (*big'ot*), *n.* one who is unreasonably and blindly attached to a particular creed.
big-ot-ed (*big'ot-ed*), *adj.* characterized by bigotry.
big-ot-ry (*big'ot-ri*), *n.* [*pl.* bigotries (*-riz*)], the state or condition of a narrow-minded, intolerant person.
Big Sandy river, Ky. From its extensive sand bars, came the Indian names *Tatteroi*, *Chatteroi*, and *Chatterwha*. Known to the Miamis as *Wepoconecepewe*, and to the Delawares as *Sikeacepe*, "Salt river."
★**bi-jou** (*bē-zhōō'*), *n.* [*pl.* bijoux (*-zhōōz*)], a jewel; any small and elegantly finished article.
bi-lat-er-al (*bi-lat'ĕr-al*), *adj.* pertaining to, or having, two sides.
bi-lat-er-al-ly (*-li*), *adv.* in a two-sided manner; on both sides.
bil-ber-ry (*bil'bĕr-ri*), *n.* [*pl.* bilberries (*-riz*)], the berry from a shrub of the whortleberry family.
bile (*bil*), *n.* a yellowish-green bitter fluid secreted by the liver from the blood; ill-humor.
bilge (*bilj*), *n.* the bulging part of a cask; the broadest part of a ship's bottom.
bilge wa-ter (*bilj' waw-tĕr*), water which accumulates in the bilge of a ship.

bilge ways (*bilj' wāz*), the timbers supporting the cradle of a vessel, which upholds it.
bil-ia-ry (*bil'yȧ-ri*), *adj.* pertaining to the bile; conveying the bile.
bil-ious (*bil'yus*), *adj.* pertaining to the bile.
bil-ious-ness (*-nes*), *n.* the state of being bilious, having bile in excess.
bilk (*bilk*), *v. t.* to spoil the score of an opponent at cribbage; deceive or defraud.
bill (*bil*), *n.* the beak of a bird: *v. i.* to join bills, as doves; caress; *v. t.* to enter or publish in a bill or poster.
bill, *n.* a kind of hatchet with a blade hook-shaped toward the point.
bill, *n.* an account for goods sold, services rendered, or work done.
bill bro-ker (*bil' brō-kẽr*), one who negotiates the discount of bills of exchange.
bil-let (*bil'let*), *n.* a small paper in writing; a note or short letter.
bil-let, *n.* a small stick or log of wood, as for fuel.
bill-hook (*bil'hook*), *n.* a small kind of hatchet with a hooked point.
bil-liards (*bil'yẽrdz*), *n.* a game played on a rectangular, cloth-covered slate table, 12 ft. x 6 ft. in size, with ivory balls and a cue.
bil-lings-gate (*bil'lingz-gāt*), *n.* coarse or profane language; virulent abuse.
bil-lion (*bil'yun*), *n.* in the United States one thousand millions (1,000,000,000); in England a million millions (1,000,000,000,000).
bill of en-try (*en'tri*), a written account of goods entered at the custom-house.
bill of ex-change (*eks-chānj'*), a written order from one person or house (the drawer) to another (the acceptor) to pay to the person designated a certain sum.
bill of health (*helth*), a certificate given to the master of a vessel, specifying the state of the health of a ship's company or passengers at the time of her clearing a port.
bill of lad-ing (*lād'ing*), a document specifying the goods shipped on board a vessel, and signed by the master of such ship, acknowledging the receipt of the goods, and undertaking their safe conveyal to the consignee.
bill of mor-tal-i-ty (*môr-tal'i-ti*), the official return of the deaths (also births) occurring in a particular district within a certain period.
bill of sale (*sāl*), a formal instrument for the transfer of goods and chattels.
bil-lon (*bil'lon*, Fr. *bē-yôN'*), *n.* an alloy of gold and silver.
bil-lot (*bil'lot*), *n.* bullion in the mass or bar.
bil-low (*bil'lō*), *n.* a great wave of the sea. [WAVE.]
bil-ly goat (*bil'i gōt*), a male goat.
★**bi-me-tal-lic** (*bi-mē-tal'lik*), *adj.* pertaining to two metals.
★**bi-met-al-lism** (*bī-met'al-lizm*), *n.* the legalized adoption of two metals in the currency of a country.
bi-month-ly (*bī-munth'li*), *adj.* occurring once in two months.
bin (*bin*), *n.* a receptacle for any commodity.
bind (*bīnd*), *v. t.* [*p. t.* and *p. p.* bound, *p. pr.* binding], to confine or make fast with a cord or band; confine or restrain by physical force; unite by bonds of affection, loyalty, or duty: *v. i.* to tie up; confine by ligature or band.
bind-ing (*bīnd'ing*), *n.* the act of making fast; a bandage.
bin-na-cle (*bin'nȧ-kl*), *n.* a turret-shaped box containing a ship's compass.
★**Binnenhof** (*bin'nen-hōf*). Originally, the palace of Count William of Holland, at the Hague.
bin-o-cle (*bin'ō-kl* or *bī'no-kl*), *n.* a field or opera glass with two eye tubes.
★**bin-oc-u-lar** (*bin-ok'ū-lẽr* or *bī-nok'*), *adj.* having two eyes; pertaining to, or suited to, the use of both eyes.
★**bi-no-mi-al** (*bī-nō'mi-al*), *n.* an expression or quantity consisting of two terms connected by the sign plus (+) or minus (−).
bi-no-mi-al the-o-rem (*thē'ō-rem*), the celebrated theorem of Sir Isaac Newton, which expresses the law of formation of any power of a binomial.
★**bi-o-gen-e-sis** (*bī-ō-jen'ē-sis*) or **bi-og-e-ny** (*-oj'ē-ni*), *n.* the doctrine that living organisms can proceed only from, or be generated by, living parents or germs; the science of life development.
★**bi-o-graph** (*bī'ō-grȧf*), *n.* a device for projecting seemingly animated pictures upon a screen.
bi-og-ra-pher (*bī-og'rȧ-fẽr*), *n.* one who writes the history of a particular person's life.
★**bi-og-ra-phy** (*bī-og'rȧ-fi*), *n.* [*pl.* biographies (*-fiz*)], the history of the life of a particular person.
bi-o-log-ic (*bī-ō-loj'ik*) or **bi-o-log-i-cal** (*'i-kal*), *adj.* pertaining to the science of life.
bi-o-log-i-cal-ly (*-li*), *adv.* in accordance with the principles of biology.
bi-ol-o-gist (*bī-ol'ō-jist*), *n.* one who studies, or is skilled in, the science of living forms.
★**bi-ol-o-gy** (*bī-ol'ō-ji*, not *bī-ol'ō-ji*), *n.* the science of life in different forms.
bi-par-tite (*bī-pär'tīt*), *adj.* divided into two parts.
bi-par-ti-tion (*bī-pär-tish'un*), *n.* the act of dividing into two parts; the state of being so divided.
bi-ped (*bī'ped*), *adj.* having two feet: *n.* a two-footed animal.
bi-plane (*bī'plān*), *n.* a form of aëroplane consisting of two planes arranged one above the other; distinguished from monoplane and triplane.
birch (*bẽrch*), *n.* [*pl.* birches (*'ez*)], a tree or shrub belonging to the genus Betula.
birch-en (*bẽrch'en*), *adj.* pertaining to, or consisting of, birch.
bird (*bẽrd*), *n.* a warm-blooded feathered vertebrate, furnished with wings.
bird-lime (*bẽrd'līm*), *n.* a viscous substance prepared from holly bark, and used for entangling small birds in bird snaring.
bird's-eye (*bẽrdz'ī*), *adj.* seen from above, or at a glance, as by a flying bird; hence general, not minute or detailed.
bi-ret-ta (*bi-ret'tȧ*), *n.* a head-dress for men, of different shapes and colors.
★**Birmingham** (*bẽr'ming-am*). Probably a patronymic from the Boerings; *ham*, a home or family residence; literally "a place of shelter," from *heiman*, "to cover." Hence, originally, "Boering's home."
birth (*bẽrth*), *n.* the act of coming into life; the fact of being born.
birth rate (*rāt*), the increase of population as shown by the percentage of births registered.
birth right (*'rīt*), any right or privilege to which a person is entitled by birth
Biscay (*bis'kā*). Takes its name from the Spanish province of Biscaya or Viscaya, meaning the land of the Basques or Vasks.
bis-cuit (*bis'kit*), *n.* a kind of unraised bread, shaped in flat cakes and baked hard and dry.
bi-sect (*bī-sekt'*), *v. t.* to cut or divide into two equal parts.
★**bi-sex-u-al** (*bī-seks'ū-al*), *adj.* combining the organs of both sexes in one individual; hermaphrodite.
bish-op (*bish'up*), *n.* one of the highest orders of the Episcopal church; below the rank of an archbishop, but above that of a priest.
bish-op-ric (*bish'up-rik*), *n.* the office, dignity, or jurisdiction of a bishop; a diocese.
bish-op's staff (*bish'ups stȧf*), a crosier.
★**bisk** or **bisque** (*bisk*), *n.* soup or broth composed of several kinds of meat or fish boiled together.
★**Bismarck** (*biz'märk*). City in St. Francois county, Missouri, city in Burleigh county, North Dakota (capital of state), and many other places, named for Prince Otto von Bismarck of Germany.
bis-muth (*biz'muth*), *n.* one of the elements.
★**bi-son** (*bī'son*), *n.* the aurochs, or European bison, still preserved in Lithuania; the American bison, which is now nearly extinct.
★**bisque** (*bisk*), *n.* an unglazed white porcelain, used for statuettes, etc.
bi-sul-phate (*bī-sul'fāt*), *n.* a salt of sulphuric acid.
bi-sul-phite (*bī-sul'fīt*), *n.* a salt of sulphurous acid, half the hydrogen of which is replaced by the base.
bit (*bit*), *n.* a tool for boring; the metal mouthpiece of a bridle; the part of a key which enters the lock and acts on the bolts and tumblers.
bitch (*bich*), *n.* the female of the dog, or of other canine animals.
bite (*bīt*), *v. t.* [*p. t.* bit, *p. p.* bitten, bit, *p. pr.* biting], to seize, grip, cut, or crush with the teeth; sting, as an insect; cause smarting pain to: *n.* the act of seizing with the teeth; a wound made by the teeth, or by a sting.
bit-ing-ly (*'ing-li*), *adv.* in a sarcastic manner.
bitt (*bit*), *n.* a post of wood or iron to which cables are made fast.
bit-ter (*bit'tẽr*), *adj.* having a sharp taste; acrid. [ACRIMONY, FEUD.]
bit-tern (*bit'tẽrn*), *n.* a wading bird of the heron family.
bit-ters (*bit'tẽrz*), *n. pl.* liquor in which herbs or roots are steeped.
bi tu-men (*bi-tū'men*), *n.* mineral pitch.
bi-valve (*bī'valv*), *adj.* having two valves or shells united by a ligament.
★**biv-ouac** (*biv'wak* or *biv'oo-ak*), *n.* an encampment of soldiers in the open air, without tents.
bi-week-ly (*bī-wēk'li*), *adj.* occurring or appearing every two weeks; fortnightly.
★**bi-zarre** (*bē-zär'*), *adj.* odd in manner or appearance.
blab (*blab*), *v. t.* [*p. t.* and *p. p.* blabbed, *p. pr.* blabbing], to tell thoughtlessly: *v. i.* to talk indiscreetly.
black (*blak*), *adj.* destitute of light; of the darkest hue; opposed to white; enveloped in darkness.
black art, necromancy, magic.
black-ball (*blak'bawl*), *v. t.* to reject or exclude (as a candidate) by placing black balls in the ballot box.
black-ber-ry (*blak'ber-ri*), *n.* the fruit of several species of bramble.
black-bird (*blak'bẽrd*), *n.* an English song bird, a species of thrush.
black cur-rant (*blak' kur'rent*), the well-known garden bush, and its fruit.
black-en (*blak'n*), *v. t.* to grow black or dark: *v. t.* to make black; defame; asperse.
black fri-ar (*blak' fri-ẽr*), a friar of the Dominican order.
black-guard (*blag'gärd*, not *blak'gärd*), *n.* a man of low character,
black-guard-ism (*blag'gärd-izm*), *n.* the conduct or language of a blackguard.
black hole (*blak' hōl*), a dungeon or dark cell in a prison; a place of confinement for soldiers.
black-ing (*blak'ing*), *n.* a preparation for imparting a shining black polish to boots.
black-jack (*blak'-jak*), *n.* a large leathern vessel or drinking cup of old times.
black-leg (*blak'leg*), *n.* one who endeavors to obtain money by cheating at races or cards.
black let-ter (*blak' let-tẽr*), the old English or Gothic letter employed in the early manuscripts and the first printed books.
black-list (*blak'list*), *n.* a list of persons who are deemed to be deserving of punishment.
black-mail (*blak'māl*), *n.* a tax anciently paid in money, corn, or cattle, in the north of England, and in Scotland, to the agents of robbers, to secure protection from pillage; hence extortion by means of intimidation.
Black Sea. An inland sea of southeastern Europe, probably so named because it abounds with black rocks. Another explanation is that it is so called from its frequent storms and fogs.
black-smith (*blak'smith*), *n.* a smith who works in iron and makes iron utensils, horseshoes, etc.
Blackstone river, R. I. In memory of William Blackstone, an Episcopal minister, the first white settler of Rhode Island. Indian name of stream *Kehetuck*, "great river," changed afterward to *Pawtucket*, meaning "the forks," from *Pochatuck*, "a branch."
black-thorn (*blak'thôrn*), *n.* the sloe; a stick cut from the stem of the sloe.
blad-der (*blad'dẽr*), *n.* a thin, elastic, membranous bag in animals, in which a fluid is collected.
blade (*blād*), *n.* the leaf of a grass; the young stalk or spire of a grass; the broad, expanded part of a leaf; the cutting part of an instrument.
★**Blaise** (*blāz*). In France the name of the saint is found written *Blaise*, and in Germany *Blase*. In Latin it occurs as *Blasius* and *Blavius*. It seems to be the same as the Roman name *Blæsus*, which Statius renders "lisper." Danish, *Blastus;* Dutch, *Blasius;* Fr., *Blaise;* Ger., *Blasius;* It., *Biagio;* Lat., *Blasius;* Sp., *Blas;* Sw., *Blasius.*
blam-a-ble (*blām'ȧ-bl*), *adj.* worthy of being blamed.
blame (*blām*), *v. t.* to censure; reproach: *n.* an imputation of a fault; censure.

Syn. BLAME, censure, condemn, reprove, reproach, upbraid. To *blame* is simply to ascribe a fault to; to *censure* is to express disapprobation; the former is less personal than the latter. The thing more than the person is *blamed;* the person more than the thing is *censured.* A person may be *blamed* for his good nature, and *censured* for his negligence; *reprove* is even more personal than *censure.* A *reproof* passes from one individual to another, or to a certain number of individuals; *reproaching* and *upbraiding* are as much the acts of individuals as *reproving*, but the former denote the expression of personal feelings, and may be just or unjust; the latter is presumed to be divested of all personal feeling. [See *condemn.*]

Ant. APPROVE, commend, praise. [lustrous.
blanch (*blänch*), *v. t.* to take the color out; make
★**blanc-mange** (*blȧ-mȧNzh'*) *n.* a white jelly.
bland (*bland*), *adj.* mild; soft; gentle.
blan-dish-ment (*blan'dish-ment*), *n.* winning expressions or actions; artful caresses.
blank (*blangk*), *adj.* confounded; confused; dejected; empty; free from writing or printing; without result; absolute; complete.
blan-ket (*blang'ket*), *n.* a soft, loosely woven woolen cloth for a bed or as a covering.
blank verse (*vẽrs*), unrhymed verse.
blare (*blär*), *v. i.* to bellow; to give forth a loud sound like a trumpet.
blar-ney (*blär'ni*), *n.* soft, wheedling speech; flattery: *v. t.* [*p. t.* and *p. p.* blarneyed, *p. pr.* blarneying], to influence or talk over by soft words.
blar-ney stone, *n.* a stone in the wall of Blarney castle, Cork, Ireland.
bla-sé (*blȧ-zā'*), *adj.* exhausted by excess of pleasure.
★**blas-pheme** (*blas-fēm'* not *blas'fēm*), *v. t.* to speak irreverently of God or sacred things; mock; revile.
blas-phe-mous (*blas'fē-mus*), *adj.* uttering, containing, or exhibiting blasphemy; profane.
blas-phe-my (*blas'fē-mi*), *n.* [*pl.* blasphemies (*-miz*)], impious, profane, or mocking speech concerning God or sacred things.
blast (*blȧst*), *n.* a violent or sudden gust of wind; a forcible stream of air from an orifice; any sudden pernicious influence upon plants or animals. [BREEZE.]
blaze (*blāz*), *n.* a body of flame; brilliant sunlight; a sudden bursting out; active display; a white mark cut on a tree to serve as a guide.
bla-zon (*blā'zn*), *n.* a coat of arms; a description of armorial bearings; ostentatious display.
bleach (*blēch*), *v. t.* to make white by removing color.
bleak (*blēk*), *adj.* exposed to wind and cold; desolate; unsheltered; cheerless; piercing.
blear (*blēr*), *adj.* sore or dim from a watery discharge (said of the eyes).
bleat (*blēt*), *v. i.* to cry as, or like, a sheep: *n.* a cry, as of a sheep.
bleed (*blēd*), *v. i.* [*p. t.* and *p. p.* bled, *p. pr* bleeding], to emit or lose blood; to shed one's blood.
blem-ish (*blem'ish*), *v. t.* to injure; stain; mar; tarnish; defame: *n.* any defect or deformity.

Syn. BLEMISH, stain, spot, speck, flaw, defect, fault. Whatever takes off from the seemliness of appearance is a *blemish.* In works of art the slightest dimness of color, or want of proportion, is a *blemish.* A *stain* or *spot* sufficiently characterizes itself, as that which is superfluous and out of its place; a *speck* is a small *spot*, and a *flaw*, which is confined to hard substances.

mostly consists of a *faulty* indenture on the outer surface. A *blemish* tarnishes; a *stain* spoils; a *spot, speck,* or *flaw* disfigures; *defect* consists in the want of some specific property in an object; *fault* conveys the idea not only of something wrong, but also of its relation to the author. There is a *blemish* in fine china; a *defect* in the springs of a clock; and a *fault* in the contrivance.

blench (*blench*), *v. i.* to start back: flinch; quail.

blend (*blend*), *v. t.* to mix together, so that the things mixed cannot be separated or individually distinguished. [MIX.]

blende (*blend*), *n.* native sulphide of zinc.

★**Blenheim** (*blen'im,* not *blen'him*) **palace.** A mansion at Woodstock, Oxfordshire, England, built by Vanbrugh at national cost, 1705-16, for the first duke of Marlborough.

bless (*bles*), *v. t.* [*p. t.* and *p. p.* blessed and blest, *p. pr* blessing], to consecrate. [HOLY.]

bless-ed-ness (*bles'ed-nes*), *n.* the state of being blessed; happiness; heavenly joys.

bless-ing (*bles'ing*), *n.* an invocation of happiness on another; a benediction. [MERCY.]

blight (*blīt*), *n.* a disease in plants, which causes them to wither partly or wholly.

blind (*blīnd*), *adj.* destitute of the sense of sight; without light, morally or intellectually; not discriminating; inconsiderate; hidden.

blind-fold (*blīnd'fōld*), *adj.* having the eyes covered so as to be unable to see.

blind-ness (*'nes*), *n.* want of sight; want of discernment; ignorance; heedlessness.

blink (*blingk*), *v. i.* to wink with or as with the eye; twinkle; to get a glimpse; glimmer: *v. t.* to evade or shut one's eyes to; shirk.

blink-er (*blingk'ẽr*), *n.* one who blinks; a leather flap placed one on each side of a horse's bridle to prevent him from seeing any object except in front.

bliss (*blis*), *n.* the highest degree of happiness.

blis-ter (*blis'tẽr*), *n.* a vesicle or pustule on the skin containing watery matter or serum.

blithe (*blīth*), *adj.* gay; joyous; glad; mirthful; sprightly.

bliz-zard (*bliz'zẽrd*), *n.* a furious gale of wind, usually accompanied with fine, blinding snow.

bloat (*blōt*), *v. t.* to cure or dry in smoke.

bloat *v. t.* to cause to swell; make turgid or swollen.

block (*blok*) *n.* any unshaped solid mass of matter, as of wood, stone, etc.: *v. t.* to obstruct so as to hinder the passage of persons or things; stop up; obstruct.

block-ade (*blok-ād'*) *n.* the shutting up of a place, as a port, by hostile ships or troops.

block-age (*blok'āj*), *n.* an obstruction.

block-head (*blok'hed*), *n.* a stupid fellow.

block-house (*blok'hous*), *n.* an edifice constructed of heavy timber, and furnished with loopholes for musketry.

block sys-tem (*blok' sis-tem*), a system of working railway traffic by which the line is divided into short sections, no train being allowed to leave a section until the next section is signaled clear.

blond or **blonde** (*blond*), *adj.* of a fair color; light colored.

blood (*blud*), *n.* the fluid which circulates in the arteries and veins of an animal.

blood-ed, *adj.* of the best stock or breed.

blood-hound (*blud'hound*), *n.* a breed of large dogs remarkable for their acuteness of smell.

blood-i-ly (*blud'i-li*), *adv.* in a bloody manner; relentlessly; cruelly.

blood-i-ness (*-nes*), *n.* the state of being bloody; disposition to shed blood.

blood-stone (*blud'stōn*), *n.* a dark green variety of quartz spotted with red jasper.

blood-y (*blud'i*), *adj.* pertaining to, containing, or resembling blood; blood-stained; cruel; murderous.

bloom (*blōōm*), *n.* a blossom; the flower of a plant; the blossoming of flowers; a state or period of health and growth, promising higher perfection, or exhibiting freshness and beauty.

bloom-er (*blōōm'ẽr*), *n.* a costume for women sought to be introduced by a Mrs. Bloomer, of New York, in 1849-50, and consisting of a short skirt, loose trousers, fastened round the ankle.

blos-som (*blos'sum*), *n.* the flower of a plant; the state of flowering; bloom.

blot (*blot*), *n.* a spot or stain; an obliteration or erasure; a blemish; disgrace: *v. t.* [*p. t.* and *p. p.* blotted, *p. pr.* blotting], to spot or stain; mar.

Syn. BLOT OUT, expunge, rase or erase, efface, cancel, obliterate. Letters are *blotted out,* so that they cannot be seen again; they are *expunged,* so as to signify that they cannot stand for anything; they are *erased,* so that the space may be reoccupied with writing; *efface* does not designate either the manner or the object; inscriptions on stone may be *effaced* by rubbing them off so as not to be visible; *cancel* is principally confined to written or printed characters; they are *canceled* by striking through them with the pen; letters are *obliterated* which are in any way made illegible.

Ant. APPROVE, enforce, record, write.

blotch (*bloch*), *n.* a large, irregular spot; a clumsy daub; an eruption, or pustule.

★**blouse** (*blouz,* Fr. *blooz*), *n.* a light, loose overgarment.

blow (*blō*), *n.* a mass of blossoms; the state or condition of flowering: *v. i.* [*p. t.* blew, *p. p.* blown, *p. pr.* blowing], to blossom; flower.

blow (*blō*), *n.* a stroke with the hand or with a weapon; a knock.

blow *v. i.* [*p. t.* blew, *p. p.* blown, *p. pr.* blowing], to form or make a current of air; pant; breathe quickly: *n.* a blowing; a blast; a gale of wind, an egg deposited by a fly; the spouting of a whale.

blow-fly (*blō'flī*), *n.* any species of fly which deposits its eggs upon animal food products.

blow-pipe (*blō'pip*), *n.* a long tube of cane or reed used by South American Indians and the Dyaks of Borneo to discharge arrows by force of the breath; a tube through which a current of air or gas is driven upon a flame.

blow-y (*blō'i*), *adj.* windy; breezy.

blub-ber (*blub'bẽr*), *v. i.* to weep violently, or so as to disfigure the face.

blu-cher (*blū'kẽr*). *n* a strong half boot.

bludg-eon (*bluj'un*), *n.* a short, heavy stick, sometimes loaded, used as a weapon.

blue (*blū*), *adj.* of the color of the clear sky: azure; low-spirited; dismal; severe.

blue-bell (*'bel*), *n.* the wild hyacinth; the harebell of Scotland.

blue-blood (*'blud*), *n.* aristocratic lineage.

blue-b ok (*'book*), *n.* a governmental official report, etc.; so called from the blue paper covers.

Blue Grotto. A celebrated cavern on the shore of Capri, an island of Italy.

blue-jacket (*blū'jak-et*), *n.* a sailor.

blue-stock-ing (*blū'stok-ing*), *n.* a woman of literary tastes or occupation.

bluff (*bluf*), *adj.* having a broad, flattened front; rising steeply or boldly; *n.* a high, steep bank; a cliff or headland with a broad, steep face: *v. t.* to deceive, or gain an advantage over.

blu-ing (*blū'ing*), *n.* the process of imparting a blue tint; the indigo, etc., used by washerwomen.

blu-ish (*blū'ish*), *adj* somewhat blue.

blun-der (*blun'dẽr*), *v. i.* to make a gross mistake. [ERROR.]

blun-der-buss (*blun'dẽr-bus*), *n.* a short gun or firearm with a large bore, now obsolete.

blun-der-ing-ly (*blun'dẽr-ing-li*), *adv.* in a blundering manner.

blunt (*blunt*), *adj.* having a thick or rounded edge or point; not sharp; dull in understanding; abrupt.

blur (*blẽr*), *v. t.* [*p. t.* and *p. p.* blurred, *p. pr.* blurring], to dim; sully; stain; blemish.

blurt (*blẽrt*), *v. t.* to speak inadvertently; divulge unadvisedly (usually with *out*).

blush (*blush*), *v. i.* to become red in the face, as from shame or confusion.

blus-ter (*blus'tẽr*), *v. i.* to be windy and boisterous, as the weather.

blus-ter-ous (*blus'tẽr-us*), **blus-trous** (*'trus*), or **blus-ter-y** (*'tẽr-i*), *adj.* noisy; tumultuous; rough.

★**bo-a** (*bō'ā*), *n.* [*pl.* boas (*'āz*)], a huge serpent of South America; a long fur tippet.

bo-a con-stric-tor (*bō'ā kon-strik'tẽr*), a reptile remarkable for its length, and power of destroying its prey by constriction.

boar (*bōr*), *n.* the male of swine; the wild hog, or wild boar.

board (*bōrd*), *n.* a piece of timber sawed thin, and of considerable length and breadth compared with the thickness; a table for food; provision; entertainment.

board-ing (*bōrd'ing*), *n.* light timber collectively; a covering of boards; the act of supplying, or state of being supplied with, food and lodging.

boar-ish (*bōr'ish*), *adj.* swinish; brutal; cruel.

boast (*bōst*), *v. i.* to brag; to speak of one's self or belongings in assertive and bombastic terms. [GLORY.]

boast, *v. t.* to dress (stone) with a broad chisel and mallet.

boast-ful (*bōst'fūl*), *adj.* given to boasting.

boat (*bōt*) *n.* a small open vessel usually moved by oars, but often by a sail.

★**boat-swain** (*bōt'swān* or *bō'sn*), *n.* a petty officer of a ship who has charge of the rigging, etc.

bob (*bob*), *v. t.* [*p. t.* and *p. p.* bobbed, *p. pr.* bobbing], to impart a short jerking motion to; to cut short: *v. i.* to have a short jerking motion; move or play to and fro, or up and down.

bob-bin (*bob'bin*), *n.* one of the pins or small cylinders of wood used to carry and steady the threads in pillow lace making.

★**bob-o-link** (*bob'ō-lingk*), *n.* an American song bird.

bob-stay (*bob'stā*), *n.* one of two or more ropes or chains to hold the bowsprit down.

bob-tail (*bob'tāl*), *n.* a short tail, or a tail cut short; the rabble (rag, tag and bobtail).

bode (*bōd*), *v. t.* to portend; be an omen of: *v. i.* to augur; presage.

bod-ice (*bod'is*), *n.* a close-fitting waist.

bod-i-ly (*bod'i-li*), *adj.* not mental; corporeal. [PHYSICAL.]

bod-kin (*bod'kin*), *n.* a pointed instrument for piercing holes.

★**Bodleian** (*bod'lē-an*) **library.** A library of Oxford University, England, which was originally established in 1445, and reëstablished by Sir Thomas Bodley in 1597-1602.

bod-y (*bod'i*), *n.* [*pl.* bodies (*'iz*)], the material organized substance of an animal, as distinguished from the soul, spirit, or vital principle.

Syn. BODY, ashes, carcass, clay, corpse, dust, form, frame, remains, system, trunk. *Body* denotes the structure considered as a whole; *form* looks upon it as a thing of shape and outline; *frame* regards it as supported by its framework; *system* views it as an assemblage of many related and harmonious organs. *Body, form, frame,* and *system* may be either dead or living, *clay* and *dust* are sometimes figuratively so used, *corpse* and *remains* are used only of the dead, *carcass* applies only to the *body* of an animal.

Ant. MIND, soul, spirit.

bod-y col-or (*bod'i kul'ẽr*), a pigment possessing body or consistence.

★**Bœ-o-tian** (*bē-ō'shan*), *adj.* pertaining to Bœotia, in central Greece.

★**Boer** (*bōōr,* not *bōr*). Applied to Dutch inhabitants of the country districts of the Cape of Good Hope, is the German name for farmers and agriculturists.

bog (*bog*), *v. t.* [*p. t.* and *p. p.* bogged, *p. pr.* bogging], to sink or submerge in a bog or quagmire: *v. i.* to sink or stick in a bog.

bo-gus (*bō'gus*), *adj.* counterfeit; spurious.

bo-gy or **bo-gey** (*bō'gi*), *n.* [*pl.* bogies, bogeys (*'giz*)], a hobgoblin; a specter.

bo-hea (*bō-hē'*), *n.* a kind of black tea.

Bohemia (*bō-hē'mi-ȧ*). Once the country of the Boii, expelled in the time of Augustus by the Marcomanni. Now part of Austria-Hungary.

bo-he-mi-an (*bō-hē'mi-an*), *n.* a person who disregards social conventionalities.

boil (*boil*), *v. i.* to be in a state of ebullition through the action of heat.

boil, *n.* an inflamed and painful suppurating tumor.

boil-er (*boil'ẽr*), *n.* one who boils, a vessel in which anything is boiled.

★**Bois de Boulogne** (*bwȧ du bōō-lōn'yu*). A park in Paris reached by the Champs Élysées, the avenue of the Grande Armée, or the avenue of the Bois de Boulogne.

★**Bois de Vincennes** (*bwȧ du van-sen'*). A public park in Paris larger than the Bois de Boulogne.

★**Boise** (*boi'zā*), **Idaho.** From the river on which it was located, the latter having been named by the French *Rivière Boisé,* "woody river."

bois-ter-ous (*bois'tẽr-us*), *adj.* violent; rough; stormy; turbulent; noisy. [VIOLENT.]

★**Bokhara** (*bō-kä'rȧ*). The treasury of sciences, or "town of learning"; the chief town in a state of the same name in central Asia.

bold (*bōld*), *adj.* courageous; venturesome; planned or executed with courage and spirit.

Syn. BOLD, fearless, intrepid, undaunted. *Boldness* is a positive characteristic of the spirit; *fearlessness* is a negative state of the mind, that is, simply an absence of fear. A person may be *bold* through *fearlessness,* but he may be *fearless* without being *bold;* he may be *fearless* where there is no apprehension of danger or no cause for apprehension, but he is *bold* only when he is conscious or apprehensive of danger, and prepared to encounter it. A man is *intrepid* who has no fear where the most *fearless* might tremble; he is *undaunted* whose spirit is unabated by that which would make the stoutest heart yield.

Ant. COWARDLY, dastardly, fearful.

bole (*bōl*), *n.* the trunk or stem of a tree.

Bolivia (*bō-liv'i-ȧ*, Sp. *bō-lē'vē-ä*). A republic of South America. So named in memory of Gen. Simon Bolivar.

★**boll** (*bōl*), *n.* the pod or capsule of a plant, as of flax: *v. i.* to form a boll or seed vessel; go to seed.

★**Bologna** (*bō-lōn'yȧ*, not *bō-lō'nȧ*), **Italy.** Named from the Boii, anciently *Felsina,* later *Bononia.*

bol-ster (*bōl'stẽr*), *n.* a long pillow or cushion used to support the head.

bolt (*bōlt*), *n.* a short, thick arrow with a blunt head; a thunderbolt; a discharge of lightning; a stout metallic pin or rod used for holding objects together; a sliding catch for securing a door.

bolt (*bōlt*), *v. t.* to sift or separate the coarser from the finer particles.

bomb (*bom* or *bum*), *n.* a hollow iron ball or shell filled with an explosive material, fired from a mortar and usually exploded by a fuse.

bom-bard (*bom-bärd'*), *v. t.* to attack with cannon.

bom-bard-ment (*bom-bärd'ment*), *n.* a continuous attack with shot and shell.

★**bom-bast** (*bom'bast* or *bum'bast*), *n.* originally cotton or other soft material used for stuffing garments.

★**Bombay** (*bom-bā'*). Named after an Indian goddess *Bombe,* but translated by the Portuguese into *Bom bahia,* "good bay." A seaport of India.

★**bom-ba-zine** (*bum-bä-zēn'* or *bom-*), *n.* a twilled fabric, of which the warp is silk, the weft worsted.

bo-nan-za (*bō-nan'zȧ*), *n.* a rich vein of ore; hence, anything which is a mine of wealth.

★**bon-bon** (*bŏn'bŏn*), *n.* a sugar-plum; any confection of sugar; a Christmas cracker.

bond (*bond*), *n.* anything that binds, fastens, or confines; a ligament: *pl.* fetters; imprisonment; captivity: hence, a cause of union; duty; obligation; an instrument under seal by which a person binds himself, his heirs, etc.

bone (*bōn*), *n.* the ossified tissue forming the skeleton of most vertebrate animals, one of the parts or pieces of an animal skeleton.

bone-black (*bōn'blak*), *n.* animal charcoal.

bon-fire (*bon'fir*), *n.* any large fire made in the open.

★**Boniface** (*bon'i-fās*). From the Latin *Bonifacius,* name of several popes; this, in turn, from *benefacio,* "to do good," hence, a "well-doer." Danish, *Bonifacius;* Dutch, *Bonifacius;* Fr., *Boniface;* Ger., *Bonifaz* or *Bonifacius;* It., *Bonifacio;* Lat., *Bonifacius;* Sw., *Bonifacius.*

bon-net (*bon'net*), *n.* a soft woolen cap worn by men in Scotland; a woman's head covering, varying according to fashion.

★**bon-ny** (*bon'ni*), *adj.* handsome; beautiful; pretty; gay; blithe. [Written also *bonnie.*]

bo-nus (*bō'nus*), *n.* [*pl.* bonuses (*-ez*)], a sum given or paid, over and above what is required or actually payable.

boo (*bōō*), *interj.* an expression of aversion or contempt: *n.* hooting.

boo-by (*bōō'bi*), *n.* a dunce; a stupid fellow.

boo-die (*bōō'di*), *n.* money paid for votes, or undue political influence.

book (*book*), *n.* a collection of sheets of paper and other material, blank, written, or printed, bound together.

book-ing of-fice (*book'ing of'fis*), in England, an office where passenger tickets are sold. [study.

book-ish (*book'ish*), *adj.* given to reading; fond of

book-keep-ing (*book'kēp-ing*), *n.* the art of recording pecuniary or business transactions in a regular and systematic manner.

book-let (*book'let*), *n.* a little book.

book-mak-er (*book'māk-ẽr*), *n.* one who writes and publishes books; a compiler.

book-worm (*book'wẽrm*), *n.* the larva or grub of various species of insects which infest and injure books; a person closely addicted to study.

boom (*bōōm*), *n.* a long pole or spar run out to extend the foot of certain sails; a strong chain, cable, or line of spars bound together, extended across a river or harbor to exclude an enemy's ships.

boom-er-ang (*bōōm'ẽr-ang*), *n.* a missile weapon used by the Australian aborigines, consisting of a piece of flat, curved wood, which, when thrown by the hand in a certain manner, describes a series of curves, and finally returns to the thrower.

boon (*bōōn*), *n.* a benefit; a gift; a privilege; a favor: *adj.* convivial.

boor (*bōōr*), *n.* a rustic; a peasant.

boor-ish (*bōōr'ish*), *adj.* like a boor; clownish.

boose. See *booze.*

boost (*bōōst*), *v. t.* to lift by pushing from behind.

boot (*bōōt*), *n.* that which is thrown in as an inducement to a bargain.

boot, *v. t.* to profit; to advantage.

boot, *n.* a leather covering for the feet and the lower part of the leg.

booth (*bōōth*), *n.* a temporary structure.

boot-less (*bōōt'les*), *adv.* without advantage.

boots (*bōōts*), *n.* the servant in a hotel who cleans the boots of the guests. [war.

boo-ty (*bōō'ti*), *n.* [*pl.* booties (*'tiz*)], spoil taken in

Syn. BOOTY, spoil, prey. *Booty* and *spoil* are used as military terms in attacks on an enemy, *prey* in cases of particular violence. The soldier gets his *booty;* the combatant his *spoils;* the carnivorous animal his *prey. Booty* respects what is of personal service to the captor; *spoils* whatever serves to designate his triumph; *prey* includes whatever gratifies the appetite and is to be consumed.

booze (*bōōz*), *n.* liquor: *v. i.* to drink deeply.

bo-rac-ic (*bō-ras'ik*), *adj.* pertaining to, or produced from, borax.

bo-rac-ic [ac-id (*as'id*), a compound of boron with oxygen and hydrogen.

bo-rax (*bō'raks*), *n.* a salt compounded of boracic acid and soda.

bor-deaux (*bôr-dō'*), *n.* red and white wines produced in the district of Bordeaux, France.

Bordeaux. Literally means "the margin of the water."

bor-der (*bôr'dẽr*), *n.* the outer part or edge of anything; a margin; brink; boundary; frontier. [ADJACENT.]

bore (*bôr*), *v. t.* to pierce or drill a hole in; form by piercing or drilling; to force (as a passage) with effort; weary by tedious repetition.

bore, *n.* a tidal wave which breaks in the estuaries of some rivers.

bore-dom (*bôr'dum*), *n.* ennui; the realm of bores; bores collectively.

★**Borghese** (*bôr-gā'zā*) **palace.** A famous Roman palace, seat of the Borghese family, and noted for its art collections.

★**Borgne** (*bôrn'y*) **lake, La.** French word, meaning "blind of one eye," or "one-eyed." Application has never been explained.

bo-ride (*bō'rid*), *n.* a compound of boron with a metallic base.

★**Borneo** (*bôr'nē-ō*). Comes from the Malay *Brunei,* once the name of the largest city on the island, and changed by the Portuguese to *Borneo.* Largest of the East Indian islands

bor-nite (*bôr'nīt*), *n.* a valuable ore of copper.

★**bo-ro-glyc-er-ide** (*bō-rō-glis'ẽr-id* or *-id*), *n.* an antiseptic containing boric acid, glycerine, etc.

bo-ron (*bō'ron*), *n.* a nonmetallic element occurring abundantly in borax.

bor-ough (*bur'ō*), *n.* a corporate town.

bor-row (*bor'rō*), *v. t.* to obtain (a thing) on loan.

bort (*bôrt*), *n.* imperfect or inferior diamonds.

★**bos-cage** or **bos-kage** (*bos'kāj*), *n.* ground covered with trees and shrubs; woods; thickets; a wooded landscape.

bosh (*bosh*), *n.* absurd or empty talk.

bos-ket (*bos'ket*), *n.* a grove; a thicket.

bos-ky (*bos'ki*), *adj.* woody; bushy.

★**Bosnia** (*boz'ni-a,* not *bos'ni-a*). The country of southeastern Europe traversed by the river Bosna.

bos-om (*booz um*), *n.* the breast; clothing covering the breast; the affections or passions.

★**Bosporus** (*bos'pō-rus*). A Greek term, composed of *bous,* "a cow," and *poros,* "a ford," alluding to the legend that, after Io was transformed into a cow, she forded this strait.

boss (*bos*), *n.* [*pl.* bosses (*'ez*)], a protuberant part; a stud or knob.

boss (*bos*), *n.* a master, superintendent; foreman.

★**Boston** (*bôs'tun,* not *bos'ton* nor *bôs'ton*). City in Massachusetts. By some authorities the name is said to have been given in honor of John Cotton, vicar of St. Bodolph's church in Boston, Lincolnshire, England, and one of the first clergymen in the American Boston. Others say it was named before the arrival of John Cotton, in honor of three prominent colonists from Boston, England.

bo-tan-ic (*bō-tan'ik*), or **bo-tan-i-cal** (*'i-kal*), *adj.* skilled in a knowledge of plants.

★**bot-a-nist** (*bot'ā-nist*), *n.* one who studies or is skilled in a knowledge of plants.

bot-a-nize (*bot'ā-nīz*), *v. i.* to seek after plants for the purpose of studying them.

★**bot-a-ny** (*bot'ā-ni*), *n.* the science of plants.

Botany bay. So called by Captain Cook from the great variety of plants which he found growing on its shores when exploring it in the year 1770.

botch (*boch*), *v. t.* to mend or patch in a clumsy manner.

both (*bōth*), *adj.* and *pron.* the one and the other; the two.

both-er (*both'ẽr*), *v. t.* to annoy; tease; worry.

both-er-a-tion (*both-ẽr-ā'shun*), *n.* the act of bothering, or state of being bothered.

both-er-some (*both'ẽr-sum*), *adj.* troublesome.

bot-tle (*bot'l*), *n.* a hollow vessel, usually with a narrow neck, made of glass or earthenware, for holding liquids.

bot-tle-hold-er (*bot'l-hōld'ẽr*), *n.* one who waits upon a pugilist in a prize fight.

bot-tom (*bot'tum*), *n.* the deepest part of anything; the base; foundation; root; the ground under any body of water; the buttocks.

bot-tom lands (*bot'tum lands*), rich, flat alluvial soil on the river banks of the western states.

bot-tom-ry (*bot'tum-ri*), *n.* the act of borrowing money on the security of a ship.

★**bou-doir** (*bōō'dwôr,* Fr. *bōō-dwär'*), *n.* a small room, elegantly furnished, for a lady's private use.

bough (*bou*), *n.* an arm or branch of a tree.

★**bou-illon** (*bōō'yôn* or *bōōl-yôn'*), *n.* a clear soup produced from boiling meat.

boul-der (*bōl'dẽr*), *n.* a large stone worn or rounded by the action of water.

★**bou-le-vard** (*bōō'lē-vär* or *bōō'lē-värd*), *n.* a broad street in or around a city.

bounce (*bouns*), *v. t.* to cause to bound; to eject summarily; to bully: *v. i.* to strike against anything so as to rebound.

bound (*bound*), *n.* a limit; confine; extent; boundary: *pl.* territory within certain boundaries: *v. t.* to limit.

Syn. BOUND, limit, confine, circumscribe, restrict. *Bound* applies to the natural or political divisions of the earth; countries are *bounded* by mountains and seas; *limit* applies to any artificial boundary, as landmarks in fields serve to show the *limits* of one man's ground from another. To *confine* is to bring the *limits* close together, to part off one space absolutely from another; in this manner we *confine* a garden by means of walls. To *circumscribe* is literally to surround; in this manner a circle may *circumscribe* a square; to *restrict* is to exercise a strong degree of control; a person is *restricted* by his physician to a certain portion of food in a day.

Ant. BROADEN, enlarge, extend.

bound (*bound*), *v. i.* to jump or spring suddenly or in succession; leap; rebound.

bound (*bound*), *adj.* ready to go; destined.

bound-a-ry (*bound'ā-ri*), *n.* [*pl.* boundaries (*-riz*)], the extent or limit of anything.

bound-less (*bound'les*), *adj.* without bound.

Syn. BOUNDLESS, unbounded, unlimited, infinite. The ocean is a *boundless* object so long as no bounds to it have been discovered; desires are often *unbounded* which ought always to be bounded; power is sometimes *unlimited* which would be better limited; nothing is *infinite* but that Being from whom all finite beings proceed.

Ant. FINITE, limited, restricted.

boun-te-ous (*boun'tē-us*), *adj.* giving freely; liberal in gifts; munificent. [BENEFICENT.]

boun-ti-ful (*boun'ti-ful*), *adj.* liberal in bestowing gifts or favors; generous; ample. [BENEFICENT.]

boun-ty (*boun'ti*), *n.* [*pl.* bounties (*ti'z*)], liberality in bestowing gifts or favors; generosity.

★**bou-quet** (*bōō-kā',* not *bō-kā'*), *n.* a nosegay; a perfume or aroma characteristic of some wines.

★**bour-geois** (*bōōr-zhwä'*), *n.* a French citizen of the mercantile class; a shopkeeper.

★**bour-geoi-sie** (*bōōr-zhwä-zē'*), *n.* the French middle class.

bourn (*bōrn*), *n.* a stream; a rivulet.

★**bourse** (*bōōrs*), *n.* a stock exchange for the transaction of business.

bout (*bout*), *n.* a turn or bend; a going and returning.

bo-vine (*bō'vin*), *adj.* of or pertaining to cows or oxen.

bow (*bou*), *n.* the forepart or prow of a ship.

bow (*bou*), *v. t.* to bend; make curved or crooked; bend or incline, as the head or body in token of respect.

bow (*bō*), *n.* a weapon for discharging arrows; anything curved.

bow-el (*bou'el*), *n.* one of the intestines of an animal.

bow-er (*bou'ẽr*), *n.* a shelter constructed of boughs or twining plants; an arbor.

bow-er (*bou'ẽr*), *n.* an anchor carried at the bow of a ship.

bow-er-y (*bou'ẽr-i*), *adj.* like a bower; shady.

bow-er-y (*bou'ẽr-i*), *n.* [*pl.* boweries (*-iz*)], a country retreat; farm or plantation with its buildings.

bowl (*bōl*), *n.* a circular, hollow vessel for holding liquids.

bowl (*bōl*), *n.* a ball of wood used in the games of bowls, and skittles.

bowse (*bouz*), *v. i.* to pull or haul hard.

★**bow-sprit** (*bō'sprit*), *n.* a large boom or spar running out from the stem of a ship.

bow-string (*bō'string*), *n.* string of a bow; string used by the Turks for strangling offenders.

box (*boks*), *n.* an evergreen shrub or small tree, yielding a hard, close-grained wood.

box (*boks*), *n.* [*pl.* boxes (*'ez*)], a case for holding anything: *v. t.* to inclose in a box; confine.

box (*boks*), *n.* a blow on the head with the fist, or on the ear with the open hand.

box-ing glove (*boks'ing gluv*), a padded glove.

box met-al (*boks' met-al*), an antifriction alloy used for journal boxes, shafting, etc.

boy (*bos*), *n.* a male child; a young lad.

★**boy-cott** (*boi'kot*), *v. t.* to combine against a person so as to ostracize.

boy-hood (*boi'hood*), *n.* the state of being a boy.

boy-ish (*boi'ish*), *adj.* pertaining to a boy or boyhood; childish; puerile.

brace (*brās*), *n.* that which holds anything tightly or supports it firmly; a prop; a bandage; a pair; a rope reeved through a block at the end of a yard, by which the yard is swung from the deck; *v. t.* to bind or tie closely; strain up; strengthen; furnish with supports.

brace-let (*brās'let*), *n.* an ornamental band or ring for the wrist.

brack-en (*brak'en*), *n.* the brake or fern.

brack-et (*brak'et*), *n.* a supporting piece projecting from a wall; one of the inclosing marks in printing: *v. t.* to furnish with or inclose within brackets.

brack-ish (*brak'ish*), *adj.* saltish.

bract (*brackt*), *n.* a modified leaf growing from the flower stem.

brad (*brad*), *n.* a slender nail, having a projection on one side: *v. t.* [*p. t.* and *p. p.* bradded, *p. pr.* bradding], to nail or secure with brads.

brag (*brag*), *v. i.* [*p. t.* and *p. p.* bragged, *p. pr.* bragging], to boast; speak vaingloriously.

brag-ga-do-cio (*brag-ä-dō'shō*), *n.* a boaster; a braggart; empty boasting.

brag-gart (*brag'gẽrt*), *n.* a boaster: *adj.* boastful.

brag-ger (*brag'gẽr*), *n.* one who brags.

brah-ma (*brä'mä*), *n.* a useful variety of large domestic fowl.

Brahman or **Brahmin** (*brä'man* or *brä'min*), *n.* [*pl.* Brahmans or Brahmins (*'manz* or *'minz*)], a member of the Hindu priestly caste.

★**Brahmanism** or **Brahminism** (*brä'man-izm* or *brä'min-izm*), *n.* the religion or doctrines of the Brahmans.

★**Brahmapootra** or **Bramaputra** (*brä-mä-pōō'trä*). River of India, the name being of Sanskrit origin, meaning "the offspring of Brahma," or "Brahma's son."

braid (*brād*), *v. t.* to weave or intertwine; plait: *n.* a plaited band.

brain (*brān*), *n.* the soft, whitish, convoluted mass occupying the cranium of a vertebrate; the understanding.

★**brain storm** (*stôrm*), a state of cerebral excitement.

brain wave (*wāv*), a telepathic vibration by which it is supposed a thought is conveyed from one mind to another.

brain-y (*brān'i*), *adj.* possessed of brains; acute.

★**braise** (*brāz*), *v. t.* to stew (as meat) in a covered vessel.

brait (*brāt*), *n.* a rough diamond.

brake (*brāk*), *n.* an instrument or machine to break flax; an extended handle, by which a number of men can unite in working a pump; a mechanical device for checking the motion of a vehicle or machine.

brake (*brāk*), *n.* a place overgrown with bracken, brushwood, etc.; the common fern.

bram-ble (*bram'bl*), *n.* the English blackberry; any prickly bush or shrub.

bram-bly (*bram'bli*), *adj.* full of brambles.

bran (*bran*), *n.* the husks of wheat, rye, etc., separated from the flour by bolting.

branch (*bränch*), *n.* [*pl.* branches (*'ez*)], a shoot or limb from a main bough; an offshoot; any member or part of a body or system; a department.

brand (*brand*), *n.* a burning piece of wood; any form of trade-mark; hence, quality or kind: *v. t.* to mark by burning with a hot iron.

bran-dish (*bran'dish*), *v. t.* to move, wave, or shake, as a raised weapon.

bran-dy (*bran'di*), *n.* [*pl.* brandies (*'diz*)], an ardent alcoholic liquor distilled from wine or the husks of grapes.

Brandywine river, Pa. Called by the first settlers, the Swedes, *Fish-kiln,* "Fish creek." Its present name is ascribed by tradition to the loss of a Dutch vessel laden with brandy, or *brand-wijn.* A celebrated battle was fought there, which

accounts for the name being given to eight places in the country.

brash (*brash*), *adj.* brittle, as wood. [*Colloq., U. S.*]

brash (*brash*), *n.* broken, loose, and angular fragments of rock underlying alluvial deposits.

brass (*brås*), *n.* [*pl.* brasses (*'ez*)], an alloy of copper and zinc.

brass-y (*brås'i*), *adj.* pertaining to, or resembling, brass; impudent; brazen.

brat (*brat*), *n.* a child (used contemptuously).

brat-tish-ing (*brat'tish-ing*), *n.* ornamental openwork; cresting.

★**bra-va-do** (*brä-vä'dō*), *n.* [*pl.* bravadoes (*'dōz*)], arrogant menace; defiance.

brave (*brāv*), *adj.* bold; courageous; intrepid; making a fine show: *n.* an Indian warrior.

Syn. BRAVE, gallant. *Gallantry* is extraordinary bravery or bravery on extraordinary occasions; the *brave* man goes willingly where he is commanded; the *gallant* man leads on with vigor to the attack. *Bravery* is common to vast numbers and whole nations; *gallantry* is peculiar to individuals or particular bodies.

Ant. FEAR, cringe, shrink, tremble.

brav-er-y (*brāv'ẽr-i*), *n.* the quality of being brave.

Syn. BRAVERY, courage, valor. *Bravery* lies in the blood; *courage* lies in the mind; the latter depends on the reason, the former on the physical temperament; the first is a species of instinct, the second a virtue; a man is *brave* in proportion as he is without thought; he has *courage* in proportion as he reasons or reflects. *Valor* is a higher quality than either *bravery* or *courage*, and seems to partake of the characteristics of both; it combines the fire of *bravery* with the determination and firmness of *courage*. [See *courage*.]

Ant. FEAR, pusillanimity, cowardice.

bra-vo (*brä'vō*), *interj.* well done! good! *n.* a cheer.

bra-vu-ra (*brä-vōō'rä*), *n.* an air of florid, brilliant style, adapted to display the skill of the performer, or the range and flexibility of a singer's voice.

brawl (*brawl*), *v. i.* to quarrel noisily and outrageously. [FEUD.]

brawn (*brawn*), *n.* full, strong muscles; boar's flesh, especially when collared and otherwise prepared.

brawn-y (*brawn'i*), *adj.* muscular; tough.

bray (*brā*), *v. t.* [*p. t.* and *p. p.* brayed, *p. pr.* braying], to pound or beat fine or small.

braze (*brāz*), *v. t.* to solder with brass; cover or ornament with brass.

bra-zen (*brā'zn*), *adj.* made of brass; pertaining to brass.

bra-zier (*brā'zhẽr*), *n.* an open pan for burning charcoal.

★**Brazil** (*brä-zil'*, Port. *bra-zēl'*). Named, on account of the color of its dye-woods, from *braza*, "a live coal." A republic of South America.

bra-zil nut (*brä-zil' nut*), *n.* the seed of a tree of tropical America.

★**Brazos** (*brä'zōs*) **river, Tex.** As named by the Spaniards *Brazos de Dios*, "arm of God." The Spaniards established a mission on its banks, and, the guard having been called away, the Indians descended on the mission, completely destroying it. When the soldiery returned, their loss was quickly discovered, and, searching for a solution, they found in the river many of the dead bodies of the depredators, still floating in its eddies; as they could discern no marks of violence, they pronounced it a retributive miracle done by the "arm of God."

breach (*brēch*), *n.* the act of breaking; the violation of a law, contract, or any other engagement.

Syn. BREACH, break, gap, chasm. A *breach* and a *gap* are the consequence of a violent removal, which destroys the connection; a *break* and a *chasm* may arise from the absence of that which would form a connection. A *breach* in a wall is made by means of cannon; *gaps* in fences are commonly the effect of some violent effort to pass through; a *break* is made in a page of printing by leaving off in the middle of a line; a *chasm* is left in writing when any words in the sentence are omitted. [See *break*.]

bread (*bred*), *n.* food made from ground grain; food in general.

bread-fruit (*'frōōt*), *n.* the fruit of a tree growing in the Pacific islands.

bread-stuff (*'stuf*), *n.* grain, flour, or meal from which bread is made.

breadth (*bredth*), *n.* the measure of any surface from side to side.

break (*brāk*), *v. t.* [*p. t.* broke, *p. p.* broken, *p. pr.* breaking], to separate with violence; interrupt: *n.* a breach; rupture; an interruption.

Syn. BREAK, burst, crack, split. To *break* does not specify any particular manner or form of action; what is *broken* may be *broken* in two or more pieces. *broken* short or lengthwise, and the like; to *burst* is to break suddenly and with violence, frequently also with noise. To *crack* and *split* are modes of breaking lengthwise; the former in application to hard or brittle objects, as clay, or the things made of clay; the latter in application to wood. [See *breach*.]

Ant. ATTACH, bind, join, mend, unite.

break-age (*brāk'āj*), *n.* the act of breaking; allowance for accidental fracture.

break-down (*brāk'doun*), *n.* a collapse; failure.

break-er (*brāk'ẽr*), *n.* one who, or that which, breaks. [WAVE.]

break-fast (*brek'fast*), *n.* the first meal in the day.

break-wa-ter (*'waw-tẽr*), *n.* any structure to break the force of the waves.

bream (*brēm*), *n.* a broad-shaped fresh-water fish; sunfish; marine fishes of different varieties.

breast (*brest*), *n.* the fore part of the body between the neck and the abdomen.

breast-plate (*'plāt*), *n.* a portion of armor covering the front of the body.

breast-work (*'wẽrk*), *n.* a hastily constructed work, thrown up breast-high for defense.

★**breath** (*breth*), *n.* the air inhaled and exhaled in respiration; life; the power or capacity to breathe.

★**breathe** (*brēth*), *v. i.* to inhale air and expel it from the lungs; live; take breath.

breath-ing (*brēth'ing*), *n.* respiration; air in gentle motion.

breech (*brēch*), *n.* the buttocks; the hinder part of anything.

breech-es (*brich'ez*), *n. pl.* a garment worn by men, covering the legs.

breech-ing (*brich'ing*), *n.* the harness which passes round a horse's breech.

breed (*brēd*), *v. t.* [*p. t.* and *p. p.* bred, *p. pr.* breeding], to procreate; hatch; train. [EDUCATION.]

breeze (*brēz*), *n.* a gentle gale; a fresh, soft wind.

Syn. BREEZE, gale, blast, gust, storm, tempest, hurricane. A *breeze* is gentle; a *gale* is brisk, but steady; we have *breezes* in a calm summer's day; the mariner has favorable *gales*, which keep the sails on the stretch. A *blast* is impetuous; the exhalations of a trumpet, the breath of bellows, are *blasts*. A *gust* is sudden and vehement; *storm*, *tempest*, and *hurricane* include other particulars besides wind. A *storm* throws the whole atmosphere into commotion; it is a war of the elements, in which wind, rain, hail, and the like conspire to disturb the heavens. *Tempest* is a species of *storm* which has also thunder and lightning to add to the confusion. *Hurricane* is a species of *storm* which exceeds all the rest in violence and duration.

Ant. CALM, lull, quiet.

breeze (*brēz*), *n.* house sweepings.

★**Brenner** (*bren'nẽr*) **pass.** The lowest pass over the main chain of the Alps. It is situated in the Tyrol about twenty-five miles south of Innsbruck.

★**breth-ren** (*breth'ren*, not *breth'ẽrn*), *n.* plural of brother.

★**Breton** (*brit'un* or *bret'un*) **Cape.** Discovered by mariners from Brittany.

breve (*brēv*), *n.* a note of time equal to two semibreves or four minims.

★**bre-vet** (*brē-vet'*), *n.* a commission to an officer in the army conferring a higher rank, but without increase of pay.

★**bre-vi-a-ry** (*brē'vi-ā-ri*), *n.* [*pl.* breviaries (*-riz*)], a book containing the daily prayers.

brev-i-ty (*brev'i-ti*), *n.* [*pl.* brevities (*-tiz*)], shortness.

brew (*brōō*), *v. t.* to make liquors from malt; plot: *n.* the action, process, or product of brewing.

brew-er-y (*brōō'ẽr-i*), *n.* a brewhouse.

★**Brian** (*bri'an*) or **Briant.** Names derived from the Irish name *Brian*, which has been rendered "warrior of great strength."

bribe (*brib*), *n.* a gift or consideration given or promised with the object of corrupting or unduly influencing the judgment of the recipient.

brib-er-y (*brib'ẽr-i*), *n.* [*pl.* briberies (*-iz*)], the act or practice of bribing.

★**bric-a-brac** (*brik'-ä-brak*), *n.* antique articles of virtu; fancy ware.

brick (*brik*), *n.* a block of clay dried in the sun or burned in a kiln; a jolly, good-natured fellow.

brick-kiln (*'kil*), *n.* a kiln or furnace in which bricks are baked or burnt.

brid-al (*brīd'al*), *n.* a marriage; nuptials: *adj.* pertaining to a bride, or wedding.

bride (*brīd*), *n.* a woman newly married, or about to be married.

bride-groom (*'grōōm*), *n.* a man newly married or about to be married.

brides-maid (*brīdz'mād*), *n.* a female friend who attends on a bride at her wedding.

bride-well (*brīd'wel*), *n.* a house of correction for the confinement of disorderly persons.

bridge (*brij*), *n.* a structure of iron, stone, or wood, spanning a river, road, valley, etc.

★**Bridget** (*brij'et*). Mr. Arthur derives this feminine name from Gaelic *brighid*, "fiery dart" or "shining bright"; the Gaelic word signifies also a hostage; Armstrong renders *brighide* "a hostage." Celtic, "strength." Danish, *Birgitte*; Dutch, *Brigetta*; Fr., *Brigitte*; Ger., *Brigitta*; It., *Brigida* or *Brigita*; Lat., *Brigida*; Sp., *Brigida*.

bri-dle (*brī'dl*), *n.* the headstall, bit and reins by which a horse is controlled; a restraint.

brief (*brēf*), *adj.* short; concise; contracted; narrow: *n.* an epitome; an abridged statement. [SHORT.]

bri-er (*brī'ẽr*), *n.* a thorny plant or shrub.

bri-er root (*rōōt*), *n.* the root of two species of smilax, used in the manufacture of tobacco pipes.

brig (*brig*), *n.* a two-masted, square-rigged vessel.

bri-gade (*bri-gād'*), *n.* a subdivision of an army: *v. t.* to form into a brigade or brigades.

brig-a-dier (*brig-ä-dēr'*), *n.* a general officer commanding a brigade. [Also *brigadier general*.]

★**brig-and** (*brig'and*, not *brig-and'*), *n.* a robber; a member of a gang of freebooters; a bandit.

brig-and-age (*brig'and-āj*), *n.* the life and practices of a brigand; organized robbery.

brig-an-tine (*brig'an-tīn*), *n.* a small two-masted square-rigged vessel like a brig, except that she has no square mainsail.

bright (*brīt*), *adj.* brilliant; shining; illustrious; witty; clever; lively. [CLEAR.]

bright-en (*brīt'n*), *v. i.* to grow bright; clear up: *v. t.* to make bright or luminous; make cheerful.

Brighton (*brī'tun*). Formerly Brighthelmstoen, from a personal name. A city and watering-place in Sussex, England, on the English channel. It is the leading seaside resort in Great Britain.

Bright's dis-ease (*brits' diz-ēz'*), *n.* a form of kidney disease characterized by the presence of albumin in the urine.

brill (*bril*), *n.* a flatfish resembling the turbot; prill.

bril-lian-cy (*bril'yan-si*), *n.* splendor. [RADIANCE.]

bril-liant (*bril'yant*), *adj.* sparkling; distinguished: *n.* a diamond, cut to exhibit its refracting qualities.

brim (*brim*), *n.* the edge of anything: *v. t.* [*p. t.* and *p. p.* brimmed, *p. pr.* brimming], to fill to the brim.

brim-ful (*brim'ful*), *adj.* overflowing.

brim-stone (*brim'stōn*), *n.* sulphur: *adj.* made of brimstone; of the color of sulphur.

brine (*brin*), *n.* salt water; pickle; the ocean; tears: *v. t.* to steep in brine.

bring (*bring*), *v. t.* [*p. t.* and *p. p.* brought, *p. pr.* bringing], to fetch or convey.

Syn. BRING, fetch, carry. To *bring* is simply to take with one's self from the place where one is; to *fetch* is to go first to a place and then bring a thing; to *fetch*, therefore, is a species of *bringing;* whatever is near at hand is *brought;* whatever is at a distance must be *fetched;* to *carry* respects always a motion directly from the place or at a distance from the place; he *carries* a parcel from home.

brink (*bringk*), *n.* the edge; verge.

brisk (*brisk*), *adj.* lively; active; swift; vivacious; effervescing vigorously; sparkling. [ACTIVE.]

bris-ket (*bris'ket*), *n.* that part of an animal's breast where the ribs join the breastbone.

★**bris-tle** (*bris'l*, not *brist'l*), *n.* a short, stiff, coarse hair, especially upon the back and sides of swine.

bris-tly (*bris'li*), *adj.* covered with bristles.

bris-tol board (*bris'tul bōrd*), *n.* a thick, smooth, white pasteboard.

bris-tol pa-per (*pā'pẽr*), *n.* a kind of stout drawing paper.

Bristol, R. I. From the town of same name in England. Derived from Anglo-Saxon words *brie*, "bright," and *stol*, "place."

bris-tol stone (*stōn*), *n.* a transparent rock crystal. Called, when polished, bristol diamond.

Britain (*brit'n*). From *brith*, meaning "to paint." The British poets called it *Inis gwyn*, "white island," which answers to the Roman name *Albion*. It was known to the Phenns as *Barat-Anac*, or "the land of tin," as far back as the year 1037 B. C. Five hundred years afterward it was alluded to by the Romans under the name of Britannia, which subsequently became Britain.

Brit-ish (*brit'ish*), *adj.* of or pertaining to Great Britain or its inhabitants.

British Columbia. The only portion of North America that retains the name of the discoverer of the new world, with the exception of the District of Columbia.

British museum. A celebrated museum at Bloomsbury, London, founded in 1753.

Brit-on (*brit'un*), *n.* a native of Great Britain.

★**Brittany** (*brit'ta-ni*). In French, *Bretagne*, an old province in the northwest of France. It was originally called *Armorica*, a Celtic name meaning the "land by the sea."

brit-tle (*brit'l*), *adj.* apt to break; not tough. [FRAGILE.]

broach (*brōch*), *n.* an awl; spike; skewer; a kind of boring bit or drill; a stonecutter's chisel.

broad (*brawd*), *adj.* [*comp.* broader, *superl.* broadest], wide; ample; vast; liberal. [LARGE.]

broad ar-row (*ar'ō*), *n.* a British government mark to distinguish its property.

broad-cloth (*'klawth*), *n.* a fine woolen cloth with a smooth finished surface.

broad-en (*brawd'n*), *v. i.* to grow broad: *v. t.* to make broad or comprehensive.

Broad river, N. C. and **S. C.** The Indian name given by the Catawbas was *Eswan Huppeday*, or "Line River," because it was the established line between the Cherokee and Catawba tribes.

broad-side (*brawd'sid*), *n.* a simultaneous volley from one side of a warship.

broad-sword (*'sōrd*), *n.* a cutting sword with a broad blade.

Broadway. The principal business street of New York, extending from Bowling Green northward to Albany, N. Y. Longest street in the world.

bro-cade (*brō-kād'*), *n.* a silk stuff variegated with gold and silver flowers, etc.

broch (*brok*), *n.* a prehistoric roofless round tower, with massive walls of unhewn stone, found on the Orkney and Shetland islands and near the mainland.

bro-chure (*brō-shōōr'*), *n.* a pamphlet dealing with a subject of passing interest.

★**Brocken** (*brok'en*) or **Blocksberg** (*bloks'bẽrg*). The chief summit of the Harz mountains, and the highest mountain in northern Germany, situated in the province of Saxony, Prussia. It is the Roman *Mons Bructerus*.

★**brogue** (*brōg*), *n.* a coarse, rough shoe; a dialectic pronunciation.

broil (*broil*), *v. t.* to cook upon a gridiron: *v. i.* to be subjected to great heat: *n.* a noisy quarrel. [QUARREL, FEUD.]
bro-ken (*brō'kn*), *p. adj.* not entire; in pieces; rough; hilly; bankrupt; crushed; infirm; imperfect.
bro-ker (*brō'kẽr*), *n.* one who acts as agent or middleman for another.
bro-ker-age (*brō'kẽr-āj*), *n.* the business of a broker; his fee or commission.
bro-ma (*brō'mà*), *n.* aliment; a light preparation of cocoa.
bro-mic ac-id (*brō'mik as'id*), a compound of bromine and oxygen.
★**bro-mide** (*brō'mīd* or *'mid*), *n.* a compound of bromine.
★**bro-mine** (*brō'min* or *'min*), *n.* a nonmetallic element related to chlorine and iodine.
bron-chi-a (*brong'ki-à*), *n. pl.* the bronchial tubes.
bron-chit-ic (*bron-kit'ik*), *adj.* of or pertaining to bronchitis.
★**bron-chi-tis** (*bron-kī'tis*), *n.* an inflammation of the mucous lining of the bronchial tubes.
★**bron-cho** (*brong'kō*), *n.* a native, a Mexican or Californian horse of small size.
bron-cho-pneu-mo-ni-a (*brong-kō-nū-mō'ni-à*), *n.* inflammation of the lungs and bronchi.
bron-chus (*brong'kus*), *n.* [*pl.* bronchi (*'kī*)], one of the two principal branches of the windpipe.
Bronxville (*brongks'vil*). Village in Westchester county, New York. Named for Jonas or Jacob Bronck, an early settler.
bronze (*bronz*), *n.* an alloy of copper and tin; a work of art cast or wrought in bronze.
brooch (*brōch*), *n.* an ornamental dress clasp.
brood (*brōōd*), *n.* offspring; the young birds hatched at one time: *v. i.* to linger over sorrowfully.
brook (*brook*), *n.* a small stream.
brook (*brook*), *v. t.* to bear; put up with.
Brooklyn (*brook'lin*). City in New York, corruption of the Dutch name *Breukelen*, from a village in the province of Utrecht, Holland. The name signifies "broken-up land," or "marshy land."
broom (*brōōm*), *n.* a shrub, bearing large yellow flowers; a besom or brush.
broth (*broth*), *n.* a kind of thin soup.
broth-el (*broth'el*), *n.* a house of ill fame.
broth-er (*bruth'ẽr*), *n.* [*pl.* brothers (*'ẽrz*) and brethren (*breth'ren*)], a male person who has the same father and mother with another person; one closely united by a common interest with another.
broth-er ger-man (*-jẽr'man*), a brother on both the father's and the mother's side.
broth-er-hood (*-hood*), *n.* the state or quality of being a brother; a fraternity.
broth-er-in-law (*-in-law*), *n.* the brother of one's husband or wife; sister's husband.
★**brough-am** (*brōō'am* or *brōōm*), *n.* a close four-wheeled carriage for one or two horses.
brow (*brou*), *n.* the arch of hair over the eye; the forehead; the edge of a steep place.
brow-beat (*brou'bēt*), *v. t.* [*p. t.* browbeat, *p. p.* browbeaten, *p. pr.* browbeating], to bully.
brown (*broun*), *adj.* of a dusky or dark color: *n.* a dark color, inclined to red or yellow.
brown-ie (*broun'i*), *n.* a beneficent spirit supposed to haunt old farmhouses. [*Scotch.*]
browse (*brouz*), *v. t.* to feed on; pasture on; graze: said of cattle, deer, etc.
★**Brüges** (*brü'jez*, Fr. *brüzh*). In Belgium, "a city with many bridges"; *brücke*, "a bridge."
bru-in (*brōō'in*), *n.* a bear, in popular tales.
bruise (*brōōz*), *n.* an injury to the flesh of an animal or to a plant or other body, caused by a blow.
bruit (*brōōt*), *n.* report; rumor; fame: *v. t.* to report; noise abroad.
bru-nette (*brōō-net'*), *n.* a woman with a dark complexion, usually with dark hair and eyes.
brunt (*brunt*), *n.* a violent shock; a furious onslaught; a strong, brief and sudden effort.
brush (*brush*), *n.* a thicket of small trees; an instrument composed of bristles, etc.
brusque (*brusk*), *adj.* abrupt in manner.
★**Brussels** (*brus'selz*), Fr. **Bruxelles.** Meaning "the seat or site on the marsh"; *broek*, "a marsh," and *sels*, "a house." The capital of Belgium.
Brus-sels car-pet (*kär'pet*), a strong kind of woolen carpet.
Brus-sels lace (*lās*), various kinds of expensive lace made originally at Brussels.
Brus-sels sprouts (*sproutz*), a variety of the common cabbage.
bru-tal (*brōō'tal*), *adj.* pertaining to or resembling a brute; savage. [CRUEL.]
bru-tal-i-ty (*brōō-tal'i-ti*), *n.* the quality of being brutal; pitiless cruelty.
brute (*brōōt*), *adj.* without reason or intelligence; uncivilized: *n.* a beast; a brutal person.
bru-tish (*brōō'tish*), *adj.* pertaining to, or resembling, a brute; savage; sensuous.
bub-ble (*bub'l*), *n.* a small bladder or water or other fluid filled with air or gas; anything unreal.
★**buc-ca-neer** (*buk-ka-nēr'*), *n.* a pirate; a sea robber: *v. i.* acting the part of a buccaneer.
buc-ci-na-tor (*buk-si-nā'tẽr*), *n.* a muscle of the cheek called the trumpeter's muscle.
★**Bucharest** or **Bukharest** (*bū-kà-rest'*). From an Albanian word *bucurie*, "pleasure, joy"; hence, "the city of enjoyment." Capital of Roumania.
buck (*buk*), *v. t.* to break or pulverize, as ore.
buck, *n.* the male of the fallow-deer, goat, rabbit, etc.; a gay fellow; a male Indian or negro.
buck-et (*buk'et*), *n.* a vessel for drawing or holding water; the scoop of a dredging machine.
buck-et shop (*shop*), an office for gambling in stocks, grain, etc., in small amounts.
buck-eye (*buk'i*), *n.* a name of the American horse chestnut.
buck-hound (*'hound*), *n.* a staghound.
★**Buckingham** (*buk'ing-am*). A tribe name, "the dwelling among beeches": *buche*, "the beech tree"; *ham*, "a home or family dwelling."
Buckingham palace. The London residence of the sovereign, situated at the western end of St. James' park.
buck-jumper (*'jump-ẽr*), *n.* a vicious untrained horse that endeavors to throw the rider.
buc-kle (*buk'l*), *n.* a metal clasp consisting of a frame with movable tongue or catch.
buck-le (*buk'l*), *n.* a bend, or kink, as in a blade; a curl of hair; the condition of being curled, as hair.
buc-kler (*buk'lẽr*), *n.* a kind of ancient shield.
★**buck-ram** (*buk'ram*), *n.* coarse linen cloth stiffened with dressing: *adj.* made of, or resembling, buckram.
buck-shot (*'shot*), *n.* shot of a large size.
buck-wheat (*'hwēt*), *n.* a plant cultivated for its seeds, which are ground into meal and used for food.
bu-col-ic (*bū-kol'ik*), *adj.* pastoral: *n.* a pastoral poem.
bud (*bud*), *v. t.* [*p. t.* and *p. p.* budded, *p. pr.* budding], to graft: *v. i.* begin to grow: *n.* the undeveloped stage of a branch, leaf, or flower.
★**Buda** (*bōō'dà*). In Hungary; took its name from *Buda*, the brother of Attila, as well as *Bud-var* and *Bud-falva*, meaning "Buda's fort and village"; *buda*, "a hut or dwelling."
★**Bud-dhist** (*bōōd'ist*), *n.* one who accepts the doctrines of Buddhism: *adj.* pertaining to Buddha or Buddhism.
budge (*buj*), *v. i.* to move from one's position.
budg-et (*buj'et*), *n.* a bag with its contents, hence a stock or store.
bud-let (*bud'let*), *n.* a small bud.
★**Buenos Ayres** or **Aires** (*bō'nus ā'riz* or *ārz*). Meaning "good breezes"; *buen*, "good." The capital of the Argentine Republic.
buff (*buf*), *n.* a thick leather prepared from the skin of the ox, etc.; a light yellow.
buf-fa-lo (*buf'à-lō*), *n.* [*pl.* buffaloes (*-lōz*)], a ruminant mammal of the ox family.
Buffalo. A city in New York, named from the stream Buffalo creek, on which it is located, the stream receiving its name from the frequent visits of the American bison to a salt spring which welled up near its mouth, "where the buffalo drinks." Indian name of the locality *Teosahwa* or *Teshuway*, "the place of the basswood," also *sisiliichanne*, "waters sought by the buffaloes."
buf-fa-lo bird (*bẽrd*), a bird which perches on the buffalo to catch parasites.
buf-fer (*buf'ẽr*), *n.* any contrivance which serves to deaden the concussion caused by the impact of two bodies.
buf-fet (*buf'et*), *n.* a blow with the hand: *v. t.* to strike with the hand; box; beat; contend against.
buf-fet (*boo-fā'*), *n.* a cupboard or sideboard; a counter for refreshments.
buf-foon (*buf-ōōn'*), *n.* one who amuses others by low jests, antics, odd gestures, etc. [FOOL.]
buf-foon-er-y (*buf-ōōn'ẽr-i*), *n.* [*pl.* buffooneries (*-iz*)], the arts and practices of a buffoon.
bug (*bug*), *n.* name in England for the bedbug; an insect.
bug-a-boo (*bug-à-bōō'*), *n.* a bugbear.
bug-bear (*bug'bâr*), *n.* a frightful object; a vain terror.
bug-gy (*bug'i*), *n.* a light four-wheeled carriage drawn by one horse. [instrument.
bu-gle (*bū'gl*), *n.* a hunting horn; a military wind-
bu-gle (*bū'gl*), *n.* an elongated glass bead.
build (*bild*), *v. t.* [*p. t.* and *p. p.* built, builded, *p. pr.* building], to construct; erect, as a house: *v. i.* to construct an edifice; depend, base, or reckon.
build-ing (*bild'ing*), *n.* the act of constructing, raising, or establishing; an edifice.
bulb (*bulb*), *n.* an onion-shaped root; a kind of leaf bud; any protuberance or expansion on a stem or tube.
★**Bulgaria** (*bōōl-gā'ri-à*, not *bul-gā'ri-à*). On the Danube, and comprising part of ancient Mœsia.
bulge (*bulj*), *n.* the bilge or widest part of a cask; a bending outward: *v. i.* to jut out.
bulk (*bulk*), *n.* magnitude or size.
bulk-head (*'hed*), *n.* a partition in a vessel which separates apartments on the same deck.
bulk-y (*bulk'i*), *adj.* of great size or bulk.
Syn. BULKY, massive. Whatever is *bulky* has a prominence of figure; what is *massive* has compactness of matter.
bull (*bool*), *n.* the male of any bovine mammal; the male of various large animals.
bull (*bool*), *n.* a papal letter, edict, or rescript, having a leaden seal (*bulla*) affixed to it.
bull (*bool*), *n.* a ludicrous inconsistency in language.
bul-let (*bool'let*), *n.* a small ball or projectile.
bul-le-tin (*bool'lẽ-tin*), *n.* an official report; a periodical publication.
bull-fight (*bool'fīt*), *n.* a combat between armed men and a bull.
bull-finch (*bool'finch*), *n.* a common European song bird.
bull-head (*bool'hed*), *n.* a broad-headed, scaleless fish of North America; catfish.
★**bul-lion** (*bool'yun*), *n.* uncoined gold or silver; foreign coin.
bul-lock (*bool'luk*), *n.* an ox or castrated bull; a full-grown steer.
bull's-eye (*boolz'i*), *n.* a boss of glass; the center of a target.
bull ter-ri-er (*bool' ter'i-ẽr*), a cross-breed between the bulldog and the terrier.
bull-y (*bool'i*), *n.* [*pl.* bullies (*'iz*)], one who domineers by insolence or threats.
bul-rush (*bool'rush*), *n.* a rushlike aquatic plant.
★**bul-wark** (*bool'wẽrk*), *n.* a rampart; a fortification; the sides of a ship above the upper deck.
bum-ble-bee (*bum'bl-bē*), *n.* a large bee.
bum-mer (*bum'ẽr*), *n.* a loafing fellow who sponges on others. [*Slang, U. S.*]
bump (*bump*), *n.* a shock from a blow; a swelling, protuberance.
bump-er (*bump'ẽr*), *n.* an overflowing cup.
bump-kin (*bump'kin*), *n.* an awkward, clumsy rustic; a country lout.
bump-tious (*bump'shus*), *adj.* self-assertive.
bun (*bun*), *n.* a small, light cake.
bunch (*bunch*), *n.* a cluster; a collection of things of the same kind growing or fastened together.
★**bun-combe** or **bun-kum** (*bung'kum*), *n.* idle or showy speech, especially if intended to secure votes.
bun-dle (*bun'dl*), *n.* a number of things bound together; a roll or package; two reams of printing or brown paper
bung (*bung*), *n.* a large cork for stopping the hole in a cask.
★**bun-ga-low** (*bung'gà-lō*), *n.* a single-storied house, lightly built, and generally surrounded by a veranda.
bun-gle (*bung'gl*), *v. i.* to work in a clumsy, awkward manner: *v. t.* to botch; manage awkwardly.
bun-ion (*bun'yun*), *n.* a swelling on the foot.
bunk (*bungk*), *n.* a box or recess serving for a sleeping berth in a vessel, sleeping car, etc.
bun-ker (*bung'kẽr*), *n.* a large bin or receptacle; a sandhole on golf links.
bun-ko or **bun-co** (*bung'kō*), *n.* a confidence game.
bunt (*bunt*), *n.* the middle part or belly of a sail: *v. i.* to swell out.
bunt (*bunt*), *n.* a species of fungus which affects the ear of cereals, filling the grains with a fetid dust.
bunt-ing (*bunt'ing*), *n.* a bird allied to the finches and the sparrows.
★**buoy** (*bwoi* or *boi*), *n.* a floating body moored at a certain place to indicate the position of something beneath the water; a life buoy.
buoy-an-cy (*'an-si*), *n.* relative lightness; elasticity of spirits.
buoy-ant (*'ant*), *adj.* having the quality of floating in a fluid.
bur (*bẽr*), *n.* the rough, prickly seed case of certain plants.
bur-den (*bẽr'dn*), *n.* that which is borne or carried; a load; something grievous, wearisome, or oppressive. [WEIGHT.]
bur-dock (*bẽr'dok*), *n.* a large wayside weed with rough, broad leaves.
★**bu-reau** (*bū'rō* or *bū-rō'*), *n.* [*pl.* bureaus or bureaux (*'rōz*)], a desk or writing table furnished with drawers; an office; a governmental department.
bu-reau-cra-cy (*bū-rō'krà-si*), *n.* the system of centralized government by means of bureaus or departments.
bu-reau-crat (*bū'rō-krat*), *n.* an advocate or supporter of bureaucracy.
burg (*bûrg*), *n.* a borough.
bur-gess (*bûr'jes*), *n.* an inhabitant of a borough or walled town, or one who possesses a tenement therein.
bur-gher (*bûr'gẽr*), *n.* a citizen or freeman of a burg or borough.
bur-glar (*bûr'glẽr*), *n.* one who breaks into a house at night with intent to commit a felony.
bur-gla-ry (*bûr'glà-ri*), *n.* the act or crime of breaking into a house at night with intent to commit a felony.
★**bur-gun-dy** (*bûr'gun-di*, not *bûr-gun'di*), *n.* a wine, red and white, made in Burgundy in France.
bur-i-al (*ber'i-al*), *n.* the act of burying.
Syn. BURIAL, interment, sepulture. We *bury* in order to conceal; *interment* and *sepulture* are accompanied with religious ceremonies. *Bury* is confined to no object or place; *interment* may be used when a body is deposited in a vault; *sepulture* is an abstract term confined to particular cases, as in speaking of the rites and privileges of *sepulture*.
bur-lap (*bûr'lap*), *n.* a coarse fabric made of jute or hemp.
★**bur-lesque** (*bûr-lesk'*, not *bûr'lesk*), *adj.* tending to excite laughter by extravagant contrast or caricature.
Burlington house, Old. A house standing between Bond and Sackville streets, London, named for Lord Burlington, by whom it was built.
bur-ly (*bûr'li*), *adj.* bulky; large; corpulent.
★**Burmese** (*bûr'mēz* or *'mēs*), *adj.* pertaining to Burma.
burn (*bûrn*), *v. t.* [*p. t.* burnt and burned, *p. pr.* burning], to consume or injure with fire; reduce to ashes; scorch: *v. i.* to be on fire; suffer from excess of heat. [HOT, EAGER.]
burn (*bûrn*), *n.* a rivulet; a brook.
burn-er (*bûrn'ẽr*), *n.* one who burns or sets fire to anything.
bur-nish (*bûr'nish*), *v. t.* polish by friction.
bur-row (*bur'rō*), *n.* a hole in the ground: *v. i.* to excavate; work a way into or under something.
★**bur-sar** (*bûr'sẽr*), *n.* the treasurer of a college.

burst (*bûrst*), *v. i.* [*p. t.* and *p. p.* burst, *p. pr.* bursting], to rend or break open with violence; yield to internal force or pressure: *n.* a violent or sudden breaking forth. [BREAK.]
bur-y (*ber'i*), *v. t.* [*p. t.* and *p. p.* buried, *p. pr.* burying], to deposit and cover in a grave or tomb.
bus (*bus*), *n.* a shortened form of omnibus.
bush (*boosh*), *n.* a thick shrub; a forest region; wild, uncleared country.
bush-el (*boosh'el*), *n.* a dry measure containing eight gallons or four pecks.
bush-whacker (*boosh'hwak-ẽr*), *n.* one accustomed to beat about through bushes; a guerrilla.
bush-y (*boosh'i*), *adj.* thick and spreading like a bush; overgrown with shrubs.
★**busi-ness** (*biz'nes*, not *bis'i-nes*), *n.* employment; trade; profession; something to be transacted.
Syn. BUSINESS, art, profession, trade. Buying and selling of merchandise is inseparable from *trade;* but the exercise of one's knowledge and experience for purposes of gain constitutes a *business;* when learning or particular skill is required, it is a *profession;* and when there is a particular exercise of art, it is an *art.*
Ant. LEISURE, pastime, pleasure.
bus-kin (*bus'kin*), *n.* a high shoe (*cothurnus*) worn by ancient actors in tragedy.
bust (*bust*), *n.* the chest or thorax; the head, shoulders, and breast of a person.
bus-tard (*bus'tẽrd*), *n.* a bird of the genus Otis.
★**bus-tle** (*bus'l*, not *bust'l*), *v. i.* to be busy, with a certain amount of noise.
Syn. BUSTLE, tumult, uproar. *Bustle* has most of hurry in it; *tumult* most of disorder and confusion; *uproar* most of noise; the hurried movements of one, or many, cause a *bustle;* the disorderly struggles of many constitute a *tumult;* the loud elevation of many opposing voices produces an *uproar; uproar* is the consequence either of general anger or mirth. [See *active.*]
Ant. CALM, peace, quiet.
bus-y (*biz'i*), *adj.* earnestly or closely employed. [ACTIVE.]
bus-y-bod-y (*biz'i-bod-i*), *n.* [*pl.* busybodies (*-iz*)], a meddling, officious person.
butch-er (*booch'ẽr*), *n.* one who slaughters animals for food.
butch-er-y (*booch'ẽr-i*), *n.* the business of slaughtering cattle; barbarous murder. [CARNAGE.]
but-ler (*but'lẽr*), *n.* a manservant in a household who has the care of the plate, wines, etc.
butt (*but*), *n.* a push or thrust delivered by the head of an animal; a thrust in fencing; the extremity of a thing; the thicker end of anything.
butte (*būt* or *boot*), *n.* an abrupt isolated hill or ridge.
Butte. City in Montana, named for a bare butte overlooking the place.
but-ter (*but'ẽr*), *n.* an oily, unctuous substance obtained from cream or milk by churning.
but-ter-cup (*-kup*), *n.* a plant bearing yellow, cup-shaped flowers.
but-ter-fly (*but'ẽr-flī*), *n.* [*pl.* butterflies (*-flīz*)], a general name for any species of diurnal lepidopterous insects.
★**but-ter-ine** (*but'ẽr-in*), *n.* an imitation butter.
but-ter-milk (*but'ẽr-milk*), *n.* milk separated from the cream in butter-making.
but-ter-nut (*but'ẽr-nut*), *n.* the fruit of a North American tree allied to the walnut.
but-ter-y (*but'ẽr-i*), *n.* [*pl.* butteries (*-iz*)], an apartment in which provisions, wines, etc., are kept.
but-tock (*but'ok*), *n.* the rump or protuberant hinder part of a man or animal.
but-ton (*but'n*), *n.* any small rounded object used to secure different parts of a garment, or attached for ornament; something resembling a button.
but-ton-wood (*-wood*), *n.* the plane tree.
but-tress (*but'res*), *n.* masonry or brickwork built on to an outside wall to afford support.
bux-om (*buks'um*), *adj.* cheerful; jolly; robust; plump and comely.
buy (*bī*), *v. t.* [*p. t.* and *p. p.* bought, *p. pr.* buying], to acquire by paying an agreed price; purchase; bribe.
Syn. BUY, purchase, bargain, cheapen. *Buy* may always be substituted for *purchase* without impropriety, but *purchase* would be sometimes ridiculous in the familiar application of *buy;* the necessaries of life are *bought;* luxuries are *purchased;* to *cheapen* is not only to lower the price asked, but to deal in such things as are cheap.
Ant. SELL.
buzz (*buz*), *n.* a continuous humming noise, as of bees.
buz-zard (*buz'ẽrd*), *n.* the name of several species of hawks; a stupid, dull fellow.
Buzzard's bay, Mass. Waters discovered by Gosnold, May 21, 1602, and by him named "Bay of Hope." Indian name *Manomet.*
buzz saw (*buz' saw*), a circular saw.
by-law (*bī'-law*), *n.* a private law or statute framed by a corporate body; a secondary law.
by-word (*bī'wẽrd*), *n.* a proverb; nickname; an object of derision.
★**Byzantine** (*bi-zan'tin* or *biz'an-tīn*), *adj.* of or pertaining to Byzantium (Constantinople), the ancient capital of the eastern Roman empire.

C

Cab (*kab*), n. a public carriage with two or four wheels, drawn by one horse.
★**ca-bal** (*kȧ-bal'*), *n.* a secret combination for carrying out some specific design. [MYSTERIOUS.]
cab-a-ret (*kȧ'bȧ-rē'*), originally a French drinking house; now generally applied to drinking places offering some sort of theatrical entertainment.
cab-bage (*kab'āj*), *n.* a well-known vegetable; the terminal head of palm trees.
cab-in (*kab'in*), *n.* a small hut, cottage, or room; a room in a ship for officers or passengers.
cab-i-net (*kab'i-net*), *n.* a small room; a piece of furniture to hold objects of virtu.
cab-i-net pic-ture (*pik'tūr*), a valuable picture of small dimensions.
ca-ble (*kā'bl*), *n.* a large, strong rope or chain.
ca-ble-gram (*kā'bl-gram*), *n.* a message sent by a submarine cable.
ca-boose (*kȧ-bōōs'*), *n.* a ship's galley or kitchen; the trainmen's car attached to a freight train.
★**ca-ca-o** (*kȧ-kā'ō* or *kā'kō*), *n.* a small evergreen tree of South America and the West Indies.
★**cache** (*kȧsh*), *n.* a place of concealment for food for future use.
cach-in-na-tion (*kak-i-nā'shun*), *n.* loud or unrestrained laughter.
cac-kle (*kak'l*), *v. i.* to cry like a hen or goose.
cac-tus (*kak'tus*), *n.* [*pl.* cactuses (*-ez*) and cacti (*'tī*)], a spiny, fleshy plant with showy flowers.
cad (*kad*), *n.* a vulgar, ill-bred fellow; an omnibus conductor.
★**ca-da-ver** (*kȧ-dā'vẽr*, not *cȧ-dav'ẽr*), *n.* a dead body; a corpse.
ca-dav-er-ous (*kȧ-dav'ẽr-us*), *adj.* resembling a corpse.
cad-die (*kad'i*), *n.* a lad who carries a golf player's clubs.
cad-dy (*kad'i*), *n.* [*pl.* caddies (*'iz*)], a small box for keeping tea.
ca-dence (*kā'dens*), *n.* a fall of, or a rhythmical modulation of, the voice in reading or speaking.
ca-den-za (*kȧ-den'zȧ*), *n.* a vocal or instrumental flourish.
ca-det (*kȧ-det'*), *n.* a younger son; student in a naval or military academy.
ca-di (*kā'di*), *n.* Mohammedan judge.
★**Cadillac** (*ka'di-lak*, Fr. *kā-dēl-yăk'*). City in Wexford county, Michigan, named for La Motte (or La Mothe) Cadillac.
★**Cadiz** (*kā'diz*, not *kā-diz'*, Sp., *kā'thēth*). From *gadr*, meaning "an inclosure, a city, or fortified place," and *kir*, 'a wall." A city of Spain.
★**Cæsar** (*sē'zẽr*). Some translate this name "hairy"; Schlegel says from Sanskrit *kesa*, "adorned with hair." It is more probable, however, of Persian origin, and comes from the Persian *sar*, "head, highest, greatest, chief." Danish, *Cæsar;* Fr., *César;* Ger., *Casar* or *Cæsar;* It., *Cesare;* Lat., *Cæsar;* Sp., *Cesar*. Name of first Roman emperor, and title of successors.
Cæ-sa-ri-an (*sē-zā'ri-an*), *adj.* pertaining to Cæsar.
Cæ-sa-ri-an op-er-a-tion (*op-ẽr-ā'shun*), a delivery of a fœtus by cutting through the walls of the abdomen.
cage (*kāj*), *n.* a box or inclosure furnished with metal bars for confining birds, or other animals.
★**ca-ïque** (*kā-ēk'*), *n.* a skiff or light rowing boat used on the Bosporus.
★**cairn** (*kârn*), *n.* a conical heap of stones erected as a monument.
★**Cairo** (*kī'rō*, not *kā'rō*), a corruption of the Arabic *Alkâhirah*, "the victorious"; so called because *Kâhir* (Mars), the planet of victory, was visible on the night when the city was founded. A city in Egypt.
★**Cairo** (*kā'rō*, not *kī'rō*), **Ill.** A locally fancied adoption from the Egyptian city Cairo, as it has a similar location, namely, at the mouth of a large river.
★**cais-son** (*kā'son*), *n.* an ammunition wagon or chest; a box filled with explosives for firing a mine.
cai-tiff (*kā'tif*), *n.* a despicable or cowardly wretch: *adj.* despicable; vile; cowardly.
ca-jole (*kȧ-jōl'*), *v. t.* to coax or deceive by flattery; wheedle; cheat.
cake (*kāk*), *n.* a small mass of dough, sweetened and baked; a compressed or solidified mass of any substance, especially if thin or flat.
cal-a-boose (*kal-ȧ-bōōs'*), *n.* a jail; a lockup.
ca-lam-i-tous (*kȧ-lam'i-tus*), *adj.* producing, or resulting from, calamity.
ca-lam-i-ty (*kȧ-lam'i-ti*), *n.* [*pl.* calamities (*-tiz*)], any cause that produces evil.
Syn. CALAMITY, disaster, misfortune, mischance, mishap. A *calamity* is a great *disaster* or *misfortune;* a *misfortune* a great *mischance* or *mishap;* whatever is attended with destruction is a *calamity;* whatever occasions mischief to the person, defeats or interrupts plans, is a *disaster;* whatever is accompanied with a loss of property, or the deprivation of health, is a *misfortune;* whatever diminishes the beauty or utility of objects is a *mischance* or *mishap.* [See *accident.*]
Ant. GOOD FORTUNE, luck.
ca-lash (*kȧ-lash'*), *n.* a light carriage with low wheels and a folding adjustable top.
cal-ci-fy (*kal'si-fī*), *v. t.* [*p. t.* and *p. p.* calcified, *p. pr.* calcifying], to convert into lime.
cal-ci-mine (*kal'si-min*), *n.* white or tinted wash for walls or ceilings.
cal-ci-na-tion (*kal-si-nā'shun*), *n.* the act or process of reducing to powder by heat.
★**cal-cine** (*kal'sin* or *kal-sin'*), *v. t.* to reduce a substance to powder by heat.
cal-ci-um (*kal'si-um*), *n.* the metallic base of lime.
cal-cu-late (*kal'kū-lāt*), *v. t.* to compute.
Syn. CALCULATE, reckon, compute, count. To *calculate* denotes any numerical operation in general, but is particularly applicable to the abstract science of figures; the astronomer *calculates* the motions of the heavenly bodies; the mathematician makes algebraic *calculations;* to *reckon* is to enumerate and set down things in detail; *reckoning* is applicable to the ordinary business of life; tradesmen keep their accounts by *reckoning;* children learn to *reckon* by various simple processes. *Calculation* is therefore the science, *reckoning* the practical art, of enumerating. To *compute* is to come at the result by *calculation;* we *count* one by one; we *count* the minutes. [See *estimate.*]
cal-cu-la-tion (*kal-kū-lā'shun*), *n.* the art of reckoning by numbers.
cal-cu-la-tor (*kal'kū-lā-tẽr*), *n.* one who, or a machine that, computes or reckons.
★**cal-cu-lus** (*kal'kū-lus*), *n.* [*pl.* calculi (*-lī*)], one of the higher branches of mathematics; the differential calculus.
Calcutta (*kal-kut'tȧ*). Called *Kalkatta* in early annals. The name is supposed to be a corruption of the Indian *Kali-Kata*, the "dwelling or sacred place of Kali," the wife of Siva. A city of India.
cal-dron (*kawl'drun*), *n.* a large kettle or boiler.
Caleb (*kā'leb*). From the Hebrew *kalebh*, "a dog."
cal-en-dar (*kal'en-dẽr*), *n.* a register of the days, weeks, and months of the year, etc.
calf (*käf*), *n.* [*pl.* calves (*kävz*)], the young of the cow, or of the bovine family, also of some other mammals.
cal-i-ber (*kal'i-bẽr*), *n.* the diameter of a cylindrical body; mental capacity.
cal-i-co (*kal'i-kō*), *n.* [*pl.* calicoes (*-kōz*)], white or unprinted cotton cloth; also with figured pattern.
California (*kal-i-fôr'ni-a*). Most authorities derive it from the two Spanish words, *caliente fornalia* (*i. e.*, "hot furnace"), given by Cortes in the year 1535 to the peninsula now known as Old or Lower California, of which he was the discoverer, on account of its hot climate. A state of the Union.
California, Gulf of. Variously called *Mar de Cortez* and *Mar Bermejo* by the Spaniards—the former in honor of Hernando Cortes; the latter meaning "bright reddish color," literally, "red sea," for its resemblance in color to the Red Sea.
cal-i-pers (*kal'i-pẽrz*), *n. pl.* compasses for measuring the diameters of bodies or the bore of tubes.
★**ca-liph** (*kā'lif*), *n.* a title of the successors of Mohammed. [Also *calif.*]
★**cal-is-then-ics** (*kal-is-then'iks*), *n. pl.* the art of promoting health by physical exercise.
calk (*kawk*), *v. t.* to copy (a drawing) by covering the back with chalk or lead, and tracing over the lines with a style for transfer.
calk (*kawk*), *n.* that part of a horseshoe which projects downward to prevent slipping; an instrument with sharp points worn on the sole of a boot or shoe: *v. t.* to furnish with calks.
calk or **caulk** (*kawk*), *v. t.* to drive oakum into the seams of (a ship), smearing with pitch.
call (*kawl*), *v. t.* to summon from, or invite to, any place: *n.* a summons or invitation; a request or command; a short visit.
Syn. CALL, bawl, bellow, clamor, cry, ejaculate, exclaim, roar, scream, shout, shriek, vociferate, yell. To *call* is to send out the voice in order to attract another's attention; a man *calls* his dog; to *shout* is to *call* or *exclaim* with the fullest volume of sustained voice; to *scream* is to utter a shriller cry; to *shriek* or to *yell* refers to that which is louder and wilder still; in *screaming, shrieking,* or *yelling* there is often no attempt at articulation; to *bawl* is to utter senseless, noisy cries; *bellow* and *roar* are applied to the utterances of animals; *clamor* is noisy iteration; *vociferate* is commonly applied to loud and excited speech; we may *exclaim* by mere interjections; to *ejaculate* is to give out utterances of joy, regret, and especially of appeal, petition, prayer. [See *name.*]
Ant. STILL, hearken, hush, listen.
cal-lig-ra-phy (*kal-lig'rȧ-fi*), *n.* elegant or beautiful writing.
call-ing (*kawl'ing*), *n.* the act of summoning; a summons or invitation.
cal-lous (*kal'us*), *adj.* hardened, insensible.
cal-low (*kal'ō*), *adj.* unfledged.
cal-lus (*kal'us*), *n.* [*pl.* calli (*-ī*)], the hardening of the skin from pressure; repair material exuded by broken bone.
calm (*käm*), *adj.* tranquil; still: undisturbed.
Syn. CALM, composed, cool, dispassionate, imperturbable, peaceful, placid, quiet, sedate, serene, smooth, still, tranquil. *Calm* is free from disturbance or agitation; we speak of a *calm* sea, a *placid* lake, a *serene* sky, a *still* night, a *quiet* day, a *quiet* home; one is *cool* if he scarcely feels the tendency to excitement; *composed* who has subdued excited feeling; *collected* when he has every thought or feeling at command. We speak of a *tranquil* mind, a *placid* disposition, a *serene* spirit. [See *composed, peace.*]
Ant. AGITATED, excited, passionate, wild.
★**cal-o-mel** (*kal'ō-mel*), *n.* mercurous chloride.
★**ca-lor-ic** (*kȧ-lor'ik*, not *kȧ-lō'rik*), *adj.* pertaining to heat.
★**cal-o-rie** (*kal'ō-ri*), *n.* the unit of heat (metric system) to express the amount of heat required to raise one kilogram of water from 0° to 1° centigrade.

cal-o-rim-e-ter (*kal-ō-rim'ē-tẽr*), *n.* an apparatus for measuring heat produced or given off by a body.
cal-o-rim-e-try (*kal-ō-rim'ē-tri*), *n.* the art or process of determining the amount of heat contained in, or given off by, bodies.
★**Calton** (*kawl'ton*) **hill.** A height in the northeastern part of Edinburgh.
★**Calumet** (*kal'ū-met*). River in Illinois and Indiana, county in Wisconsin, town in Indiana, and several other places in the country. From the French *calumet*, pipe (*calumet de paix*, pipe of peace); *chalumeau*, corn pipe, pipe, reed. The "*calumet*," or "pipe of peace," was used by the Indians to ratify treaties.
ca-lum-ni-ate (*kȧ-lum'ni-āt*), *v. t.* to accuse falsely and maliciously: *v. i.* to utter calumnies.
ca-lum-ni-a-tion (*kȧ-lum-ni-ā'shun*), *n.* the act of calumniating.
cal-um-ny (*kal'um-ni*), *n.* [*pl.* calumnies (*-niz*)], a false accusation; a slander.
Calvary (*kal'vȧ-ri*), *n.* the place where Christ was crucified.
calve (*käv*), *v. i.* to bring forth a calf.
Cal-vin-ism (*kal'vin-izm*), *n.* the doctrines of John Calvin, the French theologian and reformer, especially those relating to predestination and election.
Cal-vin-ist (*kal'vin-ist*), *n.* one who holds the doctrines of Calvin.
★**ca-lyx** (*kā'liks*, not *kal'iks*), *n.* [*pl.* calyxes (*kā'liks-ez*), Lat. *pl.* calyces (*kal'i-sēz*)], the outer envelope of a flower.
cam (*kam*), *n.* a projecting part of a wheel or other moving piece of machinery for imparting an eccentric or alternating motion.
cam-ber (*kam'bẽr*), *n.* a convexity on an upper surface; a concavity on an under surface.
★**Cambria** (*kam'bri-ȧ*). The original name for Wales, so called on account of the Cymri, or Kimri.
★**cam-bric** (*kām'brik*), *n.* a very fine thin linen.
cam-bric mus-lin (*muz'lin*), a fine cotton imitation of cambric.
Cambridge (*kām'brij*). City in Middlesex county, Massachusetts, so named for the English university town, after the general court decided to establish a college there. The English name is usually supposed to mean "the bridge over the river Cam."
Camden (*kam'den*), **N. J.** In honor of the noted English statesman, Earl of Camden (Cambden).
cam-el (*kam'el*), *n.* a large ruminant quadruped, of which there are two species, the Arabian camel or dromedary, with a single hump, and the Bactrian camel, with two humps.
★**Camellia** (*kȧ-mel'i-ȧ* or *kȧ-mēl'yȧ*), *n.* an Asiatic genus of small shrubs.
cam-e-o (*kam'ē-ō*), *n.* a precious stone or shell on which figures are engraved in relief.
cam-e-ra (*kam'ē-rȧ*), *n.* [*pl.* cameras (*-rȧz*)], a camera obscura.
★**Camilla** (*kȧ-mil'lȧ*). The feminine of *Camillus*. Fr., *Camille;* It., *Camilla;* Lat., *Camilla*.
★**Camillus** (*kȧ-mil'lus*). Some translate this name "attendant at a sacrifice." The Roman name was probably corrupted from the Arabic *Kasen-El*, signifying "oracle of God."
camp (*kamp*), *n.* the ground occupied by an army at rest; an encampment.
★**Campagna di Roma** (*kȧm-pän'yȧ dē rō'mȧ*). A large plain in Italy, surrounding Rome, between the Mediterranean and Sabine and Alban mountains.
cam-paign (*kam-pān'*), *n.* an open tract of land; the period during which an army carries on active operations in the field.
cam-pa-ni-le (*kȧm-pȧ-nē'lā*), *n.* [*pl.* campaniles (*'lāz*)], a bell-tower.
★**Campanile** (*kȧm-pȧ-nē'lā*) **of Giotto.** A famous tower near the Duomo, at Florence, Italy, begun by the architect Giotto, in 1334, and after his death, in 1336, continued by Andrea Pisano.
cam-phine (*kam-fēn'* or *kam'fin*), *n.* rectified oil of turpentine.
cam-phor (*kam'fẽr*), *n.* a volatile, aromatic, whitish resin.
camp meet-ing (*kamp' mēt'ing*), an outdoor religious gathering.
camp-stool (*'stōōl*), *n.* a folding stool or seat.
can (*kan*), *v. i.* [*p. t.* could], am able.
Syn. CAN, may. *Can* denotes possibility, *may* liberty and probability. He who has sound limbs *can* walk; but he *may* not walk in places which are prohibited.
can (*kan*), *n.* a metal vessel of small size, for holding liquids or preserving solids.
★**Canaan** (*kā'nan* or *kā'nā-an*). The "Land of Canaan" is interpreted to mean "lowland," from Semitic *kana*, "to humble," "subdue"; generally, in the Old Testament, the country west of the Jordan and the Dead Sea, extending to the Mediterranean.
Canada (*kan'ȧ-dȧ*). Called *La Nouvelle France* by the French settlers, is probably the native word *kanata*, which means "a collection of huts or wigwams."
ca-nal (*kȧ-nal'*), *n.* an artificial navigable waterway.
★**Canandaigua** (*kan-an-dā'gwȧ*). Lake town in Ontario county, New York, and village in Lenawee county, Michigan. An Indian word, the derivation of which is in dispute. Morgan defines it as "a place selected for settlement," a "chosen spot"; Haines, "a town set off."
ca-nard (*kȧ-närd'*, Fr. *kȧ-när'*), *n.* an absurd story or report.
ca-na-ry (*kȧ-nā'ri*), *n.* a light wine; a small singing bird with yellow plumage.
can-can (*kan'kan*), *n.* a vivacious and indelicate French dance.
can-cel (*kan'sel*), *v. t.* [*p. t.* and *p. p.* canceled, *p. pr.* canceling], to deface writing by drawing lines across it; annul. [ABOLISH, BLOT.]
can-cer (*kan'sẽr*), *n.* a genus of crustaceans, the crab; a malignant tumor or growth.
can-cer-ate (*kan'sẽr-āt*), *v. i.* to grow into a cancer.
can-cer-ous (*kan'sẽr-us*), *adj.* like a cancer; affected with cancer.
★**can-de-la-brum** (*kan-dē-lā'brum*, not *kan-dē-lā'brum*), *n.* [*pl.* candelabra (*'brȧ*)], a lamp-stand.
★**Candia** (*kan'di-ȧ*). From the Arabic *Khandae*, "the island of trenches." The island of Crete.
can-did (*kan'did*), *adj.* honest; outspoken; sincere; free from undue bias; open; fair.
Syn. CANDID, aboveboard, fair, frank, honest, impartial, ingenuous, innocent, open, simple, straightforward, transparent, truthful. *Fair* is applied to the conduct; *candid* is not; as, *fair* treatment, a *fair* field and no favor. He is *frank* who states the truth fearlessly; *honest* and *ingenuous* express contempt for deceit; *artless*, *simple*, imply the goodness which comes from guileless simplicity; *open* expresses unstudied truthfulness or defiant recklessness; as, *open* admiration, *open* robbery. We speak of *transparent* integrity or *transparent* fraud. *Sincere* applies to the feelings which underlie one's words. [See *fair*, *frank*, *ingenuous*.]
Ant. DECEITFUL, treacherous.
can-di-date (*kan'di-dāt*), *n.* one who offers himself, or is proposed by others, to fill some office.
can-di-da-ture (*kan'di-dā-tūr*), *n.* the state of being a candidate.
can-died (*kan'did*), *p. adj.* preserved or incrusted with sugar.
can-dle (*kan'dl*), *n.* a cylindrical body of tallow, wax, or other fatty material, inclosing a wick of cotton.
★**Can-dle-mas** (*kan'dl-mas*), *n.* the feast of the Purification of the Virgin Mary (Feb. 2).
can-dle pow-er (*pou'ẽr*), the illuminating power of a candle taken as a unit in determining the luminosity of any flame.
can-dor (*kan'dẽr*), *n.* openness; frankness.
can-dy (*kan'di*), *n.* a solid confection of sugar.
cane (*kān*), *n.* the stem of certain palms, grasses, and other plants, as the bamboo.
cane-brake (*'brāk*), *n.* a thicket of canes.
ca-nine (*kȧ-nīn'*), *adj.* pertaining to dogs; having the nature or qualities of a dog.
can-is-ter (*kan'is-tẽr*), *n.* a metal box or case for tea, coffee, etc.; a case containing shot which explodes when fired from a gun.
can-ker (*kang'kẽr*), *n.* a cancerous or ulcerous disease.
can-ker-ous (*kang'kẽr-us*), *adj.* corroding.
canned (*kand*), *adj.* preserved in tins.
can-nel coal (*kan'el kōl*), a hard bituminous coal.
can-ner-y (*kan'ẽr-i*), *n.* [*pl.* canneries (*-iz*)], an establishment for preserving meat, fish, etc.
can-ni-bal (*kan'i-bal*), *n.* a human being who eats human flesh.
can-ni-bal-ism (*kan'i-bal-izm*), *n.* the act or practice of eating human flesh by human beings.
can-non (*kan'un*), *n.* [*pl.* cannons (*'unz*), or cannon (collectively)], a large gun.
can-non-ade (*kan-un-ād'*), *n.* the act of discharging cannon against a town, fort, etc.
can-non-eer (*kan-un-ēr'*), *n.* an artilleryman.
can-non-eer-ing (*kan-un-ēr'ing*), *n.* the act or art of using the cannon.
can-not (*kan'ot*) [*can* and *not*], to be unable.
can-ny or **can-nie** (*kan'i*), *adj.* shrewd; knowing; cautious; wary; artful.
ca-noe (*kȧ-nōō'*), *n.* [*pl.* canoes (*-nōōz'*)], a light boat of bark, hide, or the hollow trunk of a tree; any light boat propelled by paddles.
ca-noe-ist (*kȧ-nōō'ist*), *n.* one who paddles a canoe.
★**can-on** (*kan'un*), *n.* a law or rule in general; a law or rule regarding doctrine or discipline enacted by a council and confirmed.
★**ca-ñon** (*kā-nyōn'*) or **canyon** (*kan'yun*), *n.* a deep gorge having more or less perpendicular sides.
can-on-ize (*kan'un-īz*), *v. t.* to enroll in the catalogue or canon of the saints.
can-on law (*law*), rules or laws relating to faith, morals, and discipline that regulate church government.
can-o-py (*kan'ō-pi*), *n.* [*pl.* canopies (*-piz*)], a covering fixed above a bed, or suspended over a throne or dais.
cant (*kant*), *v. i.* to speak in a whining voice, or with an affected or hypocritical tone: *n.* a whining manner of speech; the speech affected by those soliciting alms; the words and phrases characteristic of a certain party, sect, etc.
can't (*känt*), a colloquial contraction of *can-not*.
can-ta-lev-er (*kan'tȧ-lev-ẽr*). Same as *cantilever*.
can-ta-loupe (*kan'tȧ-lōōp*), *n.* a variety of muskmelon of delicate flavor.
can-tan-ker-ous (*kan-tang'kẽr-us*), *adj.* ill-tempered; cross-grained; contentious.
can-ta-ta (*kȧn-tä'tȧ*), *n.* a short choral composition in the manner of an oratorio.
can-teen (*kan-tēn'*), *n.* a kind of shop in barracks or camp where liquors and provisions are sold; a vessel used by soldiers for carrying water or liquor when on the march.
can-ter (*kan'tẽr*), *n.* an easy gallop.
Canterbury (*kan'tẽr-ber-i*). A corruption of the Anglo-Saxon *Cantwarabyrig*, "the forts or strongholds of the Cantwere, or men of Cant" (Kent).
can-ti-cle (*kan'ti-kl*), *n.* a song; one of the nonmetrical hymns of the Bible arranged for chanting in church service.
★**can-ti-lev-er** (*kan'ti-lev-ẽr*), *n.* one of two arms projecting from opposite banks and joined over a stream to form a bridge.
can-to (*kan'tō*), *n.* [*pl.* cantos (*'tōz*)], one of the chief divisions of a poem of some length.
can-ton (*kan'tun*), *n.* a district or division of a territory; one of the Swiss federal states.
can-ton-ment (*kan-tun'ment*), *n.* a town or village, or part of one, allotted to a body of troops.
can-vas (*kan'vas*), *n.* a coarse, heavy cloth of hemp or flax, used for tents, sails, etc.
can-vas-back (*-bak*), *n.* a North American duck.
can-vass (*kan'vas*), *v. t.* to examine; sift; discuss; solicit votes or opinions.
can-yon (*kan'yun*). Same as *canon*.
★**caout-chouc** (*kōō'chōōk*), *n.* an elastic gummy substance obtained from the milky juice of several tropical trees.
cap (*kap*), *n.* a covering for the head, usually without a brim; anything resembling a cap.
ca-pa-bil-i-ty (*kā-pȧ-bil'i-ti*), *n.* the quality of being capable. [ABILITY.]
ca-pa-ble (*kā'pȧ-bl*), *adj.* receptive; susceptible; having power, skill.
ca-pa-cious (*kȧ-pā'shus*), *adj.* roomy; spacious.
ca-pa-cious-ness (*-ness*), *n.* the power of holding or receiving. [CAPACITY.]
ca-pac-i-tate (*kȧ-pas'i-tāt*), *v. t.* to make capable; enable; qualify.
ca-pac-i-ty (*kȧ-pas'i-ti*), *n.* [*pl.* capacities (*-tiz*)], the power of receiving or containing; the power of containing a certain quantity.
Syn. CAPACITY, capaciousness. *Capacity* is an indefinite term designating the property of being fit to hold or receive, as applied to bodies generally; but *capaciousness* denotes a fullness of this property as belonging to a particular object in a great degree. Measuring the *capacity* of vessels belongs to the science of mensuration; the *capaciousness* of a room is to be observed by the eye. [See *ability*.]
★**ca-par-i-son** (*kȧ-par'i-sun*), *n.* an ornamental covering for a horse; harness or trappings collectively, especially when decorative.
cape (*kāp*), *n.* a covering for the shoulders, worn separately or attached; a headland.
Cape Colony. A British colony in South Africa, so called after the parent settlement at Cape Town, which dates from the year 1826. The Cape region, settled by the Dutch in 1652, passed in 1806 into British possession.
Cape Fear River, N. C. Was originally named by the English *Charles river*. Afterward the name of *Cape Fair river* was adopted from the Atlantic cape of that name, the stream being located by navigators as "coming in back of *Cape Fair*." Subsequently corrupted to *Fear*.
Cape Horn. The southernmost point of South America was called *Cape Hoorn* by Schouten, who first rounded it in 1616, in honor of his birthplace, *Hoorn*, in the Netherlands.
Cape May, N. J. The most southern point of New Jersey. Here is located the Cap May lighthouse.
Cape of Good Hope. Discovered by Bartholomew de Dias in 1486; was so named (*Cabo de Boa Esperance*) by John II., king of Portugal.
ca-per (*kā'pẽr*) *v. i.* to skip; jump: *n.* a frolicsome leap or spring; a skip; a prank.
★**cap-il-la-ry** (*kap'il-ā-ri* or *kȧ-pil'ȧ-ri*), *adj.* resembling a hair; minute; slender; possessing a very small bore: *n.* an extremely fine tube or blood vessel.
cap-il-la-ry at-trac-tion (*at-trak'shun*), the power possessed by solid bodies of elevating or depressing fluids, especially that of capillary tubes of drawing up fluids.
cap-i-tal (*kap'i-tal*), *adj.* affecting the head or life; principal, good, excellent: *n.* the chief city or town in a kingdom or state.
cap-i-tal (*kap'i-tal*), *n.* the sum invested in any particular business; stock in trade; stock or resources of any kind, moral or physical.
cap-i-tal-ist (*kap'i-tal-ist*), *n.* one who has capital.
cap-i-tal-i-za-tion (*kap-i-tal-i-zā'shun*), *n.* the act of capitalizing.
cap-i-tal-ize (*kap'i-tal-īz*), *v. t.* to convert into capital.
cap-i-tal-ly (*-li*), *adv.* in a manner involving the forfeiture of life; in an excellent manner.
Capitol (*kap'i-tol*), *n.* the temple of Jupiter at Rome, situated on the southwest summit of the Capitoline hill; the building occupied by the United States Congress at Washington; the statehouse of a state.
★**Capitoline** (*kap'i-tō-līn*, not *kap'i-to-lēn*) **hill, The.** One of the seven hills of ancient Rome, northwest of the Palatine, on the left bank of the Tiber, on which the Capitol was erected.
Capitoline museum (*mū-zē'um*). A famous museum of antiquities in Rome.
ca-pit-u-late (*kȧ-pit'ū-lāt*), *v. i.* to surrender to an enemy on conditions agreed upon.
ca-pit-u-la-tion (*kȧ-pit-ū-lā'shun*), *n.* the act of capitulating.
★**ca-pon** (*kā'pn* or *kā'pun*), *n.* a castrated cock.
★**Capri** (*kā'prē*). Signifies "the island of goats," being derived from the Latin *caper*, a he goat.

cap-ric (*kap'rik*), *adj.* pertaining to capric acid.
cap-ric ac-id (*as'id*), a fatty acid occurring in small quantities in butter, cocoanut oil, etc., united with glycerine.
★**ca-price** (*kȧ-prēs'*), *n.* a sudden impulse of the mind; a whim; a freak.
★**ca-pri-cious** (*kȧ-prish'us*), *adj.* characterized by caprice; unsteady; fickle. [FANCIFUL.]
cap-si-cum (*kap'si-kum*), *n.* a genus of plants, the pods of several species of which are used as a condiment.
cap-size (*kap-sīz'*), *v. i.* to be overturned; upset: *v. t.* to turn over or upset: (*kap'sīz*), *n.* an upset or overturn.
cap-stan (*kap'stan*), *n.* an upright drum or cylinder revolving upon a spindle, worked by bars or levers.
cap-su-lar (*kap'sū-lẽr*), *adj.* pertaining to, or of the nature of, a capsule.
cap-sule (*kap'sūl*), *n.* a metallic seal or cover for a bottle; a small envelope of gelatine inclosing a nauseous or acrid drug.
cap-tain (*kap'tin*), *n.* one who has command of or authority over, others; a chief; a commander.
cap-tain-cy (*kap'tin-si*), *n.* the rank, post, or commission of a captain.
cap-tion (*kap'shun*), *n.* a heading; arrest by judicial process.
★**cap-tious** (*kap'shus*), *adj.* ready to catch at faults or take offense; quibbling; sophistical.
Syn. CAPTIOUS, cross, peevish, petulant. *Captious* marks a readiness to be offended, *cross* indicates a readiness to offend or come across the wishes of others; *peevish* expresses a strong degree of crossness; *fretful* a complaining impatience; *petulant* a quick or sudden impatience. *Captiousness* is the consequence of misplaced pride; *crossness* of ill-humor; *peevishness* of a painful irritability; *petulance* is either the result of a naturally hasty temper or of a sudden irritability. [See *perverse.*]
cap-ti-vate (*kap'ti-vāt*), *v. t.* to enslave or hold captive by beauty or excellence.
cap-tive (*kap'tiv*), *adj.* made prisoner; held in bondage; fascinated.
cap-tiv-i-ty (*kap-tiv'i-ti*), *n.* the state of being held in bondage or confinement.
cap-tor (*kap'tẽr*), *n.* one who captures or takes any person or thing by force or stratagem.
cap-ture (*kap'tūr*), *n.* the act of seizing or taking, as a prisoner or a prize.
Syn. CAPTURE, seizure, prize. A *capture* is made by force of arms; a *seizure* by direct and personal force; *prize* relates only to the thing taken, and its value to the captor.
★**cap-u-chin** (*kap-ū-shēn'*, not *kap'ū-chin*), *n.* a Franciscan monk of the mendicant order.
car (*kär*), *n.* a small wheeled vehicle, especially of two wheels, for one horse; a railway carriage; a chariot.
car-a-mel (*kar'ȧ-mel*), *n.* burnt sugar, for coloring spirits, gravies, etc.; a kind of confectionery, etc.
car-at (*kar'at*), *n.* the weight of 3.2 grains Troy, used for weighing precious stones and pearls.
car-a-van (*kar'ȧ-van* or *kar-ȧ-van'*), *n.* a company of travelers, merchants, or pilgrims, associated together for mutual security.
★**car-a-van-sa-ry** (*kar-ȧ-van'sȧ-ri*), *n.* [*pl.* caravansaries (*-riz*)], in the East, a kind of inn consisting of a large unfurnished building surrounding a spacious court, where caravans rest at night.
car-a-vel (*kar'ȧ-vel*), *n.* a name given to several kinds of ships; the sixteenth century caravel was small; a Portuguese vessel of 100 or 150 tons burden.
car-a-way (*kar'ȧ-wā*), *n.* a biennial plant with aromatic and pungent seeds.
★**car-bine** (*kär'bīn* or *kär-bīn'*, not *kär'bēn*), *n.* a short, light rifle or musket, especially one adapted to the use of cavalry.
car-bi-neer (*kär-bi-nēr'*), *n.* a soldier armed with a carbine.
car-bo-hy-drate (*kär-bō-hī'drāt*), *n.* one of a group of organic compounds of carbon, hydrogen, and oxygen.
car-bol-ic (*kär-bol'ik*), *adj.* pertaining to, or derived from, coal tar and other sources.
car-bol-ic ac-id (*as'id*), an acid obtained from coal tar by distillation.
car-bon (*kär'bon*), *n.* an elementary substance found in all organic compounds, and in nature in two distinct forms, as the diamond and graphite.
car-bon-ic (*kär-bon'ik*), *adj.* pertaining to, or obtained from, carbon.
car-bon-ic ac-id (*as'id*), *n.* contains two parts hydrogen, one carbon, three oxygen; usually signifies carbon dioxide, one part carbon, two parts oxygen.
car-bon-ize (*kär'bon-īz*), *v. t.* to convert into a residue of carbon by combustion.
car-bon light (*līt*), a brilliant light produced by passing an electric current through carbon points.
car-bon point (*point*), the rod of an arc lamp.
car-boy (*kär'boi*), *n.* a large globular bottle of glass, protected by a basket work.
car-bun-cle (*kär'bung-kl*), *n.* a beautiful gem of a deep red color.
car-bun-cu-lar (*kär-bung'kū-lẽr*), *adj.* pertaining to, or resembling, a carbuncle.
car-bu-ret (*kär'bū-ret*), *n.* a carbide.
car-bu-ret-ed or **car-bu-ret-ted** (*kär'bū-ret-ed*), *p. adj.* combined with carbon in the manner of a carbide.
★**car-bu-ret-or** (*kär'bū-ret-ẽr*), *n.* an apparatus used to increase illuminating power.

car-cass or **car-case** (*kär'kas*), *n.* [*pl.* carcasses (*-ez*)], the dead body of an animal; a corpse; the decaying remains of a bulky thing. [BODY.]
card (*kärd*), *n.* a printed piece of pasteboard used for various social or business purposes: *v. t.* to comb or open, as wool, cotton, etc., with a card.
car-di-ac (*kär'di-ak*), *adj.* pertaining to the heart.
car-di-gan jack-et (*kär'di-gan jak'et*), a knitted wool jacket or waistcoat.
car-di-nal (*kär'di-nal*), *adj.* chief; preëminent; fundamental.
car-di-nal (*kär'di-nal*), *n.* an ecclesiastical prince, ranking in dignity next to the pope.
car-di-nal num-bers (*num'berz*), the numbers *one, two, three,* etc., in distinction from *first, second, third,* etc., which are called *ordinal numbers.*
car-di-nal points (*pointz*), north, south, east, and west.
car-di-nal signs (*sīnz*), Aries, Libra, Cancer, and Capricorn.
car-di-nal vir-tues (*vẽr'tūz*), among the ancients, prudence, justice, temperance, and fortitude.
car-di-nal winds (*windz*), winds which blow from due north, south, east, and west.
care (*kâr*), *n.* concern; solicitude; anxiety.
Syn. CARE, charge, management. *Care* will include both *charge* and *management*, but, in the strict sense, it comprehends personal labor; *charge* involves responsibility; *management* includes regulation and order. A gardener has the *care* of a garden; a nurse has the *charge* of children; a steward has the *management* of a farm. [See *anxiety, heed.*]
Ant. DISREGARD, neglect, recklessness.
ca-reen (*kȧ-rēn'*), *v. i.* to incline on one side, as a ship under press of sail.
ca-reer (*kȧ-rēr'*), *n.* a run at full speed; general course of action in an occupation or calling.
care-ful (*kâr'ful*), *adj.* full of care; anxious.
Syn. CAREFUL, cautious, provident. *Careful*, or full of care, is the general term; to be *cautious* is to be *careful* in guarding against danger; to be *provident* is to be *careful* in preventing straits and difficulties. The term *careful* is applied for the most part to present matters, but *provident* only to that which is future. One is *careful* of his money, but *provident* toward a time of need. [See *cautious.*]
Ant. HEEDLESS, rash, reckless.
ca-ress (*kȧ-res'*), *n.* an act or expression of affection.
★**ca-ret** (*kā'ret* or *kar'et*), *n.* a mark (ʌ) used in writing, or in correcting proofs, to indicate the place where something is omitted or is to be added.
car-go (*kär'gō*), *n.* [*pl.* cargoes (*'gōz*)], the lading or freight of a ship.
★**Carib** (*kar'ib*) or **Caribbee** (*'ib-ē*), *n.* a native of the Caribbee islands.
★**Caribbean** (*kar-ib-ē'an*, not *kar-ib'ē-an*) **Sea.** Washes the territory of the Caribs, whose name means "cruel men." An arm of the Atlantic.
car-i-bou (*kar'i-bōō*), *n.* the North American reindeer.
car-i-ca-ture (*kar'i-kȧ-tūr*), *n.* a pictorial or descriptive representation, in which defects or peculiarities are exaggerated to a ludicrous degree.
car-i-ca-tur-ist (*kar'i-kȧ-tūr-ist*), *n.* one who represents others in caricature.
ca-ri-es (*kā'ri-ēz*), *n.* decay of bones, teeth, or vegetable tissue.
car-il-lon (*kar'il-lon*), *n.* a chime of bells diatonically tuned, and played by hand or machinery.
cark (*kärk*), *v. i.* to be anxious or concerned: *v. t.* to vex; load with care or grief.
car-lock (*kär'lok*), *n.* a kind of isinglass made of the sturgeon's bladder, and used in clarifying wine.
car-min-a-tive (*kär-min'ȧ-tiv*), *n.* a medicine which expels wind and relieves colic.
car-mine (*kär'mīn* or *'min*), *n.* the essential coloring principle of cochineal.
car-nage (*kär'nāj*), *n.* slaughter; great destruction of life by violence; massacre.
Syn. CARNAGE, slaughter, massacre, butchery. *Carnage* respects the number of dead bodies in consequence of any impetuous attack from a powerful enemy; *slaughter* respects the act of taking away life, and the circumstances of the agent; *massacre* and *butchery* respect the circumstances of the objects who are the sufferers of the action; the latter three are said of human beings only; defenseless women and children are commonly *butchered* by the savage furies who are most active in this work of blood.
car-nal (*kär'nal*), *adj.* pertaining to the body, its passions and its appetites.
car-na-tion (*kär-nā'shun*), *n.* a light rose pink; flesh color.
car-ni-fi-ca-tion (*kär-ni-fi-kā'shun*), *n.* process of turning to flesh, or to substance resembling flesh.
car-ni-val (*kär'ni-val*), *n.* the season of rejoicing before Lent; merrymaking; riotous excess.
car-niv-o-rous (*kär-niv'ō-rus*), *adj.* eating or feeding on flesh.
car-ol (*kar'ul*), *n.* a song of joy or praise, especially one in honor of the Nativity.
Carolina (*kar-ō-lī'nȧ*). Name given to two states, North and South Carolina. Near the middle of the sixteenth century, Jean Ribault visited the region and named it Carolina in honor of his king, Charles IX. of France.
Caroline (*kar'ō-līn* or *-lin*). From *Carolus*, from root of *Charles*. Danish *Caroline;* Dutch, *Carolina;* Fr., *Caroline;* Ger., *Caroline* or *Karoline;* It. *Carolina;* Lat., *Carolina;* Sw., *Karolina.*

Caroline Islands. A great archipelago of the Pacific, discovered by Lopez de Villalobos in 1543, and named after Charles V., emperor of Germany.
★**ca-rot-id** (*kȧ-rot'id*, not *kȧ-rō'tid*), *n.* one of the two principal arteries on either side of the neck.
carp (*kärp*), *v. i.* to cavil or find fault. [CENSURE.]
carp (*kärp*), *n.* a fresh-water fish.
car-pal (*kär'pal*), *adj.* pertaining to the carpus or wrist.
★**Carpathian** (*kär-pā'thi-an*). The range of mountains north of Hungary. The name is derived from *Krapat* or *Karpa*, the local name of the main chain, which is explained by the Slavonic root *chrb*, signifying a "ridge" or "range of hills."
car-pen-ter (*kär'pen-tẽr*), *n.* an artificer in timber.
car-pen-try (*kär'pen-tri*), *n.* the art of cutting, framing and joining timber.
car-pet (*kär'pet*), *n.* a thick woven or felted fabric, used for covering floors or stairs.
★**Carrara** (*kä-rä'rȧ*). A town in the province of Massa-e-Carrara, Italy. *Carrara marble*, for statuary, is taken from quarries in its environs.
car-riage (*kar'ij*), *n.* the act of carrying or transporting; cost of conveyance; manner of carrying one's self.
Syn. CARRIAGE, gait, walk. *Carriage* is here the most general term; it respects the manner of carrying the body, whether in a state of motion or rest; *gait* is the mode of carrying the limbs and body whenever we move: *walk* is the manner of carrying the body when we move forward to walk.
Carrie, Caddie. Feminine names corrupted from *Caroline.*
car-ri-er (*kar'i-ẽr*), *n.* one who, or that which, carries or conveys; one whose business is to carry.
car-ri-er pig-eon (*pij'un*), a variety of pigeon trained to convey letters, etc.
car-ri-on (*kar'i-un*), *n.* dead or putrefying flesh; filth; garbage.
car-ron-ade (*kar-un-ād'*), *n.* a short cannon of large bore for close range, formerly used in the navy.
car-ron oil (*kar'un oil*), linseed-oil and lime-water; used as a liniment for burns.
car-rot (*kar'ut*), *n.* a well-known plant with an edible root; the root itself.
car-ry (*kar'i*), *v. t.* to convey from one point to another; bear; have on one's person; convey by force. [BRING.]
Carson City, Nev. Named in honor of Christopher Carson, or, as more widely known, "Kit" Carson, the noted frontiersman and hunter.
cart (*kärt*), *n.* a vehicle for conveyance of heavy goods.
car-tel (*kär-tel'* or *kär'tel*), *n.* an agreement between hostile states regarding the exchange of prisoners.
Carthage (*kär'thāj*). From *Kartha-hadtha*, "the new city," in opposition to Utica, "the old." A city of northern Africa.
car-ti-lage (*kär'ti-lāj*), *n.* an elastic animal tissue; gristle.
car-ti-lag-i-nous (*kär-ti-laj-i-nus*), *adj.* pertaining to, or in the form of, cartilage; gristly.
car-tog-ra-pher (*kär-tog'rȧ-fẽr*), *n.* one who make charts or maps.
car-to-graph-ic (*kär-tō-graf'ik*), **car-to-graph-i-cal** (*'i-kal*), *adj.* pertaining to cartography.
car-tog-ra-phy (*kär-tog'rȧ-fi*), *n.* the art or business of drawing charts or maps. [Also *chartography.*]
★**car-toon** (*kär-tōōn'*), *n.* a pictorial sketch dealing with a political or social subject.
car-tridge (*kär'trij*), *n.* a case of cardboard, metal, or other material, holding the charge of a firearm.
carve (*kärv*), *v. t.* to form a design; shape by cutting; cut into slices.
★**car-y-at-id** (*kar-i-at'id*), *n.* a figure of a woman in long robes, serving to support an entablature.
Casco Bay, Me. From an Italian word, meaning "crane"; hence "crane bay."
case (*kās*), *n.* a covering or receptacle; a sheath; a box with its contents.
case (*kās*), *n.* that which happens or befalls; the matters involved in a question under discussion or investigation; a certain form or instance of disease; a suit or action at law.
Syn. CASE, cause. The *case* is matter of fact; the *cause* is matter of question; a *case* involves circumstances and consequences; a *cause* involves arguments; a *case* is something to be learned; a *cause* something to be decided. [See *cause.*]
case-ment (*kās'ment*), *n.* a window-frame hinged at the side.
ca-se-ous (*kā'sē-us*), *adj.* cheesy.
cash (*kash*), *n.* money; ready money: *v. t.* to turn into, or exchange for, money. [MONEY.]
cash-book, *n.* a book in which a register is kept of money received or paid out.
cash-ier (*kash-ēr'*), *n.* one who has charge of the money, payments and receipts of a bank or firm.
cash-mere (*kash'mēr*), *n.* a soft woolen fabric for shawls, etc., originally made in Cashmere.
ca-si-no (*kȧ-sē'nō*), *n.* [*pl.* Eng. casinos (*'nōz*), It. casini (*'nē*)], a small country house; a room for public amusements.
cask (*kȧsk*), *n.* a vessel composed of wooden staves, bound by iron hoops.
cas-ket (*kȧs'ket*), *n.* a small chest or box for jewels, etc.; a costly coffin.
Caspian (*kas'pi-an*). The European name of the great inland sea of Asia. It was so called by the Greeks from the Caspii, a tribe who in, the time of Herodotus, dwelt on its western shore.
casque (*kȧsk*), *n.* a helt.
★**Cassandra** (*kas-san'drȧ*). A daughter of Priam,

king of Troy. Mr. Arthur translates this name "inflaming one with love." Gr., *Kassandre*; Fr. *Cassandre*; It., *Cassandra*; Lat., *Cassandra*.
★**cas-sa-va** (*kas'sȧ-vȧ*), *n.* a plant of tropical America and Africa, cultivated for its tuberous roots.
★**cas-sia** (*kash'ȧ*), *n.* a genus of leguminous plants, the leaves of several species of which constitute the drug senna.
cas-sia oil (*oil*), oil extracted from cassia bark and cassia buds.
★**cas-si-mere** (*kas'i-mēr*, not *kaz'i-mēr*), *n.* a thin twilled woolen cloth, used for men's garments.
cas-sock (*kas'uk*), *n.* a long, close-fitting vestment worn by clergymen, choristers, etc.
cas-so-wa-ry (*kas'ō-wā-ri*), *n.* [*pl.* cassowaries (*-riz*)], a large bird resembling the ostrich.
cast (*kȧst*), *v. t.* [*p. t.* and *p. p.* cast, *p. pr.* casting], to throw; hurl; shed; direct or turn.
★**cas-ta-nets** (*kas'tȧ-nets*), *n. pl.* small spoon-shaped shells of hard wood or ivory, fastened loosely at top, and shaken with the fingers to beat time.
cast-a-way (*kȧst'ȧ-wā*), *n.* one cast away or lost.
★**caste** (*kȧst*, not *kast*), *n.* one of the artificial or hereditary divisions into which Hindus are restricted by Brahman religious law. [CLASS.]
cas-ter (*kȧs'tẽr*), *n.* one who, or that which, casts; a computer; a small swiveled wheel.
cas-ti-gate (*kas'ti-gāt*), *v. t.* to correct; chastise; punish; subject to severe criticism.
cas-ti-ga-tion (*kas-ti-gā'shun*), *n.* the act of castigating.
cas-tile soap (*kas'tēl* or *kas-tēl' sōp*), a superior kind of refined soap, originally made at Castile, Spain.
★**Cas-til-ian** (*kas-til'yan*), *adj.* of or pertaining to Castile, Spain.
cast-ing (*kȧst'ing*), *n.* the act or process of founding or molding.
cast iron or **steel** (*ī'urn* or *stēl*), iron or steel melted and run into molds.
cas-tle (*kȧs'l*), *n.* a fortified residence; a fortress.
cas-trate (*kas'trāt*), *v. t.* emasculate; geld; expurgate; deprive a flower of its anthers.
cas-tra-tion (*kas-trā'shun*), *n.* the act of castrating.
cas-u-al (*kazh'ū-al*), *adj.* happening by chance; accidental. [OCCASIONAL.]
cas-u-al-ty (*kazh'ū-al-ti*), *n.* [*pl.* casualties (*-tiz*)], an accident, especially if resulting in bodily injury or death. [ACCIDENT.]
cas-u-ist-ry (*kazh'ū-is-tri*), *n.* [*pl.* casuistries (*-triz*)], the science or doctrine which deals with cases of conscience as determined by theological dogmas or ethical rules.
cat (*kat*), *n.* a carnivorous animal of the family Felidæ, especially the domesticated quadruped.
cat-boat (*'bōt*), *n.* a small boat with one sail on a mast near the bows.
cat-a-clysm (*kat'ȧ-klizm*), *n.* a deluge; an extensive, sweeping flood; a violent catastrophe, involving great changes of the earth's surface.
cat-block (*kat'blok*), *n.* a two or three fold iron strapped block used to cat the anchor; that is, to bring it up to the cathead, the projecting piece of timber or iron near the bow to which the anchor is secured.
★**cat-a-comb** (*kat'ȧ-kōm*, not *kat'ȧ-kōmb*), *n.* a subterraneous burial place with niches hollowed out for the dead.
cat-a-falque (*kat'ȧ-falk*), *n.* a temporary structure, erected usually in a church, to support a coffin.
Cat-a-lan (*kat'ȧ-lan*), *adj.* of or pertaining to Catalonia, a former province of Spain, or to its inhabitants or language.
cat-a-lep-sy (*kat'ȧ-lep-si*), *n.* a sudden suspension of sensation and volition.
cat-a-lep-tic (*kat-ȧ-lep'tik*), *adj.* of or pertaining to catalepsy.
cat-a-logue (*kat'ȧ-log*), *n.* an arranged list.
cat-a-mount (*kat'ȧ-mount*), *n.* the wildcat.
cat-a-pult (*kat'ȧ-pult*), *n.* an ancient military engine for hurling darts and stones.
cat-a-ract (*kat'ȧ-rakt*), *n.* a large waterfall; a furious rush or downpour of water; a disease of the eye in which the crystalline lens becomes opaque.
ca-tarrh (*kȧ-tär'*), *n.* an inflammatory affection of any mucous membrane, accompanied by increase of the mucus.
ca-tarrh-al (*kȧ-tär'al*), *adj.* pertaining to, or produced by, catarrh.
ca-tas-tro-phe (*kȧ-tas'trō-fē*), *n.* a great calamity or disaster.
ca-taw-ba (*kȧ-taw'bȧ*), *n.* a light red variety of American grape.
Catawba river, N. C. and **S. C.** So named from the *Catawbas*, a tribe of Indians.
Catawissa (*kat-ȧ-wis'sȧ*) **river, Pa.** From the Delaware Indian word *Cattawissa*, "getting fat."
cat-call (*kat'kawl*), *n.* a squeaking instrument used in theaters to express disapproval.
catch (*kach*), *v. t.* [*p. t.* and *p. p.* caught, *p. pr.* catching], to seize or grasp; lay hold of suddenly; intercept: *n.* the act of seizing or grasping; that which is caught or taken; gain. [LAY.]
★**catch-up** (*kach'up*, not *kech'up*), *n.* a sauce. [Also *catsup*, *ketchup*.]
cat-e-chism (*kat'ē-kizm*), *n.* an elementary manual in the principles of the Christian religion.
cat-e-chist (*kat'ē-kist*), *n.* a catechizer.
cat-e-chize (*kat'ē-kīz*), *v. t.* to instruct by means of questions and answers, and offering explanations; expecially to instruct on points of Christian dogma.

cat-e-gor-i-cal (*kat-ē-gor'i-kal*), *adj.* pertaining to a category.
cat-e-gor-i-cal-ly (*-li*), *adv.* absolutely; positively.
cat-e-go-ry (*kat'ē-gō-ri*), *n.* [*pl.* categories (*-riz*)], one of the highest classes to which the objects of knowledge or thought can be reduced; condition.
ca-ter (*kā'tẽr*), *v. i.* to supply food, amusement, etc. (with *for* and *to*).
cat-er-pil-lar (*kat'ẽr-pil'ẽr*), *n.* the hairy, wormlike larva of a butterfly or lepidopterous insect.
cat-er-waul (*kat'ẽr-wawl*), *v. i.* to cry as cats at night; to utter harsh, discordant sounds.
cat-fish (*kat'fish*), *n.* a fish remarkable for its voracity; bullhead; pout.
cat-gut (*kat'gut*), *n.* a kind of cord made from the intestines of animals, usually sheep.
Catharine (*kath'ȧ-rin*). The real name of Catharine of Alexandria, the patron saint of girls and virgins, was Dorothea. The proper derivation of the word is from the Greek *katharos*, "pure"; and, therefore, the correct spelling of the name is *Catharine* or *Katharine*. Danish, *Catharine;* Dutch, *Catharine;* Fr., *Catherine;* Ger., *Katharine;* Gr., *Katharine;* It., *Caterina;* Lat., *Catharina;* Russ., *Ekaterina* or *Yekaterina;* Sp., *Catalina;* Sw. *Katharina.*
ca-thar-tic (*kȧ-thär'tik*), *adj.* purgative: *n.* a purgative medicine.
ca-the-dral (*kȧ-thē'dral*), *n.* the chief church of a diocese, in which is the official chair of a bishop.
cath-ode (*kath'ōd*), *n.* the negative electrical pole.
cath-o-lic (*kath'ō-lik*), *adj.* universal; general; embracing all; liberal.
Catholic, *adj.* pertaining to the church of Rome.
ca-thol-i-cism (*kȧ-thol'i-sizm*), *n.* the belief of, or adherence to, the Catholic church or faith.
cath-o-lic-ity (*kath-o-lis'i-ti*), *n.* the quality of being catholic.
Ca-thol-i-cize (*kȧ-thol'i-sīz*), *v. t.* to convert to the Roman Catholic church.
cat-nip (*kat'nip*), **cat-mint** (*kat'mint*), *n.* a strong-scented perennial herb, much liked by cats.
cat o' nine tails, a whip with nine lashes of knotted cord.
ca-top-trics (*kȧ-top'triks*), *n.* that branch of optics which treats of the principles of reflected light.
Catskill mountains, N. Y. Name originally applied to the river (*Kill*) by the Dutch, and transferred to the mountains; *Katskill*, "panther creek," from the numerous panthers or lynxes (cat-like) animals formerly infesting the hills. The mountains were called *Katsbergs* by the Dutch.
★**Cattaraugus** (*kat-ȧ-raw'gus*) **river, N. Y.** From an Iroquois Indian word, which may be translated "bad smelling shore."
cat-tle (*kat'l*), *n. pl.* live stock, especially oxen, bulls and cows.
cat-tle plague (*plāg*), rinderpest.
★**Cau-ca-si-an** (*kaw-kā'shan*, not *kaw-kā'zhan*, nor *kaw-kash'an*), *adj.* of or pertaining to the Caucasus, a mountainous range between the Black and the Caspian Seas.
cau-cus (*kaw'kus*), *n.* a preliminary meeting of representatives of a political party, to decide upon a line of policy.
cau-dal (*kaw'dal*), *adj.* pertaining to a tail.
caul (*kawl*), *n.* a net or covering for the head; the omentum.
caul-dron. See *caldron.*
cau-li-flow-er (*kaw'li-flou-ẽr*), *n.* a garden variety of cabbage with an edible flowering head.
caulk. See *calk.*
caus-al (*kawz'al*), *adj.* relating to or expressing cause; causative.
cau-sal-i-ty (*kaw-zal'i-ti*), *n.* [*pl.* causalities (*-tiz*)], the agency of a cause; the action of a cause in producing its effect.
caus-al-ly (*kawz'al-li*), *adv.* according to order of series of causes; by tracing effects to causes.
cau-sa-tion (*kaw-zā'shun*), *n.* the act of causing, or the agency by which the effect is produced.
caus-a-tive (*kawz'ȧ-tiv*), *adj.* that causes; expressing a cause.
cause (*kawz*), *n.* that which produces or contributes to a result; a reason; motive; principle.
Syn. CAUSE, reason, motive. *Cause* respects the order and connection of things; *reason* the movements and operations of the mind; *motives* the movements of the mind and body. *Cause* is said of all inanimate objects; *reason* and *motive* of rational agents: whatever happens in the world happens from some *cause* mediate or immediate; whatever opinions men hold, they ought to be able to assign a substantial *reason* for them; and for whatever they do, they ought to have a sufficient *motive.* The *cause* gives birth to the effect, the *reason* gives birth to the conclusion, and the *motive* gives birth to the action. [See *case.*]
Ant. DETERRENT, effect, impulse.
cause, *v. t.* to effect, bring about, make.
Syn. CAUSE, occasion, create. What is *caused* seems to follow naturally; what is *occasioned* follows incidentally, or what *occasions* may be incidental, but necessary; what is *created* receives its existence arbitrarily. A wound *causes* pain; accidents *occasion* delay; busybodies *create* mischief. [See *occasion*]
Ant. DESTROY, happen, prevent.
cause-way (*kawz'wā*), or **cau-sey** (*kaw'zi*), *n.* a raised pathway or road; a highway.
caus-tic (*kaws'tik*), *adj.* burning; hot; corrosive; sarcastic; cutting; pungent.

cau-ter-i-za-tion (*kaw-tẽr-i-zā'shun*), *n.* the act of cauterizing.
cau-ter-ize (*kaw'tẽr-iz*), *v. t.* to burn or sear with a hot iron, or with a caustic substance.
cau-tion (*kaw'shun*), *n.* *heedfulness*; prudence in regard to danger.
cau-tion-a-ry (*kaw'shun-ā-ri*), *adj.* containing a caution; given as a pledge or security.
cau-tious (*kaw'shus*), *adj.* exercising caution; heedful; wary; vigilant; circumspect.
Syn. CAUTIOUS, wary, circumspect. We must be *cautious* on all occasions where there is danger, but we must be *wary* where there is great danger. A tradesman must be *cautious* in his dealings with all men, but he must be *wary* when he has to deal with designing men; *circumspect* is used in reference to matters of theory or contemplation, when the mind is principally employed; a man must be *circumspect* when he transacts business of particular importance and delicacy.
Ant. CARELESS, inattentive, reckless.
cav-al-cade (*kav'al-kād*), *n.* a procession of persons chiefly on horseback.
★**cav-a-lier** (*kav-a-lēr'*), *n.* an armed horseman, especially a knight or gentleman soldier.
cav-al-ry (*kav'al-ri*), *n.* mounted troops.
★**ca-va-ti-na** (*kā-vȧ-tē'nȧ* or *kav-ȧ-tē'nȧ*), *n.* a short, simple melody.
cave (*kāv*), *n.* a large natural cavity in the earth.
★**ca-ve-at** (*kā'vē-at*, not *kav'ē-at*), *n.* a notice filed to stop procedure; bar to letters patent; warning.
cav-ern (*kav'ẽrn*), *n.* a large natural hollow under the earth.
cav-ern-ous (*kav'ẽrn-us*), *adj.* hollow like a cavern.
★**ca-viare** (*kȧ-vēr'*) or **cav-i-ar** (*kav'i-är*), *n.* the roes of the sturgeon.
cav-il (*kav'il*), *v. i.* to raise captious or frivolous objections. [CENSURE.]
cav-i-ty (*kav'i-ti*), *n.* [*pl.* cavities (*-tiz*)], a hollow place or part.
ca-vort (*kȧ-vôrt'*), *v. i.* to prance about, as a horse.
caw (*kaw*), *v. i.* to cry like a crow, rook, or raven: *n.* the cry of the crow, etc.
★**cay-enne pep-per** (*kā-en'* or *kī-en' pep'ẽr*), a kind of pepper made from the seeds and fruit of various species of the genus Capsicum.
★**Cayuga** (*kā-yōō'gȧ*). County, village, and lake in New York. Indian word, the derivation of which is in dispute.
Cazenovia (*kaz-ē-nō'vi-ȧ*). Lake and town in Madison county, New York; town named by its founder, Col. John Linkhaen, for Theophilus Cazenove, general agent of the Holland Land company.
cease (*sēs*), *v. i.* to come to an end; stop; desist (followed by *from* before a noun): *v. t.* to put a stop to; end.
Syn. CEASE, leave off, discontinue. *Cease* is used either for particular actions or general habits; *leave off* more usually and properly for particular actions; *discontinue* for general habits. A restless, spoiled child never *ceases* crying until it has obtained what it wants; a laborer *leaves off* his work at any given hour; a delicate person *discontinues* his visits when they are found not to be agreeable.
Ant. BEGIN, commence, continue, start.
★**Cecil** (*sē'sil*, *sis'il*, or *ses'il*). A masculine name derived from the Latin *Cecilius* or *Cæcilius*, a diminutive of *cæcus*, "blind," or "dim-sighted." *Cecil* is also found as a feminine name. Dutch, *Cecilius;* Lat., *Cæcilius.*
Cecilia (*sē-sil'i-ȧ*). A baptismal name derived from *Cæcilia*, feminine of *Cæcilius*. [See *Cecil.*] Dutch, *Cecilia;* Fr., *Cécile;* It., *Cecilia;* Lat., *Cæcilia.*
ce-dar (*sē'dẽr*), *n.* the name of several evergreen trees, with fragrant wood of great durability.
cede (*sēd*), *v. t.* to give up or surrender.
ceil (*sēl*), *v. t.* to overlay or cover the inner surface of a roof.
ceil-ing (*sēl'ing*), *n.* the inner surface of the roof of an apartment.
cel-an-dine (*sel'an-dīn*), *n.* the name of a perennial plant of the poppy family.
cel-e-brate (*sel'ē-brāt*), *v. t.* to praise, extol, or honor; commemorate.
Syn. CELEBRATE, commemorate. Everything is *celebrated* which is distinguished by any marks of attention, whether present or past; but nothing is *commemorated* but what has been past. [See *famous.*]
Ant. DESPISE, forget, profane, violate.
cel-e-bra-tion (*sel-ē-brā'shun*), *n.* the act of celebrating.
ce-leb-ri-ty (*sē-leb'ri-ti*), [*pl.* celebrities (*-tiz*)], fame; renown.
ce-ler-i-ty (*sē-ler'i-ti*), *n.* rapidity; swiftness.
cel-er-y (*sel'ẽr-i*), *n.* a plant cultivated for a salad.
ce-les-tial (*sē-les'chal*), *adj.* of or pertaining to the sky or heavens; heavenly; supremely excellent.
Syn. CELESTIAL, heavenly. *Celestial* is applied mostly in the natural sense of the heavens; *heavenly* is employed more commonly in a spiritual sense. Hence, we speak of the *celestial* globe as distinguished from the terrestial; and of the *celestial* bodies. But, on the other hand, of the *heavenly* habitation, of *heavenly* joys or bliss, of *heavenly* spirits, and the like.
Anth. Earthly, low, mortal, mean.
Ce-les-tial (*sē-les'chal*), *n.* an inhabitant of heaven, a native of China.

Celestial empire. Name applied to the Chinese empire, because of a belief that its early rulers were all celestial deities.
★**ce-lib-a-cy** (*sē-lib'ā-si* or *sel'i-bā-si*), *n.* the state of being unmarried.
cel-i-bate (*sel'i-bāt*), *n.* one who is unmarried.
cell (*sel*), *n.* a small room in a monastery, convent, or prison; minute elementary structure of tissues of animals and plants.
cel-lar (*sel'ėr*), *n.* a vault for storing provisions, wine, fuel, etc.
★**cel-lo** (*chel'ō*), *n.* [*pl.* cellos (*'ōz*), It. celli (*'ē*)], a contraction for violoncello.
cel-lu-loid (*sel'ū-loid*), *n.* a compound of camphor and gun cotton, resembling ivory.
celt (*selt*), *n.* an instrument or weapon of stone or metal found in the tumuli of early Celtic nations.
★**Celt-ic** (*sel'tik*) or **Keltic** (*kel'tik*), *adj.* pertaining to the Celts or Kelts.
ce-ment (*sē-ment'* or *sem'ent*), *n.* any adhesive substance which makes two bodies cohere.
cem-e-ter-y (*sem'ē-ter-i*), *n.* [*pl.* cemeteries (*-iz*)], a public burial ground.
cen-o-bite (*sen'ō-bīt*), *n.* one of a religious order living in a convent or in community.
cen-o-taph (*sen'ō-taf*), *n.* an empty tomb.
cen-ser (*sen'sėr*), *n.* a covered cup-shaped vessel pierced with holes, in which incense is burned.
cen-sor (*sen'sor*), *n.* one of two magistrates of ancient Rome who imposed taxes and regulated the morals and manners of the community; an official appointed to examine books, manuscripts, plays, etc., to ascertain whether there is anything immoral or offensive in them.
cen-so-ri-al (*sen-sō'ri-al*), *adj.* pertaining to a censor; censorious.
cen-so-ri-ous (*sen-sō'ri-us*), *adj.* addicted to, or expressing, censure; carping; critical.
cen-sur-a-ble (*sen'shōōr-ā-bl*), *adj.* blamable.
cen-sure (*sen'shōōr*), *n.* blame; reproof; the act of finding fault.
Syn. CENSURE, carp, cavil. To *censure* respects positive errors; to *carp* and *cavil* have regard to what is trivial or imaginary; the former is employed for errors in persons; the latter for supposed defects in things. *Carping* and *caviling* are resorted to only to indulge ill-nature or self-conceit: party politicians *carp* at the measures of administration; infidels *cavil* at the evidences of Christianity, because they are determined to disbelieve. [See *blame, condemn.*]
cen-sus (*sen'sus*), *n.* an official enumeration of population, with details of sex, age, occupation, etc.
cent (*sent*), *n.* the one-hundredth part of a dollar.
cen-taur (*sen'tawr*), *n.* a fabulous being, half man and half horse.
cen-te-na-ri-an (*sen-tē-nā'ri-an*), *adj.* of or pertaining to a centenary: *n.* a person a hundred years old.
cen-te-na-ry (*sen'tē-nā-ri*), *n.* [*pl.* centenaries, (*-riz*)], the space of a hundred years.
cen-ten-ni-al (*sen-ten'i-al*), *adj.* consisting of, or enduring, a century; once in a century.
cen-ter (*sen'tėr*), *n.* the middle point of anything; the nucleus around which things are collected; a title of the leaders of certain organizations.
cen-ter-board (*-bōrd*), *n.* a keel so constructed that it may be raised within the vessel or lowered at pleasure; it is extensively used by racing craft.
cen-ter of grav-i-ty (*us grav'i-ti*), that point of a body through which the resultant of all the forces acting upon it in consequence of the earth's attraction will pass.
cen-ti-grade (*sen'ti-grād*), *adj.* graduated or divided into a hundred degrees.
★**cen-ti-gram** or **cen-ti-gramme** (*sen'ti-gram*), *n.* a measure of weight equal to the hundredth part of a gram.
★**cen-ti-li-ter** (*sen'ti-lē-tėr* or *sen-til'i-tėr*, Fr. *sāN'-tē-lē-tėr*), *n.* a measure of capacity equal to the hundredth part of a liter.
★**cen-time** (*sāN-tēm'*), *n.* a small French coin equal to the hundredth part of a franc.
★**cen-ti-me-ter** (*sen'ti-mē-tėr*, or *sen-tim'ē-tėr*), *n.* a measure of length equal to the hundredth part of a meter.
cen-ti-ped (*sen'ti-ped*) or **cen-ti-pede** (*-pēd*), *n.* the term applied to an articulated animal with numerous feet belonging to the class Myriapoda.
cen-tral (*sen'tral*), *adj.* relating to, or situated in, the center.
cen-tral-i-za-tion (*sen-tral-i-zā'shun*), *n.* the act of bringing all local administrations under one central government.
cen-tral-ize (*sen'tral-iz*), *v. t.* to draw or bring to a center.
Central park. The principal park in New York, extending from 59th street to 110th street, and from Fifth avenue to Eighth avenue.
cen-tre (*sen'tėr*), *n.* same as *center*.
cen-tric (*sen'trik*) or **cen-tri-cal** (*'tri-kal*), *adj.* placed in the center; central.
cen-trif-u-gal (*sen-trif'ū-gal*), *adj.* tending or causing to fly off from the center; radiating from a central focus.
cen-trip-e-tal (*sen-trip'ē-tal*), *adj.* tending or causing to approach the center; opposed to centrifugal.
cen-trip-e-tal rail-way (*rāl'wā*), a railway constructed with a single rail to support the carriage.
cen-tu-ri-on (*sen-tū'ri-un*), *n.* a military officer commanding a hundred men.
cen-tu-ry (*sen'tū-ri*), *n.* [*pl.* centuries (*-riz*)], a hundred years, especially of the Christian era.
cen-tu-ry plant (*plant*), a name of the American aloe, from the supposition that it flowered once only in a hundred years.
century run, a hundred-mile run on a bicycle.
★**ce-phal-ic** (*sē-fal'ik*, not *sef'al-ik*), *adj.* pertaining to the head.
★**ce-ram-ic** (*sē-ram'ik*, not *kē-ram'ik*), *adj.* of or pertaining to pottery or the fictile arts.
ce-rate (*sē'rāt*), *n.* a thick ointment of wax, etc.
cere (*sēr*), *n.* the naked skin at the base of the bill of many birds.
cere (*sēr*), *v. t.* to cover or close with wax.
ce-re-al (*sē'rē-al*), *adj.* pertaining to, or producing, wheat or edible grain.
cer-e-bel-lum (*ser-ē-bel'um*), *n.* [*pl.* cerebella (*'a*)], the hinder and lower part of the brain.
cer-e-bral (*ser'ē-bral*), *adj.* of or pertaining to the brain.
cer-e-bral hem-is-phere (*hem'is-fēr*), one of the two lateral halves of the cerebrum.
cer-e-bra-tion (*ser-ē-brā'shun*), *n.* the conscious or unconscious action of the brain.
cer-e-brum (*ser'ē-brum*), *n.* [*pl.* cerebra (*-brā*)], the superior and larger part of the brain.
cere-cloth (*sēr'kloth*), *n.* a cloth saturated with wax or some gummy substance, used for wrapping embalmed bodies in.
cere-ment (*sēr'ment*), *n.* a grave-cloth or shroud: *pl.* grave-clothes.
cer-e-mo-ny (*ser'ē-mō-ni*), *n.* [*pl.* ceremonies (*-niz*)], a sacred rite or observance; a prescribed rite or formality. [FORM.]
cer-iph (*ser'if*), *n.* one of the fine lines of a printing type.
ce-ri-um (*sē'ri-um*), *n.* a rare metallic element.
ce-rog-ra-phy (*sē-rog'ra-fi*), *n.* the art of writing or engraving on wax.
cer-tain (*sėr'tin*), *adj.* sure; beyond a doubt.
Syn. CERTAIN, sure, secure. *Certain* and *sure* have regard to a person's convictions; *secure* to his interests or condition: one is *certain* from actual knowledge or from a belief in others; one is *sure* from a reliance upon others; one is *secure* when free from danger. We can be *certain* of nothing future but death; we may be *sure* that God will fulfill his promises in his own way; we may be *secure* against any loss or mischief if we use proper precautions.
Ant. DUBIOUS, disputed, exposed.
cer-tain-ty (*sėr'tin-ti*), *n.* [*pl.* certainties (*-tiz*)], full assurance.
cer-tes (*sėr'tēz*), *adv.* certainly; assuredly.
cer-tif-i-cate (*sėr-tif'i-kāt*), *n.* a written testimony to the truth of any fact.
cer-ti-fi-ca-tion (*sėr-ti-fi-kā'shun*), *n.* the act of certifying.
cer-ti-fy (*sėr'ti-fi*), *v. t.* [*p. t.* and *p. p.* certified, *p. pr.* certifying], to testify to, or to make known, in writing.
★**cer-ti-o-ra-ri** (*sėr-shi-ō-rā'ri*), *n.* a writ issuing from a superior court calling for the records of an inferior court.
cer-ti-tude (*sėr'ti-tūd*), *n.* certainty; assurance.
★**Certosa** (*cher-tō'sā*). A former Carthusian monastery, at Pavia, Italy, one of the largest and most splendid existing.
ce-ru-le-an (*sē-rōō'lē-an*), *adj.* sky-colored.
ce-ru-lin (*sē'rōō-lin*), *n.* an olive-green dye.
ce-ruse (*sē'rōōs*), *n.* white lead, used as a pigment, and from which a cosmetic is prepared.
cer-vi-cal (*sėr'vi-kal*), *adj.* of or pertaining to the neck.
cer-vine (*sėr'vin*), *adj.* of or pertaining to the deer family; of a tawny or fawn color.
cess (*ses*), *v. t.* to impose a tax; assess: *n.* a rate or tax, especially the land tax.
ces-sa-tion (*ses-sā'shun*), *n.* the act of ceasing.
Syn. CESSATION, stop, rest, intermission. To *cease* respects the course of things; whatever does not go on has *ceased; stop* respects some external action or influence; *rest* is a species of *cessation* that regards labor or exertion; whatever does not move or exert itself is at *rest; intermission* is a species of *cessation* only for a time or at certain intervals. That which *ceases* or *stops* is supposed to be at an end; *rest* or *intermission* supposes a renewal. [See *hinder.*]
Ant. BEGINNING, continuance, progress.
ces-sion (*sesh'un*), *n.* a yielding up, as of territory, property, or rights.
cess-pool (*ses'pōōl*), *n.* a deep hole in the ground, or the well of a drain for the reception of filth.
ces-tus (*ses'tus*), *n.* a kind of glove used by ancient boxers, frequently loaded with lead or iron.
★**ce-ta-cean** (*sē-tā'shan*), *adj.* pertaining to the Cetacea, formerly a group of marine mammalia which included the whales.
Ce-te (*sē'tē*), *n. pl.* an order of the mammalia, containing the true whales, dolphins, etc.
★**Ceylon** (*sē-lon'* or *sil-ōn'*). Portuguese *Selen* is but a part of the original Sanskrit *Sinhalo-dwipa*, "the island of lions." Marco Polo, seemingly deriving his knowledge from Javanese sources, calls it *Seilan*, whence the Portuguese forms *Cilan* and *Ceilaon*, from the last of which the English form *Ceylon* has been obtained.
chafe (*chāf*), *v. t.* to make warm by friction; to wear away or make sore by rubbing.
chaff (*chaf*), *n.* the husk of grain, especially when separated by threshing, etc.
chaff (*chaf*), *v. t.* to banter; make game of: *v. i.* to use bantering language: *n.* banter.
chaf-finch (*chaf'inch*), *n.* a bird, so named from its feeding on grain.
chaf-ing dish (*chā'fing dish*), a small portable grate for coals.
★**cha-grin** (*shā-grin'* or *-grēn'*), *n.* vexation due to disappointment.
chain (*chān*), *n.* a connected series of links or rings fitted into one another: *v. t.* to bind with chains.
chair (*chār*), *n.* a movable seat with a back for one person; an official seat.
chair-man (*chār'man*), *n.* [*pl.* chairmen (*'men*)], the president of an assembly.
chaise (*shāz*), *n.* a light two-wheeled carriage; a carriage in general.
★**chal-ced-o-ny** (*kal-sed'ō-ni* or *kal'sē-dō-ni*), *n.* a cryptocrystalline variety of quartz, resembling diluted milk.
chal-dron (*chal'drun*), *n.* a measure for coke equal to 36 bushels (25½ cwt.).
★**chal-ice** (*chal'is*), *n.* a cup; a Eucharist cup.
chalk (*chawk*), *n.* a soft limestone rock composed of carbonate of lime; prepared chalk for drawing.
chalk-stone (*'stōn*), *n.* a chalky concretion in the joints.
chal-lenge (*chal'enj*), *n.* an invitation to a contest; a summons to fight a duel.
cham-ber (*chām'bėr*), *n.* an apartment; especially a bedroom.
cham-ber-lain (*chām'bėr-lin*), *n.* an officer who has charge of the private apartments of a sovereign or nobleman.
★**cha-me-le-on** (*kā-mē'lē-un*), *n.* an insectivorous lizard-like reptile, possessing the power of changing its color.
champ (*champ*), *v. t.* to bite with the teeth repeatedly and impatiently.
★**cham-pagne** (*sham-pān'*), *n.* a light sparkling effervescent wine.
cham-paign (*sham-pān'*), *n.* flat open country: *adj.* level; open.
★**Champ de Mars** (*shāN du mārs'*). In early French institutional history, an annual political and military assembly, held in March. The time of meeting was changed to May in the eighth century, and thereafter these assemblies were called *Champs de Mai.*
cham-pi-on (*cham'pi-un*), *n.* one who defends the cause of another.
Champlain (*sham-plān'*, Fr. *shāN-plaN'*), **Lake, N. Y.** For its discoverer Samuel de Champlain, in 1609. Indian name *Canaderi-Gouarante*, "mouth or door of the country." Allusion to the north entrance of the lake. In the Abenaqui tongue, called *Petawa-bouque*, "alternate land and water," alluding to its numerous islands. Iroquois name *Andiatora.*
★**Champs Elysées** (*shāN-zā-lē-zā'*). An avenue and the gardens surrounding it, in Paris, extending from the Place de la Concorde one and one fourth miles to the Place de l'Etoile, celebrated as a place of public resort.
chance (*chāns*), *n.* an unforeseen event; an accident; a possibility; opportunity; risk: *v. i.* to happen; occur without design or expectation.
Syn. CHANCE, fortune, fate. *Chance* applies to all things, personal or otherwise; *fortune* and *fate* are mostly said of that which is personal. *Chance* neither forms, orders, nor designs; *fortune* forms plans and designs, but without choice: it is said to be blind: *fate* forms plans and chains of causes; intention, knowledge, and power are attributed to it; its views are fixed, its results decisive. [See *accident, happen.*]
Ant. DESIGN, plan.
chan-cel (*chan'sel*), *n.* that part in a church where the altar stands; the sanctuary.
chan-cel-lor (*chan'sel-ėr*), *n.* a judge of a court of equity or chancery; the president or highest official of a university.
chance-med-ley (*chāns-med'li*), *n.* justifiable homicide in self-defense.
chan-cer-y (*chan'sėr-i*), *n.* originally in England, next to Parliament, the highest court of justice.
chan-de-lier (*shan-dē-lēr'*), *n.* a hanging frame with branches for lights.
chan-dler (*chān'dlėr*), *n.* a maker or vendor of candles; a dealer or merchant.
change (*chānj*), *v. t.* to alter; substitute; exchange or give an equivalent for; render acid or tainted.
Syn. CHANGE, exchange, barter, substitute. To *change* in respect to persons is to take one for another, without regard to whether they are alike or different, as a king *changes* his ministers; any person may *change* his servants: to *exchange* is to take one person in return for another who is in like condition, as prisoners are *exchanged* in time of war. In respect to things, to *change* is to take anything new or fresh, whether alike or different. Clothes may be *changed;* to *exchange* is to take one thing for another, that is, either of the same kind or equivalent in value, as to *exchange* one commodity for another. To *change* may often be the result of caprice, but to *exchange* is always an act either of discretion or necessity. To *barter* is the giving of any commodity for other commodities. To *substitute* is to put one person in the place of another, as to *substitute* one for another who has been drawn for the militia. [See *interchange.*]
Ant. CONTINUE, keep, retain.

change-a-ble (*chānj'ȧ-bl*), *adj.* fickle.
change-ling (*chānj'ling*), *n.* a child left in place of another; an idiot; a waverer.
chan-nel (*chan'el*), *n.* the bed of a stream; a watercourse; the deepest part of a strait, bay, harbor.
chant (*chănt*), *v. t.* to sing; intone: *v. i.* make melody with the voice; go in full cry, as hounds: *n.* a song.
chan-ti-cleer (*chan'ti-klēr*), *n.* a cock.
★**cha-os** (*kā'os*), *n.* the confused matter out of which the universe was formed.
cha-ot-ic (*kā-ot'ik*), *adj.* resembling chaos.
chap (*chap*), *v. t.* [*p. t.* and *p. p.* chapped; *p. pr.* chapping], to cause to crack longitudinally.
chap (*chap*), *n.* a fellow.
★**chap** (*chop*, not *chap*), *n.* one of the jaws or its fleshy covering (usually *pl.*); the mouth of a channel.
★**cha-par-ral** (*chă-pär-răl'*), *n.* a dense thicket.
chap-book (*chap'book*), *n.* a small book, usually of fairy tales; romances.
chap-el (*chap'el*), *n.* a subordinate place of public worship.
chap-el-ry (*chap'el-ri*), *n.* [*pl.* chapelries (*-riz*)], the district legally assigned to a chapel.
★**chap-er-on** (*chap'ēr-ōn*), *n.* a married lady who accompanies young ladies in public.
chap-lain (*chap'lin*), *n.* a clergyman who performs service in the army or navy.
chap-lain-cy (*chap'lin-si*), *n.* the office or status of a chaplain.
chap-let (*chap'let*), *n.* a wreath or garland encircling the head; a rosary.
chap-man (*chap-man*), *n.* [*pl.* chapmen (*'men*)], formerly a merchant or trader; a hawker.
chap-ter (*chap'tẽr*), *n.* a division of a book; the clergy of a cathedral or collegiate church.
char (*chär*), *v. t.* [*p. t.* and *p. p.* charred; *p. pr.* charring], burn or reduce to charcoal; burn partially.
char-ac-ter (*kar'ak-tẽr*), *n.* a letter, sign, or figure; distinctive qualities or traits.
Syn. CHARACTER, reputation. *Character* lies in the man; it is the mark of what he is; it shows itself on all occasions; *reputation* depends upon others; it is what they think of him.
char-ac-ter-is-tic (*kar-ak-tẽr-is'tik*), *adj.* pertaining to, or indicating, the character.
char-ac-ter-is-ti-cal-ly (*'ti-kal-li*), *adv.* in a characteristic manner.
char-ac-ter-i-za-tion (*kar-ak-tẽr-i-zā'shun*), *n.* the act of characterizing.
char-ac-ter-ize (*kar'ak-tẽr-iz*), *v. t.* to describe by peculiar qualities; mark or distinguish.
cha-rade (*shȧ-rād'*), *n.* an acted enigma.
char-coal (*chär'kōl*), *n.* wood partially burnt; impure carbon.
charge (*chärj*), *v. t.* to rush on or attack; load; fill up; impose; command or enjoin; instruct; accuse; place on the debit side: *n.* care, custody. [CARE, ACCUSE, COST.]
charge-a-ble (*chärj'ȧ-bl*), *adj.* liable to be charged; ratable; burdensome.
★**char-gé d'af-faires** (*shär-zhā' dȧf-fâr'*), [*pl.* chargés (*shär-zhā'*)], a government official who acts for an ambassador in his absence, or at a court to which no ambassador is accredited.
char-ger (*chär'jẽr*), *n.* a cavalry horse; a large dish.
★**Charing Cross** (*chär'ing krôs*). A cross in memory of Queen Eleanor, erected by Edward I., one and one-fourth miles west-southwest of St. Paul's, London. It was demolished by the Long Parliament, in 1647, and restored by the South Eastern Railway company, in 1865.
char-i-ot (*char'i-ot*), *n.* an ancient two-wheeled car for war, state processions, racing, etc.
char-i-ta-ble (*char'i-tȧ-bl*), *adj.* benevolent in disposition; kind and liberal. [HUMANE.]
char-i-ty (*char'i-ti*), *n.* the disposition to think well of others; liberality; alms. [LOVE.]
char-la-tan (*shär'lȧ-tan*), *n.* a quack.
char-la-tan-ism (*-izm*), *n.* quackery.
Charles. From the Teutonic, meaning "manly" or "noble spirited." Danish, *Carl;* Dutch, *Karel;* Fr., *Charles;* Ger., *Karl;* It., *Carlo;* Lat., *Carolus;* Sp., *Carlos;* Sw., *Karl.*
Charles Cape, Va. So named in April, 1607, by Admiral Newport, in honor of "baby" Charles, son of James I., afterward King Charles I. of England.
Charleston, S. C. In honor of Charles II. of England, original settlement being called *Charles Fort.* The name *Charleston* substituted in 1783.
Charleston, W. Va. Originally known as "Clendman's Settlement" and "The town at the mouth of the Elk." December 19, 1794, the name of *Charlestown* was fixed by the Virginia legislature, but from some cause unknown, through common consent it was changed to *Charleston.* The name *Charlestown* was given by George Clendman, its founder, in honor of his father Charles.
Charlotte (*shär'lot*). From the Teutonic, meaning "noble spirited." Danish, *Charlotte;* Dutch, *Charlotta;* Fr., *Charlotte;* Ger., *Charlotte;* It., *Carlotta;* Lat., *Caroletta;* Sp., *Carlota, Charlotta.*
Charlotte, N. C. A compliment to Princess Charlotte of Mecklenburg.
Charlottenburg (*shär-lot'ten-bōorg*). A city in the province of Brandenburg, Prussia, named from a palace built for Charlotte, wife of Frederick I.
Charlottesville. City in Virginia, named for Charlotte Augusta, princess of Wales.
charm (*chärm*), *n.* a spell; an allurement; a trinket: *v. t.* to influence by magic; subdue. [GRACE.]
★**char-nel** (*chär'nel*), *adj.* containing flesh or dead bodies.
chart (*chärt*), *n.* a map of any part of a sea, river, etc., for the use of mariners.
char-ter (*chär'tẽr*), *n.* a document bestowing certain rights and privileges.
Charterhouse. The name of the *Charterhouse,* a famous school in London, is a corruption of the word *Chartreuse,* that is, *Carthusian.* The *Charterhouse* was originally a Carthusian monastery founded in 1371, but was seized by Henry VIII.
Chartists (*chärt'ists*). A body of political reformers, chiefly workingmen, that sprang up in England about the year 1838.
★**char-treuse** (*shär-trēz'*, Fr. *shär-trōz'*), *n.* a celebrated liqueur made by the monks of La Grand Chartreuse.
char-y (*chär'i*), *adj.* cautious; sparing.
chase (*chās*), *v. t.* to pursue; capture or kill; hunt; drive away: *v. i.* to ride or hunt rapidly.
chase (*chās*), *n.* a groove; an iron frame for securing types; that part of a cannon in front of the trunnions.
chasm (*kazm*), *n.* a deep gap or opening in the earth; a void space. [BREACH.]
★**chas-sis** (*chas'is* or *shȧ'sē*), *n.* the frame and springs of a motor car; by extension, also, all other mechanical parts of the car, including the wheels.
chaste (*chāst*), *adj.* morally pure; modest; pure in style; refined.
chas-ten (*chā'sn*), *v. t.* to punish for the purpose of reformation; purify; refine.
Syn. CHASTEN, chastise. *Chasten* has most regard to the end, *chastise* to the means. The former is an act of deity, the latter a human action. God *chastens* his faithful people, to cleanse them from their transgressions; parents *chastise* their children, to prevent the repetition of faults.
★**chas-tise** (*chas-tīz'*, not *chas'tīz*), *v. t.* to correct by punishment; reduce to obedience. [CHASTEN.]
★**chas-tise-ment** (*chas'tiz-ment*, not *chas-tīz'ment*), *n.* punishment.
chas-ti-ty (*chas'ti-ti*), *n.* moral and sexual purity.
chas-u-ble (*chas'ū-bl*), *n.* a rich vestment worn over the alb by a celebrating priest.
chat (*chat*), *v. i.* [*p. t.* and *p. p.* chatted; *p. pr.* chatting], to talk in an easy manner. [SPEAK.]
★**cha-teau** (*shȧ-tō'*), *n.* [*pl.* chateaux (*-tōz'*)], a castle; a manor house or country seat.
★**Chateau de Meillant** (*shȧ-tō' du mâyon'*). Noted chiefly on account of its architecture, is now the seat of the Duc de Mortemart at St. Amand Montrond, France.
★**chat-e-laine** (*shat'ē-lān*), *n.* a bunch of chains to which are attached trinkets, etc., worn at the waist by ladies.
Chatsworth (*chāts'wẽrth*). A celebrated mansion of the duke of Devonshire in Derbyshire, England.
★**Chattahoochee** (*chat-tȧ-hōō'chē*) **river, Ga.** Translated "figured or painted stone," from the Indian *Chatehoche; chateo,* "stone," *hoche,* "marked" or "figured."
Chattanooga (*chat-tȧ-nōō'gȧ*). City in Hamilton county, Tennessee, and creek in Georgia. From the Cherokee Indian word, meaning "crow's nest" or "eagle's nest."
chat-tel (*chat'el*), *n.* personal property except freehold (usually in *pl.*).
chat-ter (*chat'ẽr*), *v. i.* to utter sounds rapidly, as a monkey. [SPEAK.]
chat-ter-box (*chat'ẽr-boks*), *n.* an incessant talker.
Chaucer's Inn, the "Tabard." This old London tavern immortalized by Chaucer as the *Tabard,* was burnt down in the great fire of 1676. Upon its restoration the name was changed to the *Talbot,* or *Dog,* which name it retained until about 1873, when it was demolished.
★**chauf-feur** (*shō-fẽr'*), *n.* an operator of an automobile: *fem.* **chauffeuse** (*shō-fēz'*).
★**Chautauqua** (*shȧ-tô'kwȧ*, not *chȧ-tô'kwȧ*). A village and summer resort situated on Chautauqua lake, in western New York; noted as the seat, since 1874, of the Chautauqua assembly. An Indian word which has been the subject of much controversy. Webster says it is a corruption of a word which means "foggy place."
cheap (*chēp*), *adj.* purchasable for a low price; common; of small value.
cheap-en (*chēp'en*), *v. t.* to lessen the price of. [BUY.]
Cheapside (*chēp'sīd*). The central east-and-west thoroughfare of the city of London. Formerly *West Cheap* was distinguished from *East Cheap.*
cheat (*chēt*), *n.* a fraud or deception; one who cheats: *v. t.* to deceive or defraud; impose upon: *v. i.* to act as a cheat.
Syn. CHEAT, defraud, trick. One *cheats* by direct and gross falsehood or artifice; one *defrauds* by a settled plan or contrivance; one *tricks* by a sudden invention.
Ant. DEAL HONESTLY, fairly, justly.
★**Cheboygan** (*shē-boi'gan*). River, county, and city in Michigan. An Indian word, variously interpreted. Haines says it is composed of two words, *che,* "great," and *poygan,* "pipe."
check (*chek*), *n.* a restraint; a reproof; a pass, ticket, or token; a term in chess; cloth woven in squares of alternate patterns; an order or draft on a bank or banker for money. [OBSTRUCT.]
check-er (*chek'ẽr*), *n.* checkerwork; one of the squares of a checkered pattern; piece with which to play checkers: *pl.* game played on a checkerboard; draughts.
check-er-board (*chek'ẽr-bōrd*), *n.* board on which the game of checkers is played.
check-mate (*chek'māt*), *n.* the winning move at chess when the opponent's king cannot move out of check.
cheek (*chēk*), *n.* the side of the face beneath either eye; one of two corresponding sides.
cheep (*chēp*), *n.* a shrill noise, as that of a young chicken, or a mouse: *v. i.* to make such a noise.
cheer (*chēr*), *n.* temper or state of mind; a state of gladness or joy; a shout of applause: *v. t.* to make cheerful.
Syn. CHEER, encourage, comfort. To *cheer* regards the spirits; to *encourage* the resolution. The sad require to be *cheered;* the timid to be *encouraged.* To *cheer* and *comfort* have both regard to the spirits, but the latter differs in degree and manner. To *cheer* expresses more than to *comfort;* the former signifying to produce a lively sentiment, the latter to lessen or remove a painful one. We are *cheered* in the moments of despondency, we are *comforted* in the hour of distress. [See *encourage, comfort.*]
Ant. DISHEARTEN, dismay.
cheer-ful (*chēr'fool*), *adj.* full of good spirits.
cheer-i-ness (*chēr'i-nes*), *n.* the state of being cheery.
cheer-y (*chēr'i*), *adj.* cheerful; gay.
cheese (*chēs*), *n.* the curd or casein of milk coagulated, pressed and allowed to dry in a mold.
★**chef** (*shef*), *n.* a head or professional cook.
★**chef-d'œuvre** (*shā-dẽvr'*), *n.* [*pl.* chefs-d'œuvre (*shā-dẽvr'*)], a masterpiece.
chem-i-cal (*kem'i-kal*), *adj.* pertaining to chemistry: *n.* a chemical substance.
★**che-mise** (*shē-mēz'*), *n.* a woman's undergarment; a wall lining an earthwork.
chem-ist (*kem'ist*), *n.* one skilled in chemistry; a dealer in drugs and medicines; an analyst.
chem-is-try (*kem'is-tri*), *n.* the science which treats of the properties of elementary and compound substances and the laws which govern their molecular and atomic relations.
Chemung (*shē-mung'*) **river.** Indian word, signifying "big horn," or "horn in the water."
Chenango (*shē-nang'gō*) **river, N. Y.** From an Iroquois word, *ochenung,* "bull thistles."
che-nille (*shē-nēl'*), *n.* silk or worsted cord.
Chepstow (*chep'stō*). A town in Monmouthshire, England, situated on the Wye, thirteen miles northwest of Bristol.
★**cheque** (*chek*), *n.* an order or draft on a banker or bank, payable to the bearer; check.
cher-ish (*cher'ish*), *v. t.* to hold or esteem dear; treat with tenderness; protect and aid.
Syn. CHERISH, cheer, comfort, foster, harbor, nourish, nurse, nurture. To *cherish* is both to hold dear and to treat as dear. To *nurse* is to tend the helpless or feeble; to *nourish* is strictly to sustain and build up by food; to *nurture* combines mental and spiritual training with love and tenderness; to *foster* is to maintain and care for. [See *cheer, foster.*]
★**che-root** (*chē-rōōt'*), *n.* a kind of cigar.
cher-ry (*cher'i*), *n.* [*pl.* cherries (*'iz*)], the fruit of a tree allied to the plum.
cher-ub (*cher'ub*), *n.* [*pl.* cherubs (*'ubz*), cherubim (*'ōō-bim*)], an angel next to a seraphim.
che-ru-bic (*chē-rōō'bik*), *adj.* angelic.
★**Chesapeake** (*ches'ȧ-pēk*). Bay in Maryland which gives name to several places in the country. An Indian name variously explained. Heckewelder says it is corrupted from *Tschischwapeki,* which is compounded of *kitshi* "highly salted," and *peek,* "a body of standing water, a pond, a bay."
chess (*ches*), *n.* a game played by two persons with 16 pieces each on a checkered board divided into 64 squares.
chest (*chest*), *n.* a large box; the quantity such a box contains; the breast or thorax.
Chester, Caster, Cester. Places whose names terminate with any of these words were sites of castles built by the Romans in Great Britain.
chest-nut (*ches'nut*), *n.* the nut or seed of trees of the genus Castanea.
Chesuncook lake, Me. Indian, meaning "the goose place." *Chesunk,* "a goose," *auke,* "a place." *Chesunk* or *schunk* being the sound made by a wild goose when flying.
che-val-glass (*she-văl'glȧs*), *n.* a large swing looking-glass.
chev-a-lier (*shev-ȧ-lēr'*), *n.* a knight; a horseman.
★**Cheviot** (*chev'ē-ut*), *n.* a sheep bred on the Cheviot hills; a rough cloth made from its wool.
chev-ron (*shev'ron*), *n.* a term in heraldry; the badge on the coat sleeve of a noncommissioned officer.
chew (*chōō*), *v. t.* to crush and grind with the teeth; masticate; meditate upon.
★**Cheyenne** (*shī-en'*). County in Colorado, Kansas, and Nebraska, mountain in Colorado, river in Nebraska and South Dakota, city in Laramie county, Wyoming, and several small places, named for the Indian tribe.
★**Chianti** (*kē-ăn'tē*). A group of mountains near Siena, Italy, in Tuscany. It gives name to celebrated wines.
★**chia-ro-scu-ro** (*kī-ȧ-rō-skōō'rō*), *n.* treatment of light and shade in painting, drawing, or engraving.
★**chic** (*shēk*), *adj.* stylish: *n.* Parisian elegance in dress; manual dexterity.

Chicago (*shi-kô'gō*). City and river in Illinois. The origin of the word is from the Indian, being a derivation by elision and French annotation from the word *Chickaugong*. Col. Samuel A. Starrow used the name in a letter to Gen. Jacob Brown, in 1816, as follows: "The river Chicago (or in English, 'Wild Onion river')." Schoolcraft in 1820 said: "Its banks produce abundantly the wild species of cepa or leek." When the word first appeared the country was inhabited by a tribe of Miamis, in whose dialect the word for skunk was *se-kau-kwaw*.

chi-cane (*shi-kān'*), *n.* mean or unfair artifices to obscure the truth; sophistry.

chick (*chik*), *n.* the young of a bird, especially of the domestic hen; hence, a child.

★**Chickahominy** (*chik-à-hom'i-ni*). River in Virginia, which, according to De Vere, is named from the Indian word, *Checahaminend*, "land of much grain," so called because it flows through fertile lowlands.

★**Chickamauga** (*chik-à-mô'gà*) **river, Tenn.** From a Cherokee Indian word, meaning "river of death."

chick-en (*chik'en*), *n.* the young of a fowl, especially the domestic fowl.

chick-en pox (*poks*), a mild eruptive disease of children; varicella.

chick-weed (*chik'wēd*), *n.* a common wild plant with white blossoms.

★**Chicopee** (*chik'ō-pē*), **Mass.** An Indian word, meaning "the birch-bark place."

chic-o-ry (*chik'ō-ri*), *n.* a perennial plant with bright blue flowers and a tapering root.

chide (*chīd*), *v. t.* [*p. t.* chid, chode, *p. p.* chidden, chid, *p. pr.* chiding], to find fault with.

chief (*chēf*), *n.* a commander or leader; a head or principal person; the principal or most important part: *adj.* principal.

Syn. CHIEF, principal, main. *Chief* respects order and rank; *principal* has regard to importance and respectability; *main* to degree or quantity. We speak of a *chief* clerk; a commander-in-*chief*; the *chief* person in a city, but the *principal* people in a city; the *principal* circumstances in a narrative and the *main* object.

Ant. AUXILIARY, subaltern, subordinate, subsidiary.

chief-tain (*chēf'tin*), *n.* a captain, leader, or commander; the head of a clan or tribe. [CHIEF.]

chif-fon (*shif'fon*, Fr. *shē-fôN'*), *n.* a kind of thin gauze fabric.

chif-fo-nier (*shif-ō-nēr'*), *n.* a piece of furniture fitted with drawers and shelves.

★**chi-gnon** (*shin'yon*; Fr. *shē-nyôN'*), *n.* a roll of natural or artificial hair worn by women.

chil-blain (*chil'blān*), *n.* a sore or inflammation caused by frost or cold.

child (*child*), *n.* [*pl.* children (*chil'dren*)], a son or daughter; a very young person.

child-birth (*'bērth*), *n.* the act or time of bringing forth a child.

child-hood (*child'hood*), *n.* the period from infancy to puberty.

child-ish (*'ish*), *adj.* like a child; puerile.

★**Chili** (*chil'i*) or **Chile** (*chē'lā*). A Peruvian name denoting "land of snow." South American state.

chill (*chil*), *n.* a sudden coldness; the absence of heat in a substance; the hardened part of a casting: *adj.* having the sensation of cold.

★**Chillicothe** (*chil-i-koth'ē*). City in Ohio and Illinois, and town in Wapello county, Iowa, and Livingston county, Missouri, named from an Indian tribe.

★**Chillon** (*shil'on*, Fr. *shē-yôN'*). A castle in Vaud, Switzerland, at the eastern end of Lake Geneva. It covers an isolated rock on the edge of the lake, and is a very picturesque combination of semicircular and square towers and machicolated curtains grouped about a higher central tower.

chi-lo-plas-ty (*ki'lō-plas-ti*), *n.* the transplantation of healthy skin to a diseased lip.

chime (*chīm*), *n.* the musical harmony produced by striking a set of bells with hammers; a set of bells tuned to the musical scale and struck with hammers.

★**chi-me-ra** (*ki-mē'rà*, not *ki-mē'rà*), *n.* an incongruous conception of the fancy.

★**chi-mer-i-cal** (*ki-mer'i-kal*), *adj.* merely imaginary; fantastic; unreal. [ABSURD.]

chim-ney (*chim'ni*), *n.* [*pl.* chimneys (*'niz*)], a flue; vent.

★**chim-pan-zee** (*chim-pan'zē*, not *chim-pan-zē'*), *n.* a large West Indian anthropoid ape allied to the gorilla.

chin (*chin*), *n.* the part of the face below the under lip.

chi-na (*chī-nà*), *n.* a fine kind of porcelain: *adj.* of or from China; of, or made of, china.

China. Is a western corruption of *Tsina*, so called in honor of Tsin, the founder of the great dynasty which commenced in the third century B. C., when a knowledge of this country was first conveyed to the western nations.

chin-chil-la (*chin-chil'à*), *n.* a small South American rodent with a soft, fine fur

★**chine** (*chīn*), *n.* the backbone or spine of an animal; a piece of the backbone of an animal with adjacent parts cut for cooking.

Chi-nese (*chi-nēz'*), *adj.* of or pertaining to China.

chink (*chingk*), *n.* a small fissure opening lengthwise; a narrow aperture: *v. i.* to crack; to form into or close up cracks.

chink (*chingk*), *n.* a sharp metallic or jingling sound; money.

chintz (*chints*), *n.* cotton cloth, usually glazed, printed in various colors.

chip (*chip*), *v. t.* [*p. t.* and *p. p.* chipped, *p. pr.* chipping], to cut into small pieces; bet at cards: *v. i.* to break or fly off into small pieces.

chip-munk (*chip'mungk*), *n.* a small squirrel of North America, having dark and light stripes on its back.

chip-per (*chip'ēr*), *adj.* active; pert.

★**Chippewa** (*chip'ē-wā*, *chip'ē-wā*). River in Michigan and county in Michigan, Minnesota, and Wisconsin, named from an Indian tribe.

★**chi-rog-ra-phy** (*ki-rog'rà-fi*, not *chir-og'rà-fi*), *n.* the art of writing or engrossing.

★**chi-rop-o-dist** (*ki-rop'ō-dist*), *n.* one who removes corns, bunions, etc.

chirp (*chērp*), *n.* a short shrill cheerful note: *v. i.* to utter such a note.

chis-el (*chiz'el*), *n.* an edged instrument of iron or steel for cutting wood, stone, etc.: *v. t.* [*p. t.* and *p. p.* chiseled, *p. pr.* chiseling], to cut with a chisel.

chit (*chit*), *n.* a child; a pert, forward girl.

chiv-al-rous (*shiv'al-rus*), *adj.* relating to chivalry; gallant.

chiv-al-ry (*shiv'al-ri*), *n.* the mediæval system of knighthood; knights collectively; the qualifications of a knight, as bravery, etc.

Chloe (*klō'ē*). A female name derived from the Greek, signifying a "green bud" or "germ," hence, a "young shoot," "blooming," etc. Fr., *Chloe;* Gr., *Chloe;* Lat., *Chloe.*

chlo-ral (*klō'ral*), *n.* a strong narcotic.

chlo-rate (*klō'rāt*), *n.* a salt of chloric acid.

chlo-ric (*klō'rik*), *adj.* pertaining to, or containing, chlorine.

chlo-ric ac-id (*as'id*), an acid containing hydrogen, oxygen, and chlorine.

chlo-ride (*klō'rid* or *'rid*), *n.* a compound of chlorine with another element.

chlo-ride of lime (*ov līm*), a compound of chloride with lime, used in bleaching.

chlo-rine (*klō'rin* or *'rēn*), *n.* a greenish-yellow gas possessing great bleaching powers.

chlo-ro-form (*klō'rō-fôrm*), *n.* a volatile liquid used for producing insensibility to pain: *v. t.* to administer chloroform to.

choc-o-late (*chok'ō-lāt*), *n.* a paste made from the roasted kernels of the cacao-nut, used in making the beverage so called: *adj.* having the color of, or made of, chocolate.

choice (*chois*), *n.* the act of choosing; the thing chosen: *adj.* carefully chosen. [ALTERNATIVE.]

choir (*kwīr*), *n.* a band of singers in a church; the place where they sing.

choke (*chōk*), *v. t.* to suffocate by obstructing the windpipe; block up. [OBSTRUCT.]

choke-damp (*'damp*), *n.* carbonic acid generated in mines.

chol-er (*kol'ēr*), *n.* bile; irascibility.

chol-er-a (*kol'ēr-à*), *n.* a disease with violent vomiting and purging.

choose (*chōōz*), *v. t.* [*p. t.* chose, *p. p.* chosen, *p. pr.* choosing], to take by preference; select: *v. i.* to make a choice.

Syn. CHOOSE, prefer. To *choose* is to take one thing from among others; to *prefer* is to take one thing before or rather than another.

Ant. DECLINE, reject.

Syn. CHOOSE, pick, select. We may *choose* whatever comes in our way without regard to the number of the objects to be chosen from, but we *pick* or *select* out of a number only, as to *pick* or *select* books from a library. We may *pick* one or many out of a number, but we mostly *select* a number. We *select* with even greater care than we *pick*.

Ant. CAST AWAY, leave, refuse.

chop (*chop*), *v. t.* [*p. t.* and *p. p.* chopped, *p. pr.* chopping], to cut with repeated blows; hew; mince: *v. i.* to do anything with a quick motion: *n.* the act of chopping; a piece chopped off.

chop-sticks (*chop'stiks*), *n. pl.* two small sticks used in China for eating.

chop-su-ey (*chop-sōō'i*), *n.* a dish consisting of stewed or fried chicken (or pork), rice, noodles, various vegetables, and sesame seeds, served in its own juice.

cho-ral (*kō'ral*), *adj.* of or pertaining to a choir: *n.* a simple sacred melody or hymn sung in unison. [Written also *chorale.*]

chord (*kôrd*), *n.* the string of a musical instrument; notes in harmony: *v. t.* to string, as a musical instrument.

chores (*chōrz*), *n. pl.* the daily light work of a farmyard or household.

★**chor-is-ter** (*kor'is-tēr*, not *kō'ris-tēr*), *n.* a member of a choir.

cho-rus (*kō'rus*), *n.* a number singing in concert; a band of singers and dancers in a Greek tragedy.

chow-chow (*chou'chou*), *adj.* a kind of mixed pickles.

chow-der (*chou'dēr*), *n.* a dish of fresh fish; clams stewed together with pork and biscuit, etc.

Christabel (*kris'tà-bel*). Not an uncommon female name. It would seem to be derived from *Cristobal*, the Spanish form of *Christopher.*

chris-ten (*kris'n*), *v. t.* to baptize in the name of the Holy Trinity; give a Christian name to.

Chris-ten-dom (*kris'n-dum*), *n.* countries whose inhabitants profess the Christian faith; Christians collectively.

Chris-tian (*kris'chàn*), *n.* a professor of the religion of Christ: *adj.* professing the religion of Christ.

Christiania (*kris-tē-à'nē-à*). Named after Christian IV. of Sweden. The capital of Norway.

Chris-tian-i-ty (*kris-chan'i-ti* or *kris-chi-an'i-ti*), *n.* the precepts and doctrines taught by Christ.

Chris-tian-ize (*kris'chan-iz*), *v. t.* to convert to Christianity.

Christina (*kris-tē'nà*). A female name; probably derived from the Spanish name *Cristina*, from root of *Christian.* Dutch, *Christina;* Fr., *Christine;* Ger., *Christiana;* It., *Cristina.*

Christ-mas (*kris'mas*), *n.* the festival (Dec. 25) celebrating the birth of Christ.

Christmas Island. In Pacific Ocean. So named because Captain Cook set foot upon it on Christmas day, 1777.

Christopher (*kris'tō-fēr*). From the Greek name *Christophoros*, signifying Christ's bearer or carrier. Danish, *Christoffer;* Dutch, *Christophorus;* Fr., *Christophe;* Ger., *Christoph;* Gr., *Christophoros;* It., *Cristoforo;* Lat., *Christophorus;* Port., *Christovao;* Sp., *Cristoval;* Sw., *Kristofer.*

chro-mate (*krō'māt*), *n.* a salt of chromic acid.

chro-mat-ic (*krō-mat'ik*), *adj.* relating to colors; including notes not belonging to the diatonic scale: *n.* a note affected by an accidental: *pl.* that branch of optics which treats of colors.

chro-ma-type (*krō'mà-tīp*), *n.* a process for obtaining a colored photographic picture.

chrome (*krōm*), *n.* chromium: *v. t.* to dye in a bath of bichromate of potash.

chro-mi-um (*krō'mi-um*), *n.* a steel-gray metal, one of the elements.

chro-mo (*krō'mō*), *n.* [*pl.* chromos (*'mōz*)], a chromo-lithograph or picture produced by chromo-lithography.

chro-mo-li-thog-ra-phy (*krō-mō-li-thog'rà-fi*), *n.* the art of printing in colors from stone.

chro-mo-sphere (*krō'mō-sfēr*), *n.* the rose-colored outer envelope of the sun.

chron-ic (*kron'ik*), *adj.* continuing a long time, or recurring: said of a disease.

chron-o-log-ic-al (*kron-ō-loj'i-kal*), *adj.* relating to past events in the order of time.

chro-nol-o-gy (*krō-nol'ō-ji*), *n.* [*pl.* chronologies (*-jiz*)], the science that treats of events and arranges their dates in proper sequence.

chro-nom-e-ter (*krō-nom'ē-tēr*), *n.* an instrument for measuring time with extreme accuracy.

chrys-a-lis (*kris'à-lis*), *n.* the final stage through which a lepidopterous insect, or a butterfly, passes prior to its winged state.

chrys-an-the-mum (*kris-an'thē-mum*), *n.* a composite plant with large heads of showy flowers; a flower of this plant.

chub (*chub*), *n.* a fresh-water fish.

chub-bi-ness (*chub'i-nes*), *n.* plumpness.

chub-by (*chub'i*), *adj.* plump; fat and round.

chuck (*chuk*), *v. t.* to make a noise like a hen calling to her chickens: *n.* a hen's call.

chuck (*chuk*), *v. t.* to pat in a playful manner; throw smartly to a short distance: *n.* a light blow under the chin.

chuc-kle (*chuk'l*), *n.* a quiet, suppressed laugh: *v. i.* to laugh in such a manner.

chum (*chum*), *n.* one who lodges in the same apartment; an intimate friend: *v. i.* [*p. t.* and *p. p.* chummed; *p. pr.* chumming], to occupy the same room

chunk (*chungk*), *n.* a short, thick piece; a thick-set strong person or animal.

chunk-y (*chungk'i*), *adj.* short and thick.

church (*chērch*), *n.* a building set apart or consecrated for divine worship.

Church (*chērch*), *n.* the collective body of Christians; a particular body of Christians; the clergy.

Church-man (*'man*), *n.* an adherent of the established church; an Episcopalian.

church-war-den (*'wawr-dn*), *n.* in the Anglican church, one of two officers to attend to the secular affairs of the church; a long clay pipe.

churl (*chērl*), *n.* formerly one of the lowest orders of freemen; a peasant; a surly ill-bred person.

churl-ish (*'ish*), *adj.* ill-bred; niggardly.

churn (*chērn*), *n.* a vessel in which milk or cream is agitated to form butter: *v. t.* to make (butter) by agitating milk or cream.

chute (*shōōt*), *n.* an inclined trough for sending articles down; an aquatic switchback.

★**chyle** (*kil*), *n.* a milk-like fluid separated from digested matter in the stomach, absorbed by the lacteal vessels, and assimilated into the blood.

★**chyme** (*kim*), *n.* the pulpy mass of digested food prior to the separation of the chyle.

ci-ca-da (*si-kā'dà*), *n.* [*pl.* cicadæ (*'dē*)], a genus of insects having the power of producing a shrill sound.

ci-ca-trix (*si-kā'triks*), *n.* [*pl.* cicatrices (*sik-à-trī'sēz*)], the scar remaining after a wound has healed.

cic-a-trize (*sik'à-trīz*), *v. t.* to heal (a wound) by inducing the skin to form a cicatrix.

ci-der (*si'dēr*), *n.* the juice of apples expressed and fermented.

ci-gar (*si-gär'*), *n.* a small roll of tobacco leaf used for smoking.

cig-a-rette (*sig-à-ret'*), *n.* a small cigar made of tobacco rolled in thin paper.

cil-i-a (*sil'i-à*), *n. pl.* the hair of the eyelids; long minute hair-like appendages on the margins of vegetable bodies; the very minute vibratile filaments lining or covering certain organs.

Cimarron (*sē-mȧr-ron'*) **river, Okla.** Name of Spanish derivation, meaning "wild," "unruly."
cinch (*sinch*), *n.* a saddle girth firmly fastened in place by loop and knots; a sure grip or hold.
Cincinnati (*sin-sin-nä'ti*). City in Ohio, laid out and named by Colonel Israel Ludlow, in honor of an organization of officers formed after the Revolutionary war and named in honor of Cincinnatus, the Roman patriot.
cinc-ture (*singk'tūr*), *n.* a belt or girdle worn round the waist; a raised or carved ring at the bottom and top of a pillar.
cin-der (*sin'dẽr*), *n.* any piece of body thoroughly burnt but not reduced to ashes; *pl.* volcanic scoriæ.
cin-e-mat-o-graph (*sin-ē-mat'ō-gráf*), *n.* a French device similar to the biograph.
cin-na-bar (*sin'ȧ-bär*), *n.* red sulphide of mercury.
cin-na-mon (*sin'ȧ-mun*), *n.* the inner aromatic bark of an East Indian tree: *adj.* light reddish brown.
Cintra (*sēn'trä*). A town in the district of Lisbon, Portugal, fifteen miles northwest of Lisbon. It contains the Cork convent, a Moorish castle, the palace of the Pena and the royal palace.
ci-pher (*sī'fẽr*), *n.* the symbol 0; hence, a person or anything without value or power; a secret manner of writing, or the key to it: *v. i.* to practice arithmetic: *v. t.* to express in cipher.
Circassia (*sẽr-kash'i-ȧ*). Named from the country of the *Tcherkes*, a Tartar tribe which settled in the neighborhood of the river Terck.
cir-cle (*sẽr'kl*), *n.* a round body; a plane figure bounded by a single curved line called its circumference, every part of which is equally distant from a point within it, called the center; a sphere or position in society; a number of persons united by a common bond: *v. t.* to encompass: *v. i.* to move in a circle; revolve. [CLASS.]
Circleville, Ohio. So named from its original location within one of the Indian mounds bearing the shape of a circle.
★**cir-cuit** (*sẽr'kit*, not *sẽr'kut*) *n.* the act of going around anything; the space inclosed in a circle; the arrangement by which an electrical current is kept up between the two poles of a battery or machine.
Syn. CIRCUIT, tour, round. A *circuit* is made for a specific end of a serious kind; a *tour* is always made for pleasure; a *round*, like a circuit, is employed in matters of business, but of an ordinary kind. [See *excursion.*]
cir-cu-i-tous (*sẽr-kū'i-tus*), *adj.* roundabout.
cir-cu-lar (*sẽr'kū-lẽr*), *adj.* round like a circle; ending in itself; intended for circulation: *n.* a printed or written letter or notice.
cir-cu-lar-ize (*sẽr'kū-lẽr-īz*), *v. t.* to make circular; send circulars to.
cir-cu-late (*sẽr'kū-lāt*), *v. t.* to cause to pass from point to point or from one person to another: *v. i.* move round and return to the same point; pass from hand to hand; be diffused or distributed; travel. [ANNOUNCE.]
cir-cu-la-tion (*sẽr-kū-lā'shun*), *n.* the act of moving round; passing or transmitting from place to place; the extent to which a thing is circulated; currency of money.
cir-cum (*sẽr'kum*), a prefix equal to *around*, forming compounds the meaning of many of which is obvious, as *circum*polar, *around* the pole, etc.
cir-cum-cise (*sẽr'kum-sīz*), *v. t.* to cut off the foreskin or prepuce; purify the heart.
cir-cum-ci-sion (*sẽr'kum-sizh-un*), *n.* the act of circumcising; spiritual purification.
cir-cum-fer-ence (*sẽr-kum'fẽr-ens*), *n.* the line that bounds a circle; a periphery.
cir-cum-flex (*sẽr'kum-fleks*), *n.* a mark (⌒ ~ ^) over a vowel or syllable to denote accent or contraction: *adj.* marked with such an accent; curved or winding: *v. t.* to pronounce or mark with the circumflex.
cir-cum-lo-cu-tion (*sẽr-kum-lō-kū'shun*), *n.* a roundabout way of speaking; an indirect mode of statement.
cir-cum-nav-i-gate (*sẽr-kum-nav'i-gāt*), *v. t.* to sail round; usually round the globe.
cir-cum-nav-i-ga-tor (*sẽr-kum-nav'i-gā-tẽr*), *n.* one who circumnavigates.
cir-cum-scribe (*sẽr-kum-skrīb'*), *v. t.* to inclose within certain lines or boundaries: restrict.
Syn. CIRCUMSCRIBE, inclose. The extent of any place is drawn out to the eye by a *circumscription;* its extent is limited to a given point by an *inclosure.* A garden is *circumscribed* by any ditch, line, or posts that serve as its boundaries; it is *inclosed* by wall or fence. [See *bounds.*]
cir-cum-spect (*sẽr'kum-spekt*), *adj.* cautious; prudent; watchful on all sides. [CAUTIOUS.]
cir-cum-spec-tion (*sẽr-kum-spek'shun*), *n.* caution; watchfulness on every side; prudence.
cir-cum-stance (*sẽr'kum-stans*), *n.* something relative or appendant to a fact; an incident: *pl.* state of affairs: *v. t.* to place in a particular situation (only in *p. p.*)
Syn. CIRCUMSTANCE, incident, fact. *Incident* is what happens; *fact* is what is done; *circumstance* is not only what happens and is done but whatever is or belongs to a thing. To everything are annexed *circumstances*, either of time, place, age, color, or other collateral appendages which change its nature. Everything that moves and operates is exposed to *incidents;* effects are produced, results follow, and changes are brought about; these are *incidents.* [See *event.*]

cir-cum-stan-tial (*sẽr-kum-stan'shal*), *n.* something incidental and subordinate to the main subject: *pl.* incidentals: *adj.* accidental; detailed; proving indirectly.
Syn. CIRCUMSTANTIAL, particular, minute. *Circumstantial* expresses less than *particular*, and that less than *minute.* A *circumstantial* account contains all leading events; a *particular* account includes every event and movement, however trivial; a *minute* account omits nothing as to person, time, place, figure, form, and every other trivial *circumstance* connected with the events.
cir-cum-vent (*sẽr-kum-vent'*), *n.* to gain an advantage over by stratagem or deception.
cir-cum-ven-tion (*-ven'shun*), *n.* the act of circumventing; a stratagem.
cir-cus (*sẽr'kus*), *n.* [*pl.* circuses (*-ez*)], a large level oblong space for feats of horsemanship, etc., with seats for the spectators arranged in tiers; a semicircular space.
Circus Maximus (*sẽr'kus maks'i-mus*). In ancient Rome the great circus occupying the hollow between the Palatine and the Aventine hills. Under Cæsar and Augustus it was first largely built of stone, and splendidly adorned. In its final form it is said to have accommodated 385,000 spectators.
Circus of Romulus or **Maxentius.** A Roman circus built in 311 A. D., the most perfect ancient circus surviving.
cis-al-pine (*sis-al'pīn*), *adj.* this side of the Alps with regard to Rome; south of the Alps.
cis-at-lan-tic (*sis-at-lan'tik*), *adj.* on this side of the Atlantic Ocean.
cis-tern (*sis'tẽrn*), *n.* a natural or artificial receptacle for storing water; a reservoir.
cit-a-del (*sit'ȧ-del*), *n.* a fortress.
ci-ta-tion (*sī-tā'shun*), *n.* an official summons to appear before a court, especially an ecclesiastical court; a quotation.
cite (*sīt*), *v. t.* to summon officially to appear in court; quote.
Syn. CITE, quote. To *cite* is employed for persons or things; to *quote* for things only. Authors are *cited*, passages from their works are *quoted.* We *cite* only by authority; we *quote* for general purposes of convenience. [See *allege.*]
Ant. MISQUOTE.
cith-a-ra (*sith'ȧ-rȧ*), *n.* an ancient lyre.
cit-i-zen (*sit'i-zen*), *n.* a native or inhabitant of a town or city; a freeman; a member of a state or nation who enjoys political rights and privileges.
cit-rate (*sit'rāt*), *n.* a salt of citric acid.
cit-ric ac-id (*sit'rik as'id*), *n.* an acid found in the lemon and orange.
cit-ron (*sit'run*), *n.* a tree with a fruit like the lemon.
cit-y (*sit'i*), *n.* [*pl.* cities (*'iz*)], a large and important town; a corporate town.
civ-ic (*siv'ik*), *adj.* pertaining to a city.
★**civ-il** (*siv'il*, not *siv'l*) *adj.* relating to the affairs of a city or government; non-international; not military or criminal; complaisant; well-bred.
Syn. CIVIL, obliging, complaisant. *Civil* applies to words or manner as well as to the action; *obliging* to the action only. As *civil* is indefinite in its meaning, so it is indiscriminate in its application; *obliging*, on the other hand, is confined to what passes between particular persons or under particular circumstances. *Civil* and *obliging* both imply a desire to do a kindness; *complaisant* signifies the desire of receiving pleasure, which is a refined mode of doing a kindness.
Ant. BOORISH, rude, unmannerly.
ci-vil-ian (*si-vil'yan*), *n.* one engaged in the pursuits of civil life: *adj.* occupied in civil pursuits.
ci-vil-i-ty (*si-vil'i-ti*), *n.* [*pl.* civilities (*-tiz*)], good breeding; courtesy.
civ-i-li-za-tion (*siv-i-li-zā'shun*), *n.* the state of being civilized; culture; refinement. [CULTIVATION.]
civ-i-lize (*siv'i-līz*), *v. t.* to reclaim from a savage state; instruct in the arts and refinements of civilized life.
clack (*klak*), *v. i.* to make a sudden, sharp sound: *n.* a sudden, sharp sound; continual prattle.
claim (*klām*), *v. t.* to demand as a right, or by authority: *v. i.* to be entitled to anything; *n.* a demand; the thing claimed. [RIGHT, ALLEGE.]
clai-mant (*klā'mant*), *n.* one who demands anything as his right.
clair-voy-ance (*klâr-voi'ans*), *n.* the power attributed to persons in a mesmeric state of seeing objects not usually perceptible.
clair-voy-ant (*'ant*), *adj.* pertaining to, or characterized by, clairvoyance: *n.* one who professes to have the power of clairvoyance.
clam (*klam*), *v. t.* [*p. t.* and *p. p.* clammed, *p. pr.* clamming], to clog with any glutinous matter: *v. i.* to be moist and cold.
clam (*klam*), *n.* an edible bivalve mollusk.
clam-bake (*'bāk*), *n.* a picnic at which baked clams form the chief dish.
clam-my (*klam'i*), *adj.* soft and sticky.
clam-or (*klam'ẽr*), *n.* a loud and continued noise; popular outcry: *v. t.* shout. [CALL.]
clam-or-ous (*klam'ẽr-us*), *adj.* vociferous.
clamp (*klamp*), *n.* anything that fastens or binds: *v. t.* to fasten or bind with clamps.
clan (*klan*), *n.* a tribe or association of families united under one chieftain, having one common ancestor, and the same surname. [CLASS.]

★**clan-des-tine** (*klan-des'tin*), *adj.* secret; private.
Syn. CLANDESTINE, secret. To do a thing *clandestinely* is to elude observation; to do a thing *secretly* is to do it without the knowledge of any one. What is *clandestine* is unallowed, which is not necessarily the case with what is *secret.*
Ant. OPEN, conspicuous, advertised.
clang (*klang*), *n.* a loud, sharp, ringing metallic sound: *v. t.* to cause to resound with a clang: *v. i.* give out a clang.
clan-gor (*klang'gẽr*), *n.* a sharp clang.
clank (*klangk*), *n.* a sharp, hard, metallic sound: *v. t.* and *v. i.* to rattle and sound, as chains.
clap (*klap*), *v. t.* and *v. i.* [*p. t.* and *p. p.* clapped, *p. pr.* clapping], to indicate approval by striking the hands together: *n.* a loud noise made by a sudden collision; applause expressed by clapping.
★**clap-board** (*klab'ōrd*, not *klap'bōrd*), *n.* a thin, narrow board, used for the covering of the sides of frame houses.
clap-per (*klap'ẽr*), *n.* one who, or that which, claps; the tongue of a bell; the clack of a mill-hopper.
Clara (*klar'ȧ*). A modern form of *Clare.* Danish, *Clara;* Dutch, *Clara;* Fr., *Clara;* Ger., *Klara;* It., *Clara;* Lat., *Clara;* Sw., *Klara.*
Clare. A name probably derived from *St. Clare*, a popular saint in England, a friend of St. Francis, and foundress of all the *Poor Clares.* It is probably derived from Latin *clarus*, "bright," "fair."
clar-et (*klar'et*), *n.* a light bodied wine of a dark red color; blood: *adj.* claret-colored.
clar-i-fy (*klar'i-fī*), *v. t.* [*p. t.* and *p. p.* clarified, *p. pr.* clarifying], to make clear from impurities: *v. i.* to become clear.
★**clar-i-net** (*klar'i-net*), *n.* a keyed reed instrument of the oboe class. [Also *clarionet.*]
clar-i-on (*klar'i-un*), *n.* a kind of trumpet.
Clarissa (*klȧ-ris'sȧ*). From the French name *Clarisse* (It., *Clarice*), from root of *Clare.*
Clarksville, Tenn. So named as an honor to Gen. George Rogers Clark, a distinguished Revolutionary soldier.
clash (*klash*), *v. i.* to make a loud harsh noise by mutual collision: *v. t.* to strike violently together: *n.* the noise so produced.
clasp (*klȧsp*), *v. t.* to shut or fasten together with, or as with, a clasp: *n.* a hook to hold anything close; a close embrace.
Syn. CLASP, hug, embrace. To *clasp* makes the act of inclosing another in one's arms when it is performed with the warmth of true affection; *hug* is a ludicrous sort of *clasping*, which is the consequence of ignorance or extravagant feeling; *embrace* is simply a mode of ordinary salutation.
class (*klȧs*), *n.* a number of things or persons of the same status: *v. t.* to classify.
Syn. CLASS, association, caste, circle, clan, clique, club, company, coterie, grade, order, rank, set. A *class* is a number of persons or objects having common pursuits, purposes, attributes, or characteristics; membership in a *caste* is supposed to be for life; in a *class* may be very transient. *Rank* obtains among the nobility or military officers, or various *orders* of the priesthood. *Grade* implies some regular scale of valuation, as *grades* of wool, a man of inferior *grade.* A *coterie* is a small company of persons of similar tastes; *clique* is always factional; the *association* breaks up into *cliques.* A *set* is more extensive than a *clique; circle* is similar in meaning to *set*, but of wider application.
class-ic (*klȧs'ik*), *adj.* of or relating to the highest class or rank in literature or art; pertaining to, or having the characteristics of, the Greek or Roman authors. [Also *classical.*] *n.* an author of the first rank whose works serve as a standard; one versed in Greek and Latin literature: *pl.* ancient Greek and Latin literature.
clas-si-fi-ca-tion (*klȧs-i-fi-kā'shun*), *n.* the act of forming or dividing into classes.
clas-si-fy (*klȧs'i-fī*), *v. t.* [*p. t.* and *p. p.* classified; *p. pr.* classifying], to arrange in classes; systematize.
clat-ter (*klat'ẽr*), *v. t.* to strike so as to make a clatter: *v. i.* to make a clatter: *n.* a continuous or confused noise.
Claude (*klôd*). From the Roman name *Claudius*, another form of *Clodius*, Latinized from *Clodio;* from Old German, *laut*, "celebrated," "distinguished," "illustrious."
Claudia (*klô'di-ȧ*). Feminine of *Claudius.* Dutch, *Claudia;* Fr., *Claudie;* It., *Claudia;* Lat., *Claudia;* Sw., *Klaudia.*
clause (*klawz*), *n.* a part of a written composition, or a sentence; a special proviso in a document.
clav-i-cle (*klav'i-kl*), *n.* the collar bone.
claw (*klaw*), *n.* a sharp hooked nail in the foot of an animal, as the cat; the whole foot of a bird; *v. t.* to tear or scratch with, or as if with, claws.
clay (*klā*), *n.* anything easily molded; soft plastic earth: *adj.* made of or like clay. [BODY.]
clean (*klēn*), *adj.* free from dirt or extraneous matter; morally or ceremonially pure: *adv.* in a clean manner; entirely: *v. t.* to render clean.
Syn. CLEAN, cleanly, pure. *Clean* expresses a freedom from dirt or soil; *cleanly* the disposition or habit of being clean. A person who keeps himself *clean* is *cleanly.* *Pure* is used in a moral sense; the heart should be *pure.*
★**clean-ly** (*klen'li*), *adj.* neat; pure: *adv.* (*klēn'li*) wholly clean. [CLEAN.]
clean-ness (*klēn'nes*), *n.* moral or physical purity; neatness.

cleanse (*klenz*), *v. t.* to make clean; purify from moral impurity or guilt.
clear (*klēr*), *adj.* bright; pure; manifest to the understanding: *v. t.* to make bright; render evident; free from obstructions
Syn. CLEAR, lucid, bright, vivid. A mere freedom from stain or dullness constitutes *clearness;* the return of light, and consequent removal of darkness, constitutes *lucidity; brightness* supposes a certain strength of light; *vividness* a freshness combined with the strength, and even a degree of brilliancy. [See *apparent, fair, absolve.*]
clear-ance (*klēr'ans*), *n.* the act of clearing.
clear-cut (*'kut*), *adj.* having a sharp, clearly defined outline, as if chiseled.
clear-ing (*klēr'ing*), *n.* the act of making clear; land cleared of timber.
clear-ly (*klēr'li*), *adv.* in a clear manner.
Syn. CLEARLY, distinctly. That is seen *clearly* of which one has a *clear* view independent of anything else; that is seen *distinctly* which is seen so as to distinguish it from other objects. We see the moon *clearly* whenever it shines, but we cannot see the spots in the moon *distinctly* without the help of glasses.
Ant. CONFUSEDLY, dimly, obscurely.
clear-ness (*klēr'nes*), *n.* the quality of being clear.
Syn. CLEARNESS, perspicuity. *Clearness* respects our ideas, and springs from the distinction of the things themselves that are discussed; *perspicuity* respects the mode of expressing the ideas, and springs from the good qualities of style.
Ant. DULLNESS, obtuseness, obscurity.
cleat (*klēt*), *n.* a thin piece of iron worn on boots; a strip of wood nailed across a board: *v. t.* to secure or strengthen with a cleat.
cleav-a-ble (*klēv'ȧ-bl*), *adj.* divisible.
cleav-age (*klēv'āj*), *n.* the act of splitting.
cleave (*klēv*), *v. i.* [*p. t.* clave, cleaved, *p. p.* cleaved, *p. pr.* cleaving], to adhere to; be attached to.
cleave (*klēv*), *v. t.* [*p. t.* cleft, clove, *p. p.* cleft, cloven, cleaved, *p. pr.* cleaving], to divide with violence.
clef (*klef*), *n.* a figure at the beginning of each staff in music to indicate the pitch of all the notes on one particular line or space.
cleft (*kleft*), *n.* a crack; crevice.
★**clem-a-tis** (*klem'ȧ-tis*, not *klē-mä'tis*), *n.* a perennial plant of the crowfoot family.
clem-en-cy (*klem'en-si*), *n.* [*pl.* clemencies (*-siz*)], compassion; remission. [MERCY.]
clem-ent (*klem'ent*), *adj.* compassionate; forgiving; gentle; forbearing.
Clement. Like the classical name Clemens, derived from the Latin *clemens*, "mild," "calm," "gentle." Danish, *Clemens;* Fr., *Clement;* Ger., *Clemens;* It., *Clemente;* Lat., *Clemens;* Sp., *Clemente.*
Clementia (*klē-men'shi-ȧ*). A female name formed from *Clement.*
Cleopatra (*klē-ō-pā'trȧ*). Found as a female name in the parish registers of Nottingham, England. So called from Cleopatra, queen of Egypt. It is derived from *kleos*, "glory," "renown," "fame," and *patria*, "one's native country," "a family"; hence, "fame of her father."
Cleopatra's Needles. A pair of Egyptian obelisks of pink granite which were transported from Heliopolis to Alexandria in the eighteenth year of Augustus. One of them was taken to London and set up on the Thames embankment, in 1878, and the other was soon after brought to New York and erected in Central park.
cler-gy (*klẽr'ji*), *n.* a body of men set apart by ordination for the service of the church.
cler-gy-man (*-man*), *n.* [*pl.* clergymen (*-men*)], a minister.
cler-ic-al (*kler'i-kal*), *adj.* pertaining to the clergy; pertaining to a clerk, writer, or copyist.
clerk (*klẽrk*), *n.* a parish clerk; one engaged in an office to transact business generally; an assistant salesman in a store or shop: *v. i.* to act as clerk.
Cleveland, Ohio. City named in honor of Genneral Moses Cleveland of Connecticut, who had charge of the surveying of this region.
clev-er (*klev'ẽr*), *adj.* possessing skill or ability; dexterous; expert; good natured.
Syn. CLEVER, skillful, expert, dexterous, adroit. *Cleverness* is mental power employed in the ordinary concerns of life. *Skill* is both a mental and corporeal power, exerted in mechanical operations and practical sciences. A physician, a lawyer, or an artist is *skillful;* one may have a *skill* in divination, or a *skill* in painting. *Expertness* and *dexterity* require more corporeal than mental power exerted in minor arts and amusement; one is *expert* at throwing the quoit; *dexterous* in the management of horses.
clew (*kloo͞*), *n.* a ball of thread; a corner of a sail: *v. t.* to truss up (sails) to the yard of a ship.
click (*klik*), *v. i.* to make short sharp successive noises; *v. t.* to move with a clicking sound: *n.* a slight sharp sound.
cli-ent (*klī'ent*), *n.* one who employs a lawyer; one dependent upon another's patronage.
cli-ent-age (*klī'ent-āj*), *n.* the condition of being a client; clients collectively.
cliff (*klif*), *n.* a high steep rock or bank.
cli-mac-ter-ic (*klī-mak'tẽr-ik*), *n.* a critical period in human life when some great change is supposed to take place in the constitution.
cli-mate (*klī'māt*), *n.* the temperature and meteorological conditions of a country, etc.
cli-mat-ic (*klī-mat'ik*), *adj.* relating to, or connected with, climate.
cli-ma-tize (*klī'mȧ-tīz*), *v. t.* to accustom to a new climate.
cli-max (*klī'maks*), *n.* the summit; acme.
climb (*klīm*), *v. i.* to mount or ascend, as by the hands and feet: *v. t.* to ascend laboriously: *n.* an ascent by climbing.
clime (*klīm*), *n.* a country, region, or tract.
clinch (*klinch*), *v. t.* to rivet; double up tightly, as the fingers; to hold fast: *n.* anything that holds both ways.
cling (*kling*), *v. i.* [*p. t.* and *p. p.* clung, *p. pr.* clinging], to adhere closely; hold fast by embracing.
clin-ic (*klin'ik*), *n.* a medical lecture at the bedside or in the presence of patients.
clink (*klingk*), *v. t.* to strike so as to make a slight sharp sound: *v. i.* to make a clinking noise: *n.* a slight sharp vibrating noise.
clink-er (*'ẽr*), *n.* a mass of partly vitrified brick; slag.
clip (*klip*), *v. t.* [*p. t.* and *p. p.* clipped, clipt, *p. pr.* clipping], to cut with shears or scissors: *n.* the wool of a season's shearing; a spring for holding papers.
clip-per (*'ẽr*), *n.* one who, or that which, clips; a sailing vessel with very sharp lines and great spread of canvas; a first-rate person or thing.
★**clique** (*klēk*, not *klik*), *n.* a group of persons united for some common purpose (usually sinister); a coterie. [CLASS.]
Cloaca Maxima (*klō-ā'kȧ maks'i-mä*). The chief drain of Rome, built by Tarquinius Priscus about 600 B. C. and still serving its purpose.
cloak (*klōk*), *n.* a sleeveless, loose outer garment worn by both sexes; hence, a pretext; disguise: *v. t.* to cover with, or as with, a cloak; conceal. [PRETENSE.]
clock (*klok*), *n.* a machine for measuring and indicating the divisions of time by means of hands moving over a dial plate.
clock-wise (*'wīz*), *adv.* in the direction of the rotation of the hands of a clock.
clod (*klod*), *n.* a lump of earth, turf, or clay; a bait used in eel fishing; the shoulder part of the neckpiece in beef.
clog (*klog*), *v. t.* [*p. t.* and *p. p.* clogged: *p. pr.* clogging], to load with anything that may impede motion; embarrass: *n.* a load or weight; a hindrance; a kind of wooden shoe. [OBSTRUCT.]
clois-ter (*klois'tẽr*), *n.* a place of religious retirement; a monastery or nunnery: *v. t.* to confine in, or as in, a cloister or convent.
Syn. CLOISTER, convent, monastery. The proper idea of *cloister* is that of seclusion; the proper idea of *convent* is that of community; the proper idea of a *monastery* is that of solitude. One is shut up in a *cloister*, put into a *convent*, and retires to a *monastery.*
clois-tral (*klois'tral*), *adj.* pertaining to, or confined in, a cloister; secluded.
close (*klōz*), *v. t.* to shut; surround closely: *v. i.* to come together; engage in hand-to-hand conflict; grapple: *n.* end; an inclosed space: *adj.* (*klōs*) without ventilation; oppressive; minute; concise; reticent; niggardly: *adv.* near.
Syn. CLOSE, shut. To *close* signifies simply to put close together; *shut*, to stop or prevent admittance; *closing* is therefore a partial *shutting*, and *shutting* a complete *closing.* [See *end, sequel.*]
Ant. OPEN.
Syn. CLOSE, near, nigh. *Close* is more definite than *near*. Houses stand *close* to each other which are almost joined; men stand *close* when they touch each other; objects are *near* which are within sight; persons are *near* each other when they can converse together. *Near* and *nigh* are but variations of each other in etymology. [ADJACENT.]
Ant. DISTANT, far, separate.
clos-et (*kloz'et*), *n.* a small room for privacy or retirement: *adj.* private; secluded: *v. t.* to receive in a private room for confidential consultation.
clo-sure (*klō'zhūr*), *n.* the act of shutting up; that which closes; the end.
clot (*klot*), *v. i.* [*p. t.* and *p. p.* clotted, *p. pr.* clotting], to coagulate: *v. t.* to make, form into, or cover with, clots: *n.* a concrete or coagulate mass of soft or fluid matter.
cloth (*klôth*), *n.* [*pl.* cloths (*klôthz*)], a woven fabric of some fibrous material, especially wool; a table covering; the distinctive dress of any profession, especially the clerical.
clothe (*klōth*), *v. t.* to put raiment on; cover with, or as with, a garment.
clothes (*klōthz*), *n. pl.* covering for the body; dress; bedclothes.
cloth-ier (*klōth'yẽr*), *n.* one who manufactures, or sells, clothes.
cloth-ing (*klōth'ing*), *n.* garments in general.
Clotilda (*klō-til'dȧ*). From the Old German *Clothildis*, name of a queen of France, signifying "distinguished and noble," or "illustrious noble" (*laut-hild*).
cloud (*kloud*), *n.* a mass of visible vapor floating in the atmosphere; the dark markings in marble or precious stones: *v. t.* to overspread with a cloud; render gloomy: *v. i.* to grow cloudy. [OBSCURE.]
cloud-burst (*'bẽrst*), *n.* a violent downpour of rain over a very limited area.
clough (*kluf*), *n.* a ravine in a rock or hillside; a gorge; a kind of sluice.
clout (*klout*), *n.* a piece of cloth or leather for patching; the center mark of an archery target.
clove (*klōv*), *n.* a pungent aromatic spice.
clo-ven (*klō'vn*), *p. adj.* divided into parts.
clo-ver (*klō'vẽr*), *n.* a species of grass.
clown (*kloun*), *n.* a rustic; an ill-bred fellow; a professional jester or buffoon.
cloy (*kloi*), *v. t.* [*p. t.* and *p. p.* cloyed, *p. pr.* cloying], to fill to repletion; surfeit.
club (*klub*), *n.* a heavy stick; one of the suits of cards marked with trefoils; a number of persons associated for a common purpose: *v. t.* [*p. t.* and *p. p.* clubbed, *p. pr.* clubbing], to beat with a club: *v. i.* contribute to a common expense. [CLASS.]
club-foot (*'foot*), *n.* a deformed foot.
cluck (*kluk*), *v. i.* to cry or call like a hen to her chickens: *n.* a hen's call.
clue (*kloo͞*), *n.* a hint; a clew.
clump (*klump*), *n.* a cluster of trees, etc.; a thick sole: *v. t.* arrange in a clump: *v. i.* tread clumsily.
clum-sy (*klum'zi*), *adj.* awkward; heavy.
Cluny (*klū-nē'*), **Hotel de.** A former palace of the abbots of Cluny, situated on the Boulevard St. Michel, Paris.
clus-ter (*klus'tẽr*), *n.* a number of things of the same kind growing or collected together; a bunch: *v. i.* to grow or gather into bunches; congregate.
clutch (*kluch*), *v. t.* to grasp, seize, or grip strongly: *v. i.* to snatch or seize (with *at*): *n.* a grasp; seizure: *pl.* hands; claws.
co (*kō*), a prefix meaning *with, together.*
coach (*kōch*), *n.* a large, covered, four-wheeled carriage; a tutor who prepares another for an examination or an athletic contest: *v. t.* to instruct or train.
co-ad-ju-tor (*cō-ad-jū'tẽr*), *n.* One who aids another; a helper; an assistant. [ACCESSORY.]
co-ag-u-late (*kō-ag'ū-lāt*), *v. t.* to clot or curdle.
co-ag-u-la-tion (*-ū-lā'shun*), *n.* the act of coagulating; the state of being coagulated.
coal (*kōl*), *n.* mineralized vegetable matter, used as fuel: *v. t.* to furnish with coals: *v. i.* to take in coal.
co-a-lesce (*kō-ȧ-les'*), *v. t.* to grow together; combine; unite.
co-a-les-cence (*'ens*), *n.* the act of coalescing.
co-a-li-tion (*kō-ȧ-lish'un*), *n.* union in a body or mass; a combination of persons.
coal oil (*oil*), *n.* petroleum.
coal tar (*tär*), *n.* a thick opaque liquid distilled from bituminous coal, and from which many rich dye colors are obtained.
coarse (*kōrs*), *adj.* large in texture or size; not refined; rough; rude; indelicate.
Syn. COARSE, rough, rude. In the proper sense *coarse* refers to the composition and materials of bodies, as *coarse* bread, *coarse* meat, *coarse* cloth; *rough* respects the surface of bodies, as *rough* wood and *rough* skin; *rude* respects the make or fashion of things, as a *rude* bark, a *rude* utensil. *Coarse* is opposed to fine, *rough* to smooth, *rude* to polished. [See *gross.*]
Ant. CULTURED, elegant, polite, well bred.
coast (*kōst*), *n.* the margin of the land next the sea; *v. i.* to sail near or along the coast; descend an incline in a sledge, or on a bicycle without working the pedals: *v. t.* to sail close or near to.
coast-er (*'ẽr*), *n.* a home-trading vessel; one who coasts on a sled.
coast-guard (*'gärd*), *n.* a member of the service for watching the sea, originally to check smuggling.
coast-wise (*'wīz*), *adv.* by, or along, the coast.
coat (*kōt*), *n.* an outer garment covering the upper part of the body; an external covering, as fur, etc.; a thin layer; an integument: *v. t.* to cover or spread over.
coat of arms (*ov ärmz*), *n.* the emblazonment of armorial bearings on an escutcheon.
coat of mail (*māl*), *n.* chain mail.
coax (*kōks*), *v. t.* to wheedle; cajole. [PERSUADE.]
cob (*kob*), *n.* the spike of Indian corn; a strong, thick-set pony: *v. t.* [*p. t.* and *p. p.* cobbed, *p. pr.* cobbing], to punish with a strap; break (ore).
co-balt (*kō'bawlt*), *n.* a steel-gray metal.
cob-ble (*kob'l*), *n.* a pebble; a round medium-sized stone: *v. t.* to mend or patch up coarsely.
cob-bler (*'lẽr*), *n.* one who mends boots and shoes; a clumsy workman.
cob-web (*kob'web*), *n.* a spider's web; hence, a net or snare; old musty rubbish: *adj.* made of, or like, a cobweb; flimsy.
co-ca (*kō'kȧ*), *n.* the dried leaf of a small South American shrub: a powerful tonic.
★**co-ca-ine** (*kō'kȧ-in*), *n.* a powerful alkaloid extracted from coca leaves.
coch-i-neal (*koch'i-nēl*, *n.* a scarlet dye obtained from the dried body of an insect.
Cochituate (*kō-chit'ū-āt*), **Mass.** Indian word, meaning "land on or near falls," or "rapid streams."
coch-le-a (*kok'lē-ȧ*), *n.* [*pl.* cochleæ (*-ē*)], the spiral shaped cavity of the inner ear.
coch-le-ate (*kok'lē-āt*), *adj.* screwlike.
cock (*kok*), *n.* the male of birds, especially the domestic fowl; a small conical heap of hay.
cock (*kok*), *v. t.* to turn up or set (the hat or head) jauntily on one side; erect.
cock-ade (*-ād'*), *n.* a badge or ribbon worn on the hat.
cock-a-too (*'ȧ-too͞*), *n.* a crested bird of the parrot family.
cock-a-trice (*'ȧ-trīs*), *n.* a fabulous serpent said to have been hatched in a cock's egg, and possessing the power of killing by a glance of its eye.
cock-crow (*'krō*), *n.* early morning.
cock-er-el (*'ẽr-el*), *n.* a young cock.

coc-kle (*kok'kl*), *v. t.* to contract into wrinkles.
coc-kle (*'kl*), *n.* an edible shellfish with two heart-shaped wrinkled shells: the plant corncockle or darnel; a kiln for drying hops.
cock-ney (*kok'ni*), *n.* a Londoner: traditionally one born within sound of the bells of Bow church.
cock-pit (*kok'pit*), *n.* an inclosed space for cock-fighting.
cock-roach (*'rōch*), *n.* a black beetle.
co-coa (*kō'kō*), *n.* a palm which produces the cocoanut. [Also *coco.*]
co-coa (*kō'kō*), *n.* the ground seeds of the cacao or chocolate tree; the beverage made from it.
co-coa-nut (*-nut*), *n.* the fruit of the cocoa palm.
co-coon (*ko-kōōn'*), *n.* the silky oblong case covering the larvæ of many spinning insects while in the chrysalis state.
cod (*kod*), *n.* the husk or pod of a seed; the scrotum; the narrow part of a trawl net.
cod (*kod*), *n.* a large edible fish found in the northern seas, and on the banks of Newfoundland.
Cod, Cape, Mass. From the fish its name implies, discovered and named by Bartholomew Gosnold, May 15, 1602. *Tamwock*, its Indian name, means "codfish."
cod-dle (*kod'l*), *v. t.* to make effeminate by pampering.
code (*kōd*), *n.* a body of classified laws or regulations; a system of signals.
codg-er (*koj'ėr*), *n.* a miser; an old man.
cod-i-cil (*kod'i-sil*), *n.* an appendix to a will.
co-di-fy (*kō'di-fī* or *kod'i-fī*), *v. t.* [*p. t.* and *p. p.* codified, *p. pr.* codifying], to reduce to a code.
co-ef-fi-cient (*kō-ef-fish'ent*), *adj.* coöperating: *n.* in algebra, a number or known quantity prefixed as a multiplier to a variable or an unknown quantity.
co-erce (*kō-ėrs'*), *v. t.* to restrain or constrain by force, especially legally or morally; compel.
Cœur d'Alene (*kėr dā-lān'*). Lake and town in Kootenai county, Idaho; named from a tribe of Indians. French name, meaning "needle hearts" or "awl hearts."
co-e-val (*kō-ē'val*), *adj.* contemporaneous.
co-ex-ten-sive (*kō-eks-ten'siv*), *adj.* equally extensive.
cof-fee (*kof'ē*), *n.* the seeds of a plant which, roasted and ground, form a well-known beverage.
cof-fer (*kof'ėr*), *n.* a chest; a kind of caisson or floating dock; a sunken panel: *pl.* a treasury: *v. t.* to inclose in a coffer.
cof-fin (*kof'in*), *n.* a case for the dead; the hollow part of a horse's hoof: *v. t.* inclosed in a coffin.
cog (*kog*), *n.* the tooth of a wheel; a trick: *v. t.* [*p. t.* and *p. p.* cogged, *p. pr.* cogging], to furnish with cogs; wheedle; to load (dice) in order to cheat.
co-gent (*kō'jent*), *adj.* forcible, convincing.
Syn. COGENT, forcible, strong. *Cogency* applies to reasons individually considered; *force* and *strength* to modes of reasoning or expression. *Cogent* reasons impel to decisive conduct; *strong* conviction is produced by *forcible* reasoning conveyed in *strong* language.
cog-i-tate (*koj'i-tāt*), *v. i.* to meditate: *v. t.* to devise or plan.
cog-nate (*kog'nāt*), *adj.* allied by blood; of the same stock, nature, or quality.
cog-ni-tion (*kog-nish'un*), *n.* knowledge.
cog-ni-zant (*kog'ni-zant* or *kon'i-zant*), *adj.* having knowledge of anything.
★cog-no-men (*kog-nō'men*, not *kog'nō-men*), *n.* a surname.
co-hab-it (*kō-hab'it*), *v. i.* to dwell together as husband and wife.
Cohasset (*kō-has'et*), **Mass.** Indian word, meaning "place of pines."
co-here (*kō-hēr'*), *v. i.* to stick together.
co-her-ence (*'ens*), *n.* the state or quality of cohering. [Also *coherency.*]
co-he-sion (*kō-hē'zhun*), *n.* the force that unites together molecules of the same material.
co-he-sive (*'siv*), *n.* causing to cohere.
Cohoes (*kō-hōz'*), **N. Y.** Corruption of the Iroquois word *gahaoose*, "shipwrecked canoe," having reference to the falls in the Mohawk at this place.
co-hort (*kō'hôrt*), *n.* a body of ancient Roman soldiers, the tenth part of a legion.
★coif-fure (*koif'ūr*, Fr. *kwä-für'*), *n.* a headdress; manner of arranging the hair.
coil (*koil*), *n.* a rope gathered into a ring; anything resembling it: *v. t.* to gather into a circular heap.
coin (*koin*), *n.* money stamped with a legal impression: *v. t.* to convert into money; invent.
co-in-cide (*kō-in-sīd'*), *v. i.* correspond exactly; occur at the same time.
co-in-ci-dence (*kō-in'si-dens*), *n.* the act of coinciding.
co-in-ci-dent (*kō-in'si-dent*), *adj.* coinciding.
coke (*kōk*), *n.* the residue of coal after the gas has been expelled: *v. t.* to convert into coke.
col-an-der (*kul'an-dėr*), *n.* a vessel with a perforated bottom.
co-la nut (*kō'lä nut*), *n.* the large bitter seed of an African tree.
cold (*kōld*), *adj.* without heat or warmth; indifferent; *n.* the opposite of heat.
cole (*kōl*), *n.* cabbage plants in general.
cole-slaw (*'slaw*), *n.* cabbage salad.
col-ic (*kol'ik*), *n.* acute spasmodic pain in the abdomen or bowels: *adj.* pertaining to the bowels.
col-ick-y (*-i*), *adj.* pertaining to colic.
Colin (*kol'in*). From *Nicolin*, a diminutive of *Nicol*, from *Nicolas* or *Nicholas.*
col-lab-o-rate (*kol-ab'ō-rāt*), *v. i.* to work jointly, especially in literary or scientific work.
col-lapse (*kol-aps'*), *n.* sudden and complete failure: *v. i.* to break down.
col-lar (*kol'ėr*), *n.* anything encircling the neck: *v. t.* to seize by the collar.
col-late (*kol'āt*), *v. t.* compare critically one thing with another of the same kind, as manuscripts.
col-lat-er-al (*kol-at'ėr-al*), *adj.* side by side; auxiliary.
col-la-tion (*kol-ā'shun*), *n.* comparison; a light repast.
col-league (*kol'ēg*), *n.* an associate in the same office, employment, or commission.
Syn. COLLEAGUE, partner. *Colleague* is more noble than *partner.* Men in the highest offices are *colleagues;* tradesmen, mechanics, and subordinate persons are *partners.* Every Roman consul had a *colleague;* every workman has commonly a *partner. Colleague* is used for community of office; *partner* for community of interest. [ACCESSORY.]
Ant. OPPONENT.
col-lect (*kol'ekt*), *n.* a short comprehensive prayer.
col-lect (*kol-ekt'*), *v. t.* gather together; demand and obtain payment of: *v. i.* to meet together. [GATHER.]
col-lec-tion (*'shun*), *n.* the act of gathering together; an assemblage of works of art; a contribution to a special object.
col-lec-tor (*kol-ek't ėr*), *n.* one who collects.
col-lege (*kol'ej*), *n.* a society of men possessing certain powers and rights, and engaged in some common pursuit, especially literary studies; the house founded for such a society.
col-le-gi-ate (*kol-ē'ji-āt*), *adj.* pertaining to, or of the nature of, a college; instituted like a college.
col-lide (*kol-īd*), *v. i.* to come into collision.
col-lie (*kol'i*), *n.* a Scotch sheep dog.
col-lier (*kol'yėr*), *n.* a digger of coal; a worker in a coal mine; a vessel in the coal trade.
col-li-sion (*kol-izh'un*), *n.* the act of striking two bodies violently together; concussion.
col-lo-ca-tion (*kol-ō-kā'shun*), *n.* the act of placing together; arrangement.
col-lo-qui-al (*kol-ō'kwi-al*), *adj.* used in ordinary conversation.
col-lo-qui-al-ism (*-izm*), *n.* a colloquial form of speech; slang.
col-lo-quy (*kol'ō-kwi*), *n.* [*pl.* colloquies (*-kwiz*)], a conversation; a dialogue. [CONVERSATION.]
col-lu-sion (*kol-ū'zhun*), *n.* a secret agreement for a fraudulent or evil purpose.
co-logne wa-ter (*ko-lōn' waw't ėr*), *n.* perfume; eau de cologne.
co-lon (*kō'lon*), *n.* a mark of punctuation (:); the largest of the intestines.
colo-nel (*kėr'nel*), *n.* the chief officer of a regiment.
co-lo-ni-al (*kō-lō'ni-al*), *adj.* pertaining to a colony.
col-o-nist (*kol'ō-nist*), *n.* an inhabitant of a colony.
col-o-ni-za-tion (*kol'ō-ni-zā'shun*), *n.* the act of colonizing, or state of being colonized.
col-o-nize (*kol'ō-nīz*), *v. t.* to settle or establish a colony in.
col-on-nade (*kol-on-ād'*), *n.* a series of columns.
col-o-ny (*kol'ō-ni*), *n.* [*pl.* colonies (*-niz*)], a body of people from their native country who settle in another land, but are under the jurisdiction of, or connected with, the parent country.
col-or (*kul'ėr*), *n.* the hue or appearance that a body presents to the eye; a pigment or paint; an apparent right or reason: *pl.* a military or naval flag: *v. t.* to impart a color to; make plausible. [PRETENSE.]
Colorado (*kol-ō-rā'dō*). One of the western states of the United States, so named from the river; a Spanish word, meaning "ruddy" or "red," the waters of which, when swollen by heavy rains, sweep down immense volumes of red sand, mud, and silicious pebbles. Indian name, *Pashahono.*
co-los-sal (*kō-los'al*), *adj.* like a colossus; gigantic.
★col-os-se-um (*kol-os-sē'um*), *n.* the Flavian amphitheater at ancient Rome. [Also *coliseum.*]
Colosseum or **Flavian Amphitheater.** An amphitheater in Rome, begun by Vespasian (T. Flavius Sabinus) in 72 A. D., and for 400 years the seat of gladiatorial shows.
Colossus of Rhodes. A gigantic statue in commemoration of the successful defense of Rhodes against Demetrius Poliorcetes in 304 B. C. It represented the Rhodian sun-god, Helios; was over 105 feet high, and was considered one of the seven wonders of the old world.
col-por-tage (*kol'pōr-tāj*), *n.* the system of distributing bibles, religious books, etc.
colt (*kōlt*), *n.* a young male horse.
Columbia (*kō-lum'bi-a*). The United States. So named in honor of Christopher Columbus. [*Poetical.*] First used by Dr. Timothy Dwight in a popular song written by him.
col-um-bine (*kol'um-bin*), *adj.* pertaining to, or like, a dove: *n.* a plant with flowers of five petals.
Columbus, Ohio. So named as a tribute to Christopher Columbus; the ground when originally selected in 1812 was for the purpose of locating homes for Canadian and Nova Scotian refugees.
★col-umn (*kol'um*, not *kol'yum*), *n.* a round pillar to support or adorn a building; a division of the page of a book, etc.; a formation of troops. [PILLAR.]
co-ma (*kō'ma*), *n.* insensibility; stupor.
co-ma-tose (*kō'ma-tōs* or *kom'*), *adj.* torpid; lethargic.
comb (*kōm*), *n.* a toothed instrument to separate and adjust the hair; the crest of a cock or of a wave or hill: *v. t.* to dress (the hair) with a comb.
com-bat (*kom'bat*), *v. i.* to fight; act in opposition: *v. t.* to fight with; oppose by force: *n.* a contest by force; a struggle.
Syn. COMBAT, oppose. A person's positions are *combated;* his interests or his measures are *opposed.*
Ant. AID, assist, befriend.
com-bi-na-tion (*kom-bi-nā'shun*), *n.* the union of bodies or qualities; an association of persons for a common object.
com-bine (*kom-bin'*), *v. t.* to unite or join: *v. i.* to unite or coalesce: *n.* (*kom'bin*) a secret combination, generally for fraudulent purposes. [CONNECT.]
com-bus-ti-ble (*kom-bus'ti-bl*), *adj.* inflammable: *n.* an inflammable substance.
com-bus-tion (*-bus'chun*), *n.* the act of burning; the state of being burnt; the union of an inflammable substance with oxygen, etc., producing light and heat.
come (*kum*), *v. i.* [*p. t.* came, *p. p.* come, *p. pr.* coming], to move toward; draw near; reach; happen; arrive at some state or condition: *v. t.* to act or play the part of.
co-me-di-an (*kō-mē'di-an*), *n.* an actor or player in comedy: *fem.* **comédienne** (*kō-mā-di-en'*).
com-e-dy (*kom'ē-di*), *n.* [*pl.* comedies (*-diz*)], dramatic representation of the humorous or ridiculous side of human life.
★come-ly (*kum'li*, not *kōm'li*) *adj.* graceful; handsome.
com-et (*kom'et*), *n.* a luminous celestial body, with an eccentric orbit, consisting, when perfect, of a nucleus, coma, and a tail.
com-fort (*kum'fėrt*), *v. t.* to console; strengthen: *n.* a state of quiet enjoyment; consolation; a quilted bed cover.
Syn. COMFORT, pleasure. The grand feature in *comfort* is substantiality; in that of *pleasure* is warmth. *Pleasure* is quickly succeeded by pain; *comfort* is that portion of *pleasure* which seems to be the most durable sort of *pleasure. Comfort* must be sought for at home; *pleasure* is pursued abroad. [See *cheer.*]
com-fort-a-ble (*'fėrt-a-bl*), *adj.* imparting or enjoying comfort.
com-fort-er (*kum'fėrt-ėr*), *n.* one who comforts; a long woolen scarf.
com-ic (*kom'ik*) or **com-ic-al** (*'i-kal*), *adj.* exciting mirth.
com-i-ty (*kom'i-ti*), *n.* civility; politeness; acts of international courtesy.
com-ma (*kom'a*), *n.* a punctuation point (,).
com-mand (*kom-and'*), *v. t.* to order or charge with authority: *v. i.* to act as a commander; *n.* authority; an order; a naval or military force under the command of a particular officer.
Syn. COMMAND, order, injunction, precept. A *command* is an exercise of power or authority; it is imperative and must be obeyed. An *order* serves to direct; it is instructive and must be executed. A sovereign issues his *commands; orders* may be given by a subordinate or by a body, as *orders* of a court. *Order* is applied to the common concerns of life; *injunction* and *precept* to the moral conduct or duties of men. *Injunction* imposes a duty by virtue of the authority which enjoins; the *precept* lays down or teaches such duties as already exist. [See *class.*]
Ant. ALLOW, consent, permit.
com-mand-er (*'ėr*), *n.* one who commands; a naval officer next below a captain.
com-mand-ment (*kom-and'ment*), *n.* a command; a precept; a law, especially one of the decalogue.
com-mem-o-rate (*kom-em'ō-rāt*), *v. t.* to call to remembrance by a solemn act; celebrate with honor. [CELEBRATE.]
com-mem-o-ra-tion (*kom-em-ō-rā'shun*), *n.* the act of commemorating.
com-mence (*kom-ens'*), *v. i.* to come into existence; begin: *v. t.* to enter upon.
com-mence-ment (*'ment*), *n.* beginning; origin; the annual festival when degrees, etc., are conferred at colleges.
com-mend (*kom-end'*), *v. t.* to recommend as worthy of notice; praise. [LAUDABLE.]
com-men-da-tion (*kom-en-dā'shun*), *n.* the act of commending; approval.
com-men-su-ra-ble (*kom-en'sū-rā-bl*), *adj.* having, or reducible to, a common measure.
com-men-su-rate (*-en'sū-rāt*), *adj.* reducible to a common measure; equal. [PROPORTIONATE.]
com-ment (*kom'ent*), *n.* a spoken or written remark; *v. i.* (*kom-ent'*), to write notes or explanations.
com-men-ta-ry (*'en-tā-ri*), *n.* explanatory notes or annotations. [DEFINITION.]
com-merce (*kom'ėrs*), *n.* interchange of merchandise between nations or individuals.
com-mer-cial (*kom-ėr'shal*), *adj.* pertaining to trade or commerce; mercantile. [MERCANTILE.]
com-mer-cial-ism (*-izm*), *n.* commercial habits, methods, or principles.
com-min-gle (*kom-ing'gl*), *v. t.* and *v. i.* to mix; blend.
★com-mis-er-ate (*kom-iz'ėr-āt*, not *kom-iz'ėr-āt*) *v. t.* to feel pity for; sympathize with in distress. [SYMPATHY.]

com-mis-sa-ry (*kom'is-ă-ri*), *n.* [*pl.* commissaries (*-riz*)], an official in the commissariat department.

com-mis-sion (*kom-ish'un*), *n.* a delegation of business to any one; the act of doing or committing; a trust; brokerage or allowance: *v. t.* to empower.
Syn. COMMISSION, authorize, empower. We *commission* in matters where our own will and convenience are concerned; we *authorize* in matters where our personal authority is requisite; and we *empower* in matters where the authority of the law is required.
Ant. OBJECT, prevent, refuse.

com-mit (*kom-it'*), *v. t.* [*p. t.* and *p. p.* committed, *p. pr.* committing], to give in charge or trust; perpetrate; learn by heart; send for trial, or to prison.
Syn. COMMIT, assign, confide, consign, relegate, trust. *Commit* is to give in charge, put into care or keeping; to *confide* is to *commit* especially to one's fidelity. We *assign* a duty, *confide* a secret; we *commit* thoughts to writing; *commit* a paper to the flames; *consign* goods to an agent. [See *perpetrate.*]

com-mit-tee (*-it'ē*), *n.* persons appointed to consider or manage any matter.

★**com-mo-di-ous** (*kom-ō'di-us*, not *kom-ō'jus*), *adj.* useful; convenient; roomy.
Syn. COMMODIOUS, convenient. *Commodious* is mostly applied to that which contributes to the bodily ease and comfort; *convenient* to whatever suits the purposes of men in their various transactions.
Ant. SMALL, unfit.

com-mod-i-ty (*-od'i-ti*), *n.* [*pl.* commodities (*-tiz*)], that which is useful; an article of commerce: *pl.* goods; merchandise.

com-mo-dore (*'ō-dōr*), *n.* a captain commanding a squadron.

com-mon (*kom'un*), *adj.* belonging equally to more than one; usual; inferior; *n.* a tract of open public land. [MUTUAL.]

com-mon coun-cil (*koun'sil*), the representative body of a city or municipal corporation.

com-mon law (*law*), the unwritten law of England based on immemorial usage.

com-mon-ly (*kom'un-ly*), *adv.* usually, generally, ordinarily.
Syn. COMMONLY, generally, frequently, usually. What is *commonly* done is an action common to all; what is *generally* done is the action of the greatest part; what is *frequently* done is either the action of many, or an action many times repeated by the same person; what is *usually* done is done regularly by one or many.
Ant. OCCASIONALLY, seldom, singularly.

com-mon-place (*-plās*), *n.* a memorandum for ready reference; an obvious remark: *adj.* uninteresting; trite.

com-mon-sense (*-sens*), *adj.* characterized by sound practical judgment.

com-mon-wealth (*-welth*), *n.* the whole body of people in a state; a republic. [STATE.]

com-mo-tion (*kom-ō'shun*), *n.* violent agitation.

com-mu-nal-ism (*kom'ū-nal-izm*), *n.* government by communes or corporations of towns and districts.

com-mune (*kom-ūn'*), *v. i.* to take counsel; partake of the Eucharist.

com-mu-ni-ca-ble (*-ū'ni-kă-bl*), *adj.* impartible.

com-mu-ni-cate (*-kāt*), *v. t.* to impart; reveal: *v. i.* to share; partake of the Eucharist.
Syn. COMMUNICATE, impart. A thing may be *communicated* directly or indirectly, and to any number of persons; as to *communicate* intelligence by signal or otherwise. *Impart* is a direct action that passes between individuals; as to *impart* instruction. [See *announce.*]
Ant. CONCEAL, keep secret.

com-mu-ni-ca-tion (*-kā'shun*), *n.* the act of communicating; means of passing from one place to another; news.

com-mu-ni-ca-tive (*ū'ni-kă-tiv*), *adj.* unreserved.

com-mun-ion (*-ūn'yun*), *n.* intercourse; a religious body; the partaking of the Eucharist.
Syn. COMMUNION, converse. Both these terms imply a communication between minds; but the former may take place without corporeal agency, the latter never does; spirits hold *communion* with each other; people hold *converse.*

★**com-mu-nism** (*kom'ū-nizm*), *n.* the doctrine of having property in common; socialism.

com-mu-nist (*'ū-nist*), *n.* a supporter of communism; a socialist; a member of the Commune of Paris (1871).

com-mu-ni-ty (*-ū'ni-ti*), *n.* [*pl.* communities (*-tiz*)], a body of persons having common rights, interests and privileges.

com-mu-ta-tion (*-ū-tā'shun*), *n.* the act of commuting; change or exchange.

com-mute (*kom-ūt'*), *v. t.* to reduce the severity of; regulate the direction of an electric current: *v. i.* to pay in gross amount.

com-mut-er (*'er*), *n.* one who commutes or changes; one who uses a commutation ticket in traveling.

com-pact (*kom'pakt*), *n.* an agreement or covenant: *v. t.* (*kom-pakt'*), to press or pack closely; consolidate.

com-pan-ion (*kom-pan'yun*), *n.* a comrade: *adj.* attendant. [ACCESSORY.]

com-pan-ion-ship (*-ship*), *n.* fellowship. [ACQUAINTANCE.]

com-pa-ny (*kum'pă-ni*), *n.* [*pl.* companies (*-niz*)], an assemblage of people; a body of persons associated together; a firm; a subdivision of a regiment: *v. i.* associate with. [CLASS.]

★**com-pa-ra-ble** (*kom'pă-ră-bl*, not *kom-pâr'ă-bl*), *adj.* capable of being compared; of equal regard.

com-par-a-tive (*-par'ă-tiv*), *adj.* estimated by comparison; not positive: *n.* the comparative degree of grammar.

com-pare (*-pâr'*), *v. t.* to make one thing the measure of another; inflect so as to form the degrees of comparison: *v. i.* to bear a comparison.

com-par-i-son (*-par'i-sun*), *n.* the act of comparing; an illustration or simile.
Syn. COMPARISON, contrast. Likeness in the quality and difference in the degree are requisite for a *comparison;* likeness in degree and unlikeness in quality are requisite for a *contrast.*

com-part-ment (*-pärt'ment*), *n.* a division by a partition, as of a carriage, etc.; a panel.

com-pass (*kum'păs*), *v. t.* to encircle; walk around: *n.* extent; grasp; an instrument indicating the magnetic meridian: *pl.* a mathematical instrument for dividing and drawing circles.

com-pas-sion (*kom-pash'un*), *n.* sorrow for the sufferings of others; sympathy; pity. [PITY, SYMPATHY, MERCY.]

com-pas-sion-ate (*-āt*), *v. t.* to have compassion for: *adj.* sympathetic; merciful. [HUMANE.]

com-pat-i-ble (*-pat'i-bl*), *adj.* congruous; suitable.
Syn. COMPATIBLE, consistent. *Compatibility* has principally a reference to plans and measures; *consistency* to character, conduct, and station. Everything is *compatibile* with a plan which does not interrupt its prosecution; everything is *consistent* with a person's station by which it is neither degraded nor elevated.
Ant. INCONGRUOUS, irreconcilable.

com-pa-tri-ot (*-pā'tri-ot*), *n.* a fellow countryman.

com-peer (*kom-pēr'*), *n.* an equal.

com-pel (*kom-pel'*), *v. t.* [*p. t.* and *p. p.* compelled, *p. pr.* compelling], to urge irresistibly; force.
Syn. COMPEL, force, oblige, necessitate. To *compel* denotes moral rather than physical force; but to *force* is properly applied to the use of physical force or a violent degree of moral force. A man may be *compelled* to walk if he has no means of riding; he may be *forced* to go at the will of another. *Oblige* expresses only an indirect influence, which may be resisted or yielded to at discretion; we are *compelled* to do that which is repugnant to our will and our feelings; that which one is *obliged* to do may have the assent of the judgment if not of the will. We are *necessitated* by circumstances, or by anything which puts it out of our power to do otherwise.

com-pend (*kom'pend*), *n.* an abridgment.

com-pen-di-um (*'di-um*), *n.* an abridgment. [ABRIDGMENT.]

com-pen-sate (*kom'pen-sāt* or *kom-pen'sāt*), *v. t.* to recompense: *v. i.* to make compensation.

com-pen-sa-tion (*-sā'shun*), *n.* amends; recompensea set-off.
Syn.; COMPENSATION, amends, satisfaction, recompense, remuneration, requital, reward. A *compensation* is a return for a loss or damage sustained; *amends* is a return for anything that is faulty in ourselves or toward others; *satisfaction* is that which satisfies the individual requiring it; it is given for personal injuries. A *recompense* is a voluntary return for a voluntary service; it is made from a generous feeling. *Remuneration* is estimated according to the condition of the person and the dignity of the service rather than its positive worth. Authors often receive a *remuneration* for their works according to the reputation they have previously acquired, and not according to the real merit of the work. A *reward* conveys no idea of an obligation on the part of the person making it; whoever *rewards* acts optionally. When evil is returned for good, that is a bad *requital.*
Ant. CORRECTION, loss, punishment.

com-pete (*kom-pēt'*), *v. i.* to enter into competition with another.

com-pe-tence (*kom'pē-tens*), *n.* the state of being competent; sufficiency.

com-pe-tent (*-tent*), *adj.* fit; able; suitable; qualified; moderate.
Syn. COMPETENT, fitted, qualified. *Competency* mostly respects the mental endowments and attainments; *fitness,* the disposition and character; *qualification,* the artificial acquirements or natural qualities.
Ant. FEEBLE, inadequate.

com-pe-ti-tion (*-tish'un*), *n.* rivalry.

com-pet-i-tive (*kom-pet'i-tiv*), *adj.* pertaining to competition; emulous.

com-pet-i-tor (*'i-tēr*), *n.* a rival.

com-pi-la-tion (*-pi-lā'shun*), *n.* the act of compiling; the thing compiled.

com-pile (*kom-pīl'*), *v. t.* to put existing materials together in fresh form.

com-pla-cence (*kom-plā'sens*), *n.* inward satisfaction. [Also *complacency.*]

com-pla-cent (*'sent*), *adj.* affable.

com-plain (*kom-plān'*), *v. i.* to express grief, pain, or resentment; charge formally.
Syn. COMPLAIN, lament, regret. *Complaint* marks most of dissatisfaction, *lamentation* most of grief; *regret* most of pain. *Complaint* is *expressed* verbally; *lamentation* either by words or signs; *regret* may be felt without being expressed. *Complaint* is made of personal grievance; *lamentation* and *regret* may be made on account of others as well as ourselves. We *complain* of our ill-health, of our inconveniences, or of troublesome circumstances; we *lament* our inability to serve another; we *regret* the absence of one whom we love. [See *deplore.*]

com-plaint (*kom-plānt'*), *n.* an accusation; an expression of grief or pain; ailment.
Syn. COMPLAINT, accusation. A *complaint* is mostly made in matters that personally affect the complainant; an *accusation* is made of matters in general, but especially those of a moral nature. A *complaint* is made for the sake of obtaining redress; an *accusation* is made for the sake of ascertaining a fact or bringing to punishment.
Ant. COMMENDATION, eulogy.

com-plai-sance (*-plā-săns'*), *n.* courtesy.
Syn. COMPLAISANCE, deference, condescension. *Complaisance* signifies the act of complying with, or pleasing others; *deference* marks the inclination to defer, or acquiesce in the sentiments of another in preference to one's own; *condescension* marks the act of condescending from one's own height to yield to the satisfaction of others rather than rigorously to exact one's rights. The necessities and the allurements of society and of intimacy lead to *complaisance;* it makes sacrifices to the wishes, tastes, and personal feelings of others. *Complaiscnce* is the act of an equal; *deference* that of an inferior; *condescension* that of a superior.

★**com-plai-sant** (*'plā-zănt*), *adj.* courteous. [CIVIL.]

com-ple-ment (*'plē-ment*), *n.* full number; a complete set: *v. t.* to supply (a deficiency).

com-plete (*kom-plēt'*), *adj.* free from deficiency; entire; absolute; finished: *v. t.* to supply; finish.
Syn. COMPLETE, perfect, finished. That is *complete* which has no deficiency; that is *perfect* which has positive excellence; and that is *finished* which has no omission in it. [See *whole.*]
Ant. BLEMISHED, defective, faulty.
Syn. COMPLETE, finish, terminate. The characteristic idea of *completing* is that of making a thing altogether what it ought to be; that of *finishing,* the doing all that is intended to be done toward a thing; and that of *terminating,* simply putting an end to a thing.
Ant. BEGIN, commence.

★**com-plex** (*kom'pleks*, not *kom-pleks'*) *adj.* composed of various parts of things; composite; intricate. [OBSCURE.]

com-plex-ion (*-plek'shun*), *n.* the color of the skin, especially the face; aspect.

com-plex-ioned (*'shund*), *adj.* having a complexion.

com-plex-i-ty (*'i-ti*), *n.* the state of being complex. [Also *complexness.*]

com-pli-ance (*-plī'ans*), *n.* acquiescence.

com-pli-ant (*'ant*), *adj.* yielding.
Syn. COMPLIANT, yielding, submissive. A *compliant* person may want command of feeling; a *yielding* person may want fixedness of principle; a *submissive* person may want resolution. A too *compliant* disposition will be imposed upon by the selfish and unreasonable; a too *yielding* disposition is most unfit for commanding; a too *submissive* disposition exposes one to the exactions of tyranny. [See *humble.*]

com-pli-cate (*'pli-kāt*), *v. t.* to make intricate; *adj.* intricate; folded together. [OBSCURE.]

com-pli-ca-tion (*-kā'shun*), *n.* the act of complicating; the state of being complicated.

com-plic-i-ty (*-plis'i-ti*), *n.* partnership in crime.

com-pli-ment (*'pli-ment*), *n.* a formal act or expression of courtesy: *v. t.* to flatter; praise.

com-pli-men-ta-ry (*'tă-ri*), *adj.* conveying a compliment.

com-ply (*kom-plī'*), *v. i.* [*p. t.* and *p. p.* complied, *p. pr.* complying], to yield assent.
Syn. COMPLY, conform, yield, submit. *Compliance* is an act of the inclination; *conformity* an act of the judgment. *Compliance* is altogether optional; we *comply* with a thing or not, at pleasure. *Conformity* is binding on the conscience; it relates to matters in which there is a right and a wrong. To *yield* is to give way to another, either with one's will, judgment, or outward conduct; *submission* is the giving up of one's self altogether; it is the substitution of another's will for one's own. [See *agree.*]

com-po-nent (*kom-pō'nent*), *adj.* constituent: *n.* an elementary part of a compound.

com-port (*-pōrt'*), *v. i.* to agree; harmonize: *v. t.* to behave.

com-pose (*-pōz'*), *v. t.* to form by combination; write as an author; calm; adjust; arrange in order.
Syn. COMPOSE, settle. We *compose* that which has been disjointed and separated, by bringing it together again; we *settle* that which has been disturbed. [See *compound.*]

com-posed (*-pōzd'*), *adj.* tranquil; quiet.
Syn. COMPOSED, sedate. *Composed* is, opposite to ruffled or hurried, and is a temporary state; *sedate* is a permanent habit of the mind or body. [See *calm.*]

com-pos-ite (*-poz'it*), *adj.* compound.

com-po-si-tion (*-pō-zish'un*), *n.* the act of composing; the thing composed; a mass formed by mingling various ingredients.

com-pos-i-tor (*-poz'i-tēr*), *n.* one who sets type.

com-post (*'pōst*), *n.* a mixture of various substances for fertilizing the ground.

com-po-sure (*-pō'zhūr*), *n.* tranquillity.

com-pound (*kom-pound'*), *v. t.* to mix or combine together; settle by mutual agreement: *adj.* (*kom'-pound*), composed of two or more elements or ingredients or words: *n.* a mixture of two or more elements or ingredients.

Syn. COMPOUND, compose. *Compound* is used in the physical sense only; *compose* in the proper or the moral sense. A medicine is *compounded* of many ingredients; society is *composed* of various classes. [See *compose.*]

Ant. OBVIOUS, simple.

com-pre-hend (*kom-prē-hend'*), *v. t.* to include; grasp with the mind; conceive. [CONCEIVE.]

com-pre-hen-si-ble (*-hen'si-bl*), *adj.* intelligible.

com-pre-hen-sion (*-hen'shun*), *n.* the act of comprehending; extent of understanding. [full.

com-pre-hen-sive (*-hen'siv*), *adj.* including much;

Syn. COMPREHENSIVE, extensive. *Comprehensive* respects quantity; *extensive* regards space. A *comprehensive* view of a subject includes all branches of it; an *extensive* view of a subject enters into minute details; the *comprehensive* is associated with the concise; the *extensive* with the diffuse.

Ant. LIMITED, narrow, slight.

com-press (*kom-pres'*), *v. t.* to press together; condense: *n.* (*kom'pres*), a soft pad used in surgery to maintain pressure.

com-pres-sion (*-presh'un*), *n.* condensation.

com-prise (*-priz'*), *v. t.* to comprehend.

Syn. COMPRISE, comprehend, embrace, contain, include. A library *comprises* a variety of books; the whole is *comprised* within a small compass; laws *comprehend* a number of cases; a discourse *embraces* a variety of topics; a society *contains* very many individuals; it *includes* none but of a certain class, or it *includes* some of every class. [See *conceive.*]

com-pro-mise (*kom'prō-mīz*), *n.* a settlement by mutual concessions: *v. t.* to settle by compromise; expose to risk.

★**comp-trol-ler** (*kon-trōl'ĕr*). See *controller.*

com-pul-sion (*kom-pul'shun*), *n.* the act of compelling; force; constraint.

com-pul-so-ry (*-pul'sō-ri*), *adj.* exercising compulsion; obligatory.

com-punc-tion (*-pungk'shun*), *n.* contrition.

com-pu-ta-tion (*-pū-tā'shun*), *n.* the act or process of computing; estimate.

com-pute (*-pūt'*), *v. t.* to number; reckon. [ESTIMATE.]

com-rade (*kom'rad*), *n.* a companion.

con (*kon*), *v. t.* [*p. t.* and *p. p.* conned, *p. pr.* conning], to peruse carefully.

con-a-tive (*kō'nā-tiv* or *kon'ā-tiv*), *adj.* pertaining to voluntary agency; expressing endeavor.

con-cat-e-na-tion (*kon-kat-ē-nā'shun*), *n.* a series of things united like links.

con-cave (*kon'kāv*), *adj.* hollow and curved. [guise.

con-ceal (*kon-sēl'*), *v. t.* to hide; keep secret; dis-

Syn. CONCEAL, dissemble, disguise. To *conceal* is simply to abstain from making known what we wish to keep secret; to *dissemble* and *disguise* signify to *conceal* by assuming some false appearance. We *conceal* facts; we *dissemble* feelings; we *disguise* sentiments.

Ant. DISPLAY, be candid, be sincere.

Syn. CONCEAL, hide, secrete. *Concealing* has simply the idea of not letting come to observation; *hiding*, that of putting under cover; *secreting*, that of setting at a distance or in unfrequented places.

Ant. REVEAL, uncover.

con-cede (*-sēd'*), *v. t.* to yield; admit.

con-ceit (*-sēt'*), *n.* an idea; an overestimate of one's own abilities; a quaint fancy.

Syn. CONCEIT, fancy. *Conceit* applies only to internal objects; it is mental in the operation and the result; it is a species of invention. *Fancy* is applied to external objects, or whatever acts on the senses. Nervous people are subject to strange *conceits;* timid people *fancy* they hear sounds or see objects in the dark. [See *pride, opinionated.*]

con-ceiv-a-ble (*-sēv'ā-bl*), *adj.* imaginable.

con-ceive (*-sēv'*), *v. t.* imagine; understand; develop in the womb: *v. i.* to think; become pregnant.

Syn. CONCEIVE, understand, comprehend. *Conception* is the simplest operation of the three. When we *conceive* we may have but one idea; when we *understand* or *comprehend* we have all the ideas which the subject is capable of presenting. The builder *conceives* plans, the scholar *understands* languages. [See *apprehend.*]

Ant. FAIL OF, misapprehend.

con-cen-trate (*kon-sen'trāt*), *v. t.* to bring to a center: *adj.* reduced to a pure or dense state.

con-cen-tric (*-sen'trik*), *adj.* having a common center.

con-cept (*kon'cept*), *n.* an abstract general notion or conception.

con-cep-tion (*-sep'shun*), *n.* the impregnation of the ovum; the act or power of conceiving in the mind; an idea or notion.

Syn. CONCEPTION, notion. *Conception* is the mind's own work, what it pictures to itself from the exercise of its own powers; *notion* is the representation of objects as they are drawn from observation. *Conceptions* are the fruit of the understanding and imagination; *notions* are the result of experience and information.

Ant. PERCEPT, realization.

Conception, Cape, Cal. Named from one of the vessels belonging to Cortes' expedition.

con-cep-tu-al-ist (*kon-sep'tū-al-ist*), *n.* one who holds the theory (conceptualism) that the mind can form for itself general conceptions.

con-cern (*kon-sĕrn'*), *v. t.* to relate or belong to; interest or engage; make uneasy: *n.* business; affair; anxiety; a firm. [INTEREST, ANXIETY.]

con-cern-ing (*'ing*), *prep.* relating to.

con-cert (*kon-sĕrt'*), *v. t.* to contrive or devise together: *n.* (*kon'sĕrt*), a musical entertainment; coöperation; harmony, or mutual agreement.

Syn. CONCERT, contrive, manage. There is a secret understanding in *concerting;* invention in *contriving;* execution in *managing.* Measures are *concerted;* schemes are *contrived;* affairs are *managed.* [See *conduct.*]

con-cer-to (*-sĕr'tō*, It. *kon-chār'to*), *n.* [*pl.* concertos (*'tōz*)], a musical composition for a solo instrument, with an orchestral accompaniment.

con-ces-sion (*kon-sesh'un*), *n.* the act of conceding; the thing conceded.

conch (*kongk*), *n.* a marine shell.

con-cha (*kong'ka*), *n.* [*pl.* conchæ (*-kē*)], the outer ear; auricle; the dome of an apse.

con-cil-i-ate (*kon-sil'i-āt*), *v. t.* to reconcile; win or gain the affections of.

Syn. CONCILIATE, reconcile. The *conciliator* gets the good will and affections for himself; the *reconciler* unites the affections of two persons to each other.

Ant. ESTRANGE.

con-cil-i-a-to-ry (*-ā-tō-ri*), *adj.* tending to conciliate or reconcile. [Also *conciliative.*]

con-cise (*kon-sīs'*), *adj.* condensed, terse. [SHORT.]

con-cise-ness (*'nes*), *n.* brevity.

con-clave (*kon'klāv*), *n.* a private meeting, as of cardinals for the election of a pope.

con-clude (*kon-klūd'*), *v. t.* to infer; determine; settle; end: *v. i.* to draw an inference.

con-clu-sion (*-klū'zhun*), *n.* a final determination; result; end.

Syn. CONCLUSION, inference, deduction. *Conclusions* are drawn from real facts; *inferences* are drawn from the appearances of things; *deductions* only from arguments or assertions. *Conclusions* are practical; *inferences* ratiocinative; *deductions* are final.

Ant. GROUNDS, premise.

con-clu-sive (*-klū'siv*), *adj.* decisive; final.

Syn. CONCLUSIVE, decisive, convincing. *Conclusive* applies either to practical or argumentative matters; *decisive* to what is practical only; *convincing* to what is argumentative only. It is necessary to be *conclusive* when we deliberate, and *decisive* when we command; an argument is *convincing,* reasoning *conclusive.* [See *final.*]

Ant. INEFFECTIVE, sophistical, specious.

con-coct (*kon-kokt'*), *v. t.* to digest; cook; assimilate mentally; plot.

con-coc-tion (*-kok'shun*), *n.* the act of concocting; a plan or plot; a compound of various ingredients.

con-com-i-tant (*kon-kom'i-tant*), *adj.* accompanying; conjoined with: *n.* an attendant.

con-cord (*kong'kôrd*, not *kon'kôrd*), *n.* harmony; union; agreement.

Syn. CONCORD, harmony. *Concord* is generally employed for the union of wills and affections; *harmony* respects the aptitude of minds to coalesce. *Harmony* may be used in the sense of adaptation to things generally.

Ant. CONFLICT, discord, dissension.

Concord (*kong'kŭrd*). Town in Middlesex county, Massachusetts, so-called from the peaceful manner of its acquisition, having been purchased from the Indians.

Concord, N. H. Early English settlers named it *Rumford,* after a Benjamin Rumford; changed to *Concord* to commemorate an expression of unanimity in a land controversy.

con-cord-ance (*kon-kôrd'ans*), *n.* agreement; a dictionary of words or passages, especially of the bible, with references to the places where they occur.

con-cor-dat (*kon-kôr'dat*), *n.* a compact or agreement, especially between church and state.

con-course (*kong'kōrs*), *n.* arriving together; an assembly or crowd.

★**con-crete** (*kon'krēt*), *adj.* united in growth; not abstract: *n.* a mass formed by concretion; a compact mass of lime, sand, gravel, mortar, etc.

con-cre-tion (*kon-krē'shun*), *n.* the act of concreting; a mass formed by the union of separate particles.

con-cu-bine (*kong'kū-bīn*), *n.* a woman who lives with a man without being legally married.

con-cu-pis-cence (*kon-kū'pis-ens*), *n.* illicit sexual desire; unlawful desire.

con-cur (*kon-kĕr'*), *v. i.* [*p. t.* and *p. p.* concurred, *p. pr.* concurring], to agree or unite in action or opinion; coincide. [ASSENT.]

con-cur-rent (*-kur'ent*), *adj.* acting in union or conjunction; meeting at one point.

con-cus-sion (*-kush'un*), *n.* the shock caused by two bodies coming violently together.

con-demn (*kon-dem'*), *v. t.* to pronounce guilty; censure; declare to be forfeited.

Syn. CONDEMN, blame, censure, convict, denounce, doom, reprobate, reprove, sentence. To *condemn* is to pass sentence or render judgment against. We *censure* silently; we *condemn* by open utterance. A person is *convicted* when his guilt is made clearly manifest to others; the convict is *sentenced* to imprisonment. To *denounce* is to make public or official declaration against; to *doom* is to *condemn* solemnly and consign to an evil or destructive destiny.

con-dem-na-tion (*kon-dem-nā'shun*), *n.* the act of condemning.

con-den-sa-tion (*-den-sā'shun*), *n.* compression.

con-dense (*-dens'*), *v. t.* to compress; make close or thick: *v. i.* to grow dense.

con-de-scend (*kon-dē-send'*), *v. i.* to stoop; descend; yield; deign.

con-de-scen-sion (*-dē-sen'shun*), *n.* the act of condescending; humiliation. [COMPLAISANCE.]

con-dign (*-dīn'*), *adj.* well deserved; suitable.

con-di-ment (*kon'di-ment*), *n.* a relish; seasoning.

con-di-tion (*kon-dish'un*), *n.* state; external circumstances; stipulation or terms of a contract.

Syn. CONDITION, station. *Condition* has most relation to circumstances, education, birth, and the like; *station* refers rather to the rank, occupation, or mode of life which is marked out.

con-dole (*kon-dōl'*), *v. t.* to lament: *v. i.* to express sympathy for another (with *with*).

★**con-do-lence** (*kon-dō'lens*, not *kon'dō-lens*), *n.* sympathy. [SYMPATHY.]

con-done (*kon-dōn'*), *v. t.* to pardon, especially a violation of marital duty.

con-dor (*kon'dĕr*), *n.* a very large South American vulture.

con-duce (*-dūs'*), *v. i.* to tend to; contribute.

Syn. CONDUCE, contribute. To *conduce* signifies to serve the full purpose; to *contribute* signifies only to serve a secondary purpose. Exercise *conduces* to the health; it *contributes* to give vigor to the frame.

Ant. DESTROY, detract from, neglect.

con-du-cive (*-dū'siv*), *adj.* having the quality or power of conducing (with *to*).

con-duct (*kon-dukt'*), *v. t.* to guide; manage; behave: *n.* (*kon'dukt*) personal behavior or practice.

Syn. CONDUCT, manage, direct. *Conducting* requires most wisdom and knowledge; *managing* most action; *direction* most authority. A lawyer *conducts* the cause intrusted to him; a steward *manages* the mercantile concerns for his employer; a superintendent *directs* the movements of all the subordinate agents. [See *lead.*]

Ant. DEFEAT, neglect.

con-duc-tor (*-duk'tĕr*), *n.* one who, or that which, conducts; a substance which conducts or transmits certain forces.

★**con-duit** (*kon'dit* or *kun'dit*), *n.* a canal or pipe for the conveyance of water, etc.

cone (*kōn*), *n.* a geometrical solid of which the base is a circle and the summit a point; the fruit of the fir, pine, etc.

Conemaugh (*kon-ē-mô'*) **river, Pa.** Indian word, meaning "otter creek."

Coney (*kō'ni*). Island at the extremity of Long Island, New York, which is said by some to have been so named because of the numbers of rabbits there. It appears, however, to have been originally called *Congu,* which may suggest another derivation.

con-fec-tion (*kon-fek'shun*), *n.* anything conserved or compounded with sugar; a sweetmeat.

con-fec-tion-er (*-ĕr*), *n.* one who prepares and sells sweetmeats, etc.

con-fec-tion-er-y (*-i*), *n.* [*pl.* confectioneries (*-iz*)], sweetmeats, cakes, preserves, etc.

con-fed-er-a-cy (*-fed'ĕr-ā-si*), *n.* [*pl.* confederacies (*-siz*)], persons, states, or nations united in a league; unlawful combination.

con-fed-er-ate (*'ĕr-āt*), *v. i.* to unite in a league: *adj.* united: *n.* (*-āt*) a member of a confederation; an ally; an accomplice. [ACCESSORY.]

con-fer (*kon-fĕr'*), *v. t.* [*p. t.* and *p. p.* conferred, *p. pr.* conferring], to give or bestow: *v. i.* to consult together; converse.

Syn. CONFER, bestow. *Conferring* is an act of authority; *bestowing* that of charity or generosity. Princes and men in power *confer;* people in a private station *bestow.*

Ant. DEPRIVE.

con-fer-ence (*'fĕr-ens*), *n.* the act of consulting together formally; an appointed meeting. [CONVERSATION.]

con-fess (*kon-fes'*), *v. t.* to admit or acknowledge; avow; grant; prove: *v. i.* to disclose the state of one's conscience to a priest and receive absolution.

con-fes-sion (*-fesh'un*), *n.* the act of confessing.

con-fes-sion-al (*-al*), *n.* an inclosed cabinet, in which a priest sits to hear confessions.

con-fes-sor (*kon-fes'ĕr* or *kon'fes-ĕr*), *n.* a priest who hears confessions and grants absolution.

con-fet-ti (*-fet'ti*), *n.* [*pl.* confetti (*'ti*)], a sweetmeat; a plaster pellet used at carnivals.

★**con-fi-dant** (*'fi-dant*), *n.* a confidential or bosom friend. [Fem. *confidante.*]

con-fide (*kon-fīd'*), *v. i.* to have confidence in: *v. t.* to trust fully (with *to*).

Syn. CONFIDE, trust. *Confidence* is an extraordinary trust, but *trust* is always ordinary unless the term be qualified. *Confidence* involves the reliance of one upon another, but *trust* is confined to action. [See *commit.*]

con-fi-dence (*kon'fi-dens*), *n.* trust; reliance.

con-fi-dent (*-dent*), *adj.* full of confidence; positive; bold; dogmatical.

Syn. CONFIDENT, dogmatic, positive. *Confidence* implies a general reliance on one's

abilities. *Dogmatism* implies a reliance on the truth of our opinions; *positiveness* a reliance on the truth of our assertions. A *confident* man is always ready to act, as he is sure of succeeding; a *dogmatical* man is always ready to speak, as he is sure of being heard; a *positive* man is determined to maintain what he has asserted. [See *definite*.]
Ant. DIFFEDENT, unbiased.

con-fi-den-tial (*kon-fi-den'shal*), *adj.* spoken or written in confidence; trustworthy.

con-fig-u-ra-tion (*-fig-ū-rā'shun*), *n.* external form; relative position of the planets.

con-fine (*kon'fīn*), *n.* a boundary, border, or limit; a frontier (usually *pl.*): *v. t.* (*kon-fīn'*) to restrict within limits; imprison. [CONTRACTED, BOUND.]

con-fine-ment (*kon-fīn'ment*), *n.* the act of confining; childbirth.

con-firm (*kon-fẽrm'*), *v. t.* to strengthen; ratify; administer the rite of confirmation.
Syn. CONFIRM, corroborate, establish. What *confirms* serves to *confirm* the mind; what *corroborates* gives weight to the thing. An opinion or a story is *confirmed;* an evidence or the representation of a person is *corroborated; established* is applied to that which is permanent and of importance; as, to *establish* a reputation; to *establish* a trade or a government.
Ant. CANCEL, weaken.

con-fir-ma-tion (*-fẽr-mā'shun*), *n.* the act of confirming; verification.

con-firm-a-to-ry (*-fẽrm'ȧ-tō-ri*), *adj.* serving to confirm.

con-fis-cate (*kon'fis-kāt* or *kon-fis'kāt*), *v. t.* to adjudge to be forfeited; seize as thus forfeited.

con-fis-ca-tion (*-kā'shun*), *n.* thea ct of confiscating.

con-fis-ca-to-ry (*-fis'kȧ-tō-ri*), *adj.* characterized by, or attended with, confiscation.

con-fla-gra-tion (*-flȧ-grā'shun*), *n.* a great fire.

con-flict (*kon-flikt'*), *v. i.* to strike or dash together: *n.* (*kon'flikt*), a fight or struggle for the mastery.

con-flu-ence (*kon'flōō-ens*), *n.* the junction of two or more streams; an assembly.

con-flu-ent (*-ent*), *adj.* flowing or running together: *n.* a tributary river or stream.

con-form (*kon-fôrm'*), *v. t.* to make like; bring into harmony : *v. i.* to comply with. [COMPLY.]

con-form-a-ble (*'ȧ-bl*), *adj.* like; corresponding; compliant; in parallel order.
Syn. CONFORMABLE, agreeable, suitable. *Conformable* is employed for matters of obligation; *agreeable* for matters of choice; *suitable* for matters of propriety and discretion What is *conformable* accords with some prescribed form or given rule of others; what is *agreeable* accords with the feelings of ourselves or others; what is *suitable* accords with outward circumstances.

con-for-ma-tion (*-fôr-mā'shun*), *n.* structure; arrangement; shape.

con-form-i-ty (*-fôrm'i-ti*), *n.* compliance with established forms: resemblance.

con-found (*kon-found'*), *v. t.* to mingle; perplex; astonish; confuse; overthrow.
Syn. CONFOUND, confuse. A person *confounds* one thing with another; objects become *confused*, or a person *confuses* himself. It is a common error among ignorant people to *confound* names, and among children to have their ideas *confused* on commencing a new study. [See *abash*, *mix*.]
Ant. DIFFERENTIATE, discriminate, embolden, put at ease.

con-front (*kon-frunt'*), *v. t.* to stand face to face (with *with*); oppose; compare.
Syn. CONFRONT, face. *Confront* implies to set face to face; and *face* signifies to set the face toward any object. Witnesses are *confronted;* a person *faces* danger.
Ant. AVOID, shun.

con-fuse (*kon-fūz'*), *v. t.* to mingle; jumble up; render indistinct; disconcert. [CONFOUND, ABASH.]

con-fu-sion (*-fū'zhun*), *n.* the act of confusing; perplexity; loss of self-possession; disorder.
Syn. CONFUSION, disorder. *Confusion* supposes the absence of all order; *disorder* the derangement of order where it exists, or is supposed to exist.
Ant. NEATNESS, regularity.

con-fu-ta-tion (*-fū-tā'shun*), *n.* disproof.

con-fute (*kon-fūt'*), *v. t.* to prove to be false or invalid; convict of error.
Syn. CONFUTE, refute, disprove, oppugn. To *confute* respects what is argumentative; *refute* what is practical and personal; *disprove* whatever is represented or related; *oppugn* what is held or maintained. An argument is *confuted* by proving its fallacy; a charge is *refuted* by proving the innocence of the party charged; an assertion is *disproved* by proving that it is incorrect; a doctrine is *oppugned* by a course of reasoning.

con-geal (*kon-jēl'*), *v. t.* to convert from a liquid to a solid state by cold: *v. i* to concrete by cold.

★**con-ge-ni-al** (*kon-jēn'yal*), *adj.* kindred; pleasant and sympathetic; cognate.

con-ge-ni-al-i-ty (*-ni-al'i-ti*), *n.* the state or quality of being congenial.

con-gen-i-tal (*-jen'i-tal*), *adj.* existing, or produced, at birth; constitutional.

con-gest (*kon-jest'*), *v. ti.* to accumulate.

con-gest-ed (*'ed*), *p. adj.* unduly crowded; containing an unnatural accumulation of blood.

con-ges-tion (*-jest'yun*), *n.* an overcrowded condition, especially of the blood vessels.

con-glom-er-ate (*kon-glom'ẽr-āt*), *adj.* collected or clustered together: *n.* a rock composed of rounded or water-worn fragments of preexistent rocks.

con-glu-ti-nate (*-glū'ti-nāt*), *v. t.* to glue together: *adj.* glued together; united by an adhesive substance.

con-grat-u-late (*kon-grat'ū-lāt*), *v. t.* to felicitate on account of some happy event (with *on* or *upon*). [FELICITATE.]

con-grat-u-la-tion (*-grat-ū-lā'shun*), *n.* the act of congratulating.

★**con-gre-gate** (*kong'grē-gāt*), *v. t.* to assemble; gather together: *v. i.* to come together.

con-gre-ga-tion (*-gā'shun*), *n.* an assembly, especially of persons for religious worship.

con-gre-ga-tion-al (*-al*), *adj.* pertaining to a congregation.

Con-gre-ga-tion-al-ism (*'shun-al-izm*), *n.* a democratic form of church government.

Con-gre-ga-tion-al-ist (*-al-ist*), *n.* an adherent to Congregationalism: *adj.* pertaining to Congregationalism.

con-gress (*kong'gres*), *n.* a conference; an assembly of ambassadors, etc.

Congress, *n.* the national legislature of the United States.

Con-gress-man (*-man*), *n.* a member of Congress, especially of the house of representatives.

con-gru-ence (*kong'grōō-ens*), *n.* suitability; agreement; consistency. [Also *congruency*.]

con-gru-ent (*-grōō'ent*), *adj.* suitable; agreeing.

con-gru-ous (*'grōō-us*), *adj.* accordant; fit.

con-ic (*kon'ik*), *adj.* pertaining to, or shaped like, a cone. [Also *conical.*] *n. pl.* the branch of geometry which treats of the parabola, ellipse, and hyperbola; conic sections.

con-jec-ture (*kon-jek'tūr*), *n.* a guess: *v. t.* to surmise: *v. i.* to form conjectures. [GUESS.]

con-join (*kon-join'*), *v. t.* to join together; connect or associate: *v. i.* to unite.

con-joint (*-joint'*), *adj.* united; coöperating.

con-ju-gal (*'jōō-gal*), *adj.* of or pertaining to marriage; connubial.

con-ju-gate (*kon'jōō-gāt*), *v. t.* to inflect (verbs): *adj.* combined in pairs.

con-ju-ga-tion (*-gā'shun*), *n.* the act of conjugating; the inflection of a verb; sexual union.

con-junct (*kon-jungkt'*), *adj.* conjoined.

con-junc-tion (*-jungk'shun*), *n.* union; the apparent meeting of two or more stars or planets; a word used to connect sentences or words.

con-jure (*kon-jūr'*), *v. t.* to summon in a sacred name: (*kun'jẽr*), influence by, or as if by, magic: *v. i.* to practice the arts of a conjurer.

con-jur-er (*kon'jẽr-ẽr*), *n.* one who performs tricks by sleight of hand: (*kon-jūr'ẽr*), *n.* one who solemnly enjoins.

con-nect (*kon-nekt'*), *v. t.* to bind or fasten together; *v. i.* to join.
Syn. CONNECT, combine, unite. What is *connected* and *combined* remains distinct, but what is *united* loses all individuality. Things the most dissimilar may be *connected* or *combined;* things of the same kind only can be *united*. Houses are *connected* by means of a common passage; the armies of two nations are *combined;* two armies of the same nation are *united*.
Ant. ISOLATE, separate, sever.

Connecticut (*kon-net'i-kut*). River and state. An Indian name derived from *Quonoktacut*, meaning, according to some authorities, "a river whose water is driven in waves by tides or winds." Haines says, "land on the long tidal river." Other interpretations are, "on long river," "long river," and "the long, or without end, river."

con-nec-tion or **con-nex-ion** (*kon-nek'shun*), *n.* the state of being connected; relation by marriage or blood.
Syn. CONNECTION, relation. Families are *connected* with each other by the ties of blood or marriage; persons are *connected* with each other in the way of trade or business; objects stand in a certain *relation* to each other, as persons stand in the *relation* of giver and receiver, or of debtor and creditor.
Ant. DISCONNECTION, isolation.

con-ni-vance (*-nī'vans*), *n.* the act of conniving; passive coöperation in a crime or fault; collusion.

con-nive (*kon-nīv'*), *v. i.* to close the eyes upon a fault; be in secret complicity (with *at*). [ABET.]

con-note (*kon-nōt'*), *v. t.* to designate by implication; imply as an attribute.

con-nu-bi-al (*kon-nū'bi-al*), *adj.* of or pertaining to the marriage state; nuptial.

con-quer (*kong'kẽr*), *v. t.* to gain by conquest; overcome; subdue: *v. i.* to get the victory.

con-quer-or (*kong'kẽr-ẽr*), *n.* one who conquers.
Syn. CONQUEROR, victor. A *conqueror* is always supposed to add something to his possessions; a *victor* gains nothing but the superiority. Those who take possession of other men's lands by force of arms make a *conquest;* those who excel in any trial of skill are the *victors*.

★**con-quest** (*kong'kwest*, not *kon'kwest*), *n.* the act of conquering; subjugation; victory.

Conrad (*kon'rad*). From the Old German name *Cunrad*, which Wachter translates "quick in counsel." Danish, *Conrad*; Dutch, *Könraad*; Fr., *Conrad*; Ger., *Conrad*; It., *Corrado*, or *Curado*; Lat., *Conradus*; Sw., *Konrad*.

con-science (*kon'shens*), *n.* the moral sense which determines right and wrong.

★**con-sci-en-tious** (*kon-shi-en'shus*, not *kon-si-en'shus*), *adj.* influenced or regulated by conscience; scrupulous.

con-scious (*'shus*), *adj.* aware of one's thoughts and actions; sensible. [FELL.]

con-scious-ness (*-ness*), *n.* the knowledge of that which passes in one's own mind.

con-script (*kon-skript'*), *v. t.* to enroll for compulsory military or naval service: (*kon'skript*), *adj.* registered: *n.* one thus compulsorily enrolled.

con-se-crate (*kon'sē-krāt*), *v. t.* to set apart as sacred; dedicate to God; set apart to a sacred office: *adj.* made sacred. [DEDICATE, HOLY.]

con-sec-u-tive (*-sek'ū-tiv*), *adj.* successive.

con-sen-sus (*-sen'sus*), *n.* general agreement.

con-sent (*kon-sent'*), *n.* a yielding of the mind or will: *v. i.* to comply; yield.
Syn. CONSENT, permit, allow. As the act of an equal we *consent* to that in which we have a common interest with others; we *permit* or *allow* what is for the accommodation of others; we *allow* by abstaining to oppose; we *permit* by a direct expression of our will; contracts are formed by the *consent* of the parties who are interested; the proprietor of an estate *permits* his friends to sport on his grounds; he *allows* of a passage through his premises. [See *agree*, *assent*, *admit*.]

con-se-quence (*kon'sē-kwens*), *n.* that which naturally follows an effect.
Syn. CONSEQUENCE, effect, result, issue, event. A *consequence* is that which follows of itself, without any qualification or restriction; an *effect* is that which is produced, or which follows from the connection between the thing *effecting*, as a cause, and the thing *effected;* a *result* is general following from a whole; there may be many *consequences* from the same thing, and but one *result* only; we speak of the *issue* of a negotiation or a battle, and the *event* of a war. The fate of a nation sometimes hangs on the *issue* of a battle.
Ant. CAUSE, occasion, origin, reason, source.

con-se-quent (*-kwent*), *adj.* following as a result or natural effect (with *to*): *n.* a result or effect.

con-se-quen-tial (*-kwen'shal*), *adj.* following as the effect; self-important.

con-ser-va-tion (*-sẽr-vā'shun*), *n.* the act of preserving from decay, loss, or injury.

con-serv-a-tive (*-serv'ȧ-tiv*), *adj.* having the tendency or power to preserve: *n.* that which preserves; one opposed to hasty changes.

con-serv-a-to-ry (*sẽrv'ȧ-tō-ri*), *adj.* tending to preserve: *n.* a greenhouse.

★**con-serve** (*kon-sẽrv'*), *v. t.* to preserve from injury or destruction: *n.* (*kon'sẽrv*) candied fruit.

con-sid-er (*kon-sid'ẽr*), *v. t.* to fix the mind upon; contemplate: *v. i.* to deliberate; reflect.
Syn. CONSIDER, reflect. *Consideration* is employed for practical purposes; *reflection* for matters of speculation or moral improvement. Common objects call for *consideration;* the workings of the mind itself, or objects purely spiritual, occupy *reflection*.
Ant. NEGLECT, slight.
Syn. CONSIDER, regard. There is more caution or thought in *considering;* more personal interest in *regarding*. To *consider* is to bear in mind all that prudence or propriety suggests; to *regard*, all that our wishes or interests suggest.

★**con-sid-er-ate** (*-āt*), *adj.* having regard for others; prudent; thoughtful; careful.

con-sign (*kon-sīn'*), *v. t.* to deliver in a formal manner to another; yield in trust; to send, as goods. [COMMIT.]

★**con-sign-ee** (*-si-nē'*), *n.* the person to whom goods are sent; an agent or factor.

con-sist (*kon-sist'*), *v. i.* to be composed of; co-exist; subsist (with *in*).

con-sist-ent (*'ent*), *adj.* solid; not contradictory. [CONSONANT, COMPATIBLE.]

con-sole (*kon-sōl'*), *v. t.* to give comfort to; cheer in sorrow; solace.

con-sol-i-date (*-sol'i-dāt*), *v. t.* to make solid; harden; condense: *v. i.* to become solid.

con-so-nance (*kon'sō-nans*), *n.* agreement of sounds; harmony; concord.

con-so-nant (*-nant*), *adj.* harmonious; accordant: *n.* a letter other than a vowel.
Syn. CONSONANT, accordant, consistent. *Consonant* is employed in matters of representation; *accordant* in matters of opinion; *consistent* in matters of conduct. [See *compatible*.]

con-sort (*kon'sôrt*), *n.* a companion; a husband or wife; a ship accompanying another: *v. t.* and *v. i.* (*kon-sort'*) to associate; keep company (with *with*).

con-spic-u-ous (*-spik'ū-us*), *adj.* mentally or physically visible; distinguished. [DISTINGUISHED, PROMINENT.]

con-spir-a-cy (*-spir'ȧ-si*), *n.* [*pl.* conspiracies (*-siz*)], a plot; two or more persons engaged together for an unlawful or evil purpose.

con-spir-a-tor (*'ȧ-tẽr*), *n.* one who conspires.

con-spire (*kon-spīr'*), *v. i.* to concert a crime; combine for an unlawful purpose.

★**con-sta-ble** (*kun'stȧ-bl*, not *kon'stȧ-bl*), *n.* a high officer of state in mediæval courts; a policeman.

Constance (*kon'stans*). From the Latin name *Constantia*, "constancy," "steadfastness." Dutch, *Constantia*; Fr., *Constance*; It., *Costanza*; Lat., *Constantia*; Sp., *Constancia*.

con-stan-cy (*kon'stan-si*), *n.* steadiness of purpose or action.
Syn. CONSTANCY, stability, steadiness.

firmness. *Constancy* respects the affections; *stability* the opinions; *steadiness* the action, or the motives of action; *firmness* the purpose or resolution.

con-stant (*kon'stant*), *adj.* steadfast; continuous: *n.* that which is not subject to change. [CONTINUED, PERMANENT.]

Constantine (*kon'stan-tin*). From the Latin *Constantinus*, "firm, resolute." Danish, *Constantin;* Dutch, *Konstantijn;* Fr., *Constantin;* Gr., *Konstantinos;* It., *Constantino.*

Constantinople (*kon-stan-ti-nō'pl*). The Anglicised form of *Constantinopolis*, "the city of Constantine," the name given by Constantine to Byzantium.

con-stel-la-tion (*-stel-ā'shun*), *n.* a group or cluster of fixed stars designated by some name.

con-ster-na-tion (*-stēr-nā'shun*), *n.* excessive terror, or surprise.

con-sti-pate (*kon'sti-pāt*), *v. t.* to make costive.

con-sti-pa-tion (*-pā'shun*), *n.* costiveness.

con-stit-u-en-cy (*-stit'ū-en-si*), *n.* [*pl.* constituencies (*-siz*)], the body of electors voting for a member of Congress, etc.

con-stit-u-ent (*'ū-ent*), *adj.* necessary or essential: *n.* an essential or component part; an elector.

con-sti-tute (*kon'sti-tūt*), *v. t.* to compose or make up; appoint; establish.

Syn. CONSTITUTE, appoint, depute. To *constitute* is the act of a body; to *appoint* and *depute* that of either a body or an individual. A community *constitutes* any one their leader; a monarch *appoints* his ministers; whoever is *deputed* has private and not public authority.

con-sti-tu-tion (*kon-sti-tū'shun*), *n.* the act of constituting; bodily strength; the system of fundamental laws of a nation, state or society.

con-sti-tu-tion-al (*-al*), *adj.* inherent in the constitution: *n.* walk taken to benefit the health.

con-strain (*kon-strān'*), *v. t.* to hold down or keep back by force.

con-straint (*-strānt'*), *n.* compulsion.

con-strict (*-strikt'*), *v. t.* to bind; cramp.

con-stric-tor (*-strik'tēr*), *n.* that which contracts or compresses; a large serpent, the boa constrictor.

con-strin-gent (*-strin'jent*), *adj.* contracting or binding.

con-struct (*kon-strukt'*), *v. t.* to build; form; put together; compose.

con-struc-tion (*-struk'shun*), *n.* the act of building; that which is constructed; the syntactical arrangement of words in a sentence.

con-strue (*kon'strōō*), *v. t.* to put into proper order by syntactical rules; translate; interpret.

con-sub-stan-tial (*kon-sub-stan'shal*), *adj.* having the same substance, essence, or nature.

con-sub-stan-ti-a-tion (*-shi-ā'shun*), *n.* the doctrine that the body and blood of Christ are in a mysterious manner substantially present in the Eucharistic elements after consecration.

★**con-sul** (*kon'sul*, not *kown'sul*), *n.* the chief magistrate of the Roman republic; an officer commissioned by a government to reside in a foreign country to promote the interests of its trade, and protect its subjects.

con-su-lar (*'sū-lēr*), *adj.* pertaining to a consul.

con-su-late (*'sū-lāt*), *n.* the office and residence of a consul.

con-sult (*kon-sult'*), *v. t.* to ask advice of; have regard to: *v. i.* to take counsel together.

Syn. CONSULT, deliberate. *Consultations* always require two persons at least; *deliberations* may be carried on either with one's self or with numbers; an individual may *consult* with one or many; assemblies commonly *deliberate.*

con-sul-ta-tion (*-sul-tā'shun*), *n.* the act of consulting.

con-sume (*kon-sūm'*), *v. t.* to destroy; waste: *v. i.* to waste away. [DESTROY, ABSORB.]

con-sum-mate (*kon'sum-āt*), *v. t.* to complete; finish: *adj.* (*kon-sum'āt*), perfect.

con-sum-mate-ly (*-sum'āt-li*), *adv.* perfectly.

con-sum-ma-tion (*-mā'shun*), *n.* completion.

Syn. CONSUMMATION, completion. Wishes are *consummated;* plans are *completed.*

con-sump-tion (*-sump'shun*), *n.* the act of consuming; pulmonary disease; phthisis. [DECAY.]

con-sump-tive (*'tiv*), *adj.* pertaining to consumption.

con-tact (*kon'takt*), *n.* touch; close union.

con-ta-gion (*kon-tā'jun*), *n.* transmission of disease by direct or indirect contact.

Syn. CONTAGION, infection. We consider *contagion* as to the manner of spreading from one body to another; we consider *infection* as to the act of its working itself into the system. Whatever acts by *contagion* acts immediately by direct personal contact; whatever acts by *infection* acts gradually and indirectly, or through the medium of a third body, as clothes, or the air when *infected.*

Ant. IMMUNITY, health.

con-ta-gious (*'jus*), *adj.* transmitted by contact.

Syn. CONTAGIOUS, epidemical, pestilential. The *contagious* applies to that which is capable of being caught, and ought not, therefore, to be touched; the *epidemical* to that which is already caught or circulated, and requires, therefore, to be stopped; the *pestilential* to that which may breed an evil; and is, therefore, to be removed; diseases are *contagious* or *epidemical;* the air or breath is *pestilential.*

con-tain (*kon-tān'*), *v. t.* to hold, as a vessel; inclose. [COMPRISE.]

con-tam-i-nate (*-tam'i-nāt*), *v. t.* to pollute.

Syn. CONTAMINATE, defile, pollute, taint, corrupt. Whatever is impure *contaminates;* what is gross and vile in the natural sense *defiles* and in the moral sense *pollutes;* what is contagious or infectious *corrupts;* and what is *corrupted* may *taint* other things.

Ant. CLEAN, clear, purify, whiten.

con-temn (*kon-tem'*), *v. t.* to despise.

Syn. CONTEMN, despise, scorn, disdain. *Contemn* signifies to pollute or render worthless, which is the cause of contempt. *Despise* signifies to look down upon, which is a strong mark of contempt; *scorn* signifies stripped of all honors and exposed to derision; *disdain* signifies to hold altogether unworthy.

Ant. ADMIRE, adore, esteem, laud.

con-tem-plate (*kon-tem'plāt*), *v. t.* to consider with continued attention.

Syn. CONTEMPLATE, meditate, muse. Different species of reflection are marked by these terms. We *contemplate* what is present or before our eyes; we *meditate* on what is past or absent. The heavens and all the works of the Creator are objects of *contemplation;* the ways of Providence are fit subjects for *meditation.* One *muses* on events or circumstances which have been just passing.

Ant. ACT, do.

★**con-tem-pla-tive** (*kon-tem'plā-tiv*, not *kon'tem-plā-tiv*), *adj.* thoughtful.

con-tem-po-ra-ne-ous (*-pō-rā-nē-us*), *adj.* contemporary.

con-tem-po-ra-ry (*'pō-rā-ri*), *adj.* existing or occurring at the same time: *n.* one living at the same time as another.

con-tempt (*kon-tempt'*), *n.* disdain; disobedience to the orders, etc., of a court.

con-tempt-i-ble (*'i-bl*), *adj.* meriting scorn.

Syn. CONTEMPTIBLE, contemptuous. *Contemptible* is applied to the thing deserving contempt; *contemptuous* to that which is expressive of contempt. A production is *contemptible;* a sneer or look is *contemptuous.*

Ant. ESTIMABLE, noble, praiseworthy.

con-temp-tu-ous (*-temp'tū-us*), *adj.* disdainful. [CONTEMPTIBLE.]

con-tend (*kon-tend'*), *v. i.* to strive in opposition; dispute or debate; assert.

Syn. CONTEND, contest, dispute. To *contend* is simply to exert a force against a force; to *contest* is to struggle together for an object; to *dispute*, according to its original meaning, applies to opinions only, and is distinguished from *contend* in that the latter signifies to maintain one's own opinion, and the former to call in question the opinion of another.

con-tent (*kon-tent'*), *adj.* satisfied: *v. t.* to satisfy; gratify: *n.* (*kon'tent*), generally plural, that which is comprised in anything.

con-ten-tion (*-ten'shun*), *n.* contest; debate. [STRIFE, DISSENSION, FEUD.]

con-ten-tious (*-ten'shus*), *adj.* causing contention.

con-tent-ment (*-tent'ment*), *n.* satisfaction, gratification.

Syn. CONTENTMENT, satisfaction. *Contentment* lies in ourselves; *satisfaction* is derived from external objects. One is *contented* when one wishes for no more; one is *satisfied* when one has obtained all one wishes; *contentment* is within the reach of the poor man, to whom it is a continual feast; but *satisfaction* has never been procured by wealth, however enormous, or ambition, however boundless. [See *compensation.*]

Ant. DISTRESS, melancholy, trouble.

con-test (*kon-test'*), *v. t.* to dispute; oppose: *v. i.* to strive: *n.* (*kon'test*) a struggle for superiority; dispute. [CONTEND, FEUD.]

con-test-ant (*-test'ant*), *n.* one who contests, especially an election or a will.

con-text (*kon'tekst*), *n.* the parts in a book or discourse immediately adjoining the sentence quoted.

con-ti-gu-i-ty (*-ti-gū'i-ti*), *n.* contact.

★**con-tig-u-ous** (*-tig'ū-us*), *adj.* adjacent. [ADJACENT.]

con-ti-nence (*kon'ti-nens*), *n.* chastity; self-restraint.

con-ti-nent (*'ti-nent*), *adj.* chaste; exercising self-restraint: *n.* a large extent of land, forming a geographical division.

con-ti-nen-tal (*-nen'tal*), *adj.* pertaining to a continent.

con-tin-gence (*kon-tin'jens*), *n.* [*pl.* contingencies (*'jen-siz*)], a chance or possible occurrence.

con-tin-gent (*'jent*), *adj.* accidental; conditional: *n.* quota of troops.

con-tin-u-al (*'ū-al*), *adj.* proceeding without interruption; incessant; constant.

Syn. CONTINUAL, perpetual, constant. What is *continual* admits of no interruption; what is *perpetual* admits of no termination. There may be an end to that which is *continued* and there may be intervals in that which is *perpetual. Constant*, like *continual*, admits of no interruption; what is *continual* may not always continue in the same state; but what is *constant* remains in the same state. [See *durable.*]

Ant. CEASING, changeable, broken, interrupted.

con-tin-u-ance (*'ū-ans*), *n.* permanence; uninterrupted succession; continuation.

Syn. CONTINUANCE, continuation, duration. The *continuance* is said of that which itself continues; the *continuation* of that which is continued by some other agency; as, the *continuance* of the rain; the *continuation* of a history, work, line, etc. Things are of long or short *duration* by comparison.

con-tin-ue (*kon-tin'ū*), *v. t.* to carry on without interruption: *v. i.* to remain; persevere.

Syn. CONTINUE, remain, stay. To *continue* is associated with a state of action; to *remain* with a state of rest; we are said to *continue* to speak, or do anything, to *remain* stationary or in a position; *stay* is a voluntary act; as, to *stay* at a friend's, or with a friend.

Ant. Go, leave, move.

Syn. CONTINUE, persevere, persist. We *continue* from habit or casualty; we *persevere* from reflection and the exercise of our judgment; we *persist* from attachment. A child *perseveres* in a new study until he has mastered it; he *persists* in making a request until he has obtained the object of his desire.

Ant. CEASE, lag, discontinue.

con-ti-nu-i-ty (*-ti-nū'i-ti*), *n.* [*pl.* continuities (*-tiz*)], uninterrupted succession or connection.

con-tin-u-ous (*-tin'ū-us*), *adj.* uninterrupted.

con-tort (*kon-tōrt'*), *v. t.* to twist.

con-tour (*kon-tōōr'*), *n.* an outline; profile.

con-tra-band (*kon'trā-band*), *adj.* prohibited from importation; illegal.

con-tract (*kon-trakt'*), *v. t.* to condense: *v. i.* to shrink up; agree upon: *n.* (*kon'trakt*) a compact; a written agreement. [ABBREVIATE.]

con-tract-ed (*kon-trak'ted*), *adj.* narrow, mean, scanty.

Syn. CONTRACTED, confined, narrow. *Contracted* signifies drawn into a smaller compass than it might otherwise be in, and *confined* signifies brought within unusually small bounds. *Narrow* denotes a quality belonging to a material body. A limb is said to be *contracted* which is drawn up by disease; a situation is *confined* which has not the necessary or usual degree of open space; a road or a room is *narrow.*

con-trac-tion (*-trak'shun*), *n.* the act of contracting; the state of being contracted; abbreviation.

con-tra-dict (*kon-tra-dikt'*), *v. t.* to assert the contrary or opposite of; gainsay; deny.

Syn. CONTRADICT, deny. One *contradicts* in direct terms by asserting something contrary; one *denies* by advancing arguments, or suggesting doubts or difficulties. These terms may, therefore, both be used in reference to disputations. We may *deny* the truth of a position by *contradicting* the assertions that are advanced in its support.

Ant. AGREE, acquiesce, admit, assent.

con-tra-dic-to-ry (*-dik'tō-ri*), *adj.* contrary.

con-tra-dis-tinc-tion (*-dis-tingk'shun*), *n.* a distinction by opposite qualities.

con-trai-to (*kon-tral'tō*), *n.* the part sung by the highest male (*counter-tenor*) or the lowest female voice (*alto*).

con-tra-ri-e-ty (*-trā-ri'ē-ti*), *n.* [*pl.* contrarieties (*-tiz*)], opposition.

con-tra-ry (*'trā-ri*), *adj.* opposite; perverse: *n.* a thing of opposite qualities. [PERVERSE.]

con-trast (*kon-trāst'*), *v. t.* to place in contrast: *n.* (*kon'trast*) opposition or difference of qualities; dissimilitude. [COMPARISON.]

con-tra-vene (*kon-trā-vēn'*), *v. t.* to obstruct; violate.

con-trib-ute (*kon-trib'ūt*), *v. t.* to give to some common stock: *v. i.* to use one's influence. [CONDUCE.]

con-tri-bu-tion (*-tri-bū'shun*), *n.* the act of contributing; a subscription; a writing furnished to a periodical.

con-trite (*kon'trit*), *adj.* penitent.

con-tri-tion (*-trish'un*), *n.* sorrow for sin.

con-triv-ance (*-triv'ans*), *n.* a device; apparatus; plan.

con-trive (*kon-triv'*), *v. t.* to devise; invent. [CONCERT.]

con-trol (*kon-trōl'*), *n.* a check; restraint: *v. t.* [*p. t.* and *p. p.* controlled, *p. pr.* controlling], to restrain; govern.

con-tro-ver-sial (*-trō-vēr'shal*), *adj.* polemical.

con-tro-ver-sy (*'trō-vēr-si*), *n.* [*pl.* controversies (*-siz*)], debate; disputation. [FEUD.]

con-tro-vert (*-trō-vērt'*), *v. t.* to contend against; refute.

Syn. CONTROVERT, dispute. To *controvert* has regard to speculative points; to *dispute* respects matters of fact; there is more of opposition in *controversy;* more of doubt in *disputing;* a sophist *controverts;* a skeptic *disputes.*

Ant. AGREE.

con-tu-ma-cious (*-tū-mā'shus*), *adj.* perverse. [OBSTINATE.]

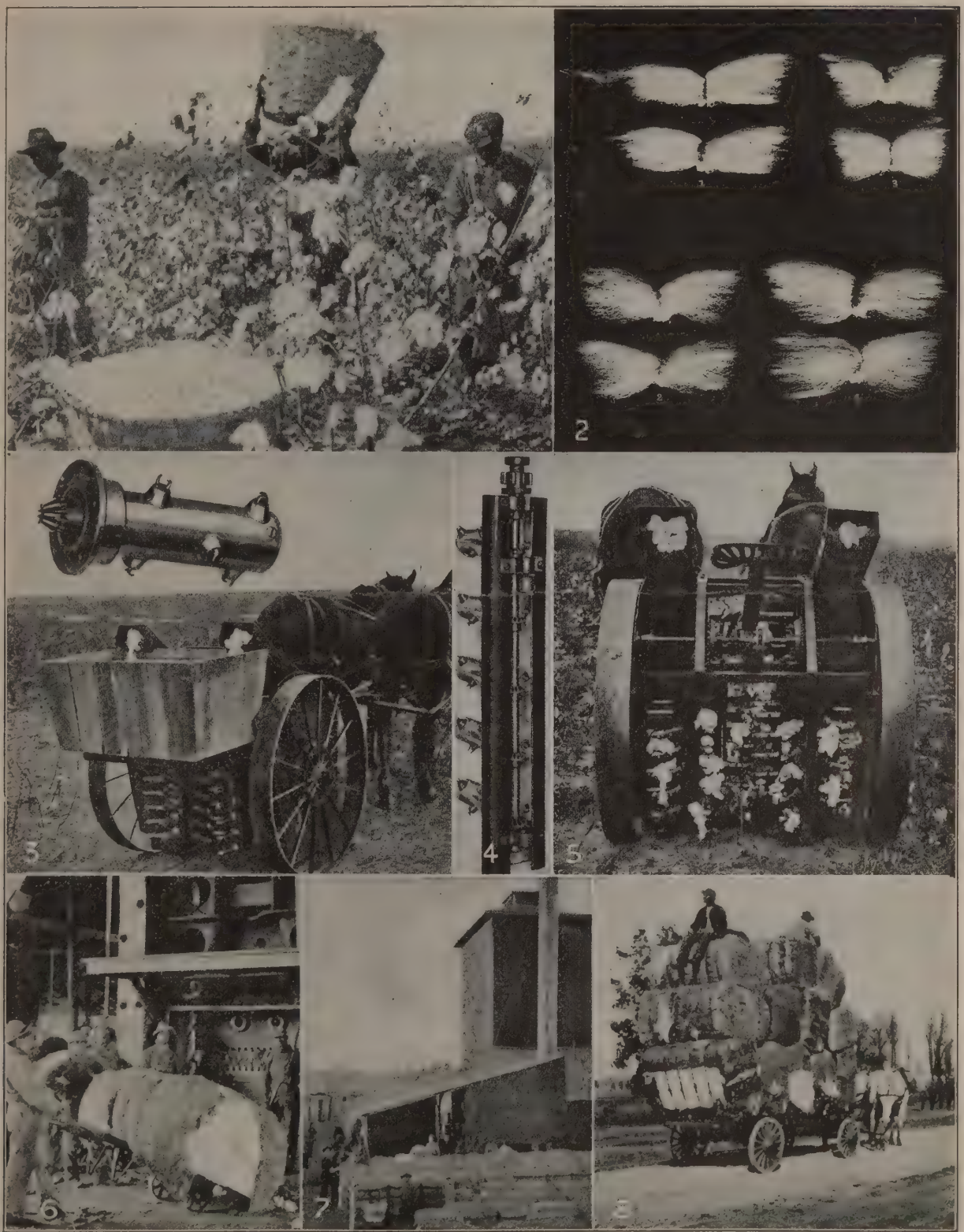
con-tu-ma-cy (*'tū-mā-si*), *n.* [*pl.* contumacies (*-siz*)], obstinate or perverse opposition to lawful authority.

Syn. CONTUMACY, rebellion. The *contumacious* resist only occasionally; the *rebel* resists systematically: the *contumacious* stand only on certain points, and oppose the individual; the *rebel* sets himself up against the authority itself.

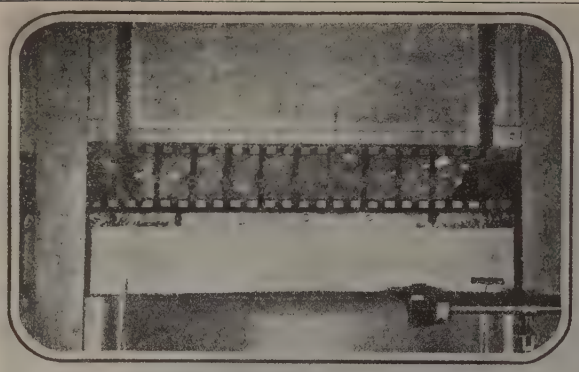
con-tu-me-ly (*'tū-mē-li*), *n.* haughty and contemptuous rudeness. [REPROACH.]

con-tuse (*kon-tūz'*), *v. t.* to wound or bruise without breaking the skin.
co-nun-drum (*kō-nun'drum*), *n.* a riddle.
con-va-lesce (*kon-va-les'*), *v. i.* to recover strength and health after illness.
con-va-les-cence (*'ens*), *n.* gradual recovery after illness. [Also *convalescency.*]
con-vene (*kon-vēn'*), *v. i.* to meet together: *v. t.* to cause to assemble.
con-ven-ience (*-vēn'yens*), *n.* fitness; freedom from discomfort.
con-ven-ient (*'yent*), *adj.* suitable; appropriate; handy.
Syn. CONVENIENT, suitable. *Convenient* regards the circumstances of the individual; *suitable* is closely connected with moral propriety; nothing is *convenient* which does not favor one's purpose; nothing is *suitable* which does not suit the person, place, and thing. [See *commodious.*]
con-vent (*kon'vent*), *n.* a community of religious recluses; a nunnery; monastery. [CLOISTER.]
con-ven-ti-cle (*-ven'ti-kl*), *n.* an assembly for worship (usually implying schism).
con-ven-tion (*-ven'shun*), *n.* a political or ecclesiastical assembly.
con-ven-tion-al (*-al*), *adj.* sanctioned by, or growing out of, custom; based on accepted models.
con-verge (*kon-vėrj'*), *v. i.* tend to one point.
con-ver-gence (*'jens*), *n.* [*pl.* convergencies (*'en-siz*)], tendency to one point.
★**con-ver-sant** (*kon'vėr-sant*, not *kon-vėr'sant*), *adj.* acquainted or familiar with; proficient.
Syn. CONVERSANT, familiar. A person is *conversant* in matters that come frequently before his notice; he is *familiar* with such as form the daily routine of his business.
Ant. IGNORANT.
con-ver-sa-tion (*-sā'shun*), *n.* informal or familiar talk.
Syn. CONVERSATION, dialogue, conference, colloquy. A *conversation* is always something actually held between two or more persons; a *dialogue* is mostly fictitious, and written as if spoken; any number of persons may take part in a *conversation*, but a *dialogue* always refers to the two persons who are expressly engaged; a *conference* is always specifically appointed and is mostly on public concerns; the *colloquy* has the same character as the *dialogue*, but is not confined to two people.
con-ver-sa-tion-ist (*-ist*), *n.* one who excels in conversation. [Also *conversationalist.*]
con-ver-sa-zi-o-ne (*kōn-vėr-sä-tsē-ō'nā*), *n.* [*pl.* conversazioni (*'nē*)], a meeting for conversation, especially on literary or scientific topics. [*Italian.*]
con-verse (*kon-vėrse'*), *v. i.* to interchange thoughts; *adj.* (*kon'vėrse*) reversed in order or relation; opposite: *n.* familiar talk. [SPEAK, COMMUNION.]
con-ver-sion (*kon-vėr'shun*), *n.* change from one state, or from one religion, to another.
con-vert (*kon-vėrt'*), *v. t.* to transmute; change from one religion to another: *n.* (*kon'vert*) one who changes from one religion to another.
Syn. CONVERT, proselyte. *Convert* is more extensive in its sense and application than *proselyte; convert* includes every change of opinion, without respect to the subject; *proselyte* denoted changes only from one religious belief to another; *proselyte* now means a new convert to a religion, a religious sect or to some particular system or party.
con-vert-i-ble (*kon-vėrt'i-bl*), *adj.* transmutable.
con-vex (*kon'veks*), *adj.* curved on the exterior surface; opposed to concave.
con-vey (*kon-vā'*), *v. t.* [*p. t.* and *p. p.* conveyed, *p. pr.* conveying], to carry or transport; communicate; transfer the title to (property).
con-vey-ance (*'ans*), *n.* the act or means of conveying; a vehicle.
con-vict (*kon-vikt'*), *v. t.* to prove guilty of a crime charged: *n.* (*kon'vikt*) a criminal sentenced to penal servitude.
Syn. CONVICT, detect. A person is *convicted* by means of evidence; he is *detected* by means of ocular demonstration. One is *convicted* of having perpetrated some evil deed; one is *detected* in the very act of committing the deed. [See *condemn, criminal.*]
con-vic-tion (*-vik'shun*), *n.* the act of convicting; strong belief.
con-vince (*kon-vins'*), *v. t.* to satisfy by evidence or argument. [PERSUADE, CONCLUSIVE.]
con-viv-i-al (*kon-viv'i-al*), *adj.* festive; jovial.
Syn. CONVIVIAL, social. The prominent idea in *convivial* is that of sensual indulgence; the prominent idea in *social* is that of enjoyment from an intercourse with society. We speak of *convivial* meetings, *convivial* enjoyments, or the *convivial* board; but *social* intercourse, *social* pleasure, *social* amusements.
con-vo-ca-tion (*kon-vō-kā'shun*), *n.* the act of convoking an assembly.
con-voke (*kon-vōk'*), *v. t.* to call or summon together; convene.
con-voy (*kon-voi'*), *v. t.* [*p. t.* and *p. p.* convoyed, *p. pr.* convoying], to accompany on the way for protection: *n.* (*kon'voi*) a protecting force accompanying ships, goods, persons, etc.; an escort.
con-vulse (*kon-vuls'*), *v. t.* to agitate violently.
con-vul-sion (*-vul'shun*), *n.* an agitation; tumult.
co-ny or **co-ney** (*ko'ni*), *n.* [*pl.* conies (*'niz*)], a rabbit.
coo (*kōō*), *v. i.* [*p. t.* and *p. p.* cooed, *p. pr.* cooing], to cry like a dove or pigeon: *n.* the sound uttered by doves and pigeons.
cook (*kook*), *v. t.* to prepare for eating by boiling, baking, or roasting: *n.* one who prepares food for the table.
cook-er-y (*'ėr-i*), *n.* [*pl.* cookeries (*-iz*)], the art or practice of cooking.
cook-y (*'i*), *n.* [*pl.* cookies (*'iz*)], a small flat sweet cake.
cool (*kōōl*), *adj.* slightly or moderately cold: *v. t.* to make cool: *v. i.* to become cool. [DISPASSIONATE, CALM.]
coon (*kōōn*), *n.* abbreviation of raccoon; slang name for a negro.
coop (*kōōp*), *n.* a cage; pen: *v. t.* to confine; inclose.
coop-er (*'ėr*), *n.* a maker of barrels, casks, etc.
co-öp-er-ate (*kō-op'ėr-āt*), *v. i.* to act or work jointly.
co-öp-er-a-tion (*-ā'shun*), *n.* the act of working jointly together.
Cooper river, S. C. Named in honor of Sir Anthony Ashley Cooper, afterward earl of Shaftesbury, one of the original charterers.
Cooperstown. Village in Otsego county, New York, named for the father of James Fenimore Cooper, the novelist.
co-ör-di-nate (*kō-ôr'di-nāt*), *v. t.* to place in the same order, class, etc.: *adj.* of the same rank or authority as another.
coot (*kōōt*), *n.* a short-tailed water fowl.
cop (*kop*), *v. t.* [*p. t.* and *p. p.* copped, *p. pr.* copping], to seize as a prisoner: *n.* a policeman.
cope (*kōp*), *n.* a large semicircular ecclesiastical vestment, worn by bishops and priests over the surplice.
cope (*kōp*), *v. i.* to strive or contend (followed by *with*).
Copenhagen (*kō-pen-hā'gen*). In Danish, *Kjobenhavn*, the capital of Denmark. Is first mentioned in 1027. Owing to its position it became a great resort for merchants, and was called *Kaupmanna hofn* or *Kjobmannshavn*, names translated by Saxo Grammaticus in the twelfth century as *Portus Mercatorum*, the "haven of the merchants."
cop-ing (*kō'ping*), *n.* the top masonry of a wall.
co-pi-ous (*'pi-us*), *adj.* abundant; diffusive.
cop-per (*kop'ėr*), *n.* a red, ductile metal: *v. t.* to cover with copper.
cop-per-head (*-hed*), *n.* a venomous American serpent.
copse (*kops*), *n.* a thicket of brushwood.
cop-u-la (*'ū-lä*), *n.* [*pl.* copulas (*läz*) or copulæ (*-lē*)], a word which joins the subject and predicate in a sentence or proposition.
cop-u-la-tive (*'lā-tiv*), *adj.* uniting: *n.* a copulative conjunction.
cop-y (*kop'i*), *n.* [*pl.* copies (*'iz*)], an imitation; a transcript: *v. t.* to transcribe; reproduce.
Syn. COPY, transcribe, model, pattern, specimen. To *copy* respects the matter; to *transcribe* respects simply the act of writing. What is *copied* must be taken immediately from the original, with which it must exactly correspond; what is *transcribed* may be taken from the *copy*, but not necessarily in an entire state; a *copier* should be very exact; a *transcriber* should be a good writer; a *model* is that which may be used as a guide or rule; the *pattern* regards solely the outward form or color of anything that is made or manufactured; the *specimen* is any portion of a material which serves to show the quality of that of which it forms a part. [See *example.*]
★**co-quet** (*kō-ket'*), *v. i.* [*p. t.* and *p. p.* coquetted, *p. pr.* coquetting], to flirt; trifle.
co-quet (*kō-ket'*), *n.* a vain woman who seeks to gain men's attention and admiration.
Syn. COQUET, jilt. The *coquet* makes a traffic of her own charms by seeking a multitude of admirers; the *jilt* sports with the sacred passion of love, and barters it for the gratification of any selfish propensity.
Cora. From the Greek *kore*, "a girl," "damsel."
★**cor-al** (*kor'al*, not *kō'ral*), *n.* the hard calcareous skeleton of certain marine polyps: *adj.* pertaining to coral.
cor-al-line (*'al-in*), *adj.* consisting of, or like, coral; of a color like coral: *n.* an orange-red dye stuff.
cord (*kôrd*), *n.* a twisted string; a measure of wood: *v. t.* to fasten with cord.
Cordelia (*kôr-dē'li-ä* or *kôr-dēl'yä*). According to Rev. Edward Davies, from the Celtic, *Creirdyddlydd*, "jewel of the sea." Fr., *Cordelie.*
★**cor-dial** (*kôr'jal* or *kōrd'yal*), *adj.* hearty; sincere: *n.* an aromatic and sweetened spirit. [HEARTY.]
cor-dial-i-ty (*'i-ti*), *n.* sincere, sympathetic geniality; sincerity; heartiness.
cor-don (*kôr'don*), *n.* a ribbon worn as the badge of an order; a line of military posts.
cor-du-roy (*'dū-roi*), *n.* a stout ribbed or corded cotton.
core (*kōr*), *n.* the heart or innermost part of anything, especially of fruit: *v. t.* to remove the core from.
co-re-spond-ent (*kō-re-spond'ent*), *n.* a joint respondent in a divorce suit.
Co-rin-thi-an (*kō-rin'thi-an*), *adj.* of or pertaining to Corinth, noted for its luxury and licentiousness; luxurious; denoting the Corinthian order of architecture.
cork (*kôrk*), *n.* a light elastic oak bark, variously used; a stopper for a bottle: *adj.* made of cork.
corn (*kôrn*), *n.* grain, as wheat, barley, rye, etc.; plants that yield grain; breadstuff; a horny excrescence on the toe, or foot.
cor-ne-a (*kôr'nē-ä*), *n.* the horny circular transparent membrane which forms the anterior portion of the eyeball.
Cornelia (*kôr-nēl'li-ä* or *kôr-nēl'yä*). A female name formed from *Cornelius.*
Cornelius (*kôr-nēl'li-us* or *kôr-nēl'yus*). Latin name, translated by some, "horn." Danish, *Cornelius;* Dutch, *Kornelis* or *Cornelis;* Fr., *Corneille;* It., *Cornelio;* Lat., *Cornelius;* Sp., *Cornelio.*
cor-ner (*kôr'nėr*), *n.* an angle; a mercantile ring to monopolize some product: *v. t.* to drive or force into some position of difficulty from which there is no escape; *corner the market*, to buy up a commodity so as to monopolize it.
★**cor-net** (*kôr'net*, not *kôr-net'*), a kind of trumpet.
cor-nice (*'nis*), *n.* the highest projection or border on a wall or column.
Corniche (*kor-nēsh'*), **The.** A celebrated coast-road along the Riviera of France and Italy from Nice to Genoa.
corn-starch (*kōrn'stärch*), *n.* starch made from meal of Indian corn, used for puddings, etc.
cor-nu-co-pi-a (*kôr-nū-kō'pi-ä*), *n.* [*pl.* cornucopiæ (*-ē*), or -as (*-äz*)], the horn of plenty, represented in sculpture as overflowing with fruit, flowers, etc.
Cornwall. A southwestern county of England. The Romans, who traded here for tin called it *Cornubia*, which name it bore until the Saxons imposed the name of *Weales* upon the British who retreated into the fastness west of the Severn and the Dee. The latter portion of the name *Cornubia* was then dropped, and the word *Wales* substituted, forming the name *Corn-Wales*, of which the present *Cornwall* is a corruption.
★**co-rol-la** (*kō-rol'ä*), *n.* the inner envelope of a flower composed of two or more petals.
cor-ol-la-ry (*kor'ol-* or *kō-rol'ä-ri*), *n.* an additional deduction or inference drawn from a demonstrated proposition.
co-ro-na (*kō-rō'nä*), *n.* [*pl.* coronæ (*'nē*)], a crown; the flat projecting part of a cornice; the upper surface of a molar tooth; a halo surrounding heavenly bodies.
cor-o-na-tion (*kor-ō-nā'shun*), *n.* the act or ceremony of crowning a sovereign.
cor-o-ner (*kor'o-nėr*), *n.* an officer who inquires into cases of sudden or accidental death.
cor-o-net (*'ō-net*), *n.* an inferior crown; an ornamental headdress.
cor-po-ral (*kôr'pō-ral*), *adj.* relating to the body; opposed to the mind: *n.* a noncommissioned officer of the lowest grade. [PHYSICAL.]
cor-po-rate (*-rāt*), *adj.* united in a body or community by legal enactment.
cor-po-ra-tion (*-rā'shun*), *n.* a body politic having a common seal, and legally authorized to act as one individual; an organization of a number of manufacturing or mercantile companies.
cor-po-re-al (*-pō'rē-al*), *adj.* having a material body; physical. [PHYSICAL.]
★**corps** (*kôr*), *n. sing. and pl.* a body, as of troops, etc.
corpse (*kôrps*), *n.* a dead body. [BODY.]
cor-pu-lence (*kôr'pū-lens*), *n.* excessive fatness of body.
cor-pu-lent (*-lent*), *adj.* bulky; fat.
Cor-pus Chris-ti (*kôr'pus kris'ti*). [Latin, the body of Christ]. A Roman Catholic festival (the first Thursday after Trinity Sunday) in honor of the Eucharist.
cor-pus-cle (*kôr'pus-l*), *n.* a minute particle.
cor-ral (*kor-ral'*), *n.* a pen for live stock.
cor-rect (*kor-rekt'*), *v. t.* to set straight; rectify: *adj.* exact; accurate.
Syn. CORRECT, accurate. What is done by the exercise of the judgment is said to be *correct;* as a *correct* style, a *correct* writer; what is done by the effort of the individual is more properly *accurate;* as, *accurate* observations, an *accurate* survey. [See *amend.*]
Ant. FAULTY, imperfect, perverted, poor.
cor-re-late (*kor-ē-lāt'*), *v. i.* to be reciprocally related.
cor-re-la-tion (*-lā'shun*), *n.* reciprocal relation; the interdependence of functions or organs.
cor-re-spond (*kor-ē-spond'*), *v. i.* to be adequate to; answer.
Syn. CORRESPOND, answerable, suitable. Things that *correspond* must be alike in size, shape, color, and every minute particular; those that *answer* must be fitted for the same purpose; those that *suit* must have nothing disproportionate or discordant. In the moral application, actions are said not to *correspond* with professions; the success of an undertaking does not *answer* the expectation; particular measures do not *suit* the purpose of individuals. [See *conformable.*]
cor-re-spond-ence (*'ens*), *n.* communication by letters.
cor-re-spond-ent (*'ent*), *adj.* agreeing with; similar.
cor-ri-dor (*kor'i-dôr*), *n.* a gallery or open passage in a building.
cor-ri-gi-ble (*kor'i-ji-bl*), *adj.* capable of being amended.
cor-rob-o-rate (*kor-rob'ō-rāt*), *v. t.* confirm; strengthen. [CONFIRM.]

cor-rob-o-ra-tive (*kor-rob'ō-rā-tiv*), *adj.* verifying; confirmative.
cor-rode (*kor-ōd'*), *v. t.* to eat away gradually.
cor-ro-sion (*kor-ō'zhun*), *n.* the act of corroding.
cor-ru-gate (*'oo-gāt*), *v. t.* to draw, or shape, into wrinkles or folds.
cor-rupt (*kor-rupt'*), *v. t.* to turn from a sound to an unsound and putrescent state. [CONTAMINATE.]
cor-rupt-i-ble (*-rupt'i-bl*), *adj.* capable of being corrupted.
cor-rup-tion (*-rup'shun*), *n.* the act of corrupting. [DEPRAVITY.]
cor-sage (*kôr'sāj*), *n.* a bodice.
cor-set (*kôr'set*), *n.* a close-fitting bodice.
Corsica (*kôr'si-kȧ*). A Mediterranean island. A Phenician word denoting "the wooded island."
cors-let (*kôrs'let*), *n.* light body armor.
Corso (*kôr'sō*). One of the principal streets of Rome.
★**cor-tége** (*kôr-tāzh'*), *n.* a train of attendants; procession.
cor-tes (*kôr'tēs*), *n. pl.* the national and legislative assembly of Spain and Portugal.
cor-us-cate (*kor'us-kāt* or *kō-rus'*), *v. i.* to sparkle; flash.
cor-us-ca-tion (*kor-us-kā'shun*), *n.* a sudden flash or play of light.
Coshocton (*kō-shok'tun*). County and village in Ohio, named from the Indian town of *Goshocking*. The word means, according to some authorities, "habitation of owls."
★**cos-met-ic** (*koz-met'ik*, not *kos-met'ik*), *adj.* imparting or improving beauty: *n.* a wash or preparation for such a purpose.
cos-mic (*koz'mik*), *adj.* pertaining to the universe and the laws which govern it.
Cosmo (*koz'mō*). A name originating in Italy, where it became famous from being borne by the family of the Medici (Cosmo di Medici).
cos-mog-ra-phy (*-mog'rȧ-fi*), *n.* the science which includes geography, astronomy, and geology.
cos-mo-pol-i-tan (*-mō-pol'i-tan*), *n.* a citizen of the world.
cos-mos (*koz'mos*), *n.* the world or universe as an orderly system.
cost (*kôst*), *v. t.* to be bought for, or had at, a price: *n.* charge.
Syn. COST, expense, price, charge. The *cost* is what is to be laid out for anything; the *expense* is that which a person actually lays out; the *price* is that which a thing may fetch or which it may be worth; the *charge* is that which a person or thing is charged with; we do a thing at our own *cost*, but at another's *expense*. [See *expense*.]
Ant. INCOME, receipts.
cos-tal (*kos'tal*), *adj.* pertaining to a rib.
Costa Rica (*kos'tä rē'kä*). [Sp., literally, for "rich coast."] A republic of Central America.
cos-tive (*'tiv*), *adj.* constipated.
cos-tume (*kos'tūm*), *n.* dress in general; style of dress.
co-sy, another form of *cozy*.
cot (*kot*), *n.* a cottage; small bed.
★**cote** (*kōt*, not *kot*), *n.* a hut; a sheepfold.
co-tem-po-ra-ry, cotemporaneous, etc., same as *contemporary*, etc.
co-te-rie (*kō-te-rē'*), *n.* a clique. [CLASS.]
★**co-til-lion** (*-til'yun*), *n.* a brisk, lively dance for eight or more persons.
Cotswold (*kots'wōld*) **hills.** A range of hills in Gloucestershire, England. So named from the Anglo-Saxon *cote* and *wold*, as meaning a place where there are no growing woods.
cot-tage (*kot'āj*), *n.* a small dwelling.
cot-ton (*kot'n*), *n.* a white downy substance enveloping the seeds of the cotton plant.
cot-ton gin (*jin*), a machine for separating the seeds from cotton fiber.
couch (*kouch*), *v. t.* to place on a bed or other resting-place: *n.* a bed.
cough (*kôf*), *v. i.* to expel air from the lungs by a violent effort.
coul-ter (*kōl'tẽr*), *n.* a plowshare.
coun-cil (*koun'sil*), *n.* an assembly of persons met in consultation, or to give advice; a convocation.
Council Bluffs. City in Pottawattamie county, Iowa. [council.
coun-cil-man (*-man*), *n.* a member of a common
coun-sel (*'sel*), *n.* interchange of opinion; advice.
coun-sel-or (*-ẽr*), *n.* one who gives advice, especially legal advice.
count (*kount*), *n.* a title of nobility.
count (*kount*), *v. t.* to reckon or sum up; *v. i.* to tell off: *n.* the act of numbering. [CALCULATE.]
coun-te-nance (*koun'te-nans*), *n.* the whole form of the face.
Syn. COUNTENANCE, sanction, support. Persons are *countenanced;* things are *sanctioned;* persons or things are *supported;* persons are *countenanced* in their proceedings by the apparent approbation of others; measures are *sanctioned* by those who have due authority; measures or persons are *supported* by every means which may forward the object. [ABET.]
coun-ter (*'tẽr*), *n.* one who, or that which, counts; a shop table.
coun-ter (*'tẽr*), *adv.* contrary; adverse.
coun-ter-act (*-akt'*), *v. t.* to act in opposition to so as to defeat.
coun-ter-feit (*koun'tẽr-fit*), *v. t.* to make a copy of without authority for fraudulent purposes.
coun-ter-mand (*koun-tẽr-mȧnd'*), *v. t.* to revoke or annul. [ABOLISH.]
coun-ter-pane (*koun'ter-pān*), *n.* a bed coverlet.
coun-ter part (*-pärt*), *n.* a duplicate.
coun-ter-sign (*koun'tẽr-sīn*), *n.* an additional signature to a document to attest it.
count-ess (*kount'es*), *n.* the wife of an earl or count.
count-ing-house (*'ing-hous*), *n.* the room where accounts or mercantile transactions are carried on.
coun-try (*kun'tri*), *n.* [*pl.* countries (*'triz*)], a tract of land; region; rural parts. [LAND.]
coun-ty (*koun'ti*), *n.* [*pl.* counties (*'tiz*)], a definite district of a country separated from the rest for political or judicial administrative purposes.
cou-ple (*kup'l*), *n.* two of the same kind connected together; a pair; man and wife: *v. t.* to link or join together.
coup-let (*kup'let*), *n.* two successive lines of verse which rhyme together.
★**cou-pon** (*kōō'pon*), *n.* a certificate attached to transferable bonds; a section of a ticket.
cour-age (*kur'āj*), *n.* fortitude; valor.
Syn. COURAGE, fortitude, resolution. *Courage* respects action, *fortitude* respects passion; a man has *courage* to meet danger, and *fortitude* to endure pain; *resolution* simply marks the will not to recede; we require *resolution* not to yield to the first difficulties that offer. [See *bravery*.]
cour-a-geous (*-ā'jus*), *adj.* brave; bold.
cou-ri-er (*kōō'ri-ẽr*), *n.* a special messenger.
course (*kōrs*), *n.* a race; a path or track; career; direction or line of motion; regular sequence; conduct.
court (*kōrt*), *n.* a paved space surrounded by houses; a royal palace; the retinue of a sovereign: *v. t.* to pay court to; woo; flatter; solicit. [ADDRESS.]
★**cour-te-ous** (*kûr'tē-us*), *adj.* polite; obliging.
cour-te-san (*'tē-zan*), *n.* a prostitute.
cour-te-sy (*'tē-si*), *n.* [*pl.* courtesies (*-siz*)], politeness combined with kindness.
courte-sy (*kûrt'si*), *n.* [*pl.* courtesies (*-siz*)], a salutation made by bending the knees.
court-ier (*kōrt'yẽr*), *n.* one who frequents or attends court.
court-ly (*'li*), *adj.* refined; elegant.
court-mar-tial (*-mär'shal*), *n.* [*pl.* courts-martial], a court of justice composed of naval or military officers.
★**cous-in** (*kuz'n*, not *kuz'in*), *n.* the son or daughter of an uncle or aunt.
cove (*kōv*), *n.* a small sheltered inlet or creek; a fellow.
cov-e-nant (*kuv'e-nant*), *n.* a written agreement; a free promise of God's blessing.
Covent Garden theater. A theater in Bow street, Covent Garden, London, built by John Rich, the famous harlequin of Lincoln's Inn theater, in 1731.
Coventry (*kuv'en-tri*). The name of this English city is not derived from "convent," as some suppose, but from *Cune*, or *Coven*, the name of the stream on which it is built.
cov-er (*kuv'ẽr*), *v. t.* to overspread, as the top of anything, with something else
Syn. COVER, shelter, screen. *Cover* includes the idea of concealing; *shelter* comprehends that of protecting from some immediate or impending evil; *screen* includes that of warding off some trouble.
Ant. REVEAL.
cov-ert (*kuv'ẽrt*), *adj.* concealed; covered; disguised.
cov-et (*kuv'et*), *v. t.* to desire earnestly; lust after. [DESIRE.]
★**cov-et-ous** (*-us*), *adj.* inordinately desirous.
cov-ey (*kuv'i*), *n.* a hatch or brood of birds.
cow (*kou*), *n.* [*pl.* cows (*kouz*)], the mature female of the genus bos, or ox: *v. t.* to depress with fear.
cow-ard (*'ẽrd*), *n.* one without courage; a dastard; poltroon.
★**cow-ard-ice** (*-is*, not *īs*), *n.* dishonorable fear.
cow-er (*kou'ẽr*), *v. i.* to crouch or sink down through fear; tremble.
cow-hide (*'hīd*), *n.* the tanned and dressed skins of cows: *adj.* made of cowhide.
cowl (*koul*), *n.* a monk's hood; a revolving cover for a chimney pot.
cow-lick (*'lik*), *n.* a tuft of hair turned up or awry on the forehead.
cox-comb (*koks'kōm*), *n.* a fop.
coy (*koi*), *adj.* bashful.
coy-o-te (*ki'ō-tē* or *ki'ōt*), *n.* the prairie wolf.
coz-en (*kuz'n*), *v. t.* to cheat.
co-zy (*kō'zi*), *adj.* warm and comfortable; snug.
crab (*krab*), *n.* a short-tailed, stalk-eyed, ten-footed crustacean.
crack (*krak*), *n.* a chink or fissure; a narrow fracture: *v. t.* and *v. i.* to burst, break, or sever: *adj.* of superior excellence. [BREAK.]
crack-er (*krak'ẽr*), *n.* a hard biscuit; a firework.
crac-kle (*krak'l*), *v. i.* to make a slight, sharp explosive noise: *n.* a noise of frequent and slight cracks.
Cracow (*krā'kō*). The town of *Krak*, duke of Poland.
cra-dle (*krā'dl*), *n.* a baby's crib or little bed; infancy: *v. t.* to rock or place in a cradle.
craft (*krȧft*), *n.* manual skill; a trade; cunning.
crafts-man (*krafts'man*), *n.* [*pl.* craftsmen (*'men*)], a skilled artisan.
crag (*krag*), *n.* a steep, rugged rock.
cram (*kram*), *v. t.* [*p. t.* and *p. p.* crammed, *p. pr.* cramming], to stuff; tell lies to.
cramp (*kramp*), *n.* a rectangular piece of iron with a tightening screw at one end.
cran-ber-ry (*kran'ber-ri*), *n.* [*pl.* cranberries (*-riz*)], the marsh whortleberry.
crane (*krān*), *n.* a large wading bird with very long legs and neck; a machine for raising heavy weights.
cra-ni-al (*krā'ni-al*), *adj.* pertaining to the skull.
cra-ni-um (*'ni-um*), *n.* [*pl.* crania], the skull.
crank (*krangk*), *n.* a device for causing the rotation of an axis; a crotchety or impracticable person.
crank-y (*'i*), *adj.* full of crotchets or cranks; liable to be upset.
cran-ny (*'ni*), *n.* [*pl.* crannies (*'niz*)], a chink.
crape (*krāp*), *n.* a thin black gauze made of raw silk and gummed.
crash (*krash*), *v. t.* to clash together with violence: *v. i.* to make a loud clattering noise.
crass (*kras*), *adj.* gross; dense; obtuse.
crate (*krāt*), *n.* a wicker hamper.
cra-ter (*krā'tẽr*), *n.* the cup-shaped cavity of a volcano.
cra-vat (*krȧ-vat'*), *n.* a neckcloth.
crave (*krāv*), *v. t.* to ask for with humility. [BEG.]
cra-ven (*krā'vn*), *adj.* cowardly; base: *n.* a coward; recreant.
craw-fish (*kraw'fish*) or **crayfish** (*krā'*), *n.* the common name of a fresh-water lobster-like crustacean.
crawl (*krawl*), *v. i.* move slowly and with difficulty.
cray-on (*krā'un*), *n.* a kind of chalk pencil.
craze (*krāz*), *v. i.* to become demented: *n.* a passing fashion or infatuation.
creak (*krēk*), *v. i.* to make a sharp, harsh, grating sound.
cream (*krēm*), *n.* the rich, oily part of milk.
cream-er-y (*'ẽr-i*), *n.* [*pl.* creameries (*-iz*)], a place where butter and cheese are made.
cream of tar-tar (*ov tär'tẽr*), *n.* purified tartar or argol.
crease (*krēs*), *n.* a mark made by folding or doubling anything.
cre-ate (*krē-āt'*), *v. t.* to cause to come into existence. [CAUSE, MAKE.]
cre-a-tion (*-ā'shun*), *n.* the act of creating.
cre-a-tor (*'tẽr*), *n.* one who creates.
Creator, *n.* the Supreme Being.
crea-ture (*krē'tūr*), *n.* anything created, especially a living being.
★**cre-dence** (*krē'dens*, not *kred'ens*), *n.* belief; trust.
cre-den-tial (*-den'shal*), *adj.* giving a claim or title to credit: *n. pl.* letters or certificates given to a person to show he has a right.
cred-i-ble (*cred'i-bl*), *adj.* worthy of credit; probable.
cred-it (*kred'it*), *v. t.* to believe; trust; enter on the credit side of an account: *n.* belief; honor.
Syn. CREDIT, favor, influence. *Credit* rises out of esteem; *favor* out of good-will or affection; *influence* out of either credit or favor or external circumstances; *influence* is employed in directing others; weak people easily give their *credit*, or bestow their *favor*, by which an *influence* is gained over them to bend them to the will of others.
cre-du-li-ty (*crē-dū'li-ti*), *n.* ready belief.
★**cred-u-lous** (*kred'ū-lus*, not *krej'ōō-lus*), *adj.* easily imposed upon.
creed (*krēd*), *n.* a brief statement of belief. [FAITH.]
★**creek** (*krēk*, not *krik*), *n.* a small bay; cove.
creep (*krēp*), *v. i.* [*p. t.* and *p. p.* crept, *p. pr.* creeping], to move slowly along the ground.
creep-er (*'ẽr*), *n.* one who, or that which, creeps.
cre-mate (*krē'māt*), *v. t.* to reduce to ashes by heat, especially dead bodies.
cre-ma-tion (*-mā'shun*), *n.* the act of cremating.
★**cre-ma-to-ry** (*'mȧ-tō-ri*), *n.* [*pl.* crematories (*-riz*)], a place for burning the dead.
cre-ole (*krē'ōl*), *n.* a native of Spanish America or the West Indies: *adj.* pertaining to a creole.
cre-o-sote (*'ō-sōt*), *n.* a heavy oily liquid with a smoky smell.
cres-cent (*kres'ent*), *adj.* growing: *n.* an increasing or new moon; a figure like a new moon.
cress (*kres*), *n.* a name for various cruciferous plants.
crest (*krest*), *n.* a plume of feathers on the head of a bird, helmet, etc.; the ridge of a wave; summit of a hill.
crest-fal-len (*'fawl-n*), *adj.* dejected.
cre-ta-ceous (*krē-tā'shus*), *adj.* composed of, or like, chalk.
cre-vasse (*krā-vȧs'*), *n.* a deep fissure in a glacier ice.
crev-ice (*krev'is*), *n.* a crack; fissure.
crew (*krōō*), *n.* a ship or boat's company.
crib (*krib*), *n.* a rack or manger; a stall for horses or cattle; a child's bed.
crib-bage (*'āj*), *n.* a card game.
crick (*krik*), *n.* a painful stiffness of the muscles of the neck.
crick-et (*'et*), *n.* the well-known game; a chirping insect.
crime (*krīm*), *n.* a violation of the law.
Syn. CRIME, vice, sin. A *crime* is a social offense; a *vice* is a personal offense; every action which does injury to others, either individually or collectively, is a *crime;* that which does injury to ourselves is a *vice*. *Crime* consists in a violation of human laws; *vice* in a violation of the moral law; *sin* in a violation of the divine law. [See *abomination*.]
Crimea (*krī-mē'ȧ*). A peninsula in southern Russia named from a small town established in the peninsula by the Kimri, or Cymri.

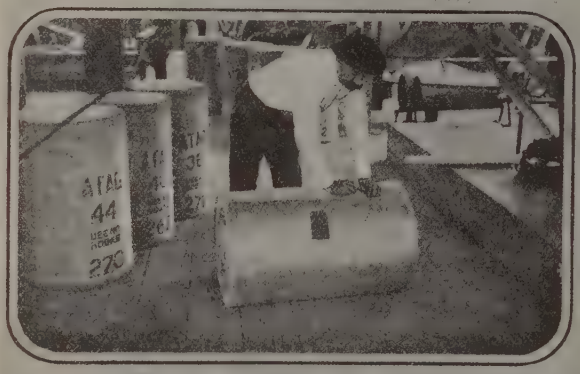


1—Picking cotton near Atlanta, Georgia. **2**—Seeds with lint attached, illustrating types of long and short staple cotton. 1, Griffin; 2, Southern Hope; 3, Truitt; 4, Hybrid of Sea Island Upland. **3**—Cotton-picking machine, showing the arms which carry the rotary picker points for plucking the cotton bolls. **4**—Rear view of one of the slats. **5**—Rear view of the cotton-picking machine, showing how the seed is plucked by the picker points and delivered to the hopper. **6**—Cotton compress. **7**—A cotton gin in Alabama. **8**—The procession of progress travels the route of good roads. Every bale of cotton which a good road permits the farmer to add to his wagonload increases his profit and decreases the cost of the ultimate consumer. Such splendid highways as this, in Mecklenburg County, North Carolina, enhance the material and social wealth of the community through which they are built.



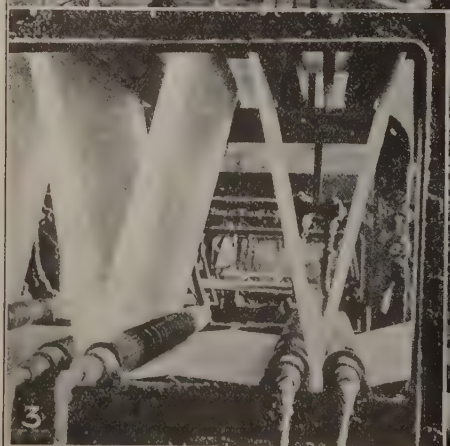
Old Way of Pressing the Bale for the Market
Final compression into one-fifth original size

New Way of Pressing the Bale for the Market
1. Automatic method of compressing round bale



New Way of Pressing the Bale for the Market
2. The round bale completed

Method of Unrolling round Bale in the Cotton-mill



1—A primitive cotton-factory in Alabama. **2**—A battery of forty-eight printing-machine at work: Lawrence, Mass. **3**—Singeing cloth preparatory to printing. **4**—A Warping-machine in an up-to-date textile factory. **5**—Dyeing cloth in a Lawrence mill.

crim-i-nal (*krim'i-nal*), *adj.* pertaining to crime.
Syn. CRIMINAL, culprit, malefactor, felon, convict. When we wish to speak in general of those whose offenses have exposed them to punishment, we denominate them *criminals;* when we consider them as already brought before a tribunal, we call them *culprits;* when we consider them as the promoters of evil rather than of good, we entitle them *malefactors;* when we consider them as offending by the grosser violations of the law, they are termed *felons;* when we consider them as already under the sentence of the law, we denominate them *convicts.*
crim-i-nal-i-ty (*-nal'i-ti*), *n.* guilt.
crim-i-nate (*'i-nāt*), *v. t.* to accuse, or declare, guilty of crime.
crim-i-nol-o-gy (*-i-nol'ō-ji*), *n.* the scientific investigation of crimes.
crimp (*krimp*), *v. t.* to bend or twist in regular undulations: *n.* formerly one who entrapped men for the English navy or army.
crim-son (*krim'zn*), *n.* a deep red color inclining to purple.
cringe (*krinj*), *v. i.* to bend or crouch from fear.
crin-kle (*kring'kl*), *v. t.* to wrinkle; corrugate: *n.* a wrinkle.
crin-o-line (*krin'ō-lin*), *n.* a hoopskirt.
crip-ple (*krip'l*), *n.* one who is lame.
Cripplegate (*krip'l-gāt*) or **Crepelgate.** An old London gate, probably built by King Alfred in 886 A. D.
cri-sis (*krī'sis*), *n.* [*pl.* crises (*-sēz*)], a turning point; a critical turn in a disease; emergency.
Cris Kingle (*kris' king'l*). Also variously spelled *Kriss Kingle,* and *Kriss Kringle,* has been corrupted from the German word, *Christ-Kindel,* meaning the "little Christ-child."
crisp (*krisp*), *adj.* wavy; curled; brittle; terse.
criss-cross (*kris'krôs*), *n.* an intersection; a child's game.
cri-te-ri-on (*krī-tē'ri-un*), *n.* [*pl.* criteria (*-ă*)], a standard, law, or rule.
Syn. CRITERION, standard. The *criterion* is employed only in matters of judgment; the *standard* is used in the ordinary concerns of life. The former serves for determining the characters and qualities of things; the latter for defining quantity and measure.
crit-ic (*krit'ik*), *n.* one skilled in criticism.
crit-ic-al (*'i-kal*), *adj.* nicely exact.
crit-i-cise (*'i-siz*), *v. t.* to examine or judge as a critic.
crit-i-cism (*'i-sizm*), *n.* the art of judging and defining the merits of a literary or artistic work.
cri-tique (*kri-tēk'*), *n.* a careful analysis.
croak (*krōk*), *v. i.* to make a sound like a raven: *n.* the low, hoarse sound of the raven or frog.
cro-chet (*krō-shā'*), *n.* a kind of knitting: *v. t.* to work in crochet.
crock (*krok*), *n.* soot on a kettle, etc.: *v. t.* to blacken with soot; smudge.
crock-er-y (*'ėr-i*), *n.* earthenware.
croc-o-dile (*'ō-dil*), *n.* a large lizard-like amphibian reptile.
cro-cus (*krō'kus*), *n.* a genus of iridaceous plants.
crone (*krōn*), *n.* an old woman.
cro-ny (*krō'ni*), *n.* [*pl.* cronies (*'niz*)], a familiar friend.
crook (*krook*), *n.* a bend; a shepherd's hooked staff.
croon (*krōōn*), *v. i.* to utter a hollow continued moan.
crop (*krop*), *n.* the produce of the ground; a bird's craw: *v. t.* [*p. t.* and *p. p.* cropped, cropt, *p. pr.* cropping], to cut off the tops or ends of anything; reap.
cro-quet (*krō-kā'*), *n.* a lawn game.
cro-quette (*-ket'*), *n.* ball of mincemeat, fish, or fowl.
cross (*krôs*), *n.* a gibbet of wood formed of an upright and a piece placed across it: now the emblem of the Christian faith; anything resembling a cross *adj.* not parallel; fretful; perverse; untractable. [CAPTIOUS.]
cross-bill (*'bil*), *n.* a bill brought by a defendant against a plaintiff, praying for relief.
cross-bow (*'bō*), *n.* a shooting weapon.
cross-breed (*'brēd*), *n.* an animal produced by a male and female of different varieties.
cross-ex-am-i-na-tion (*-eg-zam-i-nā'shun*), *n.* the questioning of a witness by his own, or the opposing, counsel.
cross-grained (*'grānd*), *adj.* with an irregular grain or fiber.
cross-stitch (*'stich*), *n.* a stitch formed of two stitches of the same length, intersecting in the middle.
cross-tie (*'ti*), *n.* a railroad sleeper.
cross-trees (*'trēz*), *n. pl.* short pieces of timber at the upper ends of the lower and top masts.
cross-wise (*'wiz*), *adv.* across; cross-shaped.
crotch (*kroch*), *n.* a hook or fork.
crotch-et (*'et*), *n.* a musical note; a whim or fancy.
★**crouch** (*krouch, not krōōch*), *v. i.* to stoop low; cringe.
croup (*krōōp*), *n.* the rump or buttocks of certain animals; inflammation of the trachea and larynx.
crow (*krō*), *v. i.* [*p. t.* and *p. p.* crowed, crew, *p. pr.* crowing], to make a shrill sound like a cock: *n.* a general name for birds of the genus Corvus.
crow-bar (*'bär*), *n.* an iron lever.
crowd (*kroud*), *n.* a number of persons or things collected closely together: *v. i.* to press in numbers.
crown (*kroun*), *n.* a royal headdress worn as the insignia of sovereignty: *v. t.* to invest with a crown.
Crown Point, N. Y. Alleged to be so named because scalping ("crown") parties were sent out from this place by the French and Indians.
crow's-foot (*krōz'-foot*), *n.* the ranunculus: *pl.* wrinkles under the eyes.
crow's-nest (*krōz'-nest*), *n.* a lookout, on the mainmast of a vessel.
cru-cial (*krōō'shal*), *adj.* cruciform; intersecting; severe; searching.
cru-ci-ble (*'si-bl*), *n.* a melting-pot.
cru-ci-fix (*'si-fiks*), *n.* [*pl.* crucifixes (*-ez*)], a cross with the sculptured figure of Christ.
cru-ci-fix-ion (*-si-fik'shun*), *n.* the act of crucifying.
cru-ci-fy (*'si-fi*), *v. t.* [*p. t.* and *p. p.* crucified, *p. pr.* crucifying], to put to death by nailing the hands and feet to a cross.
crude (*krōōd*), *adj.* in a natural state.
crud-i-ty (*'i-ti*), *n.* [*pl.* crudities (*-tiz*)], the state or condition of being crude.
cru-el (*krōō'el*), *adj.* disposed to give pain to others; merciless.
Syn. CRUEL, inhuman, barbarous, brutal, savage. A person is *cruel* who neglects the creature he should protect and take care of; he is *inhuman* if he withhold from him the common marks of tenderness or kindness; he is *barbarous* if he find amusement in inflicting pain; he is *brutal* or *savage* according to the circumstances of aggravation which accompany the act of torturing.
cru-el-ty (*'el-ti*), *n.* [*pl.* cruelties (*-tiz*)], inhumanity.
cru-et (*'et*), *n.* a small glass vial.
cruise (*krōōz*), *v. i.* to sail to and fro.
cruis-er (*'ėr*), *n.* a person, or ship, that cruises.
crumb (*krum*), *n.* a fragment of bread.
crum-ble (*'bl*), *v. t.* to break into crumbs.
crum-ple (*'pl*), *v. t.* to press into wrinkles; rumple.
crunch (*krunch*), *v. t.* to crush with the teeth: *v. i.* to chew audibly.
crup-per (*krup'ėr*), *n.* the buttocks of a horse; the looped leather band passing round a horse's tail.
cru-ral (*krōō'ral*), *adj.* pertaining to the leg or thigh.
cru-sade (*krōō-sād'*), *n.* a mediæval military expedition under the banner of the cross by any one of the Christian powers to recover the Holy Land.
cruse (*krōōs*), *n.* an earthen pot or dish.
crush (*krush*), *v. t.* to press between two opposite bodies; break by pressure.
crust (*krust*), *n.* a hard external coating or rind.
crus-ta-ceous (*krus-tā'shus*), *adj.* shelly.
crus-ty (*krus'ti*), *adj.* like a crust; snappish.
crutch (*kruch*), *n.* a support for cripples.
cry (*krī*), *v. i.* [*p. t.* and *p. p.* cried, *p. pr.* crying], to call aloud; proclaim: *n.* loud or passionate utterance; a party catchword or phrase.
Syn. CRY, weep. *Crying* arises from an impatience in suffering corporeal pains; *weeping* is occasioned by mental grief. [See *call.*]
cry-ing (*'ing*), *p. adj.* specially demanding notice.
crypt (*kript*), *n.* a subterranean cell or vault.
cryp-tic (*krip'tik*), *adj.* hidden; secret.
cryp-to-gram (*krip'tō-gram*), *n.* a system of writing in cipher.
cryp-tog-ra-phy (*-tog'ra-fi*), *n.* the art of writing in cipher.
crys-tal (*kris'tal*), *n.* an inorganic body having a definite geometrical form.
crys-tal-line (*'tal-lin* or *-lin*), *adj.* pertaining to, or having the form of, a crystal.
crys-tal-li-za-tion (*-li-zā'shun*), *n.* the act of crystallizing.
crys-tal-lize (*'tal-īz*), *v. t.* to cause to form crystals or a crystalline structure.
cub (*kub*), *n.* the young of certain animals, as the fox.
Cuba (*kū'ba*, Spanish *kōō'ba*). The largest island of the West Indies, discovered by Columbus in 1492, on his first voyage.
cub-by-hole (*kub'i-hōl*), *n.* a snug place.
cube (*kūb*), *n.* a regular solid body with six equal square sides or faces.
cu-beb (*kū'beb*), *n.* the small spicy berry of a species of pepper.
cu-bic (*'bik*), *adj.* having the form or properties of a cube.
cu-bit (*'bit*), *n.* an ancient measure of about 18 inches.
cuck-old (*kuk'ōld*), *n.* the husband of an adulteress.
cuck-oo (*kook'ōō*), *n.* a passerine bird with a dark plumage and curved bill.
cu-cum-ber (*kū'kum-bėr*), *n.* a creeping plant.
cud (*kud*), *n.* food brought from the first stomach of a ruminating animal back into the mouth.
cud-dle (*kud'l*), *v. t.* to embrace closely.
cudg-el (*kuj'el*), *n.* a short thick stick.
cue (*kū*), *n.* the last word of an actor's speech; the tapering rod used in billiards.
cuff (*kuf*), *n.* a blow; the ornamental fold of the sleeve of a garment at the wrist.
★**cui-rass** (*kwē-ras'*), *n.* a breastplate.
★**cui-sine** (*kwē-zēn'*), *n.* the kitchen of a hotel.
★**cu-li-na-ry** (*kū'li-nā-ri*, not *kul'in-ā-ri*), *adj.* pertaining to the kitchen.
cull (*kul*), *v. t.* to pick out.
cul-mi-nate (*'mi-nāt*), *v. i.* to reach the highest point.
cul-mi-na-tion (*-mi-nā'shun*), *n.* the attainment of the highest point.
cul-pa-bil-i-ty (*-pā-bil'i-ti*), *n.* liability to blame.
cul-pa-ble (*'pā-bl*), *adj.* deserving censure; criminal.
cul-prit (*'prit*), *n.* one arraigned before a judge. [CRIMINAL.]
cult (*kult*), *n.* a particular ritual or system of worship.
cul-ti-vate (*kul'ti-vāt*), *v. t.* to till; improve by care, labor, or study.
cul-ti-va-tion (*-vā'shun*), *n.* the act of cultivating.
Syn. CULTIVATION, culture, civilization, refinement. *Cultivation* is with more propriety applied to the thing that grows; *culture* to that in which it grows. The *cultivation* of flowers will not repay the labor unless the soil be prepared by proper *culture. Civilization* is the first stage of *cultivation; refinement* is the last; we *civilize* savages by divesting them of their rudeness; we *refine* them by the introduction of the liberal arts.
cul-tur-al (*'tūr-al*), *adj.* pertaining to culture.
cul-ture (*'tūr*), *n.* tillage; the training or refining of the moral or intellectual faculties. [CULTIVATION.]
cul-vert (*'vėrt*), *n.* a drain or waterway of masonry or brickwork.
cum-ber (*kum'bėr*), *v. t.* to hinder; embarrass.
Cumberland mountains and **river.** In Tennessee. Name applied by Dr. Thomas Walker, an English explorer (1748), in honor of the duke of Cumberland, at that time prime minister of England.
cum-brous (*'bru s*). *adj.* troublesome; vexatious.
cu-mu-la-tive (*kū'mū-lā-tiv*), *adj.* augmenting or giving force.
cu-ne-i-form (*kū-nē'i-fôrm*), *adj.* having the form of a wedge.
cun-ning (*kun'ing*), *adj.* crafty; sly; designing; subtle.
cup (*kup*), *n.* a small drinking vessel.
★**cup-board** (*kub'bėrd*), *n.* a closet fitted with shelves.
cu-pid-i-ty (*kū-pid'i-ti*), *n.* covetousness.
★**cu-po-la** (*'pō-lā*, not *kū'pā-lō*), *n.* [*pl.* cupolas (*-lāz*)], a spherical cup-shaped roof.
cu-pre-ous (*'prē-us*), *adj.* coppery.
cur (*kėr*), *n.* a mongrel dog.
cur-a-ble (*kūr'ā-bl*), *adj.* remediable.
cu-rate (*kū'rāt*), *n.* a clergyman who assists a vicar.
cur-a-tive (*kūr'ā-tiv*), *adj.* pertaining to the cure of diseases.
★**cu-ra-tor** (*-rā'tėr*), *n.* the superintendent of a museum.
curb (*kėrb*), *v. t.* restrain; keep in subjection: *n.* that which checks, restrains.
curd (*kėrd*), *n.* the coagulated part of milk.
cur-dle (*kėr'dl*), *v. t.* to thicken into curd.
cure (*kūr*), *n.* restoration to health; the act, or art, of healing: *v. t.* to heal; preserve by salting.
Syn. CURE, heal, remedy. To *cure* is employed for what is out of order; to *heal* for that which is broken; diseases are *cured,* wounds are *healed.* To *remedy,* in the sense of applying remedies, has a moral application; an omission, a deficiency, or a mischief, requires to be *remedied.*
Ant. DIE, grow worse, relapse.
cur-few (*kėr'fū*), *n.* a bell rung at 8 p. m. as an intimation that fires were to be extinguished.
cu-ri-ous (*kū'ri-us*), *adj.* desirous to see or know something new or strange; inquisitive.
Syn. CURIOUS, inquisitive, prying. *Curiosity* is directed to all objects that can gratify the inclination, taste, or understanding; *inquisitiveness* to such things only as satisfy the understanding; a *prying* temper endeavors to get acquainted with the secrets of others. [See *rare.*]
Ant. HEEDLESS, uninterested.
curl (*kėrl*), *n.* a ringlet of hair: *v. t.* to twist into ringlets; curve.
curl-ing (*kėrl'ing*), *n.* a popular Scottish game played on the ice.
cur-mudg-eon (*kur-muj'un*), *n.* a grasping, churlish fellow.
cur-rant (*'ant*), *n.* a small variety of dried grape.
cur-ren-cy (*'en-si*), *n.* the circulating monetary medium of a nation used by authority.
cur-rent (*'ent*), *adj.* widely circulated: *n.* a flow or passing; said of fluids. [STREAM.]
cur-ric-u-lum (*-sik'ū-lum*), *n.* [*pl.* curriculums (*-lumz*)], a prescribed course of study.
Currituck sound, N. C. Named from a tribe of Indians, who lived on its shores.
cur-ry (*kur'i*), *v. t.* [*p. t.* and *p. p.* curried, *p. pr.* currying], to dress after tanning.
curse (*kûrs*), *n.* an imprecation of evil; a profane oath. [ABOMINATION.]
cur-so-ry (*kûr'sō-ri*), *adj.* hasty; superficial.
Syn. CURSORY, hasty, slight, desultory. An author will take a *cursory* view of those points which are not necessarily connected with his subject; one who takes a *hasty* view of a subject will mislead by his errors; he who takes a *slight* view will disappoint by the shallowness of his information. Between *cursory* and *desultory* there is the same difference as between running and leaping; we run in a line, but we leap from one part to another; so remarks that are *cursory* have more or less connection, but remarks that are *desultory* are without coherence.
Ant. CAREFUL, detailed, thorough, orderly, methodical.
curt (*kûrt*), *adj.* abrupt.
cur-tail (*kûr-tāl'*), *v. t.* to cut short.
cur-tain (*'tin*), *n.* a textile hanging screen which can be drawn up or set aside.
curt-sy (*kûrt'si*), *n.* [*pl.* curtsies (*'siz*)], a salutation made by bending the knees.
cur-va-ture (*kûr'vā-tûr*), *n.* a bending.
curve (*kûrv*), *n.* a bending without angles.

cur-vet (*kûr'* or *kûr-vet'*), *n.* a particular leap of a horse.
cur-vi-lin-e-al (*-vi-lin'ē-al*), or **curvilinear** (*-ar*), *adj.* consisting of, or bounded by, curved lines.
cush-ion (*koosh'un*), *n.* a pillow or soft pad.
cusp (*kusp*), *n.* the horn of a crescent; a sharp, rigid point.
cus-pi-dor (*kus'pi-dōr*), *n.* a spittoon.
cus-tard (*t'tĕrd*), *n.* a composition of eggs, milk, etc.
cus-to-di-an (*-tō'di-an*), *n.* one who has the care of anything.
cus-to-dy (*'tō-di*), *n.* guardianship; imprisonment; security. [KEEPING.]
cus-tom (*'tum*), *n.* frequent or habitual repetition of the same act; duties on imported or exported goods.
Syn. CUSTOM, habit. *Custom* is a frequent repetition of the same act; *habit* the effect of such repetition. *Custom* supposes an act of the will; *habit* implies an involuntary movement; a custom is followed; a *habit* is acquired.
Syn. CUSTOM, fashion, manner, practice. *Custom* is authoritative; it stands in the place of law, and regulates the conduct of men in the most important concerns of life; *fashion* is arbitrary and capricious; it decides in matters of trifling import; *manners* are rational; they are the expressions of moral feelings; *practice* signifies actual doing or the thing done. [See *usage*.]
cut (*kut*), *v. t.* [*p. t.* and *p. p.* cut, *p. pr.* cutting], to cleave or separate with a sharp instrument: *v. i.* to make an incision: *n.* an incision or wound made by a sharp instrument.
cu-ta-ne-ous (*kū-tā'ne-us*), *adj.* pertaining to the skin.
cut-a-way (*kut'a-wā*), *adj.* cut back from the waist.
cute (*kūt*), *adj.* sharp; clever.
cut-glass (*kut'glăs*), *n.* flint glass cut into facets or figures.
cu-ti-cle (*kū'ti-kl*), *n.* the scarf skin.
cut-ler-y (*kut'lĕr-i*), *n.* edged or cutting instruments.
cut-let (*'let*), *n.* a slice of meat.
cut-off (*'ôf*), *n.* a short or straight road; a new shorter channel.
cut-out (*'out*), *n.* a switch-like contrivance to cut off an electric light.
cut-ter (*'ĕr*), *n.* one who cuts or hews; one who cuts out and shapes garments.
cut-throat (*'thrōt*), *n.* a murderer.
cut-ting (*'ing*), *p. adj.* dividing by an edged instrument: *n.* a piece cut off or from.
cut-tle (*kut'l*), *n.* the cuttlefish.
cut-water (*'waw-tĕr*), *n.* the fore part of a ship's prow.
Cuzco (*kōōz'kō*). A department of Peru.
cy-a-nide (*si'a-nīd*), *n.* a compound of cyanic acid with a metal.
cy-an-o-gen (*-an'ō-jen*), *n.* a colorless poisonous gas.
★**cy-cle** (*si'kl*, not *sik'l*), *n.* a revolution of a certain period of time; an imaginary circle in the heavens: *v. i.* [*p. t.* and *p. p.* cycled, *p. pr.* cycling], to occur, or recur, in cycles.
cyc-lic (*sik'lik* or *si'klik*), *adj.* pertaining to, or moving in, a cycle.
cy-clone (*'klōn*), *n.* an atmospheric movement in which the wind blows spirally toward a center.
cy-clo-pæ-di-a or **cyclopedia** (*si-klō-pē'di-ā*), *n.* a shorter form of *encyclopædia*.
cy-clo-ra-ma (*si-klō-ra'mā*), *n.* a series of pictures extended circularly so as to appear in natural perspective to the spectator standing in the center.
cy-clo-style (*'klō-stīl*), *n.* an apparatus for producing manifold copies.
cyg-net (*sig'net*), *n.* a young swan.
cyl-in-der (*sil'in-dĕr*), *n.* a right prism, having circles for bases; a body, solid or hollow, of such form.
cy-lin-dric (*si-lin'drik*), *adj.* having the form of a cylinder.
cym-bal (*sim'bal*), *n.* one of a pair of circular disk-shaped brass plates, which when struck produce a clashing sound.
cyn-ic (*sin'ik*), *n.* a morose, surly, or sarcastic person.
cyn-ic-al (*'i-kal*), *adj.* like a cynic.
cyn-i-cism (*'i-sizm*), *n.* the temper and practice of a cynic.
cy-no-sure (*si'nō-* or *sin'ō-shûr*), *n.* an object of general attraction.
Cynthia (*sin'thi-ā*). A name of Diana; so called from *Mount Cynthus*, where she was born.
cy-press (*si'pres*), *n.* a coniferous tree, the emblem of mourning.
Cyprian (*sip'ri-an*). From the Latin *Cyprianus*, "of Cyprus." Dutch, *Cypriaan;* Fr., *Cyprien;* Ger., *Cyprian;* It., *Cipriano;* Port., *Cypriano;* Sp., *Cipriano*.
Cyprus (*si'prus*). Perhaps named from the herb *kupros*, with which it abounded.
Cyril, Cyrill (*sir'il*). From the Latin name *Cyrillus*, a diminutive of *Cyrus*, meaning "little Cyrus." Danish, *Cyrillus;* Dutch, *Cyrillus;* Fr., *Crilley;* It., *Cirillo;* Lat., *Cyrillus*.
Cyrus (*si'rus*). From Greek *kuros*, "the supreme power." Fr., *Cyrus;* Ger., *Cyrus;* Gr., *Kuros;* It., *Ciro;* Lat., *Cyrus;* Sp., *Ciro*.
cyst (*sist*), *n.* a bladder; pouch.
cy-tode (*si'tōd*), *n.* a cell.
czar (*zär*) or **tsar** (*tsär*), *n.* the title of the Russian emperor.
★**czar-e-vitch** (*zär'ē-vich*), or **tsarevitch** (*tsär'*), *n.* the eldest son of the czar.
cza-rev-na (*za-rev'nä*) or **tsarevna** (*tsä-rev'nä*), *n.* a Russian princess (imperial).
cza-ri-na (*za-rē'nä*) or **tsarina** (*tsä-*), *n.* the wife of the czar.

D

dab (*dab*), *v. t.* [*p. t.* and *p. p.* dabbed, *p. pr.* dabbing], to strike or touch lightly: *n.* a gentle blow.
dab-ble (*dab'l*), *v. t.* to dip slightly and often.
dab-ster (*'stĕr*), *n.* an expert.
dace (*dās*), *n.* a small fresh-water fish.
dachs-hund (*dăks'hōōnt*), *n.* the German badger dog.
dac-tyl (*dak'til*), *n.* a poetical foot of three syllables, one long and two short.
dad-dy long-legs (*dad'i long'legz*), a name for various kinds of crane fly.
da-do (*dā'dō*), *n.* the solid block forming the body of a pedestal.
daf-fo-dil (*daf'ō-dil*), *n.* the narcissus.
daft (*daft*), *adj.* simple; silly.
dag-ger (*dag'ĕr*), *n.* a short, edged and pointed weapon.
da-go (*dā'gō*), *n.* [*pl.* dagos (*'gōz*)], a nickname for a person of Spanish, Portuguese, or Italian descent.
★**da-guerre-o-type** (*dă-ger'ō-tīp*, not *dă-ger-ē'ō-tīp*), *n.* a picture produced on a silvered plate.
dah-lia (*dāl'ya*), *n.* [*pl.* dahlias (*'yaz*)], a composite plant, with large bright colored flowers.
Dahlonega (*dă-lō-nē'gä*), **Ga.** Named from the Indian, *taulawneca*, "yellow wampum," from the discovery of gold at this place.
dai-ly (*dā'li*), *n.* [*pl.* dailies (*'liz*)], a daily paper: *adj.* occurring or recurring each successive day.
Syn. DAILY, diurnal. *Daily* is applicable to whatever passes in the daytime; *diurnal* applies to what passes within or belongs to the astronomical day.
dain-ty (*dān'ti*), *n.* [*pl.* dainties (*'tiz*)], something choice or delicious; sensitive.
dai-ry (*dā'ri*), *n.* [*pl.* dairies (*'riz*)], a place where milk is kept and converted into butter and cheese.
★**da-is** (*dā'is*), *n.* a raised platform.
dai-sied (*dā'zid*), *adj.* full of, or adorned with, daisies.
dai-sy (*dā'zi*), *n.* [*pl.* daisies (*'ziz*)], a low composite herb.
Daisy. A female name, derived from the flower, whose name in Anglo-Saxon signifies "day's eye."
Dakota (*dă-kō'tă*). Two states—North and South Dakota—counties in Nebraska and Minnesota, and several small places, named for the Indian tribe.
Dakota river, Dak. Named originally from the territory.
dale (*dāl*), *n.* a vale; glen.
Dalilah. Another spelling of *Delilah*.
dal-li-ance (*dal'i-ans*), *n.* the act of dallying.
dal-ly (*dal'i*), *v. i.* [*p. t.* and *p. p.* dallied, *p. pr* dallying], to trifle away time; loiter.
dam (*dam*), *n.* a barrier across a watercourse; a female parent: *v. t.* to confine by a dam; restrain.
★**dam-age** (*dam'āj*, not *dam'ij*), *n.* injury or harm: *pl.* money recovered for loss suffered: *v. t.* to injure. [ABUSE.]
dam-ask (*'ask*), *n.* a rich silk fabric woven with elaborate patterns; a fine twilled table linen.
dame (*dām*), *n.* a title formerly used instead of mistress.
damn (*dam*), *v. t.* to sentence to punishment judicially.
dam-na-tion (*-nā'shun*), *n.* the state of being damned.
dam-num (*'num*), *n.* loss or damage.
damp (*damp*), *n.* moisture; fog: *adj.* moist. [MOISTURE.]
dam-sel (*dam'zel*), *n.* a maiden.
dance (*dăns*), *v. i.* to move with measured steps or to a musical accompaniment.
dan-de-li-on (*dan'dē-li-un*), *n.* a biennial composite plant with large yellow flowers.
dan-der (*'dĕr*), *n.* dandruff; anger.
dan-dle (*'dl*), *v. t.* fondle.
dan-druff (*'druf*), *n.* scurf on the scalp.
dan-dy (*'di*), *n.* [*pl.* dandies (*'diz*)], a fop; coxcomb.
dan-ger (*dān'jĕr*), *n.* hazard; peril.
Syn. DANGER, peril, hazard. *Danger* signifies the chance of a loss; *peril* signifies either to go over or to perish. In all walks of life we are in *danger;* the explorer undergoes *perils*. *Hazard* respects the possibility of either good or evil. When we run the *hazard* of a battle, we may either win or lose.
dan-gle (*dang'gl*) *v. i.* to hang or swing loosely.
Daniel (*dan'yel*). From the Hebrew, *Daniyyel*, which has been translated "God's judge," one who delivers judgment in the name of the Lord. Danish, *Daniel;* Dutch, *Daniel;* Fr., *Daniel;* Ger., *Daniel;* It., *Daniele;* Lat., *Daniel;* Sp., *Daniel*.
Dantzic (*dant'sik*, German *dän'tsig*). A Prussian seaport. Name supposed to be a corruption of *Dansk-vik*, "Dane's town."
Danube (*dan'ūb*). The English name of the great river which the Germans call the *Donau* is derived from the Roman name *Danubius* or *Danuvius*.
dap-per (*dap'ĕr*), *adj.* small and active.
dap-ple (*dap'l*), *adj.* spotted; variegated.
Dardanelles (*där-dă-nelz'*). Modern name of the Hellespont is derived from two Turkish forts guarding the passage, called by the Italians, *Dardanelli*.
dare (*dār*), *v. i.* [*p. t.* dared, durst, *p. p.* dared, *p. pr.* daring], to have courage; attempt.
dar-ing (*dār'ing*), *n.* intrepidity: *adj.* fearless; bold.
dark (*därk*), *adj.* destitute of light; of a brunette complexion: *n.* darkness.
Syn. DARK, obscure, dim, mysterious. *Dark* is opposed to light; *obscure* to bright; what is *dark* is altogether hidden; what is *obscure* is not to be seen distinctly, or without an effort. *Dim* expresses a degree of darkness; any intricate affair, which involves the characters and conduct of men, may be *mysterious*. [See *obscure, mysterious*.]
dark-en (*'en*), *v. t.* to make dark.
dark-y (*'i*), *n.* [*pl.* darkies (*'iz*)], a negro.
dar-ling (*där'ling*), *n.* a favorite.
darn (*därn*), *v. t.* to mend by filling in the hole with yarn or thread.
dar-nel (*där'nel*), *n.* the popular name of a grass, *Lolium tremulentum*.
dart (*därt*), *n.* a sp lance or spear: *v. i.* to move swiftly; start suddenly and run quickly.
Dar-win-i-an (*där-win'i-an*), *adj.* pertaining to Charles Darwin, the naturalist: *n.* an evolutionist.
dash (*dash*), *v. t.* to throw violently or hastily: *v. i.* to rush with violence.
das-tard (*das'tĕrd*), *n.* a coward.
date (*dāt*), *n.* the fruit of the date palm; the time of an epoch or transaction: *v. t.* to mark with a date. [TIME.]
da-tive (*dā'tiv*), *adj.* denoting the case of a noun, pronoun or adjective which expresses the remoter object.
da-tum (*'tum*), *n.* [*pl.* data (*'tă*)], something assumed, known, or conceded.
★**daub** (*dawb*, not *dob*), *v. t.* to cover or smear with adhesive matter.
daugh-ter (*daw'tĕr*), *n.* the female offspring.
daunt (*dānt*), *v. t.* to intimidate; dishearten. [DISMAY.]
Dauphin (*daw'fin*. French, *dō-faN'*). A title formerly borne by the eldest son of the kings of France.
David (*dā'vid*). From the Hebrew *Daviydh*, signifying "beloved." Danish *David;* Dutch, *David;* Fr., *David;* Ger., *David;* It., *Davide;* or *Davidde;* Lat., *David*.
dav-it (*dav'it*), *n.* one of a pair of f-shaped uprights projecting over the side of a vessel for suspending or lowering a boat.
da-vy (*dā'vi*), *n.* [*pl.* davies (*'viz*)], a miner's safety lamp.
daw (*daw*), *n.* a jackdaw.
daw-dle (*daw'dl*), *v. i.* to waste time.
dawn (*dawn*), *v. i.* to begin to grow light.
day (*dā*), *n.* the period of light between sunrise and sunset.
day-book (*'book*), *n.* a book in which the transactions of the day are entered.
day-break (*'brāk*), *n.* the dawn.
day-spring (*'spring*), *n.* the dawn.
daze (*dāz*), *v. t.* to dazzle: *n.* the state of being dazed.
daz-zle (*daz'l*), *v. t.* to overpower by a glare of light.
dea-con (*dē'kn*), *n.* the lowest order of the clergy in the Anglican church.
dead (*ded*), *adj.* destitute of life; inanimate.
dead cen-ter (*sen'tĕr*), that position of a crank in which the crank-axle, crank-pin, and the connecting rod are all in a straight line.
dead-en (*ded'n*), *v. t.* to diminish the acuteness, intensity, or vigor of.
dead-head (*'hed*), *n.* a person who has a free pass on railways or to places of amusement, etc.
dead let-ter (*let'ĕr*), *n.* an unclaimed letter.
dead-lock (*'lok*), *n.* a situation in which progress is impossible.
dead-ly (*'li*), *adj.* causing death.
Syn. DEADLY, mortal, fatal. *Deadly* is applied to what is productive of death; *mortal* to what terminates in or is liable to death; *fatal* applies not only to death, but to everything which may be of great mischief.
Ant. HEALTHFUL, invigorating, wholesome.
dead set (*set*), the fixed position of a dog in pointing game.
dead weight (*wāt*), the weight of the vehicle in addition to the load to be carried.
★**deaf** (*def*), *adj.* deprived of hearing.
★**deaf-en** (*def'n*), *v. t.* to make deaf.
deal (*dēl*), *n.* an indefinite quantity, degree, or extent; a division of cards to the players.
dean (*dēn*), *n.* the presiding ecclesiastical dignitary in cathedral and collegiate churches.
dear (*dēr*), *adj.* expensive; costly: *n.* a darling.
death (*deth*), *n.* extinction of life.
death-point (*deth'point*), *n.* the degree of heat or cold which destroys an animal organism.
death rate (*'rāt*), the percentage of deaths, usually reckoned per thousand.
death's-head (*deths'hed*), *n.* a skull,
Death valley. A desert region in Inyo county, eastern California, near the Nevada frontier, lying about 160 feet below the sea level.
death-watch (*deth'woch*), *n.* a vigil beside a dying person.
de-bar (*dē-bär'*), *v. t.* [*p. t.* and *p. p.* debarred, *p. pr.* debarring], to shut out; exclude.
de-bark (*dē-bärk'*), *v. i.* to disembark.
de-bar-ka-tion (*-bär-kā'shun*), *n.* the act of disembarking.
de-base (*dē-bās'*), *v. t.* to reduce from a higher to a lower state. [ABASE.]
de-ba-ta-ble (*dē-bā'tă-bl*), *adj.* admitting of question or debate.

de-bate (*dē-bāt'*), *v. t.* to contend for in words or arguments: *n.* controversy; discussion.
Syn. DEBATE, deliberate. These terms equally mark the acts of pausing or withholding the decision, whether applicable to one or many. To *debate* supposes always a contrariety of opinion; to *deliberate* supposes simply the weighing or estimating the value of the opinion that is offered.
de-bauch (*dē-bawch'*), *v. t.* to corrupt in morals or principles; seduce.
de-bauch-er-y (*de-bawch'ĕr-i*), *n.* [*pl.* debaucheries (*-iz*)], excessive intemperance.
de-bil-i-tate (*dē-bil'i-tāt*), *v. t.* to enfeeble; enervate.
de-bil-i-ty (*-bil'i-ti*), *n.* [*pl.* debilities (*-tiz*)], abnormal functional weakness.
Syn. DEBILITY, infirmity, imbecility. *Debility* is constitutional, or otherwise; *imbecility* is always constitutional; *infirmity* is accidental, and results from sickness or a decay of the frame. *Debility* may be either general or local; *infirmity* is always local; *imbecility* always general.
Ant. ROBUSTNESS, strength, vigor.
deb-it (*deb'it*), *n.* that which is owing, entered on the debtor side of a ledger.
deb-o-nair (*deb-ō-nâr'*), *adj.* of gentle manners or breeding.
Deborah (*deb'ō-rā*). From the Hebrew, *D'bhorah*, which Jerome translates "a bee," or "eloquence." Dutch, *Debora;* Fr., *Débora;* It., *Debora;* Lat., *Debora.*
de-bouch (*dē-bōōsh'*), *v. i.* to march out of a confined space into open ground.
★**dé-bris** (*dā-brē'*), *n.* fragments; broken rubbish.
debt (*det*), *n.* that which is due from one person to another.
Syn. DEBT, due. *Debt* is commonly applied to that which is owing from the person spoken of; *due* is always applied to that which is owing to the person; to pay one's *debts*, and receive one's *due.*
Ant. CREDIT.
debt-or (*'ĕr*), *n.* one who owes something to another.
★**dé-but** (*dā-bū'*, French *dā-bü'*), *n.* a first appearance in society.
★**dec-ade** (*dek'ād*, not *dē-kād'*), *n.* a group of ten; ten consecutive years.
de-ca-dence (*dē-kā'dens*), *n.* a state of decay.
dec-a-gon (*dek'a-gon*), *n.* plane figure having ten sides.
dec-a-logue (*'a-log*), *n.* the ten commandments.
de-camp (*dē-kamp'*), *v. i.* to depart speedily.
de-cant (*dē-kant'*), *v. t.* to pour off gently.
de-can-ter (*-kan'tĕr*), *n.* an ornamental glass bottle for holding wines.
de-cap-i-tate (*dē-kap'i-tāt*), *v. t.* to behead.
de-cay (*dē-kā'*), *v. i.* [*p. t.* and *p. p.* decayed, *p. pr.* decaying], to become impaired; rot.
Syn. DECAY, decline, consumption. What is *decayed* is fallen or gone; what *declines* leads toward a fall, or is going; *consumption* implies a rapid decay.
de-cease (*dē-sēs'*), *v. i.* to die: *n.* death.
de-ceit (*dē-sēt'*), *n.* deception; falsehood, deceitful.
Syn. DECEIT, deception. A person is said to be guilty of *deceit* who has sought to deceive another for his own purposes; but *deceptions* may be practiced in a diversity of ways. *Deceitful* and *deceptive* are employed with this distinction, a person is said to be *deceitful*, and a thing *deceptive.* [See *fallacious.*]
Syn. DECEIT, fraud, guile. *Deceit* is practiced only, in private transactions; *fraud* is practiced toward bodies as well as individuals, in public as well as private. A child practices *deceit* toward its parents; *frauds* are practiced upon government; *guile* marks a strong degree of moral turpitude in the individual.
de-ceiv-a-ble (*-sēv'a-bl*), *adj.* capable of being deceived.
de-ceive (*-sēv'*), *v. t.* to mislead or cause to err; delude.
de-ceiv-er (*'ĕr*), *n.* an impostor, cheat.
Syn. DECEIVER, impostor. A *deceiver* is any one who practices any sort of deception; but an *impostor* is a *deceiver* who studiously *deceives* by putting on a false appearance.
December, the twelfth month. From the Latin *decem*, "ten," tenth month of the Romans.
de-cem-vir (*dē-sem'vĕr*), *n.* [*pl.* decemviri (*'vi-ri*)], one of ten Roman magistrates.
de-cen-cy (*dē-sen-si*), *n.* [*pl.* decencies (*-siz*)], the state of being decent.
Syn. DECENCY, decorum. *Decency* respects a man's conduct; *decorum*, his behavior.
de-cen-ni-al (*-ni'al*), *adj.* lasting for, or occurring, every ten years.
de-cent (*'sent*), *adj.* decorous; becoming.
de-cep-tion (*-sep'shun*), *n.* the act of deceiving. [DECEIT.]
de-cep-tive (*'tiv*), *adj.* tending to deceive.
de-cide (*dē-sīd'*), *v. t.* to bring to an issue or conclusion.
de-cid-ed (*'ed*), *adj.* free from ambiguity; determined.
Syn. DECIDED, determined, resolute. A man who is *decided* remains in no doubt; he who is *determined* is uninfluenced by the doubts or questions of others; he who is *resolute* is uninfluenced by the consequences. [See *obstinate.*]
de-cid-u-ous (*-sid'ū-us*), *adj.* falling off at maturity, or in season.
dec-i-mal (*des'i-mal*), *adj.* pertaining to, or based upon the number 10.
dec-i-mal place (*des'i-mal plās*), the place of a figure after the decimal point.
dec-i-mal point (*point*), *n.* a dot separating a decimal fraction from a whole number.
dec-i-mal sys-tem (*sis'tem*), *n.* a system of reckoning or measuring by 10 or powers of 10.
dec-i-mate (*des'i-māt*), *v. t.* to select by lot and put to death, or punish, every tenth man; destroy a large proportion of.
de-ci-pher (*dē-sī'fĕr*), *v. t.* to read (secret writing); discover or make out the meaning of; solve; unravel.
de-ci-sion (*-sizh'un*), *n.* the act of deciding.
Syn. DECISION, judgment, sentence. A *decision* has no respect to the agent; it may be said of one or many; it may be the *decision* of the court, of the nation, of the public, of a particular body of men, or of a private individual; but a *judgment* is given in a public court, or among private individuals; a *sentence* is passed in a court of law, or at the bar of the public.
Ant. DISAGREEMENT.
de-ci-sive (*-si'siv*), *adj.* final. [CONCLUSIVE.]
dec-i-stere (*des'i-stēr* or *-stār*), *n.* a cubic measure, one-tenth of a stere, equal to 3.532 cubic feet. [*French.*]
deck (*dek*), *v. t.* to array in finery or ornaments: *n.* the plank flooring of a ship.
de-claim (*dē-klām'*), *v. t.* to speak in a rhetorical style.
Syn. DECLAIM, inveigh. *Declaim* signifies literally to cry aloud in a set form of words. Public men and public measures are subjects for the *declaimer;* private individuals afford subjects for *inveighing* against. [See *abuse, speak.*]
dec-la-ma-tion (*dek-lā-mā'shun*), *n.* the art of declaiming.
de-clam-a-to-ry (*dē-klam'ā-tō-ri*), *adj.* pertaining to declamation.
dec-la-ra-tion (*dek-lā-rā'shun*), *n.* the act of declaring or proclaiming.
de-clar-a-tive (*dē-klar'ā-tiv*), *adj.* explanatory.
de-clar-a-to-ry (*'ā-tō-ri*), *adj.* affirmative.
de-clare (*dē-klâr'*), *v. t.* to make known; tell openly or publicly.
Syn. DECLARE, publish, proclaim. In *declaring*, the leading idea is that of speaking out that which passes in the mind; in *publishing*, the leading idea is that of making public or common; in *proclaiming*, the leading idea is that of crying aloud. Facts and opinions are *declared;* events and circumstances are *published;* the measures of government are *proclaimed.* [See *allege, speak, discover, announce.*]
Ant. CONCEAL, suppress, withhold.
de-clen-sion (*-klen'shun*), *n.* decline.
dec-li-na-tion (*dek-li-nā'shun*), *n.* the act or state of bending, or moving, downward.
de-cline (*dē-klīn'*), *v. i.* to incline from a right line: *v. t.* to refuse. [REFUSE, ABATE, DECAY.]
de-cliv-i-ty (*-kliv'i-ti*), *n.* [*pl.* declivities (*-tiz*)], a gradual descent.
de-coct (*dē-kokt'*), *v. t.* the act of boiling anything to extract its essence.
de-coc-tion (*-kok'shun*), *n.* an extract obtained by digesting in hot water.
de-com-pose (*dē-kom-pōz'*), *v. t.* to resolve into constituent elements.
de-com-po-si-tion (*-pō-zish'un*), *n.* the act of resolving into constituent elements.
dec-o-rate (*dek'ō-rāt*), *v. t.* to ornament.
dec-o-ra-tion (*-rā'shun*), *n.* the art of decorating.
Decoration day (*dā*). The day (May 30) on which the graves of those who fell in the Civil war (1861-65) are decorated.
dec-o-ra-tive (*dek'ō-rā-tiv*), *adj.* tending to decorate.
★**de-co-rous** (*dē-kō'rus* or *dek'ō-rus*), *adj.* marked by propriety.
de-co-rum (*dē-kō'rum*), *n.* propriety and decency. [DECENCY.]
de-coy (*dē-koi'*), *v. t.* [*p. t.* and *p. p.* decoyed, *p. pr.* decoying], to lead or allure into danger by artifice.
de-crease (*dē-krēs'*), *v. i.* to become less; diminish; abate. [ABATE.]
de-cree (*dē-krē'*), *n.* an ordinance, law, or edict.
Syn. DECREE, edict, proclamation. A *decree* is a more solemn and deliberative act than an *edict;* on the other hand, an *edict* is more authoritative than a *decree.* A *decree* is the decision of one or many; an *edict* speaks the will of an individual; councils and senates, as well as princes, makes *decrees;* despotic rulers issue *edicts.* An *edict* is peculiar to a despotic government; a *proclamation* is common to a monarchical and aristocratic form of government.
de-crep-it (*dē-krep'it*), *adj.* enfeebled by age, or infirmity.
de-crep-i-tate (*'i-tāt*), *v. t.* to calcine (as salt) in a strong heat.
de-crep-i-tude (*'i-tūd*), *n.* physical infirmity.
de-cre-tal (*-krē'tal*), *n.* a papal decree.
de-cry (*dē-krī'*), *v. t.* [*p. t.* and *p. p.* decried, *p. pr.* decrying], to blame clamorously.
de-cum-bent (*-kum'bent*), *adj.* lying down.
dec-u-ple (*dek'ū-pl*), *adj.* tenfold: *n.* a number repeated ten times.
de-cus-sate (*dē-kus'āt*), *v. i.* to intersect or cross at an acute angle.
ded-i-cate (*ded'i-kāt*), *v. t.* to set apart by a solemn act or religious ceremony.
Syn. DEDICATE, devote, consecrate, hallow. There is something more solemn in the act of *dedicating* than in that of *devoting;* but less so than in that of *consecrating.* To *dedicate* and *devote* may be employed in both temporal and spiritual matters; to *consecrate* and *hallow* only in the spiritual sense; we may *dedicate* or *devote* anything that is at our disposal to the service of some object; but the former is employed mostly in regard to superiors, and the latter to persons without distinction of rank. We *dedicate* a house to the service of God; or we *devote* our time to the benefit of our friends, or the relief of the poor; we may *dedicate* or *devote* ourselves to an object.
Ant. DEFILE, desecrate, withhold.
ded-i-ca-tion (*ded-i-kā'shun*), *n.* the act of dedicating.
ded-i-ca-to-ry (*ded'i-kā-tō-ri*), *adj.* pertaining to a dedication.
de-duce (*dē-dūs'*), *v. t.* to gather by reasoning; infer. [DERIVE.]
de-duct (*dē-dukt'*), *v. t.* to take away.
de-duc-tion (*-duk'shun*), *n.* the act or process of deducting.
Syn. DEDUCTION, abatement. Both these words imply a taking off from something. A person may make a *deduction* in an account for various reasons, but he makes an *abatement* in a demand when it is excessive. [See *conclusion.*]
deed (*dēd*), *n.* that which is done by a responsible agent.
deem (*dēm*), *v. t.* to think; determine. [THINK.]
deep (*dēp*), *adj.* extending far below the surface; low in situation. [OBSCURE.]
deep-laid (*'lād*), *adj.* well concerted.
deep-sea (*dēp'-sē*), *adj.* pertaining to the open sea.
deer (*dēr*), *n. sing.* and *pl.* a general name for solid-horned ruminants of the genus Cervus.
de-face (*dē-fās'*), *v. t.* to mar, disfigure, efface.
Syn. DEFACE, disfigure, deform. To *deface* is an act of destruction; it is the actual destruction of that which has before existed; to *disfigure* is either an act of destruction or an erroneous execution, which takes away the figure; to *deform* is altogether an imperfect execution, which renders the form what it should not be.
Ant. BEAUTIFY, perfect.
de-fal-ca-tion (*-fal-kā'shun*), *n.* embezzlement.
★**def-al-ca-tor** (*def'al-kā-tĕr*), *n.* an embezzler.
def-a-ma-tion (*def-a-mā'shun*), *n.* the act of injuring one's good name.
de-fam-a-to-ry (*dē-fam'ā-tō-ri*), *adj.* containing that which is injurious to the character.
de-fame (*dē-fām'*), *v. t.* to injure or destroy the good reputation of. [ABUSE.]
de-fault (*-fawlt'*), *n.* failure or omission to do any act.
de-fault-er (*'ĕr*), *n.* one who fails to make a proper account of money.
de-fea-sance (*dē-fē'zans*), *n.* the annulment of a contract or deed.
de-feat (*dē-fēt*), *v. t.* to overcome or vanquish; frustrate; baffle. [BEAT.]
def-e-cate (*def'ē-kāt*), *v. t.* to clarify: *v. i.* discharge from the bowels.
de-fect (*dē-fekt'*), *n.* an imperfection, moral or physical. [BLEMISH.]
de-fec-tion (*-fek'shun*), *n.* a falling away.
de-fec-tive (*'tiv*), *adj.* having a defect or flaw of any kind.
Syn. DEFECTIVE, deficient. *Defective* expresses the quality or property of having a defect; *deficient* is employed with regard to the thing itself that is wanting. A book may be *defective*, in consequence of some leaves being *deficient.* A *deficiency* is, therefore, often what constitutes a *defect.*
Ant. ADEQUATE, competent, perfect.
de-fend (*dē-fend'*), *v. t.* to guard or protect.
Syn. DEFEND, protect, vindicate. A person may be *defended* in any particular case of actual danger or difficulty; he is *protected* from what may happen as well as what does happen. *Defense* respects the evil that threatens; *protection* involves the supply of necessities and the affording comforts; to *vindicate* is a species of *defense* only in the moral sense of the word. Acts of importance are *defended;* those of trifling import are commonly *vindicated.* [See *apologize, guard.*]
Ant. BETRAY, expose, surrender.
de-fense (*dē-fens'*), *n.* the act or state of defending. [APOLOGY.]
de-fen-si-bil-i-ty (*-fen-si-bil'i-ti*), *adj.* the quality of being defensible.
de-fen-si-ble (*'si-bl*), *adj.* capable of being defended.
de-fer (*dē-fĕr'*), *v. t.* [*p. t.* and *p. p.* deferred, *p. pr.* deferring], to put off to a future time.
def-er-ence (*def'ĕr-ens*), *n.* a yielding to the opinions or wishes of another. [COMPLAISANCE.]
def-er-en-tial (*-ĕr-en'shal*), *adj.* characterized by, or expressing, deference.
de-fi-ance (*dē-fī'ans*), *n.* a challenge.
de-fi-ant (*'ant*), *adj.* characterized by defiance.
de-fi-cien-cy (*-fish'en-si*), *n.* [*pl.* deficiencies (*-siz*)], the state of being deficient.
de-fi-cient (*'ent*), *adj.* wanting; incomplete. [DEFECTIVE.]
★**def-i-cit** (*def'i-sit*, not *dē-fis'it*), *n.* a falling off, or deficiency.
de-fi-er (*dē-fī'ĕr*), *n.* one who defies.
de-file (*dē-fīl'*), *v. t.* to make foul or impure. [CONTAMINATE, ABUSE.]
de-fin-a-ble (*-fīn'a-bl*), *adj.* capable of being defined.
de-fine (*dē-fīn'*), *v. t.* to determine the limits of.

def-i-nite (*def'i-nit*), *adj.* having fixed or distinct limits.

Syn. DEFINITE, positive. *Definite* signifies that which is *defined*, or has the limits drawn or marked out; *positive* that which is placed or fixed in a particular manner; *definite* is said of things as they present themselves or are presented to the mind; as, a *definite* idea, a *definite* proposal; *positive* is said of a person's temper of mind; a person is *positive* as to his opinions, or an assurance is *positive* which serves to make one *positive*.

Ant. VACILLATING, vague.

def-i-ni-tion (*-nish'un*), *n.* a brief description or explanation.

Syn. DEFINITION, commentary, description, explanation, exposition, interpretation, rendering, translation. *Definition* is exact, *explanation* general; a *definition* is formal, a *description* pictorial. A *definition* must include all that belongs to the object defined, and exclude all that does not; a *description* may include only some general features; an *explanation* throws light upon some point; an *exposition* undertakes a fuller statement; *interpretation* is a statement giving the doubtful or hidden meaning of that which is difficult.

Ant. OBFUSCATION.

de-fin-i-tive (*dē-fin'i-tiv*), *adj.* determining; conclusive.

def-la-grate (*def'lă-grāt*), *v. t.* to set fire to.

de-flect (*dē-flekt'*), *v. t.* to bend from a straight line.

de-flec-tive (*-flek'tiv*), *adj.* causing deflection.

de-flec-tor (*'tĕr*), *n.* a plate or cone in a furnace or lamp to bring flames or gases into close contact.

de-flow-er (*dē-flou'ĕr*), *v. t.* to deprive of flowers or bloom.

de-for-est (*dē-for'est*), *v. t.* to clear of forest.

de-form (*-fôrm'*) *v. t.* to render ugly. [DEFACE.]

de-form-i-ty (*'i-ti*), *n.* [*pl.* deformities (*-tiz*)], physical malformation.

de-fraud (*-frawd'*), *v. t.* to deprive of some right or interest. [CHEAT.]

de-fray (*dē-frā'*), *v. t.* [*p. t.* and *p. p.* defrayed, *p. pr.* defraying], to discharge (the expense of anything).

deft (*deft*), *adj.* dexterous.

de-funct (*dē-fungkt'*), *adj.* dead.

de-fy (*-fī'*), *v. t.* [*p. t.* and *p. p.* defied, *p. pr.* defying], to challenge.

de-gen-er-a-cy (*dē-jen'ĕr-ă-si*), *n.* the state of being degenerate.

de-gen-er-ate (*'ĕr-āt*), *v. i.* to become inferior in goodness or quality.

deg-lu-ti-tion (*deg-lōō-tish'un*), *n.* swallowing.

deg-ra-da-tion (*deg-ră-dā'shun*), *n.* the act of degrading.

de-grade (*dē-grād'*), *v. t.* to reduce in grade or rank. [ABASE.]

de-gree (*dē-grē'*), *n.* a step or grade; the 360th part of the circumference of a circle; *third degree*, in police practice, the process of severely examining, or harshly treating, a prisoner or an accomplice of a person suspected of a crime, for the purpose of securing information concerning it.

de-i-fi-ca-tion (*dē-i-fi-kā'shun*), *n.* apotheosis.

de-i-fy (*'i-fī*), *v. t.* [*p. t.* and *p. p.* deified, *p. pr.* deifying], to make, or exalt to the rank of, a deity.

★**deign** (*dān*), *v. i.* to condescend.

de-ism (*dē'izm*), *n.* the creed of a deist.

de-ist (*'ist*), *n.* one who believes in the existence of a personal God but not in revealed religion.

de-ist-ic (*'ik*), *adj.* pertaining to deism, or deists.

de-i-ty (*'i-ti*), *n.* [*pl.* deities (*-tiz*)], a god, goddess, or person worshiped.

Syn. DEITY, divinity. *Deity* signifies a divine person; *divinity* signifies the divine essence or power.

De-i-ty, *n.* God; Jehovah.

de-ject (*dē-jekt'*), *v. t.* to depress the spirits of.

de-jec-tion (*-jek'shun*), *n.* depression of spirits.

Syn. DEJECTION, depression, melancholy. *Depression* is but a degree of *dejection;* slight circumstances may occasion a *depression;* distressing events occasion a *dejection;* the death of a near and dear relative may be expected to produce *dejection* in persons of the greatest equanimity; *melancholy* is a disease which nothing but clear views of religion can possibly correct.

Ant. DELIGHT, ecstasy, joy, pleasure.

Delaware (*del'ă-wâr*). Name of state, bay and river in the eastern section of the United States first given to the bay by Capt. Samuel Argall, afterward deputy governor of Virginia, who came to this country in company with Lord de la Ware.

de-lay (*de-lā'*), *v. t.* [*p. t.* and *p. p.* delayed, *p. pr.* delaying], to postpone.

de-lec-ta-ble (*dē-lek'tă-bl*), *adj.* pleasing; delightful.

de-lec-ta-tion (*-tā'shun*), *n.* delight; pleasure.

del-e-gate (*del'ē-gāt*), *v. t.* to send as a representative: *n.* a representative.

Syn. DELEGATE, depute, deputy. To *delegate* is applied to the power or office which is given; *depute* to the person employed. Parents *delegate* their office to the instructor; persons are *deputed* to act for others. A *delegate* is the person commissioned, who is bound to act according to his commission; the *deputy* is that person *deputed*, who acts in the place of another.

Ant. ACT, in person.

del-e-ga-tion (*-gā'shun*), *n.* the act of delegating; a person or body of persons chosen to act for others.

de-lete (*dē-lēt'*), *v. t.* to blot out; erase.

del-e-te-ri-ous (*del-ē-tē'ri-us*), *adj.* harmful.

delf (*delf*), *n.* glazed earthenware.

Delft (*delft*). This name for earthenware is derived from *Delft*, a town in Holland, where extensive potteries existed from A. D. 1300.

Delhi (*del'hē*), or **Dehli** (*dā'lē*). From the Sanskrit, *dahal*, "a quagmire," or from the Hindustani word *dil*, "an eminence."

de-lib-er-ate (*dē-lib'ĕr-āt*), *v. t.* to think upon or consider: *adj.* slow. [CONSULT, DEBATE.]

de-lib-er-a-tion (*-ĕr-ā'shun*), *n.* calm and careful consideration.

del-i-ca-cy (*del'i-kă-si*), *n.* [*pl.* delicacies (*-siz*)], the state or quality of being delicate.

del-i-ca-tes-sen (*-kă-tes'en*), *n. pl.* table delicacies.

de-li-cious (*dē-lish'us*), *adj.* highly pleasing to the senses.

de-light (*dē-līt'*), *v. t.* to gratify or please greatly: *n.* an extreme degree of pleasure. [ADMIRE.]

de-light-ful (*'fool*), *adj.* pleasing, charming.

Delilah (*dē-lī'lă*). From the Hebrew *D'liylah*, signifying "weak," "delicate."

de-lin-e-ate (*-lin'ē-āt*), *v. t.* to mark out with lines.

de-lin-e-a-tion (*-ē-ā'shun*), *n.* the act or art of delineating.

de-lin-quen-cy (*-ling'kwen-si*), *n.* [*pl.* delinquencies (*-siz*)], neglect of, or failure in, duty.

de-lin-quent (*'kwent*), *adj.* falling short of duty. [OFFENDER.]

del-i-quesce (*del-i-kwes'*), *v. i.* to melt and become liquid.

★**de-lir-i-ous** (*dē-lir'i-us*, not *dē-lē'ri-us*), *adj.* light-headed; insane.

de-lir-i-um (*'i-um*), *n.* excitement and aberration of the mind.

de-lir-i-um tre-mens (*trē'mens*), *n.* a disease of the brain caused by the use of intoxicating liquors.

de-liv-er (*dē-liv'ĕr*), *v. t.* to set free; yield possession or control of.

Syn. DELIVER, rescue, save. One may be *delivered* from any evil, whether great or small, and in any manner; to *rescue* is to deliver from a great impending danger or immediate evil; as to *rescue* from the hands of robbers, or from the jaws of a wild beast; to *save* signifies to keep from evil. [See *speak*.]

Ant. ABANDON, desert, forsake.

de-liv-er-ance (*'ĕr-ans*), *n* the act of delivering.

de-liv-er-y (*'ĕr-i*), *n.* [*pl.* deliveries (*-riz*)], the act of delivering.

dell (*del*), *n.* a small secluded valley.

Del-phic (*del'fik*), *adj.* pertaining to Delphi.

del-ta (*del'tă*), *n.* [*pl.* deltas (*'tăz*)], an alluvial deposit, shaped like the Greek letter △, formed at the mouth of a river.

de-lude (*dē-lūd'*), *v. t.* deceive.

★**del-uge** (*del'ūj*), *n.* a great overflowing of the land by water, especially that of the time of Noah.

de-lu-sion (*dē-lū'zhun*), *n.* the act of deluding.

de-lu-sive (*-lū'siv*), *adj.* tending to delude or deceive.

delve (*delv*), *v. t.* to open with a spade.

de-mag-net-ize (*dē-mag'net-iz*), *v. t.* to deprive of magnetic properties.

dem-a-gogue (*dem'ă-gog*), *n.* a popular orator.

de-mand (*dē-mând'*), *v. t.* to claim as by right or authority.

Syn. DEMAND, require. We *demand* that which is owing and ought to be given; we *require* that which we wish and expect to have done. The creditor makes a *demand* on the debtor; the master *requires* a certain portion of duty from his servant.

Ant. BEG, entreat.

de-mar-ca-tion (*-mär-kā'shun*), *n.* the act of defining.

de-mean (*dē-mēn'*), *v. t.* to behave (with *self*).

de-mean-or (*'ĕr*), *n.* behavior.

de-men-ti-a (*-men'shi-ă*), *n.* insanity.

★**de-mesne** (*dē-mēn'*), *n.* landed estate attached to a manor.

Demetrius (*dē-mē'tri-us*). From the Greek, *Demetrios*, "sprung from the earth;" Fr., *Demetrius;* It., *Demetrio;* Lat., *Demetrius;* Russ., *Dmitri*.

dem-i (*dem'i*), a prefix signifying *half*.

dem-i-god (*dem'i-god*), *n.* an inferior deity.

dem-i-john (*-jon*), *n.* a large glass bottle with a small neck and large body.

de-mise (*dē-mīz'*), *n.* the transfer of a right to, or of a title in, an estate through death or forfeiture; death.

de-mob-i-lize (*dē-mob'i-līz*), *v. t.* to disband or dismiss.

de-moc-ra-cy (*-mok'rā-si*), *n.* [*pl.* democracies (*-siz*)], government by the people collectively.

dem-o-crat (*dem'ō-krat*), *n.* one who advocates and upholds the principles of democracy.

Democrat, *n.* a member of the Democratic party.

dem-o-crat-ic (*-krat'ik*), or **dem-o-crat-ic-al** (*'i-kal*), *adj.* pertaining to democracy.

de-moi-ish (*dē-moi'ish*), *v. t.* to throw down.

dem-o-li-tion (*dem-ō-lish'un*), *n.* the act or process of demolishing.

de-mon (*dē'mon*), *n.* an evil spirit; devil.

de-mon-e-tize (*dē-mun'* or *dē-mon'ē-tiz*), *v. t.* to deprive of standard value.

de-mo-ni-ac (*-mō'ni-ak*), *adj.* influenced by demons.

de-mon-ism (*'mon-izm*), *n.* belief in demons.

de-mon-stra-ble (*dē-mon'strā-bl*), *adj.* capable of being demonstrated.

★**dem-on-strate** (*dem-on'* or *dē-mon'strāt*), *v. t.* to prove beyond the possibility of a doubt.

dem-on-stra-tion (*dem-on-strā'shun*), *n.* the act of demonstrating.

de-mon-stra-tive (*dē-mon'strā-tiv*), *adj.* having the power of demonstration.

dem-on-stra-tor (*dem-on-strā-tĕr*), *n.* one who demonstrates.

de-mor-al-ize (*dē-mor'al-iz*), *v. t.* to corrupt, or undermine, the morals of.

de-mul-cent (*-mul'sent*), *adj.* softening.

de-mur (*dē-mur'*), *v. i.* [*p. t.* and *p. p.* demurred, *p. pr.* demurring], to hesitate.

Syn. DEMUR, hesitate, pause. We *demur* from doubt or difficulty; we *hesitate* from an undecided state of mind; we *pause* from circumstances. *Demurring* is a matter of prudence; it is always grounded on some reason; *hesitating* is rather a matter of feeling, and is oftener faulty than otherwise. When a request of a dubious nature is made to us, we *hesitate* in complying with it.

Ant. ACT, continue, rush.

de-mure (*-mūr'*), *adj.* grave; sober.

de-mur-rage (*-mur'āj*), *n.* the compensation paid for the detention of a vessel in port beyond the stipulated time.

de-mur-rer (*'ĕr*), *n.* an issue on a point of law.

den (*den*), *n.* the hollow cave of a wild beast.

de-na-tion-al-ize (*dē-nash'un-al-iz*), *v. t.* to deprive of national rights or character.

de-nat-u-ral-ize (*-nat'ū-ral-iz*), *v. t.* to divest of acquired rights of citizenship.

de-na-tured (*dē-nā'tūrd*), *adj.* changed in nature or character.

den-drol-o-gy (*den-drol'ō-ji*), *n.* the natural history of trees.

den-drom-e-ter (*-drom'ē-tĕr*), *n.* an apparatus for taking the heights and diameters of trees.

de-ni-al (*dē-nī'al*), *n.* the act of denying.

Denis (*den'is*) or **Dionysius** (*dī-ō-nish'i-us*). From the Greek, "belonging to the wine of god." Danish, *Dionysius;* Dutch, *Dionysius;* Fr., *Denis* or *Denys;* Ger., *Dionys;* Gr., *Dionysios;* It., *Dionigio;* Lat., *Dionysius;* Sp., *Dionisio*.

den-i-zen (*den'i-zen*), *n.* an inhabitant; citizen.

Denmark (*den'märk*). Called *Dan-mörk* in the Sagas. In old Norse, *mörk* means a "forest," and, as forests commonly formed the boundaries of tribes, we obtain such words as *mearc* in Anglo-Saxon and *marca* in Old High German, meaning a "marsh land" or "boundary."

de-nom-i-nate (*dē-nom'i-nāt*), *v. t.* to designate.

de-nom-i-na-tion (*-i-nā'shun*), *n.* the act of designating.

de-nom-i-na-tion-al-ism (*-al-izm*), *n.* a sectarian or class spirit, or policy.

de-nom-i-na-tor (*'i-nā-tĕr*), *n.* the expression of a fraction which gives the name or value to the unit.

de-note (*dē-nōt'*), *v. t.* to signify or identify by a visible sign.

Syn. DENOTE, signify. *Denote* is employed with regard to things and their characters; *signify* with regard to the thoughts or movements. A letter or character may be made to *denote* any number, as words are made to *signify* the intentions and wishes of the person.

Ant. IMPLY.

★**dé-noue-ment** (*dā-nōō-mäN'* or *dā-nōō'mäN*), *n.* the act of unraveling a plot.

de-nounce (*dē-nouns'*), *v. t.* to threaten or accuse publicly; censure. [CONDEMN.]

dense (*dens*), *adj.* thick; compact; intense. [THICK, OBSCURE.]

den-si-ty (*den'si-ti*), *n.* compactness.

dent (*dent*), *n.* a slight depression caused by a blow or pressure.

den-tal (*den'tal*), *adj.* pertaining to the teeth.

den-tine (*den'tin*), *n.* the hard tissue which forms the body of a tooth.

den-ti-phone (*'ti-fōn*), *n.* an audiphone.

den-tist (*'tist*), *n.* a dental surgeon.

den-tis-try (*'tis-tri*), *n.* dental surgery.

den-ti-tion (*-tish'un*), *n.* the process, or period, of cutting the teeth.

de-nude (*dē-nūd'*), *v. t.* to make bare or naked.

de-nun-ci-a-tion (*-nun-si-ā'shun*), *n.* the act of denouncing.

de-nun-ci-a-to-ry (*'shi-ă-tō-ri*), *adj.* pertaining to a denunciation.

Denver, Colo. Named after James W. Denver, ex-governor of Kansas. [contradict.

de-ny (*dē-nī'*), *v. t.* to refuse to believe or admit; **Syn.** DENY, refuse. To *deny* respects matters of fact or knowledge; to *refuse*, matters of wish or request. We *deny* what immediately relates to ourselves; we *refuse* what relates to another. [See *contradict*.]

de-o-dor-ant (*-ō'dĕr-ant*), *n.* a deodorizer.

de-o-dor-ize (*'dĕr-iz*), *v. t.* to disinfect.

de-part (*dē-pärt'*), *v. i.* to go or move away; leave.

de-part-ment (*'ment*), *n.* a separate room or office for business; a branch of business.

de-par-ture (*-pär'tūr*), *n.* the act of departing; deviation.

de-pend (*dē-pend'*), *v. i.* to rely for support.

de-pend-ence (*'ens*), *n.* the state of being dependent. [Also *dependency* (*-si*), *pl.* dependencies (*-siz*), a colony.]

de-pend-ent (*'ent*), *adj.* hanging down; contingent.

de-pict (*-pikt'*), *v. t.* to paint or portray. [PAINT.]

de-ple-tion (*-plē'shun*), *n.* the act of emptying.

de-plor-a-ble (*-plōr'ă-bl*), *adj.* worthy to be deplored; sad.

de-plore (*dē-plōr'*), *v. t.* to lament; grieve for.
Syn. DEPLORE, lament. *Deplore* is a much stronger expression than *lament*. The former calls forth tears from the bitterness of the heart; the latter excites a cry from the warmth of feeling. *Deploring* indicates despair; to *lament* marks only pain or distress.
de-ploy (*-ploi'*), *v. t.* and *v. i.* [*p. t.* and *p. p.* deployed, *p. pr.* deploying], to open out; extend in line.
de-pon-ent (*-pōn'ent*), *n.* a witness who makes an affidavit.
Syn. DEPONENT, evidence, witness. All these words are properly applied to judicial proceedings, where the *deponent* deposes generally to facts either in causes or otherwise; the *evidence* consists either of persons or things, which are brought before the court for the purpose of making a doubtful matter clear; the *witness* is always a person who bears witness to any fact for or against another.
de-pop-u-late (*-pop'ū-lāt*), *v. t.* to deprive of inhabitants.
de-port (*-pōrt'*), *v. t.* to carry from one country to another.
de-port-ment (*'ment*), *n.* conduct.
de-pose (*-pōz'*), *v. t.* to deprive of office.
de-pos-it (*-poz'it*), *v. t.* to put or set down; *n.* anything deposited.
Syn. DEPOSIT, pledge, security. The term *deposit* has most regard to the confidence we place in another; *pledge* has most regard to the *security* we give for ourselves; *security* is a species of *pledge*. A *security* is whatever makes a person *secure* against a loss, and in the ordinary acceptation consists of any instrument or written document which legally binds a person.
dep-o-si-tion (*dep-ō-zish'un*), *n.* the act of depositing or deposing. [TESTIMONY.]
de-pos-i-tor (*dē-poz'i-tēr*), *n.* one who deposits.
de-pos-i-to-ry (*'i-tō-ri*), *n.* [*pl.* depositories (*-riz*)], the place where anything is deposited.
de-pot (*dē'pō*, Fr. *dā-pō'*), *n.* a warehouse.
de-prave (*dē-prāv'*), *v. t.* to make bad. [ABANDON.]
de-prav-i-ty (*-prav'i-ti*), *n* the state of being depraved; depravation.
Syn. DEPRAVITY, depravation, corruption. All these terms are applied to objects which are contrary to the order of Providence, but the term *depravity* characterizes the thing as it is; the terms *depravation* and *corruption* designate the making or causing it to be so; *depravity*, therefore, excludes the idea of any cause; *depravation* always carries us to the cause or external agency; hence we may speak of *depravity* as natural, but we speak of *depravation* as the result of circumstances.
dep-re-cate (*dep're-kāt*), *v. t.* to pray against.
dep-re-ca-tion (*-kā'shun*), *n.* the act of deprecating.
dep-re-ca-to-ry (*dep're-kā-tō-ri*), *adj.* apologetic.
de-pre-ci-ate (*dē-prē'shi-āt*), *v. t.* to disparage.
de-pre-ci-a-tion (*-ā'shun*), *n.* the act of lessening the value.
dep-re-date (*dep're-dāt*), *v. t.* to pillage; rob.
dep-re-da-tion (*-dā'shun*), *n.* the act of depredating.
de-press (*dē-pres'*), *v. t.* to press or thrust down.
de-pres-sion (*-presh'un*), *n.* the act of depressing. [DEJECTION.]
dep-ri-va-tion (*dep-ri-vā'shun*), *n.* the act of taking away; destitution.
de-prive (*dē-priv'*), *v. t.* to take from. [ABDUCT.]
depth (*depth*), *n.* the state or degree of being deep.
Syn. DEPTH, profundity. *Depth* is indefinite in its signification; and *profundity* is a positive and considerable degree of depth. Moreover, the word *depth* is applied to objects in general; *profundity* is confined in its application to moral objects.
dep-u-ta-tion (*dep-ū-tā'shun*), *n.* the act of deputing.
de-pute (*dē-pūt'*), *v. t.* to appoint as an agent or deputy. [DELEGATE, CONSTITUTE.]
dep-u-ty (*dep'ū-ti*), *n.* [*pl.* deputies (*-tiz*)], a delegate. [DELEGATE, AMBASSADOR.]
de-rail (*dē-rāl'*), *v. t.* to cause to leave the rails.
de-range (*-rānj'*), *v. t.* to throw into confusion.
der-by (*dēr'bi*), *n.* a kind of stiff felt hat.
der-e-lict (*der'ē-likt*), *adj.* abandoned: *n.* anything left, forsaken.
der-e-lic-tion (*-lik'shun*), *n.* omission, as of obligation or duty.
de-ride (*dē-rīd'*), *v. t.* to mock.
de-ri-sion (*-rizh'un*), *n.* the act of deriding.
de-ri-sive (*-ri'siv*), *adj.* expressing derision.
der-i-va-tion (*der-i-vā'shun*), *n.* the act of deriving.
de-riv-a-tive (*dē-riv'a-tiv*), *adj.* derived or taken from another.
de-rive (*-rīv'*), *v. t.* to draw from an original source.
Syn. DERIVE, trace, deduce. The act of *deriving* is immediate and direct; that of *tracing* a gradual process; that of *deducing* a ratiocinative process. We discover causes and sources by *derivation;* we discover the course, progress, and commencement of things by *tracing;* we discover the grounds and reasons of things by *deduction*.
der-ma (*dēr'mā*), *n.* the true skin.
der-ma-tol-o-gy (*-tol'ō-ji*), *n.* the science which treats of the skin.
der-o-gate (*der'ō-gāt*), *v. t.* to take away.
de-rog-a-to-ry (*dē-rog'a-tō-ri*), *adj.* tending to derogate from honor.
der-rick (*der'ik*), *n.* an apparatus for hoisting heavy weights.
Derrick or **Dirck.** A name corrupted from *Theodoric*.
der-rin-ger (*der'in-jēr*), *n.* a pocket pistol with a short barrel.
der-vish (*dēr'vish*), *n.* a Mohammedan monk.
★**des-cant** (*des'kant*), *n.* a disquisition or comment.
de-scend (*dē-send'*), *v. i.* to pass from a higher to a lower position.
de-scend-ant (*'ant*), *n.* one who is lineally descended from an ancestor.
de-scend-ent (*'ent*), *adj.* descending.
de-scen-sion (*-sen'shun*), *n.* the act of descending.
de-scent (*-sent'*), *n.* change from a higher to a lower place.
de-scribe (*-skrīb'*), *v. t.* to delineate or trace out.
de-scrip-tion (*-skrip'shun*), *n.* the act of describing. [DEFINITION.]
de-scrip-tive (*'tiv*), *adj.* tending to, or serving to; describe.
de-scry (*-skrī'*), *v. t.* to behold at a distance.
des-e-crate (*des'ē-krāt*), *v. t.* to divert from a sacred to a secular use.
de-sert (*dē-zērt'*), *v. t.* to forsake; abandon; *n.* merit.
Syn. DESERT, merit, worth. *Desert* is taken for that which is good or bad; *merit* for that which is good only. We deserve praise or blame; we *merit* a reward; *worth* is that which is absolutely valuable; it must be sought for on its own account. [See *abandon*.]
des-ert (*dez'ērt*), *n.* a barren tract incapable of supporting life or vegetation. [SOLITARY.]
de-serve (*dē-zērv'*), *v. t.* to earn by service.
des-ic-cate (*des'i-kāt*), *v. t.* to dry thoroughly.
★**de-sid-er-a-tum** (*dē-sid-ēr-ā'tum*, not *dē-sid-ēr-ā'tum*), *n.* [*pl.* desiderata (*'tà*)], anything desired.
de-sign (*-zin'*), *v. t.* to draw, mark, or plan out: *v. i.* to formulate designs: *n.* purpose.
Syn. DESIGN, purpose, intend, mean. A *design* supposes something studied and methodical, it requires reflection; a *purpose* is the thing proposed or set before the mind; an *intention* is the thing to which the mind bends or inclines. We *purpose* seriously; we *intend* vaguely; we set about that which we *purpose;* we may delay that which we have only *intended*. *Mean* differs but little from *intend*, except that it is used for matters requiring but little thought.
Ant. EFFECT, express.
de-sign (*-zin'*), *n.* a plan; project; scheme.
des-ig-nate (*des'ig-nāt*), *v. t.* to indicate by marks, lines, or a description.
de-sign-ing (*dē-zin'ing*), *adj.* scheming; artful.
de-sir-a-bil-i-ty (*-zīr-a-bil'i-ti*), *n.* the state of being desirable.
de-sir-a-ble (*'a-bl*), *adj.* pleasing; agreeable.
de-sire (*-zī r'*), *v. t.* to wish earnestly for.
Syn. DESIRE, wish, long, covet. *Desire* is imperious, it demands gratification; *wish* is less vehement, it consists of a strong inclination; *longing* is an impatient and continued species of *desire; coveting* is a *desire* for that which belongs to another, or what it is in his power to grant.
Ant. ABHOR, dislike, refuse, repulse.
de-sir-ous (*'us*), *adj.* full of desire. [EAGER.]
de-sist (*-sist'*), *v. i.* to cease from.
Syn. DESIST, leave off. To *desist* is voluntary or involuntary; to *leave off* voluntary. We are frequently obliged to *desist;* but we *leave off* at our option; he who annoys another must be made to *desist;* he who does not wish to offend will *leave off* when requested.
desk (*desk*), *n.* a table for reading or writing.
Des Moines (*dē-moin'*). River, county, and city in Iowa. This name is thought to have been derived from the Indian word *mškonang*, meaning "the road."
des-o-late (*des'ō-lāt*), *v. t.* to lay waste: *adj.* deserted. [SOLITARY.]
des-o-la-tion (*-lā'shun*), *n.* the act of desolating.
de-spair (*dē'spār*), *v. i.* to abandon all hope, or expectation: *v. t.* to lose hope; desperation.
Syn. DESPAIR, desperation, despondency. *Despair* is a state of mind produced by the view of external circumstances; *desperation* and *despondency* may be the fruit of the imagination. *Desperation* marks a state of vehement and impatient feeling; *despondency* is a disease of the mind.
des-patch (*des-pach'*) or **dispatch** (*dis-*), *v. t.* to send off; put to death: *n.* speedy performance. [HASTEN.] [danger.
des-per-a-do (*-pēr-ā'dō*), *n.* a man reckless of
des-per-ate (*'pēr-āt*), *adj.* regardless of danger.
★**des-pic-a-ble** (*des'pik-a-bl*, not *dē-spik'a-bl*), *adj.* contemptible.
de-spise (*dē-spīz'*), *v. t.* to look down upon. [CONTEMN.]
de-spite (*-spīt'*), *n.* extreme contempt.
de-spond (*-spond'*), *v. i.* to be cast down in spirits.
de-spond-en-cy (*'en-si*), *n.* absence of hope. [DESPAIR.]
des-pot (*des'pot*), *n.* an absolute, irresponsible ruler.
des-pot-ic (*-pot'ik*), *adj.* absolute in power. [ABSOLUTE.]
des-pot-ism (*'pot-izm*), *n.* absolute power; tyranny.
des-sert (*dez-zērt'*), *n.* a course of fruits, sweets, etc., usually served last at dinner.
des-ti-na-tion (*des-ti-nā'shun*), *n.* purpose or end.
★**des-tine** (*des'tin*), *v. t.* to appoint to any use.
des-ti-ny (*des'ti-ni*), *n.* [*pl.* destinies (*-niz*)], fate.
Syn. DESTINY, fate, lot, doom. *Destiny* is used in regard to one's station and walk in life; *fate* in regard to what one suffers; *lot* in regard to what one gets or possesses; and *doom* is the final destiny which terminates unhappily, and depends mostly upon the will of another; *destiny* is marked out; *fate* is fixed; a *lot* is assigned; a *doom* is passed. [See *chance*.]
Ant. CHOICE, preference.
des-ti-tute (*'ti-tūt*), *adj.* without means of existence. [BARE, FORSAKEN.]
des-ti-tu-tion (*-tū'shun*), *n.* poverty.
de-stroy (*dē-stroi'*), *v. t.* to pull down; overturn.
Syn. DESTROY, consume, waste. To *destroy* is to reduce to nothing that which has been artificially raised or formed; as, to *destroy* a town or a house; to *consume* is to use up; as, to *consume* food, or to *consume* articles of manufacture. [See *subvert*.]
Ant. CHERISH, hoard, renew.
de-struc-ti-ble (*-struk'ti-bl*), *adj.* that may be destroyed.
de-struc-tion (*'shun*), *n.* the act of destroying.
Syn. DESTRUCTION, ruin. *Destruction* is an act of immediate violence; *ruin* is a gradual process; a thing is *destroyed* by some external action upon it; a thing falls to *ruin* of itself.
de-struc-tive (*'tiv*), *adj.* tending to destruction.
des-ul-to-ry (*des'ul-tō-ri*), *adj.* passing from one thing to another. [CURSORY.]
de-tach (*dē-tach'*), *v. t.* to disconnect.
de-tach-ment (*'ment*), *n.* the act of detaching; a body of troops detached from the main body.
de-tail (*dē-tāl'*), *v. t.* to relate minutely; tell off for a given duty.
de-tain (*dē-tān'*), *v. t.* to hold back. [HOLD.]
de-tect (*dē-tekt'*), *v. t.* to discover; bring to light.
Syn. DETECT, discover. *Detect* is always taken in a bad sense; *discover* in an indifferent sense. A person is *detected* in what he wishes to conceal; a person or a thing is *discovered* that has lain concealed. [See *convict*.]
Ant. OVERLOOK.
de-tec-ta-ble (*-tek'tà-bl*), *adj.* that may be detected.
de-tec-tion (*'shun*), *n.* the act of detecting or its result; discovery.
de-tec-tive (*'tiv*), *n.* one whose business it is to trace wrongdoers.
de-ten-tion (*-ten'shun*), *n.* the act of detaining or withholding.
de-ten-tive (*'tiv*), *adj.* employed in detaining.
de-ter (*dē-tēr'*), *v. t.* [*p. t.* and *p. p.* deterred, *p. pr.* deterring], to discourage, or hinder.
de-terge (*-tērj'*), *v. t.* to cleanse, as a wound.
de-te-ri-o-rate (*-tē'ri-ō-rāt*), *v. t.* to reduce to an inferior quality.
de-ter-mi-na-ble (*-tēr'mi-nà-bl*), *adj.* capable of being ascertained.
de-ter-mi-nate (*'mi-nāt*), *adj.* having definite or fixed limits.
★**de-ter-min-a-tive** (*'min-à-tiv*), *adj.* determining; limiting.
de-ter-mine (*dē-tēr'min*), *v. i.* to decide; end.
Syn. DETERMINE, resolve. We *determine* how or what we shall do; this requires examination and choice; we *resolve* that we will do what we have *determined* upon. [See *decided*.]
Ant. DOUBT, hesitate.
de-ter-rent (*-tēr'ent*), *adj.* serving, or tending, to deter: *n.* that which deters.
de-test (*-test'*), *v. t.* to hate intensely. [HATE, ABHOR.]
de-tes-ta-tion (*dē-tes-* or *det-es-tā'shun*), *n.* extreme dislike or abhorrence. [ANTIPATHY, ABOMINATION.]
de-throne (*-thrōn'*), *v. t.* to remove from a throne.
★**det-o-nate** (*det'ō-nāt*), *v. t.* to cause to explode.
de-tour (*dē-tōōr'*), *n.* a circuitous way.
de-tract (*-trakt'*), *v. t.* to draw or take away.
de-trac-tion (*-trak'shun*), *n.* depreciation; slander.
det-ri-ment (*det'ri-ment*), *n.* that which injures.
det-ri-men-tal (*-men'tal*), *adj.* injurious.
Detroit (*dē-troit'*), **Mich.** From the river or strait on which the city is built. Derived from two French words, *de troit*, "the narrows."
Deuteronomy (*dū-tēr-on'ō-mi*). From two Greek words meaning *second* and *law*. The fifth book of Moses is so named.
de-vap-o-ra-tion (*dē-vap-ō-rā'shun*), *n.* the change of vapor into water.
dev-as-tate (*dev'as-tāt*), *v. t.* to lay waste.
dev-as-ta-tion (*-tā'shun*), *n.* the act of devastating.
de-vel-op (*dē-vel'op*), *v. t.* to unfold gradually; make known in detail.
de-vel-op-ment (*-ment*), *n.* the act of developing.
de-vest (*dē-vest'*), *v. t.* to alienate or annul.
de-vi-ate (*dē'vi-āt*), *v. i.* to turn aside from a certain course.
Syn. DEVIATE, wander, swerve, stray. *Deviate* always supposes a direct path which is departed from; *wander* includes no such idea. The act of *deviating* is commonly faulty; that of *wandering* is indifferent. To *swerve* is to *deviate* from that which one holds right; to *stray* is to *wander* in the same bad sense. Men *swerve* from their duty to consult their interest; the young *stray* from the path of rectitude. [See *digress*.]
de-vi-a-tion (*-ā'shun*), *n.* the act of deviating.

de-vice (*dē-vīs'*), *n.* a contrivance; invention; a stratagem.
Devil. Many philologists declare that the name of God is derived from *Good Spirit*, shortened by long use to "good" or "god." By a similar process, Satan may have been known as *the Evil Spirit*, which shortened by usage would become *the Evil*, or *th'evil*, easily corrupted into *Devil*.
dev-il-ish (*dev'l-ish*), *adj.* diabolical; extremely wicked; infernal; excessive.
dev-il-ment (*-ment*), *n.* roguishness.
de-vi-ous (*dē'vi-us*), *adj.* rambling; circuitous.
de-vis-a-ble (*-vīs'ȧ-bl*), *adj.* capable of being bequeathed.
de-vise (*-vīz'*), *v. t.* to imagine; contrive; bequeath by will.
Syn. DEVISE, bequeath. In the technical sense, to *devise* is to give lands by a will duly attested according to law; to *bequeath* is to give personality after one's death by a less formal instrument.
de-vis-er (*dē-vīz'ẽr*), *n.* one who devises or invents.
de-vis-or (*'ẽr* or *ôr*), *n.* one who bequeaths by will.
de-void (*-void'*), *adj.* destitute of.
de-volve (*dē-volv'*), *v. t.* to transfer from one to another.
de-vote (*dē-vōt'*), *v. t.* to dedicate or consecrate. [DEDICATE, HOLY, ADDICTED.]
dev-o-tee (*dev-ō-tē'*), *n.* a votary; enthusiast.
de-vo-tion (*dē-vō'shun*), *n.* the act of devoting or consecrating; strong affection. [LOVE.]
de-vour (*dē-vour'*), *v. t.* to swallow greedily or ravenously.
de-vout (*-vout'*), *adj.* devoted to religious thoughts.
dew (*dū*), *n.* aqueous vapor condensed from the atmosphere and deposited in small drops at evening.
dew-claw (*'klaw*), *n.* the little claw behind a dog's foot.
dew-lap (*'lap*), *n.* the loose skin that hangs from the neck of an ox or cow.
dew-y (*dū'i*), *adj.* moist with dew.
Dewy or **Dewey.** A Cornish form of *David*.
dex-ter-i-ty (*deks-ter'i-ti*), *n.* mental or physical adroitness.
dex-ter-ous (*'tẽr-us*), *adj.* quick, mentally or physically. [CLEVER.]
di-a-be-tes (*dī-ȧ-bē'tēz*), *n.* a disease characterized by a morbid and excessive discharge of urine.
di-a-bol-ic (*dī-ȧ-bol'ik*), or **di-a-bol-ic-al** (*'i-kal*), *adj.* devilish.
di-ab-o-lo (*dī-ab'ō-lō*) *n.* a game played by one or more persons, each of whom holds in either hand a stick connected by a cord, and endeavors by the aid of this cord to pick a reel-like top off the ground and cause it to spin continuously.
★**di-a-cous-tics** (*dī-ȧ-kous'* or *-kōōs'tiks*), *n. pl.* the science of refracted sounds.
di-a-crit-ic-al (*-krit'i-kal*), *adj.* serving to separate or distinguish.
di-a-crit-ic-al mark (*märk*), *n.* a mark employed to distinguish letters or sounds which resemble each other.
di-a-dem (*'ȧ-dem*), *n.* a crown; tiara.
di-ag-nose (*-ag-nōs'*), *v. t.* to ascertain, as a disease, by its general symptoms.
di-ag-no-sis (*-nō'sis*), *n.* [*pl.* diagnoses (*'sēz*)], scientific discrimination.
di-ag-o-nal (*-ag'ō-nal*), *adj.* extending from one angle to another.
di-a-gram (*'ȧ-gram*), *n.* a geometrical figure; a mechanical plan.
di-al (*dī'al*), *n.* an instrument for showing the time of the sun's shadow.
di-a-lect (*'ȧ-lekt*), *n.* the peculiar manner in which a language is spoken in a province or district of a country.
di-a-lec-tic (*lek'tik*), *adj.* pertaining to a dialect.
di-a-lec-ti-cian (*-tish'an*), *n.* a logician.
di-a-lec-tics (*'tiks*), *n. pl.* the art of reasoning.
di-a-logue (*'ȧ-log*), *n.* a conversation between two or more persons. [CONVERSATION.]
di-a-mag-net-ism (*-mag'net-izm*), *n.* the property possessed by certain bodies when under the influence of magnetism, and freely suspended, of taking a position at right angles to the magnetic meridian.
di-am-e-ter (*dī-am'ē-tẽr*), *n.* the length of a line passing through the center of any object from one side to the other.
di-a-met-ric-al (*-ȧ-met'ri-kal*), *adj.* pertaining to a diameter; directly adverse or opposite
di-a-mond (*dī'ȧ-mund*), *n.* a gem of extreme hardness and refractive power.
Diana (*dī-an'ȧ*) or **Dian** (*dī'an*). So called after *Diana*, goddess of hunting, the same as *Luna*, "the moon." Danish, *Diana;* Fr., *Diane;* Ger., *Diana;* Gr., *Artemis;* It., *Diana;* Lat., *Diana*.
di-a-pa-son (*dī-ȧ-pā'zon*), *n.* the entire compass of a voice or instrument.
di-a-per (*'ȧ-pẽr*), *n.* linen cloth woven in geometric patterns.
di-aph-a-nous (*-af'ȧ-nus*), *adj.* transparent.
di-a-phragm (*'ȧ-fram*), *n.* any substance that intercepts or divides.
di-ar-rhœ-a (*dī-ȧ-rē'ȧ*), *n.* persistent looseness of the bowels.
di-a-ry (*'ȧ-ri*), *n.* [*pl.* diaries (*-riz*)], a register of daily occurrences.
di-as-to-le (*-as'tō-lē*), *n.* the rhythmical expansion and dilatation of the heart.
di-a-ton-ic (*dī-ȧ-ton'ik*), *adj.* designating the regular tones of a key or scale.
di-a-tribe (*'ȧ-trīb*), *n.* a continued discourse or disputation.
dice (*dīs*), *n. pl.* small cubes marked on the sides with one to six spots.
di-chro-mism (*dī'krō-mizm*), *n.* inability to see more than one of the three primary colors.
di-cing (*dī'sing*), *n.* gaming with dice.
dick-er (*dik'ẽr*), *v. i.* to barter or trade on a small scale.
dick-y (*dik'i*), *n.* [*pl.* dickies (*'iz*)], a small separate shirt front.
dic-tate (*dik'tāt*), *v. t.* to declare with authority: *n.* command.
Syn. DICTATE, prescribe. *Dictate* signifies to make a word for another; and *prescribe* literally signifies to write down for another; to *dictate* is, however, a greater exercise of authority than to *prescribe*. He who *dictates* speaks with an adventitious authority; he who *prescribes* has the sanction of reason.
Ant. SUGGEST.
dic-ta-tion (*-tā'shun*), *n.* the act of dictating.
dic-ta-tor (*'tẽr*), *n.* one who dictates.
dic-ta-to-ri-al (*-tō'ri-al*), *adj.* pertaining to a dictator.
dic-tion (*dik'shun*), *n.* manner of speaking or expression.
dic-tion-a-ry (*-ā-ri*), *n.* [*pl.* dictionaries (*-riz*)], a book containing all, or the principal, words in a language, with their meanings, derivations, etc.
Syn. DICTIONARY, lexicon, vocabulary, glossary, nomenclature. *Lexicon* is a species of *dictionary* appropriately applied to the dead languages. *Dictionary* is applied to the words of a modern language. A *vocabulary* is a partial kind of *dictionary*, which may comprehend a simple list of words, with or without explanation, arranged in order or otherwise. A *glossary* is an explanatory *vocabulary*, which commonly serves to explain difficult or obsolete terms. A *nomenclature* is literally a list of names, and in particular a reference to proper names.
dic-tum (*'tum*), *n.* [*pl.* dicta (*-tȧ*)], aphorism.
di-dac-tic (*di-dak'tik*), *adj.* teaching; instructing.
did-dle (*did'l*), *v. t.* to overreach or cheat.
di-do (*dī'dō*), *n.* a caper.
die (*dī*), *v. i.* [*p. t.* and *p. p.* died, *p. pr.* dying], to cease to live.
Syn. DIE, expire. *Die* designates in general the extinction of being. *Expire* designates the last action of life in certain objects. Plants and trees *die*. The flame of a lamp *expires*.
Ant. BE BORN, live.
die (*dī*), *n.* [*pl.* dies (*dīz*)], a piece of engraved metal with a device used for coining money, medals etc; a small cube (*pl. dice*, see *dice*).
di-er-e-sis (*-er'ē-sis*), *n.* a sign (¨) placed over the second of two separate vowels to show that each has a separate sound in pronunciation.
di-e-sis (*dī'ē-sis*), *n.* the double dagger (‡) used in printing.
di-et (*dī'et*), *n.* manner of living with special reference to food.
di-e-ta-ry (*dī'ē-tā-ri*), *adj.* pertaining to the rules of diet.
di-e-tet-ic (*dī-ē-tet'ik*), *adj.* regulating food or diet.
dif-fer (*dif'ẽr*), *v. i.* to be dissimilar.
dif-fer-ence (*'ẽr-ens*), *n.* the act or state of being unlike.
Syn. DIFFERENCE, variety, diversity, medley. *Difference* and *variety* seem to lie in the things themselves; *diversity* and *medley* are created either by accident or design. A *difference* may lie in two objects only; a *variety* cannot exist without an assemblage; a *difference* is discovered by means of a comparison which the mind forms of objects to prevent confusion; *variety* strikes on the mind, and pleases the imagination with many agreeable images; *diversity* arises from an assemblage of objects naturally contrasted; a *medley* is produced by an assemblage of objects so ill suited as to produce a ludicrous effect.
Ant. IDENTITY, likeness, uniformity.
★**dif-fer-ent** (*dif'ẽr-ent*, not *dif'rent*), *adj.* unlike.
Syn. DIFFERENT, unlike. *Different* is positive, *unlike* is negative; we look at what is *different* and draw a comparison; but that which is *unlike* needs no comparison; a thing is said to be *different* from every other thing, or *unlike* to anything seen before.
Ant. IDENTICAL, one, same, similar.
dif-fer-en-ti-ate (*-en'shi-āt*), *v. t.* to constitute a difference between.
dif-fer-en-ti-a-tion (*-ā'shun*), *n.* the act of differentiating.
dif-fi-cult (*'i-kult*), *adj.* not easy. [OBSCURE.]
dif-fi-cul-ty (*-kul-ti*), *n.* [*pl.* difficulties (*-tiz*)], something that requires labor or skill to overcome.
Syn. DIFFICULTY, obstacle, impediment. *Difficulty* signifies not easy to be done; *obstacle* signifies the thing that stands in the way between a person and the object he has in view; *impediment* signifies something that entangles the feet. A *difficulty* interferes with the completion of any work; an *obstacle* interferes with the attainment of any end; an *impediment* interrupts the progress, and prevents the execution of one's wishes.
dif-fi-dence (*'i-dens*), *n.* lack of self-reliance. [DISTRUST.]
dif-fi-dent (*dif'i-dent*), *adj.* lacking self-reliance. [MODEST.]
dif-frac-tion (*dif-frak'shun*), *n.* the act of turning a ray of light when passing the edge of an opaque body.
dif-fuse (*dif-fūz'*), *v. t.* to pour out and spread all around: *n.* prolix.
Syn. DIFFUSE, prolix. Both mark defects of style opposed to brevity. The *diffuse* is properly opposed to the precise; the *prolix* to the concise or laconic. A *diffuse* writer is fond of amplification; the *prolix* writer is fond of minute details. [See *spread*.]
dif-fu-sion (*dif-fū'zhun*), *n.* the act of diffusing.
dif-fus-ive (*-fūs'iv*), *adj.* capable of diffusing.
dig (*dig*), *v. i.* [*p. t.* and *p. p.* dug or digged; *p. pr.* digging], to work with a spade.
di-gest (*dī'jest*), *n.* any compilation, abridgment, or summary of laws; *v. t.* (*di-gest'*) dissolve in the stomach by the action of digestive juices. [ABRIDGMENT, DISPOSE.]
di-ges-ti-bil-i-ty (*-jes-ti-bil'i-ti*), *n.* the quality of being digestible.
di-ges-ti-ble (*'ti-bl*), *adj.* capable of being digested.
di-ges-tion (*-jes'chun*), *n.* the act of digesting.
dig-ger (*dig'ẽr*), *n.* one who digs.
dig-ging (*'ing*), *n.* the act of excavating.
dig-it (*dij'it*), *n.* a finger or toe; any one of the Arabic numerals.
★**Dig-i-ta-lis** (*dij-i-tā'lis*, not *dij-i-tä'lis*), *n.* a genus of tall plants.
dig-i-tate (*'i-tāt*), *adj.* finger-shaped.
dig-i-ti-grade (*'i-ti-grād*), *adj.* walking on the toes, as cats.
dig-ni-fy (*dig'ni-fī*), *v. t.* [*p. t.* and *p. p.* dignified, *p. pr.* dignifying], to invest with dignity or rank.
dig-ni-ta-ry (*-tā-ri*), *n.* [*pl.* dignitaries (*-riz*)], one who holds a position of dignity or honor.
dig-ni-ty (*'ni-ti*), *n.* [*pl.* dignities (*-tiz*)], elevation of rank; moral worth.
di-gress (*di-* or *dī-gres'*), *v. i.* to turn aside.
Syn. DIGRESS, deviate. Both these words express going out of the ordinary course; we *digress* only in a narrative, whether written or spoken; we *deviate* in actions as well as in words, in our conduct as well as in writings.
di-gres-sion (*-gresh'un*), *n.* the act of digressing.
dike (*dīk*), *n.* an embankment of earth thrown up as a protection against the sea, floods, etc.
di-lap-i-date (*di-lap'i-dāt*), *v. t.* to bring into partial ruin.
di-lap-i-da-tion (*-i-dā'shun*), *n.* a state of partial ruin.
di-lat-a-ble (*-lā'tȧ-bl*), *adj.* expansive.
di-late (*-lāt'*), *v. t.* to enlarge or expand in all directions.
di-la-tor (*-lā'tẽr*), *n.* one who, or that which, dilates.
dil-a-to-ry (*dil'ā-tō-ri*), *adj.* causing, or tending to cause, delay.
di-lem-ma (*di-* or *dī-lem'ȧ*), *n.* an awkward or vexatious situation.
★**dil-et-tan-te** (*dil-et-an'tā* or *dē-lā-tȧn'tā*), *n.* [*pl.* dilettanti (*-tē*)], one who pursues the arts only for amusement; an amateur.
dil-et-tant-ism (*-tant'izm*), *n.* the characteristics of dilettanti.
dil-i-gence (*'i-jens*), *n.* careful attention.
dil-i-gent (*'i-jent*), *adj.* active, alert, prompt.
Syn. DILIGENT, expeditious, prompt. *Diligent* marks the interest one takes in doing something; he is *diligent* who loses no time, who keeps close to the work from inclination: *expeditious* marks the desire one has to complete the thing begun. *Prompt* marks one's desire to get ready; he is *prompt* who sets about a thing without delay, so as to make it ready. [See *active*.]
dil-ly-dal-ly (*dil'i-dal'i*), *v. i.* [*p. t.* and *p. p.* -dallied, *p. pr.* -dallying], to loiter; trifle.
di-lute (*di-* or *dī-lūt'*), *v. t.* to thin or weaken by the admixture of another fluid.
di-lu-tion (*-lū'shun*), *n.* the act of diluting.
dim (*dim*), *adj.* [*comp.* dimmer, *superl.* dimmest], somewhat dark; hazy; obscure; faint; tarnished. [DARK, OBSCURE, FAINT.]
dime (*dīm*), *n.* a silver coin equal to 1-10th of a dollar, or ten cents.
di-men-sion (*di-men'shun*), *n.* the size or measured extent of a body.
di-min-ish (*di-min'ish*), *v. t.* to make less; reduce in bulk or amount. [ABATE.]
dim-i-nu-tion (*dim-i-nū'shun*), *n.* reduction; lessening.
di-min-u-tive (*di-min'ū-tiv*), *adj.* below the average size; little. [LITTLE.]
dim-i-ty (*dim'i-ti*), *n.* [*pl.* dimities (*-tiz*)], a cotton cloth of thick texture.
dim-ple (*dim'pl*) *n.* a small depression or hollow in the cheek or chin.
din (*din*), *n.* a continued and violent noise.
Dinah. From the Hebrew *Diynah*, signifying "judged"; *i. e.*, "acquitted", "vindicated."
dine (*dīn*), *v i.* to take dinner.
ding (*ding*), *v. i* to sound as a bell.
ding-dong (*'dông*), *n.* the sound of a metallic body produced by blows.
★**din-ghy** (*ding'gi*), *n.* the smallest boat of a man-of-war.
din-gle (*ding'gl*), *n.* a narrow hollow between hills.
din-gle - dan-gle (*-dȧng'gl*), *adv.* swinging backward and forward.
din-gy (*din'ji*), *adj.* dark-colored; dirty.
din-ner (*'ẽr*), *n.* the chief meal of the day.

dint (*dint*), *n.* a mark left by a blow or pressure.
di-oc-e-san (*dī-os'ē-san* or *dī'ō-sē-san*), *adj.* of or pertaining to a diocese.
di-o-cese (*'ō-sēs*), *n.* [*pl.* dioceses (*-sē-sez*)], a bishop's see.
di-op-tric (*-op'trik*), *adj.* assisting vision by means of the refraction of light.
di-ox-ide (*-oks'id* or *id*), *n.* an oxide consisting of 2 atoms of oxygen and 1 atom of a metal.
dip (*dip*), *v. t.* [*p. t.* and *p. p.* dipped, dipt, *p. pr.* dipping], to plunge for a short time into a fluid; the angle of inclination of strata to the horizon.
★**diph-the-ri-a** (*dif-* or *dip-thē'ri-ā*), *n.* a contagious throat-disease characterized by the formation of a false membrane in the air passages.
★**diph-thong** (*dif'* or *dip'thông*), *n.* the union of two vowel sounds pronounced in one syllable.
★**di-plo-ma** (*di-plō'mā*, not *dī-plō'mā*), *n.* a writing on parchment or paper under sign and seal, conferring some honor.
di-plo-ma-cy (*'mā-si*, or *-plom'ā-si*), *n.* [*pl.* diplomacies (*-siz*)], the art of conducting negotiations between two states or nations.
dip-lo-mat (*dip'lō-mat*), *n.* a diplomatist.
di-plo-ma-tist (*di-plō'mā-tist*), *n.* one who is skilled in diplomacy.
dip-per (*dip'ėr*), *n.* one who, or that which, dips.
dip-so-ma-ni-a (*-sō-mā'ni-ā*), *n.* a morbid craving for alcoholic drinks.
dire (*dīr*), *adj.* dreadful; mournful.
di-rect (*di-rekt'*), *adj.* straight; not circuitous. [CONDUCT.]
di-rec-tion (*-rek'shun*), *n.* relative position; a command.
Syn. DIRECTION, address, superscription. A *direction* may serve to direct to place as well as to persons; an *address* is never used but in direct application to the person; a *superscription* has more respect to the thing than the person. A *direction* is given to such as go in search of persons and places; an *address* is put either on a card and a letter, or in a book; a *superscription* is placed at the head of other writings, or over tombs and pillars.
di-rect-ly (*-rekt'li*), *adv.* in a direct or straight line.
di-rect-ness (*'nes*), *n.* the quality of being direct.
di-rect-or (*'ėr*), *n.* one who directs or superintends.
di-rect-o-rate (*'ō-rāt*), *n.* the office of a director.
di-rect-o-ry (*'ō-ri*), *n.* [*pl.* directories (*-riz*)], a book containing the names of the residents of a place.
dirge (*dėrj*), *n.* a funeral hymn.
dir-i-gi-ble (*dir'i-ji-ble*), *adj.* that may be guided or steered: *n.* a dirigible balloon.
dirk (*dėrk*), *n.* a dagger.
dirt (*dėrt*), *n.* any foul or filthy substance.
dirt-y (*'i*), *adj.* impure; soiled.
dis, *prefix*, signifies separation, privation or negation.
dis-a-bil-i-ty (*dis-ā-bil'i-ti*), *n.* [*pl.* disabilities (*-tiz*)], lack of fitness. [INABILITY.]
dis-a-ble (*-ā'bl*), *v. t.* to deprive of power.
dis-a-buse (*-būz'*), *v. t.* to clear from mistakes.
dis-af-fect (*-af-fekt'*), *v. t.* to fill with discontent.
dis-af-fec-tion (*-fek'shun*), *n.* alienation of affection.
Syn. DISAFFECTION, disloyalty. *Disaffection* may be said with regard to any form of government; *disloyalty* only with regard to monarchy. Many were disaffected by the usurpation of Oliver Cromwell, because they would not be *disloyal* to their king.
dis-a-gree-a-ble (*-ā-grē'ā-bl*), *adj.* exciting repugnance.
dis-ap-pear (*-ā-pēr'*), *v. i.* to pass away.
Syn. DISAPPEAR, vanish. A thing *disappears* either gradually or suddenly; it *vanishes* on a sudden; it *disappears* in the ordinary course of things, it *vanishes* by an unusual effort, a supernatural or a magic power.
dis-ap-pear-ance (*'ans*), *n.* removal from sight.
dis-ap-point (*-point'*), *v. t.* to thwart or frustrate the hopes of.
dis-arm (*-ārm*), *v. t.* deprive of arms.
dis-arm-a-ment (*-ārm'ā-ment*), *n.* the act of disarming.
dis-ar-ray (*dis-ā-rā'*), *v. t.* [*p. t.* and *p. p.* disarrayed, *p. pr.* disarraying], throw into disorder.
dis-as-ter (*diz-as'tėr*) *n.* a sudden or unexpected misfortune. [CALAMITY, ACCIDENT.]
★**dis-as-trous** (*'trus*), *adj.* unfortunate.
dis-band (*dis-band'*), *v. t.* to dismiss from military service.
dis-bar (*-bār'*), *v. t.* [*p. t.* and *p. p.* disbarred, *p. pr.* disbarring], to deprive a lawyer of his right to practice.
dis-be-lief (*bē-lēf'*), *n.* positive unbelief.
Syn. DISBELIEF, unbelief. *Disbelief* properly implies the believing that a thing is not, or refusing to believe that it is. *Unbelief* expresses properly a believing the contrary of what one has believed before. *Disbelief* is most applicable to the ordinary events of life; *unbelief* to serious matters of opinion.
dis-bur-den (*-bûr'dn*), *v. t.* to remove a burden from.
dis-burse (*-bûrs'*), *v. t.* to expend.
dis-burse-ment (*'ment*), *n.* money expended.
disc. Another form of *disk*.
dis-card (*-kārd'*), *v. t.* to cast off as useless.
dis-cern (*diz-zėrn'*), *v. t.* to distinguish.
dis-cern-i-ble (*'i-bl*), *adj.* perceptible.
dis-charge (*dis-chārj'*), *v. t.* unload; free from any burden, impediment, or obligation: dismission from office or employment. [ABSOLVE, BANISH.]
dis-ci-ple (*dis-si'pl*), *n.* one who receives the teaching of another.
dis-ci-plin-a-ble (*dis'i-plin-ā-bl*), *adj.* capable of instruction.
dis-ci-plin-a-ri-an (*-plin-ā'ri-an*), *adj.* pertaining to discipline.
dis-ci-pline (*'i-plin*), *n.* mental or moral training: *v. t.* to train to obedience or efficiency. [TEACH.]
dis-claim (*-klām'*), *v. t.* to disown.
Syn. DISCLAIM, disown. To *disclaim* is to throw off a claim; to *disown* is not to admit as one's own.
dis-close (*-klōz'*), *v. t.* to uncover. [PUBLISH.]
dis-col-or (*-kul'ėr*), *v. t.* to change from the natural color.
dis-com-fit (*-kum'fit*), *v. t.* to defeat; rout.
dis-com-mode (*-kom-ōd'*), *v. t.* to inconvenience.
dis-con-cert (*-kon-sėrt'*), *v. t.* to disturb the composure of.
dis-con-so-late (*'sō-lāt*), *adj.* hopeless.
dis-con-tin-ue (*-tin'ū*), *v. t.* to interrupt; break off. [CEASE.]
dis-cord (*'kôrd*), *n.* disagreement; a confused noise.
Syn. DISCORD, strife. *Discord* consists most in the feeling; *strife* consists most in the outward action. *Discord* evinces itself in various ways; by looks, words, or actions; *strife* displays itself in words or acts of violence. [See *dissension*.]
dis-count (*dis'kount*), *n.* a sum deducted or allowed for prompt payment of an account: *v. t.* (*dis-kount'*) to allow a discount on.
dis-cour-age (*-kur'āj*), *v. t.* dishearten; deter.
★**dis-course** (*dis-kōrs'*, not *dis'kōrs*), *n.* speech or language: *v. t.* and *v. i.* to talk or converse. [SPEAK.]
dis-cov-er (*dis-kuv'ėr*), *v. t.* to bring to light; reveal.
Syn. DISCOVER, manifest, declare. We *discover* by any means direct or indirect; we *manifest* by unquestionable marks; we *declare* by express words. Talents and dispositions *discover* themselves; particular feelings and sentiments *manifest* themselves; facts, opinions, and sentiments are *declared*. [See *find, detect*.]
dis-cov-er-y (*-i*), *n.* [*pl.* discoveries (*-iz*)], a bringing to light or making known.
dis-cred-it (*-kred-it*), *v. t.* disbelieve; *n.* state of being discredited.
Syn. DISCREDIT, disgrace, reproach, scandal. *Discredit* interferes with a man's credit or respectability; *disgrace* marks him out as an object of unfavorable distinction; *reproach* makes him a subject of reproachful conversation; *scandal* makes him an object of offense or even abhorrence.
dis-creet (*-krēt'*), *adj.* prudent.
dis-crep-an-cy (*-krep'an-si*), *n.* disagreement.
dis-crep-ant (*'ant*), *adj.* disagreeing; different.
dis-cre-tion (*-kresh'un*), *n.* prudence; judgment. [JUDGMENT.]
dis-crim-i-nate (*-krim'i-nāt*), *v. t.* to observe or mark the differences between. [DISTINGUISH.]
dis-crim-i-na-tion (*-i-nā'shun*), *n.* faculty of nice discernment.
dis-cur-sive (*-kûr'siv*), *adj.* desultory.
dis-cuss (*dis-kus'*), *v. t.* to debate; agitate.
Syn. DISCUSS, examine. *Discuss* signifies to shake asunder or to separate thoroughly so as to see the whole composition; *examine* is used where the judgment holds the balance in examining. *Discussion* is altogether carried on by verbal and personal communication; *examination* proceeds by reading, reflection, and observation.
dis-cus-sion (*-kush'un*), *n.* argument.
dis-dain (*-dān'*), *v. t.* to think unworthy; deem unsuitable: *n.* haughty, or indignant scorn. [CONTEMN, HAUGHTINESS.]
★**dis-ease** (*diz-ēz'*, not *dis-ēz'*), *n.* any mental, moral, or physical disorder. [DISORDER, DISEASE.]
dis-em-bow-el (*-bou'el*), *v. t.* [*p. t.* and *p. p.* disemboweled, *p. pr.* disemboweling], to deprive of bowels.
dis-fig-ure (*-fig'ūr*), *v. t.* to injure; deform. [DEFACE.]
dis-fran-chise (*-fran'chīz*), *v. t.* to deprive of electoral or municipal privileges.
dis-gorge (*-gôrj'*), *v. t.* to force out of the mouth or stomach with violence.
dis-grace (*-grās'*), *n.* the state of being out of favor; ignominy. [ABASE, DISCREDIT, DISHONOR.]
dis-guise (*-gīz'*), *v. t.* to change the appearance of; conceal. [CONCEAL, PRETENSE.]
dis-gust (*-gust'*), *v. t.* to cause aversion in: *n.* strong aversion or repugnance.
Syn. DISGUST, loathing, nausea. *Disgust* is less than *loathing*, and that than *nausea*. When applied to sensible objects we are *disgusted* with dirt; we *loathe* the smell of food if we have a sickly appetite; we *nauseate* medicine. When applied metaphorically, we are *disgusted* with affectation; we *loathe* the endearments of those who are offensive. [See *antipathy, abomination*.]
dish (*dish*), *n.* a broad hollow vessel with a rimmed edge.
★**dis-ha-bille** (*dis-ā-bil'*), *n.* negligent attire.
dis-heart-en (*-hārt'n*), *v. t.* to discourage.
di-shev-el (*di-shev'el*), *v. t.* [*p. t.* and *p. p.* disheveled, *p. pr.* disheveling], to disorder.
dis-hon-est (*dis-on'est*), *adj.* lacking in honesty.
Syn. DISHONEST, knavish. What is *dishonest* violates the established laws of man; what is *knavish* supposes peculiar art and design in the accomplishment.
dis-hon-or (*dis-on'ėr*), *v. t.* to deprive of honor; violate the chastity of: *n.* disgrace.
Syn. DISHONOR, disgrace. *Dishonor* deprives a person of those outward marks of honor which men look for according to their rank and station; *disgrace* deprives a man of the favor and kindness which he has heretofore received from others. [See *abase*.]
dis-hon-or-a-ble (*dis-on'ėr-ā-bl*), *adj.* discreditable.
dis-in-te-grate (*-in'tē-grāt*), *v. t.* to break up into component parts.
dis-junc-tive (*-jungk'tiv*), *adj.* serving, or tending, to disjoin.
disk (*disk*), *n.* a flat circular plate.
dis-like (*dis-lik'*), *n.* a strong feeling of repugnance. [ANTIPATHY.]
dis-lo-cate (*'lō-kāt*), *v. t.* to put out of joint.
dis-lo-ca-tion (*-kā'shun*), *n.* the act of dislocating.
dis-lodge (*-loj'*), *v. t.* to remove or drive out from. [BANISH.]
dis-loy-al-ty (*-loi'al-ti*), *n.* unfaithfulness. [DISAFFECTION.]
dis-mal (*diz'mal*), *adj.* gloomy; depressing. [DULL.]
dis-man-tle (*dis-man'tl*), *v. t.* to strip or divest of.
dis-may (*-mā'*), *v. t.* [*p. t.* and *p. p.* dismayed, *p. pr.* dismaying], to terrify; dispirit.
Syn. DISMAY, daunt, appall. We are *dismayed* by alarming circumstances; we are *daunted* by terrifying circumstances; we are *appalled* by horrid circumstances.
dis-mem-ber (*dis-mem'bėr*), *v. t.* to tear limb from limb.
dis-miss (*-mis'*), *v. t.* to send away. [BANISH.]
dis-miss-al (*-mis'al*), *n.* the act of dismissing.
dis-or-der (*-ôr'dėr*), *n.* want of order or arrangement.
Syn. DISORDER, disease, distemper, malady. In a general sense *disorder* is altogether indefinite; *disease* comprehends every serious and permanent *disorder* in the animal economy. The *disorder* is slight, partial, and transitory; the *disease* is deep-rooted and permanent. *Distemper* is used for such particularly as throw the animal frame most completely out of its temper or course. *Malady* has less of a technical sense than the other terms. [See *confusion*.]
dis-par-age (*-par'āj*), *v. t.* treat with contempt. [ABUSE.]
dis-par-i-ty (*-par'i-ti*), *n.* [*pl.* disparities (*-tiz*)], inequality of rank, station, or excellence.
Syn. DISPARITY, inequality. *Disparity* applies to two objects which should meet or stand in coalition with each other; *inequality* is applicable to those that are compared with each other; the *disparity* of age, situation, and circumstances is to be considered with regard to persons entering into a matrimonial connection; the *inequality* in the portion of labor which is to be performed by two persons is a ground for the *inequality* of their recompense.
dis-pas-sion-ate (*-pash'un-āt*), *adj.* free from passion.
Syn. DISPASSIONATE, cool. *Dispassionate* is taken negatively, it marks merely the absence of *passion; cool* is taken positively, it marks an entire freedom from *passion;* when we meet with an angry disputant it is necessary to be *dispassionate*, in order to avoid quarrels; in the moment of danger our safety often depends upon our *coolness*. [See *calm*.]
dis-patch. Same as *despatch*.
dis-pel (*dis-pel'*), *v. t.* [*p. t.* and *p. p.* dispelled, *p. pr.* dispelling], to drive away.
Syn. DISPEL, disperse. To *dispel* is a more forcible action than to *disperse;* we destroy the existence of a thing by *dispelling* it; we merely destroy the junction *dispersing* it.
Ant. GATHER, increase.
dis-pen-sa-ble (*-pen'sā-bl*), *adj.* that for which a dispensation may be granted; that may be spared.
dis-pen-sa-ry (*'sā-ri*), *n.* [*pl.* dispensaries (*-riz*)], a place where medicines are kept and made up.
dis-pen-sa-tion (*-sā'shun*), *n.* the act of dispensing; that which is appointed or bestowed by a higher power.
dis-pense (*dis-pens'*), *v. t.* to deal out in portions; distribute.
Syn. DISPENSE, distribute. *Dispense* is an indiscriminate action; *distribute* is a particularizing action. We *dispense* to all; we *distribute* to each individually.
Ant. COLLECT, consolidate.
dis-perse (*dis-pėrs'*), *v. i.* to scatter in different directions or parts: *v. t.* to cause to scatter in different directions. [DISPEL.]
dis-pir-it (*-pir'it*), *v. t.* to dishearten.
dis-place (*-plās'*), *v. t.* to put out of place.
dis-place-ment (*'ment*), *n.* the act of displacing.
dis-play (*-plā'*), *v. t.* [*p. t.* and *p. p.* displayed, *p. pr.* displaying], to spread out; exhibit.
dis-please (*dis-plēz'*) *v. t.* to fail to please, offend.
dis-pleas-ure (*dis-plezh'ūr*), *n.* annoyance; vexation.
Syn. DISPLEASURE, anger. *Displeasure* is always a softened and gentle feeling; *anger* is always a harsh feeling, and sometimes rises to vehemence and madness. *Displeasure* is always produced by some adequate cause, real or supposed; but *anger* may be provoked by every or any cause, according to the temper of the individual; *displeasure* is an act of the will, it is an angry sentiment. [See *anger*.]
Ant. AMIABILITY, gentleness, sanction.

dis-port (*dis-pōrt'*), *v. t.* to amuse or divert (with *self*): *v. i.* to play.
dis-pos-al (*-pōz'al*), *n.* arrangement; order; control.
Syn. DISPOSAL, disposition. *Disposal* is a personal act; it depends upon the will of the individual; *disposition* is an act of the judgment; it depends upon the nature of the things. The removal of a thing from one's self is involved in a *disposal;* the good order of the things is comprehended in their *disposition.*
dis-pose (*-pōz'*), *v. t.* to place; arrange; order.
Syn. DISPOSE, arrange, digest. We may *dispose* ordinary matters by simply assigning a place to each; in this manner trees are *disposed* in a row, but we *arrange* and *digest* by an intellectual effort; in the first case by putting those together which ought to go together; and in the latter case by both separating that which is dissimilar, and bringing together that which is similar; books are *arranged* in a library; the materials for a literary production are *digested.* [See *persuade, addicted.*]
Ant. CONFUSE, disturb.
dis-po-si-tion (*-pō-zish'un*), *n.* the act of disposing; order; temper.
Syn. DISPOSITION, temper. *Disposition* is permanent and settled; *temper* may be transitory and fluctuating. The *disposition* comprehends the springs and motives of actions; the *temper* influences the action of the moment. It is possible and not infrequent to have a good *disposition* with a bad *temper*, and vice versa.
Syn. DISPOSITION, inclination. We may always expect a man to do that which he is *disposed* to do; but we cannot always calculate upon his executing that to which he is merely *inclined.* We indulge a *disposition;* we yield to an *inclination.* The *disposition* comprehends the whole state of the mind at the time; an *inclination* is particular, referring always to a particular object. [See *disposal.*]
Ant. DISINCLINATION, dislike.
dis-prove (*-prōōv'*), *v. t.* to prove to be false. [CONFUTE.]
dis-pu-ta-ble (*'pū-tȧ-bl*), *adj.* liable to be disputed.
★**dis-pu-tant** (*dis'pū-tant,* not *dis-pū'tant*) *n.* a controversialist.
dis-pu-ta-tion (*-tā'shun*), *n.* a verbal controversy.
dis-pute (*dis-pūt'*), *v. i.* to debate; argue: *n.* a controversy. [CONTROVERT, FEUD, CONTEND.]
dis-qui-si-tion (*-kwi-zish'un*), *n.* an elaborate essay.
dis-re-gard (*-rē-gärd'*), *v. t.* to pay no heed to.
Syn. DISREGARD, neglect, slight. We *disregard* the warnings, the words, or opinions of others; we *neglect* their injunctions or their precepts. To *disregard* results from the settled purpose of the mind; to *neglect* from a temporary forgetfulness or oversight; *slight* is altogether an intentional act toward an individual.
Ant. FAVOR, notice, watch.
dis-rup-tion (*-rup'shun*), *n.* forcible separation; breach.
dis-sect (*-sekt'*), *v. t.* to cut in pieces.
dis-sem-ble (*-sem'bl*), *v. t.* to hide under a false appearance. [CONCEAL.]
dis-sem-i-nate (*-sem'i-nāt*), *v. t.* to scatter abroad, like seed.
dis-sen-sion (*dis-sen'shun*), *n.* strife.
Syn. DISSENSION, contention, discord. A collision of opinions produces *dissension;* a collision of interests produces *contention;* a collision of humors produces *discord.* [See *feud.*]
Ant. ACCORD, harmony, peace.
dis-sent (*-sent'*), *v. i.* to disagree in opinion (with *from*).
dis-sent-er (*'ẽr*), *n.* a nonconformist.
dis-sent-ing (*'ing*), *p. adj.* pertaining to, or characterized by, dissent.
dis-ser-ta-tion (*-ẽr-tā'shun*), *n.* a formal argumentative discourse.
dis-sev-er (*-sev'ẽr*), *v. t.* to cut in two.
dis-sim-u-late (*-sim'ū-lāt*), *v. i.* and *v. t.* to dissemble.
dis-sim-u-la-tion (*-lā'shun*), *n.* hypocrisy. [PRETENSE, SIMULATION.]
dis-si-pate (*'i-pāt*), *v. t.* to scatter completely.
dis-si-pa-tion (*-pā'shun*), *n.* the act or state of being dissipated; luxury. [EXCESS.]
dis-so-ci-ate (*-sō'shi-āt*), *v. t.* to separate.
★**dis-sol-u-ble** (*-sol'ū-bl*), *adj.* capable of being dissolved.
dis-so-lute (*'sō-lūt*), *adj.* loose in morals or conduct. [ABANDONED.]
dis-so-lu-tion (*-lū'shun*), *n.* the act of dissolving or liquefying.
dis-solve (*-olv'*), *v. t.* to liquefy; melt; terminate; annul.
dis-so-nance (*'ō-nans*), *n.* discord.
dis-suade (*-swād'*), *v. t.* to advise or counsel against.
dis-sua-sion (*-swā'zhun*), *n.* the act of dissuading.
dis-syl-la-ble (*-sil'ȧ-bl*), *n.* a word of two syllables.
dis-taff (*dis'tȧf*), *n.* [*pl.* distaffs (*'tȧfs*)], the staff from which flax is drawn in spinning.
dis-tance (*'tans*), *n.* the space or interval between two objects or points.
dis-tant (*'tant*), *adj.* remote.
Syn. DISTANT, far, remote. *Distant* is used to designate great space; *far* only that which is ordinary; astronomers estimate that the sun is ninety-four millions of miles *distant* from the earth; a person lives not very *far* off, or a person is *far* from the spot; *remote* expresses the relative idea of being gone out of sight.
Ant. NEAR, close, proximate.
dis-taste (*dis-tāst'*), *n.* aversion of the palate. [ANTIPATHY.]
dis-taste-ful (*'fool*), *adj.* unpleasant to the taste.
dis-tem-per (*-tem'pẽr*), *v. t.* to disorder or disease; derange the functions of. [DISORDER.]
dis-tend (*-tend'*), *v. t.* to stretch out in all directions.
dis-ten-tion (*-ten'shun*), *n.* a swelling out.
dis-til (*-til'*), *v. i.* [*p. t.* and *p. p.* distilled, *p. pr.* distilling], to practice the art of distillation.
dis-til-la-tion (*-ā'shun*), *n.* the process of distilling.
dis-tinct (*-tingkt'*), *adj.* separate; plain; unconfused; *adv.* distinctly. [CLEARLY.]
dis-tin-guish (*-ting'gwish*), *v. t.* to separate from others by some mark of honor or preference.
Syn. DISTINGUISH, discriminate. To *discriminate* is in fact to *distinguish* specifically; hence we speak of a *distinction* as true or false, but of a *discrimination* as nice; we *distinguish* by means of the senses as well as the understanding; we *discriminate* by the understanding only. [See *abstract.*]
Ant. CONFUSE, confound.
dis-tin-guished (*'gwisht*), *p. adj.* eminent.
Syn. DISTINGUISHED, conspicuous, noted, eminent, illustrious. A thing is *distinguished* in proportion as it is *distinct* or separate from others; it is *conspicuous* in proportion as it is easily seen; it is *noted* in proportion as it is widely known; *eminent* applies to those things which set a man high in the circle of his acquaintance; *illustrious* applies to that which makes him shine before the world.
Ant. OBSCURE, unimportant, unknown.
dis-tort (*-tôrt'*) *v. t.* to twist or turn from the natural shape or figure. [TURN.]
dis-tract (*-trakt'*), *v. t.* to perplex; harass.
dis-train (*-trān'*) *v. t.* to seize and hold as security for payment.
dis-traint (*-trānt'*), *n.* the act of distraining.
dis-trait (*dis-trā'*), *adj.* absent-minded.
dis-traught (*dis-trawt'*), *adj.* bewildered or harassed.
dis-tress (*-tres'*), *n.* affliction, adversity.
Syn. DISTRESS, anxiety, anguish, agony. *Distress* is the pain felt when in a strait from which we see no means of extricating ourselves; *anxiety* is that pain which one feels on the prospect of an evil. *Distress* always depends upon some outward cause; *anxiety* often lies in the imagination; *anguish* arises from the reflection on the evil that is past; *agony* springs from witnessing that which is immediate or before the eye. [See *grief.*]
Ant. APATHY, calmness, ease, nonchalance.
dis-tress, *v. t.* to inflict pain or suffering upon.
Syn. DISTRESS, harass, perplex. A person is *distressed* either in his outward circumstances or his feelings; he is *harassed* mentally or corporeally; he is *perplexed* in his understanding, more than in his feelings; a deprivation *distresses;* provocations and hostile measures *harass;* stratagems and ambiguous measures *perplex.*
Ant. AID, comfort, soothe, succor.
dis-trib-ute (*dis-trib'ūt*), *v. t.* to deal out or divide; allot. [DISPENSE.]
dis-tri-bu-tion (*-tri-bū'shun*), *n.* the act of distributing.
dis-trib-u-tive (*-trib'ū-tiv*), *adj.* pertaining to distribution.
★**dis-trict** (*dis'trikt,* not *dē'strikt*), *n.* a territorial division.
dis-trust (*-trust'*), *n.* want of confidence, faith, or reliance.
Syn. DISTRUST, suspicion, diffidence. *Distrust* is said either of ourselves or others; *suspicion* is said only of others; *diffidence* only of ourselves. To be *distrustful* of a person is to impute no good to him; to be *suspicious* of a person is to impute positive evil to him. As regards one's self, a person may *distrust* his own powers for the execution of a particular office, or have a *distrust* of himself in company; he has a general *diffidence* or he is naturally *diffident.*
Ant. ASSURANCE, confidence, conviction, certainty.
dis-turb (*-tûrb'*), *v. t.* to trouble; vex.
Syn. DISTURB, interrupt. We may be *disturbed* either inwardly or outwardly; we are *interrupted* only outwardly. Our minds may be *disturbed* by disquieting reflections, or we may be *disturbed* in our rest or in our business by unseemly noises. [See *anxiety, trouble.*]
ditch (*dich*), *n.* a trench cut in the earth.
dit-to (*dit'tō*), *n.* that which has been said; a duplicate.
dit-ty (*'i*), *n.* [*pl.* ditties (*'iz*)], a little song.
di-ur-nal (*dī-ûr'nal*), *adj.* daily. [DAILY.]
di-van (*dī-van'*), *n.* a court of justice; couch.
dive (*dīv*), *v. i.* to plunge head foremost into water.
★**di-verge** (*dī-vẽrj'*), *v. i.* to spread out from one point.
di-ver-gence (*-vẽr'jens*), *n.* a receding from each ther.
di-verse (*'vẽrs,* or *dī-vers'*), *adj.* essentially different.
di-ver-si-fy (*di-vẽr'si-fī*), *v. t.* [*p. t.* and *p. p.* diversified, *p. pr.* diversifying], to make different.
di-ver-si-ty (*-ti*), *n.* the state of being unlike. [DIFFERENCE.]
di-ver-sion (*'shun*), *n.* variation; alteration.
di-vert (*di-vẽrt'* not *dī-vẽrt'*), *v. t.* to turn aside from any direction or course.
di-vest (*di-vest'*), *v. t.* to strip or deprive of.
di-vide (*di-vīd'*), *v. t.* to cut into two or more parts: *v. i.* to be separated.
Syn. DIVIDE, separate, part. That is said to be *divided* which has been or is conceived to be a whole; that is *separated* which might be joined. An army may be *divided* into two or three *divisions* or portions; the *divisions* are frequently *separated* in their march; to *divide* is properly to make any whole into parts.
Ant. CONSOLIDATE, keep together.
div-i-dend (*div'i-dend*), *n.* a share of the profits of a public company or business.
div-i-na-tion (*-i-nā'shun*), *n.* the pretended art of foreseeing future events.
di-vine (*di-vīn'*), *adj.* partaking of the nature of God; *v. t.* to conjecture. [GODLIKE, HOLY, GUESS.]
div-ing (*dīv'ing*), *n.* the act of plunging into water.
di-vin-i-ty (*di-vin'i-ti*), *n.* [*pl.* divinities (*-tiz*)], the state or quality of being divine; theology. [DEITY.]
di-vis-i-ble (*di-viz'i-bl*), *adj.* capable of being divided.
di-vi-sion (*-vizh'un*), *n.* the act or state of being divided.
di-vi-sor (*di-vī'zor*), *n.* the number by which another is divided.
di-vorce (*-vōrs'*), *n.* a dissolution of the marriage contract by legal authority.
di-vulge (*di-vulj'*), *v. t.* to make known. [PUBLISH.]
diz-zy (*diz'i*), *adj.* giddy.
Dnieper (*nē'pẽr*). From *Don-ieper,* "upper river."
Dniester (*nēs'tẽr*). From *Don-iester,* "lower river Don."
do (*dōō*), *v. t.* [*p. t.* did, *p. p.* done, *p. pr.* doing], to perform; achieve.
doc-ile (*dos'il* or *dō'sil*), *adj.* easy to teach; tractable.
do-cil-i-ty (*dō-sil'i-ti*), *n.* the quality of being docile.
dock (*dok*), *n.* a place for constructing and laying up ships: *v. t.* to cut off or curtail.
dock-et (*'et*), *v. t.* to mark the contents or titles of papers on the back of them; a digest.
doc-tor (*'tẽr*), *n.* one skilled in any particular branch of knowledge; an academical degree denoting the highest proficiency in a faculty of a university.
doc-tri-naire (*-trē-nâr'*), *n.* one who theorizes on political or other matters.
doc-trine (*'trin*), *n.* the principles or dogma of any church.
Syn. DOCTRINE, dogma, tenet. A *doctrine* rests on the authority of the individual by whom it is framed; the *dogma* on the authority of the body by whom it is maintained; a *tenet* rests on its own intrinsic merits. A *tenet* is a species of principle maintained in matters of opinion by persons in general.
doc-u-ment (*'ū-ment*), *n.* a printed or written paper.
doc-u-men-ta-ry (*-men'tȧ-ri*), *adj.* pertaining to, or consisting of, documents.
dodge (*doj*), *v. i.* to start aside and shift about: *v. i.* to escape by starting aside.
doe (*dō*), *n.* the female of a buck or fallow deer.
doff (*dof*), *v. t.* to take, or put, off.
dog (*dog*), *n.* a domesticated carnivorous anima, belonging to the genus Canis.
dog-cart (*'kärt*), *n.* a light cart with two transverse seats.
dog-days (*'dāz*), *n. pl.* a period in July and August when the dog star or Sirius rises and sets with the sun.
Doge's (*dōjez*) **palace.** Formerly the palace of the doges of Venice, and now one of its most interesting architectual monuments. The present building was begun by Marino Falierno in 1354.
dog-ged (*dog'ed*), *adj.* stubborn; pertinacious. [OBSTINATE.]
dog-ger-el (*'ẽr-el*), *n.* verse devoid of sense or rhythm.
dog-ma (*'mȧ*), *n.* [*pl.* dogmas (*'mȧz*) or dogmata (*'mȧ-tȧ*)], an established principle, tenet, or doctrine. [DOCTRINE.]
dog-mat-ic (*-mat'ik*), *adj.* pertaining to, or of the nature of, dogma. [CONFIDENT.]
dog-ma-tize (*'mȧ-tīz*), *v. i.* to make dogmatic assertions.
dog-trot (*'trot*), *n.* a gentle trot.
dog-wood (*'wood*), *n.* the wild cornel.
doily (*doi'li*), *n.* [*pl.* doilies (*'liz*)], a small mat or napkin.
dole (*dōl*), *v. t.* to deal out sparingly.
dole-ful (*'fool*), *adj.* sorrowful; dismal. [PITEOUS.]
doll (*dol*), *n.* a girl's puppet or toy baby.
dol-lar (*'ẽr*), *n.* a silver coin current in the United States and Canada equal to 100 cents.
dol-ly (*'i*), *n.* [*pl.* dollies (*'iz*)], a little doll.
dol-man (*'man*), *n.* a long outer garment worn by the Turks.
Dolores (*dō-lō'res*). Derived from the Spanish name *Dolores,* signifying "sorrows."
dol-o-rous (*dol'ō-rus*), *adj.* sorrowful.
dol-phin (*dol'fin*), *n.* the name of a cetaceous mammal of the genus Delphinus.
dolt (*dōlt*), *n.* a heavy, stupid fellow.
★**do-main** (*dō-mān',* not *dō'mān*), *n.* lordship.
dome (*dōm*), *n.* a hemispherical roof.
do-mes-tic (*dō-mes'tik*), *adj* pertaining to the house or household affairs. [SERVANT.]
do-mes-ti-cate (*'ti-kāt*), *v. t.* to make domestic.
do-mes-tic-i-ty (*-tis'i-ti*), *n.* [*pl.* domesticities (*-tiz*)], the state of being domestic.
dom-i-cile (*dom'i-sil*), *n.* a permanent residence.
dom-i-nant (*'i-nant*), *adj.* exercising chief authority; predominant.
dom-i-nate (*'i-nāt*), *v. t.* to govern; rule.

dom-i-neer (*dŏm-i-nēr'*), *v. i.* to exercise authority arrogantly or tyrannically. [IMPERIOUS.]
Dominic (*dŏm'i-nik*). From the Latin, *dominicus*, "of or belonging to a lord or master." Danish, *Dominicus*; Dutch, *Dominicus*; Fr., *Dominique*; It., *Domenico*; Port., *Domingos*; Sp., *Domingo*; Sw., *Dominicus*.
Dominica (*dŏm-i-nē'kȧ*). "Sunday Island," indicative of its discovery by Columbus, on Sunday, November 2, 1493. A West Indian island.
do-min-ic-al (*dō-min'i-kal*), *adj.* pertaining to Christ as Lord, or to Sunday.
dom-i-nie (*dŏm'i-nē*), *n.* a schoolmaster.
do-min-ion (*dō-min'yun*), *n.* supreme authority. [EMPIRE.]
dom-i-no (*dŏm'i-nō*), *n.* [*pl.* dominos (*-nōz*)], a cape or cloak used as a masquerade garment; an ecclesiastical hood.
don (*don*), *v. t.* [*p. t.* and *p. p.* donned, *p. pr.* donning], to put on; assume.
Donald. An English form of *Donghal*, "brown stranger."
do-nate (*dō'nāt*), *v. t.* to contribute. [GIFT.]
don-jon (*dŏn'* or *dun'jun*), *n.* the principal tower of a mediæval castle.
★don-key (*dong'ki* not *dung'ki*), *n.* [*pl.* donkeys (*'kiz*)], an ass.
don-na (*don'nȧ*), *n.* a lady. [*Italian.*]
do-nor (*dō'nẽr*), *n.* a giver.
doom (*dōōm*), *n.* a judicial sentence of condemnation. [DESTINY, CONDEMN.]
dooms-day (*dōōmz'dā*), *n.* the day of final judgment.
door (*dōr*), *n.* the gate or entrance of a house.
dor (*dôr*), *n.* a large black dung beetle.
Dora. A female name abbreviated from *Theodora*.
Dorcas. From the Greek name, *dorkas*, signifying "a wild goat," "antelope," "gazelle."
Do-ri-an (*dō'ri-an*), *adj.* pertaining to, or characteristic of, Doris: *n.* a member of the Doric or Dorian race.
Dor-ic order (*ôr'dẽr*), the oldest of the three orders of Greek architecture.
dor-king (*dôr'king*), *n.* one of a breed of domestic fowls.
dor-man-cy (*'man-si*), *n.* quiescence.
dor-mant (*'mant*), *adj.* sleeping; quiet.
dor-mer (*'mẽr*), *n.* a window pierced vertically in the side of a roof.
dor-mi-to-ry (*'mi-tō-ri*), *n.* [*pl.* dormitories (*-riz*)], a large apartment capable of holding several beds.
dor-mouse (*'mous*), *n.* [*pl.* dormice (*'mīs*)], a small European squirrel-like rodent.
Dorothy (*dor'ō-thi*). From the Greek name *Dorothea*, signifying "the gift of God." Danish, *Dorothea*; Dutch, *Dorothea*; Fr., *Dorothée*; Ger., *Dorothea*; It., *Dorotea*; Lat., *Dorothea*; Sp., *Dorotea*; Sw., *Dorothea*.
dor-sal (*dôr'sal*), *adj.* pertaining to, or situated near, the back.
do-ry (*dō'ri*), *n.* [*pl.* dories (*'riz*)], a small flat-bottomed skiff with a sharp prow.
dose (*dōs*), *n.* the quantity of medicine to be taken at one time
dot (*dŏt*), *n.* a small point or speck.
do-tage (*dō'tāj*), *n.* imbecility of mind; foolish or excessive affection.
do-tard (*'tẽrd*), *n.* one whose intellect is impaired by age.
dote (*dōt*), *v. i.* to exhibit the weakness of age.
dou-ble (*dub'l*), *adj.* twofold; two of a sort: *n.* a turning back to escape pursuit.
dou-ble bass (*-bās*), the largest violin.
dou-ble-en-ten-dre (*dōō'bl-ȧN-tȧN'dr*), *n.* a word or phrase with a double meaning.
doub-let (*dub'let*), *n.* a kind of close-fitting man's garment.
doub-loon (*'lōōn*), *n.* a Spanish gold coin.
doubt (*dout*), *v. i.* to waver in opinion; be in suspense; *v. t.* to suspect: *n.* indecision of belief; question.
Syn. DOUBT, suspense. *Doubt* respects that which we should believe; *suspense* that which we wish to know or ascertain. We are in *doubt* for the want of evidence; we are in *suspense* for the want of certainty. *Doubt* interrupts our progress in the attainment of truth; *suspense* impedes us in the attainment of our objects.
Ant. CERTAINTY, confidence, knowledge.
doubt-ful (*'fool*), *adj.* of uncertain issue. [EQUIVOCAL, OBSCURE.]
★douche (*dōōsh*), *n.* a jet or current of water
dough (*dō*), *n.* a soft mass of moistened flour yet unbaked.
dough-ty (*dou'ti*), *adj.* valiant, strong.
dough-y (*dō'i*) *adj.* soft like dough.
Douglas (*dug'lȧs*). From Gaelic *dubh-ghlas*, "dark gray."
douse (*dous*), *v. t.* to plunge suddenly into a liquid.
dove (*duv*), *n* a pigeon of the genus Columba.
dove-cote (*'kōt*), *n.* a small house for doves.
Dover, Del. Named from the town in England of that name
dove-tail (*duv'tāl*), *v. t.* to join by a joint resembling a dove's tail spread out.
dow-a-ger (*dou'ȧ-jẽr*). Strictly-speaking, a dowager is an endowed widow. In practice the name "dowager" is applied to any widowed lady.
dow-dy (*'di*), *n.* [*pl.* dowdies (*'diz*)], a slatternly woman who affects finery.
dow-el (*dou'el*), *n.* a pin to connect two pieces of wood
dow-er (*'ẽr*) *n.* that part of a husband's property which his widow enjoys during her life
down (*doun*), *n.* soft feathers, hair, or wool: *adv.* from a higher to a lower degree or position.
down-cast (*'kȧst*), *adj.* directed downward; sad.
down-fall (*'fawl*), *n.* a falling downward. [FALL.]
Downing street, London. So named after Sir George Downing.
down-right (*doun'rīt*), *adj.* straight to the point; blunt.
down-ward (*'wẽrd*), *adj.* tending to the ground.
down-y (*'i*), *adj.* covered with, or made of, down; soft.
dow-ry (*dou'ri*), *n.* [*pl.* dowries (*'riz*)], the property a woman brings to her husband at marriage.
dox-ol-o-gy (*doks-ol'ō-ji*), *n.* [*pl.* doxologies (*-jiz*)], a short hymn of praise to God
doze (*dōz*), *v. i.* to sleep lightly or fitfully.
drab (*drab*), *n.* a kind of thick dull brown or yellowish-gray woolen cloth.
drab-ble (*'l*), *v. t.* to make wet or dirty.
draft (*drȧft*), *n.* a sketch or outline; an order for money; the depth of water a vessel draws or to which she sinks.
drag (*drag*), *v. t.* [*p. t.* and *p. p.* dragged, *p. pr.* dragging], to pull or draw along by force; haul; tug: *v. i.* to trail along the ground. [DRAW.]
drag-gle (*drag'l*), *v. t.* to wet or soil by dragging in the mud.
drag-o-man (*drag'ō-man*), *n.* [*pl.* dragomans (*-manz*)], in the East, an interpreter.
drag-on (*'un*), *n.* a fabulous animal represented as a winged serpent or lizard.
drag-on fly (*flī*), an insect with a long slender abdomen, large eyes and wings.
drag-on's blood (*-unz blud*), *n.* the red juice and gum of several trees.
dra-goon (*drȧ-gōōn'*), *n.* originally a kind of mounted infantry.
drain (*drān*), *v. t.* to draw off gradually: *n.* a channel or pipe for superfluous water.
drain-age (*'āj*), *n.* the act or means of draining.
drake (*drāk*), *n.* a male duck.
dram (*dram*), *n.* 1-8th of an ounce troy, and 1-16th of an ounce avoirdupois.
★dra-ma (*drȧ'mȧ*, or *drā'mȧ*), *n.* a composition depicting a story of human life in character, on the stage.
dra-mat-ic (*drȧ-mat'ik*), *adj.* pertaining to, or appropriate to, the drama.
dram-a-tis per-so-næ (*dram'ȧ-tis pẽr-sō'nē*), the characters in a play.
dram-a-tize (*dram'ȧ-tīz*), *v. t.* to compose for stage representation.
dram-a-tur-gy (*'ȧ-tẽr-ji*), *n.* the art of dramatic composition.
drape (*drāp*), *v. t.* to cover with cloth.
dra-per (*drā'pẽr*), *n.* a dealer in woolen or cotton cloth, etc.
dra-per-y (*-i*), *n.* [*pl.* draperies (*-iz*)], textile cloths or fabrics.
dras-tic (*dras'tik*), *adj.* powerful.
draw (*draw*), *v. t.* [*p. t.* drew, *p. p.* drawn, *p. pr.* drawing], to pull along or haul: sketch; draft.
Syn. DRAW, drag, haul or hale, pull, pluck, tug. *Draw* expresses here the idea common to the first three terms, namely, of putting a body in motion from behind one's self or toward one's self; to *drag* is to *draw* a thing with violence, or to *draw* that which makes resistance; to *haul* is to *drag* it with still greater violence. To *pull* signifies only an effort to *draw* without the idea of motion; horses *pull* very long sometimes before they can *draw* a heavily laden cart uphill. To *pluck* is to *pull* with a sudden twitch in order to separate; to *tug* is to *pull* with violence.
Ant. LEAVE, push, repel, thrust away or back.
draw-back (*'bak*), *n.* loss of advantage; a discouragement.
draw-bridge (*'brij*), *n.* a bridge which may be lifted up.
★draw-er (*'ẽr*), *n.* one who draws, a sliding, box-like arrangement for holding clothes, papers, etc.; one who draws a bill of exchange.
draw-ing (*'ing*), *n.* delineation.
draw-ing room (*rōōm*), a room for the reception of company.
drawl (*drawl*), *v. t.* to utter in a slow, lazy tone.
drawn (*drawn*), *p. adj.* left undecided.
dray (*drā*), *n.* a low, stoutly-built cart.
dread (*dred*), *v. t.* to fear greatly. [ANXIETY.]
dread-ful (*'fool*), *adj.* inspiring dread. [FEARFUL, FORMIDABLE.]
dread-naught (*'nawt*), *n.* a fearless person; a very large battleship.
dream (*drēm*), *n.* a train of thoughts or images passing through the mind during sleep.
Syn. DREAM, reverie. *Dreams* and *reveries* are alike opposed to the reality, and have their origin in the imagination; but the former commonly passes in sleep, and the latter when awake.
Ant. REASON, act.
drear-y (*drēr'i*), *adj.* cheerless; gloomy.
dredge (*drej*), *n.* a drag or instrument for sweeping the bottoms of rivers.
dregs (*dregz*), *n. pl.* the sediment of liquors.
drench (*drench*), *v. t.* to wet thoroughly. [SOAK.]
dress (*dres*), *v. t.* [*p. t.* and *p. p.* dressed or drest, *p. pr.* dressing], to invest with, or as with, clothing; adorn, adjust to a straight line: *v. i.* to put on clothes.
dress-ing (*'ing*), *n.* the act of putting on clothes, the smoothing of the surface of stone.
dress-ing-gown (*-goun'*), *n.* a light, easy, loose gown.
drib-ble (*drib'l*), *v. i.* to fall in small drops; drip: *n.* a drizzling shower.
drib-let (*drib'let*), *n.* a small piece, part or sum.
dri-er (*drī'ẽr*), *n.* one who, or that which, dries.
drift (*drift*), *n.* the direction in which anything is driven; an accumulation heaped up by sea or wind: *v. i.* to be carried along by a current.
drill (*dril*), *v. t.* to pierce with a drill; instruct thoroughly. [TEACH.]
drink (*dringk*), *v. t.* [*p. t.* drank, *p. p.* drunk, *p. pr.* drinking], to swallow (a liquid). [ABSORB.]
drip (*drip*), *v. i.* [*p. t.* and *p. p.* dripped, *p. pr.* dripping], to fall in drops.
drive (*driv*), *v. t.* [*p. t.* drove, *p. p.* driven, *p. pr.* driving], to impel or urge forward by force. [BANISH.]
driv-el (*driv'el*), *v. i.* to slaver; be weak or foolish.
driz-zle (*driz'l*), *v. i.* to rain slightly
droll (*drōl'*), *adj.* ridiculous.
droll-er-y (*'ẽr-i*), *n.* [*pl.* drolleries (*-iz*)], the quality of being droll.
drom-e-da-ry (*drum'ē-dā-ri*), *n.* [*pl.* dromedaries (*-riz*)], one of a domesticated breed of camels distinguished by having one hump.
drone (*drōn*), *v. t.* to utter in a monotonous tone or sound: *n.* the male of the honeybee, which produces no honey.
droop (*drōōp*), *v. i.* to sink or hang down.
drop (*drop*), *v. i.* [*p. t.* and *p. p.* dropped, dropt, *p. pr.* dropping], to fall in drops; sink to a lower position: *v. t.* to let fall: *n.* a globule of moisture.
drop-si-cal (*'si-kal*), *adj.* affected with dropsy.
drop-sy (*'si*), *n.* an unnatural accumulation of serous fluid in any cavity of the body.
dross (*dros*), *n.* the scum or slag of melted metal.
★drought (*drout*), *n.* continued absence of rain.
drove (*drōv*), *n.* [*p. t.* of drive] a collection of cattle or sheep.
drown (*droun*), *v. i.* to perish by suffocation in water.
drow-sy (*drou'zi*), *adj.* sleepy.
drudge (*druj*), *v. i.* to labor hard: *n.* one employed in menial work; drudgery. [SERVANT, WORK.]
drug (*drug*), *n.* an ingredient used in medicine; a narcotic: *v. t.* [*p. t.* and *p. p.* drugged, *p. pr.* drugging], to mix drugs with.
drug-gist (*'ist*), *n.* a dealer in drugs.
dru-id (*drōō'id*), *n.* a priest of the ancient Celts of Britain.
drum (*drum*), *n.* an instrument of percussion, consisting of a hollow cylinder with vellum at the ends.
drum-head (*'hed*), *n.* the head or top of a drum.
drum-mer (*'ẽr*), *n.* a commercial traveler.
drum-stick (*'stik*), *n.* the stick with which a drum is beaten.
drunk (*drungk*), *n.* [*p. p.* of drink], a fit of drunkenness.
drunk-ard (*'ard*), *n.* one habitually drunk.
drunk-en-ness (*'n-nes*), *n.* the state of being drunk.
Drury Lane. A street in London, near the Strand. It is one of the great arteries of the parish of St. Clement Danes, an aristocratic part of London in the time of the Stuarts.
Drury Lane theater. This famous London theater was originally a cockpit, which was converted into a theater in the time of James I. It was rebuilt in 1662, in 1674, in 1775, in 1794, and in 1812. The last building was destroyed by fire in the early part of 1908, and replaced by the present structure.
Drusilla (*drōō-sil'lȧ*). A female name derived from the Greek name *Drousille*, which Bailey translates "dewy eyes." The word signifies "dew," "moisture," "pure water"; and figuratively, what is tender, delicate, young. Fr., *Drusille*; Ger., *Drusille*; It., *Drusilla*; Lat., *Drusilla*.
dry (*drī*), *adj.* [*comp.* drier, *superl.* driest], free from moisture or wetness.
Dryburgh (*dri'bur-o*) **abbey.** An ancient abbey, now in ruins, four miles southeast of Melrose, Scotland. In the south isle is the tomb of Sir Walter Scott.
dry-ly (*drī'li*), *adv.* without moisture; in a dry manner; coldly.
du-al (*dū'al*), *adj.* expressing, or composed of, the number 2.
du-al-ism (*-izm*), *n.* a twofold division.
du-al-i-ty (*-al'i-ti*), *n.* the state or quality of being twofold.
dub (*dub*), *v. t.* [*p. t.* and *p. p.* dubbed, *p. pr.* dubbing], to invest with knighthood by striking the shoulder with a sword.
du-bi-ous (*dū'bi-us*), *adj.* doubtful. [EQUIVOCAL.]
Dublin. The capital of Ireland. In the Irish language this is *Dubh-linn*, the meaning of which is "black pool."
Dubuque (*dōō-būk'*). County and city in Iowa, named for a French trader.
duc-at (*duk'at*), *n.* a gold or silver coin formerly in use in Europe. Intrinsic value, $2.28¾.
duch-ess (*duch'es*), *n.* the consort or widow of a duke.
duch-y (*'i*), *n.* [*pl.* duchies (*'iz*)], the territory, dominions, or jurisdiction of a duke.
duck (*duk*), *n.* any bird of the family Anatidæ, especially the domestic duck.
duck-ling (*'ling*), *n.* a young duck.
duct (*dukt*), *n.* a passage by which a fluid is conveyed.
★duc-tile (*duk'til*, not *duk'tēl*), *adj.* capable of being drawn out into threads or wire; tractable.
dude (*dūd*), *n.* a kind of dandy.
dudg-eon (*duj'un*), *n.* sullen anger.
due (*dū*), *adj.* owed or owing; payable; ascribable; proper. [DEBT.]

du-el (*dū'el*), *n.* a combat between two persons with deadly weapons.
du-et (*dū-et'*), *n.* a vocal or instrumental composition for two performers.
Dugald. An English form of *Dughall.*
dug-out (*dug'out*), *n.* a canoe hollowed out from a log.
duke (*dūk*), *n.* the highest order of English nobility.
duke-dom (*'dum*), *n.* a duchy.
dul-cet (*dul'set*), *adj.* sweet or pleasant to the ear; harmonious.
dul-ci-mer (*'si-mĕr*), *n.* an instrument with wire strings.
dull (*dul*), *adj.* slow of apprehension or action.
Syn. DULL, gloomy, sad, dismal. When applied to natural objects, *dull* and *gloomy* denote the want of necessary light or life; in this sense metals are more or less *dull* according as they are stained with dirt; the weather is *dull* when the sun is obscured by clouds, and *gloomy* when the atmosphere is darkened by fogs or thick clouds; *dismal* denotes either that which is necessary, or that which is repugnant to the senses; as a glare of light or a sound may be *dismal.* *Sad* is not applied so much to sensible as moral objects; the loss of a parent is *sad.*
Ant. BRIGHT, clear, radiant, joyful.
dull-ness (*'nes*), *n.* the state or quality of being dull. [STUPIDITY.]
Duluth, Minn. Named in honor of the French explorer, Daniel Greysolon du Lhut.
du-ly (*dū'li*), *adv.* in a fit and becoming manner; fitly.
dumb (*dum*), *adj.* incapable of speech.
dumb-bell (*'bel*), *n.* one of a pair of heavy weights used for exercise.
dum-my (*dum'i*), *n.* [*pl.* dummies (*'iz*)], one who is mute or silent.
dump (*dump*), *n.* a place to discharge rubbish in: *v. t.* to throw down and empty.
dump-ling (*dump'ling*), *n.* a pudding.
dun (*dun*), *adj.* of a dull brown color: *n.* a creditor who presses persistently for payment.
Duncan. A Scottish surname. Some render it "powerful chieftain."
dunce (*duns*), *n.* a dull, ignorant person.
dune (*dūn*), *n.* a heap of drifted sand piled up on the seashore.
dung (*dung*), *n.* the excrement of animals.
dun-geon (*dun'jun*), *n.* a dark underground cell.
Dun-kers (*dung'kĕrz*), *n. pl.* a sect of German-American Baptists.
Dunstan. A masculine name, derived from a locality, signifying, "the stone hill" (*dun-stan*).
du-o-dec-i-mal (*dū-ō-des'i-mal*), *adj.* consisting of, or computing by, twelves.
du-o-dec-i-mo (*'i-mō*), *n.* a sheet folded into twelve leaves (12mo).
dupe (*dūp*), *n.* one who is, or can be, easily tricked.
du-plex (*dū'pleks*), *adj.* double; compound.
du-pli-cate (*'pli-kāt*), *v. t.* to make or render double: *adj.* corresponding exactly with another.
du-pli-ca-tion (*-kā'shun*), *n.* the act of duplicating.
du-plic-i-ty (*-plis'i-ti*), *n.* deceit; hypocrisy.
Duquesne (*dū-kān'*). Borough in Allegheny county Pennsylvania, named from old Fort Duquesne, which was named for a distinguished French officer, the Marquis Abraham Duquesne.
du-ra-ble (*'rá-bl*), *adj.* not perishing; permanent.
Syn. DURABLE, lasting, permanent. *Durable* is naturally said of material substances; and *lasting* of those which are spiritual; although in ordinary discourse sometimes they exchange offices; *permanent* applies more to the affairs of men. That which perishes quickly is not *durable;* that which ceases quickly is not *lasting;* that which is only for a time is not *permanent.*
Ant. BRIEF, fugitive, momentary, temporary.
du-ra ma-ter (*'rá mā'tĕr*), the tough covering which envelops the brain.
du-rance (*'rans*), *n.* imprisonment.
du-ra-tion (*-rā'shun*), *n.* continuance in time. [CONTINUANCE, TIME.]
du-ress (*dū-res'* or *dū'res*), *n.* restraint of personal liberty.
dur-ing (*dūr'ing*), *prep.* in the time of.
dusk (*dusk*), *adj.* tending to darkness; shadowy.
dust (*dust*), *n.* fine dry particles of matter state of dissolution. [BODY.]
du-ti-a-ble (*dū'ti-á-bl*), *adj.* subject to duty.
du-ti-ful (*-fool*), *adj.* respectful.
du-ty (*'ti*), *n.* [*pl.* duties (*'tiz*)], obligatory service; tax levied by government.
Syn. DUTY, obligation. *Duty* has to do with the conscience; an *obligation* arises from circumstances, and is a species of *duty.* He who guarantees to pay a sum of money contracts an *obligation.* He who marries contracts new *duties.*
Ant. CHOICE, pleasure, whim.
dwarf (*dwawrf*), *n.* a human being, much below the average height: *v. t.* hinder from growing to the natural size.
dwell (*dwel*), *v. i.* [*p. t.* and *p. p.* dwelt, *p. pr.* dwelling], to reside for a length of time. [ABIDE.]
dwin-dle (*dwin'dl*), *v. i.* to become gradually less.
dye (*dī*), *v. t.* [*p. t.* and *p. p.* dyed, *p. pr.* dyeing], to stain or color.
dy-nam-ic (*-nam'ik*), *adj.* pertaining to mechanical forces not in equilibrium.
★**dy-na-mite** (*'ná-mīt*), *n.* a highly explosive compound: *v. t.* to destroy by dynamite.
dy-na-mo (*'ná-mō*), *n.* an electric machine for converting mechanical into electric energy.
dy-nas-ty (*dī'nas-ti*), *n.* [*pl.* dynasties (*-tiz*)], a line or succession of sovereigns of a particular family.
dyne (*dīn*), *n.* the force which, acting upon a gram per second, generates a velocity of 1 centimeter.
dys-en-ter-y (*dis'en-ter-i*), *n.* a tropical disease akin to diarrhœa.
dys-pep-si-a (*-pep'si-á*), *n.* indigestion.
dys-pep-tic (*'tik*), *adj.* pertaining to, causing, or afflicted with, dyspepsia.

E

each (*ēch*), *adj.* and *pron.* every one.
ea-ger (*ē'gĕr*), *adj.* impetuous; vehement.
Syn. EAGER, animated, anxious, ardent burning, desirous, earnest, enthusiastic, fervent, glowing, hot, impatient, impetuous, importunate, intense, intent, keen, longing, vehement, yearning, zealous. One is *eager* who *impatiently* desires to accomplish some end; one is *earnest* with a desire that is more deep, and constant; one is *anxious* with a desire that foresees the pain of disappointment. One is *eager* for the gratification of any appetite or passion; he is *earnest* in conviction, purpose, or character; the soldier is *earnest* in his devotion to his country, *eager* for a battle.
Ant. APATHETIC, heedless, purposeless.
ea-gle (*'gl*), *n.* a bird of prey, genus Aquila; a gold coin of the United States equal to 10 dollars.
ear (*ēr*), *n.* the organ of hearing.
earl (*ĕrl*), *n.* nobleman next in rank below a marquis.
earl-dom (*'dum*), *n.* the possessions or dignity of an earl.
ear-ly (*ĕr'li*), *adj.* [*comp.* earlier, *superl.* earliest], before the usual time.
ear-mark (*ēr'märk*), *n.* a mark for identification.
earn (*ĕrn*), *v. t.* to gain as a just recompense for one's labor.
earn-est (*'est*), *adj.* in serious reality. [EAGER.]
earn-ings (*'ingz*), *n. pl.* wages; reward.
ear-ring (*ēr'ring*), *n.* an ear ornament.
earth (*ĕrth*), *n.* the inhabited terraqueous globe.
earth-en (*'en*), *adj.* made of earth.
earth-ly (*'li*), *adj.* pertaining to the earth; sensual.
earth-quake (*'kwāk*), *n.* a shaking or trembling of the earth.
earth-work (*'wĕrk*), *n.* an offensive or defensive fortification.
earth-worm (*'wĕrm*), *n.* a common name for worms.
earth-y (*'i*), *adj.* pertaining to the earth; dull.
ear-wax (*ēr'waks*), *n.* cerumen.
ease (*ēz*), *n.* freedom from pain, disturbance, labor or affectation.
Syn. EASE, quiet, rest, repose. *Ease* and *quiet* respect action on the body; *rest* and *repose* respect the action of the body; *ease* denotes an exemption from any painful agency in general; *quiet* denotes an exemption from that in particular which noise, disturbance, or the violence of others may cause; *rest* simply denotes the cessation of motion; *repose* is that species of *rest* which is agreeable after labor.
Ant. ANXIETY, dread, solicitude.
ea-sel (*ē'zl*), *n.* a wooden frame for supporting a canvas.
east (*ēst*), *n.* that part of the heavens where the sun is seen to rise.
East (*ēst*), *n.* the Orient; eastern part of the United States.
East-er (*ēst'ĕr*), *n.* a festival of the Christian church to commemorate the resurrection of Jesus Christ.
Easter Island. In the eastern Pacific; named by Jacob Roggevin in consequence of his visit on Easter Sunday, 1722.
east-er-ly (*-li*), *adv.* situated, or moving toward, the east.
east-ern (*ēst'ĕrn*), *adj.* situated toward, or lying in, the east.
east-ern-er (*-ĕr*), *n.* a person who resides in the eastern part of the United States.
East river. Name applied to the body of water at New York, more properly a strait, connecting Long Isl-nd sound with New York bay.
east-ward (*'wĕr*), *adv.* toward the east.
eas-y (*ēz'i*), *adj.* [*comp.* easier, *superl.* easiest], free from pain, disturbance, etc.
Syn. EASY, ready. *Ecsy* marks the freedom of being done; *ready* the disposition or willingness to do; the former refers mostly to the thing or the manner, the latter to the person.
eat (*ēt*), *v. t.* [*p. t.* ate, *p. p.* eaten, *p. pr.* eating], to chew and swallow, as food.
eaves (*ēvz*), *n. pl.* the edges of the roof which overhang a building.
eaves-drop (*'drop*), *v. i.* [*p. t.* and *v. p.* eavesdropped, *p. pr.* eavesdropping], to listen to the private conversation of others.
ebb (*eb*), *n.* the flowing back of the tide.
Ebenezer (*eb-en-ē'zĕr*). From the Hebrew *Ebhenezer*, signifying "stone of help," name of the stone which Samuel set up near Mispeh, in witness of the divine assistance obtained against the Philistines.
eb-on-ize (*eb'un-īz*), *v. t.* to make black by staining like ebony.
eb-o-ny (*'un-i*), *n.* a hard, heavy, durable, black-colored wood.
eb-ul-li-tion (*eb-ul-lish'un*), *n.* the act of boiling.
é-car-té (*ā-kär-tā'*), *n.* a game of cards played by two persons.
ec-cen-tric (*ek'sen-trik*), *adj.* not situated in, or deviating from, the center; peculiar in manner or character.
ec-cen-tric-i-ty (*-tris'i-ti*), *n.* [*pl.* eccentricities (*-tiz*)], deviation from a center; peculiarity.
ec-cle-si-as-tic (*ek-klē-zi-as'tik*), *n.* a person in holy orders.
ec-cle-si-as-tic-al (*-ti-kal*), *adj.* pertaining to the church.
e-chi-nus (*ē-kī'nus*), *n.* [*pl.* echini (*'nī*)], a sea-urchin; a rounded egg-shaped molding.
ech-o (*ek'ō*), *n.* [*pl.* echoes (*'ōz*)], the repetition of a sound caused by reflection: *v. i.* [*p. t.* and *p. p.* echoed; *p. pr.* echoing], to emit an echo; give, or reflect back, a sound: *v. t.* to repeat the sound of.
é-clair (*ā-klâr'*), *n.* a small oblong cake.
é-clat (*ā-klä'*), *n.* a bursting forth, as of applause or admiration.
ec-lec-tic (*ek-lek'tik*), *adj.* selecting or choosing from different systems, doctrines, or sources.
ec-lec-ti-cism (*'ti-sizm*), *n.* the eclectic system of philosophy.
e-clipse (*ē-klips'*), *n.* the total or partial obscuration of the light of a heavenly body: *v. t.* to overshadow.
Syn. ECLIPSE, obscure. Heavenly bodies are *eclipsed* by the intervention of other bodies between them and the beholder; things are in general *obscured* which are in any way rendered less striking or visible.
Ant. DISCOVER, reveal.
e-clip-tic (*-klip'tik*), *n.* the apparent path of the sun in the heavens during a year.
ec-logue (*ek'log*), *n.* a pastoral poem.
ec-o-nom-ic (*ek-ō-* or *ē-kō-nom'ik*), *adj.* frugal; saving; pertaining to domestic economy.
ec-o-nom-ic-al (*'i-kal*), *adj.* economic. [PENURIOUS.]
e-con-o-mist (*ē-kon'ō-mist*), *n.* one prudent in expenditure.
e-con-o-mize (*'ō-mīz*), *v. t.* to manage with care or frugality.
e-con-o-my (*'ō-mi*), *n.* [*pl.* economies (*-miz*)], the regulation of household affairs. [FRUGALITY.]
é-cru (*ā-kroo'*), *adj.* unbleached.
ec-sta-sy (*ek'stá-si*), *n.* [*pl.* ecstasies (*-siz*)], the state of being beside one's self.
ec-stat-ic (*-stat'ik*), *adj.* overpowering; rapturous.
é-cu (*ā-koo'*), *n.* a mediæval shield.
Ecuador (*ek-wä-dōr'.* Spanish *ā-kwä-dōr'*). Spanish for equator. A republic of South America, so called by virtue of its geographical position.
ec-u-men-ic (*ek-ū-men'ik*), *adj.* general; universal.
★**ec-ze-ma** (*ek'zē-má,* not *ek-zē'má*), *n.* an inflammatory disease of the skin.
ed-dy (*ed'i*), *n.* [*pl.* eddies (*'iz*)], a contrary current of air or water causing a circular motion.
e-del-weiss (*ā'del-vīs*), *n.* a small white Alpine plant.
E-den (*ē'dn*), *n.* paradise.
Edgar. From the Anglo-Saxon name *Eadgar.*
edge (*ej*), *n.* the thin, sharp, or cutting part of an instrument; extreme border.
edged (*ejd*), *p. adj.* furnished with an edge, border, or fringe.
edge-tool (*'tōōl*), *n.* any sharp tool.
edg-ing (*'ing*), *n.* that which forms an edge or border.
ed-i-ble (*ed'i-bl*), *adj.* fit to be eaten as food.
e-dict (*ē'dikt*), *n.* a public proclamation or decree. [DECREE.]
ed-i-fi-ca-tion (*ed-i-fi-kā'shun*), *n.* a building up in a moral sense.
ed-i-fice (*ed'i-fis*), *n.* a fine structure.
ed-i-fy (*'i-fī*), *v. t.* [*p. t.* and *p. p.* edified, *p. pr.* edifying], to build up or strengthen.
Edinburgh (*ed'in-bur-ō*). The capital of Scotland. Formerly *Edwinesburg*, means ostensibly the fortress of Eadwine, the Northumbrian king, who was converted by Paulinus.
ed-it (*ed'it*), *v. t.* to revise and prepare for publication.
Edith. Formerly *Eadith;* from Anglo-Saxon *eadig*, "happy," "rich."
e-di-tion (*ē-dish'un*), *n.* the published form of a literary work.
ed-i-tor (*ed'i-tĕr*), *n.* one who superintends a literary work for publication.
ed-i-to-ri-al (*-tō'ri-al*), *adj.* pertaining to an editor: *n.* a leading article.
Edmund (*ed'mund*). From Anglo-Saxon *ead-mund* "guardian or defender of happiness." Danish, *Edmund;* Fr., *Edmond;* Ger., *Edmund;* It., *Edmondo;* Lat., *Edmundus;* Sp., *Edmondo*, or *Edmundo.*
ed-u-cate (*'ū-kāt*), *v. t.* to impart knowledge to; train. [TEACH.]
ed-u-ca-tion (*-kā'shun*) *n.* the act of educating.
Syn. EDUCATION, instruction, breeding. *Instruction* and *breeding* are to *education* as parts to a whole; *instruction* respects the communication of knowledge and *breeding* respects the manners or outward conduct; but *education* comprehends not only both these, but the formation of the mind, and the establishment of the principles; good *instruction* makes one wiser; good *breeding* makes one more polished and agreeable.
Ant. IGNORANCE, uncouthness.
ed-u-ca-tor (*-kā-tĕr*) *n.* one who, or that which, educates.
e-duce (*ē-dūs'*), *v. t.* to draw out; evolve.
Edward (*ed'ward*). From Anglo-Saxon *ead-weard*, "guardian of happiness." Danish, *Eduard;* Dutch, *Eduard;* Fr., *Edouard;* Ger., *Eduard;* It., *Eduardo* or *Edoardo;* Lat., *Edvardus* or *Edoardus;* Port., *Duarte;* Sp., *Eduardo;* Sw., *Eduard.*

Edwin (*ed'win*). From the Anglo-Saxon name Eadwin, from *ead-winn*, "happy conqueror." Danish, *Edwin*; Lat., *Edwinus*.

eel (*ēl*), *n.* an elongated fish, destitute of ventral fins.

eel-fare (*ēl'fâr*), *n.* a brood of eels.

Eel river, Ind. From the translation of the Indian name, *shoamague*, "slippery fish" (the eel).

e'en (*ēn*), contraction of even and evening.

e'er (*âr* or *âr*), contraction of ever.

ee-rie (*ē'ri*), *adj.* weird.

ef-face (*ef-fās'*), *v. t.* to obliterate. [BLOT.]

ef-face-a-ble (*ā-bl*), *adj.* capable of being effaced.

ef-fect (*ef-fekt'*), *v. t* to produce as a cause: *n.* result; purpose.

Syn. EFFECT, produce, perform. To *produce* signifies to bring something forth or into existence; to *perform* to do something to the end; to *effect* is to *produce* an effect by performing; whatever is *effected* is the consequence of a specific design; what is *performed* is done by specific efforts. [See *accomplish*, *consequence*.]

Ant. CAUSE, fail, spoil.

ef-fect-ive (*iv*), *adj.* having the power to effect.

ef-fect-u-al (*ŭ-al*), *adj.* producing, or having, effect.

ef-fem-i-na-cy (*-fem'i-nā-si*), *n.* the quality of being effeminate.

ef-fem-i-nate (*'i-nāt*), *v. t.* to make womanish or delicate: *adj.* unmanly. [FEMALE.]

ef-fer-vesce (*-fēr-ves'*), *v. i.* to be in a state of natural ebullition.

ef-fer-ves-cence (*'ens*), *n.* the state or condition of effervescing.

ef-fete (*-fēt'*), *adj.* worn out. [effect.

ef-fi-ca-cious (*-i-kā'shus*), *adj.* producing a desired

ef-fi-ca-cy (*-kā-si*), *n.* power to produce results or effects.

ef-fi-cien-cy (*-fish'en-si*), *n.* effectual agency or power. [ABILITY.]

ef-fi-cient (*'ent*), *adj.* producing or causing effects or results; powerful.

Effie. A Scottish corruption of *Euphemia*.

ef-fi-gy (*ef'i-ji*), *n.* [*pl.* effigies (*-jiz*)], an image.

ef-flo-resce (*-flō-res'*), *v. i.* to blossom.

ef-flu-vi-um (*ef-flū'vi-um*), *n. pl.* effluvia (*-ā*)], disagreeable exhalations arising from decaying matter.

ef-fort (*'fērt*), *n.* strenuous exertion. [ENDEAVOR.]

ef-front-er-y (*-frunt'ēr-i*), *n.* impudence.

ef-ful-gence (*-ful'jens*), *n.* a great luster.

ef-fu-sion (*-fū'zhun*), *n.* the act of pouring out.

Syn. EFFUSION, ejaculation. An *effusion* commonly flows from a heated imagination uncorrected by the judgment; it is, therefore, in general not only incoherent but extravagant and senseless; an *ejaculation* is produced by the warmth of the moment, but never without reference to some particular circumstance. Enthusiasts are full of extravagant *effusions;* contrite sinners will often express their penitence in pious *ejaculations*.

ef-fu-sive (*'siv*), *adj.* pouring forth freely or widely.

Egbert (*eg'bērt*). It means, "distinguished in battle," Lat., *Egbertus*.

egg (*eg*), *n.* the oval or roundish body laid by birds from which their young are produced.

eg-lan-tine (*'lan-tin* or *-tin*), *n.* the dog-rose.

eg-o-ism (*eg'ō-izm*), *n.* the habit of regarding self as the center of everything. [OPINIONATED.]

eg-o-ist (*-ist*), *n.* an adherent of egoism.

eg-o-tism (*eg'ō-tizm*), *n.* vanity. [OPINIONATED.]

eg-o-tist (*-tist*), *n.* one characterized by egotism.

e-gre-gious (*ē-grē'jus*), *adj.* extraordinary.

e-gress (*'gres*), *n.* departure.

e-gret (*'gret*), *n.* a heron's plume.

Egypt. Is the Greek and not the native name of the country which on the monuments is called *Kem* (Ham), "the black," probably from the dark alluvial soil. It has been explained as the "land" (*αἰα*) of the "vulture" (*guptos*), or sacred kite of Horus, which is the most conspicuous animal in the country.

Egyptian hall. The Egyptian hall in the mansion house of the city of London was so-called because of its exact correspondence with the Egyptian hall described by Vitruvius.

ei-der (*i'dēr*), *n.* a large marine duck, the down of which is an article of commercial value.

eight (*āt*), *adj.* one more than 7: a cardinal numeral.

eight-een (*āt'ēn*), *adj.* one more than 17: a cardinal numeral; the sum of 17 and 1.

eight-een-mo (*-mō*), *n.* a size of book the sheets for which are folded into 18 leaves.

eight-eenth (*'ēnth*), *adj.* next in order after 17th: an ordinal numeral.

eighth (*āt'th*), *adj.* next after seventh.

eight-i-eth (*āt'i-eth*), *adj.* next to seventy-ninth.

eight-y (*'i*), *adj.* eight times ten.

ei-kon (*ī'kŏn*), *n.* a holy image.

ei-ther (*ē'* or *ī'thēr*), *adj.* one or the other of two.

e-jac-u-late (*ē-jak'ū-lāt*), *v. t.* to utter suddenly. [CALL.]

e-jac-u-la-tion (*ū-lā'shun*), *n.* something uttered suddenly. [EFFUSION.]

e-ject (*ē-jekt'*), *v. t.* to cast forth. [BANISH.]

eke (*ēk*), *v. t.* to extend or lengthen.

e-lab-o-rate (*ē-lab'ō-rāt*), *v. t.* improve or refine with study or labor.

e-lapse (*-laps'*), *v. i.* to slip or glide away.

e-las-tic (*-las'tik*), *adj.* springing back; rebounding.

e-las-tic-i-ty (*-tis'i-ti*), *n.* the quality of being elastic.

e-las-tic tis-sue (*ē-las'tik tish'ū*), elastic tissue in the ligaments of the vertebræ.

e-late (*-lāt'*), *v. t.* to raise the spirits of.

e-la-tion (*-lā'shun*), *n.* the state of being elated.

Elba (*el'bā*). An island belonging to the province of Leghorn, Italy, situated in the Mediterranean, east of Corsica, and about five and one-half miles from Tuscany. Napoleon I. lived here in exile from May 4, 1814, to February 26, 1815.

el-bow (*el'bō*), *n.* the joint or bend of the arm: *v. t.* to thrust on one side.

el-der (*'dēr*), *adj.* older: *n.* one older in age, rank, or station; one of a body of laymen, in certain churches, authorized to superintend its spiritual interests.

el-der-ly (*'li*), *adj.* somewhat old.

Syn. ELDERLY, aged, old. The *elderly* man has passed the meridian of life; the *aged* man is fast approaching the term of our existence; the *old* man has already reached this term, or has exceeded it.

Ant. YOUNG, youthful.

el-dest (*'dest*), *adj.* oldest; first-born.

Eldred (*el'dred*). From the Teutonic, meaning "all dread," hence "terrible." Lat., *Eldredus*.

Eleanor (*el'ē-a-nŏr, el'en-ŏr*). Derived from *Helen*. Danish, *Eleonore;* Dutch, *Leonora;* Fr., *Elenore;* Ger., *Eleonore;* It., *Eleonora;* Lat., *Eleanora;* Sp., *Leanor*.

e-lect (*ē-lekt'*), *v. t.* to choose for any office or use: *adj.* taken in preference.

e-lec-tion (*-lek'shun*), *n.* the act of electing; voluntary preference. [ALTERNATIVE.]

e-lec-tion-eer (*-shun-ēr'*), *v. i.* to employ means for influencing the result of an election.

e-lect-ive (*-lekt'iv*), *adj.* regulated by choice; exerting the power of choice.

e-lect-or (*'ēr*) *n.* one legally qualified to vote.

e-lect-or-al col-lege (*kol'ej*), a body of representatives elected by the voters of the several states to choose a president of the United States.

e-lect-or-ate (*'ŏr-āt*), *n.* the whole body of persons entitled to vote.

e-lec-tric (*-lek'trik*), *adj.* pertaining to electricity; magnetic.

e-lec-tri-cian (*-trish'un*), *n.* one who is skilled in the science of electricity.

e-lec-tric-i-ty (*-tris'i-ti*), *n.* an imponderable and invisible agent producing light, heat, chemical decomposition, and other physical phenomena.

e-lec-tri-fi-a-ble (*'tri-fi-ā-bl*), *adj.* capable of being charged with electricity.

e-lec-tri-fi-ca-tion (*-fi-kā'shun*), *n.* the act of electrifying.

e-lec-tri-fy (*'tri-fi*), *v. t.* [*p. t.* and *p. p.* electrified, *p. pr.* electrifying], to charge with, or act upon, by electricity.

e-lec-tro, a *prefix* denoting electricity as the motive power, or operating agent.

e-lec-tro-cute (*'trō-kūt*), *v. t.* to put to death by an electric current.

e-lec-tro-cu-tion (*-kū'shun*), *n.* the act of electrocuting.

e-lec-trode (*ē-lek'trōd*), *n.* either of the terminals of an electric source; anode or cathode.

e-lec-tro-dy-nam-ics (*ē-lek'trō-dī-nam'iks*), *n.* that branch of physics which treats of electric currents.

e-lec-tro-dy-na-mom-e-ter (*-nā-mom'ē-tēr*), *n.* an instrument for measuring the strength of an electric current.

e-lec-tro-graph (*-grāf*), *n.* an apparatus used in preparing copper cylinders for printing fabrics.

e-lec-trog-ra-phy (*-trog'rā-fi*), *n.* a process of copying fine engravings on copper or steel.

e-lec-tro-ki-net-ics (*-trō-ki-net'iks*), *n.* that branch of electrical science which treats of electric currents in motion.

e-lec-tro-lier (*-trō-lēr'*), *n.* an ornamental bracket for supporting electric lamps.

e-lec-trol-y-sis (*-trol'i-sis*), *n.* the decomposition of a chemical compound by electricity.

e-lec-tro-lyze (*'trō-līz*), *v. t.* to decompose by the action of electricity.

e-lec-tro-mag-net (*-mag'net*), *n.* a coil of soft iron rendered magnetic by the passage of an electric current through it.

e-lec-tro-mag-net-ics (*-mag-net'iks*), *n.* the science of electromagnetism.

e-lec-tro-met-al-lur-gy (*-met'al-ēr-ji*), *n.* the art of precipitating certain metals from their solutions by a slow electric current.

e-lec-tron (*ē-lek'tron*), *n.* an electrical unit.

e-lec-trop-a-thy (*-trop'ā-thi*), *n.* the treatment of diseases by electricity.

e-lec-troph-o-rus (*-trof'ō-rus*), *n.* an instrument for generating statical electricity.

e-lec-tro-pho-tom-e-ter (*'trō-fō-tom'ē-tēr*), *n.* an instrument for comparing the brightness of various lights with that produced by an electric spark.

e-lec-tro-plate (*'trō-plāt*), *v. t.* to cover or give a coating of metal to by means of a current of electricity.

e-lec-tro-tech-nics (*-tek'niks*), *n.* the science of the processes in which electricity is applied to the industrial arts.

e-lec-tro-tint-ing (*-tint'ing*), *n.* a method of producing a design, etc., the lines of which when exposed in an electro bath are protected.

e-lec-tro-type (*'trō-tīp*), *n.* a facsimile in metal of any object made by the action of a galvanic electric current.

el-ee-mos-y-na-ry (*el-ē-mos'i-nā-ri*), *adj.* pertaining to alms.

el-e-gance (*el'ē-gans*), *n.* [*pl.* elegances (*-gan-siz*)], the state or quality of being elegant.

el-e-gant (*-gant*), *adj.* characterized by refinement and good taste.

★e-le-gi-ac (*ē-lē'ji-ak*, or *el-ē-ji'ak*), *adj.* pertaining to, or of the nature of, an elegy.

el-e-gy (*el'ē-ji*), *n.* [*pl.* elegies (*-jiz*)], a funeral song or ode.

el-e-ment (*el'ē-ment*), *n.* a first or constituent principle.

el-e-mental (*'tal*), *adj.* pertaining to, or characteristic of, an element.

el-e-phant (*'ē-fant*), *n.* a large five-toed proboscidian mammal.

Elephanta (*el-ē-fan'tā*). The Portuguese name for a small island in Bombay harbor, derived from the colossal figure of an elephant carved on the rock.

el-e-phan-ti-a-sis (*-ti'ā-sis*), *n.* a cutaneous disease resembling leprosy.

el-e-phan-tine (*'tin*), *adj.* huge; unwieldy.

Elephantine (*el-ē-fan-tē'nā*). The Greek name of the island of Philœ.

el-e-vate (*el'ē-vāt*), *v. t.* to raise.

el-e-va-tion (*-vā'shun*), *n.* the act of elevating.

el-e-va-tor (*-tēr*), *n.* a hoisting machine or lift.

★e-lev-en (*ē-lev'n*), *adj.* 10 with 1 added.

e-lev-enth (*-lev'nth*), *adj.* next in order after 10th: an ordinal numeral.

elf (*elf*), *n.* [*pl.* elves (*elvz*)], a diminutive mischievous sprite; fairy.

el-fin (*el'fin*), *n.* an inhabitant of fairyland: *adj.* pertaining to elves.

Elgin (*el-gin*) **marbles.** A collection of Greek sculptures comprising the bulk of the surviving plastic decorations of the Parthenon, and a caryatid and column from the Erechtheum, and recognized as containing the finest existing productions of sculpture.

Elias (*ē-lī'as*). From the Greek form of *Elijah*, meaning "God the Lord." Danish, *Elias;* Fr., *Elie;* Ger., *Elias;* It., *Elia;* Lat., *Elias*.

e-lic-it (*ē-lis'it*), *v. t.* to draw out.

e-lide (*-lid'*), *v. t.* slur over, or cut off.

el-i-gi-bil-i-ty (*el-i-ji-bil'i-ti*), *n.* the quality of being eligible.

el-i-gi-ble (*el'i-ji-bl*), *adj.* capable of being, or fit to be, chosen.

Syn. ELIGIBLE, preferable. What is *eligible* is desirable in itself, what is *preferable* is more desirable than another.

Elihu (*ē-li'hū* or *el'i-hū*). A name derived from Elias.

Elijah. See *Elias*.

e-lim-i-nate (*ē-lim'i-nāt*), *v. t.* to leave out of consideration.

Elisabeth. See *Elizabeth*.

Elisha (*ē-lī'shā*). From the Hebrew, meaning "the salvation of God." Fr., *Elisée;* It., *Eliseo;* Lat., *Elisæus;* Port., *Eliseu;* Sp., *Eliseo*.

e-li-sion (*ē-lizh'un*), *n.* the cutting off of a rowel or syllable for the sake of euphony.

e-lix-ir (*ē-lik'sēr*), *n.* a tincture, essence, or cordial.

Eliza (*ē-li'zā*). Corrupted from *Elizabeth*. Danish, *Elisa;* Dutch, *Elisa;* Fr., *Elise;* Ger., *Elisa;* Lat., *Eliza*, or *Elisa*.

Elizabeth (*ē-liz'a-beth*). From the Hebrew *Eliyshebha*, which St. Jerome translates "oath of my God"; Danish, *Elisabeth;* Dutch, *Elizabeth;* Fr., *Elisabeth;* Ger., *Elisabeth;* It., *Elisabetta;* Lat., *Elizabetha;* Sp., *Isabel*.

Elizabeth, N. J. Named for Elizabeth Carteret, wife of Sir George Carteret.

elk (*elk*), *n.* a very large deer of North America and northern Europe.

ell (*el*), *n.* a measure formerly used for cloth equal to 45 inches.

Ellen. Some consider this the same as *Helen*, and, indeed, in Spanish *Helen* and *Ellen* are both represented by *Elena*. It may, however, be the same as *Aileen*.

el-lipse (*el-lips'*), *n.* one of the sections of a cone.

el-lip-sis (*'sis*), *n.* the omission of a word or words in a sentence.

el-lip-tic (*-lip'tik*), *adj.* pertaining to, or formed like, an ellipse.

Ellis Island, N. Y. Variously called Oyster, Bucket, and Gibbett island. The port of arrival of immigrants.

elm (*elm*), *n.* a tree of various species belonging to the genus Ulmus.

Elma. A female name abbreviated from *Guilielma*, a feminine formed from *Guilielmus*, from root of *William*.

Elmira. City in Chemung county, New York.

Elmo, Castle of Saint. A castle at Naples and a fort at Malta.

el-o-cu-tion (*el-ō-kū'shun*), *n.* the art, manner, or style of speaking in public.

el-o-cu-tion-ist (*-ist*), *n.* one skilled in the art of elocution.

★e-lon-gate (*ē-lŏng'gāt*, not *ē-lon'gāt*), *v. t.* to stretch out.

e-lope (*ē-lōp'*), *v. i.* to escape privately.

e-lope-ment (*'ment*), *n.* running away.

e-lo-quence (*el'ō-kwens*), *n.* the art of speaking with fluency and elegance.

el-o-quent (*-kwent*), *adj.* having the power of oratory.

else (*els*), *adv.* besides.

Else or **Elsa.** See *Alice*.

else-where (*'hwâr*), *adv.* in another place.

Elsie. A name corrupted from *Elizabeth*.

e-lu-ci-date (*ē-lū'si-dāt*), *v. t.* to make clear; render intelligible. [EXPLAIN.]
e-lude (*ē-lūd'*), *v. t.* to avoid by artifice or dexterity.
e-lu-sive (*-lū'siv*), *adj.* deceptive.
e-lu-so-ry (*'sō-ri*), *adj.* evasive.
elves, *pl.* of elf.
Elvira (*el-vi'ra*). It has been corrupted from the name *Geloyra* or *Geluira*.
Elysée (*ā-lē-zā'*), **Palace of.** The official residence of the president of France, in Paris. It was built in 1718, and since the reign of Louis XV. has been the property of the state.
e-ly-sian (*ē-lizh'an*), *adj.* pertaining to Elysium.
E-ly-sium (*'um*), *n.* the Greek paradise or residence of the blessed after death; a condition of perfect happiness.
em (*em*), *n.* the square body of any size of type.
e-ma-ci-ate (*ē-mā'shi-āt*), *v. i.* to lose flesh; pine away.
em-a-nate (*em'ā-nāt*), *v. i.* to flow out, issue, as from a source.
e-man-ci-pate (*ē-man'si-pāt*), *v. t.* to liberate from servitude or bondage.
e-man-ci-pa-tor (*-pā-tēr*), *n.* a liberator.
e-mas-cu-late (*-mas'kū-lāt*), *v. t.* to castrate; deprive of virility: *adj.* castrated.
em-balm (*em-bām'*), *v. t.* to preserve from decay by balsams or aromatic spices.
em-bank (*-bangk'*), *v. t.* to inclose with a bank.
em-bank-ment (*'ment*), *n.* a bank of earth.
em-bar-go (*-bär'gō*), *n.* [*pl.* embargoes (*'gōz*)], an order by authority prohibiting the departure of vessels from port.
em-bark (*-bärk'*), *v. t.* to put on board ship; venture or invest: *v. i.* to go on board a vessel.
em-bar-rass (*-bar'as*), *v. t.* to hinder, perplex.
Syn. EMBARRASS, perplex, entangle. *Embarrassments* depend altogether on ourselves; the want of prudence and presence of mind is the common cause; *perplexities* depend on extraneous circumstances as well as ourselves; extensive dealings with others are mostly attended with *perplexities; entanglements* arise mostly from the evil designs of others. [See *obstruct.*]
Ant. EMBOLDEN, rally, extricate.
em-bas-sy (*'bā-si*), *n.* [*pl.* embassies (*-siz*)], the public function of an ambassador; a legation.
em-bat-tled (*-bat'ld*), *p. adj.* furnished with battlements.
em-bed (*-bed'*), *v. t.* to lay in a bed; set in surrounding matter.
em-bel-lish (*-bel'ish*), *v. t.* to make beautiful.
em-ber (*'bēr*), *n.* a small live coal.
em-bez-zle (*-bez'l*), *v. t.* to appropriate fraudulently.
em-bit-ter (*-bit'ēr*), *v. t.* to make bitter.
em-bla-zon (*-blā'zn*), *v. t.* to adorn with heraldic figures.
em-bla-zon-ry (*-ri*), *n.* [*pl.* emblazonries (*-riz*)], heraldic decoration.
em-blem (*'blem*), *n.* a symbolical figure or design.
em-blem-at-ic (*blem-at'ik*), *adj.* pertaining to an emblem.
em-ble-ments (*'blē-ments*), *n. pl.* annual crops.
em-bod-i-ment (*-bod'i-ment*), *n.* the act of embodying or uniting in a whole.
em-bod-y (*-bod'i*), *v. t.* [*p. t.* and *p. p.* embodied, *p. pr.* embodying], to collect into one mass or united whole: *v. i.* to coalesce.
em-bold-en (*em-bōld'n*), *v. t.* to encourage. [ENCOURAGE.]
em-bo-lus (*'bō-lus*), *n.* [*pl.* emboli (*-lī*)], something inserted and acting in another thing.
em-bos-om (*em-booz'um*), *v. t.* to hold in the bosom.
em-boss (*-bos'*), *v. t.* to cover with bosses or studs.
em-boss-ing (*'ing*), *n.* the art of producing raised figures in relief.
em-bow-el (*-bou'el*), *v. t.* [*p. t.* and *p. p.* emboweled, *p. pr.* emboweling], to remove the intestines from.
em-bow-er (*-bou'ēr*), *v. t.* to cover with, or as with, a bower.
em-brace (*-brās'*), *v. t.* to take in close, or press to the bosom with affection; hug: *v. i.* to join in an embrace. [CLASP, EMBRACE.]
em-bra-cer-y (*-brā'sēr-i*), *n.* the act of attempting to corrupt a jury.
em-bra-sure (*'zhūr*), *n.* an opening in a wall from which to fire guns.
em-bro-ca-tion (*-brō-kā'shun*), *n.* a liniment for rubbing an injured part.
em-broid-er (*-broid'ēr*), *v. t.* to decorate with needlework.
em-broid-er-y (*-i*), *n.* [*pl.* embroideries (*-iz*)], ornamental work of gold, silver, silk, etc., executed with the needle.
em-broil (*-broil'*), *v. t.* to throw into confusion.
em-bry-o (*'bri-ō*), *n.* [*pl.* embryos (*-ōz*)], the first germ or rudiment of an organism.
em-bry-ol-o-gy (*-ol'ō-ji*), *n.* that branch of biology which treats of embryos.
em-bry-on-ic (*-on'ik*), *adj.* pertaining to an embryo.
em-bry-ot-o-my (*-ot'ō-mi*), *n.* the extraction of an embryo by cutting.
e-mend (*ē-mend'*), *v. t.*, to correct. [AMEND.]
em-en-da-tion (*em-en-dā'shun*), *n.* the alteration or correction of a text.
em-er-ald (*em'ēr-ald*), *n.* a precious stone of a rich, deep green color.
Emerald Isle. Ireland. The author of this epithet was Dr. Drennan, of Belfast, who died 1820.
e-merge (*ē-mērj'*), *v. i.* to rise up, or come forth, from anything.
e-mer-gen-cy (*ē-mēr'jen-si*), *n.* [*pl.* emergencies (*-siz*)], a sudden occasion; crisis. [EXIGENCY.]
e-mer-sion (*-mēr'shun*), *n.* the act of emerging.
em-er-y (*em'ēr-i*), *n.* a very hard variety of corundum.
Emery (*em'e-ri*). A name derived from the old name *Amalaric*, signifying "powerful without a blot," or "rich in chastity." Danish, *Almerik;* Dutch, *Almerik;* Fr., *Emeric* or *Emeri;* Lat., *Almericus;* Sw., *Emmerik.*
e-met-ic (*ē-met'ik*), *adj.* inducing vomiting.
em-i-grant (*em'i-grant*), *n.* one who quits his own country to settle in another.
em-i-grate (*'i-grāt*), *v. i.* to leave one's country to settle in another.
Syn. EMIGRATE, immigrate, migrate. To *migrate* is to change one's dwelling-place, usually with the idea of repeated change, or of periodical return; it applies to wandering tribes of men, and to many birds and animals. *Emigrate* and *immigrate* carry the idea of a permanent change of residence to some other country or some distant region.
Emilia (*ē-mil'i-ā*) or **Emily** (*em'i-li*). A name corrupted from *Amelia.* Fr., *Emilie;* Ger., *Emilie,* or *Emilia;* It., *Emilia.*
Emily. See *Emilia.*
em-i-nence (*em'i-nens*), *n.* that which is lofty; elevation; height.
em-i-nent (*-nent*), *adj.* high in office, or reputation. [DISTINGUISHED.]
em-is-sa-ry (*em'i-sā-ri*), *n.* [*pl.* emissaries (*-riz*)], a person sent on a mission.
Syn. EMISSARY, spy. Both these words designate a person sent out by a body on some public concern among their enemies. The *emissary* is sent so as to mix with the people to whom he goes, to be in all places, and to associate with every one individually as may serve his purpose; the *spy* takes his station wherever he can best perceive what is passing. The *emissary* is generally employed by those who have some legitimate object to pursue; *spies,* on the other hand, are employed by governments in a time of warfare only.
e-mis-sion (*ē-mish'un*), *n.* the act of sending out.
e-mit (*-mit'*), *v. t.* [*p. t.* and *p. p.* emitted, *p. pr.* emitting], to send or give forth.
Emma. Some derive this name from Greek *amme,* "a nurse." Fr., *Emma;* It., *Emma;* Lat., *Emma.*
Emmanuel (*em-man'ū-el*) or **Immanuel.** From the Hebrew, meaning "God with us;" Fr., *Emmanuel;* Ger., *Emanuel* or *Immanuel;* It., *Emanuele;* Lat., *Emanuel;* Port., *Manoel;* Sp., *Manuel.*
e-mol-lient (*ē-mol'yent*), *adj.* softening: *n.* a medicine that has a softening effect.
e-mol-u-ment (*'ū-ment*), *n.* profit; remuneration.
e-mo-tion (*-mō'shun*), *n.* mental agitation.
e-mo-tion-al (*-al*), *adj.* pertaining to emotion.
em-per-or (*em'pēr-ēr*), *n.* the sovereign of an empire.
em-pha-sis (*'fa-sis*), *n.* a particular stress of the voice on a word or words in reading or speaking.
em-pha-size (*'fa-siz*), *v. t.* to pronounce with emphasis.
em-phat-ic (*-fat'ik*), *adj.* uttered with emphasis; forcibly significant.
em-pire (*'pir*), *n.* supreme power or dominion; the region ruled over by an emperor or sovereign.
Syn. EMPIRE, reign, dominion. As *empire* signifies command, or the power exercised in commanding, it properly refers to the country or people commanded; and as *reign* signifies the act of *reigning* it refers to the individual who *reigns. Dominion* may be applied in the proper sense to the power which man exercises over the brutes or inanimate objects, and figuratively to the power of the passions.
em-pir-ic (*-pir'ik*), *adj.* pertaining to, or derived from, experience.
em-pir-i-cism (*'i-sizm*), *n.* observation, or practical experience apart from scientific knowledge.
em-ploy (*-ploi'*), *v. t.* [*p. t.* and *p. p.* employed, *p. pr.* employing], to give occupation to: *n.* occupation.
Syn. EMPLOY, use. We *employ* whatever we take into our service, or make subservient to our convenience for a time; we *use* whatever we entirely devote to our purpose.
Ant. NEGLECT.
★em-ploy-é (*em-ploi-ā'* or *ăN-plwā-yā*, not *em-ploi-ē'* unless spelled *employee*), *n.* one who works for another.
em-ploy-ment (*'ment*), *n.* business; occupation.
em-po-ri-um (*-pō'ri-um*), *n.* a commercial center or place of trade.
em-pow-er (*-pou'ēr*), *v. t.* to authorize. [COMMISSION.]
em-press (*'pres*), *n.* a woman invested with sovereign sway over an empire.
emp-ty (*emp'ti*), *adj.* [*comp.* emptier, *superl.* emptiest], containing nothing; vacant: *v. t.* [*p. t.* and *p. p.* emptied, *p. pr.* emptying], to pour out; discharge. [HOLLOW.]
em-py-re-an (*em-pi'rē-an*), *adj.* ethereal.
e-mu (*ē'mū*), *n.* a large Australian ostrich-like bird.
em-u-late (*em'ū-lāt*), *v. t.* to strive to equal or excel.
e-mul-gent (*ē-mul'jent*), *adj.* draining out: *n.* a medicine that promotes a flow of the bile.
e-mul-sion (*ē-mul'shun*), *n.* any liquid preparation resembling milk.
en-a-ble (*en-ā'bl*), *v. t.* to make able.
en-act (*-akt'*), *v. t.* to decree; pass into law.
en-act-ment (*en-akt'ment*), *n.* the act of enacting; a statute.
Enaid or **Enid.** A Welsh female name signifying "soul, life."
en-am-el (*en-am'el*), *n.* an opaque, semitransparent substance, or glass, used in coating the surface of metals or porcelain: *v. t.* [*p. t.* and *p. p.* enameled, *p. pr.* enameling], to decorate with enamel.
en-am-or (*-am'ēr*), *v. t.* to captivate.
en-camp (*-kamp'*), *v. i.* to form a camp; halt on the march.
en-camp-ment (*'ment*), *n.* a temporary resting place.
en-chain (*en-chān'*), *v. t.* to hold fast with, or as with, a chain.
★en-chant (*-chant'*, not *en-chant'*), *v. t.* to charm or subdue, fill with delight.
en-cir-cle (*-sēr'kl*), *v. t.* to enclasp; embrace. [SURROUND.]
en-co-mi-um (*-kō'mi-um*), *n.* [*pl.* encomiums (*-umz*)], formal praise.
Syn. ENCOMIUM, eulogy, panegyric. We bestow *encomiums* upon any work of art or production of genius; we bestow *eulogies* on the exploits of a hero; but we write *panegyrics* either in a direct address, or in direct reference to the person who is *panegyrized;* the *encomium* is produced by merit, real or supposed; the *eulogy* may spring from admiration of the person *eulogized.*
Ant. ABUSE, censure, denunciation.
en-com-pass (*-kum'pas*), *v. t.* to surround. [SURROUND.]
★en-core (*ăng-kōr'*, French *ăN-kōr'*), *adv.* once more; again: *n.* a demand by an audience for a repetition of a part of a program.
en-coun-ter (*en-koun't ēr*), *v. t.* to come upon suddenly; meet face to face: *n.* a conflict; battle.
en-cour-age (*-kur'āj*), *v. t.* to inspire with courage.
Syn. ENCOURAGE, embolden. To *encourage* is to give *courage,* and to *embolden* to make *bold;* the former impelling to action in general, the latter to that which is more difficult or dangerous.
Ant. BAFFLE, confuse, deter, discourage.
en-croach (*-krōch'*), *v. i.* to invade gradually or by stealth.
en-cum-ber (*-kum'bēr*), *v. t.* to impede; retard.
en-cum-brance (*'brans*), *n.* that which encumbers.
en-cyc-li-cal (*-sik'li-kal*), *adj.* sent to all members of a class or community.
en-cy-clo-pæ-di-a or **encyclopedia** (*-si-klō-pē'di-ā*), *n.* a dictionary of the arts, sciences, and literature.
en-cy-clo-pæd-ic (*-ped'ik*), *adj.* pertaining to an encyclopædia.
en-cy-clo-pæ-dist (*-pē'dist*), *n.* a compiler of an encyclopædia.
Encyclopædists or **Encyclopedists** (*en-si-klō-pē'dists*). The collaborators in the encyclopædia of Diderot and D'Alembert (1751-65).
end (*end*), *n.* the extreme limit or terminal point of anything; purpose in view; death: *v. t.* to bring to an end; destroy: *v. i.* to come to an end; die.
Syn. END, terminate, close. To *end* is indefinite in its meaning and general in its application; *terminate* and *close* are modes of *ending;* to *terminate* is to *end* finally; to *close* to end gradually. Whatever is begun will *end,* and it may *end* in any way; but what *terminates* is that which has been designedly brought to an end; a string, a line, a verse, etc., may *end,* but a road is said properly to *terminate.* [See *abolish.*]
Ant. BEGIN, commence, continue.
en-dan-ger (*en-dān'jēr*), *v. t.* expose to danger.
en-dear (*-dēr'*), *v. t.* to make dear or beloved.
en-deav-or (*-dev'ēr*), *v. i.* to strive for the attainment of some object; attempt: *n.* exertion; effort; attempt.
Syn. ENDEAVOR, effort, exertion. *Endeavor* expresses little more than this common idea, being a term of general import; *effort* and *exertion* are particular modes of *endeavor;* the former being a special strong *endeavor,* the latter a continued strong *endeavor.*
Ant. NEGLECT, idleness.
end-less (*end'les*), *adj.* forever. [ETERNAL.]
en-do-gen (*'dō-jen*), *n.* a plant of one of the primary classes of the vegetable kingdom: *pl.* the class.
en-do-sperm (*'dō-spērm*), *n.* the albumen of a seed.
en-dow (*-dou'*), *v. t.* to bestow a fund or income upon.
en-dow-ment (*'ment*), *n.* the act of endowing; that which is bestowed, settled, or appropriated to any object.
en-due (*-dū'*), *v. t.* to clothe; invest. [INVEST.]
en-dur-a-ble (*-dūr'ā-bl*), *adj.* bearable.
en-dur-ance (*-dūr'ans*), *n.* the capacity to endure; fortitude.
en-dure (*-dūr'*), *v. t.* to support without breaking or yielding; remain in: *v. i.* to harden; remain in the same state.
en-e-ma (*en'ē-mā*), *n.* an injection into the rectum.
en-e-my (*'ē-mi*), *n.* [*pl.* enemies (*-miz*)], one hostile to another.
en-er-get-ic (*-ēr-jet'ik*), *adj.* possessing, or displaying, energy; vigorous in action. [ACTIVE.]
en-er-gize (*'ēr-jīz*), *v. t.* to endow with energy.
en-er-gy (*'ēr-ji*), *n.* [*pl.* energies (*-jiz*)], internal or inherent power; vigorous operation.
Syn. ENERGY, force, vigor. With *energy* is connected the idea of activity; with *force* that of capability; with *vigor* that of health; *energy* lies only in the mind; *force* and *vigor* are the property of either body or mind.
Ant. FEEBLENESS, impatience, weakness.

e-ner-vate (*ē-nẽr'vāt* or *en'ẽr-vāt*), *v. t.* to deprive of nerve.
en-fee-ble (*en-fē'bl*), *v. t.* to weaken; relax.
en-force (*-fōrs'*), *v. t.* to put into execution with vigor.
★**en-fran-chise** (*en-fran'chiz*), *v. t.* to liberate or set free; admit to the right of voting.
Engadine (*en-gä-dēn'*). A valley in the canton of Grisons, Switzerland, traversed by the Inn, noted for its health resorts and high elevation.
en-gage (*en-gāj'*), *v. t.* to pledge or bind by oath or contract; secure for aid or employment; encounter in battle; occupy the time or attention of; interlock. [ATTRACT.]
en-gage-ment (*-gāj'ment*), *n.* the act of engaging; the state or condition of being engaged; betrothal. [PROMISE.]
en-gen-der (*-jen'dẽr*), *v. t.* to beget; excite.
★**en-gine** (*en'jin*, not *en'jīn*), *n.* a machine by which power is applied for the performance of work.
en-gi-neer (*-ji-nēr'*), *n.* one who is skilled in the principles or practice of any branch of engineering.
en-gi-neer-ing (*'ing*), *n.* the art of constructing and using machinery.
England (*ing'gland*). When Egbert, king of the West-Saxons, in 829, had subjugated the other six Saxon kingdoms, he summoned a general council at Winchester, at which it was declared that henceforth Britain should be called England, its people Englishmen, and himself king of England. Originally the name was *Englaland*, the land of the Engles, or Angles, who came over from Sleswick, a province of Juteland.
Eng-lish (*ing'glish*), *adj.* belonging to, characteristic of, or pertaining to, the language or the people of England, or those descended from them.
en-grain. Another form of *ingrain.*
en-grave (*en-grāv'*), *v. t.* to cut or carve in sunken patterns.
en-gross (*-grōs'*), *v. t.* to absorb; write in a large distinct, round hand. [ABSORB.
en-gulf. Same as *ingulf.*
en-hance (*-hans'*), *v. t.* to raise in esteem.
en-har-mon-ic (*-här-mon'ik*), *adj.* proceeding by smaller intervals than a semitone.
e-nig-ma (*ē-nig'mȧ*), *n.* a riddle.
e-nig-mat-ic (*-mat'ik*), *adj.* pertaining to an enigma. [EQUIVOCAL, MYSTERIOUS.]
en-join (*-join'*), *v. t.* to direct with authority or urgency; prohibit.
en-joy (*-joi'*), *v. t.* to feel or perceive with pleasure. [ADMIRE.]
en-kin-dle (*-kin'dl*), *v. t.* to set on fire; rouse.
en-large (*-lärj'*), *v. t.* to make larger; extend in limits or dimensions; amplify.
Syn. ENLARGE, increase, extend. *Enlarge* is applied to dimension and extent; *increase* is applicable to quantity, signifying to become greater in size; *extend* signifies to make greater in space. [See *add.*]
Ant. ABBREVIATE, curtail, limit, reduce.
en-light-en (*-līt'n*), *v. t.* to illuminate; make clear to the mind. [ILLUMINATE, TEACH.]
en-list (*-list'*), *v. t.* to enroll, as for military service; register.
en-liv-en (*-līv'n*), *v. t.* to make vigorous, active, or vivacious.
en-mi-ty (*'mi-ti*), *n.* [*pl.* enmities (*-tiz*)], animosity; hatred; hostility; ill will.
Syn. ENMITY, animosity, hostility. *Enmity* lies in the heart; *animosity*, lies in the passions; *hostility*, lies in the action. *Enmity* is altogether personal; *hostility* respects public or private measures; *enmity* often lies concealed in the heart and does not betray itself by any open act of *hostility*. [See *feud.*]
en-no-ble (*-nō'bl*), *v. t.* to make noble.
★**en-nui** (*än-wè*, French *äɴ-nwē*), *n.* languor of mind; listlessness.
Enoch (*ē'nok*). Derived from the Hebrew *Hhanokh*, "initiated, dedicated"; *i. e.*, to God. Fr., *Enoch* or *Henoch;* Lat., *Enochus* or *Henochus.*
e-nor-mi-ty (*ē-nôr'mi-ti*), *n.* [*pl.* enormities (*-tiz*)], something outrageous or extremely immoderate.
e-nor-mous (*'mus*), *adj.* excessive; very great; immense; huge.
Syn. ENORMOUS, prodigious, monstrous. The *enormous* contradicts our rules of estimate and calculating; the *prodigious* raises our minds beyond their ordinary standard of thinking; the *monstrous* contradicts nature and the course of things. What is enormous excites our surprise or amazement: what is *prodigious* excites our astonishment; what is *monstrous* does violence to our senses and understanding.
Ant. DIMINUTIVE, little, mean, paltry, slight.
e-nough (*ē-nuf'*), *adj.* sufficient: *n.* a sufficiency.
Syn. ENOUGH, sufficient. He has *enough* whose desires are satisfied; he has *sufficient* whose wants are supplied.
Ant. INADEQUATE, scanty, scarce.
en-rage (*en-rāj'*), *v. t.* to throw into a rage.
en-rail (*-rāl'*), *v. t.* to place a car upon rails; opposed to derail.
en-rapt (*-rapt'*), *adj.* enraptured.
en-rap-ture (*-rap'tūr*), *v. t.* to transport with delight.
en-rich (*en-rich'*), *v. t.* to make rich.
en-robe (*-rōb'*), *v. t.* to clothe; invest.
en-roll (*-rōl'*), *v. t.* to insert in a register; enlist; record.
en route (*äɴ-rōōt'*), on the way. [*French.*]

en-sam-ple (*en-sam'pl*) *n.* example. [EXAMPLE.]
en-sconce (*-skons'*), *v. t.* to hide; fix securely.
en-sheathe (*-shēth'*), *v. t.* to sheathe.
en-shrine (*en-shrīn'*), *v. t.* to place in a shrine.
en-shroud (*-shroud'*), *v. t.* to cover with, or as with, a shroud.
en-sign (*'sīn*), *n.* a flag; the lowest rank in the navy.
en-si-lage (*'si-lāj*), *n.* fodder or vegetable produce stored in a silo.
en-slave (*-slāv'*), *v. t.* to bring into, or reduce to, slavery.
en-snare (*-snâr'*), *v. t.* to take in, or as in, a snare.
en-sue (*-sū'*), *v. i.* to follow as a consequence. [FOLLOW.]
en-sure. Same as *insure.*
en-tab-la-ture (*-tab'lȧ-tūr*), *n.* the whole parts on the top of a pillar or column.
en-tail (*en-tāl'*), *n.* an estate in fee limited to a particular heir or heirs: *v. t.* to leave or settle, as if by entail.
en-tan-gle (*-tang'gl*), *v. t.* to involve; tangle. [EMBARRASS.]
en-ter (*'tẽr*), *v. t.* to go or come into; begin; penetrate: *v. i.* to effect an entrance.
en-ter-prise (*'tẽr-prīz*), *n.* an undertaking of importance.
en-ter-pris-ing (*-ing*), *adj.* adventurous.
Syn. ENTERPRISING, adventurous. The *enterprising* character conceives great projects, and pursues objects that are difficult to be obtained; the *adventurous* character is contented with seeking that which is new, and placing himself in dangerous and unusual situations.
Ant. TIMID, conservative, meticulous.
en-ter-tain (*-tān'*), *v. t.* to receive and treat hospitably; take into consideration: *v. i.* to receive guests hospitably.
en-ter-tain-ment (*'ment*), *n.* the act of entertaining.
en-thrall (*-thrawl'*), *v. t.* to enslave.
en-throne (*-thrōn'*), *v. t.* to place on a throne.
en-thu-si-asm (*-thū'zi-azm*), *n.* elevation of fancy; zeal.
en-thu-si-ast (*'zi-ast*), *n.* one who is filled with enthusiasm.
en-thu-si-as-tic (*-as'tik*), *adj.* given to, or characterized by, enthusiasm. [EAGER.]
en-tice (*-tīs'*), *v. t.* to attract or allure. [PERSUADE.]
en-tire (*-tīr'*), *adj.* complete in all parts; whole: *adv.* entirely; wholly. [WHOLE.]
en-tire-ty (*'ti*), *n.* completeness.
en-ti-tle (*en-tī'tl*), *v. t.* to give a title, or designation to.
en-ti-ty (*'ti-ti*), *n.* [*pl.* entities (*-tiz*)], anything that exists, or is supposed to exist; being.
en-tomb (*en-tōōm'*), *v. t.* to place in a tomb.
en-to-mol-o-gist (*-jist*), *n.* a student of entomology.
en-to-mol-o-gy (*-tō-mol'ō-ji*), *n.* that branch of zoölogy which treats of insects.
en-ton-ic (*-ton'ik*), *adj.* having great tension.
en-trails (*'trālz*), *n. pl.* the intestines.
en-train (*-trān'*), *v. t.* to dispatch by train.
en-trance (*'trans*), *n.* the act of entering; a passage.
en-trap (*-trap'*), *v. t.* to take in, or as in, a trap.
en-treat (*-trēt'*), *v. t.* to solicit earnestly. [BEG.]
en-treat-y (*-trēt'i*), *n.* [*pl.* entreaties (*'iz*)], an earnest petition.
en-trée (*äɴ-trā'*), *n.* entrance; admission.
en-trust. Same as *intrust.*
en-try (*en'tri*), *n.* [*pl.* entries (*'triz*)], an entrance; passage.
en-twine (*-twīn'*), *v. t.* to twine around.
e-nu-mer-ate (*ē-nū'mẽr-āt*), *v. t.* to reckon or name singly.
e-nu-mer-a-tion (*-ā'shun*), *n.* the act of numbering.
e-nun-ci-ate (*ē-nun'shi-āt*), *v. t.* to declare or proclaim. [ANNOUNCE, SPEAK.]
e-nun-ci-a-tion (*-si-ā'shun*), *n.* articulation.
en-vel-op (*-vel'up*), *v. t.* to surround with, or as with, a wrapper.
en-vel-ope (*en'vel-ōp*), *n.* a case or wrapper, usually gummed, for safe conveyance of a letter.
en-vel-op-ment (*-vel'up-ment*), *n.* the act of enveloping.
en-ven-om (*-ven'um*), *v. t.* to make poisonous.
en-vi-a-ble (*'vi-ȧ-bl*), *adj.* exciting envy.
en-vi-a-bly (*-bli*), *adv.* in an enviable manner.
en-vi-ous (*'vi-us*), *adj.* feeling, or characterized by, envy.
en-vi-ron (*-vī'run*), *v. t.* to surround or inclose. [SURROUND.]
en-vi-ron-ment (*-ment*), *n.* that which surrounds.
en-voy (*'voi*), *n.* a diplomatic representative. [AMBASSADOR.]
en-vy (*'vi*), *v. t.* [*p. t.* and *p. p.* envied, *p. pr.* envying], to grudge; feel displeasure at the excellence or prosperity of. [JEALOUSY.]
en-wrap (*-rap'*), *v. t.* to wrap up.
en-zo-öt-ic (*-zō-ot'ik*), *adj.* pertaining to a disease of a particular district.
e-pact (*ē'pakt*), *n.* the excess of the solar over the lunar month.
ep-au-let (*ep'aw-let*), *n.* an ornamental badge sometimes worn on the shoulder by officers.
e-pergne (*ē-pern'*), *n.* an ornamental stand with a dish for holding flowers, etc.
e-phem-e-ra (*ē-fem'ē-rȧ*), *n.* [*pl.* ephemeræ (*-rē*)], that which exists but for a day.

e-phem-e-ris (*ē-fem'ē-ris*), *n.* [*pl.* ephemerides (*ef-ē-mer'i-dēz*)], an astronomical almanac showing the daily positions of the sun, moon, and planets.
Ephraim (*ē'frȧ-im*). From the Hebrew *Ephrayim*, "two-fold increase," "very fruitful"; from *p'riy*, "fruit of the earth," hence "fruitful." Fr., *Ephraim;* Lat., *Ephraimus.*
ep-ic (*ep'ik*), *adj.* heroic: *n.* a narrative poem of some heroic deed or event.
ep-i-cure (*'i-kūr*), *n.* one devoted to luxury. [SENSUALIST.]
ep-i-cu-re-an (*i-kū-rē'an*), *adj.* luxurious: *n.* a voluptuary; gormand; epicure.
ep-i-dem-ic (*-i-dem'ik*), *adj.* attacking many at the same time. [CONTAGIOUS.]
ep-i-der-mis (*-dẽr'mis*), *n.* the cuticle or scarf skin.
ep-i-glot-tis (*-glot'is*), *n.* the leaf-shaped cartilage which covers the upper part of the larynx.
ep-i-gram (*'i-gram*), *n.* a verse or short poem ending in some ingenious or witty turn.
ep-i-gram-mat-ic (*-at'ik*), *adj.* pertaining to, or of the nature of, an epigram.
ep-i-gram-mat-ic-al-ly (*i-kal-li*), *adv.* in an epigrammatical manner.
ep-i-graph (*'i-grȧf*), *n.* an inscription on a building, monument, etc.
ep-i-lep-sy (*'i-lep-si*), *n.* a chronic nervous disease accompanied by loss of consciousness.
ep-i-lep-tic (*'tik*), *adj.* affected with epilepsy.
ep-i-logue (*'i-log*), *n.* a poem or speech at the conclusion of a play.
E-piph-a-ny (*ē-pif'ȧ-ni*), *n.* a church festival (Jan. 6) to commemorate the visit of the Magi to Bethlehem.
e-pis-co-pa-cy (*ē-pis'kō-pȧ-si*), *n.* church government by bishops.
e-pis-co-pal (*'kō-pal*), *adj.* pertaining to episcopacy.
e-pis-co-pa-lian (*-pā'li-an*), *adj.* pertaining to episcopacy.
Episcopalian, *adj.* pertaining to the Protestant Episcopal church.
ep-i-sode (*ep'i-sōd*), *n.* an incident.
ep-i-sod-ic (*-sod'ik*), *adj.* pertaining to an episode.
e-pis-tle (*ē-pis'l*), *n.* a letter. [LETTER.]
e-pis-to-la-ry (*'tō-lā-ri*), *adj.* pertaining to letters.
ep-i-taph (*ep'i-tȧf*), *n.* a memorial inscription.
ep-i-thet (*'i-thet*), *n.* an adjective denoting any quality.
Syn. EPITHET, adjective. *Epithet* is the technical term of the rhetorician; *adjective* that of the grammarian. The same word is an *epithet* as it qualifies the sense; it is an *adjective* as it is a part of speech; thus, in the phrase "Alexander the Great," great is an *epithet*, inasmuch as it designates Alexander in distinction from all other persons; it is an *adjective* as it expresses a quality in distinction from the noun Alexander, which denotes a thing.
Ant. SUBSTANTIVE.
e-pit-o-me (*ē-pit'ō-mē*), *n.* a brief summary. [ABRIDGMENT.]
e-pit-o-mize (*'ō-mīz*), *v. t.* to describe briefly.
ep-i-zo-öt-ic (*ep-i-zō-ot'ik*), *adj.* parasitic on animals.
ep-och (*ep'ok* or *ē'pok*), *n.* a point of time from which succeeding years are reckoned. [TIME.]
ep-ode (*ep'ōd*), *n.* the last part of an ode.
Epsom (*ep'sum*). A market town in the county of Surrey, fifteen miles southwest of London, chiefly celebrated now as the place near which the Oaks and Derby races are run.
ep-som salts (*'sum sawltz*), *n. pl.* sulphate of magnesia.
e-qua-bil-i-ty (*ē-kwȧ-bil'i-ti*), *n.* evenness.
e-qua-ble (*'kwȧ-bl*), *adj.* uniform; consistently equal. [EQUAL.]
e-qual (*'kwal*), *adj.* of the same extent, or magnitude; uniform; adequate.
Syn. EQUAL, even, equable, like, or alike, uniform. *Equal* is said of degree, quantity, number and dimensions, as *equal* in years; *even* is said of the surface and position of bodies; a board is made *even* with another board; *like* is said of accidental qualities in things, as *alike* in color or in feature; *uniform* is said of things only as to their fitness to correspond; those which are *unlike* in color, shape, or make, are not *uniform*, and cannot be made to match as pairs; *equable* is used only in the moral acceptation, in which all the others are likewise employed.
Ant. DIFFERENT, dissimilar, heterogeneous.
e-qual-i-ty (*-kwäl'i-ti*), *n.* [*pl.* equalities (*-tiz*)], the state of being equal.
e-qual-ize (*'kwal-īz*), *v. t.* to make equal; render uniform.
e-qua-nim-i-ty (*-kwȧ-nim'i-ti*), *n.* evenness of temper or mind.
e-quate (*-kwāt'*), *v. t.* to reduce to an average.
e-qua-tion (*-kwā'shun*), *n.* in mathematics, a proposition expressing the equality of two quantities.
e-qua-tor (*-kwā'tẽr*), *n.* the imaginary circle which passes around the middle of the earth.
e-qua-to-ri-al (*-tō'ri-al*), *adj.* pertaining to the equator.
eq-uer-ry (*ek'wer-i*), *n.* [*pl*, equerries (*-iz*)], an officer in the house of a prince or nobleman.
e-ques-tri-an (*ē-kwes'tri-an*), *adj.* pertaining to horses or horsemanship.
e-ques-tri-enne (*-kwes-tri-en'*), *n.* a skillful horsewoman.
equi, a *prefix* meaning *equal, equally, same.*

e-qui-lat-er-al (*ē-kwi-lat'ĕr-al*), *adj.* having all the sides equal.
e-qui-lib-ri-um (*-lib'ri-um*), *n.* equality of weight, power, force.
e-quine (*ē'kwīn*), *adj.* pertaining to a horse.
e-qui-noc-tial (*-kwi-nok'shal*), *adj.* pertaining to the equinoxes: *n.* the equinoctial line.
e-qui-nox (*'kwi-noks*), *n.* the point of intersection of the ecliptic and the equator.
e-quip (*ē-kwip'*), *v. t.* [*p. t.* and *p. p.* equipped, *p. pr.* equipping], to furnish or fit out; accouter.
eq-ui-page (*ek'wi-pāj*), *n.* the arms and outfit of an army, vessel, traveler.
e-quip-ment (*ē-kwip'ment*), *n.* articles or supplies necessary for any particular service.
e-qui-poise (*ē'kwi-poiz*), *n.* equilibrium.
eq-ui-ta-ble (*ek'wi-tȧ-bl*), *adj.* impartial; just.
eq-ui-ty (*'wi-ti*), *n.* [*pl.* equities (*-tiz*)], justice; just regard to right or claim.
e-quiv-a-lent (*ē-kwiv'ȧ-lent*), *adj.* equal in value or power; the same in significance or effect.
e-quiv-o-cal (*'ō-kal*), *adj.* of a doubtful or double significance; ambiguous.
Syn. EQUIVOCAL, ambiguous, doubtful, dubious, enigmatic, enigmatical, indefinite, indeterminate, indistinct, questionable, suspicious, uncertain. *Equivocal* denotes that which may equally well be understood in either of two or more ways. *Ambiguous* signifies lacking in distinctness or certainty. *Ambiguous* is applied only to spoken or written statements; *equivocal* has other applications; an *equivocal* expression is, as a rule, intentionally deceptive, while an *ambiguous* utterance may be simply the result of a want of adequate expression. That which is *enigmatical* must be guessed like a riddle; that is *doubtful* which is fairly open to doubt; *questionable* may be used nearly in the sense either of *dubious* or of *doubtful;* to say that one's honesty is *questionable* is a mild way of saying that in the opinion of the speaker he is likely to prove dishonest. A *suspicious* character gives manifest reason to be suspected.
e-quiv-o-cate (*'ō-kāt*), *v. i.* to use words of double meaning. [EVADE.]
e-ra (*ē'rȧ*), *n.* the point of time from which a series of years is reckoned; period. [TIME.]
e-rad-i-cate (*ē-rad'i-kāt*), *v. t.* to destroy thoroughly.
e-rase (*-rās'*), *v.* t. to obliterate by, or as by, scratching. [BLOT.]
e-ra-ser (*-rā'sĕr*), *n.* a knife or prepared india-rubber for rubbing out.
Erasmus (*ē-raz'mus*). The Latin name, from Greek *Erasmos*, "desirable", "pleasant." Danish, *Erasmus;* Fr., *Erasme;* Ger., *Erasmus;* It., *Erasmo;* Lat., *Erasmus;* Sp., *Erasmo.*
Erastus (*ē-ras'tus*). Means, "beloved." Fr., *Eraste*; Gr., *Erastos*; Lat., *Erastus.*
★**e-ra-sure** (*ē-rā'zhūr*, not *ē-rā'shūr*), *n.* the act of erasing.
ere (*ār* or *ȧr*), *conj.* and *prep.* before; sooner than.
Er-e-bus (*er'ē-bus*), *n.* a place of utter darkness; Hades.
Erechtheum (*er-ek-thē'um*). An Ionic temple in Athens dating from the end of the fifth century B. C., remarkable for its complex plan and architectural variety, as well as for its technical perfection.
e-rect (*ē-rekt'*), *v. t.* to raise upright; construct; build; raise; establish.
e-rec-tion (*-rek'shun*), *n.* the act of constructing or raising.
e-rect-ive (*'iv*), *adj.* tending, or serving, to erect.
erg (*ĕrg*), *n.* a unit of work in the centimeter-gram-second system.
erg-me-ter (*'mē-tĕr*), *n.* an instrument for measuring an electric current in ergs.
er-gom-e-ter (*er-gom'ē-tĕr*), *n.* an instrument for measuring work performed.
Eric (*er'ik, ē'rik*). The same as the old *Ericus*, name of several Danish kings. Wachter says it should be written *Errich*, which he translates, "powerful in war."
Erie. The name of one of the Great Lakes, drained by the St. Lawrence, is an Indian word which signifies "cat" or "wildcat"; another authority gives the meaning as "mad."
er-mine (*ĕr'min*), *n.* a weasel-like animal, much valued for its fur.
Erminia (*ĕr-min'i-ȧ*). A female name derived from the Roman *Herminus.* Latinized from *Hermann*, an Old German compound signifying "war-man", "warrior."
Ernest (*ĕr'nest*). From Old German *ernst*, "ardent and vehement desire for study." Danish, *Ernst;* Dutch, *Ernestus;* Fr., *Ernest;* Ger., *Ernst;* It., *Ernesto;* Lat., *Ernestus;* Sw., *Ernst.*
Ernestine (*ĕr'nes-tēn*). A female name formed from *Ernest.*
e-rode (*ē-rōd'*), *v. t.* to eat away.
e-rose (*-rōs'*), *adj.* toothed irregularly, as if gnawed away.
e-ro-sion (*-rō'zhun*), *n.* the act of eroding; an eroded part.
e-ro-sive (*-rō'siv*), *adj.* gnawing or wearing away.
e-rot-ic (*-rot'ik*), *adj.* pertaining to, or caused by, love.
err (*ĕr*), *v. i.* to commit an error or mistake; wander.
er-rand (*er'rand*), *n.* a message; commission.
er-rant (*'rant*), *adj.* roving; wandering.
er-rat-ic (*-rat'ik*), *adj.* wandering; irregular; eccentric.
er-ra-tum (*er-rā'tum*), *n.* [*pl.* errata (*'tȧ*)], an error in printing.
er-ro-ne-ous (*-rō'nē-us*), *adj.* characterized by error; incorrect. [ABSURD.]
er-ror (*'ĕr*), *n.* deviation from the truth; mistake.
Syn. ERROR, mistake, blunder. *Error* in its universal sense is the general term, since every deviation from what is right in rational agents is termed *error.* Into whatever we attempt to do or think *error* will be sure to creep. The other terms designate modes of *error*, which mostly refer to the common concerns of life; *mistake* is an error of choice; *blunder* an error of action.
e-ruc-ta-tion (*ē-ruk-tā'shun*), *n.* the act of throwing off wind from the stomach.
er-u-dite (*er'ū-dīt*), *adj.* learned.
er-u-di-tion (*-dish'un*), *n.* knowledge obtained by the study of books. [KNOWLEDGE.]
e-rup-tion (*ē-rup'shun*), *n.* a sudden breaking forth; outburst.
Syn. ERUPTION, explosion. *Eruption* is the coming into view, by a sudden bursting; *explosion* signifies bursting out with a noise; hence of flames there will be properly an *eruption*, but of gunpowder an *explosion.*
e-rup-tive (*ē-rup'tiv*), *adj.* bursting forth.
★**er-y-sip-e-las** (*er-i-sip'ē-las*, not *ir-i-sip'ē-las*), *n.* an inflammation of the skin, accompanied with fever.
Erzeroom (*ĕrz-rōōm'*). From *Arz-er-Room*, "the fortress of the Romans." The capital of a district of same name in Asiatic Turkey.
Esau (*ē'saw*). From the Hebrew, signifying "hairy, covered with hair." Fr., *Esau*; Lat., *Esavus.*
es-ca-lade (*es-kȧ-lād'*), *n.* the act of scaling the walls of a fortified place by means of scaling ladders.
es-cal-lop. Same as *scallop.*
es-ca-pade (*-kȧ-pād'*), *n.* a breach of propriety; misdeed.
es-cape (*-kāp'*), *v. t.* to flee from; get out of the way of; avoid: *n.* flight; deliverance.
es-carp (*-kärp'*), *n.* the side of the ditch next the rampart forming a steep slope.
es-carp-ment (*'ment*), *n.* the precipitous face of a ridge of high land.
es-cheat (*-chēt'*), *v. t.* to forfeit through failure of heirs.
es-chew (*-chū'*), *v. t.* to shun; avoid.
Escorial (*es-kō'ri-al*, Spanish *es-kō-rē-äl'*). A celebrated building in Spain, situated twenty-seven miles northwest of Madrid, containing a monastery, palace, church, and mausoleum of the Spanish sovereign.
es-cort (*es'kôrt*), *n.* a body of armed men acting as a guard.
es-cu-lent (*'kū-lent*), *adj.* eatable.
es-cutch-eon (*-kuch'un*), *n.* a shield on which arms are emblazoned.
Es-ki-mo (*'ki-mō*), *adj.* pertaining to one of a tribe of diminutive people inhabiting Greenland.
e-soph-a-gus (*ē-sof'ȧ-gus*), *n.* the gullet or canal through which food and drink pass to the stomach.
★**es-o-ter-ic** (*es-ō-ter'ik*), *adj.* pertaining to doctrines taught privately.
es-pe-cial (*-pesh'al*), *adj.* particular; chief.
es-pe-cial-ly (*-li*), *adv.* particularly; chiefly.
es-per-an-to (*es-pĕr-an'tō*), *n.* a recently invented artificial language, designed for international use.
★**es-pi-o-nage** (*es'pē-ō-nāj*, or *es'pē-on-äzh*), *n.* the act or practice of spying.
Espiritu Santo (*äs-pē'rē-tōō sän'tō*) **bay, Texas.** Spanish appellation, meaning "Bay of the Holy Spirit."
es-pla-nade (*es-plȧ-nād'*), *n.* a level walk or drive, especially by the seaside.
es-pouse (*-pouz'*), *v. t.* to promise, engage, or give in marriage.
es-py (*-pī'*), *v. t.* [*p. t.* and *p. p.* espied, *p. pr.* espying], to see at a distance; discover (something intended to be hid).
es-quire (*-kwīr'*), *n.* originally the armor-bearer or attendant on a knight.
es-say (*'sā*), *n.* a short written composition or treatise.
es-sence (*'ens*), *n.* the concentrated preparation of any substance.
es-sen-tial (*-sen'shal*), *adj.* necessary to the existence of a thing.
Essie (*es'-si*). A female name derived from *Esther* or *Hester.*
es-tab-lish (*-tab'lish*), *v. t.* to fix firmly; settle. [CONFIRM.]
es-tab-lish-ment (*-ment*), *n.* the act of establishing; ratification; settlement.
es-tate (*-tāt'*), *n.* condition of life; rank, position, or quality.
es-teem (*-tēm'*), *v. t.* to set a high value upon; respect; prize; consider. [VALUE, ADMIRE.]
Estelle. A French name derived from Spanish *estella*, from Latin *stella*, a "star."
Esther (*es'tĕr*). From the Persian *sitarah*, "star;" Dutch, *Hester*; Fr., *Esther*; Ger., *Esther*; It., *Ester*; Lat., *Esthera*; Sp., *Ester.*
es-thet-ics. Same as *æsthetics.*
es-ti-ma-ble (*'ti-mȧ-bl*), *adj.* worthy of regard or esteem.
es-ti-mate (*'ti-māt*), *v. t.* to compute; determine the value of.
Syn. ESTIMATE, compute, rate. To *estimate* is to obtain the aggregate sum in one's mind, either by an immediate or a progressive act; to *compute* is to obtain the sum by the gradual process of putting together items; to *rate* is to fix the relative value in one's mind by deduction and comparison. [See *calculate.*]
es-ti-ma-tion (*es-ti-mā'shun*), *n.* calculation; appraisement.
es-top (*-top'*), *v. t.* [*p. t.* and *p. p.* estopped, *p. pr.* estopping], to prevent; bar.
es-trange (*-trānj'*), *v. t.* to alienate; keep at a distance.
Estremadura (*ās-trā-mȧ-dōō'rȧ*). From *Esytema-Durii*, the extreme limits of the River Douro. A province of Portugal.
es-tu-a-ri-al (*-tū-ā'ri-al*), *adj.* pertaining to, or formed in, an estuary.
es-tu-a-ry (*'tū-ā-ri*), *n.* [*pl.* estuaries (*-riz*)], the mouth of a tidal river.
etch (*ech*), *v. t.* to engrave by biting out with an acid the design previously drawn with an etching-needle.
e-ter-nal (*ē-tĕr'nal*), *adj.* without beginning or end.
Syn. ETERNAL, endless, everlasting. The *eternal* is set above time; the *endless* lies within time. That is properly *eternal* which has neither beginning nor end; that is *endless* which has a beginning, but no end; that which is *everlasting* has neither interruption nor cessation.
Ant. FINITE, mortal, temporary, transient.
e-ter-ni-ty (*'ni-ti*), *n.* [*pl.* eternities (*-tiz*)], infinite duration.
Ethel (*eth'el*). From the Anglo-Saxon, signifying "noble."
Ethelbert (*eth'el-bĕrt*). From the Teutonic, meaning 'nobly bright." Danish, *Adelbert;* Dutch, *Adelbert;* Fr., *Adalbert* or *Adelbert;* Ger., *Adelbert;* Lat., *Ethelbertus* or *Adalbertus.*
e-ther (*ē'thĕr*), *n.* an extremely fine fluid, lighter than air, supposed to pervade all space.
e-the-re-al (*-thē'rē-al*), *adj.* pertaining to, or formed of, ether.
eth-ic-al (*eth'i-kal*), *adj.* pertaining to ethics; moral.
eth-ics (*'iks*), *n. pl.* the science that treats of the principles of human morality and duty.
Ethiopia or **Æthiopia** (*ē-thi-ō'pi-ȧ*). The "land of the blacks," according to the two Greek words, *aithein*, "to burn," and *ops*, "the face."
E-thi-o-pi-an (*-thi-ō'pi-an*), *adj.* pertaining to Ethiopia.
eth-nic (*eth'nik*), *adj.* characteristic of races or peoples.
eth-nol-o-gy (*-nol'ō-ji*), *n.* the science that treats of races of men.
e-thos (*ē'thos*), *n.* the characteristic genius of a people.
eth-yl (*eth'il*), *n.* a monatomic fatty hydrocarbon radical.
★**et-i-quette** (*et'i-ket*), *n.* the conventional rules observed in polite society.
Etna (*et'nȧ*). The chief mountain in Sicily, and the highest volcano in Europe. The Greek name was *Aitna*, "burning mountain."
et-y-mol-o-gist (*et-i-mol'ō-jist*), *n.* one who is proficient in etymology.
et-y-mol-o-gize (*-mol'ō-jīz*), *v. i.* to investigate the origin of words.
et-y-mol-o-gy (*'ō-ji*), *n.* [*pl.* etymologies (*-jiz*)], that branch of philology which treats of the origin of words.
Eu-ca-lyp-tus (*ū-kȧ-lip'tus*), *n.* [*pl.* Eucalypti (*'tī*)], a genus of Australian evergreen trees.
eu-char-ist (*ū'kär-ist*), *n.* the holy communion; the elements, bread and wine.
eu-cha-ris-tic (*-kȧ-ris'tik*), *adj.* pertaining to the eucharist.
eu-chre (*'kĕr*), *n.* a particular game of cards.
Eugene (*ū-jēn'*). A name derived from the Latin, *Eugenius*, "nobly descended." Dutch, *Eugenius;* Fr., *Eugene*; Ger., *Eugen*; Gr., *Eugenios*; It., *Eugenio*; Sp., *Eugenio.*
Eugenia (*ū-jē'ni-ȧ*). Feminins of the Latin name *Eugenius.* Fr., *Eugénie;* Gr., *Eugenia.*
eu-lo-gist (*ū'lō-jist*), *n.* one who eulogizes.
eu-lo-gis-tic (*-jis'tik*), *adj.* laudatory.
eu-lo-gize (*'lō-jīz*), *v. t.* to praise highly.
eu-lo-gy (*-ji*), *n.* [*pl.* eulogies (*-jiz*)], the praise of any one spoken or written. [ENCOMIUM.]
Eunice (*ū'nis, ū-nī'sē*). A female name derived from the Greek name, *Eunike*, "happy victory." Lat., *Eunice.*
eu-nuch (*'nuk*), *n.* a castrated person.
Euphemia (*ū-fē'mi-ȧ*). From the Greek, *Euphemia*, "words of good omen, or good report."
eu-phe-mism (*'fē-mizm*), *n.* the substitution of a delicate expression in place of that which is offensive or indelicate.
eu-phon-ic (*-fon'ik*), *adj.* sounding pleasantly to the ear.
eu-pho-ny (*'fō-ni*), *n.* [*pl.* euphonies (*-niz*)], an agreeable sound.
Euphrates (*ū-frā'tēz*). A great river of Mesopotamia. The name is merely a Greek adaptation of the Persian *Hufrat* or *Ufratu.*
eu-phu-ism (*'fū-izm*), *n.* the affected use of words.
Eurasian (*ū-rā'shan*). This word, which is often met with in Indian newspapers, is applied to persons born of European fathers and native mothers.
Europe (*ū'rup*). From the Greek *eurus*, "broad," and *op*, "to see," or *ops*, "the face," in allusion to "the broad face of the earth." The continent.
Eusebius (*ū-sē'bi-us*). From the Greek, *eusebes*, "pious," or "religious." Fr., *Eusebe;* Gr., *Eusebios;* It., *Eusebio;* Lat., *Eusebius;* Sp. *Eusebio.*

Eustace (*ûs'tĭs*). From the Latin name, *Eustathius*, "standing fast," "firm," "constant." Dutch, *Eustatius*; Fr., *Eustache*; It., *Eustachio*; Lat., *Eustachius*; Sp., *Eustaquio*.

eu-sta-chi-an (*ū-stā'ki-an*), *adj.* pertaining to a tube which leads from the cavity of the tympanum of the ear to the pharynx.

Euxine (*ūks'in*). The Black Sea. Greek, "the hospitable"; formerly *axinos*, "the inhospitable sea."

e-vac-u-ate (*ē-vak'ū-āt*), *v. t.* to make void or empty; discharge through the excretory passages.

e-vade (*-vād'*), *v. t.* to elude; escape by artifice.

Syn. EVADE, equivocate, prevaricate. We *evade* by artfully turning the subject or calling off the attention of the inquirer; we *equivocate* by the use of *equivocal* expressions; we *prevaricate* by the use of loose and indefinite expressions; we avoid giving satisfaction by *evading;* we give a false satisfaction by *equivocating;* we give dissatisfaction by *prevaricating.*

Ant. ANSWER, meet; be frank, direct, open, candid.

e-vad-i-ble (*'i-bl*), *adj.* capable of being evaded.

Evan (*ev'an*). A Welsh name. *Evan*, or rather *Evans*, is merely another spelling of *Jones*, which has been corrupted from the Greek original of *John*.

ev-a-nes-cent (*ev-a-nes'ent*), *adj.* disappearing gradually.

e-van-gel-ic-al (*ē-van-jel'i-kal*), *adj.* pertaining to the gospel, or the four Gospels.

e-van-gel-ism (*'jel-izm*), *n.* the doctrine and preaching of evangelical principles.

e-van-gel-ist (*-ist*), *n.* an itinerant preacher.

e-van-gel-ize (*'jel-iz*), *v. t.* to instruct in the gospel; convert to Christianity.

e-vap-o-rate (*-vap'ō-rāt*), *v. i.* to disperse in vapor.

e-vap-o-ra-tion (*-rā'shun*), *n.* the slow conversion of a fluid into vapor.

e-va-sion (*-vā'zhun*), *n.* the act of evading; an excuse.

e-va-sive (*-vā'siv*), *adj.* tending or seeking to evade.

eve (*ēv*), *n.* the period immediately preceding some important event; evening. [*Poetry.*]

Evelina (*ev-ē-lī'nà*), **Eveline** (*ev'ē-lin*). Female names derived from *Evelyn*.

Evelyn (*ev'ē-lin*). From the Latin, meaning "hazel nut."

e-ven (*ē'vn*), *adj.* level; uniform; divisible by 2 without a remainder; equal; balanced. [EQUAL.]

e-ven-ing (*-ing*), *n.* the close of the day.

e-ven-ly (*'li*), *adv.* in an even manner; smoothly.

e-ven-ness (*-nes*), *n.* smoothness; uniformity.

e-vent (*ē-vent'*), *n.* an occurrence; incident.

Syn. EVENT, incident, accident, adventure, occurrence. These terms are expressive of what passes in the world, which is the sole signification of the term *event;* an *incident* is a personal *event;* an *accident* an accidental *event* which happens by the way; an *adventure* an extraordinary *event;* an *occurrence* an ordinary or domestic event. *Event* in its ordinary and limited acceptation, excludes the idea of chance; *accident* excludes that of design; *incident, adventure,* and *occurrence* are applicable in both cases. [See *circumstance, consequence.*]

e-vent-ful (*'fool*), *adj.* full of incidents or events.

e-ven-tide (*ē'vn-tīd*), *n.* evening.

e-ven-tu-al-i-ty (*-ven-tū-al'i-ti*), *n.* [*pl.* eventualities (*-tiz*)], a possible occurrence.

e-ven-tu-ate (*'tū-āt*), *v. i.* to happen; terminate.

ev-er (*ev'ĕr*), *adv.* at any time.

Everard (*ev'ĕr-ard*). Same as the German names *Eberhard, Eberhardt.* From *eberhart*, "strong as a wild boar." Danish, *Eberhard;* Dutch *Everard;* Ger., *Eberhard.*

ev-er-glade (*-glād*), *n.* a low, swampy tract of land.

ev-er-green (*-grēn*), *n.* a tree or plant which retains its foliage throughout the year.

ev-er-last-ing (*-last'ing*), *adj.* perpetual: *n.* eternity. [ETERNAL.]

Ev-er-last-ing, *n.* God, the Eternal.

ev-er-more (*-mōr*), *adv.* eternally.

eve-ry (*ev'ri* or *ev'ĕr-i*), *adj.* the whole, taken one at a time.

e-vict (*ē-vikt'*), *v. t.* to expel or dispossess by legal process. [BANISH]

e-vic-tion (*-vik'shun*), *n.* the act of evicting.

ev-i-dence (*ev'i-dens*), *n.* indubitable certainty. [DEPONENT, TESTIMONY.]

ev-i-dent* (*-dent*), *adj.* plain. [APPARENT.]

ev-i-den-tial (*-den'shal*), *adj.* proving clearly.

e-vil (*ē'vl*), *adj.* morally bad; wicked: *adv.* badly; unfortunately: *n.* anything that harms or injures. [ABOMINATION.]

e-vince (*ē-vins'*), *v. t.* to manifest or make evident.

e-vin-ci-ble (*-vin'si-bl*), *adj.* capable of proof.

e-vis-cer-ate (*-vis'ĕr-āt*), *v. t.* to disembowel.

e-voke (*-vōk'*), *v. t.* to call forth.

ev-o-lu-tion (*ev-ō-lū'shun*), *n.* the gradual development or descent of forms of life from simple or low organized types.

ev-o-lu-tion-ist (*-ist*), *adj.* pertaining to evolution.

ev-o-lu-tive (*-tiv*), *adj.* causing evolution.

e-volve (*ē-volv'*), *v. t.* to develop; unfold; expand.

ewe (*û*), *n.* a female sheep.

ew-er (*ū'ĕr*), *n.* a large water jug.

ex, *prefix,* meaning *out of, beyond, from.*

ex-act (*egz-akt'*), *adj.* very correct or accurate; precise; particular: *v. t.* to demand; extort.

Syn. EXACT, extort. To *exact* is to demand with force; it is commonly an act of injustice; to *extort* is to get with violence; it is an act of tyranny.

ex-act-ing (*egz-akt'ing*), *p. adj.* making unreasonable demands.

ex-ac-tion (*-ak'shun*), *n.* the act of exacting; extortion.

ex-act-ness (*-akt'nes*), *n.* accuracy; precision.

★ex-ag-ger-ate (*egz-aj'ĕr-āt*), *v. t.* to enlarge or heighten by overstatement.

ex-alt (*-awlt'*), *v. t.* to elevate in rank, station or dignity.

ex-am-i-na-tion (*-am-i-nā'shun*), *n.* careful search; investigation; interrogatory.

★ex-am-ine (*egz-am'in*, not *eks-am'in*), *v. t.* to scrutinize or investigate carefully. [DISCUSS.]

★ex-am-ple (*egz-am'pl*), *n.* a pattern; a model or copy.

Syn. EXAMPLE, pattern, ensample. The *example* must be followed generally; the *pattern* must be followed particularly, not only as to what, but how a thing is to be done; the former serves as a guide to the judgment; the latter to guide the actions; the *ensample* is a species of *example*, the word being employed only in the solemn style.

Ant. ANOMALY, abnormality.

ex-as-per-ate (*egz-as'pĕr-āt*), *v. t.* to irritate exceedingly; enrage greatly; exasperation. [AGGRAVATE.]

ex ca-the-dra (*eks kà-thē'drà*), with an air of official authority.

ex-ca-vate (*eks'kà-vāt*), *v. t.* to dig or hollow out.

ex-ca-va-tion (*-vā'shun*), *n.* a hollow cavity formed by digging out earth.

ex-ceed (*ek-sēd'*), *v. t.* to go beyond the limit or measure of; surpass; excel; transcend.

ex-ceed-ing (*'ing*), *p. adj.* very great.

ex-cel (*-sel'*), *v. t.* to possess good qualities in a great degree.

ex-cel-lence (*'sel-ens*), *n.* the state of excelling in anything; virtue.

ex-cel-len-cy (*-en-si*), *n.* a title of honor of various high officials.

ex-cel-lent (*-ent*), *adj.* of great value, merit, or virtue.

ex-cel-si-or (*'si-ĕr*), *adj.* yet higher.

ex-cept (*-sept'*), *v. t.* to omit or leave out: *prep.* omitting; without inclusion of. [UNLESS.]

ex-cep-tion (*-sep'shun*), *n.* the state of being excepted.

ex-cep-tion-a-ble (*-à-bl*), *adj.* objectionable.

ex-cep-tion-al (*-al*), *adj.* unusual.

ex-cerpt (*-serpt'*) *v. t.* to take out or select from, as a passage from a book.

ex-cess (*-ses'*), *n.* that which exceeds the ordinary limit; overplus.

Syn. EXCESS, dissipation, exorbitance, extravagance, intemperance, lavishness, prodigality, profusion, redundance, redundancy, superfluity, surplus, waste wasteful. *Excess* is more than enough of anything; the word is used frequently in an unfavorable sense. Careless expenditure is *extravagance;* we may have also *extravagance* of language; *exorbitance* is *excess* in pecuniary demands upon others; *lavishness* and *profusion*, a generous, bountiful, or amiable *excess; surplus* is neutral, having none of the unfavorable meaning that often attaches to *excess;* a *surplus* is that which remains over after all demands are met. *Redundance* or *redundancy* refers chiefly to literary style, denoting an *excess* of words or matter.

Ant. DEARTH, lack, need, want.

ex-cess-ive (*'iv*), *adj.* extreme; unreasonable.

ex-change (*eks-chānj'*), *v. t.* to give in return for an equivalent; barter; give; resign. [CHANGE, INTERCHANGE.]

ex-change-a-ble (*à-bl*), *adj.* that may be exchanged.

ex-cheq-uer (*-chek'ĕr*), *n.* a treasury; cash or funds.

ex-cis-a-ble (*ek-siz'à-bl*), *adj.* dutiable.

ex-cise (*-siz'*), *v. t.* to levy a duty upon: *n.* a tax.

ex-ci-sion (*-sizh'un*), *n.* the act of cutting out, or off.

ex-ci-ta-bil-i-ty (*-si-tà-bil'i-ti*), *n.* [*pl.* excitabilities (*'tiz*)], the state or quality of being excitable.

ex-ci-tant (*-si'tant*), *n.* a stimulant.

ex-ci-ta-tion (*-tā'shun*), *n.* the act of exciting.

ex-cite (*-sīt'*), *v. t.* to animate; put into motion or action.

Syn. EXCITE, incite, provoke. To *excite* is said more particularly of the inward feelings; *incite* is said of the external actions; *provoke* is said of both. A person's passions are *excited;* he is *incited* by any particular passion to a course of conduct; a particular feeling is *provoked,* or he is *provoked* by some feeling to a particular step. [See *awaken.*]

Ant. CALM, quiet, soothe.

ex-cite-ment (*'ment*), *n.* the state of being excited; commotion; stimulation.

ex-claim (*eks-klām'*), *v. i.* and *v. t.* to cry out abruptly. [CALL.]

ex-cla-ma-tion (*-klà-mā'shun*), *n.* an abrupt or clamorous outcry.

ex-clam-a-to-ry (*-klam'à-tō-ri*), *adj.* containing or using exclamation.

ex-clude (*-klūd'*), *v. t.* to shut out; hinder from entrance or admission.

ex-clu-sion (*-klū'zhun*), *n.* the act of excluding.

ex-clu-sive (*'siv*), *adj.* tending to exclude; illiberal.

ex-cog-i-tate (*-koj'i-tāt*), *v. t.* to discover by thinking.

ex-com-mu-ni-cate (*kom-mū'ni-kāt*), *v. t.* to punish by cutting off from the communication of the church.

ex-co-ri-ate (*-kō'ri-āt*), *v. t.* to strip off the skin; rub or gall.

ex-cre-ment (*eks'krē-ment*), *n.* matter discharged from the body of an animal after digestion.

ex-cres-cence (*-kres'ens*), *n.* an unnatural outgrowth.

ex-cre-tion (*eks-krē'shun*), *n.* the ejection or waste matter from the body.

ex-cre-to-ry (*'tō-ri*), *adj.* pertaining to excretion.

ex-cru-ci-ate (*-krū'shi-āt*), *v. t.* to inflict severe pains upon; torture.

ex-cul-pate (*-kul'pāt*), *v. t.* to clear from blame; exonerate. [APOLOGIZE, ABSOLVE.]

ex-cur-sion (*-kûr'shun*), *n.* a pleasure trip; a short or rapid tour.

Syn. EXCURSION, ramble, tour, trip, jaunt. *Excursion* signifies going out of one's course; a *ramble* is a going without any course or regular path; a *tour*, is a circuitous course; a *trip* means to go on the toes like a dancer, is properly a pedestrian *excursion* or *tour*; those who have no better means of spending their time make *jaunts.* [See *circuit.*]

ex-cus-a-ble (*-kūz'à-bl*), *adv.* pardonable.

ex-cuse (*-kūz'*), *v. t.* to extenuate by apology; pardon: *n.* (*-kūs'*), apology; pretext.

Syn. EXCUSE, pardon. We *excuse* a person or thing by exempting him from blame; we *pardon* by giving up the punishment of the offense one has committed. We *excuse* a small fault; we *pardon* a great fault; we *excuse* that which personally affects ourselves; we *pardon* that which offends against morals. [See *apologize, pretense.*]

Ant. CHASTEN, condemn, punish.

ex-e-crate (*'ē-krāt*), *v. t.* to imprecate evil upon.

ex-e-cra-tion (*-krā'shun*), *n.* the act of execrating. [ABOMINATION.]

ex-e-cute (*'ē-kūt*), *v. t.* to perform; carry into effect; put to death.

Syn. EXECUTE, fulfill, perform. To *execute* is to bring about an end; it involves active measures, and is peculiarly applicable to that which is extraordinary; to *fulfill* is to satisfy a moral obligation. We *fulfill* the duties of citizens; to *perform* is to carry through by simple action or labor; we *perform* a work or a task. [See *accomplish.*]

Ant. FAIL, frustrate, miscarry, neglect.

ex-e-cu-tion (*-kū'shun*), *n.* the act of executing; performance; capital punishment.

ex-ec-u-tive (*egz-ek'ū-tiv*). *adj.* pertaining to the governing body; administrative.

ex-ec-u-tor (*'ū-tĕr*), *n.* a person appointed by a testator to see that the terms of his will are carried out.

ex-e-ge-sis (*eks-ē-jē'sis*), *n.* explanation or interpretation of a text of the bible.

ex-em-plar (*egz-em'plĕr*), *n.* something to be copied, example.

ex-em-pla-ry (*-em'plà-ri*), *adj.* serving as a copy or model.

ex-em-pli-fy (*'pli-fī*), *v. t.* [*p. t.* and *p. p.* exemplified, *p. pr.* exemplifying], to illustrate by example.

ex-empt (*-empt'*), *v. t.* to free from some duty or obligation. [FREE, ABSOLVE.]

ex-er-cise (*eks'ĕr-sīz*), *v. t.* to train by use; exert; practice; employ actively.

Syn. EXERCISE, practice. We *exercise* in that where the powers are called forth; we *practice* in that where frequency and habitude of action is requisite.

ex-ert (*egz-ĕrt'*), *v. t.* to put forth; use with an effort.

ex-er-tion (*-ĕr'shun*), *n.* effort. [ENDEAVOR.]

ex-ha-la-tion (*eks-hà-lā'shun*), *n.* the act of exhaling.

ex-hale (*-hāl'*), *v. t.* to breathe forth; emit or send out.

★ex-haust (*egz-awst'*), *v. t.* to empty by drawing off the contents; drain; weaken: *adj.* wholly or partially deprived of strength. [ABSORB, FAINT.]

ex-haust-i-ble (*'i-bl*), *adj.* capable of being exhausted.

ex-haust-ive (*'iv*), *adj.* exhausting.

ex-hib-it (*egz-ib'it* or *eks-hib'it*), *v. t.* to present to view; display. [GIVE.]

ex-hi-bi-tion (*eks-hi-bish'un*) *n.* the act of exhibiting. [SHOW.]

ex-hil-a-rate (*egz-il'à-rāt* or *eks-hil'à-rāt*), *v. t.* to make joyous, glad, enliven.

ex-hort (*egz-ôrt'* or *eks-hôrt'*). *v. t.* to incite by appeal or argument to good deeds.

ex-hume (*eks-hūm'*), *v. t.* to disinter.

ex-i-gen-cy (*eks'i-jen-si*), *n.* [*pl.* exigencies (*-siz*)], pressing necessity or demand.

Syn. EXIGENCY, emergency. The *exigency* is more common, but less pressing; the *emergency* is imperious when it comes, but comes less frequently. A prudent traveler will never carry more money with him than what will supply the *exigencies* of his journey; and in case of an *emergency* will rather borrow than risk his property.

ex-ile (*eks'il*), *v. t.* to banish from one's native country. [BANISH.]

ex-ist (*egz-ist'*), *v. i.* to have existence.

ex-ist-ence (*-ist'ens*), *n.* the state of being; life.

★ex-it (*eks'it*, not *egz'it*), *n.* the act of going out.

ex-o-gen (*'ō-jen*), *n.* a plant which increases year by year by the addition of layers outside the previous bark.

ex-on-er-ate (*egz-on'ĕr-āt*), *v. t.* to free from the imputation of a fault; acquit.

Syn. EXONERATE, exculpate. The first is the act of another; the second is one's own act. We *exonerate* him upon whom a charge has lain, or who has the load of guilt; we *exculpate* ourselves when there is any danger of being blamed; cir-

cumstances may sometimes tend to *exonerate;* the explanation of some person is requisite to *exculpate.* [See *absolve.*]
Ant. Accuse, implicate.

ex-or-bi-tance (*egz'ôr-bi-tans*), *n.* going beyond due limits. [EXCESS.]
ex-or-bi-tant (*-tant*), *adj.* excessive.
ex-or-cise (*eks'or-sīz*), *v. t.* to expel (an evil spirit).
ex-or-cism (*-sizm*), *n.* the act of expelling evil spirits.
ex-or-di-um (*egz-ôr'di-um*), *n.* the opening part of a speech.
ex-o-ter-ic (*eks-ō-ter'ik*), *adj.* pertaining to the uninitiated public.
ex-ot-ic (*egz-ot'ik*), *adj.* foreign.
ex-pand (*eks-pand'*), *v.t.* to distend; dilate. [SPREAD]
ex-panse (*-pans'*), *n.* a continuous area.
ex-pan-sion (*-pan'shun*), *n.* the state of being expanded.
ex-pan-sive (*'siv*), *adj.* capable of being expanded.
ex-pa-ti-ate (*-pā'shi-āt*), *v. i.* to enlarge in statement or language.
ex-pa-tri-ate (*-pā'tri-āt*), *v. t.* to drive from one's native country. [BANISH.]
ex-pect (*-pekt'*), *v. t.* to wait for. [ANTICIPATE.]
ex-pect-ance (*'ans*), *n.* the act or state of expecting.
ex-pect-ant (*'ant*), *adj.* waiting in expectation.
ex-pec-ta-tion (*-tā'shun*), *n.* the act of looking forward to.
ex-pec-to-rate (*'tō-rāt*), *v. t.* to eject by coughing.
ex-pe-di-en-cy (*-pē'di-en-si*), *n.* [*pl.* expediencies (*-siz*)], suitability to an end or purpose.
★**ex-pe-di-ent** (*eks-pē'di-ent,* not *eks-pē'jent*), *adj.* fit; convenient; suitable; proper: *n.* device; resource.
Syn. EXPEDIENT, resource. The *expedient* is an artificial means; the *resource* is a natural means. A cunning man is fruitful in *expedients;* a fortunate man abounds in *resources.*
Syn. EXPEDIENT, fit. The *expediency* of a thing depends altogether upon the outward circumstances; the fitness is determined by a moral rule.
Ant. Futile, unwise.
ex-pe-dite (*'pē-dīt*), *v. t.* to hasten. [HASTEN.]
ex-pe-di-tion (*-dish'un*), *n.* haste; dispatch; promptness; a march.
ex-pe-di-tious (*'us*), *adj.* quick; speedy. [DILIGENT, ACTIVE.]
ex-pel (*-pel'*), *v. t.* to drive away; force out. [BANISH.]
ex-pend (*-pend'*), *v. t.* to spend.
ex-pend-i-ture (*'i-tūr*), *n.* laying out, as money. [EXPENSE.]
ex-pense (*-pens'*), *n.* expenditure; cost.
Syn. EXPENSE, cost, expenditure, outlay. The *cost* of a thing is whatever one surrenders or gives up for it; *expense* is what is laid out by calculation or intention. There is a tendency to use *cost* of what we pay for a possession, *expense* of what we pay for service; *outlay* is used of some definite *expenditure,* as for the purchase of supplies; outgo is a steady drain of incidental *expenses.* [See *cost.*]
ex-pen-sive (*pen'siv*), *adj.* causing expense.
ex-pe-ri-ence (*-pē'ri-ens*), *n.* knowledge gained by trial and practice. [ACQUAINTANCE.[
ex-per-i-ment (*-per'i-ment*), *n.* a trial or operation to discover something. [periment.
ex-per-i-men-tal (*-men'tal*), *adj.* founded on ex-
ex-pert (*-pẽrt'*), *adj.* skillful, through practice or experience; adroit; dexterous. [CLEVER.]
ex-pi-ate (*'pi-āt*), *v. t.* to atone for.
ex-pi-ra-tion (*-pi-rā'shun*), *n.* termination.
ex-pire (*-pīr'*), *v. t.* to breathe out from the lungs; cease to live. [DIE.]
ex-plain (*-plān'*), *v. t.* to make intelligible or clear.
Syn. EXPLAIN, expound, interpret. Single words or sentences are *explained;* a whole work, or considerable parts of it, are *expounded;* the sense of any writing or symbolical sign is *interpreted.*
Ant. Confuse, obscure, darken, obfuscate.
ex-pla-na-tion (*plȧ-nā'shun*), *n.* the act of explaining; elucidation. [DEFINITION.]
ex-plan-a-to-ry (*-plan'ȧ-tō-ri*), *adj.* serving to explain.
ex-ple-tive (*'plē-tiv*), *n.* a word inserted in a sentence for ornament or to fill up a verse.
ex-pli-ca-ble (*'pli-kȧ-bl*), *adj.* that may be explained.
ex-pli-ca-tive (*-kā-tiv*), *adj.* serving to explain.
ex-plic-it (*-plis'it*), *adj.* plain; definite.
ex-plode (*-plōd'*), *v. i.* to burst forth with sudden noise and violence.
ex-ploit (*-ploit'*), *v. t.* to make use of for one's own profit: *n.* a remarkable deed or heroic act.
ex-ploi-ta-tion (*-ploi-tā'shun*), *n.* the act of exploiting; the improvement of lands.
ex-plo-ra-tion (*-plō-rā'shun*), *n.* the act of exploring; careful investigation or search. [thoroughly.
ex-plore (*-plōr'*), *v. t.* to search into or examine
ex-plo-sion (*-plō'zhun*), *n.* the act of exploding. [ERUPTION.]
ex-plo-sive (*'siv*), *adj.* pertaining to, or causing, explosion.
ex-po-nent (*-pō'nent*), *n.* one who explains or interprets the principles of something.
ex-port (*-pōrt'*), *v. t.* to send or carry out of the country, as merchandise.
ex-pose (*-pōz'*), *v. t.* to lay open; leave to the action of any force or circumstance; disclose.
ex-po-si-tion (*-pō-zish'un*), *n.* an explanation or interpretation. [DEFINITION.] [terprets.
ex-pos-i-tor (*-poz'i-tẽr*), *n.* one who expounds or in-
ex-pos-i-to-ry (*eks-poz'i-tō-ri*), *adj.* pertaining to, or conveying, exposition.
ex-pos-tu-late (*-pos'tū-lāt*), *v. i.* to reason earnestly or remonstrate.
Syn. EXPOSTULATE, remonstrate. We *expostulate* in a tone of authority; we *remonstrate* in a tone of complaint. He who *expostulates* passes a censure, and claims to be heard; he who *remonstrates* presents his case and requests to be heard.
ex-po-sure (*-pō'zhūr*), *n.* the act of exposing.
ex-pound (*-pound'*), *v. t.* to set forth, explain, or interpret. [EXPLAIN.]
ex-press (*-pres'*), *v. t.* to exhibit by language; utter; dispatch by express. [SPEAK.]
ex-press-i-ble (*'i-bl*), *adj.* capable of being expressed.
ex-pres-sion (*-presh'un*), *n.* the act or power of representing anything; mode of speech.
ex-press-ive (*'iv*), *adj.* serving to express.
ex-press-man (*'man*), *n.* the person who takes charge of express matter.
ex-pul-sion (*-pul'shun*), *n.* forcible ejection.
ex-pul-sive (*'siv*), *adj.* serving to expel.
ex-punge (*-punj'*), *v. t.* to erase; destroy. [BLOT.]
ex-pur-gate (*'pẽr-gāt*), *v. t.* to remove whatever is offensive.
★**ex-qui-site** (*eks'kwiz-it,* not *eks-kwiz'it*), *adj.* refined; delicate; nice; accurate.
★**ex-tant** (*eks'tant,* not *eks-tant'*), *adj.* still existing.
ex-tem-po-ra-ne-ous (*-tem-pō-rā'nē-us*), *adj.* unpremeditated; without previous notes or study.
ex-tem-po-rize (*'pō-rīz*), *v. t.* to compose on the spur of the moment.
ex-tend (*-tend'*), *v. t.* to stretch out; enlarge; amplify; continue. [ENLARGE, ADD.]
ex-ten-sion (*-ten'shun*), *n.* the act of extending; the state of being extended.
ex-ten-sive (*'siv*), *adj.* having great extent. [COMPREHENSIVE.]
ex-ten-sor (*-ten'sẽr*), *n.* a muscle that extends a limb.
ex-tent (*-tent'*), *n.* the space or degree to which a thing is extended; size.
ex-ten-u-ate (*-ten'ū-āt*), *v. t.* to offer excuses for; palliate.
ex-te-ri-or (*-tē'ri-ẽr*), *adj.* outward; external. [OUTWARD.]
ex-ter-mi-nate (*-tẽr'mi-nāt*), *v. t.* to destroy utterly.
ex-ter-mi-na-to-ry (*-nȧ-tō-ri*), *adj.* pertaining to extermination.
ex-ter-nal (*-tẽr'nal*), *adj.* outside; exterior; superficial; objective; foreign. [OUTWARD.]
ex-ter-ri-to-ri-al-i-ty (*-ter-ri-tō-ri-al'i-ti*), *n.* the right possessed by ambassadors to live under the laws of their own country.
ex-tinct (*-tingkt'*), *adj.* extinguished; put out.
ex-tin-guish (*-ting'gwish*), *v. t.* to put out.
ex-tin-guish-er (*-ẽr*), *n.* that which extinguishes.
ex-tir-pate (*'tẽr-pāt*), *v. t.* to eradicate; destroy.
ex-tol (*-tōl'*), *v. t.* [*p. t.* and *p. p.* extolled, *p. pr.* extolling], to praise highly; magnify. [ADMIRE.]
ex-tort (*-tôrt'*), *v. t.* to obtain by threats, violence, or injustice. [EXACT.]
ex-tor-tion (*-tôr'shun*), *n.* the act or practice of extorting.
ex-tor-tion-ate (*'shun-āt*), *adj.* characterized by extortion.
ex-tor-tion-er (*'shun-ẽr*), *n.* one who practices extortion.
ex-tra (*'trȧ*), *adj.* additional.
ex-tract (*-trakt'*), *v. t.* to draw out of; pull out; select from a large literary work: *n.* an abstract or excerpt from a book.
ex-trac-tion (*-trak'shun*), *n.* lineage, birth, or descent.
ex-tra-dite (*'trȧ-dīt*), *v. t.* to surrender (a person) to another government.
ex-tra-di-ta-ble (*-dī-tȧ-bl*), *adj.* liable or subject to, extradition.
ex-tra-di-tion (*-dish'un*), *n.* the surrender by the government of one nation to another of a person guilty of a crime.
ex-tra-ne-ous (*-trā'nē-us*), *adj.* external.
Syn. EXTRANEOUS, extrinsic, foreign. The *extraneous* is that which forms no necessary or natural part of anything; the *extrinsic* is that which forms a part or has a connection, but only in an indirect form; it is not an inherent or component part; the *foreign* is that which forms no part whatever, and has no kind of connection.
Ant. Apropos, essential, relevant, intrinsic.
★**ex-traor-di-na-ry** (*-trôr'di-nā-ri*), *adj.* beyond or out of the usual course; uncommon.
Syn. EXTRAORDINARY, remarkable. The *extraordinary* is that which is out of the ordinary course, but it does not always excite remark, and is not, therefore, *remarkable,* as when we speak of an *extraordinary* loan; on the other hand, *extraordinary* expresses much more than *remarkable.* [See *rare.*]
Ant. Ordinary, usual, obscure.
ex-trav-a-gance (*-trav'ȧ-gans*), *n.* excess in anything. [EXCESS.]
ex-trav-a-gant (*'ȧ-gant*), *adj.* exceeding reasonable limits; wasteful; prodigal.
Syn. EXTRAVAGANT, prodigal, lavish, profuse. The *extravagant* man spends his money without reason; the *prodigal* man spends it in excesses. One may be *extravagant* with a small sum where it exceeds one's means; one can be *prodigal* only with large sums; *lavish* and *profuse* are properly applied to particular actions, the former to denote an expenditure more or less wasteful or superfluous, the latter to denote a full supply without any sort of scant.
Ant. Close, miserly, parsimonious, saving.
ex-trav-a-gan-za (*eks-trav-ȧ-gan'zȧ*), *n.* a stage burlesque; an irregular piece of music.
ex-treme (*-trēm'*), *adj.* of the highest degree; last; utmost; furthest; uncompromising.
ex-trem-ist (*'ist*), *n.* a supporter of extreme views or practice.
ex-trem-i-ty (*-trem'i-ti*), *n.* [*pl.* extremities (*-tiz*)], the utmost point or degree.
ex-tri-ca-ble (*'tri-kȧ-bl*), *adj.* capable of being extricated.
ex-tri-cate (*'tri-kāt*), *v. t.* to free from difficulties.
ex-trin-sic (*-trin'sik*), *adj.* external. [EXTRANEOUS.]
ex-trude (*-trūd'*), *v. t.* to thrust out.
ex-u-ber-ance (*-ū'bẽr-ans*), *n.* superabundance.
ex-u-ber-ant (*-ant*), *adj.* copious.
Syn. EXUBERANT, luxuriant. These terms are both applied to vegetation in a flourishing state; but *exuberance* expresses the excess, and *luxuriance* the perfection.
Ant. Drained, poor, scant.
ex-ude (*-ūd'*), *v. t.* to discharge gradually through pores.
ex-ult (*egz-ult'*), *v. i.* to rejoice in triumph.
ex-ult-ant (*'ant*), *adj.* rejoicing triumphantly.
ex-u-vi-æ (*egz-ū'vi-ē*), *n. pl.* the cast off skins, shells, etc., of animals.
eye (*ī*), *n.* the organ of sight; the eyeball; sight; observation; view.
eye-ball (*'bawl*), *n.* the globe of the eye.
eye-brow (*'brou*), *n.* the hairy arch above the eyes.
eye-lash (*'lash*), *n.* the ridge of hair that lines the eyelid.
eye-let (*'let*), *n.* a small hole to receive a cord.
eye-lid (*'lid*), *n.* the movable skin which covers over and closes the eye.
eye-sight (*'sīt*), *n.* the sight of the eye.
eye-sore (*'sōr*), *n.* anything that offends the sight.
eye-tooth (*'tōōth*), *n.* [*pl.* eye-teeth (*'tēth*)], one of the upper teeth in the jaw.
★**ey-rie** (*ā'ri* or *ē'ri*), *n.* the nest of a predatory bird. [Also *eyry.*]
Ezekiel (*ē-zē'ki-el*). From the Hebrew, meaning "strength of God." Dutch, *Ezechiel;* Fr., *Ezechiel.*
Ezra (*ez'rȧ*). From the Hebrew, *Ezra,* meaning "a helper." Fr., *Esdras;* Lat., *Ezra* or *Ezdras.*

F

Fabian (*fā'bi-an*). A name derived from the Roman *Fabius,* which, in turn, is derived from *faba,* a bean. Danish, *Favian;* Dutch, *Fabiaan;* Fr., *Fabien;* It., *Fabiano;* Lat., *Fabianus.*
fa-ble (*fā'bl*), *n.* a short fictitious narrative intended to convey some moral: *v. i.* to speak falsely or untruthfully. [FICTION.]
fab-ric (*fab'rik*), *n.* an edifice or building.
fab-ri-cate (*'ri-kāt*), *v. t.* to construct; invent falsely.
fab-u-lous (*'ū-lus*), *adj.* fictitious.
★**fa-çade** (*fȧ-sȧd'* or *fȧ-sād'*), *n.* front elevation.
face (*fās*), *n.* the countenance; dial of a clock, etc.; value, excluding discount or interest) said of a note, etc.: *v. t.* to meet in front. [CONFRONT.]
faced (*fāst*), *p. adj.* having a face; dressed, as stone or tea.
fac-et (*fas'et*), *n.* a small surface or face.
fa-ce-tious (*fȧ-sē'shus*), *adj.* humorous; jocular.
Syn. FACETIOUS, pleasant, jocular, jocose. *Facetious* may be employed either for writing or conversation; the rest only in conversation. The *facetious* man deals in that kind of discourse which may excite laughter; a *conversable* man may instruct as well as amuse; the *pleasant* man says everything in a *pleasant* manner; his *pleasantry* even on the most delicate subject is without offense; the person speaking is *jocose;* the thing said, or the manner of saying it, is *jocular.*
fa-cial (*fā'shal*), *adj.* pertaining to the face.
fa-ci-es (*'shi-ēz*), *n.* the general resemblance or aspect of any group of organisms or rocks.
fac-ile (*fas'il*), *adj.* yielding.
fa-cil-i-tate (*fȧ-sil'i-tāt*), *v. t.* to make easy or less difficult.
fa-cil-i-ty (*'i-ti*), *n.* [*pl.* facilities (*-tiz*)], freedom from difficulty; dexterity; ease. [EASE.]
fa-cing (*fā'sing*), *n.* a covering in front for ornamental or other purposes.
fac-sim-i-le (*fak-sim'i-lē*), *n.* an exact reproduction, counterpart, or likeness of an original.
fact (*fakt*), *n.* anything that is done; reality. [CIRCUMSTANCE.]
fac-tion (*fak'shun*), *n.* a party in disloyal opposition.
fac-tious (*'shus*), *adj.* given to faction.
Syn. FACTIOUS, seditious. *Factious* is an epithet to characterize the tempers of men; *seditious* characterizes their conduct. The *factious* man attempts to raise himself into importance, he aims at authority, and seeks to interfere in the measures of government; the *seditious* man attempts to excite others, and to provoke their resistance to established authority. [See *perverse.*]
Ant. Peaceable, quiet, well disposed, governable.
fac-ti-tious (*-tish'us*), *adj.* artificial; sham.

fac-tor (*fak'tĕr*), *n.* an agent who transacts business for another.

★fac-to-ry (*fak'tō-ri*, not *fak'tri*), *n.* [*pl.* factories (*-riz*)], a manufactory.

fac-to-tum (*-tō'tum*), *n.* a man of all work.

fac-ul-ty (*'ul-ti*), *n.* [*pl.* faculties (*-tiz*)], any mental or physical power; the masters and professors of a department in a university. [ABILITY.]

fad (*fad*), *n.* a pet idea or hobby.

fade (*fād*), *v. i.* to lose color or distinctness. [FAINT.]

fæ-ces (*fē'sēz*), *n. pl.* excrement.

fag (*fag*), *v. i.* [*p. t.* and *p. p.* fagged, *p. pr.* fagging], to work hard: *v. t.* to tire out or exhaust.

fag-ot (*'ot*), *n.* a bundle of sticks bound together.

fag-ot-ing (*-ing*), *n.* a method of ornamenting textile fabrics.

fail (*fāl*), *v. i.* to be deficient; waste away: *v. t.* to be wanting, or insufficient for; forsake.

fail-ing (*'ing*), *n.* a fault; weakness; imperfection; the act of becoming bankrupt.

fail-ure (*fāl'ūr*), *n.* the act of failing; omission; want of success. [INSOLVENCY.]

fain (*fān*), *adv.* willingly; gladly.

faint (*fānt*), *v. i.* to become feeble; lose consciousness; swoon.

Syn. FAINT, dim, exhausted, faded, faltering, fatigued, feeble, indistinct, languid, listless, timid, weak, wearied. *Faint* has the general sense of lacking strength or effectiveness. A person may be *faint* when physically *wearied;* he may be a *faint* adherent because naturally *feeble* or purposeless, or because half hearted in the cause. Written characters may be *faint* or *dim*, either because originally written with poor ink, or because they have become *faded* by time and exposure.

faint-ing (*'ing*), *n.* a sudden and temporary loss of consciousness.

fair (*fār*), *adj.* beautiful; handsome; pleasing to the eye or mind; *n.* market: *adv.* justly openly.

Syn. FAIR, clear. *Fair* is used in a positive sense; *clear* in a negative sense; there must be some brightness in what is *fair;* there must be no spots in what is *clear*. The weather is said to be *fair*, which is not only free from what is disagreeable but somewhat enlivened by the sun; it is *clear* when it is free from clouds or mists.

Ant. DECEITFUL, unjust, unprincipled.

fair-y (*fār'i*), *n.* [*pl.* fairies (*-iz*)], an imaginary being of graceful and diminutive human form.

faith (*fāth*), *n.* belief; trust in the honesty and truth of another; the assent of the mind to divine revelation; a system of doctrines or tenets.

Syn. FAITH, creed. These words are synonymous when taken for the thing trusted in or believed; but they differ in this, that *faith* has always a reference to the principle in the mind; *creed* only respects the thing which is the object of faith.

Ant. DENIAL, disbelief, infidelity.

faith-ful (*'fool*), *adj.* full of faith; trustworthy; truthful; honest; loyal.

Syn. FAITHFUL, trusty. *Faithful* respects the principle altogether; *trusty* includes not only the principle, but the mental qualifications in general. It is the part of a Christian to be *faithful* to all his engagements; it is a particular excellence in a servant to be *trusty*.

Ant. FAITHLESS, deceitful.

faith-less (*'les*), *adj.* without faith or belief; unbelieving.

Syn. FAITHLESS, perfidious, treacherous. A *faithless* man is *faithless* only for his own interest; a *perfidious* man is expressly so to the injury of another. *Perfidy* may lie in the will to do; *treachery* lies altogether in the thing done. A friend is *perfidious* whenever he evinces his *perfidy;* but he is said to be *treacherous* only in the particular instance in which he betrays the confidence and interests of another.

Ant. FAITHFUL, honest, magnanimous, trustworthy.

fake (*fāk*), *v. t.* to fabricate with the view of deception.

fak-er (*'ĕr*), *n.* a swindler; pickpocket.

Fa-kir (*fā'kēr*), *n.* a Mohammedan ascetic.

fal-chion (*fawl'chun*), *n.* a short, slightly curved sword.

★fal-con (*faw'kn*), *n.* a predatory bird.

fal-con-er (*faw'kn-ĕr*), *n.* one who trains or sports with falcons.

fal-con-ry (*faw'kn-ri*), *n.* the art of training hawks.

fall (*fawl*), *v. i.* [*p. t.* fell, *p. p.* fallen, *p. pr.* falling], to drop from a higher to a lower place: *adj.* pertaining to the autumn.

Syn. FALL, downfall, ruin. *Fall* applies to that which is erect; *downfall* to that which is elevated. Everything which is set up, although as trifling as a stick, may have a *fall;* but we speak of the *downfall* of the loftiest trees or the tallest spires. A man may recover from his *fall*, but his *downfall* is commonly followed by the entire *ruin* of his concerns, and often of himself.

Ant. RISE, flourish, prosper.

fal-la-cious (*fal-lā'shus*), *adj.* deceptive.

Syn. FALLACIOUS, deceitful, fraudulent. The *fallacious* has respect to falsehood in opinion; *deceitful* to that which is externally false. Our hopes are often *fallacious;* the appearances of things are often *deceitful*. *Fallacious*, as characteristic of the mind, excludes the idea of design; *deceitful* excludes the idea of mistake; *fraudulent* is a gross species of the *deceitful*.

Ant. HONEST, sound, truthful.

fal-la-cy (*fal'a-si*), *n.* [*pl.* fallacies (*-siz*)], a deceptive or false appearance; mistake.

fall-en (*fawl'n*), *p. adj.* sunk to a lower state or condition.

fal-li-ble (*fal'i-bl*), *adj.* liable to be deceived.

fall-ing (*fawl'ing*), *p. adj.* moving or hanging downward: *n.* the act or process of falling.

fal-low (*fal'ō*), *adj.* plowed but not sown for the season.

false (*fawls*), *adj.* untrue; dishonest; disloyal; perfidious. [ABSURD.]

false-hood (*'hood*), *n.* an untruth; lie. [FICTION.]

fal-set-to (*fawl-set'ō*), *n.* an artificial tone higher in key than the natural compass of the voice.

fal-si-fy (*'si-fi*), *v. t.* [*p. t.* and *p. p.* falsified, *p. pr.* falsifying], to make, or prove to be, false.

fal-si-ty (*'si-ti*), *n.* [*pl.* falsities (*-tiz*)], the quality of being false.

Fal-staf-fi-an (*fawl'staf-i-an*), *adj.* resembling Falstaff; convivial.

fal-ter (*'tĕr*), *v. t.* to utter in a weak, trembling manner (with *out*). [FAINT, HESITATE.]

fame (*fām*), *n.* public report.

Syn. FAME, report, reputation, renown. *Fame* may be applied to any object, good, bad, or indifferent; a *report* serves to communicate information of events; *reputation* is applied only to real eminence in some department; *renown* is employed only for extraordinary men and brilliant exploits. [See *character*.]

famed (*fāmd*), *adj.* renowned; celebrated.

fa-mil-iar (*fa-mil'yĕr*), *adj.* well acquainted, or intimate, with; domestic; affable; easy; unconstrained; unceremonious. [CONVERSANT.]

fa-mil-iar-i-ty (*yar'i-ti*), *n.* [*pl.* familiarities (*-tiz*)], intimacy; ease of conversation; freedom from ceremony or conventionality. [ACQUAINTANCE.]

fam-i-ly (*fam'i-li*), *n.* [*pl.* families (*-liz*)], a household; a group of animals larger than a genus, but less than an order.

fam-ine (*fam'in*), *n.* extreme dearth; great scarcity.

fam-ish (*'ish*), *v. t.* and *v. i.* to starve.

fa-mous (*fā'mus*), *adj.* renowned.

Syn. FAMOUS, celebrated, renowned, illustrious. *Famous* signifies literally having *fame* or the cause of *fame;* it is applicable to that which causes a noise or sensation; *celebrated* signifies literally kept in the memory by a celebration or memorial; *renowned* signifies literally possessed of a name; *illustrious* signifies literally what has or gives a luster.

Ant. OBSCURE, unknown.

fan (*fan*), *v. t.* [*p. t.* and *p. p.* fanned, *p. pr.* fanning], to cool with a fan; agitate (the air), as with a fan: *n.* an object with a broad surface used to agitate the air; a fanatic (said of a baseball enthusiast).

fa-nat-ic (*fa-nat'ik*), *n.* one who is intemperately zealous, or wildly extravagant: *adj.* characterized by fanaticism.

fa-nat-i-cism (*i'sizm*), *n.* extravagant or frenzied zeal.

fan-cied (*fan'sid*), *adj.* imaginary.

fan-ci-ful (*'si-fool*), *adj.* influenced by the fancy.

Syn. FANCIFUL, fantastic, whimsical, capricious. *Fanciful* is said of that which is irregular in the taste or judgment; *fantastical* is said of that which violates all propriety, as well as regularity; the former may consist of a simple deviation from rule; the latter is something extravagant; *whimsical* is a species of the *fanciful* in regard to one's likes or dislikes; *capricious* respects errors of temper.

fan-cy (*'si*), *v. t.* [*p. t.* and *p. p.* fancied, *p. pr.* fancying], to imagine; be pleased with: *v. i.* to imagine: *n.* creative imagination.

Syn. FANCY, imagination. The *fancy* only employs itself about things without regarding their nature; but the *imagination* aims at tracing a resemblance, and getting a true copy. The *fancy* consequently forms combinations, either real or unreal, as chance may direct; but the *imagination* is more seldom led astray. The *fancy* is busy in dreams, or when the mind is disordered; but the *imagination* acts when the intellectual powers are in full play. [See *conceit*.]

Ant. RATIOCINATION.

fan-dan-go (*-dang'gō*), *n.* a lively Spanish dance.

fane (*fān*), *n.* a temple.

fan-fare (*fan'fār*), *n.* a flourish of trumpets.

fang (*fang*), *n.* the poison tooth of a serpent; a tusk.

Fanny. A female name corrupted from *Frances*.

fan-tail (*fan'tāl*), *n.* a variety of pigeon.

fan-tan (*'tan*), *n.* a Chinese gambling game.

fan-ta-si-a (*fan-tā'zi-ā*, It. *fän-tä'zē-ä*), *n.* a musical composition not restricted by usual laws.

fan-tas-tic (*fan-tas'tik*), *adj.* odd; whimsical; grotesque. [FANCIFUL.]

far (*fär*), *adj.* remote; distant; extending widely or at length. [DISTANT.]

far-ad (*far'ad*), *n.* a unit of electric capacity.

farce (*färs*), *n.* a short comedy in which qualities are exaggerated.

far-ci-cal (*fär'si-kal*), *adj.* of the nature of a farce.

fare (*fār*), *v. i.* to be in any state; live: *n.* the sum paid for a journey by rail, etc.

fare-well (*fār'wel*), *interj.* may you fare well or prosper; good-by.

Syn. FAREWELL. adieu, good-by, leave-taking, parting salutation, valedictory. *Good-by* is the homely and hearty, *farewell* the formal, English word at parting. *Adieu*, from the French, is still more ceremonious than *farewell*. A *valedictory* is a public farewell to a company or assembly.

far-fetched (*fär'fecht*), *adj.* unnatural; forced.

fa-ri-na (*fā-rī'* or *fa-rē'nā*), *n.* meal or flour.

far-i-na-ceous (*far-i-nā'shus*), *adj.* consisting of farina.

farm (*färm*), *n.* a portion of land with the buildings, etc., appurtenant to it: *v. t.* to cultivate (land).

farm-er (*'ĕr*), *n.* one who cultivates a farm; an agriculturist.

farm-ing (*'ing*), *adj.* pertaining to, or engaged in, agriculture.

Farnese (*fär-nēz'*, Italian *fär-nā'zā*) **palace.** A celebrated palace of the Farnese in Rome, founded in the first part of the reign of Leo X.

fa-ro (*fā'rō* or *fā'rō*), *n.* a game of chance, played with cards.

far-ri-er (*far'i-ĕr*), *n.* one who shoes horses.

far-ther (*fär'thĕr*), *adj.* [*comp.* of far], more distant or remote; additional.

far-thing (*'thing*), *n.* one-fourth of an English penny.

fas-ci-nate (*fas'i-nāt*), *v. t.* to influence the mind or will of, as if by enchantment.

fas-ci-na-tion (*-nā'shun*), *n.* the act of fascinating.

fash-ion (*fash'un*), *n.* the shape or form of anything; conventional custom or usage: *v. t.* to mold, shape, or form. [CUSTOM, FORM.]

fash-ion-a-ble (*a-bl*), *adj.* made in accordance with the fashion of the day.

fast (*fāst*), *v. i.* to abstain from food as a religious obligation.

fast (*fast*), *adj.* quick; speedy in motion; in advance of the standard: *adv.* rapidly; firmly.

fast day (*'dā*), a day set apart for religious fasting.

fas-ten (*fas'n*), *v. t.* to fix securely; make fast; bolt or bar.

fas-tid-i-ous (*-tid'i-us*), *adj.* squeamish.

fast-ing (*fast'ing*), *n.* abstinence from food.

fat (*fat*), *adj.* [*comp.* fatter, *superl.* fattest], corpulent; fleshy; adipose; greasy: *n* a solid, oily substance forming part of the tissue of animals.

fa-tal (*fā'tal*), *adj.* causing death; mortal. [DEADLY.]

fa-tal-ism (*-izm*), *n.* the doctrine that all things happen by irresistible necessity.

fa-tal-is-tic (*-is'tik*), *adj.* pertaining to fatalism.

fa-tal-i-ty (*fā-tal'i-ti*), *n.* [*pl.* fatalities (*-tiz*)], predetermined order or series of events.

fate (*fāt*), *n.* destiny; inevitable necessity; death or destruction. [DESTINY.]

fat-ed (*fāt'ed*), *p. adj.* decreed by fate; destined.

fa-ther (*fä'thĕr*), *n.* a male parent; the official title of a confessor of the Roman Catholic church.

Fa-ther, *n.* the Creator, God.

fath-om (*fath'um*), *n.* a measure of length equal to 6 feet.

fa-tigue (*fa-tēg'*), *n.* weariness; toil.

Syn. FATIGUE, weariness, lassitude. *Fatigue* is an exhaustion of the animal or mental powers; *weariness* is a wearing out the strength, or breaking the spirits; *lassitude* is a general relaxation of the animal frame. [See *faint*.]

fat-ten (*fat'n*), *v. t.* to make fat, plump, or stout.

fat-ty (*'i*), *adj.* consisting, or having the qualities, of fat.

fa-tu-i-ty (*fa-tū'i-ti*), *n.* weakness of intellect.

fat-u-ous (*fat'ū-us*), *adj.* weak in intellect; silly.

★fau-cet (*faw'set*, not *fas'et*), *n.* a short pipe with a valve, used for drawing out liquor.

fault (*fawlt*), *n.* a slight crime or offense; blemish; defect. [BLEMISH.]

fault-y (*'i*), *adj.* imperfect.

faun (*fawn*), *n.* a classic woodland deity.

fau-na (*faw'nä*), *n.* [*pl.* faunas (*'näz*), faunæ (*'nē*)], the animals characteristic of any particular region.

fa-vor (*fā'vĕr*), *n.* kindness; support; patronage; good will; facility: *v. t.* to regard with favor. [CREDIT, MERCY.]

fa-vor-a-ble (*-a-bl*), *adj.* propitious; advantageous.

fa-vored (*'vĕrd*), *adj.* featured.

★fa-vor-ite (*fā'vĕr-it*, not *fā'vĕr-īt*), *n.* one who, or that which, is particularly esteemed.

fa-vor-it-ism (*-izm*), *n.* the disposition or tendency to favor one person or class in preference to others.

fawn (*fawn*), *n.* a young deer.

fawn-ing (*'ing*), *n.* gross, or servile, flattery.

fay (*fā*), *n.* an elf; fairy.

faze (*fāz*), *v. t.* to worry.

fe-al-ty (*fē'al-ti*), *n.* the duty of a vassal or tenant to his feudal superior.

fear (*fēr*), *n.* apprehension of evil or danger; dread: *v. i.* to be in fear; feel anxiety. [ANXIETY.]

Fear, Cape, N. C. Is said to have been named *Cape of Fear*, owing to its tempestuous coast at the time Raleigh's fleet was trying to find an entrance, June 20, 1585.

fear-ful (*fēr'fool*), *adj.* affected with fear; timorous; apprehensive.

Syn. FEARFUL, dreadful, frightful, tremendous, terrible, horrible, horrid. A contest is *fearful* when the issue is important, but the event doubtful; the thought of death is *dreadful* to one who feels himself unprepared; the

frightful is less than the *tremendous;* the *tremendous* than the *terrible;* the *terrible* than the *horrible;* shrieks may be *frightful;* thunder and lightning may be *tremendous;* the roaring of a lion is *terrible;* the actual spectacle of killing is *horrible* or *horrid.* We may speak of a *frightful, dreadful, terrible,* or *horrid* dream; or *frightful, dreadful,* or *terrible* tempest: *Dreadful, terrible,* or *horrid* consequences.

Ant. COMMONPLACE, contemptible, mean, paltry.

fear-less (*fēr'les*), *adj.* without fear. [BOLD.]

fea-si-ble (*fē'zi-bl*), *adj.* practicable.

feast (*fēst*), *n.* a sumptuous repast; a festival, especially of the church: *v. i.* to feed sumptuously.

feat (*fēt*), *n.* a notable achievement.

feath-er (*feth' ĕr*), *n.* part of the exterior covering of a bird: *v. t.* turn the blade of (an oar) horizontally when leaving the water.

feath-er weight (*wāt*), in a handicap, the least weight that can be put on a racehorse.

feath-er-y (*-i*), *adj.* covered with, or resembling, feathers.

fea-ture (*fē'tūr*), *n.* the cast of the face.

fea-tured (*'tūrd*), *adj.* having a particular cast of face.

fe-brile (*fē'bril* or *fēb'ril*), *adj.* pertaining to, or accompanied by, fever.

February (*feb'roo-ā-ri*). From the Latin word, *februa,* "to purify," because the purification of women took place in this month.

fec-u-lent (*fek-ū'lent*), *adj.* containing dregs.

★**fe-cund** (*fek'und,* not *fē'kund*), *adj.* fruitful; prolific.

fec-un-date (*fek'un-dāt*), *v. t.* to make fruitful or prolific.

fed-er-al (*fed' ĕr-al*), *adj.* pertaining to, constituting, or founded upon, a league or treaty.

Fed-er-al, *adj.* supporting the cause of the Union in the American Civil war (1861-65).

fed-er-al-ism (*izm*), *n.* the doctrine of federal union.

Federalist (*fed' ĕr-al-ist*), **The.** A collection of essays in favor and in explanation of the United States constitution, first issued in serial form, October, 1787, to April, 1788.

fee (*fē*), *n.* a compensation or payment for service rendered, especially professional service; land held from a superior.

fee-ble (*fē'bl*), *adj.* weak; wanting in physical strength or mental vigor. [WEAK, FAINT.]

feed (*fēd*), *v. t.* to give food to; nourish: *v. i.* to eat: *n.* a certain quantity of food given to animals.

feed-er (*' ĕr*), *n.* one who, or that which, feeds.

feel (*fēl*), *v. t.* to perceive by the touch; be influenced or moved by: *v. i.* to seem to the touch.

Syn. FEEL, be sensible, conscious. To *feel* is said of the whole frame, inwardly and outwardly; it is the accompaniment of existence; to be *sensible* is said only of the *senses.* It is the property of all living creatures to *feel* pleasure and pain in a greater or less degree; those creatures which have not the sense of hearing will not be *sensible* of sounds; we are *conscious* of having fallen short of our duty.

Ant. BE INSENSIBLE, unconscious.

feel-er (*' ĕr*), *n.* one who, or that which, feels.

feel-ing (*'ing*), *p. adj.* easily affected; sympathetic; *n.* susceptibility.

fee sim-ple (*fē-sim'pl*), an estate in land or tenements held by a person in his own right.

feign (*fān*), *v. t.* to pretend; invent.

Syn. FEIGN, pretend. One *feigns* in order to gain some future end; a person *feigns* sickness in order to be excused from paying a disagreeable visit; one *pretends* in order to serve a present purpose; a child *pretends* to have lost his book who wishes to excuse himself for his idleness.

Ant. BE SINCERE, unaffected.

feint (*fānt*), *n.* a pretense; mock attack.

feld-spar (*feld'spär*), *n.* a name for various crystalline minerals.

Felicia. A female name formed from *Felix.*

fe-lic-i-tate (*fē-lis'i-tāt*), *v. t.* to congratulate.

Syn. FELICITATE, congratulate. *Felicitate* signifies to make happy, and is applicable only to ourselves; *congratulate* is applicable either to ourselves or others; we *felicitate* ourselves on having escaped the danger; we *congratulate* others on their good fortune.

Ant. CONDOLE, console.

fe-lic-i-tous (*'itus*), *adj.* characterized by, or causing, happiness.

fe-lic-i-ty (*'i-ti*), *n.* [*pl.* felicities (*-tiz*)], a condition of supreme happiness.

fe-line (*fē'lin*) *adj.* pertaining to, or resembling, a cat.

Felix (*fē'liks*). A Latin name meaning "happy." Danish, *Felix;* Dutch, *Felix;* Fr., *Felix;* Ger., *Felix;* It., *Felice;* Sp., *Felix.*

fell (*fel*), *v. t.* to hew, cut, or knock, down; cause to fall: *adj.* cruel.

fel-lah (*'ä*), *n.* [*pl.* fellahs (*'äz*, fellaheen (*-hēn'*)], in Egypt and Syria, a peasant or laboring man.

fel-loe. Same as *felly.*

★**fel-low** (*fel'lō,* not *fel'lu*), *n.* a companion or associate; one of the same kind.

fel-low-ship (*-ship*), *n.* association; communion; intimacy. [ACQUAINTANCE.]

fel-ly (*'i*), *n.* [*pl.* fellies (*'iz*)], one of the curved pieces of wood which form the rim of a wheel.

fel-on (*fel'un*), *n.* one guilty of felony. [CRIMINAL.]

fe-lo-ni-ous (*fē-lō'ni-us*), *adj.* malignant.

felt (*felt*), *n.* an unwoven fabric composed of wool or wool and hair.

fe-luc-ca (*fē-luk'ä*), *n.* a small sailing vessel used in the Mediterranean.

fe-male (*fē'māl*), *n.* one of that sex which conceives and produces young: *adj.* feminine; womanly.

Syn. FEMALE, feminine, effeminate. In the *female* character we expect to find that which is *feminine.* The *female* dress, manners, and habits, have engaged the attention of all essayists, from the time of Addison to the present period. The *feminine* is natural to the *female;* the *effeminate* is unnatural to the male.

★**fem-i-nine** (*fem'i-nin,* not *fem'i-nīn*), *adj.* pertaining to, or characteristic of, women. [FEMALE.]

fem-i-nin-i-ty (*-i-nin'i-ti*), *n.* the state or quality of being feminine.

fem-o-ral (*fem'ō-ral*), *adj.* pertaining to the thigh.

fe-mur (*fē'mĕr*), *n.* the thigh bone.

fen (*fen*), *n.* low, flat marsh land, covered with sedges.

fence (*fens*), *v. i.* to practice fencing: *v. t.* to defend; inclose or surround with a fence.

fen-cing (*fen'sing*), *n.* the art of skillfully using a foil or sword.

fend (*fend*), *v. t.* to ward off.

fend-er (*' ĕr*), *n.* a cushion of rope, or piece of wood, hung over the side of a vessel to prevent injury by contact with a landing stage.

fen-nel (*fen'el*), *n.* an aromatic biennial herb of the parsley family.

Ferdinand (*fĕr'di-nand*). One authority derives this name from the North High German name *Ferdinand* or *Fert-nand,* translated, figuratively, "one quick of comprehension." Ger., *Ferdinand;* It., *Ferdinando;* Lat., *Ferdinandus;* Port., *Fernando* or *Fernao;* Sp., *Fernando.*

Fergus. An English form of *Frederick.*

fer-ment (*fĕr'ment*), *n.* a microscopic fungus which produces fermentation: *v. t.* (*fĕr-ment'*) to produce fermentation in.

fer-men-ta-tion (*-men-tā'shun*), *n.* the chemical decomposition which takes place in an organic substance exposed to the air.

fern (*fĕrn*), *n.* a flowerless plant with broad and feathery fronds or leaves.

Fernandina (*fĕr-nän-dē'nä*), **Fla.** Given by the Spaniards in honor of their king, Ferdinand.

fern-er-y (*fĕrn' ĕr-i*), *n.* [*pl.* ferneries (*-iz*)], a place where ferns are cultivated.

fe-ro-cious (*fē-rō'shus*), *adj.* savage; fierce; rapacious.

Syn. FEROCIOUS, fierce, savage. *Ferocity* marks the untamed character of a cruel disposition; *fierceness* has a greater mixture of pride and anger in it; *savageness* marks a more permanent, but not so violent a sentiment of either cruelty or anger as the two former. *Ferocity* and *fierceness* are in common applied to the brutes, to designate their natural tempers; *savage* is mostly employed to designate the natural tempers of man.

Ant. DOCILE, harmless, tame.

fe-roc-i-ty (*-ros'i-ti*), *n.* [*pl.* ferocities (*-tiz*)], savageness or cruelty of disposition.

fer-ret (*fer'et*), *n.* a domesticated variety of polecat, employed to hunt rats and rabbits from their holes.

fer-ric ac-id (*fer'ik as'id*), an acid composed of 3 atoms of oxygen and 1 of iron.

fer-ro-type (*-tīp*), *n.* a photograph taken upon a sensitized iron plate.

fer-rule (*'ril*), *n.* a metal ring placed at the end of a stick.

fer-ry (*'i*), *n.* [*pl.* ferries (*'iz*)], a passage across a river, etc.; a ferryboat.

fer-tile (*fĕr'til*), *adj.* producing abundantly; fruitful.

fer-til-i-ty (*'i-ti*), *n.* the state or quality of being fertile.

fer-til-i-za-tion (*-i-zā'shun*), *n.* the act or process of making fertile.

fer-ule (*fer'il*), *n.* a rod or flat stick used for chastisement.

fer-vent (*fĕr'vent*), *adj.* zealous; earnest. [EAGER.]

fer-vid (*'vid*), *adj.* burning; ardent; fiery.

fer-vor (*'vĕr*), *n.* intensity of feeling.

Syn. FERVOR, ardor. The affections are properly *fervent;* the passions are *ardent;* we are *fervent* in feeling, and *ardent* in acting. [See *zeal.*]

Ant. COOL, indifferent.

fes-tal (*fes'tal*), *adj.* pertaining to a feast; joyous; festive.

fes-ter (*'tĕr*), *v. t.* to cause to fester or rankle: *n.* an ulcerous sore.

fes-ti-val (*'ti-val*), *n.* a joyful celebration; an entertainment.

fes-tive (*'tiv*), *adj.* pertaining to a feast; gay.

fes-tiv-i-ty (*-tiv'i-ti*), *n.* [*pl.* festivities (*-tiz*)], social gayety at an entertainment or feast.

fes-toon (*-tōōn'*), *n.* a wreath or garland suspended at the extremities and hanging in a curve.

fetch (*fech*), *v. t.* to go after and bring; *v. i.* to move and turn; reach or get. [BRING.]

★**fête** (*fāt*), *n.* a festival or holiday.

fet-id (*fet'id,* or *fē'tid*), *adj.* giving forth an offensive smell.

fe-tish (*fēt'ish,* or *fet'ish*), *n.* any object, as a stone, weapon, feather, etc., supposed by the negroes of Western Africa to be the abode of a spirit.

fet-lock (*fetlock*), *n.* a tuft of hair behind a horse's pastern joint.

fet-ter (*fet'ĕr*), *n.* a chain or shackle for the feet (usually *pl.*).

fet-tle (*fet'l*), *n.* good condition or repair; fuss

fe-tus. Same as *fœtus.*

feud (*fūd*), *n.* an inveterate quarrel between clans or families.

Syn. FEUD, affray, animosity, bitterness, brawl, broil, contention, contest, controversy, dispute, dissension, enmity, fray, hostility, quarrel, strife. A *feud* is *enmity* between families, clans, or parties; *feud* is rarely used of nations; a *feud* is long enduring, and often hereditary. *Dissension* is used of a number of persons, of a party or other organization. *Bitterness* is in feeling only; a *quarrel* is in word or act, or both, and is commonly slight and transient; *contention* and *strife* may be in word or deed; *contest* is often used in a good sense, *contention* and *strife* very rarely so. *Affray, brawl,* and *broil,* like *quarrel,* are words of inferior dignity. [See *quarrel.*]

feu-dal (*fū'dal*), *adj.* pertaining to, or founded upon, a feud or fief.

feu-dal sys-tem (*sis'tem*), the politico-social system prevalent in Europe during the middle ages of holding lands.

fe-ver (*fē'vĕr*), *n.* a disease characterized by marked increase of heat of the skin.

fe-ver-ish (*-ish*), *adj.* affected with fever.

few (*fū*), *adj.* [*comp.* fewer, *superl.* fewest], not many.

fez (*fez*), *n.* a brimless, close fitting, felt hat, usually red, with a black tassel (worn by Turks).

★**fi-an-cé** (*fē-äN-sā'*), *n.* one who is betrothed or affianced. [Fem. *fiancée.*]

fi-as-co (*fē-as'kō*), *n.* a complete or ludicrous failure.

fi-at (*fi'at*), *n.* peremptory order or decree.

fib (*fib*), *n.* a falsehood.

fi-ber (*fi'bĕr*), *n.* a slender thread-like substance.

★**fi-bril** (*fi'bril,* not *fib'ril*) *n.* a small fiber.

fi-brin (*fi'brin*), *n.* a white albuminoid substance which forms the clot of blood.

fi-bri-nous (*'bri-nus*), *adj.* composed of, or of the nature of, fibrin.

fi-brous (*'brus*), *adj.* composed of, or of the nature of, fibers.

fib-u-la (*fib'ū-lä*), *n.* [*pl.* fibulæ (*-lē*)], the outer and smaller of the two bones which form the lower leg.

fi-chu (*fē-shōō'*), *n.* a linen or lace three-cornered cape or collar worn, by ladies, over the shoulders.

fic-kle (*fik'kl*), *adj.* capricious; inconstant.

fic-tion (*'shun*), *n.* that which is feigned or invented; a literary production of the imagination.

Syn. FICTION. allegory, apologue, fable, falsehood, figment, invention, legend, myth, novel, romance, story. *Fiction* is now chiefly used of a prose work in narrative form in which the characters are partly or wholly imaginary; a *romance* portrays what is picturesque or striking; *novel* is a general name for any continuous fictitious narrative, especially a love story; a *fiction* is studied; a *myth* grows up without intent; a *legend* may be true, but can not be historically verified; a *myth* has been received as true at some time, but is now known to be false, a *fabrication* is designed to deceive; a *figment* is something imaginary which the one who utters it may or may not believe to be true; *apologue* is the same as *fable.*

Ant. ACTUALITY, truth, reality.

fic-ti-tious (*-tish'us*), *adj.* false; unreal.

fid (*fid*), *n.* an iron or wooden bar to support a topmast. [violin.

fid-dle (*fid'l*), *n.* a violin: *v. i.* to play the fiddle or

fid-dle-fad-dle (*-fad'l*), *n.* nonsense.

fid-dler (*fid'lĕr*), *n.* a violinist.

fid-dle-stick (*fid'l-stik*), *n.* a bow for playing upon the fiddle or violin.

fid-dling (*fid'ling*), *n.* the act of playing the violin.

fi-del-i-ty (*fi-del'i-ti*), *n.* [*pl.* fidelities (*-tiz*)], integrity; faithful adherence to obligation. [FAITH.]

fidg-et (*fij'et*), *n.* one who is fidgety; nervous.

fi-du-cial (*fi-dū'shal*), *adj.* of the nature of a trust.

fi-du-ci-a-ry (*'shi-ā-ri*), *n.* [*pl.* fiduciaries (*-riz*)], a trustee: *adj.* pertaining to, or of the nature of, a trust.

fie (*fi*), *interj.* for shame!

fief (*fēf*), *n.* a fee or feud.

field (*fēld*), *n.* a piece of land inclosed for tillage or pasture; a wide expanse; in heraldry, the surface of the shield.

field ar-til-ler-y (*är-til' ĕr-i*), artillery so mounted as to be readily handled in active service.

field book (*book*), a surveyor's notebook.

field day (*dā*), a day devoted to outdoor scientific research.

field glass (*glas*), a small portable telescope.

field mar-shal (*mär'shal*), the highest rank in the armies of European countries.

field of-fi-cer (*of'i-sĕr*), a major, lieutenant-colonel, or colonel.

field sports (*spōrtz*), outdoor diversions.

fiend (*fēnd*), *n.* an infernal being; demon.

fiend-ish (*'ish*), *adj.* like a fiend.

fierce (*fērs*), *adj.* savage; violent; merciless. [FEROCIOUS].

fi-er-i-ness (*fi'ĕr-i-nes*), *n.* the quality of being fiery; heat of temper.

fi-er-y (*fi'ĕr-i*), *adj.* [*comp.* fierier, *superl.* fieriest], pertaining to, or consisting of, fire. [HOT.]

Fiesole (*fē-es'ō-lē*). An old Etruscan city in the province of Florence, Italy, four miles northeast of Florence; the ancient *Fæsulæ.* It was the headquarters of Catiline in 63-62 B. C.

MARINE LIFE

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1 Jellyfish.
2 Cat Shark.
3 Tube Worm.
4 Root of Jellyfish.
5 Umbrella of Jellyfish.
6 Crinoid.
7 Squid.
8 Sting Ray Shark.
9 Giant Perch.
10 Prawn.
11 Red Coral.
12, 13 Starfish.
14 Mollusk.
15 Sponge.
16 Coral.
17 Hermit Crab.
18, 19, 23 Sea Anemones.
20 Yellow Coral.
21, 22 Tube Worms.
24, 25 Sea Roses.
26 Crab.
27 Gurnard.
28 Sea Urchin.
29 Horse Sea Rose.
30 Sea Hare.
31 Scallop.
32 Nail Sea Rose.
33 Weever.
34 Sea Cucumber.
35 Skate.

fife (*fīf*), *n.* a shrill-toned musical instrument of the flute class.
fif-teen (*fif'tēn*), *adj.* consisting of 5 and 10; a cardinal numeral: *n.* the number made up of 5 and 10.
fifth (*fifth*), *adj.* next in order after 4th: *n.* one of 5 equal parts
Fifth avenue. The principal residence street of New York, extending from Washington square to Harlem river, a distance of about six and one-half miles.
fif-ti-eth (*fif'ti-eth*), *adj.* next in order after 49th: *n.* one of 50 equal parts.
fif-ty (*'ti*), *adj.* consisting of five times 10.
fig (*fig*), *n.* the pear-shaped fruit of the fig tree.
fight (*fīt*), *v. i.* [*p. t.* and *p. p.* fought, *p. pr.* fighting], contend in battle; make war: *n.* a combat; contest.
fight-ing (*'ing*), *adj.* pertaining to conflict: *n.* a combat.
fig-ment (*fig'ment*), *n.* an invention. [FICTION.]
fig-ur-a-tive (*'ūr-ȧ-tiv*), *adj.* representing by figure; metaphorical.
★**fig-ure** (*'ūr*), *n.* the outline or shape of a person or object; appearance; pattern; a space bounded on all sides by lines or planes: *v. i.* to be conspicuous; cipher.
fig-ured (*'ūrd*), *adj.* covered or adorned with figures; symbolized.
fig-ure-head (*'ūr-hed*), *n.* a carved representation placed at the prow of a ship.
fig-ur-ing (*fig'ūr-ing*), *n.* computation.
fil-a-ment (*fil'ȧ-ment*), *n.* a fine thread, or thread-like process or appendage.
fil-bert (*fil'bẽrt*), *n.* the edible nut of the cultivated hazel.
filch (*filch*), *v. t.* to pilfer; rob.
file (*fīl*), *n.* a wire, etc., on which papers are strung; a tool of hard steel with small grooves on the surface: *v. i.* to march in a file or line.
fil-i-al (*fil'i-al*), *adj.* pertaining to, or befitting, a son or daughter.
fil-i-bus-ter (*-i-bus'tẽr*), *n.* a freebooter; a lawless military adventurer: *v. i.* to act as a filibuster.
fil-i-gree (*'i-grē*), *adj.* made of, or relating to, work in filigree: *n.* ornamental work, resembling lace.
fil-i-greed (*'i-grēd*), *adj.* ornamented with filigree.
fil-ing (*fīl'ing*), *n.* the act of using a file.
Fil-i-pi-no (*fil-i-pē'nō*), *n.* a native of the Philippine islands.
fill (*fil*), *v. t.* to make full; satisfy; crowd: *v. i.* to become full or replete.
fill-er (*'er*), *n.* one who, or that which, fills.
fil-let (*'et*), *n.* a narrow band worn around the forehead for securing the hair.
fill-ing (*fil'ing*), *p. adj.* serving to fill; occupying the whole space; satiating.
fil-ly (*'i*), *n.* [*pl.* fillies (*'iz*)], a young mare.
film (*film*), *n.* a thin skin or filament.
film-y (*'i*), *adj.* composed of, or resembling, films.
fil-ter (*fil'tẽr*), *n.* any material or apparatus by which water is purified; a strainer.
filth (*filth*), *n.* foul matter; dirt.
filth-y (*'i*), *adj.* [*comp.* filthier, *superl.* filthiest], foul; dirty; unclean.
fin (*fin*), *n.* one of the organs of locomotion of a fish.
fi-nal (*fī'nal*), *adj.* pertaining to the end; ultimate, finishing; decisive.
Syn. FINAL, conclusive. *Final* designates simply the circumstance of being the last; *conclusive* the mode of finishing or coming to the last; a determination is *final* which is to be succeeded by no other; a reasoning is *conclusive* that puts a stop to further question.
Ant. OPENING, beginning.
★**fi-na-le** (*fē-nä'lā*, not *fī-nal'ē*), *n.* the last passage in a musical composition.
fi-nal-i-ty (*fī-nal'i-ti*), *n.* completeness.
★**fi-nance** (*fi-nans'*, not *fī'nans*), *n.* the science of the profitable management of monetary affairs.
fi-nan-cial (*-nan'shal*), *adj.* pertaining to finance.
Syn. FINANCIAL, fiscal, monetary, pecuniary. *Monetary* relates to actual money, coin, currency; as, the *monetary* system; *pecuniary* refers to that in which money is involved, but less directly; *financial* applies especially to governmental revenues or expenditures, or to private transactions of considerable moment; we speak of a *pecuniary* reward, a *financial* enterprise; we give a needy person *pecuniary* assistance.
★**fin-an-cier** (*fin-an-sẽr'*, not *fī'nan-sẽr*), *n.* one who is skilled in the principles of banking.
finch (*finch*), *n.* the common name for various small birds.
find (*fīnd*), *v. t.* [*p. t.* and *p. p.* found, *p. pr.* finding], to discover; obtain by searching; ascertain.
Syn. FIND, find out, discover, invent. The merit of *finding* or *inventing* consists in newly applying or modifying the materials, which exist separately; the merit of *discovering* consists in removing the obstacles which prevent us from knowing the real nature of the thing; imagination and industry are requisite for *finding* or *inventing*; acuteness and penetration for *discovering*. *Find* is applicable to the operative arts; *invent* to the mechanical; *discover* to the speculative.
Ant. CONCEAL, suppress, lose, overlook.
find-er (*'ẽr*), *n.* one who, or that which, finds.
find-ing (*fīnd'ing*), *n.* discovery; the verdict of a jury, or court.
fine (*fīn*), *n.* money paid as a penalty: *v. t.* to impose a monetary penalty upon.
fine (*fīn*), *adj.* slender; thin; pure; refined; delicate.
Syn. FINE, delicate, nice. *Fine*, in the natural sense, denotes smallness in general. *Delicate* denotes a degree of *fineness* that is agreeable to the taste. Thread is said to be *fine*; silk is said to be *delicate*, when to *fineness* of texture it adds softness; *nice* is said of what is agreeable to the appetite.
Ant. BROAD, coarse, huge, repulsive.
fine-drawn (*fīn'drawn*), *adj.* spun very fine.
fi-ner-y (*fī'nẽr-i*), *n.* [*pl.* fineries (*iz*)], personal adornment, as fine or showy clothes.
fi-nesse (*fi-nes'*), *n.* artifice or stratagem; skill: *v. i.* to use artifice or skill to accomplish some end.
fin-ger (*fing'gẽr*), *n.* one of the four digits of the hand, as distinguished from the thumb.
fin-ger-ing (*-ing*), *n.* the act of touching with, or manipulating, the fingers; fine work executed with the fingers.
fin-i-cal (*fin'i-kal*), *adj.* fastidious; overparticular.
fin-ing (*fīn'ing*), *n.* the act or process of purifying or refining.
fi-nis (*fī'nis*), *n.* the end.
fin-ish (*fin'ish*), *v. t.* to bring to an end; complete; conclude; make perfect; polish. [COMPLETE.]
fin-ished (*'isht*), *p. adj.* complete; of superior excellence or quality. [COMPLETE.]
fi-nite (*fī'nīt*), *adj.* having limits.
Syn. FINITE, limited. *Finite* is the natural property of things; and *limited* is the artificial property; the former is opposite only to the *infinite*; but the latter, which lies within the *finite*, is opposed to the *unlimited* or the *infinite*. This world is *finite*, and space *infinite*; the power of a prince is *limited*.
Ant. BOUNDLESS, infinite, unlimited.
Finland. Properly *Fenland*, meaning "the land of marshes."
fiord (*fyôrd*), *n.* a long narrow inlet of the sea between high rocks or banks.
fir (*fẽr*), *n.* the name of various cone-bearing trees of the genus Abies, and allied genera; a fir tree.
fire (*fīr*), *n.* heat and light evolved by ignition and combustion; ardor; spirit: *v. t.* explode; excite violently; illuminate.
fire-arms (*'ärmz*), *n. pl.* rifles, cannon, etc.
fire bal-loon (*bal-lōōn*), a balloon inflated by hot air.
fire-box (*'boks*), *n.* in a locomotive engine, the receptacle for the fire.
fire-brand (*'brand*), *n.* a piece of burning wood; an incendiary.
fire-bug (*'bug*), *n.* an incendiary.
fire clay (*klā*), a kind of clay capable of resisting intense heat.
fire-cracker (*'krak-ẽr*), *n.* a small explosive firework.
fire damp (*damp*), carburetted hydrogen.
fire-dog (*'dog*), *n.* an andiron.
fire en-gine (*en-jin*), a hand or steam engine for ejecting water.
fire es-cape (*es-kāp*), a kind of ladder for rescuing persons.
fire-fly (*'flī*), *n.* a winged insect which emits light.
fire irons (*ī-urns*), the shovel, poker, and tongs.
fire-man (*'man*), *n.* [*pl.* firemen (*'men*)], one trained to extinguish fires.
fire ship (*ship*), a ship filled with combustibles, set fire to, and floated among the vessels of an enemy.
fire-side (*'sīd*), *n.* the hearth: hence, domestic life and comfort.
fire-works (*'wẽrkz*), *n. pl.* a pyrotechnic display.
fire wor-ship (*wẽr-ship*), the worship of fire as a deity.
fir-ing (*'ing*), *n.* the act of discharging firearms.
fir-kin (*fẽr'kin*), *n.* a small wooden vessel for holding butter, lard, etc.
firm (*fẽrm*), *adj.* hard; compact; solid; closely compressed; unyielding; not easily moved.
Syn. FIRM, fixed, solid, stable. *Fixed* denotes the state of being *fixed*; *solid*, in Latin *solidus*, comes from solum, the ground, which is the most *solid* thing existing. That is *firm* which is not easily shaken; that is *fixed* which is fastened to something else, and not easily torn; that is, *solid* which is able to bear, and does not easily give way; that is *stable* which is able to withstand resistance. [See *obstinate, hard.*]
Ant. UNCERTAIN, variable, wavering.
fir-ma-ment (*fẽr'mȧ-ment*), *n.* the sky.
first (*fẽrst*), *adj.* the ordinal of one; foremost in place, rank, dignity, time, excellence, etc.; earliest: *adv.* before all others in order.
first-class (*-klȧs*), *adj.* of the highest excellence, rank, or quality.
First day (*dā*), the name given to Sunday by the society of Friends.
first fruits (*frūts*), the first gatherings of the produce of the season.
first-hand (*-hand*), *adj.* obtained direct from the producer or grower.
first mate (*māt*), in the merchant service, the officer next in rank to the captain.
first-rate (*-rāt*), *adj.* of the highest excellence: *adv.* excellently.
firth. Same as *frith*, a bay.
fis-cal (*fis'kal*), *adj.* pertaining to the exchequer or public revenues; financial. [FINANCIAL.]
fish (*fish*), *n.* [*pl.* fish, fishes (*'ez*)], a vetebrate, cold-blooded, aquatic animal, furnished with permanent gills: *v. t.* to catch (fish).
fish-er-man (*'ẽr-man*), *n.* one whose occupation it is to catch fish.
fish-er-y (*'ẽr-i*), *n.* [*pl.* fisheries (*-iz*)], the business of catching fish.
fish-hawk (*fish'hawk*), *n.* the osprey.
fish-i-ness (*'i-nes*), *n.* the state of being fishy.
fish-ing (*'ing*), *n.* the art, sport, or business of taking fish.
fish-mon-ger (*'mung-gẽr*), *n.* one who sells fish.
fish-wife (*'wīf*), *n.* a woman who retails fish.
fish-y (*'i*), *adj.* incredible.
fis-sile (*fis'il*), *adj.* capable of being split.
fis-sion (*fish'un*), *n.* the act of cleaving or splitting up into parts.
fis-sure (*fish'ūr*), *n.* a cleft or crack; a narrow opening; furrow.
fist (*fist*), *n.* the hand when closed or clenched.
fis-tic (*fis'tik*), *adj.* pertaining to pugilism.
fis-ti-cuffs (*'ti-kufs*), *n.* a combat with the fists.
fis-tu-la (*'tū-lȧ*), *n.* a deep ulcer.
fit (*fit*), *v. t.* [*p. t.* and *p. p.* fitted, *p. pr.* fitting], to make fit or suitable; adapt; accommodate to anything; qualify: *adj.* [*comp.* fitter, *superl.* fittest], convenient; suitable.
Syn. FIT, apt, meet. A house is *fit* for the accommodation of the family according to the plan of the builder; the young mind is *apt* to receive either good or bad impressions; *meet* is a term of rare use, except in religion or poetry; it is *meet* to offer prayers. [See *competent, expedient.*]
Ant. UNBECOMING, unseemly, unsuitable.
fit (*fit*), *n.* a sudden attack of disease attended with convulsions.
Fitchburg. City in Worcester county, Mass., named for John Fitch, one of the committee that procured the act of incorporation.
fit-ful (*fit'fool*), *adj.* capricious; spasmodic.
fit-ting (*'ing*), *p. adj.* suitable; appropriate: *n. pl.* the necessary fixtures of a house.
Fitzedward. A baptismal name, son of Edward. Norman *fitz*, for *filius*.
Fitzwilliam Museum. A museum at Cambridge University, England, founded by Richard, seventh and last Viscount Fitzwilliam.
five (*fīv*), *adj.* a cardinal numeral: *n.* the sum of 4 and 1.
five-fold (*'fōld*), *adj.* five times as much or as great.
fix (*fiks*), *v. t.* to make fast, secure, or stable; direct steadily; adjust; predispose.
fix-a-tion (*-ā'shun*), *n.* the act of fixing; stability.
fixed (*fikst*), *p. adj.* firm; lasting; settled; permanent; stable. [FIRM, PERMANENT, OBSTINATE.]
fix-ed-ly (*fiks'ed-li*), *adv.* steadily; firmly.
fix-ing (*fiks'ing*), *n.* the act of making firm, or rendering permanent; the act of adjusting or amending.
fix-i-ty (*'i-ti*), *n.* stability; permanence.
fix-ture (*fiks'tūr*), *n.* that which is firmly fixed; an article of furniture regarded as part of a house.
fizz (*fiz*), *n.* a hissing noise: *v. i.* to make a fizzing noise.
flab-by (*flab'i*), *adj.* easily shaken or yielding to the touch; lacking musele.
fla-bel-lum (*flȧ-bel'um*), *n.* [*pl.* flabella (*'ȧ*)], a large fan carried by the pope's attendants.
flac-cid (*flak'sid*), *adj.* flabby; weak.
flag (*flag*), *n.* a piece of cloth or bunting on which usually some device is wrought, used as a standard, ensign, signal, ete.: *v. t.* to signal with a flag: *v. i.* to droop; become feeble.
flag-el-late (*flaj'el-āt*), *v. t.* to whip.
flag-eo-let (*flaj'ō-let*), *n.* a musical instrument of the flute class.
flag-ging (*flag'ing*), *n.* pavement of flagstones.
fla-gi-tious (*flȧ-jish'us*), *adj.* atrocious; wicked. [HEINOUS.]
flag-on (*flag'un*), *n.* a large drinking vessel.
fla-grant (*flā'grant*), *adj.* openly wicked; heinous. [HEINOUS.]
flag-stone (*flag'stōn*), *n.* a large flat paving stone.
flail (*flāl*), *n.* a wooden instrument for threshing wheat.
flake (*flāk*), *n.* a small film of anything loosely held together, as snow: *v. t.* and *v. i.* to form into flakes.
flak-y (*'i*), *adj.* consisting of flakes or layers.
flam-beau (*'bō*), *n.* [*pl.* flambeaux (*'bōz*)], a lighted torch.
flam-boy-ant (*-boi'ant*), *adj.* denoting a florid or showy style.
flame (*flām*), *n.* fire; ardor of temper or passion: *v. t.* to heat; excite.
flam-ing (*flām'ing*), *adj.* giving forth flames; blazing.
fla-min-go (*flȧ-ming'gō*), *n.* a long-legged, web-footed, red-colored bird.
Flaminian (*flā-min'i-an*) **way.** One of the oldest and most famous highways of ancient Rome. It extends in a direct line from Rome to Ariminum (Rimini), and was built by the censor Caius Flaminius in 220 B. C.
flange (*flanj*), *n.* a raised or projecting rim for preventing a wheel slipping.
flank (*flangk*), *n.* the fleshy part of an animal between the ribs and hip; that part of a fortification constructed to defend another: *v. i.* to border or touch (with *on*).
flank-er (*'ẽr*), *n.* ore of a body of troops thrown out to protect a line of march.
flan-nel (*flan'el*), *n.* a soft-textured cloth with a light nap.
flap (*flap*), *n.* anything broad and flexible hanging loosely; a slap: *v. t.* [*p. t.* and *p. p.* flapped], to strike with a flap.
flare (*flār*), *n.* a large, unsteady, glaring light: *v. i.* to burn with a broad, unsteady light.

flash (*flash*), *n.* a sudden, quick blaze: *adj* sham; *v. t.* gleam.
flash light (*līt*), a momentary, brilliant light for taking photographs.
flash-ing (*'ing*), *n.* a name for various operations in glass making.
flash-ing point (*point*), *n.* the temperature below the burning point at which the vapor of a volatile liquid will ignite and explode.
flash-y (*'i*), *adj.* brilliant, but empty; gaudy.
flask (*flăsk*), *n.* a small bottle.
flat (*flat*), *adj.* level; insipid; sounded below the true pitch: *n.* story or floor of a house.
flat-fish (*'fish*), *n.* any fish with a compressed body.
flat-ten (*'n*), *v. t.* to lay flat.
flat-ter (*'ĕr*), *v. t.* to gain over or please by complimentary speech: *n.* flatterer, one who flatters.
Syn. FLATTERER, sycophant, parasite. The *flatterer* is one who *flatters* by words; the *sycophant* and *parasite* are therefore always a *flatterer* and something more, for the *sycophant* adopts every mean artifice by which he can ingratiate himself, and the *parasite* submits to every degradation and servile compliance by which he can obtain his base purpose.
flat-ter-ing (*-ing*), *p. adj.* pleasing to pride or vanity.
flat-ter-y (*'ĕr-i*), *n.* [*pl.* flatteries (*-iz*)], insincere complimentary speech.
flat-u-lence (*'ū-lens*), *n.* distension of the stomach, caused by gases. [Also *flatulency.*]
flat-wise (*'wiz*), *adv.* with the flat side downward.
flaunt (*flänt* or *flawnt*), *v. i.* to make an ostentatious display.
fla-vor (*flā'vĕr*), *n.* a particular smell or taste: *v. t.* to impart a flavor to.
flaw (*flaw*), *n.* a blemish; inherent defect. [BLEMISH.]
flax (*flaks*), *n.* a plant, the fiber of which is spun into linen cloth.
flax-en (*'en*), *adj.* resembling, or made of, flax.
flax-seed (*'sēd*), *n.* linseed.
flay (*flā*), *v. t.* [*p. t.* and *p. p.* flayed, *p. pr.* flaying], to strip off, as skin.
flea (*flē*), *n.* a small blood-sucking insect of the genus Pulex.
fleck (*flek*), *n.* a streak or spot: *v. t.* variegate.
fledge (*flej*), *v. i.* to acquire the full plumage necessary for flight.
fledg-ling (*'ling*), *n.* a young bird just fledged.
flee (*flē*), *v. t.* [*p. t.* and *p. p.* fled, *p. pr.* fleeing], to run away from.
fleece (*flēs*), *n.* the wool shorn from a sheep at one time: *v. t.* to strip; plunder by injustice.
flee-cy (*flē'si*), *adj.* resembling a fleece; woolly.
fleet (*flēt*), *adj.* swift: *n.* a company of warships or merchant vessels.
Fleet street. A London street running from Ludgate circus to the Strand and the West End. It is named from the Fleet brook.
flesh (*flesh*), *n.* that part of an animal body underlying the skin: *adj.* resembling flesh.
flesh-ings (*'ingz*), *n. pl.* flesh-colored tights.
flesh-ly (*'li*), *adj.* pertaining to the body: *adv.* carnally.
flesh-y (*'i*), *adj.* [*comp.* fleshier, *superl.* fleshiest], plump; succulent; gross.
fleur-de-lis (*flĕr-de-lē'*), *n.* [*pl.* fleurs-de-lis], the royal bearing or emblem of France.
flex-i-ble (*fleks'i-bl*), *adj.* easily bent; yielding to persuasion.
Syn. FLEXIBLE, pliable, pliant, supple. *Flexible* is used in a natural or moral sense; *pliable* in the familiar sense only; *pliant* in the higher and moral application only; what can be bent in any degree, as a stick, is *flexible;* what can be bent as wax, or folded like cloth, is *pliable; supple,* whether in a proper or a figurative sense, is an excess of *pliability;* what can be bent backward and forward, like an osier twig, is *supple.*
Ant. RIGID, stiff, unyielding.
flex-ion (*flek'shun*), *n.* the act of bending; inflection.
flex-or (*fleks'ĕr*), *n.* a muscle that acts in bending the joints.
flex-ure (*'ūr*), *n.* the act of bending.
flick (*flik*), *n.* a light, quick stroke: *v. t.* to whip lightly.
flick-er (*'ĕr*), *v. i.* to move with an unsteady and quick motion: *n.* the golden-winged woodpecker.
fli-er (*flī'ĕr*), *n.* one who flies; that part of a machine that regulates motion.
flight (*flīt*), *n.* the act or power of flying; hasty departure; a series of steps.
flight-y (*'i*), *adj.* changeful; capricious; extravagant in fancy.
flim-sy (*flim'zi*), *adj.* unsubstantial; thin; weak.
flinch (*flinch*), *v. i.* to shrink or draw back.
fling (*fling*), *v. t.* [*p. t.* and *p. p.* flung, *p. pr.* flinging], to throw or hurl: *v. i.* to flounce: *n.* the act of throwing.
flint (*flint*), *n.* a variety of quartz.
Flint, Mich. Named from the river on which it is located, the name derived from translation of the Indian name *Pewonigo,* "river of flint."
flint-y (*'i*), *adj.* composed of, or resembling, flint.
flip (*flip*), *n.* a short quick stroke; a flick: *v. t.* to jerk with the fingers.
flip-flap (*'flap*), *n.* the noise caused by something flapping.
flip-pan-cy (*flip'an-si*), *n.* pertness.
flip-pant (*'ant*), *adj.* characterized by pertness.
flip-per (*flip'ĕr*), *n.* a broad fin, arm, or paddle used in swimming.
flirt (*flĕrt*), *v. t.* to move with a rapid action: *v. i.* to make love from mere amusement.
flir-ta-tion (*flĕr-tā'shun*), *n.* the act of flirting.
flirt-ing (*flĕrt'ing*), *n.* coquetry: *adj.* coquettish.
flit (*flit*), *v. i.* to pass lightly and swiftly along.
flitch (*flich*), *n.* the side of a hog salted and cured.
flit-ting (*flit'ing*), *n.* the act of flying.
float (*flōt*), *v. t.* to cause to rest on the surface of a liquid: *v. i.* to drift about.
float-ing (*'ing*), *p. adj.* swimming, or buoyed up, on the surface of a liquid.
floc-cu-lent (*flok'ū-lent*), *adj.* woolly.
flock (*flok*), *n.* a company or collection of sheep or bird: crowd.
floe (*flō*), *n.* a large flat mass of floating ice.
flog (*flog*), *v. t.* [*p. t.* and *p. p.* flogged, *p. pr.* flogging], to whip; chastise.
flood (*flud*), *n.* a great flow of water; high tide: *v. t.* to overflow.
flood gate (*gāt*), a gate in a water way.
flood tide (*tīd*), the rising tide.
floor (*flōr*), *n.* the part of a house, room, etc., on which one treads; any smooth or level area: *v. t.* to strike down.
floor-ing (*'ing*), *n.* materials for floors; pavement.
flop (*flop*), *v. t.* [*p. t.* and *p. p.* flopped, *p. pr.* flopping], to strike frequently: *v. i.* to plump down; fall loosely and flatly.
flo-ra (*flō'ra*), *n.* the wild plants of a particular region.
Flora (*flō'ra*). A female name derived from *Flora,* goddess of flowers and gardens, the same as the *Chloris* of the Greeks. Dutch, *Flora;* Fr., *Flore;* It., *Flora;* Lat., *Flora.*
flo-ral (*'ral*), *adj.* pertaining to flowers.
flo-re-a-ted (*'rē-ā-ted*), *adj.* ornamented with floral decorations.
Florence (*flor'ens*). A female name, said to have been Anglicized from *Finin* or *Fineen,* an Irish name used by men, meaning "flourishing." It might also mean "white," or "fair." Danish, *Florenz;* Dutch, *Florentia;* Fr., *Florence;* Ger., *Florenz;* It., *Fiorenza;* Lat., *Florentia;* Sp., *Florencia;* Sw., *Florenz.*
Florence, Italy. This is the French form adopted for the city whose Italian name, formerly *Fiorenza,* is now *Firenze.*
flo-res-cence (*flō-res'ens*), *n.* the flowering of a plant.
flo-ri-cul-ture (*'ri-kul-tūr*), *n.* the culture of flowers.
★flor-id (*flor'id,* not *flō'rid*), *adj.* bright in color; brilliant with decorations.
Florida. The southeasternmost state of the United States. So named by Ponce de Leon, a Spanish navigator, in honor of his discovery of the land on Easter Sunday, March 27, 1513, which is called by Spaniards *Pascua Florida,* "holy day of flowers."
flor-in (*'in*), *n.* a Dutch silver coin value, 0.402.
flo-rist (*flō'rist*), *n.* one who cultivates flowers.
floss (*flos*), *n.* floss silk.
floss silk (*silk*), an inferior, untwisted, soft silk.
floss-y (*'i*), *adj.* downy.
flo-ta-tion (*flō-tā'shun*), *n.* the act or state of floating.
flo-til-la (*-til'ā*), *n.* a fleet of small vessels.
flot-sam (*flot'sam*), *n.* goods lost in shipwreck, and found floating upon the sea.
flounce (*flouns*), *n.* a narrow piece of cloth sewed to the skirt of a dress or petticoat, with the lower border loose and spreading; a sudden jerk or movement of the body, indicative of impatience: *v. t.* to furnish or trim with flounces: *v. i.* to throw about the limbs and body.
floun-cing (*'sing*), *n.* material for flounces.
floun-der (*floun'dĕr*), *v. i.* to struggle, or proceed with difficulty: *n.* a flat sea fish.
flour (*flour*), *n.* the fine meal of ground wheat.
flour-ish (*flur'ish*), *v. i.* to prosper or thrive; embellish: *v. t.* to swing about or brandish; *n.* ostentatious parade.
flour-ish-ing (*-ing*), *p. adj.* prosperous; thriving.
flout (*flout*), *v. t.* to insult; treat contemptuously: *v. i.* to sneer.
flow (*flō*), *v. i.* to run or spread, as water: *v. t.* to overflow.
flow-er (*flou'ĕr*), *n.* that part of a plant which contains the reproductive organs; blossom; the best part of anything: *v. i.* to put forth flowers.
flow-er-et (*-et*), *n.* a little flower.
flow-er-ing fern (*'ĕr-ing fĕrn*), the Osmunda regalis.
flow-ing (*flō'ing*), *p. adj.* moving, or pouring forth.
fluc-tu-ate (*fluk'tū-āt*), *v. i.* to roll to and fro, as a wave; be irresolute.
Syn. FLUCTUATE, waver. To *fluctuate* conveys the idea of strong agitation; *to waver* that of constant motion backward and forward; when applied in the moral sense, to *fluctuate* designates the action of the spirits or the opinions; to *waver* is said only of the will or opinions.
Ant. ABIDE, persist, be constant.
flue (*flū*), *n.* a pipe or passage to convey away smoke, etc.
flu-en-cy (*flū'en-si*), *n.* the quality of being fluent.
flu-ent (*'ent*), *adj.* possessing readiness and ease of speech.
fluff (*fluf*), *n.* light down or fur nap.
fluff-y (*'i*), *adj.* feathery.
flu-id (*flū'id*), *adj.* liquid or gaseous: *n.* a substance the particles of which are readily separable.
flu-id-i-ty (*-id'i-ti*), *n.* the state of being fluid.
fluke (*flūk*), *n.* the broad part of an anchor; one of the two lobes of a whale's tail: *v. i.* to score by a lucky stroke.
flume (*flūm*), *n.* a channel for the conveyance of water.
flum-mer-y (*flum'ĕr-i*), *n.* a jelly made of flour; blancmange.
flunk (*flungk*), *n.* a complete failure.
flunk-y (*'i*), *n.* [*pl.* flunkies (*'iz*)], a liveried servant.
flu-o-res-cence (*flū-ō-res'ens*), *n.* the quality existing in certain bodies of giving off a color differing from their own.
flu-or-ine (*'or-in*), *n.* an elementary gaseous body.
flu-or spar (*'or spär*), a transparent or semi-transparent mineral.
flur-ry (*flur'i*), *v. t.* [*p. t.* and *p. p.* flurried, *p. pr.* flurrying], to agitate, confuse, or bewilder.
flush (*flush*), *v. t.* to cause to blush; excite; clean out with a flow of water: *adj.* level with the surface.
flush-ing (*'ing*), *n.* the act of cleaning out by a copious flow of water.
flus-ter (*flus'tĕr*), *v. t.* to confuse or agitate; hurry.
flute (*flūt*), *n.* a tubular wind instrument furnished with fingerholes and keys.
flut-ing (*flūt'ing*), *n.* a channel or groove.
flut-ist (*'ist*), *n.* a performer on the flute.
flut-ter (*flut'ĕr*), *v. i.* to move the wings rapidly; be in agitation: *v. t.* to throw into confusion.
flu-vi-al (*flū'vi-al*), *adj.* pertaining to, or caused by, rivers.
flux (*fluks*), *n.* any flow or issue of matter.
fly (*flī*), *v. i.* [*p. t.* flew, *p. p.* flown, *p. pr.* flying], to move in the air with wings: *n.* [*pl.* flies (*fliz*)], a two-winged insect of many species including the housefly.
fly-blow (*'blō*), *n.* the egg or larva of a fly.
fly-ing (*'ing*), *n.* the action of the verb *to fly.*
fly-ing but-tress (*but'tres*), an arched brace for strengthening and supporting a part of a building.
fly-ing fish (*fish*), a fish which has the power of sustaining itself in the air.
fly wheel (*flī' hwēl*), a heavy wheel in a machine which regulates its motion.
foal (*fōl*), *n.* the young of a horse.
foam (*fōm*), *n.* the white substance formed on a liquid by violent agitation or fermentation.
fob (*fob*), *n.* a small pocket.
fo-cal (*fō'kal*), *adj.* pertaining to a focus.
fo-cal dis-tance (*dis'tans*), the distance between the optical center of a lens and the point where the rays converge.
fo-cus (*fō'kus*), *n.* [*pl.* focuses (*-ez*), foci (*'sī*)], the point where a system of rays of light or heat meet after being reflected or refracted.
fod-der (*fod'ĕr*), *n.* food for horses, cattle or sheep.
foe (*fō*), *n.* a personal enemy.
fœ-tus (*'tus*), *n.* the young of viviparous animals in the uterus.
fog (*fōg*), *n.* condensed watery vapor; bewilderment.
fog bank (*bangk*), a dense mass of fog at sea.
fog-gy (*'i*), *adj.* abounding in, or filled with, fog.
fo-gy (*fō'gi*), *n.* [*pl.* fogies (*'giz*)], a person of old-fashioned or eccentric habits.
foi-ble (*foi'bl*), *n.* a failing or imperfection in character.
foil (*foil*), *v. t.* to baffle or frustrate: *n.* a contrast to set something off to advantage.
foist (*foist*), *v. t.* to place wrongfully or surreptitiously.
fold (*fōld*), *v. t.* to bend one part over another: *n.* a pen for sheep.
fold-er (*'ĕr*), *n.* one who, or that which, folds.
fold-ing (*'ing*), *n.* the act or process of doubling one part over another.
fold-ing doors (*dōrz*), a pair of doors hung on opposite side-posts and meeting in the middle.
fo-li-a-ceous (*fō-li-ā'shus*), *adj.* resembling, shaped like, or having, leaves, or laminæ.
fo-li-age (*'li-āj*), *n.* leaves collectively.
fo-li-a-tion (*-ā'shun*), *n.* the act of leafing; the act or process of beating a metal into thin plates.
fo-li-o (*fō'li-ō*), *n.* a book of the largest size; a case for music, etc.
folk (*fōk*), *n.* people in general; nation or race.
folk-lore (*'lōr*), *n.* popular traditions.
folk song (*sông*), a popular song or ballad.
fol-low (*fol'ō*), *v. t.* to go or come after; pursue; conform to: *v. i.* to go or come after another; result.
Syn. FOLLOW, succeed, ensue, pursue. *Follow* and *succeed* are said of persons and things; *ensue* of things only; *follow* in respect of persons, denotes the going in order; *succeed* denotes the going or being in the same place immediately after another; *ensue* is used in specific cases; quarrels too often *ensue* from the conversations of violent men who differ either in religion or politics; to *pursue* with a hostile intention.
Ant. FLEE, precede, anticipate, create.
fol-low-er (*-ĕr*), *n.* one who follows another; a disciple, attendant, or dependent.
Syn. FOLLOWER, adherent, partisan. A *follower* is one who *follows* a person generally; an *adherent* is one who *adheres* to his cause; a *partisan* is the follower of a *party.* [See *accessory.*]
Ant. ADVERSARY, betrayer, renegade.
fol-low-ing (*-ing*), *adj.* *n.* succeeding: vocation or calling.
fol-ly (*fol'i*), *n.* [*pl.* follies (*'iz*)], want of understanding; foolishness.
Syn. FOLLY, foolery. *Folly* is the abstract of *foolish,* and characterizes the thing; *foolery* the abstract of *fool,* and characterizes the person. Young people are perpetually committing *follies* if not under proper control; fashionable people lay aside one *foolery* only to take up another.

o-ment (*fō-ment'*), *v. t.* to bathe with warm or medicated liquids. [ABET.]
fo-men-ta-tion (*-men-tā'shun*), *n.* the act of fomenting.
fond (*fond*), *adj.* affectionate; loving. INDULGENT, LOVE.]
Fond du Lac (*fon-dū-lak'*), **Wis.** A city and county. French appellation, "bottom of the lake."
fondle (*fon'dl*), *v. t.* to caress: *v. i.* to exhibit fondness.
font (*font*), *n.* a stone receptacle to hold the water used in baptizing; a complete assortment of a particular kind of type.
Fontainebleau (*fŏn-tān-blō'*). Originally a hunting seat called *Fons Bleaudi*, but now a town in the department of Seine-et-Marne, France.
food (*fōōd*), *n.* nutriment; material.
fool (*fōōl*), *n.* a person devoid of reason or intelligence: *v. t.* to disappoint. [FOLLY.]
Syn. FOOL, idiot, buffoon. *Fool* is doubtless connected with our word foul; *idiot* signifies either a private person or one that is rude and unskilled in the ways of the world; *buffoon* signifies a senseless fellow. The *fool* is either naturally or artificially a fool; the *idiot* is a natural fool; whoever intentionally violates common sense is a *buffoon*. [See *folly*.]
Ant. SAGE.
fool-har-dy (*'här-di*), *adj.* foolishly bold.
Syn. FOOLHARDY, adventurous, rash. The *foolhardy* man ventures in defiance of consequences; the *adventurous* man ventures from a love of the arduous and the bold; the *rash* man ventures for want of thought.
Ant. CAUTIOUS, cowardly, timid, wary.
fool-ing (*'ing*), *n.* banter; idle interference.
fool-ish (*'ish*), *adj.* acting without reason or judgment. [IRRATIONAL, ABSURD.]
fools-cap (*fōōlz'kap*), *n.* a size of paper about 17 in. by 14 in.
foot (*foot*), *n.* [*pl.* feet (*fēt*)], the part of the leg on which an animal walks or stands; a measure equal to 12 inches; a certain number of syllables constituting part of a verse.
foot-ball (*'bawl*), *n.* a large india-rubber ball incased in leather.
foot-ing (*'ing*), *n.* ground or supporting for the feet.
foot-man (*'man*), *n.* [*pl.* footmen (*'men*)], a liveried servant who attends a carriage.
foot-pad (*'pad*), *n.* a highwayman who robs on foot.
foot-pound (*'pound*), *n.* the unit of energy, equal to work required to raise 1 lb. through a space of 1 ft.
foot-step (*'step*), *n.* the act of moving the foot; a footfall. [MARK.]
fop (*fop*), *n.* a dandy; pretentious fool.
fop-pish (*'ish*), *adj.* affected in dress and manners.
for (*fôr*), *prep.* in place of; on account of; for the sake of: *conj.* because; since.
for-age (*for'āj*), *n.* food for horses and cattle: *v. i.* to search for provisions.
for-ag-ing (*-ing*), *n.* the act of searching for forage.
★**for-ay** (*for'ā, fō-rā'*), *n.* a predatory expedition in border warfare.
for-bear (*-bār'*), *v. t.* [*p. t.* forbore, *p. p.* forborne, *p. pr.* forbearing], to abstain from: *v. i.* to restrain one's self. [MERCY.]
for-bid (*-bid'*), *v. t.* [*p. t.* forbade, *p. p.* forbidden, forbid, *p. pr.* forbidding], to prohibit.
for-bid-ding (*'ing*), *p. adj.* repellent; disagreeable.
force (*fôrs*), *n.* active power; power to persuade or convince; troops: *v. t.* to compel: *v. i.* to endeavor.
Syn. FORCE, violence. The arm of justice must exercise *force* in order to bring offenders to a proper account; one nation exercises *violence* against another in the act of carrying on war; *force* is mostly conformable to reason and equity; *violence* is always resorted to for that which is unattainable by law. [See *compel, energy*.]
for-ceps (*fôr'seps*), *n.* pincers for seizing and extracting anything.
for-ci-ble (*fôr'si-bl*), *adj.* characterized by mental or physical power. [COGENT.]
ford (*fôrd*), *n.* a shallow part of a stream.
fore, a *prefix* meaning *before.*
fore-arm (*fôr'ärm*), *n.* the arm between the wrist and elbow: *v. t.* (*fôr-ärm'*) to prepare for attack.
fore-bode (*-bōd'*), *v. t.* to presage. [AUGUR, ANXIETY.]
fore-cast (*'kast*), *n.* a foresight; prediction of the weather. [ANTICIPATE.]
fore-cas-tle (*fōr'kas-l* or *fōk'sl*), *n.* the part of a vessel forward of the foremast.
fore-close (*fôr-klōz'*), *v. t.* to cut off from the right of redemption.
fore-fa-ther (*'fä-thẽr*), *n.* a male ancestor.
Syn. FOREFATHERS, progenitors, ancestors. *Forefathers* signifies our *fathers* before us, and includes our immediate parents; *progenitors* signifies those begotten before us, exclusive of our immediate parents; *ancestors* is said of those from whom we are remotely descended.
Fore father's day (*'fä-thẽrz dā*). Dec. 21, the day on which the Pilgrim Fathers landed at Plymouth, Mass.
fore-gath-er (*-gath'ẽr*), *v. i.* to assemble.
fore-go (*-gō'*), *v. t.* to renounce or refrain from. [ABANDON.]
fore-head (*for'ed*), *n.* that part of the face between the eyes and the hair.
for-eign (*for'en*), *adj.* belonging to another nation or country. [EXTRANEOUS.] [forehead.
fore-lock (*fōr'lok*), *n.* a lock of hair growing on the
fore-man (*fōr'man*), *n.* [*pl.* foremen (*'men*)], the spokesman of a jury.
fore-most (*'mōst*), *adj.* chief.
fo-ren-sic (*fō-ren'sik*), *adj.* pertaining to courts of justice or public debate.
fore-run (*-run'*), *v. t.* [*p. t.* foreran, *p. p.* forerun, *p. pr.* forerunning], to run before.
fore-run-ner (*'ẽr*), *n.* a messenger sent before; herald.
fore-sail (*'sāl*), *n.* a large square sail, the principal one on the foremast.
fore-short-en (*-shôrt'n*), *v. t.* to depict (figures as they appear to the eye when viewed obliquely) so as to convey the impression of full length.
fore-sight (*'sīt*), *n.* the act or power of foreseeing.
★**for-est** (*for'est*, not *fôr'ust*), *n.* a large extent of ground covered with trees: *v. t.* to cover with trees or forest.
fore-stall (*fōr-stawl'*), *v. t.* to be beforehand with; anticipate.
for-est-er (*for'est-ẽr*), *n.* one skilled in forestry.
for-est-ry (*'est-rī*), *n.* the art of cultivating forests or managing timber.
fore-taste (*fōr'tāst*), *n.* anticipation. [ANTICIPATE.]
fore-tell (*tel'*), *v. t.* to predict.
Syn. FORETELL, predict, prophesy, prognosticate. We may *foretell* common events, although we cannot *predict* or *prophesy* anything important; one *foretells* by a simple calculation or guess; *to predict* and *prophesy* are extraordinary gifts; to *prognosticate* is an act of the understanding; a physician *prognosticates* the crises of a disorder.
Ant. CALCULATE, demonstrate, make sure, prove.
fore-thought (*'thawt*), *n.* premeditation.
fore-top (*fōr'top*), *n.* the platform at the head of a foremast.
fore-top-mast (*-mast*), *n.* the mast immediately above the foremast.
for-feit (*fôr'fit*), *n.* a fine or penalty: *v. t.* to lose by breach of conditions.
for-fei-ture (*'fi-tūr*), *n.* the act of forfeiting.
for-fend (*-fend'*), *v. t.* to ward off.
forge (*fōrj* or *fôrj*), *v. t.* to fashion (metal) by heating and hammering; impel forward: *v. i.* to be guilty of the crime of forgery.
for-ger (*fōr'jẽr*), *n.* one who commits the crime of forgery.
for-ger-y (*-i*), *n.* the act of counterfeiting the handwriting of another.
for-get (*for-get'*), *v. t.* [*p. t.* forgot, *p. p.* forgotten, *p. pr.* forgetting], to lose the remembrance of.
for-get-a-ble (*'a-bl*), *adj.* liable to be forgotten.
for-get-ful (*'fool*), *adj.* apt to forget; careless.
for-get-me-not (*-mē-not*), *n.* a perennial plant with small bright sky-blue flowers.
for-giv-a-ble (*-giv'a-bl*), *adj.* that may be forgiven.
for-give (*-giv'*), *v. t.* [*p. t.* forgave, *p. p.* forgiven, *p. pr.* forgiving], to pardon; remit, as a sin.
Syn. FORGIVE, pardon, absolve, remit. Individuals *forgive* each other personal offenses; they *pardon* offenses against law and morals: *remission* is the consequence of the crime; it has more *particular* regard to the punishment; it arrests the execution of justice. *Absolution* is pronounced either by the civil judge or the ecclesiastical minister; and it reëstablishes the accused in the rights of innocence. [See *absolve, mercy*.]
Ant. ACCUSE, condemn, convict.
fork (*fôrk*), *n.* an instrument with two or more prongs, *v. t.* to raise, throw, or dig with a fork.
forked (*fôrkt*), *adj.* shaped like a fork.
for-lorn (*for-lôrn'*), *adj.* abandoned; deserted; destitute. [FORSAKEN.]
form (*fôrm*), *n.* the appearance or shape of anything; established practice: *v. t.* to give shape to; create.
Syn. FORM, fashion, mold, shape. As everything respects a *form* when it receives existence, so *to form* conveys the idea of producing. When we wish to represent a thing as *formed* in any distinct or remarkable way, we may speak of it as *fashioned*. God *formed* man out of the dust of the ground; he *fashioned* him after his own image. When we wish to represent a thing as *formed* according to a precise rule, we should say it was *molded*. When we wish to represent a thing so as to distinguish it from others, we talk of *shaping* it. [See *body, make*.]
Ant. CONTENT, meaning, soul, spirit.
form-al (*'al*), *adj.* according to form or established rules.
for-mal-de-hyde (*fôr-mal'de-hīd*), *n.* a gas obtained by the partial oxidation of methyl alcoho[1].
for-ma-lin (*fôr'mä-lin*), *n.* a 40 per cent solution of ormaldehyde.
for-mal-i-ty (*-mal'i-ti*), *n.* [*pl.* formalities (*-tiz*)], strict adherence to external or customary forms.
form-al-ly (*fôrm'al-li*), *adv.* in a formal manner.
for-ma-tion (*-mā'shun*), *n.* the act of forming; that which is formed.
form-a-tive (*fôrm'a-tiv*), *adj.* giving or serving to form; plastic.
for-mer (*fôr'mẽr*), *adj.* preceding in time or place; first mentioned; formerly.
for-mer-ly (*-li*), *adv.* in time past; heretofore.
for-mic (*'mik*), *adj.* pertaining to, or produced by, ants.
for-mid-a-ble (*'mid-a-bl*), *adj.* exciting dread; fearful.
Syn. FORMIDABLE, dreadful, terrible, shocking. The *formidable* acts neither suddenly nor violently; the *dreadful* may act violently, but not suddenly; thus the appearance of an army may be *formidable;* but that of a field of battle is *dreadful*. The *terrible* and *shocking* act both suddenly and violently; but the former acts both on the senses and the imagination, the latter on the moral feelings; thus, the glare of a tiger's eye is *terrible;* the unexpected news of a friend's death is *shocking*.
Ant. SMALL, ridiculous, puny.
Formosa (*fôr-mō'sa*). Portuguese for "beautiful." An island near China belonging to Japan.
for-mu-la (*'mū-la*), *n.* [*pl.* formulas (*-laz*), formulæ (*-lē*)], a prescribed form, rule, or model; a prescription.
for-mu-late (*'mū-lāt*), *v. t.* to put into the form of, or reduce to, a formula.
for-myl (*'mil*), *n.* the hypothetical base of formic
for-sake (*for-sāk'*), *v. t.* [*p. t.* forsook, *p. p.* forsaken, *p. pr.* forsaking], to leave. [ABANDON.]
for-sak-en (*'n*), *p. adj.* deserted; abandoned, forlorn.
Syn. FORSAKEN, forlorn, destitute. To be *forsaken* is to be deprived of the company and assistance of those we have looked to; to be *forlorn* is to be *forsaken* in time of difficulty; to be *destitute* is to be deprived of the first necessaries of life. [See *abandoned*.]
Ant. CHERISHED, favored, protected, supported.
for-sooth (*-sōōth'*), *adv.* verily; in truth.
fort (*fôrt*), *n.* an inclosed fortified place.
forte (*fôrt*), *n.* one's special talent.
forth (*fôrth*), *adv.* onward in time, place or order.
forth-com-ing (*-kum'ing*), *adj.* ready, or about to appear.
forth-with (*-with'*), *adv.* immediately.
for-ti-eth (*fôr'ti-eth*), *adj.* next in order after 39th.
for-ti-fi-ca-tion (*-ti-fi-kā'shun*), *n.* the art or science of fortifying.
for-ti-fy (*'ti-fī*), *v. t.* [*p. t.* and *p. p.* fortified, *p. pr.* fortifying], to strengthen against attack; encourage or confirm. [STRENGTHEN.]
for-ti-tude (*'ti-tūd*), *n.* mental strength to endure suffering with courage. [COURAGE.]
fort-night (*fôrt'nit*), *n.* 14 days.
for-tress (*fôr'tres*), *n.* a large permanently fortified place.
for-tu-i-tous (*for-tū'i-tus*), *adj.* happening by chance.
for-tu-i-ty (*'i-ti*), *n.* [*pl.* fortuities (*-tiz*)], an accidental occurrence. [ACCIDENT.]
for-tu-nate (*fôr'tū-nāt*), *adj.* happening by good fortune; auspicious. [HAPPY.]
for-tune (*'tūn*), *n.* the good or ill that happens to mankind. [CHANCE.]
Fort Wayne, Ind. Named (1749) in honor of "Mad" Anthony Wayne, a Revolutionary general.
for-ty (*'ti*), *adj.* one more than 39: *n.* sum of 10 and 30.
fo-rum (*fō'rum*), *n.* [*pl.* forums (*'rumz*), fora (*'rä*)], the public place of meeting in ancient Rome.
for-ward (*fôr'wẽrd*), *adv.* onward; in advance: *adj.* prompt.
for-ward-er (*-ẽr*), *n.* one who forwards or promotes.
fos-sil (*fos'il*), *n.* any organic body which by burial in the earth's strata has become petrified.
fos-ter (*'tẽr*), *v. t.* to nourish; nurse; rear up.
Syn. FOSTER, cherish, harbor, indulge. These terms are all employed here in the moral acceptation, to express the idea of giving nourishment to an object; to *foster* in the mind is to keep with care and positive endeavors; to *cherish* in the mind is to hold dear or set a value upon; as when one *cherishes* good sentiments; to *harbor* is to allow room in the mind; as when one *harbors* resentment by permitting it to have a resting place in the heart; to *indulge* in the mind is to give the whole mind to it, to make it the chief source of pleasure. [See *cherish*.]
Ant. ABANDON, desert, afflict, chastise.
fos-ter broth-er (*bruth'ẽr*), a brother by nursing, but not by birth.
fos-ter child (*child*), a child nursed or reared by one who is not its parent.
foul (*foul*), *adj.* offensive; dirty; impure: *v. t.* to make foul or dirty.
fou-lard (*fōō-lärd'*), *n.* a light silk.
found, *p. t.* and *p. p.* of find.
found (*found*), *v. t.* to lay the basis of; build; fix firmly; establish.
foun-da-tion (*foun-dā'shun*), *n.* the basis or lowest part of a structure; groundwork.
Syn. FOUNDATION, ground, basis. A report is said to be without any *foundation* which has taken its rise in mere conjecture, or in some arbitrary cause independent of all fact; a man's suspicion is said to be without *ground* which is not supported by the shadow of external evidence; both *foundation* and *basis* are the lowest parts of any structure; but the former lies under ground, the latter stands above; the *foundation* supports some large and artificially erected pile; the *basis* supports a simple pillar.
foun-der (*foun'dẽr*), *n.* one who originates; builder: *v. t.* to sink by filling with water.
found-ling (*found'ling*), *n.* a child found whose parent is unknown.
foun-dry (*foun'dri*), *n.* [*pl.* foundries (*'driz*)], the place where metal casting is carried on.
fount (*fount*), *n.* a fountain or spring.
foun-tain (*foun'tin*), *n.* a natural or artificial spring of water.
Fountains abbey. A Cistercian monastery of the fourteenth century, near Ripon, England, now

the largest and most picturesque of English ecclesiastical ruins.

foun-tain head (*foun'tin hed*), the spring from which a stream flows.

foun-tain pen (*pen*), a pen having a reservoir of ink in the holder.

four (*fōr*), *adj.* consisting of 1 more than 3; a cardinal numeral.

four-fold (*fōr'fōld*), *n.* quantity four times as much.

four-in-hand (*fōr'-in-hand*), *n.* a coach drawn by four horses.

four-score (*'skōr*), *adj.* eighty.

four-teen (*'tēn*), *adj.* consisting of 4 more than 10: *n.* the sum of 4 and 10.

fourth (*fōrth*), *adj.* next in order after third.

fowl (*foul*), *n.* a gallinaceous bird, especially the domestic cock or hen.

fowl-ing (*'ing*), *n.* the act of shooting wild birds.

fowl-ing piece (*pēs*), a light gun used for ordinary sporting.

fox (*foks*), *n.* a canine mammal with a long bushy tail, belonging to the genus Vulpes.

fox brush (*brush*), the tail of a fox.

foxed (*fokst*), *p. adj.* stained, as timber, or spotted, as prints, books, etc., with a reddish discoloration.

fox-glove (*foks'gluv*), *n.* a plant of the genus Digitalis, the leaves of which are used medicinally.

fox grape (*grāp*), a variety of grape.

fox-hound (*'hound*), *n.* one of a breed of dogs used for fox-hunting.

Fox islands, Lake Michigan. So named from translation of the Indian name *Annemosine*, "place of the young fox"; *annemose*, "a young fox"; *ink*, "a place."

Fox river, Ill. English rendering of its Indian name *Meshdeke Wakpa*, "river of the foxes."

fox squir-rel (*skwĕr-el*), the North American tree squirrel.

fox-tail (*'tāl*), *n.* the name of various species of grass; the tail of a fox.

fox-y (*'i*), *adj.* pertaining to, or resembling, a fox; cunning; crafty.

foy-er (*fwä-yā'*), *n.* the lobby of a theater.

fra-cas (*frā'kas*), *n.* a noisy quarrel.

frac-tion (*frak'shun*), *n.* a part broken off; act of breaking; the state of being broken; a part of a unit, as one-fourth.

frac-tious (*'shus*), *adj.* unruly; cross. [PERVERSE.]

frac-ture (*'tūr*), *n.* a part broken; a break caused by violence; separation: *v. t.* to break or crack.

★**frag-ile** (*fraj'il*, not *fraj'il*), *adj.* easily broken weak; delicate.

Syn. FRAGILE, frail, brittle. Man, corporeally considered, is a *fragile* creature, his frame is composed of *fragile* materials; mentally considered, he is a *frail* creature, for he is liable to every sort of *frailty*; *fragile* applies to whatever will break from the effects of time; *brittle* to that which will not bear a temporary violence.

frag-ment (*frag'ment*), *n.* a part broken off from a whole; an imperfect part.

fra-grance (*frā'grans*), *n.* the state or quality of being fragrant.

fra-grant (*'grant*), *adj.* sweet-smelling.

frail (*frāl*), *adj.* fragile; brittle; weak, physically or morally; infirm: *n.* a basket made of rushes. [FRAGILE.]

fram-a-ble (*frām'ä-bl*), *adj.* capable of being framed.

frame (*frām*), *n.* something constructed or composed of parts fitted and joined together; that on which anything is held or stretched; shape; temper; state: *v. t.* to fit (one thing) into another; shape or form; adjust or regulate; invent; adapt. [BODY.]

frame-work (*'wĕrk*), *n.* that which incloses or supports something else.

franc (*frangk*), *n.* a French coin, the unit of monetary value, equal to 19.3 cents.

France (*frans*, French *frāns*). Country of the Franks, or, as the Germans call it, Frankreich; *i. e.*, "kingdom of the Franks." All western nations were styled Franks by the Turks and Orientals, and anything brought to them from the west invariably merited a prenomen descriptive of its origin, as, for example, *frankincense*, by which was meant incense brought from the country of the Franks.

Frances. Female name formed from *Francis*, "free." Danish, *Francisca;* Dutch, *Francisca;* Fr., *Francoise;* Ger., *Francisca;* It., *Francesca;* Lat. *Francesca* or *Francisca;* Sw., *Franciska.*

fran-chise (*fran'chiz*), *n.* the constitutional right of suffrage; a particular privilege or right granted by a sovereign or by a legislative body to an individual, or to a corporation.

Francis (*fran'sis*). From the Latin *Franciscus*, which has been rendered, "one who had visited the Franks"; also, "free." Danish, *Frants*, or *Franciscus;* Dutch, *Franciscus;* Fr., *Francois;* Ger., *Franz;* It., *Francesco;* Port., *Francisco;* Sp., *Francisco;* Sw., *Frans.*

Franconia (*frang-kō'ni-ä*). German province inhabited by the Franks, so called from the *franca*, a kind of javelin which they carried.

fran-gi-bil-i-ty (*fran-ji-bil'i-ti*), *n.* the state or quality of being frangible.

fran-gi-ble (*'ji-bl*), *adj.* easily broken.

frank (*frangk*), *adj.* open or ingenuous; candid; outspoken; unreserved: *n.* a signature that exempts mail-matter from payment of postage: *v. t.* to send or have conveyed free of charge.

Syn. FRANK, candid, ingenuous, free, open, plain. The *frank* man is under no constraint; his thoughts and feelings are both set at ease, and his lips are ever ready to give utterance to the dictates of his heart; the *candid* man has nothing to conceal; he speaks nothing but the truth; the *ingenuous* man throws off all disguise; the *frank*, *free* and open men all speak without constraint; but the *frank* man is not impertinent like the *free* man, nor indiscreet like the *open* man; the *open* man says all he knows and thinks, from the inconsiderate levity of his temper; the *plain* man speaks *plainly* but truly. [See *candid.*]

Ant. ADROIT, cunning, diplomatic, sharp, shrewd, wily.

Frank. A baptismal name corrupted from *Francis.*

Frankfort, Ky. The county, Franklin, was named in honor of Benjamin Franklin, and when its capital was created, a composite word further commemorating the honor was adopted, *Frank*, diminutive of Franklin; *fort*, meaning "town"; "town of Franklin."

frank-in-cense (*frangk'in-sens*), *n.* a fragrant inflammable resin burnt as incense.

frank-ness (*'nes*), *n.* candor; openness.

fran-tic (*fran'tik*), *adj.* violently mad or distracted; outrageous; transported by passion.

frap-pé (*fra-pā'*), *adj.* chilled with ice.

Fraseati (*frās-kā'tē*). A town in the province of Rome, Italy, twelve miles southeast of Rome, celebrated for its villas. There are remains of a Roman amphitheater, and of a small but very perfect Roman theater, in which much of the stage structure survives.

fra-ter-nal (*frä-tĕr'nal*), *adj.* pertaining to, becoming, or like, brothers.

fra-ter-ni-ty (*frä-tĕr'ni-ti*), *n.* [*pl.* fraternities (*-tiz*)], brotherly relationship; a body of men associated together by a common bond of interest; men of the same profession or class.

frat-ri-cide (*frat'ri-sīd*), *n.* the crime of killing a brother; one who kills a brother.

fraud (*frawd*), *n.* deceit; artifice; trick; cheat; humbug. [DECEIT.]

fraud-u-lent (*'ū-lent*), *adj.* characterized by, founded on, or obtained by, fraud. [FALLACIOUS.]

fraught (*frawt*), *adj.* laden; charged.

fray (*frā*), *n.* a riot; quarrel; a chafe or rub: *v. t.* to chafe or wear away. [FEUD.]

fray-ing (*'ing*), *n.* the act of wearing away by friction; the peeling off of the velvet of a deer's horn.

freak (*frēk*), *n.* sudden or capricious change of mind, or whim; a prank; an abnormal animal or plant: *v. t.* to variegate; spot or streak.

freck-le (*frek'l*), *n.* a brownish spot in the skin: *v. t.* to mark with freckles: *v. i.* to become freckled.

Frederick (*fred'ĕr-ik*). The same as the Old German name *Friderich, Fridorich, Fridurih.* Junius translates the two latter "rich or powerful in peace." The more probable etymology is from *frid-reich*, "powerful protector." Danish, *Frederik;* Dutch, *Frederik;* Fr., *Frederic;* Ger., *Friedrich;* It., *Frederico* or *Federigo;* Lat., *Fredericus;* Port., *Frederico;* Sp., *Frederico;* Sw., *Frederick.*

Fredericksburg, Va. Name adopted 1727, in honor of Prince Frederick, father of George III.

free (*frē*), *adj.* [*comp.* freer, *superl.* freest], without restraint; at liberty; permitted; generous; open; independent; familiar; not attached or fixed; invested with the franchise, etc. (with *of*): *v. t.* to set at liberty; exempt; clear: *adv.* gratuitously.

Syn. FREE, liberal. To be *free* signifies to act or think at will; to be *liberal* is to act according to the dictates of an enlarged heart and an enlightened mind. [See *frank.*]

Ant. AVARICIOUS, close, parsimonious.

Syn. FREE, exempt. *Free* is applied to everything from which any one may wish to be disengaged; but *exempt* to those burdens which we should share with others. [See *absolve.*]

Ant. LIABLE, subject.

free-boot-er (*'bōōt-ĕr*), *n.* one who roves about for plunder or pillage; buccaneer.

freed-man (*frēd'man*), *n.* [*pl.* freedmen (*'men*)], a slave who has been legally emancipated.

free-dom (*frē'dum*), *n.* the state of being free; liberty; independence; ease in performance; particular privilege.

Syn. FREEDOM, liberty. *Freedom* is personal, and private; *liberty* is public. The *freedom* of the city is the privilege granted by the city to individuals; the *liberties* of the city are the immunities enjoyed by the city.

Ant. CAPTIVITY, bondage, oppression.

free-hold (*'hōld*), *n.* an estate or tenement held by fee simple, fee tail, or for life.

free lance (*lans*), one of a class of mediæval soldiers who sold their services to fight; one who acts, speaks, or writes irrespective of any party.

free-man (*'man*), *n.* [*pl.* freemen (*'men*)], one in the enjoyment of liberty; one possessed of certain franchises or municipal privileges.

Free-ma-son (*'mā-sn*), *n.* a member of a secret society, consisting formerly of skilled craftsmen, now a social association professing principles of brotherly love, charity, and mutual aid.

free port (*pōrt*), a port where no duties are levied on merchandise.

Free-soil (*'soil*), *adj.* opposed to the extension of slavery: said of the party formed at Boston, United States, 1848, to restrict slavery.

free-think-er (*'thingk-ĕr*), *n.* one who forms his opinions independently of others; one who rejects revelation in religion.

free trade (*frē trād*), trade with other countries unrestricted by tariffs or customs duties.

free-will (*'wil*), *adj.* voluntary; holding the theological doctrine that man is free to exercise his will for good or evil.

freeze (*frēz*), *v. t.* [*p. t.* froze, *p. p.* frozen, *p. pr.* freezing], to congeal or harden into ice; kill by cold: *v. i.* to be congealed with cold: be at or below the temperature of 32 degrees.

freez-ing point (*ing point*), 32° above 0° in the Fahrenheit scale (0° centigrade), at which water freezes.

freight (*frāt*), *n.* cargo of a ship; goods carried by rail; the sum paid or charges for the conveyance of goods: *adj.* used for conveying goods: *v. t.* to load with goods for conveyance.

freight car (*kär*), a railway car for transporting freight.

French (*french*), *adj.* pertaining to France, its inhabitants, or language.

French Broad. River in North Carolina, so named because the country west of the Blue Ridge was held by the French, according to some authorities. Others hold that the river was named by a party of hunters for their captain, whose name was French. The latter part of the name is used descriptively.

French leave (*-lēv*), departure without ceremony or notice.

fren-zy (*fren'zi*) *n.*, [*pl.* frenzies (*'ziz*)], violent agitation; temporary madness; fury: *v. t.* [*p. t.* and *p. p.* frenzied, *p. pr.* frenzying], to throw into a frenzy; render mad. [MADNESS.]

fre-quen-cy (*frē'kwen-si*), *n.* the repeated occurrence of a thing at short intervals.

fre-quent (*'kwent*), *adj.* recurring often: *v. t.* (*frē-kwent'*), to resort to, or visit often.

Syn. FREQUENT, resort to, haunt. *Frequent* is more commonly used of an individual who goes often to a place; *resort* and *haunt* of a number of individuals; a man may *frequent* a theater, a club, or any other social meeting, innocent or otherwise; people from different quarters may *resort* to a fair, a church, or any other place where they wish to meet for a common purpose; but those who *haunt* any place go to it in privacy for some bad purpose. [See *commonly.*]

Ant. AVOID, desert, forsake.

fres-co (*fres'kō*), *n.* [*pl.* frescos, frescoes (*'kōz*)], a method of wall painting in water colors on fresh plaster: *v. t.* to decorate or paint in fresco.

fresh (*fresh*), *adj.* new; recent; unfaded; in good condition; not forgotten; strong and active; lively; pure and cool; not salt; inexperienced: *n.* a spring freshet. [NEW.]

fresh-en (*'n*), *v. t.* to make fresh; render less salt; revive: *v. i.* to become vigorous; grow fresh; lose saltness.

fresh-et (*'ĕt*), *n.* a flood caused by melting snow or heavy rain.

fresh-man (*'man*), *n.* [*pl.* freshmen (*'men*)], a college student in his first year.

fret (*fret*), *v. t.* [*p. t.* and *p. p.* fretted, *p. pr.* fretting], to wear away by friction; corrode; vex; make rough on the surface; ornament with raised or interlaced work. [ANXIETY.]

fret-work (*'wĕrk*), *n.* carved, raised, or open ornamental work.

fri-a-bil-i-ty (*fri-ä-bil'i-ti*), *n.* the state or quality of being friable. [Also *friableness.*]

fri-a-ble (*'ä-bl*), *adj.* readily crumbled, or reduced to powder.

fri-ar (*'ĕr*), *n.* one of a mendicant order of monks in the Roman Catholic church.

★**fric-as-see** (*frik-ä-sē'*, not *frig-ä-zē'*), *n.* a dish of chicken, rabbit, or other meat cut into small pieces, stewed and fried with gravy or sauce: *v. t.* to make into, or dress like, a fricassee.

fric-tion (*'shun*), *n.* the act of rubbing; resistance to the motion of a body, caused by contact with the surface upon which it moves; irritation or disagreement.

Fri-day (*fri'dā*), *n.* the sixth day of the week: named from the Scandinavian deity Frigga, the goddess of love.

friend (*frend*), *n.* one attached to another by affection, regard, or esteem; an intimate acquaintance; an ally; a term of salutation.

Friend, *n.* a member of the society of Friends.

friend-li-ness (*'li-nes*), *n.* the state or quality of being friendly.

friend-ly (*'li*), *adj.* pertaining to a friend; having the characteristics of a friend; amicable; affable; convenient: *adv.* amicably.

Friendly Islands. In the South Pacific. So named because of the friendly disposition of the natives.

friend-ship (*'ship*), *n.* intimacy; united with affection or esteem; mutual attachment; good will. [ACQUAINTANCE, LOVE.]

frieze (*frēz*), *n.* the middle part of the entablature of a column between the architrave and cornice, usually ornamented with sculpture, etc.; a coarse woolen cloth.

frig-ate (*frig'āt*), *n.* formerly a warship with an upper flush deck, carrying from 24 to 50 guns.

fright (*frit*), *n.* a sudden and violent fear; alarm; a person whose dress or appearance is ridiculous.

fright-en (*'n*), *v. t.* to terrify.

Syn. FRIGHTEN, intimidate. The danger

that is near or before the eyes *frightens;* that which is seen at a distance *intimidates.*
Ant. EMBOLDEN, encourage.
fright-ful (*frīt'fool*), *adj.* terrible; dreadful; alarming; shocking; grotesque. [FEARFUL.]
frig-id (*frij'id*), *adj.* without warmth; wintery; cold in temperament; stiff; formal; dull.
frill (*fril*), *n.* a plaited or crimped edging to a garment; ruffle: *pl.* affectation of manner; ornamentation of dress, etc.: *v. i.* to become ruffled: *v. t.* to make into a frill.
frill-ing (*'ing*), *n.* gathered trimming or edging for garments.
fringe (*frinj*), *n.* an ornamental border of hanging cords, etc.; any border or edging resembling a fringe: *v. t.* to border with a fringe.
frip-per-y (*frip'ẽr-i*), *n.* old clothes or furniture; the place where old clothes are sold: *adj.* trumpery; contemptible.
frisk (*frisk*), *v. i.* to gambol or dance in frolic: *n.* a gambol, dance, or frolic.
frisk-i-ness (*'i-nes*), *n.* the state or quality of being frisky.
frisk-y (*'i*), *adj.* lively in action; sprightly; gay.
frith, *n.* a bay; a firth.
frit-ter (*frit'ẽr*), *v. t.* to waste by degrees: *n.* a small piece of meat cut for frying; a small fried cake with meat or fruit in it.
fri-vol-i-ty (*fri-vol'i-ti*), *n.* [*pl.* frivolities (*-tiz*)], levity; a trifling act, thought, or action.
friv-o-lous (*friv'ō-lus*), *adj.* trifling; trivial; petty; silly; incline l to levity.
frizz (*friz*), *v. t.* to curl or crisp; form into little hard burrs: said of the nap of cloth: *n.* that which is frizzed, as hair.
friz-zle (*friz'l*), *v. t.* to curl on hot coals; curl or frizz: *n.* a crisped lock of hair.
fro (*frō*), *adv.* away from; backward.
frock (*frok*), *n.* a loose upper garment worn by children and women and laborers; dress; a monk's habit; an undress regimental coat.
frock coat (*kōt*), a close-fitting straight-bodied coat with wide skirts.
frog (*frog*), *n.* a small tailless amphibious animal of the genus Rana; a tender horny substance growing in the middle of the sole of a horse's foot; a spindle-shaped button or toggle used for fastening cloaks, mantles, etc.; a section of a railway line where the rails diverge.
frol-ic (*frol'ik*), *n.* a scene of merry-making or gayety; wild prank: *adj.* sportive; merry or gay: *v. i.* to indulge in tricks of mirth; play wild pranks.
frol-ic-some (*-sum*), *adj.* full of frolic.
from (*from*), *prep.* out of; away since; noting source or beginning, distance, logical or physical sequences.
frond (*frond*), *n.* the union of a leaf and a branch; the leaf of a fern, palm, or seaweed.
front (*frunt*), *n.* the forehead; the forepart or foremost of anything; van; impudence or boldness: *adj.* situated at the front: *v. t.* to stand, or be situated, opposite to: *v. i.* to have the front turned in a particular direction.
front-age (*'āj*), *n.* the front part of a building or its area.
fron-tal (*fron'tal*), *adj.* pertaining to the front or forehead: *n.* something worn on the forehead; an ecclesiastical hanging in front of an altar.
★**fron-tier** (*fron'tẽr*, not *frun'tẽr*), *n.* the boundary or limits of a country: *adj.* pertaining to, or situated near, the boundary of a country; contiguous.
fron-tis-piece (*fron'tis-pēs*), *n.* an illustration facing the front page of a book.
frost (*frôst*), *n.* minute frozen particles of moisture; hoarfrost; an enterprise ending in failure: *v. t.* to cover with, or as with, hoarfrost; injure by frost.
frost-ed (*'ed*), *p. adj.* covered with, resembling, or injured by, frost.
frost-ing (*'ing*), *n.* a preparation of fine sugar and white of egg for covering cakes; rough powdered glass used in decorative work.
frost-y (*'i*), *adj.* [*comp.* frostier, *superl.* frostiest], producing, or accompanied with, frost; frozen; hoary; cold or distant in manner.
froth (*frôth*), *n.* the mass of bubbles formed on the surface of a liquid by agitation, or fermentation; foam; superficial knowledge.
froth-y (*'i*), *adj.* [*comp.* frothier, *superl.* frothiest], full of, or composed of, froth; empty; frivolous; unsubstantial.
frow (*frou*), *n.* a German or Dutch woman; slattern; (*frō*), potato-flour; a tool used for cleaving shingles, staves, etc.
fro-ward (*frō'wẽrd*), *adj.* perverse; wayward. [PERVERSE.]
frown (*froun*), *n.* a contraction of the brows: *v. i.* to contract the brows; scowl; lower.
frow-zy (*frou'zi*), *adj.* musty; untidy.
fro-zen (*frō'zn*), *p. adj.* congealed; icy; wanting sympathy.
fruc-ti-fy (*fruk'ti-fī*), *v. t.* [*p. t.* and *p. p.* fructified, *p. pr.* fructifying], to make productive; fertilize: *v. i.* to bear fruit.
fru-gal (*frōō'gal*), *adj.* thrifty; economical.
fru-gal-i-ty (*-gal'i-ti*), *n.* thrift; economy.
Syn. FRUGALITY, economy, miserliness, parsimoniousness, parsimony, providence, prudence, saving, scrimping, sparing, thrift. *Frugality* is a withholding of expenditure, or *sparing* of supplies or provision; *economy* is a wise and careful management of the means at one's disposal; *parsimony* is excessive *saving* for the sake of *saving;* *miserliness* is the denial of ordinary comforts for the sake of hoarding money; *prudence* and *providence* look far ahead, and sacrifice the present to the future; *thrift* seeks not merely to save, but to earn.
fruit (*frōōt*), *n.* the product of a tree or plant; product; result or profit; offspring: *v. i.* to produce fruit.
fruit-er-er (*'ẽr-ẽr*), *n.* one who deals in fruit.
fruit-ful (*'fool*), *adj.* yielding fruit; prolific.
fru-i-tion (*froo-ish'un*), *n.* the bearing of fruit; realization.
fruit-y (*frōōt'i*), *adj.* full-flavored; rich.
frus-trate (*frus'trāt*), *v. t.* to defeat; thwart; nullify: *adj.* vain; useless.
frus-tum (*'tum*), *n.* [*pl.* frusta (*'tȧ*)], that part of a solid next the base, as of a cone, pyramid, etc., which is left after cutting off the top.
fry (*frī*), *v. t.* [*p. t.* and *p. p.* fried, *p. pr.* frying], to cook with fat in a pan: *v. i.* to be cooked with fat in a pan; be subjected to intense heat: *n.* a dish of things fried; young fish.
fuch-si-a (*fū'shi-ȧ*), *n.* a garden plant with handsome pendulous elongated flowers.
fud-dle (*fud'l*), *v. t.* to stupefy with drink; intoxicate: *v. i.* to become intoxicated.
fu-el (*fū'el*), *n.* combustible material for supplying a fire; anything that serves to inflame or sustain passion or excitement.
fu-gi-tive (*fū'ji-tiv*), *adj.* unstable; fleeting; not permanent; fleeing from danger, pursuit, or duty: *n.* one who flees; a runaway.
fugue (*fūg*), *n.* a musical composition in which the parts follow each other with repetitions at certain intervals.
Fujiyama (*fōō'jē-yä'mȧ*). An extinct volcano and the highest mountain of Japan, situated seventy miles west-southwest of Tokio, and meaning "great mountain." There has been no eruption since 1707. It is a resort of pilgrims, and figures largely in Japanese art and legend.
ful-crum (*ful'krum*), *n.* [*pl.* fulcrums (*'krumz*), fulcra (*'krȧ*)], that part of a lever on which it rests.
ful-fill (*fool-fil'*), *v. t.* to complete or accomplish; execute; perform or carry out, as that which is promised, foretold, or anticipated. [EXECUTE.]
ful-fill-ment (*'ment*), *n.* accomplishment; completion; execution.
full (*fool*), *adj.* filled; having no empty space; well supplied; stored; saturated; satiated; copious; rounded out; clear; distinct; sonorous: *n.* the highest state, extent, or measure: *v. i.* and *v. t.* to pucker; gather: *v. t.* to scour and thicken: *adv.* without diminution or qualification; directly; quiet. [*Full* is used in composition to express *full extent* or *degree*, its meaning being generally self-evident, as *full*-armed, *full*-fledged, etc.]
full back (*bak*), in football, the player farthest from the goal of the opposing side.
full dress (*dres*), dress required for formal or ceremonial occasions.
full-er (*'ẽr*), *n.* one who fulls cloth.
ful-mi-nate (*ful'mi-nāt*), *v. t.* to cause to explode; send out or utter: *v. i.* to thunder; make a loud sudden noise; detonate: *n.* a detonating compound of fulminic acid.
ful-some (*ful'sum*), *adj.* offensive; gross.
fum-ble (*fum'bl*), *v. i.* to grope or feel about, handle or attempt something in an awkward manner: *v. t.* to manage awkwardly.
fume (*fūm*), *n.* vapor or exhalation: *v. i.* to emit smoke; to be in a passion: *v. t.* fill with gas or vapor; exhale.
fu-mi-gate (*fū'mi-gāt*), *v. t.* to smoke; perfume; disinfect by the action of smoke or vapor.
fu-mi-to-ry (*'mi-tō-ri*), *n.* a plant, the leaves of which were formerly used as a specific for skin diseases.
fun (*fun*), *n.* mirth; drollery; sport: *v. i.* [*p. t.* and *p. p.* funned, *p. pr.* funning], to indulge in fun.
func-tion (*fungk'shun*), *n.* the performance of any duty, office or business; power; the office of any organ; public or official ceremony: *v. i.* to perform a function; act.
func-tion-a-ry (*-ā-ri*), *n.* [*pl.* functionaries (*-riz*)], one who holds an office, or discharges some trust; an official.
fund (*fund*), *n.* established stock or capital; money set apart for carrying out some object; a permanent debt on which interest is paid; a stock in reserve: *pl.* money: *v. t.* to place in, or convert into, a fund.
fun-da-men-tal (*fun-dȧ-men'tal*), *adj.* pertaining to a foundation or basis; essential; primary: *n.* a principle; basis.
fund-ing (*fund'ing*), *n.* the act or process of converting money lent into a permanent fund bearing a fixed rate of interest; investment in stocks or funds.
fu-ner-al (*fū'nẽr-al*), *n.* the ceremony of burying a dead body and the procession of mourners accompanying it: *adj.* pertaining to, befitting, or used at, a funeral.
Syn. FUNERAL, obsequies. We speak of the *funeral* as the last sad office which we perform for a friend; it is accompanied by nothing but mourning and sorrow; we speak of *obsequies* as the greatest tribute of respect which can be paid to the person of one who was high in station or public esteem.
fu-ne-re-al (*-nē'rē-al*), *adj.* pertaining to, or suitable for, a funeral; mournful; sad.
★**fun-gus** (*fung'gus*), *n.* [*pl.* funguses (*-ez*), fungi (*fun'ji*)], a cryptogamous plant not containing chlorophyll, as a mushroom, toadstool, etc.; a spongy excrescence.
fu-nic-u-lus (*fū-nik'ū-lus*), *n.* [*pl.* funiculi (*-lī*)], a small cord, ligature, or fiber; a little stalk or cord-like appendage uniting a seed with the placenta.
funk (*fungk*), *n.* cowardice; ill temper [*Scotch*]; fright: *v. i.* to be in a state of cowardly fear.
fun-nel (*fun'el*), *n.* a wide-mouthed conical vessel terminating in a spout for pouring liquids; the chimney of a steamship or steam engine.
fun-ny (*'i*), *adj.* [*comp.* funnier, *superl.* funniest], comical; droll; provoking laughter; ludicrous: *n.* a long narrow clinker-built pleasure boat rowed with sculls.
fun-ny bone (*bōn*), the lower part of the elbow over which the nerve of the ulna passes.
fur (*fûr*), *n.* the soft hair of certain animals, growing thickly upon the skin: *pl.* the dressed skins of fur-bearing animals, used for apparel or ornament: *adj.* consisting, lined, or trimmed with fur: *v. t.* [*p. t.* and *p. p.* furred, *p. pr.* furring], to cover, line, or trim with fur.
fur-be-low (*'bē-lō*), *n.* an ornament of feminine attire.
fur-bish (*'bish*), *v. t.* to make bright by rubbing, polishing, or burnishing; renovate.
fu-ri-ous (*fū'ri-us*), *adj.* full of fury; frenzied; mad; tempestuous. [VIOLENT.]
furl (*fûrl*), *v. t.* to roll up and secure to something, as a sail, flag, etc.
fur-long (*fûr'lông*), *n.* 1-8th of a mile.
fur-lough (*'lō*), *n.* leave of absence: *v. t.* to grant leave of absence to.
fur-nace (*'nās*), *n.* a chamber or apparatus for producing a violent heat.
Furness (*fûr'nes*) **abbey.** The extensive ruins of Furness abbey are among the most picturesque of English mediæval remains. A large part of the fine church survives almost complete except the vaulting, and there is a beautiful early English chapter-house. The entrance to the ivy-draped cloisters is by three superb, deeply recessed Norman arches.
fur-nish (*'nish*), *v. t.* to supply with what is requisite; fit out; equip. [PROVIDE.]
fur-ni-ture (*'ni-tūr*), *n.* the necessary equipments of a house, ship, or a trade; outfit.
fu-ro-re (*fōō-rō'rā*), *n.* a great outburst of excitement.
fur-ri-er (*fûr'i-ẽr*), *n.* one who prepares or sells furs; fur dresser.
fur-row (*fûr'ō*), *n.* a trench made in the ground by a plow; a groove: *v. t.* to plow; make grooves in.
fur-ry (*fûr'i*), *adj.* covered with, or consisting of, fur.
fur-ther (*fûr'thẽr*), *adj.* more distant; additional: *adv.* to a greater distance or degree; moreover; also: *v. t.* to promote; help forward.
fur-ther-ance (*-ans*), *n.* advancement.
fur-ther-more (*-mōr*), *adv.* moreover; besides.
fur-ther-most (*-mōst*), *adj.* most remote.
fur-thest (*'thest*), *adj.* most distant in time or degree: *adv.* at or to the greatest distance.
fur-tive (*fûr'tiv*), *adj.* sly; secret; stealthy.
fu-ry (*fū'ri*), *n.* [*pl.* furies (*'riz*)], violent rage; madness. [MADNESS, ANGER.]
furze (*fûrz*), *n.* a hardy spiny shrub, belonging to the bean family.
fuse (*fūz*), *v. t.* to liquefy by heat; melt: *v. i.* to become melted by heat; blend: *n.* a small tube filled with an inflammable material, or a cord, used for exploding gunpowder, etc.
fu-see (*fū-zē'*), *n.* a kind of match, used for igniting tobacco.
fu-sel oil (*'zel oil*), an oily poisonous product produced in rectifying spirits.
fus-i-ble (*fūz'i-bl*), *adj.* capable of being fused.
fu-sil-eer (*fū-zil-ēr'*), *n.* the name of several British line regiments. [Also *fusilier.*]
fu-sil-lade (*-zil-ād'*), *n.* a simultaneous discharge of firearms.
fu-sion (*'zhun*), *n.* the act or process of melting by heat; the state of being fused; union by melting.
fuss (*fus*), *n.* unnecessary activity; disorderly confusion: *v. i.* to worry.
fuss-y (*'i*), *adj.* making a fuss.
fus-tian (*'chan*), *n.* a kind of coarse twilled cotton cloth: *adj.* made of fustian.
fus-ti-ness (*'ti-nes*), *n.* the state or quality of being fusty.
fu-tile (*fū'til*), *adj.* vain; useless.
fu-til-i-ty (*-til'i-ti*), *n.* the quality of being futile.
fu-ture (*'tūr*), *adj.* that will be hereafter: *n.* time yet to come; a tense in grammar.
fu-tu-ri-ty (*-tū'ri-ti*), *n.* [*pl.* futurities (*-tiz*)], time to come; future events.
fuzz (*fuz*), *n.* fine minute particles of down.
fuzz-y (*'i*), *adj.* covered with, or like, fuzz.

G

gab (*gab*), *n.* idle chatter: *v. i.* [*p. t.* and *p. p.* gabbed, *p. pr.* gabbing], to chatter.
gab-ble (*gab'l*), *v. t.* to utter rapidly without sense: *v. i.* to chatter: *n.* incoherent talk.
ga-ble (*gā'bl*), *n.* the triangular end of a building.
Gabriel (*gā'bri-el*). From the Hebrew, *Gabriyel*, "man of God," "strength of God," or, according to some, the "hero of God." Arabic, *Jabreel* or *Jabril;* Fr., *Gabriel;* Ger., *Gabriel;* It., *Gabriel;* Lat., *Gabriel;* Sw., *Gabriel.*
gad (*gad*), *v. i.* [*p. t.* and *p. p.* gadded, *p. pr.* gadding], to roam about: *n.* the act of roaming about without an object; an iron tool: a gadfly.

gad-fly (*gad'fī*), *n.* [*pl.* gadflies (*'flīz*)], a fly that stings cattle.

Gael-ic (*gāl'ĭk*), *adj.* pertaining to the Celtic inhabitants of the Scottish highlands, or to their language: *n.* the language of the Gaels. Also *Gadhelic, Gaïc.*

gaff (*gaf*), *n.* a large hook for landing salmon, etc.; a boom of a fore-and-aft sail: *v. t.* to seize or land with a gaff.

gag (*gag*), *n.* something placed in the mouth to hinder speech: *v. t.* [*p. t.* and *p. p.* gagged, *p. pr.* gagging], to stop the mouth with, or as with, a gag.

gage, gauge (*gāj*), *n.* a standard of measure; a measuring rod; the distance between the rails of a railway line: *v. t.* to ascertain the capacity or contents of; estimat .

gai-e-ty (*gā'ē-tĭ*), *n.* [*pl.* gaieties (*-tĭz*)], the state or quality of being gay; pleasure.

gai-ly (*gā'lĭ*), *adv.* merrily; finely.

gain (*gān*), *n.* advantage; profit; *v. t.* to obtain, as profit or advantage; earn; arrive at: *v. i.* to improve or make progress; increase.

gain-say (*'sā*), *v. t.* [*p. t.* and *p. p.* gainsaid, *p. pr.* gainsaying], to contradict; oppose.

gait (*gāt*), *n.* manner of walking. [CARRIAGE.]

gal-ter (*ga'tĕr*), *n.* a covering of cloth for the ankle; a shoe with a cloth top.

ga-la (*gā'là*), *n.* a festive show; pomp.

Gal-ax-y (*gal'aks-ĭ*), *n.* the Milky Way.

gal-ax-y, *n.* an assemblage of splendid persons or things.

gale (*gāl*), *n.* a strong wind. [BREEZE.]

ga-le-ate (*gā'lē-āt*), *adj.* wearing, covered with, or shaped like, a helmet.

ga-le-na (*gà-lē'nà*), *n.* sulphide of lead.

Galena, Ill. Name derived from its mines of lead. Latin, *galena,* "lead ore."

Galilee (*gal'ĭ-lē*). In the Roman period, the northernmost division of Palestine. It now belongs to Turkey. The name means the "circuit" or "district of the Gentiles," so called by the Hebrews because largely inhabited by Sidonians.

gal-i-pot (*'ĭ-pot*), *n.* a white resinous juice which exudes from pine trees.

gall (*gawl*), *n.* the bile; anything very bitter; rancor; the gall bladder; gall-nut; a wound caused by friction: *v. t.* to break the skin off by friction; vex; harass: *v. i.* to fret; be vexed, etc.

gal-lant (*gal'ant*), *adj.* brave; chivalrous: *n.* a person of sprightly and gay manners; a beau. [BRAVE.]

gal-lant (*gal-ant'*), *adj.* showing courtesy to women. *n.* a man who is attentive to women (used either in a good or bad sense).

gal-lant-ry (*'ant-rĭ*), *n.* [*pl.* gallantries (*-rĭz*)], bravery; heroic courage; polite and deferential attention to women.

gal-la-tin (*'à-tĭn*), *n.* coal-tar oil used for preserving timber.

gal-le-on (*'ē-on*), *n.* a large Spanish three-decked vessel.

★gal-ler-y (*gal'ĕr-ĭ,* not *gal'rĭ*), *n.* [*pl.* galleries (*-ĭz*)], corridor, the upper seats of a theater, church, etc.; a building, or room, used for the exhibition of works of art, etc.

gal-ley (*'lĭ*), *n.* [*pl.* galleys (*'lĭz*)], a one-decked vessel propelled by oars, and sometimes with sails, formerly rowed by slaves or convicts; the cook-house of a ship; a frame for holding composed type.

Gal-lic (*'ĭk*), *adj.* pertaining to ancient Gaul, or modern France.

Gal-li-can (*'ĭ-kan*), *adj.* pertaining to Gaul, or France, or the Roman Catholic church in France.

Gal-li-cism (*'ĭ-sĭzm*), *n.* a French idiom.

gall-ing (*gawl'ĭng*), *p. adj.* chafing; irritating.

gal-li-vant (*gal'ĭ-vant*), *v. i.* to flirt; idle or gad about with women.

gall-nut (*gawl'nut*), *n.* a round excrescence produced on the oak by the puncturing of the leaf-buds by the gall beetle. Contains tannin, and is used in the manufacture of ink, dyeing, etc.

gal-lon (*gal'un*), *n.* a liquid measure equal to 4 quarts; a dry measure equal to 1-8th of a bushel.

gal-lop (*'up*), *n.* the rapid forward springing movement of a horse; the act of riding at a gallop: *v. i.* ride a horse at a gallop; hasten.

gal-lows (*'ōz*), *n.* a wooden structure used for hanging criminals.

gall-stone (*gawl'stōn*), *n.* a concretion formed in the gall bladder or biliary duct.

ga-lore (*gà-lōr'*), *adv.* in great plenty.

ga-losh (*gà-losh'*), *n.* an overshoe of india rubber. [Also *goloshe.*]

gal-van-ic (*gal-van'ĭk*), *adj.* pertaining to galvanism; voltaic; spasmodic.

gal-va-nism (*'và-nizm*), *n.* that branch of electric science which treats of currents arising from the chemical action of certain bodies placed in contact, or of an acid on a metal.

gal-va-nize (*-nīz*), *v. t.* to affect with galvanism; to imbue with fictitious animation; to electrotype.

gal-va-nom-e-ter (*-và-nom'ē-tĕr*), *n.* an instrument for measuring the presence, extent, and direction of an electric current.

Galveston (*gal'ves-tun*). County and city in Texas, named for Don Jose Galvez, Spanish viceroy of Texas, who, in 1779, established a colony on this island, and, in 1797, was proclaimed king by the people of Mexico.

Gamaliel (*gā-mā'lĭ-el*). From the Hebrew, *Gamlyel,* "the gift, or benefit of God."

gam-bier (*gam'bēr*), *n.* a vegetable extract used medicinally and for tanning and dyeing.

Gambier (*gam'bēr*). Village in Knox county, Ohio, named for Lord James Gambier, a British admiral, who was a benefactor of Kenyon College, located at this place.

gam-bit (*'bĭt*), *n.* an opening play in chess.

gam-ble (*'bl*), *v. i.* play for money; risk money: *v. t.* to squander in gaming (with *away*).

gam-bler (*'blĕr*), *n.* one who gambles.

gam-bol (*'bol*), *n.* a dancing or skipping about for joy or sport; frolic: *v. i.* [*p. t.* and *p. p.* gamboled, *p. pr.* gamboling], to skip about sportively; frolic.

gam-brel (*'brel*), *n.* the hock of a horse.

gam-brel roof (*-rōōf*), a curved roof.

game (*gām*), *n.* a sport or diversion; fun; frolic; a single match at play; any object of pursuit: *pl.* athletic contests: *adj.* pertaining to game; ready; plucky: *v. i.* to play; play for a stake or prize.

game-some (*'sum*), *adj.* sportive. [PLAYFUL.]

gam-in (*gam'ĭn*), *n.* street child; street Arab.

gam-ing (*gām'ĭng*), *n.* the act of playing games for stakes; gambling.

★gam-ut (*gam'ut,* not *gā'mut*), *n.* entire range or extent.

gan-der (*gan'dĕr*), *n.* a male goose.

gang (*gang*), *n.* a number of persons associated together for a particular purpose; an association of political leaders. [*Colloquial.*]

gang-board (*'bōrd*), *n.* a plank with pieces of wood fastened on it for going on board a vessel.

Ganges (*gan'jēz*). The Greek transformation of the name of the great Indian river. Handed on to the Romans and then to the Portuguese, it has been generally adopted throughout Europe as the equivalent of the Indian name *Ganga,* which signifies a "stream" or "flowing water."

gan-gli-on (*gang'glĭ-on*), *n.* [*pl.* ganglia (*-à*), ganglions (*-onz*)], an enlargement in the course of a nerve; an encysted tumor on a tendon.

gan-gli-on-ic (*-glĭ-on'ĭk*), *adj.* pertaining to a ganglion.

gan-grene (*'grēn*), *n.* the first state of mortification: *v. t.* to mortify: *v. i.* to become mortified.

gang-way (*gang'wā*), *n.* a narrow platform of horizontal planks used as a temporary passage-way, or to enter a ship; a passage; a passageway; the waist of a vessel; the main level in a mine.

gaol. Same as *jail.*

gap (*gap*), *n.* an opening; cleft; breach: *v. t.* to make a gap in. [BREACH.]

gape (*gāp*), *v. i.* to open the mouth wide, as from drowsiness, wonder, etc.; yawn; open as a fissure or chasm: *n.* the act of gaping; yawn.

Syn. GAPE, stare, gaze. *Gape* and *stare* are taken in a bad sense; the former indicating the astonishment of gross ignorance; the latter not only ignorance but impertinence; *gaze* is taken always in a good sense, as indicating a laudable feeling, of astonishment, pleasure, or curiosity.

★gar-age (*gar-āj'*), *n.* a place in which automobiles are kept.

garb (*gārb*), *n.* a dress; external form: *v. t.* to clothe.

gar-bage (*'bāj*) *n.* offal; refuse.

gar-ble (*gār'bl*), *v. t.* to cleanse by sifting; select such parts of as are wanted or may serve some particular purpose.

gar-den (*'dn*), *n.* a piece of ground set apart for the cultivation of flowers, fruit, vegetables, etc.: *v. t.* to cultivate as a garden: *v. i.* to lay out and cultivate a garden.

gar-den-ing (*'dn-ĭng*), *n.* horticulture.

Garden of the Gods. Locality near Pike's Peak, Colorado. Lewis N. Tappan and three others went from Denver to select a site for a town. They stood upon a rocky prominence and exclaimed, "A fit garden for the gods," hence the name.

gar-fish (*gār'fĭsh*), *n.* a marine fish with a long body and spearlike snout.

gar-gle (*'gl*), *n.* a liquid for washing the throat and mouth: *v. i.* to wash the throat and mouth.

gar-goyle (*'goĭl*), *n.* in Gothic architecture, a projecting stone waterspout, often grotesquely shaped.

gar-ish (*gār'ĭsh*), *adj.* gaudy; dazzling.

gar-land (*gār'land*), *n.* a chaplet or wreath made of flowers, etc.: *v. t.* to deck or adorn with a garland.

gar-lic (*'lĭk*), *n.* a bulbous rooted plant of the lily family, with a strong pungent taste and unpleasant smell.

gar-ment (*'ment*), *n.* any article of clothing: *pl.* clothing collectively.

gar-ner (*'nĕr*), *n.* a granary: *v. t.* to store for preservation in, or as in, a granary; gather up.

gar-net (*'net*), *n.* a precious stone.

gar-nish (*'nĭsh*), *v. t.* to adorn; embellish (a dish): *n.* an ornament or decoration; something laid around a dish as an embellishment.

gar-nish-ee (*-ē'*), *n.* the person in whose hands the property of another is attached pending the satisfaction of the claims of a third party.

gar-nish-ment (*'nĭsh-ment*), *n.* a warning or summons not to pay money, etc., to a defendant, but to appear in court.

gar-ni-ture (*'nĭ-tūr*), *n.* embellishment.

gar-ret (*gar'ĕt*), *n.* the uppermost room of a house.

gar-ri-son (*'ĭ-sn*), *n.* a body of troops stationed in a fort; a fortified place: *v. t.* to furnish with troops.

gar-rote (*-rōt'*), *n.* an instrument for strangling a criminal (used in Spain): *v. t.* to execute with a garrote or by strangling.

★gar-ru-li-ty (*-rōō'lĭ-tĭ*), *n.* incessant and inconsequent loquacity.

gar-ru-lous (*gar'roo-lus*), *adj.* characterized by garrulity; verbose.

gar-ter (*gār'tĕr*), *n.* an elastic band, etc., by which a stocking is held up on the leg: *v. t.* to bind or fasten with a garter.

gar-ter fish (*fish*), a long thin-bodied fish.

gar-ter snake (*snāk*), an innocuous yellow striped snake, common in America.

gas (*gas*), *n.* [*pl.* gases (*'ez*)], matter in its most rarefied state: opposed to fluid, and solid; empty talk: *v. t.* [*p. t.* and *p. p.* gassed, *p. pr.* gassing], to impose upon by empty talk: *v. i.* to boast or indulge in empty talk.

gas-con-ade (*-kon-ād'*), *n.* boastful or blustering talk: *v. t.* to bluster; boast.

Gasconade river, Mo. Name adopted by settlers as a memento of their Gasconade of France. The word translated means "a boaster."

gas-e-lier (*'ē-lēr*), *n.* a gas-burning chandelier.

gas-e-ous (*'ē-us*), *adj.* having the nature or form of gas.

gash (*gash*), *n.* a deep or gaping wound: *v. t.* to cut deep.

gas-i-fy (*gas'ĭ-fī*), *v. t.* [*p. t.* and *p. p.* gasified, *p. pr.* gasifying], to convert into gas.

gas-o-gene (*'ō-jēn*), *n.* an apparatus for making aërated beverages.

gas-o-line (*'ō-lēn*), *n.* a volatile inflammable colorless product of petroleum, used for heating purposes, etc.

gas-om-e-ter (*-om'ē-tĕr*), *n.* a circular hollow reservoir for storing or measuring gases.

gasp (*gasp*), *n.* a convulsed painful effort to catch the breath: *v. i.* to catch the breath: *v. t.* to breathe out in gasps (with *away*).

gasp-ing (*'ĭng*), *n.* convulsive or difficult breathing.

gas-sing (*gas'ĭng*), *n.* pretentious talk.

gastero, a *prefix,* meaning *the stomach:* found in various compound scientific words, as *gasteropod,* one of the gasteropoda. [Also *gastro.*]

gas-ter-op-o-da (*gas-tĕr-op'ō-dà*), *n. pl.* a division of univalve mollusks, including the snails. [Also *gastropoda.*]

Gaston. A name of French origin, probably from the French *gaston,* "baton."

gas-tral-gi-a (*-tral'jĭ-à*), *n.* neuralgia of the stomach; stomach ache.

gas-tric (*'trĭk*), *adj.* pertaining to the stomach.

gas-tric juice (*jūs*), a fluid secreted in the stomach: the chief agent in digestion.

gas-tri-tis (*-trī'tĭs*), *n.* inflammation of the stomach.

gas-tro-nom-ic (*-trō-nom'ĭk*), *adj.* pertaining to gastronomy. [Also *gastronomical.*]

gas-tron-o-my (*-tron'ō-mĭ*), *n.* the art of good eating, or the preparation of food.

gate (*gāt*), *n.* a frame of wood, iron, etc., closing an entrance or passage, usually moving on hinges; entrance.

gath-er (*gath'ĕr*), *v. t.* to assemble; collect; pick up; pucker or plait; infer: *v. i.* to congregate; increase; ripen: *n.* a plait or pucker in cloth.

Syn. GATHER, collect. To *gather* signifies to bring things of a sort together; to *collect* annexes also the idea of binding or forming into a whole; we *gather* that which is scattered in different parts; stones are *gathered* into a heap; vessels are *collected* so as to form a fleet.

Ant. DISPERSE, scatter.

gath-er-ing (*-ĭng*), *n.* the act of assembling together; an assemblage; a charitable contribution.

gat-ling gun (*gat'lĭng gun*), a cannon with numerous small barrels, discharged in succession by turning a handle.

gaud-y (*gawd'ĭ*), *adj.* [*comp.* gaudier, *superl.* gaudiest], showy; vulgarly gay or fine.

gau-ger (*gà'jĕr*), *n.* one who gauges; an officer of excise.

gau-ging (*'jĭng*), *n.* the art or science of measuring the contents of vessels of capacity.

Gaul. The name by which France was known to the Greeks. It was known to the Romans as *Gallia* because it was the territory of the Celtiæ, or Celts.

gaunt (*gānt*), *adj.* pinched and lean.

gaunt-let (*gānt'let*), *n.* a mailed glove, or one with a long wrist-extension. [Also *gantlet, gantlop.*]

gauze (*gawz*), *n.* a very thin, light, transparent fabric; light, open-work material.

gav-el (*gav'el*), *n.* a small mallet.

ga-votte (*gà-vot'*), *n.* a lively, but dignified, dance of the minuet class.

gawk (*gawk*), *n.* a simpleton; cuckoo.

gawk-y (*'ĭ*), *adj.* awkward; ungainly: *n.* a tall, awkward, stupid person.

gay (*gā*), *adj.* lively; merry; full of spirits; cheerful; sportive.

gaze (*gāz*), *v. i.* to look fixedly: *n.* a steady look. [GAPE.]

ga-zelle (*gà-zel'*), *n.* a small antelope, with large eyes.

ga-zette (*-zet'*), *n.* English government biweekly newspaper: *v. t.* to publish in a gazette.

gaz-et-teer (*gaz-et-tēr'*), *n.* a dictionary of geographical names and places.

gear (*gēr*), *n.* apparatus; tackle; the moving parts of machinery: *v. t.* to put gear on.

gee (*jē*), *v. i.* to turn to the off side.

ge-lat-i-nate (*jē-lat'ĭ-nāt*), *v. t.* to convert into gelatine or a jelly-like substance: *v. i.* to be converted into gelatine. [Also *gelatinize.*]

gel-a-tine (*jel'à-tĭn*), *n.* a transparent nitrogenous

substance found in connective tissue; animal jelly. [Also *gelatin.*]

gel-a-tine proc-ess (*jel'a-tin pros'es*), a method of photo-engraving.

geld-ing (*geld'ing*), *n.* castration; a young horse which has been castrated.

ge-lose (*jē'lōs*), *n.* a vegetable gummy isinglass prepared from seaweed and Chinese moss.

gem (*jem*), *n.* a precious stone; any perfect or rare object; jewel.

Gem-i-ni (*'i-nī*), *n. pl.* one of the signs in the zodiac (Castor and Pollux); the Twins.

gen-darme (*zhăn-därm'*), *n.* [*pl.* gendarmes], in France and Belgium, an armed policeman. [*French.*]

gen-der (*jen'dĕr*), *n.* the grammatical distinction of sex: *v. t.* to produce.

ge-ne-a-log-ic-al (*jē-nē-* or *jen-ē-a-loj'i-kal*), *adj.* pertaining to genealogy; exhibiting descent.

ge-ne-al-o-gy (*-al'ō-ji*), *n.* [*pl.* genealogies (*-jiz*)], family pedigree; lineage; the science of tracing pedigrees.

gen-er-al (*jen'ĕr-al*), *adj.* not special or particular; not restricted; usual; ordinary; common; indefinite; taken as a whole: *n.* the whole; the chief part; the commander of an army division or brigade.

Syn. GENERAL, universal. What is *general* includes the greater part or number; what is *universal* includes every individual or part.

Ant. EXCEPTIONAL, rare.

gen-er-al-ly (*-li.*), *adv.* the state of being general; opposed to specific. [COMMONLY.]

gen-er-al-i-za-tion (*-al-i-zā'shun*), *n.* the act or result of generalizing; an induction.

★**gen-er-al-ize** (*'ĕr-al-īz*), *v. t.* to reduce to, or arrange in, a genus or genera; infer inductively, as a general principle from particular instances.

gen-er-al-ship (*-ship*), *n.* the office, rank, or skill of a general or leader.

gen-er-ate (*'ĕr-āt*), *v. t.* to produce; procreate; originate.

gen-er-a-tion (*-ā'shun*), *n.* the act or process of generating; a single succession in natural descent; progeny.

gen-er-a-tor (*'ĕr-ā-tĕr*), *n.* one who, or that which, generates.

★**ge-ner-ic** (*jē-ner'ik*, not *jen'ĕr-ik*), *adj.* pertaining to a genus, kind, or class.

gen-er-os-i-ty (*jen-ĕr-os'i-ti*), *n.* [*pl.* generosities (*-tiz*)], the quality of being generous; liberality; munificence.

gen-er-ous (*'ĕr-us*), *adj.* munificent; bountiful; high-minded; honorable. [BENEFICENT.]

gen-e-sis (*'ē-sis*). *n.* the act or process of producing or originating; beginning.

gen-et (*-et'*), *n.* an animal allied to the civet, valued for its fur. [Also *genette.*]

gen-et (*'et*), *n.* a small Spanish horse. [Also *jennet.*]

ge-ni-al (*jē'ni-al*), *adj.* kindly and sympathetic; cordial; contributing to cheerfulness.

ge-ni-al-i-ty (*-al'i-ti*), *n.* the quality of being genial; cheerfulness.

gen-i-tal (*jen'i-tal*), *adj.* pertaining to generation.

gen-ius (*jēn'yus*), *n.* remarkable aptitude or natural endowment; character or essential principle; a person possessed of high mental powers (*pl.* geniuses); a good or evil spirit (*pl.* genii). [INTELLECT.]

Genoa (*jen'ō-a*). The English form of the Italian *Genova*, probably from the same roots as *Geneva*, from the Celtic *genava*, "mouth" or "jaw." A seaport of Italy.

Gen-o-ese (*-ō-ēz'*), *adj.* pertaining to Genoa, or to its inhabitants. [Also *Genovese.*]

gens (*jenz*), *n.* [*pl.* gentes (*jen'tēz*)], among the ancient Romans, a clan, or subdivision of a curia.

gen-teel (*jen-tēl'*), *adj.* graceful or elegant in manners or dress; polite; well bred.

Syn. GENTEEL, polite. *Gentility* respects rank in life; *politeness*, the refinement of the mind and outward behavior. A *genteel* education is suited to the station of a gentleman; a *polite* education fits for polished society and conversation, and raises the individual among his equals.

Ant. BOORISH, ill bred.

gen-tian (*'shan*), *n.* a bitter herb with tonic roots.

Gen-tile (*'tīl*), *adj.* belonging to a non-Jewish people: *n.* one who is not a Jew.

gen-til-i-ty (*-til'i-ti*), *n.* [*pl.* gentilities (*-tiz*)], high birth; good breeding; social status.

gen-tle (*'tl*), *adj.* mild and refined; kindly; moderate; docile: well born.

Syn. GENTLE, tame. Any unbroken horse may be *gentle*, but not *tame;* a horse that is broken in will be *tame*, but not always *gentle*. *Gentle* signifies literally well born, and is opposed either to the fierce or the rude; *tame* is opposed either to the wild or the spirited. [See *mercy.*]

Ant. FIERCE, rough, wild.

gen-tle-man (*-man*), *n.* [*pl.* gentlemen (*-men*)], a well-bred and honorable man.

gen-tle-wom-an (*-woom'an*), *n.* [*pl.* gentlewomen (*-wim'en*)], a woman of good birth and breeding: lady.

gen-try (*'tri*), *n.* the upper class of society.

gen-u-flec-tion (*-ū-flek'shun*), *n.* bending of the knee, especially in worship. [Also *genuflexion.*]

★**gen-u-ine** (*jen'ū-in*, not *jen'ū-īn*), *adj.* real, unadulterated; not hypocritical; open.

ge-nus (*jē'nus*), *n.* [*pl.* genera (*jen'ĕr-a*)], that which has under it several species or subgenera.

ge-o-cen-tric (*jē-ō-sen'trik*), *adj.* pertaining to the center of the earth; having the earth as the center.

ge-od-e-sy (*-od'ē-si*), *n.* the science of measuring large portions of the earth's surface.

ge-o-det-ic (*jē-ō-det'ik*), *adj.* pertaining to, determined by, or carried out by, geodesy. [Also *geodetical.*]

Geoffrey (*jef'ri*) **or Geffrey.** Sometimes translated "God's peace or joyful peace." The name has been corrupted from *Galfrid* for *Walfrid;* from Old German *walt-frid*, "powerful protector." Danish, *Galfred;* Fr., *Geoffroy;* Dutch, *Godfried;* It., *Gioffreddo;* Lat., *Galfridus.*

ge-og-ra-pher (*jē-og'rā-fĕr*), *n.* one who is versed in, or a writer on, geography.

ge-o-graph-i-cal (*-ō-graf'i-kal*), *adj.* pertaining to geography.

ge-og-ra-phy (*og'ra-fi*), *n.* [*pl.* geographies (*-fiz*)], the science that describes the surface of the earth, and its divisions.

ge-o-log-ic-al (*-ō-loj'i-kal*), *adj.* pertaining to geology.

ge-ol-o-gist (*jē-ol'ō-jist*), *n.* one versed in geology.

ge-ol-o-gy (*'ō-ji*), *n.* the science that investigates the structure and physical history of the earth.

ge-o-met-ric (*jē-ō-met'rik*), *adj.* pertaining to, or done by, geometry. [Also *geometrical.*]

ge-om-e-tri-cian (*jē-om-ē-trish'an*), *n.* one who is skilled in geometry.

ge-om-e-try (*-om'e-tri*), *n.* [*pl.* geometries (*-triz*)], that branch of mathematics that treats of the measurement of lines, angles, surfaces, and solids.

George. From the Latin name, *Georgius*, "a tiller of the ground," "husbandman," "a vinedresser." Danish, *Georg;* Dutch, *Georg;* Fr., *George* or *Georges;* Ger., *Georg;* Gr., *Georgios;* It., *Giorgio;* Lat., *Georgius;* Port., *Jorge;* Sp., *Jorge;* Sw., *Georg.*

George, Lake, N. Y. So named in honor of England's king.

Georgeanna, Georgiana, Georgina. Female names derived from *George.*

Georgetown. Formerly a city, now a part of the District of Columbia, named for George Boone, an Englishman, who purchased several tracts of land in the neighborhood.

Georgia. A South Atlantic state of the Union. Named in honor of George II. of England, who here established a colony in 1732.

geor-gic (*jôr'jik*), *adj.* pertaining to husbandry or rural life: *n.* a poem on agriculture.

ge-ra-ni-um (*jē-rā'ni-um*), *n.* a plant cultivated for its handsome scarlet or white flowers.

Gerard (*jer'ărd*, French *zhā-rār'*). From the Old German name *Gerhard, Gerart;* from *gerhart*, "very strong." Sometimes corrupted to *Gar'ret* and *Ger'ril;* i. e., "firm spear." Danish, *Gerhard;* Dutch, *Gerard;* Fr., *Gérard;* Ger., *Gerhard;* It., *Gerardo;* Lat., *Gerardus;* Sw., *Gerhard.*

germ (*jĕrm*), *n.* the rudimentary form of an organism; origin; first principle.

Ger-man (*jĕr'man*), *adj.* pertaining to Germany, its inhabitants, or language; of the same stock or parentage; germane.

ger-mane (*jĕr-mān'*), *adj.* related; relevant; appropriate.

Ger-man-ic (*-man'ik*), *adj.* pertaining to Germany; Teutonic.

Ger-man-ism (*-izm*), *n.* a German idiom, custom, or characteristic; love of German institutions.

Ger-man-ize (*-iz*), *v. t.* to make German, in language, customs, etc.

German Ocean. The North Sea. Name indicative of its geographical position.

Ger-man sil-ver (*sil-vĕr*), a white alloy of zinc, nickel, and copper.

Germany. A country of central Europe. Known in ancient times as *Tronges*, the country of the *Tungri*, "speakers"; but the Romans afterward gave it the name of *Germanus*, meaning "neighbors," originally bestowed by the Gauls.

ger-mi-cide (*jĕr'mi-sid*), *n.* a substance used to destroy disease germs.

ger-mi-nal (*'mi-nal*), *adj.* pertaining to a germ or seed bud.

ger-mi-nate (*'mi-nāt*), *v. i.* to sprout or bud; begin to develop into a higher form.

ger-mi-na-tion (*-nā'shun*), *n.* the first act of growth in a seed, bud, or germ.

Gertrude (*gĕr'trūd*). From the Old German name *Gertrude;* from *gerdraut*, which translates either "very faithful," or "very dear or beloved." Another meaning is given as "true spear." Dutch, *Geertruida;* Fr., *Gertrude;* Ger., *Gertraud* or *Gertrud;* It., *Gertruda;* Lat., *Gertruda;* Sw., *Gertrud.*

★**ger-und** (*jer'und*, not *jē'rund*), *n.* a kind of verbal noun.

ges-ta-tion (*jes-tā'shun*), *n.* pregnancy.

ges-tic-u-late (*-tik'ū-lāt*), *v. i.* to make gestures or motions.

ges-ture (*'tūr*), *n.* a movement of the face, body, or limbs. [Also *gesticulation.*] [ACTION.]

get (*get*), *v. t.* [*p. t.* got, *p. p.* got, gotten, *p. pr.* getting], to obtain; procure; gain; procreate: *v. i.* to arrive at; find time, opportunity, etc.

gew-gaw (*gū'gaw*), *n.* showy trifle.

gey-ser (*gī'zĕr*), *n.* an intermittent spring from which water or mud is ejected. [Also *geyser.*]

ghast-ly (*gast'li*), *adj.* death-like; pale; haggard; cadaverous; horrible.

gher-kin (*gĕr'kin*), *n.* a small cucumber used for pickling.

Ghet-to (*get'ō*), *n.* [*pl.* ghettos (*'ōz*), ghetti (*'i*)], the Jews' quarter.

ghost (*gōst*), *n.* the spirit of a deceased person; apparition; remotest likelihood.

ghost-ly (*'li*), *adj.* pertaining to the soul; spiritual; supernatural.

ghoul (*gōōl*), *n.* a supposed demon who robs graves and feeds on the flesh of the dead.

gi-ant (*jī'ant*), *n.* a man of extraordinary bulk or stature: *adj.* like a giant; huge.

gib-ber (*gib'ĕr*), *v. i.* to speak incoherently.

gib-ber-ish (*-ish*), *n.* rapid incoherent talk: *adj.* incoherent.

gib-bet (*jib'et*), *n.* a gallows: *v. t.* to hang on a gibbet; expose to public scorn or ridicule.

gibe (*jib*), *n.* a scoff; taunt: *v. t.* to sneer at; taunt: *v. i.* to use gibes; cast reproaches; sneer.

gib-let (*jib'let*), *n.* one of the edible internal parts of a fowl, goose, etc.

Gibraltar (*ji-brawl'tĕr*). A fortified city and promontory on southern coast of Spain. Derived from *Gibel el Tarik*, "the mountain of Tarik." Tarik was the leader of the Saracens when they entered Spain in 711, and he first fortified the hill as a base of operations and a ready point of access from the Barbary coast.

gid-dy (*gid'i*), *adj.* [*comp.* giddier, *superl.* giddiest], having a whirling sensation in the head; frivolous; fickle.

Gideon (*gid'ē-on*). From the Hebrew *Gidhon*, which Tregelles renders "cutter down"; *i. e.*, "brave soldier." Fr., *Gedeon;* It., *Gedeone;* Lat., *Gideon.*

gift (*gift*), *n.* something given or bestowed; present.

Syn. GIFT, present, donation. The *gift* is an act of generosity or condescension; it contributes to the benefit of the receiver; the *present* is an act of kindness, courtesy or respect; it contributes to the pleasure of the receiver. The *gift* is private, and benefits the individual; the *donation* is public, and serves some general purpose: what is given to relieve the necessities of any poor person is a *gift;* what is given to support an institution is a *donation.*

gig (*gig*), *n.* a two-wheeled open chaise drawn by one horse; a long ship's boat.

gi-gan-tic (*jī-gan'tik*), *adj.* huge; colossal.

gig-gle (*gig'l*), *v. i.* to laugh in a nervous, foolish, tittering manner: *n.* a nervous, silly laugh.

Gila (*hē'la*) **river, Ariz.** Name corruption of the Spanish word *Guija*, meaning "pebbly" or "pebble-stone," applied by them owing to this local characteristic in its waters.

Gilbert (*gil'bĕrt*). From the Teutonic, *Giselbert*, "bright," or "bright as gold." Danish, *Gilbert;* Dutch, *Gilbert;* Fr., *Gilbert;* Ger., *Gilbert;* Lat., *Gilbertus;* Sw., *Gilbertus.*

gild (*gild*), *v. t.* [*p. t.* and *p. p.* gilded, gilt, *p. pr.* gilding], to overlay or wash with gold: *n.* another form of guild.

gild-ing (*'ing*), *n.* the art or process of overlaying or covering with gold; gold leaf, powder, etc., applied to a surface.

Giles (*jīlz*). Probably derived from *Ægidus*, from Greek *aiqidios*, "a goatskin." Fr., *Gilles;* Ger., *Ægidius;* It., *Egidio;* Lat., *Ægidius;* Sp., *Gil.*

gill (*gil*), *n.* the respiratory organ of aquatic animals, especially fishes: *pl.* the thin spore-bearing lamellæ under a cap of certain fungi.

gill (*jil*), *n.* 1-4th of a pint.

gil-ly-flow-er (*jil'i-flou-ĕr*), *n.* one of various plants of the mustard family.

gilt (*gilt*), *adj.* covered with, or yellow like, gold: *n.* gilding.

gim-crack (*jim'krak*), *adj.* showy, but of no value; trumpery: *n.* a pretty, useless thing; toy.

gim-let (*gim'let*), *n.* a small boring tool.

gimp (*gimp*), *n.* a kind of twist or trimming interwoven with wire or cord: *v. t.* to border with gimp.

gin (*jin*), *n.* an aromatic alcoholic liquid flavored with juniper berries; a trap or snare; a machine for clearing cotton fibers from the seeds: *v. t.* [*p. t.* and *p. p.* ginned, *p. pr.* ginning], to catch in a trap; clear cotton.

gin-ger (*'jĕr*), *n.* the scraped and dried root of a pungent aromatic East and West Indian plant.

gin-ger-bread (*-bred*), *n.* a dark colored cake made of flour, ginger, molasses, sugar, etc.

gin-ger-ly (*-li*), *adv.* cautiously; daintily.

ging-ham (*ging'am*), *n.* a cotton dress cloth.

gin-seng (*jin'seng*), *n.* an herb with an aromatic root.

Giorgio. See *George.*

Giovanni. See *John.*

Gip-sy (*jip'si*), *n.* [*pl.* Gipsies (*'siz*)], one of a wandering, dark-skinned, and dark-eyed race, of Eastern, probably Hindu, origin; a person of dark complexion; a hoydenish girl. [Also *Gypsy.*]

gi-raffe (*ji-raf'*), *n.* the camelopard.

gird (*gĕrd*), *v. t.* [*p. t.* and *p. p.* girded, girt, *p. pr.* girding], to surround; bind; encircle.

gird-er (*'ĕr*), *n.* the main beam in a floor.

gir-dle (*gĕr'dl*), *n.* a belt; anything that encompasses like a girdle: *v. t.* to bind with, or as with, a girdle; inclose; to cut the bark of a tree and so kill it.

girl (*gĕrl*), *n.* a female child; young unmarried woman.

girth (*gĕrth*), *n.* the band by which the saddle is kept secured on a horse; the circumference of anything.

★**gist** (*jist*, not *gist*). *n.* the substance of a matter; main point; object.

Giulia. See *Julia.*

Giuseppe. See *Joseph.*

give (*giv*), *v. t.* [*p. t.* gave, *p. p.* given, *p. pr.* giving],

to bestow; grant; yield; deliver: *v. i.* to give gifts; yield to pressure; grow moist. [ADDICTED.]

Syn. GIVE, grant, bestow. The idea of communicating to another what is our own, or in our power, is common to these terms; this is the whole signification of *give*. To *grant* is to give at one's pleasure; to *bestow* is to give from a certain degree of necessity. We *give* money, clothes, food, or whatever is transferable; *granting* is confined to such objects as afford pleasure or convenience; *bestowing* is applied to such objects only as are necessary to supply wants, which always consist of that which is transferable.

Ant. Keep, retain.

Syn. GIVE, present, offer, exhibit. We *give* to our domestics; we *present* to princes; we *offer* to God; we *give* to a person what we wish to be received; we *present* to a person what we think agreeable; a poem is said to *exhibit* marks of genius.

Ant. Cling to, hold, refuse.

giz-zard (*giz'ẽrd*), *n.* the muscular part of the intestinal canal in certain birds.

gla-cial (*glā'shal*), *adj.* pertaining to, consisting of, or caused by, ice.

gla-cier (*glā'shẽr* or *glas'i-ẽr*), *n.* a vast accumulation of ice and snow found in the valleys and ravines of mountains.

glad (*glad*), *adj.* [*comp.* gladder, *superl.* gladdest], in a state of hilarity; joyous; gay; pleased; cheerful; satisfied. [JOY.]

glad-den (*'n*), *v. t.* to make glad: *v. i.* to rejoice.

glade (*glād*), *n.* an open space or passage in a wood or forest.

glad-i-a-tor (*glad'i-ā-tẽr*), *n.* in ancient Rome a professional swordsman who fought in the arena.

glad-i-a-to-ri-al (*ȧ-tō'ri-al*), *adj.* pertaining to gladiators or their combats.

★**gla-di-o-lus** (*glȧ-dī'ō-lus*), *n.* the sword lily.

Gladys. Most probably a Welsh form of *Claudia*. It is derived from the Welsh *gwlad*, which now means "of country," but formerly signified "a prince," "a sovereign," a meaning which still survives in several of its derivations.

glair (*glâr*), *n.* the white of egg, used as size or varnish; any sticky or glairy matter.

glam-our (*glam'ẽr*), *n.* fascination; witchery: *v. t.* to fascinate.

glance (*glȧns*), *n.* quick passing look of the eye: *v. i.* to shoot a sudden ray; view with a quick movement of the eye: *v. t.* to shoot or dart suddenly or obliquely. [GLIMPSE, LOOK.]

gland (*gland*), *n.* organ by which secretion is carried on; an acorn; a name for various mechanical contrivances.

glan-ders (*glan'dẽrz*), *n. pl.* a contagious disease in horses.

glare (*glâr*), *n.* a bright dazzling light, or luster; a fierce look: *v. i.* to shine with a dazzling light; look with fierce piercing eyes; be excessively gaudy: *adj.* having a smooth slippery surface, as ice.

glar-ing (*'ing*), *adj.* Staring; clear; barefaced.

Syn. GLARING, barefaced. *Glaring* designates the thing; *barefaced* characterizes the person; a *glaring* falsehood is that which strikes the observer in an instant to be falsehood; a *barefaced* lie or falsehood betrays the effrontery of him who utters it.

Ant. Covert, imperceptible, unseen.

Glasgow (*glas'gō*). The second city in the British isles was called *Glas-gu* in 1301. Numerous etymologies have been proposed, such as *clais-dhu*, the "black ravine," *glaise-dhu*, "the black brook," or *glas-coed*, the "gray wood," but the most probable is that given by Professor Rhys, who holds that the name is from one of the Gaelic pet names of St. Kentigern, or St. Mungo, around whose cell the place grew up.

glass (*glȧs*), *n.* a hard, brittle, transparent substance formed of silica; an instrument or vessel made of glass; a drinking glass, or the quantity contained in it: *adj.* pertaining to, or made of, glass; vitreous; *v. t.* to mirror, or reflect in a mirror; glaze.

Glastonbury (*glȧs'tun-bẽr-i*). A town in Somerset, England, twenty-one miles south of Bristol. Its abbey, founded in Roman times, was refounded under Ine in the eighth century. Glastonbury is associated in legend with Joseph of Arimathea, who is said to have visited it, and, in sign of possession, planted his staff, which took root and became the famous Glastonbury thorn that bursts into leaf on Christmas eve. The Isle of Avalon, where King Arthur was buried, is also here.

glau-ber's salt (*glaw'bẽrz sawlt*), sulphate of soda, used medicinally as a strong purgative.

glaze (*glāz*), *v. t.* to furnish with glass; overlay with a transparent substance resembling glass: *v. i.* to become glassy or glazed: *n.* the vitreous or glassy coating on potter's ware.

gla-zier (*glā'zhẽr*), *n.* one whose business is to set glass in windows, etc.

glaz-ing (*glāz'ing*), *n.* a glaze; the operation of setting glass, or applying a glaze; glass.

gleam (*glēm*), *n.* a stream or shoot of light; brightness: *v. i.* to emit brightness; shoot, or dart, as rays of light.

glean (*glēn*), *v. t.* to gather; collect little by little; infer: *v. i.* to gather gleanings.

glebe (*glēb*), *n.* land belonging to a parish church, or ecclesiastical benefice.

glede (*glēd*), *n.* the kite.

glee (*glē*), *n.* gayety; mirth; exhilaration; a musical composition for voices in harmony.

glen (*glen*), *n.* a narrow valley; a secluded hollow between hills.

glib (*glib*), *adj.* voluble; flippant: *n.* the tongue; smooth talk.

glide (*glīd*), *v. i.* [*p. t.* and *p. p.* glided, *p. pr.* gliding], to flow or move along smoothly and noiselessly: *n.* the act of gliding: a gliding movement. [SLIP.]

glim (*glim*), *n.* a light or candle.

glim-mer (*'ẽr*), *v. i.* to shine faintly and intermittently: *n.* a faint intermittent light; sheen.

glimpse (*glimps*), *n.* a weak, faint light; transient view; slight trace: *v. t.* to catch a glimpse of: *v. i.* to glance; appear for the moment.

Syn. GLIMPSE, glance. A *glimpse* is the action of the object appearing to the eye; a *glance* is the action of the eye seeking the object; one catches a *glimpse* of an object; one casts a *glance* at an object.

glint (*glint*), *n.* a gleam of light: *v. i.* to gleam or flash out.

glis-sade (*glis-ād'*), *n.* the act of sliding down a glacier; a glide in dancing: *v. i.* to slide.

glis-ten (*glis'n*), *v. i.* to sparkle; shine: *n.* a glitter.

glit-ter (*glit'ẽr*), *v. i.* to sparkle; gleam; be showy: *n.* brilliancy; luster.

gloam (*glōm*), *v. i.* to begin to grow dark; exhibit gloom.

gloam-ing (*'ing*), *n.* twilight: *adj.* pertaining to twilight.

gloat (*glōt*), *v. i.* to stare or gaze, often with feelings of lust and cruelty.

globe (*glōb*), *n.* a spherical body; ball; the earth.

globe trot-ter (*trot-ẽr*), an extensive traveler.

glob-ule (*glob'ūl*), *n.* a small spherical particle.

glob-u-lin (*'ū-lin*), *n.* an albuminous proteid substance.

glom-er-ate (*glom'ẽr-āt*), *adj.* gathered into a roundish head or mass.

gloom (*gloom*), *n.* partial darkness; melancholy; sullenness: *v. i.* to be, or become, partially dark: *v. t.* to make gloomy.

gloom-y (*'i*), *adj.* [*comp.* gloomier, *superl.* gloomiest], overspread with, or enveloped in, darkness; dismal; melancholy. [DULL.]

glo-ri-a (*glō'ri-ȧ*), *n.* an ascription of praise

glo-ri-fi-ca-tion (*-ri-fi-kā'shun*) *n.* exaltation to honor: a jollification.

glo-ri-fy (*'ri-fī*), *v. t.* [*p. t.* and *p. p.* glorified, *p. pr.* glorifying], to raise in honor; magnify and honor in worship.

glo-ri-ous (*'ri-us*), *adj.* full of glory; illustrious; celebrated.

glo-ry (*'ri*), *n.* [*pl.* glories (*'riz*)], magnificence; praise ascribed in adoration; distinction: *v. i.* [*p. t.* and *p. p.* gloried, *p. pr.* glorying], to rejoice or exult (with *in*).

Syn. GLORY, honor. *Glory* is something dazzling and widely diffused; *honor* is something less splendid, but more solid; *glory* impels to extraordinary efforts and to great undertakings; *honor* induces to a discharge of one's duty.

Ant. Ignominy, infamy.

Syn. GLORY, boast, vaunt. *To glory* is to hold as one's *glory; to boast* is to set forth to one's advantage; *to vaunt*, is to set one's self up before others; *to glory* is more particularly the act of the mind, the indulgence of the internal sentiment; *to boast* denotes rather the expression of the sentiment; *to vaunt* is properly to proclaim praises aloud.

Ant. Be humble, meek, modest.

gloss (*glos*), *n.* luster from a polished surface; a plausible, specious representation: *v. t.* to explain by comments; palliate by plausible representation; make glossy: *v. i.* to annotate.

glos-sa-ry (*'ȧ-ri*), *n.* [*pl.* glossaries (*-riz*)], a dictionary of obsolete, obscure, or technical words. [DICTIONARY.]

glos-sy (*'i*), *adj.* [*comp.* glossier, *superl.* glossiest], having a lustrous, smooth surface; plausible.

glot-tal (*glot'al*), *adj.* pertaining to, or produced by, the glottis.

★**glot-tis** (*glot'is*, not *glō'tis*), *n.* the small elastic oblong opening at the top of the windpipe.

glove (*gluv*), *n.* a hand covering with a separate sheath for each finger: *pl.* boxing gloves: *v. t.* to cover with, or as with, a glove.

glow (*glō*), *v. i.* to radiate heat and light; be red or flushed; be animated with passion, love, etc.: *n.* intense or shining heat; passion. [EAGER.]

glow-er (*glou'ẽr*), *v. i.* to stare with a threatening countenance; frown.

glow-worm (*glō'wẽrm*), *n.* a beetle, the wingless female of which emits a shining green light at night.

glox-in-i-a (*gloks-in'i-ȧ*), *n.* a genus of tropical plants with bell-shaped flowers.

glu-cose (*gloo'kōs*), *n.* the particular form of sugar existing in many organisms.

glue (*gloo*), *n.* a tenacious viscid cement made by boiling some animal substance to a jelly: *v. t.* to unite or cement with glue.

glum (*glum*), *adj.* gloomy; moody; sullen.

glut (*glut*), *n.* a superabundance: *v. t.* [*p. t.* and *p. p.* glutted, *p. pr.* glutting], to fill to repletion; oversupply.

glu-ten (*gloo'ten*), *n.* a tough, gray, albuminous substance obtained from grain.

glu-ti-nous (*'ti-nus*), *adj.* viscid, like glue.

glut-ton (*glut'n*), *n.* one who eats to excess.

glut-ton-ous (*-us*), *adj.* pertaining to, or characterized by, gluttony.

glut-ton-y (*glut'n-i*), *n.* [*pl.* gluttonies (*-iz*)], the act or habit of eating to excess.

★**glyc-er-ine** (*glis'ẽr-in*, not *glis'ẽr-ēn*), *n.* a sweet, colorless viscid liquid obtained from oils, fat, etc. [Also *glycerin*.]

glyp-tic (*glip'tik*), *adj.* pertaining to engraving on gems; figured: *n. pl.* the art of engraving designs on stones.

gnarl (*närl*), *n.* a knot on a tree.

gnarled (*närld*), *adj.* full of knots; distorted.

gnash (*nash*), *v. t.* to strike together, as the teeth: *v. i.* to grind the teeth.

gnat (*nat*), *n.* a small stinging winged insect of several species, allied to the mosquito.

gnaw (*naw*), *v. t.* to bite off, or eat away, by degrees; fret: *v. i.* to exercise the teeth in biting repeatedly.

gnome (*nōm*), *n.* a fabulous deformed, diminutive goblin, supposed to dwell in the earth or to be the guardian spirit of miners; a pithy or sententious saying.

gnom-ic (*nom'ik*), *adj.* dealing in, or containing, pithy or sententious sayings; didactic.

gno-mon (*nō'mon*), *n.* the figures made up of the two complements of a parallelogram.

gno-sis (*'sis*), *n.* higher knowledge or insight.

Gnos-ti-cism (*nos'ti-sizm*), *n.* a system of religion and Greek and Oriental philosophy (first to sixth century A. D.).

gnu (*noo*), *n.* a ruminant horned animal of the antelope kind, inhabiting South Africa.

go (*gō*), *v. i.* [*p. t.* went, *p. p.* gone, *p. pr.* going], to depart; proceed; succeed; move by mechanism, as a clock: *n.* the fashion; enterprise or push.

goad (*gōd*), *n.* a pointed stick to urge on cattle: *v. t.* to urge on with, or as with, a goad: *v. i.* to act as a goad.

goal (*gōl*), *n.* the winning post at a race or at football; hence, the end aimed at.

goat (*gōt*), *n.* a ruminating horned quadruped with long hair.

goat-ee (*gō-tē'*), *n.* a tuft of hair on chin after the rest of the face is shaved.

gob-ble (*gob'l*), *v. t.* to swallow hastily or greedily: *v. i.* to utter a cry like a turkey: *n.* the noise of a turkey.

go-be-tween (*gō'-bē-twēn*), *n.* an intermediary.

gob-let (*gob'let*), *n.* a drinking vessel with a stem and without a handle.

gob-lin (*'lin*), *n.* an evil, mischievous spirit; gnome; fairy.

go-by (*gō'bi*), *n.* [*pl.* gobies (*'biz*)], a fish of peculiar shape.

go-by (*gō'-bī*), *n.* avoidance; evasion.

go-cart (*'kärt*), *n.* a child's cart; a light village cart.

god (*god*), *n.* a supernatural being conceived of as possessing divine powers or attributes: idol; a person or thing deified or honored to excess.

God, *n.* the Supreme Deity, and self-existent Creator or Upholder of the universe.

god-child (*'chīld*), *n.* one for whom another is sponsor at baptism.

god-dess (*'des*), *n.* a female deity; a woman of superior charms or excellence.

god-fa-ther (*'fä-thẽr*), *n.* one who acts as sponsor to another at baptism: *v. t.* to act as godfather to.

Godfrey (*god'fri*). From the Teutonic, meaning "God's peace." Danish, *Gottfried;* Dutch, *Godfried;* Fr., *Godefroi;* Ger., *Gottfried;* It., *Goffredo;* Lat., *Godfridus*.

god-like (*'līk*), *adj.* like God or a god in any respect; divine.

Syn. GODLIKE, divine, heavenly. *Godlike* is a more expressive but less common term than *divine; divine* is generally employed for that which appertains to a superior being, in distinction from that which is human; as *divine* is opposed to human, so is *heavenly* to earthly.

Ant. Base, mean, mortal, devilish.

god-ly (*'li*), *adj.* devout; pious.

god-moth-er (*'muth-ẽr*), *n.* a female sponsor at baptism.

god-send (*god'send*), *n.* unexpected assistance or acquisition.

god-speed (*'spēd*), *n.* success.

Godwin (*god'win*). From the Teutonic, meaning "divine friend," or "victorious in God." Dutch, *Godewijn*; Lat. *Godwinus*.

gog-gle (*gog'l*), *v. i.* to strain or roll the eyes; *adj.* staring: *n.* affected rolling of the eyes: *pl.* spectacles for protecting the eyes from dust, excessive light, etc.

go-ing (*gō'ing*), *n.* the act of departing or moving; state of roads.

goi-ter (*goi'tẽr*), *n.* a swelling of the glands in the front part and side of the neck.

gol-con-da (*gol-kon'dȧ*), *n.* a mine of wealth.

Golconda. A place in India, seven miles northwest of Hyderabad. It is noted for its fort, for the mausoleums of the ancient kings, and for the diamonds which were cut and polished here. It was the capital of a kingdom from 1512 until its overthrow by Aurungzebe in 1687.

gold (*gōld*), *n.* a metallic element, soft, ductile, and of a bright yellow color when pure; money wealth.

Gold coast. That portion of Guinea on the west coast of Africa where gold is found.

gold-en (*gōld'n*), *adj.* formed of, consisting of, or resembling, gold; shining; lustrous like gold: bright; most valuable; excellent.

Golden Gate, California. Bay in California, named by Colonel Frémont, before the discovery

of gold in the country, because of the brilliant effect of the setting sun on the cliffs and hills.

Golden gate, Constantinople. A gate in the wall of Theodosius, now walled up because of a Turkish tradition that the conquerer of Constantinople is destined to enter through it. It consists of three arches between two huge towers of white marble. The great central arch was reserved for the passage of the emperor.

Golden house. Palace of the Emperor Nero in ancient Rome, which occupied the valley between the Palatine and the Esquiline, and connected the palaces of the Cæsars with the gardens of Mæcenas. It was built after the great fire of 64 A. D., and was so large that it contained porticos 2,800 feet long and inclosed a lake where the Colosseum now stands. The forecourt contained a colossus of Nero 120 feet high

golden pheas-ant (*gold'n fez'ant*), a handsome Chinese pheasant.

gold-en-rod (*-rod*), *n.* a tall plant of the aster family with yellow flowers.

gold-en rule (*rōōl*), the rule to treat others as we ourselves wish to be treated.

gold fields (*fēldz*), auriferous deposits and diggings.

gold-finch (*'finch*), *n.* a beautiful singing bird with yellow-streaked wings and a red throat.

gold-fish (*'fish*), *n.* an orange-colored fresh-water fish of the carp family.

gold-smith (*'smith*), *n.* a worker in gold, or dealer in gold plate.

golf (*golf*), *n.* a game played with a small gutta-percha ball and club-headed sticks: *v. i.* to play golf.

Gol-go-tha (*gol'gō-thâ*), *n.* [Hebrew, "the place of the skull"], the place where Jesus Christ was crucified.

★**gon-do-la** (*gon'dō-lâ*, not *gon-dō'lâ*), *n.* a long narrow Venetian pleasure boat propelled by one oar.

gon-do-lier (*-dō-lēr'*), *n.* the rower of a gondola.

gong (*gong*), *n.* a musical instrument of bronze, which is struck by a padded stick.

good (*good*), *adj.* [*comp.* better, *superl.* best], having excellent qualities; proper, fit for, adapted, or conducive to; convenient; useful; unblemished: *n.* that which contributes to happiness; moral qualities; prosperity: *pl.* household furniture; merchandise: *interj.* an expression of assent or pleasure.

Good Fri-day (*frī'dā*), a fast held in commemoration of the crucifixion of Jesus Christ on the Friday before Easter day.

good-li-ness (*'li-nes*), *n.* grace; physical beauty.

good-ly (*'lī*), *adj.* [*comp.* goodlier, *superl.* goodliest], good looking; noble; considerable; pleasant.

good na-ture (*nā'chūr*), good humor; good disposition.

good will (*wil'*), benevolence; kindly feeling; the value a business has over and above stock-in-trade, etc.

good-y (*'i*), *adj.* affectedly or weakly pious; namby-pamby: *n.* (*pl.* goodies), a person affectedly or weakly pious.

goose (*gōōs*), *n.* [*pl.* geese (*gēs*)], a web-footed domesticated bird of the genus Anser; a tailor's smoothing iron; a silly person.

goose-ber-ry (*gōōz'ber-i*), *n.* [*pl.* gooseberries (*-iz*)], the fruit of a shrub of the genus Ribes; the shrub itself.

go-pher (*gō'fĕr*), *n.* a North American burrowing, rat-like rodent.

gor-di-an (*gôr'di-an*), *n.* anything intricate or difficult.

Gor-di-an, *adj.* pertaining to the Phrygian king, Gordius, or to the intricate knot tied by him in his harness, which Alexander the Great cut with his sword.

gore (*gōr*), *n.* congealed or clotted blood; a triangular piece sewn into a dress, sail, etc: *v. t.* to pierce as with a horn; furnish with gores (said of a garment, etc.)

gorge (*gôrj*), *n.* the throat; gullet; that which is gorged or swallowed; a narrow passage between mountains or hills: *v. t.* to swallow with greediness; satiate: *v. i.* to feed greedily.

gor-geous (*gôr'jus*), *adj.* glittering in various colors; splendid; showy.

Gor-gon (*'gon*), *n.* one of three sisters in Greek mythology whose aspect was so terrible that any one who beheld them was turned to stone.

go-ril-la (*gō-ril'â*), *n.* the largest ape known.

gor-mand (*gôr'mand*), *n.* a greedy or ravenous eater; glutton.

gor-mand-ize (*-iz*), *v. i.* to eat greedily or voraciously

gor-y (*gōr'i*), *adj.* covered or stained with gore.

gos-hawk (*gos'hawk*), *n.* a raptorial bird of the hawk family.

gos-ling (*goz'ling*), *n.* a young goose; a catkin.

gos-pel (*gos'pel*), *n.* the history of the life and doctrines of Jesus Christ, contained in the four canonical books of SS. Matthew, Mark, Luke and John; something received as infallibly true: *adj.* pertaining to the gospel.

gos-sa-mer (*'ā-mĕr*), *n.* a very thin, soft, filmy, strong gauze: *adj.* very thin, like gossamer; filmsy.

gos-sip (*'ip*), *n.* familiar or idle talk; scandal; a babbler; formerly a sponsor, neighbor, or friend: *v. i.* to tell idle tales about others; tattle; chat.

Goth (*goth*), *n.* one of an ancient Teutonic tribe that overran the Roman empire (third and fourth centuries A. D.).

Gotham (*gō'tham*). At one tine the term was applied to a parish of Nottingham, England. The people there were famed for their stupidity and simplicity, which obtained for them the satirical appellation of the "wise men of Gotham." Many nations have designated some particular locality as the paradise of fools; for example, Phrygia was the fools' home in Asia, Abdera of the Thracians, Bœotia of the Greeks, Swabia of the modern Germans, etc. To Americans it is chiefly significant as a colloquial term for the city of New York. Thus applied, it first appeared in *Salmagundi*, by Washington Irving and James K. Paulding, and is supposed to hint sarcastically at the worldly wisdom of its inhabitants.

Goth-ic (*goth'ik*), *adj.* pertaining to the Goths or their language; denoting the style of architecture characterized by high and pointed arches, clustered columns, etc.: *n.* the language of the Goths; the Gothic or pointed style of architecture.

Gothland (*goth'land*). Southern division of Sweden. Name indicated a settlement of the Goths.

Gottlieb. See *Theophilus.*

gouge (*gouj*), *n.* a rounded hollow chisel for cutting grooves or holes: *v. t.* to scoop out with a gouge.

gourd (*gōrd*), *n.* a plant and fruit of various species of the genus *Cucurbita.*

gour-met (*gōōr-mā'*), *n.* an epicure.

gout (*gout*), *n.* a painful inflammatory disease of the joints or extremities, especially of the great toe.

gout-y (*'i*), *adj.* pertaining to, or affected with, gout.

gov-ern (*guv'ĕrn*), *v. t.* regulate; direct; manage; *v. i.* to exercise authority; administer the law.

Syn. GOVERN, rule, regulate. The exercise of authority enters more or less into the signification of these terms; but *to govern* implies the exercise likewise of judgment and knowledge. *To rule* implies rather the unqualified exercise of power, the making the will the rule; a king *governs* his people by means of wise laws and an upright administration; a despot *rules* over a nation according to his arbitrary decision; *regulate* is a species of governing simply by judgment; one *governs* the affairs of a nation, or a large body where great interests are involved; we *regulate* the concerns of an individual.

Ant. Be SUBJECT, obey, yield.

gov-ern-ess (*-es*), *n.* a lady who trains and instructs children.

gov-ern-ing (*-ing*), *p. adj.* exercising control; prevalent; ruling.

★**gov-ern-ment** (*guv'ĕrn-ment*, not *guv'ĕr-ment*), *n.* the act of governing; administration of public affairs; relation between two words by which one determines the case or mood of another.

Syn. GOVERNMENT, administration. Both these terms may be employed either to designate the act of *governing* and *administering* or the persons governing and administering. In both cases *government* has a more extensive meaning than *administration;* the former includes every exercise of authority; while *administration* implies only that exercise of authority which consists in putting the laws or will of another in force.

★**gov-ern-or** (*'ĕrn-ĕr*), *n.* chief ruler; tutor; a mechanical device for regulating speed.

Governor's island. A small fortified island in New York harbor. So named from its former Dutch owner, Governor Van Twiller; previously called *Nutten island,* Indian name *Paggauck.*

gown (*goun*), *n.* a woman's dress; a long loose outer covering or wrapper, as a dressing gown, etc.

gowned (*gound*), *adj.* attired in a gown.

grab (*grab*), *v. t.* [*p. t.* and *p. p.* grabbed, *p. pr.* grabbing], to seize suddenly and forcibly; snatch: *n.* a sudden and forcible seizure.

grace (*grās*), *n.* any excellence, characteristic attraction, or endowment; elegance; beauty; divine influence; spiritual excellence; a brief prayer before or after meals; a respectful title of address: *v. t.* to adorn or embellish; honor; dignify; favor.

Syn. GRACE, charm. *Grace* is altogether corporeal; *charm* is either corporeal or mental; the *grace* qualifies the action of the body; the *charm* is an inherent quality in the body itself. A lady moves, dances, and walks with *grace;* her *charms* of person equal those of her mind. [See *mercy.*]

Ant. AWKWARDNESS, hatefulness, hardness, justice, rigor.

grace-ful (*'fool*), *adj.* full of grace or beauty; easy and elegant in manner or demeanor.

gra-cious (*grā'shus*), *adj.* showing or bestowing grace, kindness, or mercy; affable; polite.

gra-da-tion (*grā-dā'shun*), *n.* a regular advance or progress, step by step; regular arrangement; series; order.

grade (*grād*), *n.* a step or degree in rank, dignity, quality, order, etc.; the rise or descent of a railroad, etc.: *v. t.* to level and prepare; arrange in a regular series; *v. i.* to take rank. [CLASS.]

grad-u-al (*grad'ū-al*), *adj.* proceeding by degrees; regular and slow.

grad-u-ate (*'ū-āt*), *n.* one on whom a degree has been conferred: *v. t.* to mark with degrees or a scale: *v. i.* to take or receive an academical degree; change by degrees: *adj* having been graduated.

grad-u-a-tion (*-ā'shun*), *n.* the conferring or reception of an academical degree; regular progression; a marking into degrees or parts.

graft (*grăft*), *n.* a small shoot of a tree inserted into another tree; a bribe: *v. t.* to insert, as a shoot in another tree; in surgery, to transplant (tissue): *v. i.* to practice grafting; to accept bribe money.

Graham (*grā'am, grām*). From the Gaelic *gruama* "surly, stern, morose, dark, gloomy."

grail (*grāl*), *n.* a dish or chalice, especially the Holy Grail (Sangreal), the cup used by Jesus Christ at the Last Supper. [Also *graal.*]

grain (*grān*), *n.* any minute, hard mass; a single seed of corn; a unit of weight equal to 1-20th of a scruple, 1-24th of a pennyweight; the arrangement of particles in a body; texture; *v. t.* form into grains; to paint in imitation of the grain of wood.

grain-ing (*'ing*), *n.* painting in imitation of the grain of wood; the pebbling of paper or leather.

gram. See *gramme.*

gra-mer-cy (*grā-mĕr'si*), *interj.* great thanks.

gram-i-niv-o-rous (*gram-i-niv'ō-rus*), *adj.* feeding on grasses.

gram-mar (*'ĕr*), *n.* the science that treats of the principles that govern the correct use of language.

gram-ma-ri-an (*-mā'ri-an*), *n.* one who is versed in grammar; a philologist.

gram-mat-ic-al (*-mat'i-kal*), *adj.* pertaining to grammar, or its rules.

gramme (*gram*), *n* the unit of weight in the metric system, 15.43 grains troy. [Also *gram.*]

gram-o-phone (*'ō-fōn*), *n.* an instrument for recording and reproducing speech.

gram-pus (*'pus*), *n.* a large cetacean, akin to the porpoise.

Granada (*grā-nā'dā*). The capital of the province of Granada, Spain, situated on the Jenil, on spurs of the Sierra Nevada. It is famous for the Alhambra. The name is from the Arabic. *Garnatha,* "pomegranate," because the city is built on four hills divided somewhat like the divisions of a pomegranate.

gran-a-ry (*gran'ā-ri*), *n.* [*pl.* granaries (*riz*)], a storehouse for grain.

grand (*grand*), *adj.* high in dignity or power; illustrious; great; magnificent; noble; conceived or expressed in dignified language; complete; the second degree of parentage or descent: *n.* a grand piano. [GREAT.]

Grand canal. The principal cana of Venice. It runs in the form of the letter S through the center of the city, from the railway station to Santa Maria del Salute.

grand-child (*grand'child*), *n.* the child of one's son or daughter.

grand-daugh-ter (*'daw-tĕr*), *n.* the daughter of one's son or daughter.

gran-dee (*gran-dē'*), *n.* a Spanish nobleman of the highest rank.

gran-deur (*'dūr*), *n.* greatness; vastness; sublimity; splendor of appearance.

grand-fa-ther (*grand'fā-thĕr*), *n.* the father of one's father or mother.

gran-dil-o-quent (*gran-dil'ō-kwent*), *adj.* speaking in, or characterized by, a lofty or bombastic style.

gran-di-ose (*'di-ōs*), *adj.* really or affectedly grand or impressive.

Grand Manan island. An island east of Maine, at entrance to bay of Fundy, belonging to New Brunswick. A compound word meaning "great island." English, *grand;* Indian, *munnohan,* "the island." [Also spelled *Menan.*]

grand-mother (*'muth-ĕr*), *n.* the mother of one's parent.

grand-par-ent (*'pâr-ent*), *n.* the parent of one's parent.

Grand Prix (*grăn prē'*), **The.** The great horse-race at Longchamps, Paris, established by Napoleon III. (prize 20,000 francs), run by three-year-olds. Longchamps is a very good course, situated in the Bois de Boulogne, first used for racing in the reign of Louis XVI. Races have been run here since 1859. The Grand Prix is run on the Sunday of Ascot week.

Grand Prix de Rome (*grăn prē' du rōm*). A prize given by the Academy of Fine Arts in Paris to the most successful competitor in painting, sculpture, engraving, architecture, or music. The examinations are held annually, and the successful candidates become pensioners of the government for four years. They are sent to reside at Rome, where Louis XVI. founded the Academie de France in 1666.

grand-son (*'sun*), *n.* the son of one's son or daughter.

grange (*grānj*), *n.* a farm with its dwelling house, appurtenances, etc.

gran-ite (*gran'it*), *n.* a massive crystalline rock composed of quartz, feldspar, and mica.

gra-niv-o-rous (*grā-niv'ō-rus*), *adj.* eating grain; living on seeds.

grant (*grănt*), *v. t.* to give or confer; concede; transfer the title of: *n.* the act of granting; a gift; a bestowing; the thing conveyed. [GIVE.]

gran-u-lar (*gran'ū-lĕr*), *adj.* composed of, or resembling, grains or granules.

gran-u-late (*'ū-lāt*), *v. t.* to form into grains or small masses; roughen the surface of: *v. i.* to become granular

gran-ule (*'ūl*), *n.* a small grain or particle.

grape (*grāp*), *n.* the fruit of the grapevine; a vine of the genus *Vitis;* grapeshot.

grape-shot (*'shot*), *n.* a cluster of small shot arranged in tiers of three shots each between plates, so as to disperse when fired.

graph-ic (*grăf'ik*), *adj.* pertaining to the art of writing; vividly described.

graph-ite (*'it*), *n.* a metallic variety of carbon.

graph-o-phone (*graf'ō-fōn*, *n.* an instrument re-

sembling the phonograph," but having a rubber cylinder instead of one of wax.

grap-nel (*grap'nel*), *n.* a kind of small anchor usually with flukes; heavy tongs.

grap-ple (*grap'l*), *v. t.* to lay fast hold of: *v. i.* struggle or contend: *n.* a close fight; a seizing; close hold; a mechanical device for taking hold of anything.

Grasmere. One of the group of English lakes, meaning "the lake of swine."

★grasp (*grăsp*), *v. t.* to seize or catch at: *v. i.* to endeavor to seize; struggle or grapple: *n.* a seizure of the hand; reach of the hand; hold; intellectual capacity. [LAY.]

grass (*grăs*), *n.* herbage having hollow-jointed stalks; that which is subject to decay: *v. t.* to cover with grass or turf; pasture or graze.

grass-wid-ow (*-wid'ō*), *n.* a woman legally or otherwise separated from her husband.

grate (*grāt*), *n.* a framework of iron bars: *v. t.* to rub or wear away by friction; produce a sound by friction: *v. i.* make a harsh noise; produce mental irritation.

grate-ful (*'fool*), *adj.* thankful; pleasurable. [ACCEPTABLE.]

grat-i-fi-ca-tion (*grat-i-fi-kā'shun*), *n.* the act of gratifying; satisfaction; pleasure; reward.

grat-i-fy (*'i-fī*), *v. t.* [*p. t.* and *p. p.* gratified, *p. pr.* gratifying], to afford pleasure to; indulge; delight; humor.

Syn. GRATIFY, indulge, humor. *To gratify* is a positive act of the choice; *to indulge* is a negative act of the will, a yielding of the mind to circumstances. One *gratifies* his desires or appetite; and *indulges* his humors, or *indulges* in pleasures. We *gratify* and *indulge* others as well as ourselves, and mostly in the good sense; *to gratify* is for the most part in return for services; it is an act of generosity; *to indulge* is to yield to the wishes or be lenient to the infirmities of others. *To humor* is mostly taken in a bad sense. [See *satisfy*.]

Ant. ABSTAIN, discipline.

grat-ing (*grāt'ing*), *n.* an open framework or lattice of bars: *p. adj.* harsh, irritating.

★gra-tis (*grā'tis*, not *grat'is*), *adv.* gratuitously.

grat-i-tude (*grat'i-tūd*), *n.* the state of being grateful; appreciation. [THANKFULNESS.]

gra-tu-i-tous (*grā-tū'i-tus*), *adj.* freely bestowed; voluntary.

Syn. GRATUITOUS, voluntary. *Gratuitous* is opposed that which is obligatory; *voluntary* is opposed to that which is compulsory or *involuntary*.

gra-tu-i-ty (*'i-ti*), *n.* [*pl.* gratuities (*-tiz*)], a donation or present; free gift.

★gra-va-men (*grā-vā'men*), *n.* [*pl.* gravimina (*-vim'i-nā*)], cause of complaint or action.

grave (*grāv*); *adj.* serious; solemn; thoughtful; sedate; important; a long-sounding accent· *n.* an excavation for a dead body: *v. t.* to shape or carve by cutting with a chisel; engrave.

Syn. GRAVE, serious, solemn. *Grave* expresses more than *serious;* it does not merely bespeak the absence of mirth, but heaviness of mind; *seriousness*, on the other hand, bespeaks no depression, but simply steadiness of action; a judge pronounces the *solemn* sentence of condemnation in a *solemn* manner; a preacher delivers many *solemn* warnings to his hearers.

Ant. FRIVOLOUS, light, gay.

grav-el (*grav'l*), *v. t.* to embarrass; lame a horse by gravel under the shoe: *n.* fragments of rock coarser than sand; a disease in the bladder and kidneys.

grav-el-ly (*-li*), *adj.* composed of, or abounding in, gravel.

grav-i-tate (*grav'i-tāt*), *v. i.* to be acted upon, or attracted by, the force of gravity; be naturally attracted.

grav-i-ta-tion (*-i-tā'shun*), *n.* the force which attracts material bodies to each other.

grav-i-ty (*'i-ti*), *n.* that force which tends to draw all bodies toward the center of the earth; weight; importance; seriousness; solemnity.

gra-vy (*grā'vi*), *n.* [*pl.* gravies (*'viz*)], the fatty juice from roasting flesh.

gray (*grā*), *adj.* of a white color with a mixture of black; hoary; mature: *n.* the color of white mixed with black.

graze (*grāz*), *v. t.* to furnish pasture for; touch or rub lightly: *v. i.* to eat grass; move along while grazing: *n.* a slight rub or touch.

★gra-zier (*grā'zhēr*), *n.* one who pastures cattle or breeds them for the market.

grease (*grēs*), *n.* soft animal fat; oily matter: *v. t.* (*grēz*) to smear or rub with grease; cause to move easily.

greas-y (*grēz'i* or *grēs'i*), *adj.* [*comp.* greasier, *superl.* greasiest], resembling, smeared or spotted with, grease; oily; unctuous; foggy; muddy.

great (*grāt*), *adj.* large; chief; principal; marvelous; eminent; high in rank or position: *adv.* very much: *n.* the whole, or gross; noble, or influential, people.

Syn. GREAT, large, big. *Great* is applied to all kinds of dimensions in which things can grow or increase; *large* signifies to give freely, it is properly applied to space, extent, and quantity; *big* denotes *great* as to expansion or capacity. A house, a room, is *great* or *large;* an animal or a mountain is *great* or *big*.

Ant. DIMINUTIVE, little, tiny, small.

Syn. GREAT, grand, sublime. These terms are synonymous only in their moral application; *great* simply designates extent; *grand* includes likewise the idea of excellence and superiority. A *great* undertaking characterizes only the extent of the undertaking; a *grand* undertaking bespeaks its superior excellence; *sublime* designates the dimensions of height. A scene may be either *grand* or *sublime*.

Ant. INSIGNIFICANT, petty, trivial.

Great Barrington. Town in Berkshire county, Massachusetts, named for William, Lord Barrington.

Great Bear lake. In British North America. So called owing to its northern situation, referring to the northern constellations of the Great and Little Bear.

Great Mogul. An extinct title borne by the chief of the Moguls of the empire founded in Hindustan by Baber, fifteenth century.

Great Salt lake, Utah. Received its name on account of the saline character of its waters.

Great Tom. A bell, weighing about 17,000 pounds, in the tower of the Tom gate of Christ church, Oxford. Every night at ten minutes past nine (closing time) it is tolled.

Great Wall of China. A wall begun by the Emperor Tsin Chi-hwangti 214 B. C. and finished 204 B. C. as a defense against northern tribes. It extends from Shanhaikwan along the northern frontiers of Chihli, Shansi, Shensi, and Kansu. Length about 1,500 miles.

greaves (*grēvz*), *n. pl.* armor to protect the legs from the ankle to the knee.

Gre-cian (*grē'shan*), *adj.* pertaining to Greece; a native or inhabitant of Greece; a Greek scholar.

Greece. The modern form of the Lat. *Græcia*, Gr. *Graikoi*, a name originally bestowed on the inhabitants of Hellas. A country of southern Europe.

greed (*grēd*), *n.* avarice; greediness.

greed-y (*'i*), *adj.* [*comp.* greedier, *superl.* greediest], voracious; gluttonous; desirous; covetous.

Greek (*grēk*), *adj.* pertaining to, or resembling, Greece or the Greeks; Hellenic: *n.* a Grecian; the language of ancient and modern Greece; something unintelligible.

Greek church (*chērch*), the eastern or oriental church.

Greek cross (*kros*), a cross with four equal arms.

Greek fire (*fīr*), an inflammable material used by the ancient Greeks in warfare.

Greeley. City in Colorado, county and city in Kansas, and county in Nebraska, named for Horace Greeley.

green (*grēn*), *adj.* having the color of growing grass or plants; of a color composed of blue and yellow; fresh; flourishing; unripe; immature; inexperienced: *n.* the color of growing grass or plants; a color composed of blue and yellow; a grass plot or common: *v. t.* to make green: *v. i.* to become green.

green-back (*'bak*), *n.* a paper money (U. S. legal-tender note) with a green back, first issued in 1862.

Green bay, Wis. Located on its shores were a tribe of Indians, whose mode of life was so filthy, when first met by the French, they designated them as the Puans (*puans*, "stinkards"). To the bay they gave the name of *Baye de Puans*, and transposition through pronunciation carried it to *Grand bay* and *Grun bay* to *Green bay*.

green-horn (*'hôrn*), *n.* a simpleton; novice.

green-house (*'hous*), *n.* a conservatory.

Greenland. The name given by Eric the Red in 983 to the sheltered nook where he founded his colony from Iceland, thinking that "much people will go thither if the land has a pleasant name." The name is not altogether unsuitable, as the place chosen by Eric for the settlement which he named *Greenland* is the pleasantest spot in the country, a smooth grassy plain at the head of Igaliko fiord, near the modern Julianshaab. The name was afterward inappropriately extended to the whole ice-clad arctic island.

Green mountains, Vt. Name a translation of the French name *"vert-monts."*

Green river, Ky. Named in honor of General Nathaniel Greene of the Revolution. The letter *e* was originally added to the name of the river.

green-room (*'room*), *n.* the actors' retiring room in a theater.

Greensboro, N. C. Named in compliment to General Nathaniel Greene, he having had a victorious skirmish at this locality during his famous retreat in 1781.

Green Sea. Otherwise the Persian gulf, owing to a peculiar strip of green always discernible along the Arabian shore.

greet (*grēt*), *v. t.* to salute in kindness or respect; congratulate: *v. i.* to exchange greetings. [ADDRESS.]

greet-ing (*'ing*), *n.* salutation; welcome. [SALUTE.]

gre-ga-ri-an (*grē-gā'ri-an*), *adj.* living in herds; common.

gre-ga-ri-ous (*grē-gā'ri-us*), *adj.* associating or going together in herds.

Gre-go-ri-an cal-en-dar (*gre-gō'ri-an kal'en-dēr*), the reformed calendar introduced, 1582, by Pope Gregory XIII.

Gre-go-ri-an chant (*chânt*), the mediæval system of choral music, introduced by Pope Gregory the Great; plain song.

Gregory (*greg'ō-ri*). From the Latin *Gregorius*, from the Greek *Gregorios*, "to watch." The name means "watchful." Danish., *Gregor;* Dutch, *Gregorius;* Fr., *Grégoire;* Ger., *Gregor;* It., *Gregorio;* Lat., *Gregorius;* Sp. *Gregorio;* Sw., *Gregorius*.

gre-nade (*grē-nād'*), *n.* an explosive shell fired by a fuse and thrown by hand.

gren-a-dier (*gren-a-dēr'*), *n.* originally a foot soldier who threw grenades, now a soldier of the Grenadier Guards.

gren-a dine (*gren-a-dēn'*), *n.* a dress fabric of thin gauzy silk or wool; a dyestuff.

grey. Another form of *gray*.

grey-beard (*'bērd*), *n.* an old man.

grey-hound (*'hound*), *n.* a slender, swift hound.

grid-dle (*grid'l*), *n.* a broad shallow pan, used for cooking cakes.

grid-dle-cake (*-kāk*), *n.* a thin butter cake.

grid-i-ron (*grid'i-urn*), *n.* a grated iron utensil for broiling meat or fish.

grief (*grēf*), *n.* mental pain on account of present or past trouble; physical pain.

Syn. GRIEF, affliction, distress, melancholy, mourning, regret, sadness, sorrow, tribulation, trouble, woe. *Grief* is acute mental pain resulting from loss, misfortune, or deep disappointment; *sorrow* and *grief* are for definite cause; *sadness* and *melancholy* may arise from a vague sense of want or loss, from a low state of health; *affliction* expresses a deep heart-sorrow. [See *affliction*.]

griev-ance (*grēv'ans*), *n.* a sense of wrong or oppression; an injustice; cause of annoyance.

grieve (*grēv*), *v. t.* to cause to experience grief: *v. i.* to be in sorrow; lament.

griev-ous (*'us*), *adj.* causing grief or sorrow; hard to be borne.

grif-fin (*grif'in*), *n.* a fabulous animal with the body and legs of a lion, the wings and beak of an eagle.

Griffith. The English form of the Welsh name *Gryffydd*. Danish, *Griffith;* Dutch, *Rufinus;* Lat., *Griffithius;* Sw., *Rufin*.

grill (*gril*), *v. t.* to broil; torment, as if by grilling: *v. i.* to be broiled: *n.* a gridiron; grilled meat.

grille (*gril*), *n.* an open grating or screen of wrought metal.

grim (*grim*), *adj.* [*comp.* grimmer, *superl.* grimmest], of a forbidding aspect; stern and surly; unyielding.

★gri-mace (*gri-mās'*, not *grim'ās*), *n.* a distortion of the countenance; smirk: *v. i.* to make grimaces.

grime (*grim*), *n.* foul matter; dirt deeply ingrained: *v. t.* to make dirty or grimy.

grim-y (*'i*), *adj.* full of grime.

grin (*grin*), *n.* the act of closing the teeth and showing them; a broad smile: *v. i.* [*p. t.* and *p. p.* grinned, *p. pr.* grinning], to show the teeth in laughter, scorn, or pain: *v. t.* to express by grinning.

grind (*grind*), *v. t.* [*p. t.* and *p. p.* ground, *p. pr.* grinding], to pulverize or reduce to powder by friction; sharpen or smooth; study hard: *v. i.* to pe form the act of grinding; be rubbed together: *n.* the act of grinding; laborious and tedious work.

grind-stone (*'stōn*), *n.* a flat, circular stone for sharpening tools, etc.

grip (*grip*), *n.* a grasp with the hand; that by which anything is held firmly; a particular mode of grasping the hand: *v. t.* to grasp, or seize: *v. i.* to take fast hold.

gripe (*grīp*), *n.* a clasping with the hand or arms; a squeeze: *pl.* colic: *v. t.* grasp; hold tightly; seize; clutch; oppress; pinch: *v. i.* to take firm hold. [PRESS, LAY.]

grippe (*grip*, or *grēp*), *n.* influenza. [Also *grip*.]

grip-ping (*grip'ing*), *adj.* avaricious.

gris-ly (*griz'li*), *adj.* terrible; savage looking.

Grisons (*grē-zōn'*). The largest canton of Switzerland. So called from the German *Graubünden*, "the gray league," so called from the dress worn by the Unionists in 1424.

grist (*grist*), *n.* grain for grinding; ground corn; provision or supply.

gris-tle (*gris'l*), *n.* cartilage.

gris-tly (*'li*), *adj.* cartilaginous.

grit (*grit*), *n.* rough, hard particles, as sand, etc.; courage: *pl.* oats hulled and coarsely ground.

grit-ty (*'i*), *adj.* composed of, containing, or resembling, grit; courageous.

griz-zly (*griz'li*), *adj.* somewhat gray: *n.* a large, fierce bear of North America.

groan (*grōn*), *n.* low, deep sound uttered in pain, sorrow, disapprobation or ridicule: *v. i.* to utter a groan; lament; be burdened: *v. t.* to express disapproval of by groans.

Syn. GROAN, moan. *Groan* is a deep sound produced by hard breathing; *moan* is a plaintive, long-drawn sound produced by the organs of utterance. The *groan* proceeds involuntarily as an expression of severe pain, either of body or mind; the *moan* proceeds often from the desire of exciting compassion.

groat (*grōt*), *n.* formerly a silver coin current in England, value 4d.; a trifling sum.

gro-cer (*grō'sēr*, *n.* one who sells groceries.

gro-cer-y (*-i*), *n.* [*pl.* groceries (*-iz*)], tea, coffee, sugar, spices, etc. (usually *pl.*); a grocer's shop; a grogshop.

grog (*grog*), *n.* a mixture of spirits and water; spirituous liquor.

grog-gy (*'i*), *adj.* tipsy; staggering as if dazed.

groin (*groin*), *n.* the depressed part of the human body between the thigh and the belly; the curve made by the intersection of two arches: *v. t.* to build or form into groins.

groom (*grōom*), *n.* one who has charge of horses; a bridegroom: *v. t.* to feed and take care of, as a groom does a horse; curry and brush.

grooms-man (*grōomz'man*), *n.* one who attends a bridegroom; best man.

groove (*grōov*), *n.* channel or furrow, especially as cut by a tool; settled habit or routine: *v. t.* to form or cut a groove in.

grope (*grōp*), *v. i.* to feel one's way with the hands; seek blindly: *v. i.* to search out, as in the dark.

gros-beak (*grōs'bēk*), *n.* the name of various warblers with a large, stout beak, allied to the finches.

gros-grain (*grō'grān*), *n.* a stout double-corded silk.

gross (*grōs*), *adj.* bulky; thick; coarse; indelicate; corpulent; dense; whole: *n.* 12 dozen; entire amount.

Syn. GROSS, coarse. These terms are synonymous in the moral application. *Grossness* of habit is opposed to delicacy; *coarseness* to softness and refinement. A person becomes *gross* by an unrestrained indulgence of his sensual appetites; he is *coarse* from the want of polish.

Ant. EXQUISITE, fine.

Grosvenor (*grōv'nēr*) **gallery.** A gallery for the exhibition of paintings of the modern æsthetic school, established by Lord Grosvenor in New Bond street, London, in 1876. Pictures were received only by invitation. The exhibitions have been for some time discontinued.

Grosvenor square. A fashionable square in London, east of Hyde Park. It was laid out before 1716 and has been the residence of many famous men. There is great variety of styles in its architecture, and it is noted for the old ironwork and flambeau extinguishers before many of the doors.

gro-tesque (*grō-tesk'*), *adj.* fantastically or oddly formed; extravagant; whimsical; ridiculous.

grot-to (*grot'ō*), *n.* a natural or artificial cavern in the earth.

ground (*ground*), *n.* the earth or soil; surface of a floor or pavement; land; territory; cause or reason; origin: *pl.* dregs or sediment: *v. t.* to place or set on, or in, the ground; settle in first principles; base; run aground: *v. i.* to take the ground; run aground: *adj.* fundamental: *p. t.* and *p. p.* of grind. [FOUNDATION.]

ground-hog (*'hog*), *n.* the woodchuck; the aardvark.

group (*grōōp*), *n.* a small crowd or assemblage; a cluster; an assemblage of figures or objects: *v. t.* to form into a group.

grouse (*grous*), *n.* red and black heath game; partridge; pheasant; prairie hen.

grout (*grout*), *n.* mortar or cement mixed with gravel; a fine plaster for ceilings: *v. t.* to surround or fill in with grout.

grove (*grōv*), *n.* a small wood.

grov-el (*grov'l*), *v. i.* to lie prone; be mean or debased.

grow (*grō*), *v. t.* [*p. t.* grew, *p. p.* grown, *p. pr.* growing], to cultivate: *v. i.* to increase in stature or size by development; be produced by vegetation; thrive; become. [INCREASE.]

growl (*groul*), *n.* a deep angry snarl or murmur: *v. i.* to snarl or murmur like a dog; grumble.

growl-er (*'ēr*), *n.* one who, and that which, growls.

growth (*grōth*), *n.* the progressive increase of animal or vegetable bodies; advancement; increase; progress; result; effect.

grub (*grub*), *v. t.* [*p. t.* and *p. p.* grubbed, *p. pr.* grubbing], to dig up: *v. i.* to drudge or toil; perform dirty work: *n.* the larva of a beetle, moth or other insect.

grudge (*gruj*), *v. t.* to regard with envy or discontent; give or take with reluctance: *n.* secret malice or ill will.

gru-el (*grōō'el*), *n.* a light, semiliquid food for invalids.

grue-some (*grōō'sum*), *adj.* horrible of aspect; inspiring gloom or horror.

gruff (*gruf*), *adj.* rough or surly in voice or manner; harsh; hoarse.

grum-ble (*grum'bl*), *v. i.* to murmur discontentedly; find fault.

grump-y (*grump'i*), *adj.* surly; cross; low-spirited.

grunt (*grunt*), *n.* the guttural noise of a hog: *v. i.* to make a noise like a hog.

gua-no (*gwā'nō*), *n.* the dung of sea birds, yielding a valuable manure.

guar-an-tee (*gar-an-tē'*), *n.* an engagement made to secure the fulfillment of an agreement: *v. t.* to undertake to secure (that another shall perform a certain stipulation); warrant; be responsible for.

guar-an-tor (*-tôr'*), *n.* one who becomes surety for the performance of another's acts.

guar-an-ty. The legal form of *guarantee.*

guard (*gärd*), *v. t.* to watch over or protect; preserve by caution: *v. i.* be cautious (with *against*): *n.* security or defense against injury or attack; any contrivance or device for security; a man or body of men employed for defense or control.

Syn. GUARD, defend, watch. *To guard,* in its largest sense, comprehends both *watching* and *defending.* In the restricted sense, *to guard* is properly to keep off an enemy; *to defend* is to drive him away when he makes the attack. *Watch,* like *guard,* consists in looking to the danger; he who *watches* may only give an alarm.

Ant. BETRAY, expose, surrender.

Syn. GUARD, guardian. The *guard* only *guards* against external evils; the *guardian* takes upon himself the office of parent, counselor, and director.

Ant. BETRAYER, enemy.

guard-i-an (*'i-an*), *n.* one who has the care of the person or property of another; a warden: *adj.* protecting; tutelary. [GUARD.]

Guatemala (*gaw-tē-mä'lä*, Spanish *gwä-tä-mä'lä*). A republic of Central America. Name is European rendering of the Mexican *guahtemali,* "a decayed log of wood"; so called by the Mexican Indians who accompanied Alvarado into this region because they found an old worm-eaten tree near the ancient palace of the kings or *Kachiquel,* which was thought to be the center of the country.

gua-va (*gwä'vä*), *n.* a tree of tropical America yielding a pear-shaped fruit.

gu-ber-na-to-ri-al (*gū-bēr-nā-tō'ri-al*), *adj.* pertaining to a governor or to his office.

gudg-eon (*guj'un*), *n.* a small edible fresh-water fish; a person who is easily imposed upon.

guer-il-la (*gēr-il'ä*), *n.* one of an irregular force engaged in harassing an enemy in small bands: *adj.* belonging to, or consisting of, guerillas; pertaining to irregular warfare.

guern-sey (*gērn'zi*), *n.* a close-fitting knitted woolen shirt.

Guern-sey, *n.* a breed of dairy cattle from the island of Guernsey in the English channel.

guess (*ges*), *n.* a conjecture; the act of guessing: *v. t.* to hit upon at random; believe or think: *v. i.* to conjecture.

Syn. GUESS, conjecture, divine. We *guess* that a thing actually is; we *conjecture* that which may be; *guess* that it is a certain hour; we *conjecture* as to the meaning of a person's actions. *To guess* and *to conjecture* are natural acts of the mind; *to divine* in its proper sense is a supernatural act.

Ant. ASCERTAIN, discover, prove.

guest (*gest*), *n.* one who is entertained at the house or table of another.

Syn. GUEST, visitor, or visitant. *Guest* signifies one who is entertained; *visitor* or *visitant* is the one who pays the *visit; the visitor* simply comes to see the person, and enjoy social intercourse; but the *guest* patakes also of hospitality.

guf-faw (*guf-faw'*), *n.* a rude, boisterous laugh.

Guglielmo (*gōōl-yel'mō*). See *William.*

guid-ance (*gīd'ans*), *n.* direction; leading.

guide (*gīd*), *n.* one who leads or directs; conductor; that by which one directs his course: *v. t.* to lead or direct; influence; regulate. [LEAD.]

guide-book (*'book*), *n.* a handbook for the direction of travelers.

Guido (*gwē'dō*). See *Guy.*

guild (*gild*), *n.* a fraternity; corporation; association. [Also *gild.*]

guil-der (*gil'dēr*), *n.* the Dutch florin, value about 40.2 cents.

Guildhall (*gild'hawl*). The council hall of the city of London, founded in 1411, and restored after the fire of 1666. The great hall measures 153 by 48 feet, and is 55 feet high; it has a handsome open-framed roof, modern colored glass windows, and the two legendary colossal wooden figures of Gog and Magog. Along the walls are placed statues of famous men. The crypt, with its cloistered columns, is of the original construction.

guile (*gīl*), *n.* deceit; cunning; duplicity. [DECEIT.]

Guillaume (*gē-yōm'*). See *William.*

guil-lo-tine (*gil'o-tēn*), *n.* an apparatus for beheading a criminal by means of a heavy knife sliding in two upright grooves: *v. t.* (*gil-ō-tēn'*) to behead with the guillotine.

guilt (*gilt*), *n.* the state of one who is liable to a penalty; sin; criminality.

guilt-less (*'les*), *adj.* free from guilt; innocent.

guilt-y (*'i*), *adj.* [*comp.* guiltier, *superl.* guiltiest], justly chargeable with a crime; wicked.

guin-ea (*gin'ē*), *n.* a gold coin, formerly current in England, value 21s. or about $5.00. The English *guinea* was first coined in 1673. It derived its name from the fact that the gold of which it was first composed came from *Guinea.*

Guinea. A native West African term, meaning "abounding in gold."

guin-ea fowl (*foul*), a grayish-blue gallinaceous bird with white spots.

guin-ea pig (*pig*), a small domesticated South American rodent.

guise (*gīz*), *n.* external appearance; dress; mien.

Syn. GUISE, habit. The *guise* is that which is unusual, and often only occasional; the *habit* is that which is usual among particular classes; a person sometimes assumes the *guise* of a peasant, in order the better to conceal himself; he who devotes himself to the clerical profession puts on the *habit* of a clergyman.

gui-tar (*gi-tär'*), *n.* a six-stringed instrument, on the principle of the violin, played with the fingers.

gulch (*gulch*), *n.* a rocky, or rough, narrow valley.

gulf (*gulf*), *n.* an arm of the sea extending into the land, intermediate in size between a bay and sea; an abyss; something insatiable.

Gulf of Carpentaria. In north coast of Australia; preserves the memory of a Dutch captain named Carpenter, who discovered it in 1616.

Gulf of St. Lawrence. An arm of the Atlantic; first explored, and the navigation of the long river of same name flowing into it commenced, on the Feast of St. Lawrence, 1500.

gulf stream (*strēm*), a vast and important warm ocean current flowing out from the Gulf of Mexico.

gull (*gul*), *n.* a web-footed sea fowl with long wings; one easily cheated: *v. t.* to cheat; deceive.

gul-let (*'et*), *n.* the throat; œsophagus.

gul-li-ble (*gul'i-bl*), *adj.* capable of being easily deceived.

gul-ly (*gul'i*), *n.* [*pl.* gullies (*'iz*)], a channel or hollow worn by water; narrow ravine.

gulp (*gulp*), *v. t.* to swallow down eagerly: *n.* the act of gulping.

gum (*gum*), *n.* the soft fleshy part of the jaws by which the teeth are surrounded; a semitransparent viscid substance that exudes from certain trees and hardens: *v. t.* [*p. t.* and *p. p.* gummed, *p. pr.* gumming], to smear or unite with gum.

gum-my (*'i*), *adj.* like gum.

gump-tion (*gump'shun*), *n.* quickness of perception; common sense.

gump-tious (*'shus*), *adj.* shrewd; smart.

gun (*gun*), *n.* an instrument for discharging shot.

gun-boat (*gun'bōt*), *n.* a warship of light draft, next in size to a cruiser.

gun cot-ton (*kot-n*), a highly explosive substance formed by the action of nitric and sulphuric acid upon cotton.

gun fire (*fir*), the hour at which the morning and evening gun is fired.

gun met-al (*met-al*), an alloy of copper and tin.

gun-ner (*'ēr*), *n.* one who works a gun.

gun-ny (*'i*), *n.* [*pl.* gunnies (*'iz*)], a coarse heavy sackcloth of jute or hemp.

gun-pow-der (*'pou-dēr*), *n.* an explosive substance composed of sulphur, niter and charcoal.

Gun-ter's chain (*gun'tērz chān*), surveyor's chain used in measuring land, 66 ft. long, and divided into 100 links of 7.92 inches each.

Gun-ter's scale (*skāl*), a large plane scale, with various lines of numbers engraved upon it.

gun-wale (*gun'wāl*), *n.* the upper edge of the side of a ship next to the bulwarks.

gur-gi-ta-tion (*gûr-ji-tā'shun*), *n.* a state of boiling, or whirling round.

gur-gle (*gûr'gl*), *v. i.* to flow or run with a purling, bubbling sound: *n.* a purling, bubbling noise.

gush (*gush*), *n.* a sudden and violent flow of a liquid from an inclosed space; outburst; an extravagant display of sentiment: *v. i.* to issue with violence and rapidity; be extravagantly sentimental.

gush-er (*'ēr*), *n.* one who, or that which, gushes.

gus-set (*gus'et*), *n.* a small triangular piece of cloth inserted in a garment to strengthen or enlarge a part.

gust (*gust*), *n.* a sudden squall; a sudden and violent outburst of passion. [BREEZE.]

gus-ta-to-ry (*gus'tā-tō-ri*), *adj.* pertaining to the taste.

Gustavus (*gus-tā'vus*). From the Swedish name *Gustaf,* which some translate "Goth's staff"; others derive it from the Su-Goth *God,* "God" or "good," and *staf,* "staff." Gustaf is more probably corrupted from *Augustus.* Dutch, *Gustavus;* Fr., *Gustave;* Ger., *Gustav;* Lat., *Gustavus;* Sw., *Gustaf.*

gus-to (*'tō*), *n.* zest; relish.

gus-ty (*'i*), *adj.* characterized by gusts.

gut (*gut*), *n.* an intestine; catgut: *v. t.* [*p. t.* and *p. p.* gutted, *p. pr.* gutting], to extract the entrails of; to plunder, or empty entirely.

gut-ta-per-cha (*gut-ä-pēr'chä*), *n.* a reddish-brown horn-like substance; the inspissated juice of the gutta-percha tree.

gut-ter (*'ēr*), *n.* a channel for carrying away water: *v. t.* to cut into channels; furnish with gutters.

gut-tur-al (*'ur-al*), *adj.* pertaining to, or produced in, the throat: *n.* a letter produced in the throat.

guy (*gī*), *n.* a rope, chain, etc., to swing and keep steady a heavy body; a person oddly or dowdily dressed: *v. t.* to steady or guide with a guy; ridicule; delude.

Guy. Probably derived from French *gui,* "mistletoe," or from *Guillaume* (William), whence the diminutives, *Guyot* and *Gusion.* Danih, *Guido;* Dutch, *Guido;* Fr., *Guy;* Ger., *Veit;* It., *Guido;* Lat., *Guido;* Sw., *Guido.*

guz-zle (*guz'l*), *v. i.* to drink greedily and immoderately.

Gwendolen (*gwen'dō-len*). A Welsh female name. Sometimes translated "the lady of the bow"; another translation is "white-browed."

gym-na-si-um (*jim-nā'zi-um*), *n.* [*pl.* gymnasia (*ä*)], a building where gymnastic exercises are practiced.

gym-nast (*'nast*), *n.* one who practices, or is expert in, gymnastics.

gym-nas-tic (*-nas'tik*), *adj.* pertaining to, or of the nature of, gymnastics.

gym-nas-tics (*'tiks*), *n. pl.* athletic exercises; the art of developing the physical powers by athletic exercises.

gyn-e-col-o-gy (*jin-ē-kol'ō-ji*), *n.* that branch of medical science which treats of the functions and diseases of women.

gyp-sum (*jip'sum*), *n.* sulphate of lime; plaster of paris.

Gypsy. Same as *Gipsy.*

gy-ral (*ji'ral*), *adj.* rotatory; whirling.

gy-rate (*'rāt*), *v. i.* to revolve round a central point; rotate; wheel.

gy-ra-to-ry (*'rā-tō-ri*), *adj.* revolving in a circle.

gy-ro-scope (*ji'rō-skōp*), *n.* an instrument for demonstrating the laws of dynamics governing rotating bodies.

gy-ro-scope rail-way (*-rāl'wā*), a recent invention of a single-rail railway, each car being kept erect by the rotary force of two gyroscopes in rapid opposite motion. The car used is called a *gyro-car.*

gy-ro-stat (*-stat*), *n.* an instrument for demonstrating the dynamics of rotating rigid bodies.

H

hab-er-dash-er (*hab'ēr-dash-ēr*), *n.* a dealer in small wares, as ribbons, laces, tapes, needles, etc.
ha-bil-i-tate (*hȧ-bil'i-tāt*), *v. i.* to become qualified.
hab-it (*hab'it*), *n.* ordinary course of conduct; established custom; dress; a woman's riding dress; *v. t.* to dress; furnish with a habit. [GUISE, CUSTOM.]
hab-it-a-ble (*hab'it-ȧ-bl*), *adj.* fit to be dwelt in.
hab-i-tat (*'i-tat*), *n.* the natural locality of animals, plants, etc., in their wild state; geographical range.
hab-i-ta-tion (*-i-tā'shun*), *n.* residence or place of abode; natural locality.
Syn. HABITATION, home, house, residence. *Habitation* implies merely a dwelling place; *house* refers to a building constructed purposely for dwelling therein. *Home* is usually restricted to mean an endeared dwelling as the scene of domestic ties and family life.
ha-bit-u-al (*hȧ-bit'ū-al*, *adj.* formed or acquired by use; customary; inveterate.
ha-bit-u-ate (*'ū-āt*), *v. t.* to make familiar by use or custom; familiarize. [ADDICTED.]
★**ha-bit-u-é** (*ȧ-bē-too-ā'*, not *hab-it'yū-ē'*), *n.* one who habitually frequents a place of amusement, etc.
ha-ci-en-da (*ä-thē-än'dȧ*, or *hä-si-en'dȧ*), *n.* in Spanish America, a large plantation on which the owner is resident.
hack (*hak*), *v. t.* to cut irregularly and into small pieces; notch; kick (the shins of another), let out for hire: *n.* a notch; hollow irregular cut; a horse let out for hire; a kick on the shins; a carriage let out for hire; a literary drudge.
Hackensack, N. J. A town, so called from the river of same name, which is a corruption of its Indian name *haucquansauk*, "hook mouth," from its shape near the mouth, its many windings before it empties into Newark bay.
hack-ing (*'ing*), *adj.* notching; irritating and wearing: said of a cough.
hac-kle (*hak'l*), *v. t.* to dress or comb, as flax or hemp; tear into pieces: *n.* an implement with sharp spikes for cleansing flax or hemp; unspun fiber; a long narrow feather in the neck of a cock; feather fly for angling.
hack-ney (*'ni*), *v. t.* [*p. t.* and *p. p.* hackneyed, *p. pr.* hackneying], to wear out by constant use: *adj.* let out for hire; common or trite: *n.* a hackney coach; a horse kept for hire.
hack-neyed (*'nid*), *p. adj.* worn out; commonplace.
had-dock (*had'ok*), *n.* a sea fish of the cod family.
Ha-des (*hā'dēz*), *n* the abode and state of the dead.
Hadrian's (*hā'dri-anz*) **villa.** Now simply an assemblage of ruins, perhaps the most impressive in Italy, about fifteen miles from Rome, near Tivoli. It included the Greek and Latin theaters, so called, an odeum, thermæ, a stadium, a palace, several temples, spacious structures for guards and attendants, and many subsidiary buildings and devices. Of most of these there are extensive remains; and here were found many of the fine statues now in Roman museums.
Hadrian's wall. One of the most noted Roman antiquities of Great Britain, constructed by Hadrian between the Solway firth and the mouth of the Tyne, for purposes of defense. The work has been ascribed to Severus and others, but the opinion now prevails that the whole system of defense bears the impress of a single mind, and that the wall and its parallel earthworks, its camps, roads, and stations, were designed and constructed by Hadrian alone.
hæm-a-lo-pi-a (*hem-ȧ-lō'pi-ȧ*), *n.* disease of the eye in which objects appear red.
hæ-mat-ic (*hē-mat'ik*), *adj.* pertaining to the blood: *n. pl.* that branch of physiology that treats of the blood.
haft (*haft*), *n* a handle of a tool or knife.
hag (*hag*), *n.* a witch; an ugly old woman.
Hagar (*hā'gär*). From the Hebrew *Haghar*, which some translate "flight"; others render the name "stranger." from *gur*, "to tarry," "to be a sojourner." Arab *Hajar*, or *Hagar;* Fr., *Agar;* Lat., *Hagar.*
hag-gard (*'ärd*), *adj* worn and anxious in appearance; lean and hollow-eyed.
Haidee (*hī-dē'*) A female name which Stephanus renders "sempiternus"; *i. e.*, "perpetual," "eternal."
hail (*hāl*), *n.* frozen raindrops; a call or salutation: *v. i.* to pour down hail: *v. t* to pour down or out like hail; call to or salute. [ADDRESS.]
hair (*hâr*), *n.* one of the small horny fibrous tubes with a bulbous root growing out of the skin of a mammal; the mass of such horny fibrous tubes.
hair-split-ting (*'split-ing*), *adj.* making oversubtle or very minute distinctions.
hair-spring (*'spring*), *n.* a very fine spring to regulate the balance wheel of a watch.
hair-trig-ger (*hâr'trig-ēr*), *n.* a secondary trigger of a gun.
hair-y (*'i*), *adj.* covered with, abounding in, or resembling, hair.
hal-cy-on (*hal'si-un*), *adj* peaceful; happy; calm.
hale (*hāl*). *adj.* sound bodily; healthy; hearty: *v. t.* to drag or draw by violence. [DRAW.]
half (*häf*), *n.* [*pl.* halves (*hävz*)], one of two equal parts; a school term: *adv.* equally; partly: *adj* consisting of a half; approximating.
half-blood (*'blud*), *n* one whose parents are of different races; relationship between persons who have one parent in common.
half-breed (*häf'-brēd*), *n.* a person of mixed blood; as, an Indian *half-breed.*
hal-i-but (*hal'i-but*), *n* a large edible flatfish.
Halifax, Nova Scotia. Named for the Earl of Halifax.
hall (*hawl*), *n.* a large room; the first large room of a house; a college room.
hal-le-lu-jah (*hal-ē-lōō'yȧ*), *n.* [Hebrew, Praise ye Jehovah] an ascription of praise to God: *adj* singing, or containing, hallelujah. [Also *alleluiah.*]
hall-mark (*hawl'-märk*), *n.* the official mark attesting the quality of gold and silver articles; a mark or proof of genuineness.
hal-loo (*hal-lōō'*), *interj.* an exclamation to call attention or to cheer on: *v. t* to shout out; incite or cheer on: *v. i.* to cry out loudly. [Also *halloa.*]
hal-low (*hal'ō*), *v. t.* to consecrate; devote to sacred purposes; revere. [DEDICATE, HOLY.]
Hal-low-een (*-ēn'*), *n.* the eve of All Saints' or Allhallows day, Oct. 31.
hal-lu-ci-na-tion (*hal-lōō-si-nā'shun*), *n.* belief in something imaginary; delusion; error.
ha-lo (*hā'lō*), *n.* a ring or circle of light round the sun or moon; a ring of light or nimbus.
halt (*hawlt*), *n.* a stop in marching: *adj.* crippled or lame: *v. i.* to limp; be dubious; to stop in marching.
halt-er (*'ēr*), *n.* one who halts.
hal-ter (*hawl'tēr*), *n.* a rope for hanging; a rope for leading or holding a horse.
halve (*häv*), *v. t.* to divide into two equal parts; fasten together, as timbers.
hal-yard (*hal'yērd*), *n.* a rope or tackle for hoisting a sail, flag, etc. [Also *halliard.*]
ham (*ham*), *n.* the hinder parts of the thigh; a thigh of a hog, salted and smoked.
Ham-a-me-lis (*-ȧ-mē'lis*), *n.* an order of shrubs, to which the witch-hazel belongs.
Ham-burg (*'bērg*), *n.* a rich kind of black grape; a breed of black domestic fowl.
hame (*hām*), *n.* one of the curved bars on the collar to which the traces of a draft horse are fastened.
ham-let (*'let*), *n.* a small village.
Hamlet. From the Old German *amal-laut*, "distinguished for spotlessness." According to some the name in Hamlet's country was pronounced *amlet*, and signified "madman," but no etymology has been suggested for such rendering.
ham-mer (*'ēr*), *n.* an instrument with a handle and iron head for driving nails, beating metals, etc.: *v. t.* to beat with, or as with, a hammer: *v. i.* to work hard.
ham-mock (*'ok*), *n.* a swinging bed usually of network or canvas.
Hampden. County and town in Massachusetts and a town in Penobscot county, Maine, named for the English patriot, John Hampden.
ham-per (*'pēr*), *n.* a large wicker-work basket for carrying food, etc.: *v. t.* to embarrass; impede.
Hampton (*hamp'tun*) **court.** A royal palace on the Thames twelve miles from Charing Cross, built by Cardinal Wolsey. Hampton court is most intimately associated with James I. and William III., and was a place of imprisonment of Charles I.
Hampton roads. A channel connecting the estuary of James river with Chesapeake bay, situated south of Fort Monroe, Virginia. Here, March 8, 1862, the Confederate ironclad *Virginia* (*Merrimac*) destroyed the Federal frigates *Cumberland* and *Congress;* and the following day there was a contest between the *Virginia* and the ironclad *Monitor*, the former retiring. This was the first engagement between ironclads in our history.
ham-string (*'string*), *v. t.* [*p. t.* and *p. p.* hamstrung, *p. pr.* hamstringing], to lame by cutting the tendons of the ham. *n. pl.* the strong sinews at the back of the knee.
hand (*hand*), *n.* the divided and terminal extremity of the arm connected with the wrist; something resembling a hand in appearance or use; a measure of 4 inches; right or left side; style of writing; an employé; cards held: nearness; agency of; index of any kind: *v. t.* to give or transmit with, or as with, the hand; assist or lead with the hand: *adj.* pertaining to, or used by, the hand.
hand-i-craft (*'i-kräft*), *n.* the work or skill of an artificer; manual skill or labor: *adj.* pertaining to manual labor.
hand-i-work (*-wērk*), *n.* work done, or produced by, the hands.
hand-ker-chief (*hang'kēr-chif*), *n.* a square of linen, cotton or silk carried in the hand, to wipe the nose or face; a cloth square for the neck
han-dle (*hand'l*), *n.* that part of a tool, vessel, etc., grasped by the hand: *v. t.* to touch or feel with the hand: manage; manipulate; treat; buy, sell, or invest in.
hand-maid (*'mād*), *n.* a female servant or attendant. [Also *handmaiden.*]
hand screw (*skrōō*), a lifting jack.
hand-some (*'sum*), *adj.* pleasing to look upon; well formed; elegantly dressed; graceful.
hand-spike (*'spīk*), *n.* a wooden lever for moving heavy weights.
hand-y (*'i*), *adj.* [*comp* handier, *superl.* handiest], dexterous; skillful; convenient; close at hand.
hang (*hang*), *v. t.* [*p. t.* and *p. p.* hung, hanged, *p. pr* hanging], to suspend· suspend by the neck; display; furnish with ornaments or drapery; catch fast: *v. i.* to be suspended; dangle; cling: *n.* method of hanging; manner of doing or using.
★**han-gar** (*han'gär*), *n.* a carriage shed; a shed for housing aeroplanes.
hang-ing (*'ing*), *p. adj.* suspended or dangling; suggesting or involving death by hanging: *n.* the act of putting to death by hanging: *pl.* drapery for a room.
hang-man (*'man*), *n.* [*pl.* hangmen (*'men*)], a public executioner.
hang-nail (*'nāl*), *n.* a small piece of skin hanging from the root of a finger nail; an agnail.
hank (*hangk*), *n.* two or more skeins of thread, silk, wool, etc., fastened together: *v. t.* to form into hanks.
han-ker (*hang'kēr*), *v. i.* to desire eagerly (with *after*).
Hannah (*han'nȧ*). From the Hebrew *Hannah*, which Simonis translates "gratuitous gift"; *i. e.*, "grace," "mercy." Danish, *Hanne* or *Hanna;* Dutch, *Hanna;* Fr. *Anna;* Lat., *Hanna;* Sw., *Hanna.*
Hannibal (*han'ni-bal*). From the Punic, meaning "grace of Baal," or, more freely, a "gracious lord." Fr., *Hannibal;* It., *Annibale;* Lat., *Hannibal.*
Hanover (*han'ō-vēr*) **island.** Off coast of Chili; named in honor of the house of Hanover.
Hanover square. A square in the West End of London, south of Oxford street and west of Regent street. It received its name in the days of the early popularity of George I. St. George's, Hanover square, is noted as a fashionable church for marriages in London. The square was built about 1731, when the place for executions was removed from Tyburn, lest the inhabitants of the "new square" should be annoyed by them. It contains a bronze statue of William Pitt by Chantrey.
Hans. See *John.*
han-som (*han'sum*), *n.* a two-wheeled cab.
hap (*hap*), *n.* something unexpected. [ACCIDENT.]
hap-haz-ard (*'haz-ērd*), *n.* chance; accident: *adv.* by chance.
hap-less (*hap'les*), *adj.* unfortunate; unlucky; unhappy.
hap-ly (*'li*), *adv.* by chance; perhaps.
hap-pen (*'n*), *v. i.* to chance; occur.
Syn. HAPPEN, chance. *Happen* respects all events, without including any collateral idea; *chance* comprehends likewise the idea of the cause and order of events; whatever comes to pass *happens*, whether regularly in the course of things, or particularly and out of the order; whatever *chances, happens* altogether without concert.
hap-pi-ly (*'i-li*), *adv.* successfully; by good fortune; felicitously.
hap-pi-ness (*'i-nes*), *n.* the state of being happy; good fortune; felicitousness.
hap-py (*'i*), *adj.* [*comp.* happier, *superl.* happiest], enjoying pleasure or good; successful; prosperous; lucky; living in concord.
Syn. HAPPY, fortunate. Both words are applied to the external circumstances of a man; but the former conveys the idea of that which is abstractly good, the latter implies rather what is agreeable to one's wishes. A man is *happy* in his marriage; he is *fortunate* in his trading concerns. *Happy* excludes the idea of chance; *fortunate* excludes the idea of personal effort
Ant. ILL-STARRED, unlucky.
Hapsburg (*haps'-burg*), or **Habsburg.** In *Canton Aargau*, the stamm-schloss of the Austrian dynasty appears in an eleventh century document as *Habechisburc*, "hawk's castle." According to the well-known legend, Radbot, an ancestor of Rudolf of Hapsburg, while hunting in the Aargau lost his favorite hawk, and found it sitting on the ridge of the Wulpelsberg. He was so delighted with the view from the spot that he chose the site for the erection of a castle, which he built about 1020 and called *Habichtsburg.*
ha-rangue (*hȧ-rang'*), *n.* a public address or oration, especially extempore: *v. i.* to deliver a harangue: *v. t.* to address by a harangue.
★**har-ass** (*har'as*), *v. t.* to annoy or vex; fatigue or weary; to tire out and annoy an enemy by incessant petty attacks. [DISTRESS.]
★**har-bin-ger** (*här'bin-jēr*), *n.* a precursor; forerunner: *v. t.* announce; foretell; usher in.
har-bor (*'bēr*), *n.* a port or haven for ships; any place of refuge or safety: *v. t.* to shelter or protect; cherish.
Syn. HARBOR, haven, port. The idea of a resting place for vessels is common to these terms. *Harbor* carries with it the idea of affording a resting or anchoring place; *haven* conveys the idea of security; *port* conveys the idea of an inclosure. A *haven* is a natural harbor, a *port* is an artificial harbor. [See *foster, cherish.*]
Ant. CAST OUT, expel, expose.
hard (*härd*), *adj.* compact and solid; firm; laborious; fatiguing; cruel; oppressive; unfeeling; exacting *adv.* forcibly; laboriously; diligently; near; with vexation, trouble, or sorrow.
Syn. HARD, firm, solid. That is *hard* which will not yield to a closer compression; that is *firm* which will not yield so as to produce a separation. Ice is hard as far as it respeets itself, when it resists every pressure; it is *firm*, with regard to the water which it covers, when it is so closely bound as to resist every weight without breaking. *Hard* and *solid* respect the internal constitution of bodies, and the adherence of the

component parts; but *hard* denotes a much closer degree of adherence than solid; the *hard* is opposed to the soft; the *solid* to the fluid.
Ant. SOFT, shaking, wavering.

hard-en (*härd'n*), *v. t.* to make hard or harder; confirm in impudence or wickedness: *v. i.* to become hard or harder. [ABANDONED.]

hard-heart-ed (*-härt'ed*), *adj.* cruel; unmerciful; merciless.

hard-i-hood (*'i-hood*), *n.* effrontery; boldness; physical endurance.

hard-i-ly (*'i-li*), *adv.* with hardihood.

hard la-bor (*lā'bẽr*), work imposed as an additional punishment to a term of imprisonment.

hard-ly (*'li*), *adv.* with difficulty; scarcely.
Syn. HARDLY, scarcely. Where the idea of practicability predominates, *hardly* seems most proper; and where the idea of frequency predominates, *scarcely* seems preferable. One can *hardly* judge of a person's features by a single and partial glance; we *scarcely* ever see men lay aside their vices from a thorough conviction of their enormity.
Ant. EASILY, abundantly.

hard-pan (*'pan*), *n.* in mining, a stratum of gravel or sand; a solid foundation.

hard-ship (*'ship*), *n.* oppression; severe labor or want; injustice.

hard-tack (*'tak*), *n.* large hard cracker or biscuit.

hard-ware (*'wâr*), *n.* manufactured articles of metal.

hare (*hâr*), *n.* a rodent, with long ears and a short tail, larger than a rabbit.

hare-brained (*'brānd*), *adj.* volatile; wild.

hare-lip (*'lip*), *n.* a malformation of the upper lip, which is divided in the middle.

ha-rem (*hā'* or *hä-rem*), *n.* the apartments of the women and children in a Mohammedan house; the wives and concubines of a Mohammedan. [Also *hareem, haram.*]

hare's-foot (*hârz'-foot*), *n.* a species of fern; a kind of clover.

hare's-tail (*-tāl*), *n.* a species of cotton grass allied to the bulrushes.

har-i-cot (*har'ē-kō*), *n.* a kind of stew of meat and vegetables; the kidney bean.

hark (*härk*), *v. i.* to listen. [Also *harken.*]

Harlem or **Haarlem.** In Holland, called *Haralem* in a ninth century document, is a name of doubtful meaning. In Old Saxon we have *lemo*, "clay" or "mud," and *hara*, "an estuary," and the dialect-word *har* or *haar* denotes a rising ground or small eminence. Harlem, now a suburb of New York, stands on the Harlem river, a tidal channel. With Brooklyn and Hoboken it is one of the few names surviving from the time of the Dutch occupancy.

har-le-quin (*här'lē-kin* or *kwin*), *n.* the performer in a pantomime who wears parti-colored garments: *adj.* fantastic or full of trickery; parti-colored.

har-lot (*'lot*), *n.* a prostitute.

har-lot-ry (*-ri*), *n.* the trade or practice of prostitution.

harm (*härm*), *n.* injury; hurt; damage: *v. t.* to inflict hurt, damage, or injury upon. [ABUSE.]

har-mon-ic (*här-mon'ik*), *adj.* pertaining to, or producing, harmony; musical. [Also *harmonical.*]
n. pl. the science of musical sounds.

har-mon-i-ca (*-mon'i-kä*), *n.* a mouth organ; an oblong musical instrument consisting of glass slips which are struck by a mallet. [Also *harmonicon.*]

har-mo-ni-ous (*-mō'ni-us*), *adj.* concordant; musical; symmetrical.

har-mo-nize (*'mō-nīz*), *v. t.* to render harmonious; cause to agree; reconcile: *v. i.* to agree; be in peace and friendship; correspond.

har-mo-ny (*'mō-ni*), *n. pl.* harmonies (*-niz*); the quality of being pleasing to the ear; unison; accord in feeling, sentiment, etc.; a literary work showing the agreement between histories or passages; the science of music. [CONCORD.]

har-ness (*'nes*), *n.* the working gear of a horse; accouterment: *v. t.* to put harness upon.

Harold (*har'uld*). The same with the Middle High German names *Ariold*, *Harhold*, etc., which Wachter translates "powerful in battle," "a champion." Danish, *Harald;* Dutch, *Herold;* Fr., *Harold;* It., *Araldo;* Lat., *Haroldus.*

harp (*härp*), *n.* a musical stringed instrument of triangular shape, played with the fingers: *v. i.* to play on the harp; dwell tediously or persistently on a subject (with *on* or *upon*).

Harper's Ferry, Va. Robert Harper of Oxford, England, an architect, en route to Winchester, saw this pass, bought land here and formed a settlement in 1734. Later he established a ferry at this point, known as "Harper's ferry."

har-poon (*här-pōōn'*), *n.* a long barb-headed spear having a line attached to the staff: *v. t.* to strike with a harpoon.

harp-si-chord (*härp'si-kôrd*), *n.* a stringed instrument with a keyboard, the precursor of the pianoforte.

har-py (*här'pi*), *n.* [*pl.* harpies (*'iz*)], in classical mythology, one of three winged monsters, the daughters of Neptune and Terra, with a woman's face and the body and sharp claws of a vulture; a large crested American eagle.

har-ri-er (*har'i-ẽr*), *n.* a variety of dog used for hunting hares; a species of hawk.

Harriet (*har'ri-et*). From the German *Henriette*, "head of the house." Danish, *Henriette;* Dutch, *Henrietta;* Fr., *Henriette;* It., *Enrichetta;* Sp., *Enriqueta;* Sw., *Henrietta.*

Harrisburg, Pa. A city; named from its first settler, John Harris of Yorkshire, England. Founded in 1785, name subsequently changed to *Louisbourg;* in 1791, changed back to *Harrisburg.*

har-row (*har'ō*), *n.* an agricultural instrument for breaking up clods upon sown land: *v. t.* to use a harrow; lacerate or torment.

har-ry (*'i*), *v. t.* [*p. t.* and *p. p.* harried, *p. pr.* harrying], to plunder, lay waste; annoy or vex: *v. i.* to make raids.

harsh (*härsh*), *adj.* discordant; jarring; rough to the ear, taste, or touch; austere.

hart (*härt*), *n.* the male of the red deer.

Hartford. Name transferred from Hertford, England, to many places in the United States, the capital of Connecticut being one of these.

harts-horn (*härtz'hôrn*), *n.* a volatile preparation of ammonia.

har-um-scar-um (*hâr-um-skâr'um*), *adj.* giddy; wild; untidy.

har-vest (*här'vest*), *n.* the season of reaping and gathering: *v. t.* to gather in, as corn; reap.

har-vest-home (*-hōm*), *n.* a harvest festival.

Harvey. A masculine name from Old German *her-wig*, "noble," "noble soldier or warrior."

Harz (*härts*) or **Hartz mountains.** In German *Harzgebirge*, were called in the eighth century *Hart* (Old Saxon *hard*, Old High German *hart*, "wood" or "forest"). The present spelling, *Harz*, is supposed to be due to a folk etymology which has made the name into *Harzwald*, the "forest of resin" (*harz*). The *Hardt*, a wooded range of hills near Carlsruhe, is the "wood."

hash (*hash*), *n.* a dish of meat cut and cooked with vegetables; a mixture: *v. t.* to chop small and mix.

hasp (*hâsp*), *n.* a clasp folded over a staple and secured with a padlock.

has-sock (*has'ok*), *n.* a padded mat or cushion for kneeling upon.

haste (*hāst*), *n.* celerity; speed; urgency; precipitancy: *v. t.* to hasten.

has-ten (*hās'n*), *v. t.* to cause to make haste; hurry: *v. i.* to move with speed; be quick.
Syn. HASTEN, accelerate, speed, expedite, dispatch. *To hasten* expresses little more than the general idea of quickness in moving toward a point; *accelerate* expresses, moreover, the idea of bringing something to a point. The word *speed* includes not only quick but forward movement. He who goes with *speed* goes effectually forward. This idea is excluded from the term *haste*, which may often be a planless, unsuitable quickness. Hence the proverb, "The more *haste*, the less *speed.*" *Expedite* and *dispatch* are terms of higher import, in application to the most serious concerns in life; but to *expedite* expresses a process, a bringing forward toward an end; *dispatch* implies a putting an end to, a making a clearance. We do everything in our power to *expedite* a business; we *dispatch* a great deal of business within a given time.
Ant. CHECK, delay, impede, retard.

has-ty (*'ti*), *adj.* [*comp.* hastier, *superl.* hastiest], precipitate; quick; speedy; eager; vehement; rash. [CURSORY.]

ha-sty pud-ding (*pud'ing*), a pudding of flour or meal and water or milk.

hat (*hat*), *n.* a covering for the head, with a crown and brim.

hat-band (*'band*), *n.* a band worn round the hat.

hatch (*hach*), *v. t.* to produce (young) from eggs; plot or contrive: *n.* the number of young produced from eggs at a sitting; brood; plot; a door with an opening over it: *pl.* doors or openings in the deck of a ship.

hatch-er-y (*'ẽr-i*), *n.* a place where eggs are artificially hatched.

hatch-et (*'et*), *n.* a small ax.

hatch-way (*'wā*), *n.* a rectangular opening in the deck of a vessel for passage below.

hate (*hāt*), *v. t.* to dislike intensely; abhor; detest: *n.* hatred.
Syn. HATE, detest. *To hate* is a personal feeling directed toward the object independently of its qualities; *to detest* is a feeling independent of the person, and altogether dependent upon the nature of the thing. One *hates*, but not *detests*, the person who has done an injury to one's self; and that one *detests*, rather than *hates* the person who has done injuries to others.
Ant. AFFECT, dote, love.

hate-ful (*'fool*), *adj.* causing hate.
Syn. HATEFUL, odious. *Hateful* is properly applied to whatever violates general principles of morality; lying and swearing are *hateful* vices; *odious* is more commonly applied to such things as affect the interests of others, and bring *odium* upon the individual.
Ant. CONGENIAL, pleasant.

ha-tred (*hā'tred*), *n.* bitter aversion; continued hostility of feeling; detestation. [ABOMINATION, ANTIPATHY.]

Hatteras, Cape, N. C. Name applied to the headland by early English navigators, from a tribe of Indians inhabiting its shores, the *Hatterask* or *ash.*

haugh-ty (*haw'ti*) *adj.* proud and disdainful; supercilious; haughtiness.

haugh-ti-ness (*'ti-nes*), *n.* the character or quality of being haughty; pride; disdain.
Syn. HAUGHTINESS, disdain, arrogance. *Haughtiness* is founded on the high opinion we entertain of ourselves; *disdain*, on the low opinion we have of others; *arrogance* is the result of both, but if anything, more of the former than the latter. *Haughtiness* and *disdain* are properly sentiments of the mind, and *arrogance* a mode of acting resulting from a state of mind. [See *pride.*]
Ant. HUMILITY, meekness, modesty.

haul (*hawl*), *v. t.* to pull or draw with force; transport by drawing: *n.* a strong pull; draft of a net; quantity caught at one time; distance over which anything is drawn. [DRAW.]

haunch (*hänch*), *n.* the fleshy part of the hip and buttock.

haunt (*hänt*), *n.* a place of accustomed resort: *v. t.* to visit frequently or habitually. [FREQUENT.]

hau-teur (*hō-tẽr'*), *n.* haughty bearing or spirit.

Ha-van-a (*hä-van'ä*), *n.* a cigar made of Cuban tobacco.

Havana. Capital city of Cuba, city in Mason county, Illinois, named for former. The word is Spanish, meaning "harbor."

have (*hav*), *v. t.* [*p. t.* and *p. p.* had, *p. pr.* having], to possess; take; hold or bear; enjoy; desire; be obliged; bring forth; cheat; obtain the advantage of.
Syn. HAVE, possess. *To have* is sometimes *to have* in one's hand or within one's reach; but *to possess* is *to have* as one's own; a clerk *has* the money which he has fetched for his employer; the latter *possesses* the money which he *has* the power of turning to his use.

ha-ven (*hā'vn*), *n.* a sheltered anchorage for ships; harbor; place of shelter and safety. [HARBOR.]

hav-er-sack (*hav'ẽr-sak*), *n.* a strong coarse linen bag which soldiers carry.

hav-oc (*'ok*), *n.* wide and general destruction; devastation.

Havre (*hä'vẽr*). The "haven" at the mouth of the Seine was, before 1515, merely a fishing village with a chapel dedicated to Notre Dame de Grace, hence the official name *Le Havre de Grace.* The French *havre*, "a harbor," is descended from the Old French *havle*, originally *hable*, which is derived from the Low-Latin *habulum*, a word of Teutonic origin related to the English *haven.*

haw (*haw*), *n.* the fruit of various species of hawthorn; a hesitation in speech.

Ha-wai-ian (*hä-wi'yan*), *adj.* pertaining to Hawaii, its inhabitants, or language.

Hawarden (*här'den*). A town in Flintshire, North Wales, sixteen miles south of Liverpool. Near it is Hawarden castle, once the residence of Gladstone, the British statesman.

hawk (*hawk*), *n.* a name for various species of raptorial birds allied to the eagles and falcons; a forcible effort to clear the throat: *v. t.* to cry, or carry about, for sale: *v. i.* to make a forcible effort to cough.

hawk-er (*'ẽr*), *n.* peddler; falconer.

hawk-eyed (*'id*), *adj.* keen sighted like a hawk.

hawse-hole (*hawz'hōl*), *n.* one of the two holes under a ship's bow through which the cable passes.

haws-er (*'ẽr*), *n.* a thick rope or cable.

haw-thorn (*haw'thôrn*), *n.* a prickly shrub or tree of the rose family.

Hawthornden (*haw'thôrn-den*). A picturesque glen or valley in Edinburghshire, Scotland, eight miles south of Edinburgh. The estate of Hawthornden was the property of the poet, William Drummond.

hay (*hā*), *n.* grass, clover, etc., cut and dried for fodder.

hay-cock (*'kok*), *n.* a conical pile of hay.

hay fe-ver (*fē-vẽr*), a catarrh, accompanied by itching, sneezing, slight fever, and pains in the head.

Haymarket, The. A London market, established in 1644 on the site now partly covered by the Criterion restaurant and theater and Lower Regent street. It was abolished in 1830. The place is called *Haymarket square*, or the *Haymarket.*

hay-mow (*'mow*), *n.* a mass of hay laid up in a barn.

Hayti (*hā'ti*, French *ä-ē-tē'*). A native name, meaning "mountainous country." One of the West Indian islands. [Also *Haiti.*]

Hay-ti-an (*hā'ti-an*), *adj.* pertaining to Hayti or its inhabitants. [Also *Haitian.*]

haz-ard (*haz'ẽrd*), *n.* chance; accident; risk; danger: *v. t.* to run the risk of; chance; put in peril.
Syn. HAZARD, risk, venture. He who *hazards* an opinion or an assertion does it from presumptuous feelings and upon slight grounds; he who *risks* a battle does it often from necessity; he chooses the least of two evils; he who *ventures* on a mercantile speculation does it from a love of gain. [See *accident, danger.*]

haz-ard-ous (*-us*), *adj.* risky; perilous.

haze (*hāz*), *n.* a slight fog or mist; dimness of sight or knowledge: *v. i.* to be foggy or misty: *v. t.* play practical jokes upon.

haz-el (*'l*), *n.* a shrub or tree of the genus Corylus, bearing an edible nut.

haz-y (*'i*), *adj.* misty; obscure.

he (*hē*), *pr.* [*pl.* they (*thā*)], the masculine pronoun of the third person: *n.* a male.

head (*hed*), *n.* the uppermost part of the body of an animal that contains the face, brain, etc.; chief or principal part of anything; leader or commander; place of honor or authority; top; the understanding or intellect; origin or source: *adj.* principal or chief. *v. t.* to lead or direct; take the first place in; get in front of; direct the course of; *v. i.* come to, or form, a head.

head-ed (*'ed*), *adj.* having a head; noting under-

standing or intellect (much used in composition, as clear-*headed*, wrong-*headed*, etc.).
head-ing (*hed'ing*), *n.* a title.
head-land (*'land*), *n.* a promontory.
head-line (*'līn*), *n.* a line of type displayed conspicuously at the top of a page, chapter, column; *pl.* the ropes at the head of a sail.
head-long (*'lông*), *adv.* head foremost; rashly; precipitously: *adj.* rash; precipitate; thoughtless.
heads-man (*hedz'man*), *n.* an executioner.
head-strong (*hed'strông*), *adj.* ungovernable; self-willed. [OBSTINATE.]
head-y (*hed'i*), *adj.* precipitate; intoxicating. [OBSTINATE.]
heal (*hēl*), *v. t.* to restore to health; cure; make sound; *v. i.* to become well or sound. [CURE.]
health (*helth*), *n.* freedom from bodily pain or disease; vigor of mind; a toast or pledge.
health-ful (*'fool*), *adj.* promoting health; salubrious.
health-y (*'i*), *adj.* [*comp.* healthier, *superl.* healthiest], noting a sound condition of body.
Syn. HEALTHY, wholesome, salubrious, salutary. *Healthful* is applied to exercise, to air, situation, climate, and food, for which latter *wholesome* is commonly substituted; the life of a farmer is reckoned the most *healthy;* and the simplest diet is the most *wholesome. Healthy* and *wholesome* are rather negative in their sense; *salubrious* and *salutary* are positive; that is *healthy* and *wholesome* which does no injury to the health; that is *healthful* and *salubrious* which serves to improve the health; and that is *salutary* which serves to remove a disorder. [See *sound.*]
Ant. DELICATE, diseased, frail, ill, sick.
heap (*hēp*), *n.* a quantity; accumulation; crowd: *v. t.* to form into a heap; pile up; amass.
Syn. HEAP, pile, accumulate, amass. *To heap* is an indefinite action; it may be performed with or without order; *to pile* is a definite action done with design and order; thus we *heap* stones, or *pile* wood. *To accumulate* is properly to bring or add *heap* to *heap*, which is a gradual and unfinished act; *to amass* is to form into a *mass*, which is a single complete act; a man may *accumulate* guineas or anything else in small quantities, but he properly *amasses* wealth.
Ant. DISSIPATE, spend, squander, waste.
hear (*hēr*), *v. t.* [*p. t.* and *p. p.* heard, *p. pr.* hearing], to perceive by the ear; attend or listen to; attend judicially: *v. i.* to have the sense of hearing; be told of.
hear-ing (*'ing*), *n.* the sense by which sound is perceived; audience; judicial investigation.
heark-en (*härk'n*). Same as *hark.*
hear-say (*hēr'sā*), *n.* rumor or report: *adj.* second hand. [FAME.]
hearse (*hērs*), *n.* a vehicle for the conveyance of dead bodies.
heart (*härt*), *n.* the organ in animals by the muscular contraction and dilation of which the blood is circulated through the arteries, etc.; the vital, inner, or chief part of anything; the seat of affection; affection; courage; will; spirit; conscience; a suit of cards marked with one or more red hearts.
heart-bro-ken (*'brō-kn*), *adj.* overwhelmingly grieved.
heart-burn (*'bĕrn*), *n.* a burning affection of the œsophagus, caused by acidity of the stomach.
heart-en (*'n*), *v. t.* to give courage to; inspirit.
★**hearth** (*härth*, not *hĕrth*), *n.* that part of a room where the fire is made; hence, the family circle.
heart-y (*härt'i*), *adj.* [*comp.* heartier, *superl.* heartiest], cordial; sincere; open; warm; kind; healthy.
Syn. HEARTY, warm, sincere, cordial. There are cases in which it may be peculiarly proper to be *hearty*, as when we are supporting the cause of religion and virtue; there are other cases in which it is peculiarly proper to be *warm*, as when our affections ought to be roused in favor of our friends; in all cases we ought to be *sincere* when we express either a sentiment or a feeling; it is peculiarly happy to be on terms of *cordial* regard with those who stand in any close relation to us. The man himself should be *hearty;* his heart should be *warm;* professions should be *sincere;* a reception *cordial.*
Ant. COLD, distant, inimical, unfriendly.
heat (*hēt*), *n.* the sensation produced by a hot body; the state of being hot; ardor; vehemence; a course at a race: *v. t.* to make hot; warm; excite with passion or desire: *v. i.* to become hot or warm.
heath (*hēth*), *n.* a small evergreen flowering shrub with rose-colored flowers, etc.; heather; moorland.
hea-then (*hē'then*), *n.* one who is ignorant of the true God; a pagan; idolator.
hea-then-ish (*-ish*), *adj.* pertaining to heathens; rude; ignorant, or uncultured.
hea-then-ism (*-izm*), *n.* ignorance of the true God; paganism; idolatry.
heave (*hēv*), *v. t.* to hoist or lift up; force from the breast, as a sigh; throw: *v. i.* to be lifted up; rise and fall alternately; pant: *n.* an effort or exertion upward; lift; the act of throwing; haul. [LIFT.]
heav-en (*hev'n*), *n.* the abode of God and the blessed; the firmament or sky; a state or condition of bliss.
heav-en-ly (*-li*) *adj.* belonging to, or suggestive of, heaven. [CELESTIAL, GODLIKE.]
heav-er (*hēv'ĕr*), *n.* one who, or that which, lifts or heaves, especially one who loads or unloads goods, coal, etc.
heav-y (*hev'i*), *adj.* [*comp.* heavier, *superl.* heaviest], ponderous; weighty; oppressive; grievous; laborious; dull; indigestible: *adv.* heavily. [*Poetry.*]
Hebe (*hē'bē*). A female name, derived from *Hebe*, daughter of Jupiter and Juno, or of Juno only; and who, being fair and always in the bloom of youth, was called "the goddess of youth."
He-bra-ic (*hē-brā'ik*), *adj.* pertaining to the Hebrews, the Jewish language or literature.
He-bra-ist (*-ist*), *n.* one who is learned in the Hebrew language and literature.
He-brew (*'brōō*), *adj.* pertaining to the Hebrews, a Semitic race; Jewish: *n.* the Hebrew language; a Jew.
Hebrides (*heb'ri-dēz*). A group of islands west of Scotland. Anciently referred to by Ptolemy as the *Ebudæ*, and by Pliny as the *Hebudes*, denoting the "western isles."
hec-a-te (*hek'a-tē*), *n.* a witch; a hag.
Hec-a-te, *n.* an ancient threefold Grecian deity possessing power over heaven, earth, and the underworld.
hec-tic (*'tik*), *adj.* constitutional; slow, but of long continuance; feverish: *n.* a remittent fever accompanying consumption.
hec-to-graph (*'tō-grăf*), *n.* an apparatus for multiplying copies of a letter or drawing, etc. [*French.*]
hec-tor (*'tĕr*), *v. t.* to bully or bluster, from *Hector*, the Trojan hero.
Hector. From the Greek name *Hektor.* The name signifies "anchor," literally, "what holds"; also translated a "defender." Fr., *Hector;* It., *Ettore;* Lat., *Hector.*
hedge (*hej*), *n.* a fence of bushes or shrubs: *v. t.* to inclose with a hedge; encircle; invest: *v. i.* to bet on both sides.
hedge-hog (*'hog*), *n.* an insectivorous mammal covered on the back with spines or prickles.
hed-on-ism (*hed'on-izm*), *n.* the doctrine that pleasure is the chief end of life.
heed (*hēd*), *v. t.* to regard with care; take notice of; mind: *n.* careful attention; caution.
Syn. HEED, care, attention. *Heed* applies to matters of importance to one's moral conduct; *care* to matters of minor import; a man is required to take *heed;* a child is required to take *care;* the former exercises his understanding in taking *heed;* the latter exercises his thoughts and his senses in taking *care.* We speak of giving *heed* and paying *attention.*
Ant. CARELESSNESS, neglect.
heed-ful (*'fool*), *adj.* cautious; attentive.
hee-haw (*hē'haw*), *v. i.* to bray like an ass: *n.* the bray of an ass.
heel (*hēl*), *n.* the hinder part of the foot, shoe, or stocking: *v. t.* to furnish with a heel: *v. i.* lean on one side, as a ship.
heft (*heft*), *n.* weight; the greater part or bulk: *v. t.* to try the weight of, by lifting or holding in the hand.
He-gi-ra (*hē-jī'rä*), *n.* the flight of Mohammed from Mecca to Medina (662 A. D.). [Also *Hejira.*]
heif-er (*hef'ĕr*), *n.* a young cow.
heigh-ho (*hī'-hō*), *interj.* an expression of languor or uneasiness.
★**height** (*hīt*, not *hĭth*), *n.* altitude; elevation; highest state or degree; stature.
height-en (*'n*), *v. t.* to make high or higher; elevate; intensify; set off; increase.
★**hei-nous** (*hā'nus*, not *hē'nus*), *adj.* atrocious; extremely wicked; flagrant.
Syn. HEINOUS, flagrant, flagitious, atrocious. A crime is *heinous* which seriously offends against the laws of men; a sin is *heinous* which seriously offends against the will of God; an offense is *flagrant* which is in direct defiance of established opinions and practice; it is *flagitious* if a gross violation of the moral law, or coupled with any grossness; a crime is *atrocious* which is attended with any aggravating circumstances.
Ant. MERITORIOUS, moral, right, virtuous.
Heinrich (*hin'rēk*). See *Henry.*
heir (*ãr*), *n.* one who succeeds another in possession.
heir-ess (*'es*), *n.* a female heir.
heir-loom (*'lōōm*), *n.* any movable or personal chattel which descends to the heir.
Helen (*hel'en*) or **Helena** (*hel'ē-nä*). From the Greek *Helene*, signifying "a lamp," "a torch," hence "brightness." Danish, *Helena;* Dutch, *Helena;* Fr., *Hélène;* Ger., *Helene;* It., *Elena;* Lat., *Helena;* Sp., *Elena.*
Helena, Mont. From the Greek Latinized word, *Helen.* John Somerville suggested it at a meeting of several hundred miners, in 1864, as a name for the settlement. Opinions differ, however, as to the origin of the name, for by some it is supposed to be named for Helen of Troy. The Helena Historical Directory of 1879 says it was named by John Somerville, of Minnesota, *St. Helena,* from the resemblance in its location to that of the original St. Helena. It was then voted to drop the prefix *Saint,* and that was done.
He-li-an-thus (*hē-li-an'thus*), *n.* a genus of plants to which the sunflower belongs.
hel-ic-al (*hel'i-kal*), *adj.* spiral-shaped.
he-li-cop-ter (*hē-li-kop'tĕr*), *n.* in aëronautics, a flying machine in which propellers are used to give the necessary power to rise.
Heligoland (*hel'i-gō-länd*). Now a German island, expresses the Danish for "holy land settlement."
hello, a *prefix* meaning *sun, caused by,* or *like,* the *sun* or *sunlight,* as *heliograph,* an instrument for taking a photograph of the sun, or for signaling by reflecting sunlight.
he-li-om-e-ter (*hē-li-om'ē-tĕr*), *n.* a micrometer for measuring small angles in the heavens.
he-li-o-scope (*'li-ō-skōp*), *n.* a form of refracting telescope for observing the sun.
he-li-o-stat (*'li-ō-stat*), *n.* an instrument by which signaling is carried on by means of a mirror.
he-li-o-trope (*'li-ō-trōp*), *n.* a plant whose flowers follow the course of the sun; the color of the flowers of heliotrope, bluish-pink.
he-li-o-type (*'li-ō-tīp*), *n.* an impression from a photograph taken on a gelatine plate hardened with alum.
hell (*hel*), *n.* the place of the dead or of departed souls (more correctly *Hades*); the place of punishment for the wicked after death.
Hel-len-ic (*hel-en'ik*), *adj.* pertaining to, or characteristic of, the ancient Hellenes or Greeks, or to Grecian art and literature.
Hel-len-ism (*hel'en-izm*), *n.* a Greek idiom; Grecian culture.
Hel-len-ist (*'en-ist*), *n.* a Jew who spoke Greek; one learned in Greek.
helm (*helm*), *n.* the apparatus for steering a ship; tiller; the place of its direction and government; a helmet. [*Poetry.*] *v. t.* to guide or conduct.
hel-met (*hel'met*), *n.* metal or leather armor for the head; the hooded upper lip of a flower.
help (*help*), *v. t.* to give assistance to; aid; support; sustain; remedy; cure: *v. i.* to lend aid; be available or useful: *n.* assistance; aid; support; succor; relief; a portion of food; a hired servant.
Syn. HELP, assist, aid, succor, relieve. *Help* signifies to do good to; *assist* signifies to place one's self by another so as to give him our strength; *aid* signifies to profit toward a specific end; *succor* signifies to run to the help of any one; *relieve* signifies to alleviate. We *help* a person to prosecute his work, or *help* him out of a difficulty; we *assist* in order to forward a scheme, or we *assist* a person in the time of his embarrassment; we *aid* a good cause, or we *aid* a person to make his escape; we *succor* a person who is in danger; we *relieve* him in time of distress.
Ant. OPPOSE, thwart, withstand.
Helsingfors (*hel-sing-fors'*), **Finland.** From the tribal name of the *Helsings*, and *fors*, "a waterfall." We have cognate names *Helsingland* and *Helsingborg* in Sweden, and *Helsingor* in Denmark.
hel-ter-skel-ter (*hel'tĕr-skel'tĕr*), *adv.* in hurry and confusion.
Helvetia (*hel-vē'shi-ä*). The old Latin name of Switzerland; often used as a poetical appellation in modern literature. The country is often mentioned as the *Helvetian Republic,* and that is still the official name.
Hel-ve-tian (*hel-vē'shan*), *adj.* pertaining to Switzerland: *n.* a Swiss. [Also *Helvetic.*]
hem (*hem*), *n.* the edge of a garment doubled and sewn; an ejaculatory sound: *v. t.* [*p. t.* and *p. p.* hemmed, *p. pr.* hemming], to form a hem on; to shut in; environ: *v. i.* utter the ejaculation "hem!"
hem-a-tin (*hem'ä-tin*), *n.* the red coloring matter in the blood. [Also *hæmatin.*]
hemi, a *prefix* meaning *half,* as *hemi*sphere, half a sphere or globe.
hem-i-sphere. See under *hemi.*
hem-i-stich (*hem'i-stik*), *n.* in poetry, an incomplete line, or the half of a line.
hem-lock (*hem'lok*), *n.* a wild poisonous plant of the parsley family; *hemlock* spruce, an evergreen tree of the pine family.
hem-mer (*'ĕr*), *n.* one who, or that which, hems.
hem-ming (*'ing*), *n.* the action of the verb *to hem;* hems collectively.
hem-op-ty-sis (*-op'ti-sis*), *n.* spitting of blood.
hem-or-rhage (*hem'ō-răj*), *n.* bleeding from the lungs, arteries, veins, etc.
hem-or-rhoids (*'ō-roidz*), *n. pl.* bleeding piles.
hemp (*hemp*), *n.* a plant of the nettle family, the tough fiber of which is used for cordage and various kinds of coarse linen.
hemp-en (*'en*), *adj.* pertaining to, or made of, hemp.
hem-stitch (*'stich*), *n.* a particular kind of ornamental stitching.
hen (*hen*), *n.* the female of a bird, especially the domestic fowl.
hence (*hens*), *adv.* from this, in consequence of this: *interj.* away! begone!
hench-man (*hench'man*), *n. pl.* henchmen (*'men*)], formerly, a male attendant or servant. [ACCESSORY.]
Henderson, Ky. A town named after the county, so called in honor of Col. Richard Henderson.
Henlopen (*hen-lō'pen*), **Cape, Del.** From a Dutch expression, *en lofen,* meaning "to run in" as indicating the place of entrance to a bay. Previously named *Cornelius* by the Dutch commander, Mey, after his Christian name.
hen-pecked (*'pekt*), *adj.* governed by one's wife.
Henri (*än-rē'*). The French form of *Henry.*
Henrietta (*hen-ri-et'tä*). A name formed from *Henry.*
Henry. Usually rendered "home-ruler," or "chief of the house." The Gothic name is *Heinric,* the Anglo-Saxon *Henric* and *Cynric,* and the North High German, *Heinrich;* but all these names are the same as the old *Hunoricus,* from *Kunreich,* "illustrious for strength." The English name *Henry,* formerly also *Henrie, Henri, Herry,* now *Harry,* is derived from the Old French and French *Henri.* Danish, *Hendrik;* Dutch, *Hendrik;*

Ger., *Heinrich;* It., *Enrico,* or *Errico;* Lat., *Henricus;* Port., *Henrique;* Sp., *Enrique;* Sw., *Henrik.*

Henry, Cape, Va. Named by Admiral Newport in April, 1607, in honor of Henry, prince of Wales, son of James I. of England.

he-pat-ic (*hē-pat'ik*), *adj.* pertaining to the liver.

hep-tarch-y (*hep'tärk-i*), *n.* [*pl.* heptarchies (*-iz*)], a government by seven rulers, especially the seven Anglo-Saxon kingdoms established in England.

her (*hẽr*), *pron.* the objective and possessive case of the personal pronoun *she.*

her-ald (*her'ald*), *n.* formerly an official who proclaimed messages from a sovereign; a precursor: *v. t.* proclaim; usher in. [ANNOUNCE.]

he-ral-dic (*hē-ral'dik*), *adj.* pertaining to heralds or heraldry.

her-al-dry (*her'al-dri*), *n.* the science that treats of armorial bearings.

Herat (*her-ät'*). Anciently *Aria-Civitas,* the town on the Arius, now the river Heri.

herb (*ẽrb* or *hẽrb*), *n.* a plant with a soft and succulent stem.

her-ba-ceous (*hẽr-bā'shus*) *adj.* pertaining to, of the nature of, or feeding upon, herbs.

herb-age (*ẽrb'āj* or *hẽrb'āj*), *n.* herbs collectively; grass; pasturage; the right of pasture on the lands of another.

her-ba-ri-um (*hẽr-bā'ri-um*), *n.* [*pl.* herbaria (*-ȧ*)], a systematic collection of dried plants for purposes of study; a building where such a collection is kept.

Herbert (*hẽr'bẽrt*). A name derived from the Alemannic *Heribert, Heribret, Heripreht,* Old German *Aribert,* which Wachter derives from *aer bert,* "illustrious lord." Lat., *Herbertus;* Sw., *Herbert.*

her-bif-er-ous (*-bif'ẽr-us*), *adj.* producing herbs.

Herculaneum (*hẽr-kū-lā'nē-um*). An ancient city of Campania, Italy, near the coast, six miles southeast of Naples, directly at the foot of Mount Vesuvius. The ancient Greek name was *Herakleion,* "city of Hercules."

Her-cu-le-an (*-kū'lē-an*), *adj.* pertaining to Hercules, the hero of Grecian mythology, possessed of superhuman strength; hence, of exceeding strength and power; very difficult.

Hercules (*hẽr'kū-lēz*). From the Greek *Hera* and *Kleos,* "glory or fame"; hence, the "glory of Hera." Fr., *Hercule;* Ger., *Hercules;* Gr., *Herakles;* It., *Ercole;* Lat., *Hercules.*

herd (*hẽrd*), *n.* a collection of beasts or cattle; crowd; a keeper of cattle: *v. i.* to unite or associate, as beasts; crowd together.

here (*hēr*), *adv.* in, or to, this place or time; at this point.

here-by (*-bī'*), *adv.* by virtue of this; near.

he-red-i-ta-ry (*hē-red'i-tā-ri*), *adj.* passing from an ancestor to a descendant.

he-red-i-ty (*'i-ti*), *n.* the transmission of physical or mental characteristics or qualities from parent to offspring.

here-in (*hēr-in'*), *adv.* in this.

here-in-aft-er (*-ȧft'er*), *adv.* in this (deed, book, etc.) after or subsequently.

her-e-sy (*her'ē-si*), *n.* [*pl.* heresies (*-siz*)], an opinion or doctrine at variance with fundamental truths commonly received. [HETERODOXY.]

her-e-tic (*'ē-tik*), *n.* one who holds, or maintains, heretical opinions.

he-ret-i-cal (*hē-ret'i-kal*), *adj.* pertaining to, or having the character of, heresy.

here-to-fore (*hēr-tōō-fōr'*), *adv.* previously; hitherto.

her-i-tage (*her'i-tāj*), *n.* an estate or birthright that passes from an ancestor to a descendant.

Herman (*hẽr'man*). From the Teutonic, meaning the "leader of an army." Danish, *Hermann;* Dutch, *Herman;* Fr., *Armand* or *Armant;* Ger., *Hermann;* Lat., *Hermannus* or *Harmannus;* Sw., *Herman.*

her-maph-ro-dite (*hẽr-maf'rō-dīt*), *adj.* having the sexual characteristics of both male and female: *n.* an animal with both the male and female sexual organs.

her-met-ic (*hẽr-met'ik*), *adj.* perfectly closed and air-tight. [Also *hermetical.*]

Hermione (*hẽr-mī'ō-nē*). A name derived from *Hermione,* a daughter of Mars and Venus, who married Cadmus.

her-mit (*'mit*), *n.* one who retires from society and lives in solitude; an anchorite.

her-mit-age (*-āj*), *n.* the abode of a hermit; a wine.

Her-mit-age, The. A palace at St. Petersburg, Russia, founded by Catherine II., originally in the form of a pavilion of moderate size, but rebuilt in the nineteenth century in a neo-Greek style of excellent effect, and forming one of the best-designed museums existing. Also the name of the home of President Jackson, near Nashville, Tenn.

her-nia (*'ni-ȧ*), *n.* a protrusion of some part of the intestine, or of some other internal organ.

he-ro (*hē'rō*), *n.* [*pl.* heroes (*'rōz*)], a man of distinguished courage, moral or physical; the chief character in a play, novel, poem, etc.

Hero. Female name, so called after the celebrated Greek name *Hero,* "one raised or elevated."

he-ro-ic (*hē-rō'ik*), *adj.* having the qualities of a hero; larger than life; venturesome; drastic. [Also *heroical.*] *n. pl.* extravagant or boastful language.

he-ro-ic verse (*vẽrs*), epic poetry; the hexameter verse in Greek and Latin poetry; in English, iambic pentameter.

her-o-ine (*her'ō-in*), *n.* a female hero.

her-o-ism (*her'ō-izm*), *n.* the qualities of a hero.

Herold. See *Harold.*

her-on (*'un*), *n.* a wading bird with a long neck and long legs.

he-ro wor-ship (*hē'rō wẽr'ship*), excessive admiration of distinguished men.

her-pe-tol-o-gy (*hẽr-pē-tol'ō-ji*), *n.* that branch of zoölogy that treats of reptiles and amphibians.

★**her-ring** (*her'ing,* not *her'in*), *n.* an edible sea fish moving in shoals.

her-ring-bone (*-bōn*), *n.* a kind of cross-stitch: *v. t.* and *v. i.* to work in such a stitch.

hes-i-tan-cy (*hez'i-tan-si*), *n.* hesitation; suspense.

hes-i-tate (*'i-tāt*), *v. i.* to be in suspense or uncertainty; pause; vacillate; stammer.

Syn. HESITATE, falter, stammer, stutter. A person who is not in the habit of public speaking, or of collecting his thoughts into a set form, will be apt *to hesitate* even in familiar conversation; he who first addresses a public assembly will be apt *to falter;* children who first begin to read will *stammer* at hard words; and one who has an impediment in his speech will *stutter* when he attempts to speak in a hurry. [See *demur.*]

Hes-sian (*hesh'an*), *adj.* pertaining to Hesse in Germany or its inhabitants.

Hester. See *Esther.*

het-er-o-dox (*het'ẽr-ō-doks*), *adj.* deviating from an accepted doctrine or standard; opposed to orthodox.

het-er-o-dox-y (*-doks-i*), *n.* [*pl.* heterodoxies (*-iz*)], an unorthodox doctrine or opinion; heresy.

Syn. HETERODOXY, heresy. To be of a different persuasion is *heterodoxy;* to have a faith of one's own is *heresy.*

Ant. ORTHODOXY.

het-er-o-ge-ne-ous (*-ō-jē'nē-us*), *adj.* opposite or dissimilar in character, etc.; not homogeneous.

Hetty, Hettey. Female names derived from *Henrietta;* perhaps also from *Harriet.*

hew (*hū*), *v. t.* [*p. t.* hewed, *p. p.* hewn, hewed, *p. pr.* hewing], to cut or shape, as with an ax; hack; form laboriously.

hex-a-gon (*heks'ȧ-gon*), *n.* a plane figure having six sides.

hex-am-e-ter (*-am'ē-tẽr*), *n.* in Greek and Latin verse, a line consisting of six feet, the last being usually a spondee.

hex-i-ol-o-gy (*-i-ol'ō-ji*), *n.* the science of habits and environment.

Hezekiah (*hez-ē-kī'ȧ*). From the Hebrew *Hhizkeyyah,* from *hhezek-Yah,* "the strength of Jehovah," or "cleaving to the Lord." Dutch, *Hiskia;* Lat., *Hezekias.*

hi-a-tus (*hī-ā'tus*), *n.* a break; vacancy; gap; the concurrence of two vowels in two successive syllables.

hi-ber-nal (*-bẽr'nal*), *adj.* wintry.

hi-ber-nate (*'bẽr-nāt*), *v. i.* to pass the winter in a state of torpor; to winter.

Hi-ber-ni-an (*'ni-an*), *adj.* pertaining to, or characteristic of, Hibernia or Ireland.

hic-cough (*hik'up*), *n.* a short convulsive cough: *v. i.* to utter a short convulsive cough. [Also *hiccup.*]

hick-o-ry (*hik'ō-ri*), *n.* [*pl.* hickories (*-riz*)], an American nut-bearing tree of the genus Carya.

hi-dal-go (*hi-dal'gō*), *n.* in Spain, a nobleman of the lowest rank. [Fem. *hidalga.*]

hide (*hīd*), *v. t.* [*p. t.* hid, *p. p.* hidden, *p. pr.* hiding], to conceal; secrete; whip: *v. i.* to lie concealed: *n.* an animal's skin. [COVER, SECRETE, CONCEAL, MYSTERIOUS.]

hide-bound (*'bound*), *adj.* having the skin close or contracted; prejudiced; bigoted.

hid-e-ous (*hid'ē-us*), *adj.* offensive; shocking; horrible.

hie (*hī*), *v. t.* [*p. t.* and *p. p.* hied, *p. pr.* hieing], to excite; speed: *v. i.* to hasten.

hi-er-arch (*'ẽr-ärk*), *n.* the chief ruler of an ecclesiastical body.

hi-er-arch-y (*-i*), *n.* [*pl.* hierarchies (*-iz*)], the higher and lower clergy of a church; priesthood; rank of holy beings, as angels.

hi-er-o-glyph-ic (*hī-ẽr-ō-glif'ik*), *n.* a sacred character or symbol: *pl.* the picture writings of the ancient Egyptians, etc.: *adj.* pertaining to hieroglyphics.

Hieronymus (*hī-ē-ron'i-mus*). See *Jerome.*

hig-gle (*hig'l*), *v. i.* to carry provisions about for sale; dispute about trifles.

hig-gle-dy-pig-gle-dy (*-di-pig'l-di*), *adv.* in confusion; topsy-turvy.

high (*hī*), *adj.* elevated in place; lofty; chief; noble; strong; powerful; intense; tempestuous; full or complete; tainted; shrill; acute: *n.* an elevated place: *adv.* aloft; profoundly; eminently.

Syn. HIGH, tall, lofty. *High* expresses the idea of extension upward, which is common to them all; what is *tall* is *high,* but what is *high* is not always *tall;* that which attains considerable *height* by growing is *tall;* a thing may be *high* because on a pedestal; *lofty* is said of that which is extended in breadth as well as in height; we say that a house is *high,* a chimney *tall,* a room *lofty.*

Ant. BASE, deep, low.

high-church (*'chẽrch*), *adj.* attaching great importance to the prerogative and authority of the church, its sacraments and priesthood.

high-col-ored (*-kul'ẽrd*), *adj.* having a strong, deep, or glaring color; flushed; vivid; exaggerated.

high-est (*'est*), *adj.* most high.

high-fa-lu-tin (*-fȧ-lū'tin*), *adj.* bombastic: *n.* bombastic speech.

high-flown (*hī'flōn*), *adj.* elevated; proud; extravagant; inflated.

high-hand-ed (*-hand'ed*), *adj.* violent; arbitrary.

high jinks (*jinks*), sportive jollification.

high-land (*'land*), *n.* a mountainous region: *pl.* mountainous district.

Highlands, The. A district in northern and western Scotland, of vague limits. It includes the Hebrides, the counties of Argyll, Inverness, Ross and Cromarty, Sutherland and Caithness, and parts of Nairn, Elgin, Banff, Aberdeen, Kincardine, Forfar, Perth, Stirling, Dumbarton, and Bute. The inhabitants are mainly of Celtic stock. The Highlands are celebrated for romantic scenery; they contain the highest mountains in Great Britain.

Highlands of the Hudson. A range of hills and low mountains in eastern New York, in Orange Putnam, Dutchess, and Rockland counties. Prominent points are Fishkill mountain, Storm King, Crow's Nest, Donderberg, Anthony's Nose, and West Point.

high life (*līf*), fashionable society; its manner of living.

high mass (*mas*), a mass accompanied with singing, and incense.

high-ness (*'nes*), *n.* the state or quality of being high.

high priest (*prēst*), a chief priest.

high-road (*'rōd*), *n.* a chief road; an easy course or method.

high-strung (*'strung*), *adj.* strung to a high pitch; extremely sensitive.

high-toned (*'tōnd*), *adj.* high pitched; fashionable.

high wa-ter (*waw-tẽr*), pertaining to high tide, or its height or time.

high-way (*'wā*), *n.* a public road; a course or path.

★**high-way-man** (*hī'wā-man,* not *hī-wā'man*), *n.* [*pl.* highwaymen (*-men*)], one who robs on the public road.

hi-la-ri-ous (*hi-lā'ri-us*), *adj.* merry; exhilarated.

hi-lar-i-ty (*-lar'i-ti*), *n.* [*pl.* hilarities (*-tiz*)], noisy merriment; exhilaration.

Hilary (*hil'ȧ-ri*). Derived from the Latin name *Hilarius,* signifying "pleasant," "cheerful," "merry." Danish, *Hilarius;* Dutch, *Hilarius;* Fr., *Hilaire;* It., *Ilario;* Lat., *Hilarius;* Sw. *Hilarius.*

Hilda. A female name abbreviated from *Everhilda;* or derived from the Lombardian word *hild,* "noble."

Hildebrand (*hil'dē-brand*). The same as Teutonic names *Hildebrand* and *Hiltiprant.* Translated "very fervent," "hero," "leader," etc. Wachter claims the name to be the same as *Childebrand,* from *child-brand,* which might be translated either "distinguished youth," or "distinguished warrior."

hill (*hil*), *n.* an elevation less than a mountain; a small mound or heap: *v. t.* to draw earth about (plants in mounds), as potatoes.

hill-ock (*'ok*), *n.* a small hill.

hill-y (*'i*), *adj.* abounding with, or characterized by, hills.

hilt (*hilt*), *n.* a handle, especially of a sword.

Himalaya (*hi-mä'lȧ-yȧ*). A mountain system of Asia. From the Sanskrit, *hima,* "snow," and *alaya,* "abode," "dwelling." Hence, "the abode of snow."

hind (*hīnd*), *n.* the female of the stag or red deer; a farm servant; peasant: *adj.* backward; hinder.

hind-er (*hīnd'ẽr*), *adj.* belonging to, or constituting, the back or rear of anything.

hin-der (*hin'dẽr*), *v. t.* to obstruct or impede: *v. i.* to impose obstructions or impediments.

Syn. HINDER, stop. We are *hindered* from proceeding by something that draws us back; to *stop* refers simply to the cessation of motions. [See *obstruct, retard, cessation.*]

Ant. AID, assist, expedite, further.

hind-most (*hīnd'mōst*), *adj.* farthest from the front; in the extreme rear.

hin-drance (*hin'drans*), *n.* obstruction.

Hin-du (*'dōō*), *n.* a native of Hindustan belonging to the Aryan race; Brahman: *adj.* pertaining to the Hindus or to Hinduism. [Also *Hindoo.*]

Hindustan (*hin-doo-stän', hin-dō-stan'*). A Persian term signifying the country or place of the Hindus or Indians. *Hindu* is the Persian form of the Sanskrit *Sindhu,* "a dweller on the Indus," which means the river.

hinge (*hinj*), *n.* the joint or hook on which a door, etc., turns or swings; that on which anything depends or turns: *v. t.* to furnish with a hinge: *v. i.* to stand, turn, or depend, as on a hinge.

hint (*hint*), *v. t.* to suggest; mention casually: *n.* a suggestion; distant allusion. [ALLUDE.]

hip (*hip*), *n.* the upper fleshy part of the thigh; haunch: *interj.* a huzzah.

hip-po-drome (*hip'ō-drōm*), *n.* an ancient Greek racecourse for equestrian games and chariots; a circus.

hip-po-pot-a-mus (*-ō-pot'ȧ-mus*), *n.* [*pl.* hippopotami (*mī*), -muses (*-ez*)], a large pachydermatous aquatic animal of Africa.

hire (*hīr*), *v. t.* to engage for temporary service at a certain price; bribe; let or lease: *n.* recompense or consideration paid for the use of anything; wages; bribe.

hire-ling (*hīr'ling*), *n.* one who serves for hire: *adj.* mercenary.

hir-sute (*hẽr'sūt*), *adj.* hairy; shaggy.

hiss (*his*), *n.* a noise, made by forcing the breath

between the tongue and upper teeth: *v. i.* to utter such a sound.

hist (*hist*), *interj.* silence! hark!

his-tol-o-gy (*his-tol'ō-ji*), *n.* the science of animal tissues.

his-to-ri-an (*-tō'ri-an*), *n.* a writer or student of history.

his-tor-ic (*-tor'ik*), *adj.* pertaining to, contained in, or celebrated in, history [Also *historical.*]

★**his-to-ry** (*his'tō-ri*, not *his'tri*), *n.* [*pl.* histories (*-riz*)], a narration of facts and events arranged chronologically; knowledge of facts.

his-tri-on-ic (*-tri-on'ik*), *adj.* pertaining to actors or the stage; theatrical. [Also *histrionical.*]

hit (*hit*), *v. t.* [*p. t.* and *p. p.* hit, *p. pr.* hitting], to strike; give a blow to; touch (the mark); attain to; suit: *v. i.* to clash or collide; succeed: *n.* a stroke or blow; felicitous remark.

hitch (*hich*), *n.* a catch; impediment, a pulling upward: *v. i.* to move by jerks; strike the feet together: *v. t.* to fasten or tie.

hith-er (*hith'ėr*), *adv.* to this place: *adj* on the side nearest to the speaker.

hive (*hiv*), *n.* an artificial house for bees; bees inhabiting a hive; a busy assemblage: *v. t.* to gather or put into a hive.

hives (*hivz*), *n. pl.* nettle rash; croup.

ho (*hō*), *interj.* stop! hold!

Hoang-Ho (*hō-ăng-hō'*). In China, this is the "yellow river," which borders Ho-Nan, the province "south of the river," and flows into the Hoang-Hai, or "yellow sea," so called because discolored by the yellow mud brought down by the Hoang-Ho.

hoar (*hōr*), *adj.* white; gray with age; ancient.

hoard (*hōrd*), *n.* a store or treasure laid up secretly; an accumulation of things: *v. t.* to collect and lay up: *v. i.* to lay up a store.

hoar-frost (*hōr'frost*), *n.* white particles of frozen dew or moisture.

hoar-hound (*'hound*), *n.* a white, woolly, aromatic herb.

hoarse (*hōrs*), *adj.* rough and harsh in sound, as the voice when affected by a cold.

hoax (*hōks*), *n.* a sportive, deceptive trick; *v. t.* to delude by a hoax.

hob (*hob*), *n.* the flat part of a grate on which things are placed to be kept warm.

hob-ble (*'l*), *v. i.* to walk with a limp or awkward step: *v. t.* embarrass or perplex; shackle: *n.* limping or awkward step.

hob-bly (*'li*), *adj.* rough or uneven.

hob-by (*hob'i*), *n.* [*pl.* hobbies (*'iz*)], a favorite pursuit or object; an ambling nag.

hob-by-horse (*-hōrs*), *n.* a stick with a horse's head, across which children sit; a wooden or rocking-horse.

hob-gob-lin (*-gob'lin*), *n.* a goblin, sprite, or elf, especially one of frightful appearance.

hob-nail (*'nāl*), *n.* a short thick nail with a large head.

hob-nob (*'nob*), *v. i.* to drink familiarly with; associate intimately together.

ho-bo (*hō'bō*), *n.* an idle itinerant workman; a tramp.

Hoboken (*hō'bō-ken*). In New Jersey, opposite New York, often said to be a native name meaning "the smoked pipe," marking the spot where the first colonists smoked the pipe of peace with the Indian chiefs. It is more likely, however, a reminiscence of the Dutch village of *Hoboken*, three miles from Antwerp.

hock-ey (*hok'i*), *n.* an outdoor game played with a ball and clubs curved at one end.

ho-cus-po-cus (*hō'kus-pō'kus*), *n.* a juggler's trick; a juggler.

hod (*hod*), *n.* a wooden trough, affixed to a long handle, for carrying mortar, bricks, etc.

hod-car-ri-er (*'kar-i-ėr*), *n.* a man who carries a hod.

hodge-podge (*hoj'poj*), *n.* a medley of ingredients.

hod-man (*hod'man*), *n.* a hodcarrier.

hoe (*hō*), *n.* an agricultural tool for cutting weeds, etc.: *v. t.* to cut, or till, with a hoe.

hog (*hog*), *n.* a swine; a grasping, gluttonous person.

hogs-head (*hogz'hed*), *n.* a measure of capacity equal to 52½ imperial gals. or 63 wine gals.; a large barrel or cask.

Hohenzollern (*hō'en-tsol-ėrn*) **castle.** A castle situated in the Swabian Alps, near Hechingen, southern Germany, belonging to the present Prussian royal family. It is the ancestral home of Emperor Wilhelm II. of Germany.

hoi-den (*hoi'dn*), *n.* a rude rustic girl; *adj.* rustic; ill-mannered: *v. i.* to romp roughly. [Also *hoyden.*]

hoist (*hoist*), *v. t.* to lift or raise: *n.* an apparatus for lifting goods. [LIFT.]

hoi-ty-toi-ty (*hoi'ti-toi'ti*), *interj.* an exclamation of surprise, rebuke, etc.

hold (*hōld*), *v. t.* [*p. t.* held, *p. p.* held, holden, *p. pr.* holding], to grasp and keep in the hand; clutch; retain; possess; judge or consider: *v. i.* to cling; adhere; maintain an opinion: *n.* the act of holding; a grasp or clutch; that part of a vessel where the cargo is stored.

Syn. HOLD, keep, detain, retain. To *hold* is a physical act; it requires a degree of bodily strength, or at least the use of the limbs; to *keep* is simply to have by one at one's pleasure; *detain* and *retain* are modes of *keeping;* the former signifies *keeping* back what belongs to another; the latter signifies *keeping* a long time for one's own purpose.

Ant. FREE, let loose, release.

hold-ing (*hold'ing*), *n.* anything held; tenure or right of possession.

hole (*hōl*), *n.* a cavity; hollow place; pit; perforation; a difficulty or dilemma.

hol-i-day (*hol'i-dā*), *n.* a day of gayety and joy in celebration of some event, etc.: *adj.* pertaining to a festival; joyous; gay

ho-li-ness (*hō'li-nes*), *n.* the state or quality of being holy; freedom from sin, sacredness: a title of the pope.

Syn. HOLINESS, sanctity. *Holiness* is to the mind of a man what *sanctity* is to his exterior; with this difference, that *holiness* to a certain degree ought to belong to every man professing Christianity; but *sanctity*, as it lies in the manners, the outward garb, and deportment, is becoming only to certain persons, and at certain times.

hol-land (*hol'and*), *n.* fine unbleached linen.

Holland. A kingdom of western Europe. Name supposed to be derived from *olland*, or *holtland*, "marshy ground." Taylor gives the translation of *holtland* as "woodland," that is, the forest around Dordrecht.

hol-loa (*hol-ō'*), *v. i.* to shout to one at a distance: *n.* a shout.

hol-low (*'ō*), *adj.* having a void space within: opposed to solid; insincere; superficial: *n.* a cavity; space between hills or elevations: *v. t.* to make hollow: *adv.* completely; thoroughly.

Syn. HOLLOW, empty. *Hollow*, a cavity formed by taking material out; as, a *hollow* tree. That which has nothing in it is empty; as, an *empty* chair.

hol-ly (*'li*), *n.* a shrub or tree of the genus Ilex.

hol-ly-hock (*hol'i-hok*), *n.* a tall plant of the mallow family.

hol-o-caust (*'ō-kawst*), *n.* a sacrifice wholly consumed by fire.

hol-ster (*hōl'stėr*), *n.* a leather pistol case usually carried at the saddle bow.

ho-ly (*hō'li*), *adj.* [*comp.* holier, *superl.* holiest], pure; morally and spiritually perfect; sinless; pious; sacred; consecrated.

Syn. HOLY, blessed, consecrated, devoted, divine, hallowed, sacred, saintly, set apart. *Sacred* is applied to that which is to be regarded as inviolable on any account; that which is *holy* is so by its own nature, possessing intrinsic moral purity, and, in the highest sense, absolute moral perfection. God is *holy;* his commands are *sacred. Divine* has been used with great looseness, as applying to anything eminent or admirable.

Ant. CURSED, secular, unsanctified, wicked.

Holyoke (*hōl'yōk*). City in Hampden county, Mass., and mountain in same county, named for Rev. Edward Holyoke, an early president of Harvard College.

Holyrood (*hō'li-rōōd*) **palace.** An ancient royal palace of Scotland, situated in Edinburgh. It was originally an abbey, founded in 1128; was several times burned and was the scene of the murder of Rizzio, 1566. It was once the place of residence of Mary, Queen of Scots.

hom-age (*hom'āj*), *n.* respect paid by external action; deference; reverence.

home (*hōm*), *n.* one's abode or residence: dwelling place of a man and his family; a benevolent institution: *adj.* pertaining to one's abode or country; near; effective: *adv.* to or at home. [HABITATION.]

home-li-ness (*'li-nes*), *n.* the state of being homely; plainness.

home-ly (*'li*), *adj.* plain-featured; uncultured; rude.

ho-me-o-path-ic (*hō-mē-ō-path'ik*), *adj.* of or pertaining to homeopathy.

ho-me-op-a-thist (*-op'a-thist*, *n.* one who practices or believes in homeopathy.

ho-me-op-a-thy (*-op'a-thi*), *n.* the medical system introduced by Hahnemann, which seeks to cure diseases by the administration of medicines in minute quantities.

Homer. An English baptismal name at the present time. From the classical name, in Greek, *Homeros*, signifying a "pledge," "security," "hostage."

home-sick (*hōm'sik*), *adj.* ill because of absence from home; nostalgic.

home-sick-ness (*-nes*), *n.* state of being homesick; nostalgia.

★**home-stead** (*hōm'sted*, not *hōm'stid*), *n.* a dwelling house with the adjacent land; original abode.

hom-i-cide (*hom'i-sīd*), *n.* the killing of a human being; one who kills another.

hom-i-let-ics (*-i-let'iks*), *n. pl.* that branch of theology which treats of sermons and their composition.

hom-i-ly (*'i-li*), *n.* [*pl.* homilies (*-liz*)], a plain religious discourse or sermon.

hom-ing (*hōm'ing*), *adj.* returning home: said of carrier pigeons.

hom-i-ny (*hom'i-ni*), *n.* Indian corn soaked so as to remove the hull, and then coarsely ground.

ho-mo-ge-ne-ous (*hō-mō-jē'nē-us*), *adj.* uniform; composed of similar parts or elements.

Honduras (*hon-dōō'ras*). Spanish for "deep water." A republic of Central America.

hone (*hōn*), *n.* a kind of fine whetstone: *v. t.* to sharpen on a hone.

★**hon-est** (*on'est*, not *on'ust*), *adj.* upright; just; sincere; honorable; frank or open. [CANDID.]

hon-est-y (*-i*), *n.* the quality of being honest.

hon-ey (*hun'i*), *n.* a sweet sirupy substance collected by bees; sweetness: *adj.* resembling honey: *v. t.* to talk to in an endearing or flattering manner.

hon-ey-bee (*-bē'*), *n.* the common hive-bee.

hon-ey-comb (*-kōm*), *n.* the waxen hexagonal cells made by bees to contain their honey, eggs, etc.; any structure resembling a honeycomb: *v. t.* to fill with holes.

hon-ey-dew (*-dū*), *n.* a saccharine secretion from the leaves of certain plants.

hon-ey-moon (*-mōōn*), *n.* the first month after marriage.

hon-ey-suck-le (*-suk'l*). *n.* a climbing plant with fragrant flowers.

Hongkong (*hong'kong*). The place of fragrant streams. Island off coast of China.

hon-or (*on'ėr*), *n.* respectful regard; esteem; worship; reputation; fame; chastity; an outward mark of high esteem; a title; one of the four highest trump cards in whist: *v. t.* to treat with respect, deference, or civility; bestow marks of honor upon (with *with*); accept and pay when due.

Syn. HONOR, reverence, respect. *To honor* is only an outward act; *to reverence* is either an act of the mind or the outward expression of a sentiment; *to respect* is mostly an act of the mind, though it may admit of being expressed by some outward act. We *honor* God by adoration and worship; we *honor* our parents by obeying them and giving them our personal service; we *reverence* our Maker by cherishing in our minds a dread of offending him: we *respect* a person or thing that is lofty, worthy, or honorable. [See *admire, glory.*]

Honora. An Irish female name derived from the Latin name *Honor.*

★**hon-or-a-ble** (*on'ėr-a-bl*, not *on'ra-bl*), *adj.* worthy of, or conferring, honor; distinguished in rank; a title of distinction.

★**hon-o-ra-ri-um** (*on-ō-rā'ri-um*), *n.* a fee paid to a professional man.

hon-or-a-ry (*'ėr-a-ri*), *adj.* done, or conferred, as an honor.

Honoria. A female name derived from the Roman name *Honoria*, the feminine of *Honorius;* from root of *Honor.*

hood (*hood*), *n.* a soft wrapper or covering for the head; an ornamental fold hanging down the back denoting a university degree: *v. t.* to cover or furnish with, or as with, a hood: *suffix* meaning state, condition, or quality, as *manhood* hard*ihood.*

hood-lum (*hōōd'lum*), *n.* origimally a California rough or bully; a rowdy.

hoo-doo (*hōō'dōō*), *n.* a person or thing that causes ill luck: *v. t.* to bring ill luck upon.

hood-wink (*hood'wingk*), *v. t.* to deceive.

★**hoof** (*hōōf*, not *hoof*), *n.* [*pl.* hoofs], the horny substance covering the feet of certain mammals, etc.; an animal with hoofs.

hook (*hook*), *n.* a curved piece of metal, bone, etc., to hold or catch something; a cape or headland: *v. t.* to catch with, or as with, a hook: *v. i.* to bend in the shape of a hook; become fastened to anything with a hook (with *on*).

hoop (*hōōp*, or *hoop*), *n.* a band to hold together the staves of a cask, etc.; a finger ring; a kind of crinoline; a whoop; *v. t.* to bind or secure with a hoop; encircle.

Hoosac. River in Massachuetts, New York, and Vermont. Derived from the Mohican Indian *wudjoo*, meaning "a mountain," and *abic*, "a rock." [Also *Hoosic* and *Hoosick.*]

hoot (*hōōt*), *n.* a contemptuous shout: *v. t.* to jeer at or drive with contemptuous shouts: *v. i.* to utter a hoot.

hop (*hop*), *v. t.* [*p. t.* and *p. p.* hopped, *p. pr.* hopping], to leap over: *v. i.* to proceed by short leaps on one leg: *n.* a jump on one leg; a dance; a twining plant used in brewing malt liquors: *adj.* pertaining to hops.

Hopatcong (*hō-pat'kong*). Lake in New Jersey. An Indian name, meaning "stone over water," because of an artificial causeway of stone which connected an island of the lake with the shore.

hope (*hōp*), *n.* the desire of good accompanied by expectation; anticipation; confidence; the object of hope: *v. t.* to expect with confidence or desire: *v. i.* to cherish a desire for good; trust confidently. [ANTICIPATE.]

Hope. Found frequently as a female name. From the Anglo-Saxon, meaning "expectation."

hope-ful (*'fool*), *adj.* full of hope; promising success.

hop-scotch (*hop'skoch*), *n.* a children's game.

Horace. From the classical name, *Horatius*, which Littleton translates, "worthy to be looked upon, or becoming in appearance." Danish, *Horats;* Dutch, *Horatius;* Fr., *Horace;* Ger., *Horaz;* It., *Orazio;* Lat., *Horatius;* Port., *Horacio;* Sp., *Horacio.*

Horatio (*hō-rā'shi-ō*). From the root of *Horace.*

Horatius (*hō-rā'shi-us*). See *Horace.*

horde (*hōrd*), *n.* a vast multitude: *v. i.* to live, or act together, in hordes.

hore-hound. Same as *hoarhound.*

★**ho-ri-zon** (*hō-rī'zun*), *n.* the circular line where the sky and earth, or sea, appear to meet; hence the limit of one's mental vision.

hor-i-zon-tal (*hor-i-zon'tal*), *adj.* parallel to, or situated near, the horizon; level; opposed to vertical.

horn (*hōrn*), *n.* a hard protuberance on the head of certain mammals; anything made of horn, or like horn; a wind instrument.

horn-bill (*hôrn'bil*), *n.* a bird with a large horn-crested bill, allied to the kingfishers.
horn-blende (*'blend*), *n.* a dark green or black colored mineral.
hor-net (*hôr'net*), *n.* a wasp which inflicts a severe sting; hence, a disagreeable person.
horn-pipe (*hôrn'pīp*), *n.* a lively dance, especially by sailors.
hor-o-loge (*hor'ō-lōj*), *n.* a mechanism, as a clock, etc., for marking the hours.
hor-o-scope (*hor'ō-skōp*), *n.* a representation of the heavens at any time.
hor-ri-ble (*'i-bl*), *adj.* terrible; dreadful. [FEARFUL.]
hor-rid (*'id*), *adj.* dreadful; terrible; hideous; most obnoxious; gloomy. [FEARFUL.]
hor-ri-fy (*'i-fī*), *v. t.* to fill or strike with horror.
hor-ror (*'ēr*), *n.* excessive fear; extreme dread; great disgust: *pl.* extreme depression. [ABOMINATION.]
horse (*hôrs*), *n.* a solid-hoofed animal, used for riding or drawing burdens; cavalry; a framework for the support of anything: *v. t.* to mount on, or furnish with, a horse; place astride: *v. i.* to get on horseback.
horse-fly (*hôrs'flī*), *n.* a large fly that stings horses.
Horse latitudes. So called because situated between the trade winds and the westerly winds of higher latitudes, and distinguished for tedious calms. It received this name because it was in this portion of the Atlantic the old navigators often threw overboard the horses which they had undertaken to transport to the West Indies.
horse-laugh (*'laf*), *n.* a coarse, noisy laugh.
horse pow-er (*pou-ēr*), the theoretical unit of work of a steam engine equal to 33,000 lbs. raised 1 ft. in 1 minute.
horse-rad-ish (*'rad-ish*), *n.* a plant with a long root having an acrid, pungent taste.
horse-shoe (*'shōō*), *n.* a U-shaped metal shoe to protect the hoof of a horse; anything U-shaped; the king crab.
hor-ta-tive (*hôr'tà-tiv*), *adj.* inciting; giving exhortation. [Also *hortatory.*]
hor-ti-cul-ture (*-ti-kul'tūr*), *n.* the art of cultivating gardens.
hor-ti-cul-tur-ist (*-ist*), *n.* one who is skilled in horticulture.
ho-san-na (*hō-zan'à*), *n.* an exclamation of praise and glory to God.
hose (*hōz*), *n.* [*pl.* hose], coverings for the legs; stockings; flexible tubing for conveying water, etc.
ho-sier-y (*hō'zhēr-i*), *n.* stockings, underclothing, etc.; a manufactory for such goods.
hos-pit-a-ble (*hos'pit-à-bl*), *adj.* receiving and entertaining friends or strangers.
hos-pit-al (*-al*), *n.* an institution for the medical treatment and care of the sick.
hos-pi-tal-i-ty (*hos-pi-tal'i-ti*), *n.* [*pl.* hospitalities (*-tiz*)], the practice of entertaining friends and strangers with kindness and liberality.
host (*hōst*), *n.* a crowd; one who entertains another; the consecrated bread or wafer of the Eucharist.
hos-tage (*hos'tāj*), *n.* a person who remains in the hands of another as a pledge for the fulfillment of certain conditions; a pledge.
hos-tel (*'tel*), *n.* a hostelry.
hos-tel-ry (*-ri*), *n.* an inn or lodging house.
host-ess (*hōst'es*), *n.* a female host.
hos-tile (*hos'til*), *adj.* showing animosity; inimical; adverse.
hos-til-i-ty (*-til'i-ti*), *n.* [*pl.* hostilities (*-tiz*)], antagonism; enmity; animosity: *pl.* acts of warfare. [ENMITY, FEUD, ANTIPATHY.]
hos-tler (*'lēr*), *n.* one who takes charge of horses. [Also *ostler.*]
hot (*hot*), *adj.* [*comp.* hotter, *superl.* hottest], having much heat; burning; fiery; passionate; furious; pungent; unendurable.
Syn. HOT, fiery, burning, ardent. In the figurative application, a temper is said to be *hot* or *fiery;* rage is *burning;* the mind is *ardent* in pursuit of an object. Zeal may be *hot, fiery, burning* and *ardent;* but in the first three cases it denotes the intemperance of the mind when heated by religion or politics. [See *eager.*]
hot-bed (*'bed*), *n.* a bed of earth covered with glass for rearing plants.
hotch-potch (*hoch'poch*), *n.* a mixture of various ingredients; a thick broth of meat and vegetables. [*Scotch.*]
ho-tel (*hō-tel'*), *n.* a superior inn or lodging house.
Hôtel des Invalides (*ō-tàl'dā zan-vā-lēd'*). Freely translated, "soldiers' home." A great establishment founded in 1670 at Paris for disabled and infirm soldiers. The interior possesses halls adorned with interesting military paintings, and contains the Musée d'Artillerie, which includes a remarkable collection of mediæval and Renaissance armor. It contains also the tomb of Napoleon I.
Hôtel-de-Ville (*ō-tàl' du vàl*), **Paris.** A celebrated building of great size, burned by the French Commune in 1871, but carefully restored and much enlarged. The exterior is richly adorned with sculpture. The rooms of state display splendid sculptures and wall paintings by the most distinguished contemporary artists.
hot-house (*hot'hous*), *n.* a glazed building artificially heated for rearing tender plants.
Hottentot. The early Dutch settlers at the Cape of Good Hope were much struck with the *click* which forms such a distinct feature of the Caffre languages, and which sounded to them like a perpetual repetition of the syllables *hot* and *tot.* From these sounds they gave the natives the name of *Hott-en-tot, en* in the Dutch language meaning "and."
hound (*hound*), *n.* a particular breed of hunting dog; a mean fellow: *v. t.* to chase with, or as with, hounds; set upon.
hour (*our*), *n.* the 1-24th part of a day; 60 minutes; particular time: *pl.* life.
hour-glass (*our'glàs*), *n.* a device for measuring time by running sand through a narrow neck of a glass vessel.
★hou-ri (*hou'* or *hōō'ri*), *n.* [*pl.* houris (*'riz*)], one of the dark-eyed nymphs of the Mohammedan paradise.
Housatonic (*hōō-sà-ton'ik*). River of Massachusetts and Connecticut. From the Indian words *wussi,* "beyond," and *adene,* "mountain," meaning "beyond the mountain." According to other authorities from the Indian words *wassa,* "proud," *aton,* "stream," and *ick,* from *azhubic,* meaning "rocks," the whole meaning "proud river flowing through the rocks."
house (*hous*), *n.* a building for residence; place of abode; family or race; one of the divisions of a legislative or ecclesiastical body; a mercantile firm: *v. t.* to place in a house; shelter or lodge: *v. i.* to take shelter. [HABITATION.]
house-hold (*'hōld*), *n.* a family living together: *adj.* domestic; pertaining to a family or home.
Houston (*hūs'ton*), **Texas.** So called in honor of General Samuel Houston, the first president of the Texan republic. This name is borne by many places in the United States, generally given in honor of Gen. Houston, among them being counties in Minnesota, Tennessee, and Texas; city in Chickasaw county, Mississippi, and the city in Texas county, Missouri.
hov-el (*hov'el*), *n.* a mean habitation.
hov-er (*huv'ēr*), *v. i.* to flutter over or about; stand in suspense or expectation.
how (*hou*), *adv.* in what manner; to what degree or extent; for what reason.
how-be-it (*-bē'it*), *adv.* nevertheless.
how-ev-er (*-ev'ēr*), *adv.* in whatever manner or degree; at all events: *conj.* notwithstanding; yet.
how-itz-er (*'itz-ēr*), *n.* a short cannon, formerly used for throwing shells.
howl (*houl*), *n.* a prolonged cry: *v. i.* to cry like a dog or wolf; utter a prolonged cry; roar, like the wind: *v. t.* to utter in a loud wailing tone.
howl-er (*'ēr*), *n.* one who howls.
hoy-den. Same as *hoiden.*
hub (*hub*), *n.* the nave of a wheel.
hub-bub (*hub'bub*), *n.* uproar.
Hubert (*hū'bērt*). From the German name *Hugobert,* which Wachter derives from *hug-bert,* "distinguished for memory or prudence." Danish, *Hubertus;* Dutch, *Hubertus;* Fr., *Hubert;* Lat., *Hubertus;* Sw., *Hubertus.*
huck-a-back (*'à-bak*), *n.* a rough kind of linen or cotton cloth.
huck-le-ber-ry (*'l-ber-i*), *n.* [*pl.* huckleberries (*-iz*)], the edible berry of any species of Gaylussacia; the whortleberry.
huck-ster (*'stēr*), *n.* one who retails small articles.
hud-dle (*hud'l*), *v. t.* to crowd together in a disorderly manner; collect closely: *v. i.* to come in a crowd or haste (with *on, up, over*): *n.* confusion; crowd.
Hudson river, N. Y. Named in honor of Henry Hudson, an English navigator in the Dutch service who ascended the river in 1607. He called it "the Great River," or "Great River of the Mountains," from the extraordinary circumstance of such a body of water flowing through the mountains without a cataract. The Dutch gave the name of *Mauritius river,* in honor of Prince Maurice, to the section above New York island.
Hudson's bay and Hudson's strait. In northern North America. So named after their rediscovery by Captain Henry Hudson, while searching for the northwest passage in 1610. Prior to this date the bay and the strait had not been navigated since their original discovery by Cabot in 1512.
★hue (*hū*), *n.* color tint; a shouting; clamor.
hue and cry (*kri*), the process of pursuing.
huff (*huf*), *v. t.* to puff, or blow, up; treat with insolence: *n.* fit of petulance or sudden offense.
hug (*hug*), *n.* a close embrace: *v. t.* [*p. t.* and *p. p.* hugged, *p. pr.* hugging], to embrace closely; fondle; hold fast; keep close to. [CLASP.]
huge (*hūj*), *adj.* vast; very large.
Hugh (*hū*). Derived from the Teutonic *hoog,* or *hugr,* "high, tall, elevated;" also translated as "mind," "thought." Danish, *Hugo;* Dutch, *Hugo;* Fr., *Hugues;* It., *Ugo;* Lat., *Hugo;* Sw., *Hugo.*
Hu-gue-not (*hū'gē-not* or *-nō*), *n.* a name applied to French Protestants of the 16th and 17th centuries.
Hulda. A female name, from the Hebrew *Hhuldah,* signifying "a mole or weasel."
hulk (*hulk*), *n.* the body of a ship, especially if old or dismantled.
hulk-ing (*'ing*), *n.* unwieldy; bulky.
hull (*hul*), *n.* outer covering, especially of grain or nuts; the body or frame of a vessel: *v. t.* to peel off the hull or husk of.
hul-la-ba-loo (*-à-bà-lōō'*), *n.* uproar; noisy contention.
hum (*hum*), *n.* the noise of bees and other insects in flight: *v. i.* [*p. t.* and *p. p.* hummed, *p. pr.* humming], to make such a noise: *v. t.* to sing in a low undertone; set or keep going energetically: *interj.* a sound implying hesitation.
hu-man (*hū'man*), *adj.* pertaining to, or characteristic of, man or mankind. [HUMANE.]
hu-mane (*-mān'*), *adj.* having the feelings proper to man; benevolent; kind; compassionate.
Syn. HUMANE, benevolent, benignant, charitable, compassionate, human, kind, merciful. *Human* denotes what pertains to mankind; as, the *human* race; *humane* denotes what may rightly be expected of mankind at its best. The *compassionate* man sympathizes with and desires to relieve actual suffering.
hu-man-ize (*'man-īz*), *v. t.* to render human.
hu-man-ism (*-izm*), *n.* culture derived from classical training.
hu-man-ist (*-ist*), *n.* a student of the humanities; one versed in the knowledge of human nature.
hu-man-i-ta-ri-an (*hu-man-i-tā'ri-an*), *n.* a philanthropist; an anti-Trinitarian; a perfectionist: *adj.* philanthropic.
hu-man-i-ty (*'i-ti*), *n.* [*pl.* humanities (*-tiz*)], mankind; philanthropy; kindness: *pl.* the ancient classics.
hum-ble (*hum'bl*), *adj.* having a low estimate of one's self; modest; meek; mean; obscure: *v. t.* to make submissive; humiliate.
Syn. HUMBLE, modest, submissive. A man is *humble* from a sense of his comparative inferiority to others in point of station and outward circumstances, or he is *humble* from a sense of his imperfections, and a consciousness of not being what he ought to be; he is *modest* inasmuch as he sets but little value on his qualifications, acquirements, and endowments. Between *humble* and *submissive* there is this prominent feature of distinction, that the former marks a temper of mind, the latter a mode of action; we may be *submissive* because we are *humble;* but we may likewise be *submissive* from fear, from interested motives, and the like. [See *abase, compliant.*]
Ant. ADVANCE, exalt, honor.
hum-ble-bee (*-bē*), *n.* a bumble-bee.
Humboldt (*hum'bōlt*, Ger. *hoom'bōlt*) **river, Nev.** Named by General John C. Frémont in honor of Baron von Humboldt, prior to which it was known as *Mary's river,* also *Ogden river.*
hum-bug (*'bug*), *n.* a fraud or imposition under fair pretenses: *v. t.* [*p. t.* and *p. p.* humbugged, *p. pr.* humbugging], to cheat or impose upon.
hum-drum (*'drum*), *adj.* dull; monotonous; commonplace.
hu-mer-al (*hū'mēr-al*), *adj.* pertaining to the shoulder.
hu-mer-us (*'mēr-us*), *n.* [*pl.* humeri (*-i*)], the arm from the shoulder to the forearm.
hu-mid (*hū'mid*), *adj.* damp; moist.
hu-mid-i-ty (*'i-ti*), *n.* dampness. [MOISTURE.]
hu-mil-i-a-tion (*-mil-i-ā'shun*), *n.* the act of humiliating; the state of being humiliated; mortification.
hu-mil-i-ty (*-mil'i-ti*), *n.* [*pl.* humilities (*-tiz*)], the state or quality of being humble; modesty.
hum-ming bird (*hum'ing bērd*), a very small bird of the family Trochilidæ.
hum-mock (*'ok*), *n.* a large mass of floating ice; a hillock or mound.
hu-mor (*hū'* or *ū'mēr*), *n.* wit; merriment; the tendency to look at things mirthfully; caprice; temper; disease: *v. t.* to indulge; yield to a desire of.
Syn. HUMOR, temper, mood. The *humor* is so fluctuating that it varies in the same mind perpetually; but the *temper* is so far confined that it always shows itself to be the same whenever it shows itself at all. The *humor* makes a man different from himself; the *temper* makes him different from others; hence we speak of the *humor* of the moment; of the *temper* of youth or of old age. *Humor* and *mood* agree in denoting a particular and temporary state of feeling; but they differ in the cause; the former being attributable rather to the physical state of the body, and the latter to the moral frame of the mind; *mood* is a temporary or capricious state or condition of the mind in regard to passion or feeling. The *humor* of a man depends upon his *mood* whether he performs ill or well. [See *gratify.*]
hu-mor-ist (*-ist*), *n.* a droll person; one who is characterized by humor.
hu-mor-ous (*-us*), *adj.* full of, or characterized by, humor; comical; diverting.
hu-mor-some (*-sum*), *adj.* characterized by humor; laughable; capricious.
hump (*hump*), *n.* a protuberance on the back.
Humphrey (*hum'fri*). The same as *Cundfrid,* which Wachter translates "illustrious protector," or "support of peace." Dutch, *Humfried;* Fr., *Onfroi;* It., *Onofredo;* Lat., *Humphredus* or *Onuphrius;* Sw., *Humfrid.*
hu-mus (*hū'mus*), *n.* vegetable mold.
Hun (*hun*), *n.* one of an ancient Tartar race, which, in the 5th century A. D., overran and devastated Europe.
hunch (*hunch*), *n.* a hump; lump; a thrust with the fist or elbow: *v. t.* to push with the fist or elbow; push with a sudden jerk.
★hun-dred (*hun'dred*), *adj.* 10 times 10: *n.* the number of 10 times 10; the symbol (C or 100) denoting it.

hun-dredth (*hun'dredth*), *adj.* the ordinal of 100: *n.* one of 100 equal parts.
hun-dred-weight (*'dred-wāt*), *n.* the 1-20th part of a ton.
Hungary (*hung'ga-ri*). A country of central Europe. So named because originally inhabited by the Huns, who were first heard of in China in the third century B. C., as *Hiong-nu*, "giants."
hun-ger (*hung'gĕr*), *n.* keenness of appetite; want of food; strong desire: *v. i.* to feel the pain of hunger; to have a longing.
hun-gry (*'gri*), *adj.* [*comp.* hungrier, *superl.* hungriest], having a keen appetite; feeling want of food; emaciated; eagerly desirous.
hunk (*hungk*), *n.* a lump or large piece.
hunt (*hunt*), *v. t.* to pursue, or chase: *v. i.* to follow the chase: *n.* pursuit of game; a search.
hunts-man (*hunts'man*), *n.* [*pl.* huntsmen (*'men*)], one who hunts game.
hur-dle (*hûr'dl*), *n.* a movable fence; a fence to be leaped over: *v. t.* to cover or inclose with hurdles or jump hurdles.
hur-dy-gur-dy (*'di-gûr'di*), *n.* a barrel organ.
hurl (*hûrl*), *v. t.* to throw with violence; drive forcibly: *n.* the act of throwing.
hur-ly-bur-ly (*hûr'li-bûr-li*), *n.* tumult; great commotion.
Huron (*hū'ron*). One of the Great Lakes of North America. Opinions differ as to the classification of the name, whether French or Indian, and as to its meaning. According to some authorities it is a corruption of the name *Hure*, given a tribe of Indians by the French, the word meaning "head of a wild boar," applicable on account of their unkempt appearance; another authority says it is derived from the Indian words *Ohkwe honwe*, "true man"; by others to have been corrupted by the French from the Indian *Irri roron*, "cat tribe."
hur-rah (*hōō-rä'*), *interj.* a shout of joy, triumph, applause, etc.: *v. i.* to utter such a shout in applause, etc. [Also *hurra.*]
hur-ri-cane (*hur'i-kān*), *n.* a gale of extreme violence characterized by fitful changes of the wind. [BREEZE.]
hur-ri-cane deck (*dek*), the bridge-deck of a steamship; the upper deck of a river steamer.
hur-ry (*'i*), *v. t.* [*p. t.* and *p. p.* hurried, *p. pr.* hurrying], to impel to greater speed; hasten on; accelerate: *v. i.* to act or move with haste: *n.* haste; urgency; precipitation; confusion. [HASTEN.]
hurt (*hûrt*), *v. t.* [*p. t.* and *p. p.* hurt, *p. pr.* hurting], to cause or inflict pain in; wound; injure: *n.* a wound; injury; damage.
hurt-ful (*'fool*), *adj.* injurious; harmful.
Syn. HURTFUL, pernicious, noxious, noisome. Between *hurtful* and *pernicious* there is the same distinction as between hurting and destroying; that which is *hurtful* may hurt in various ways; but that which is *pernicious* necessarily tends to destruction; confinement is *hurtful* to the health; bad company is *pernicious* to the morals; *noxious* and *noisome* are species of the *hurtful;* that which is *noxious* inflicts a direct injury; that which is *noisome* inflicts it indirectly; *noxious* insects are such as wound; *noisome* vapors are such as tend to create disorders.
hur-tle (*hûrt'l*), *v. t.* to move violently; impel forcibly: *v. i.* to clash; dash in collision.
hus-band (*huz'band*), *n.* a married man: *v. t.* to manage or use with economy.
hus-band-man (*-man*), *n.* [*pl.* husbandmen (*-men*)], a tiller of the soil; farmer.
hus-band-ry (*-ri*), *n.* agriculture; frugality.
hush (*hush*), *interj.* be still! silence! *adj.* quiet; silent: *n.* quietness; silence: *v. t.* to make silent; soothe.
husk (*husk*), *n.* the dry outer covering of certain fruits or seeds: *v. t.* to remove husks from.
husk-ing bee (*'ing bē*), a social gathering to assist in husking corn.
husk-y (*'i*), *adj.* [*comp.* huskier, *superl.* huskiest], consisting of, or like, husks; worthless; rough or hoarse: said of the voice: *n.* sledge dog.
★**hus-sar** (*hooz-är'*), *n.* a light-armed cavalry soldier.
★**hus-sy** (*huz'i*, not *hus'i*), *n.* [*pl.* hussies (*'iz*)]. a worthless woman.
hus-tle (*hus'l*), *v. t.* to push roughly; jostle; mob; *v. i.* exhibit energy and alacrity.
hut (*hut*), *n.* a small house or cabin.
huz-zah. Same as *hurrah.*
hy-a-cinth (*hi'a-sinth*), *n.* a handsome bulbous flowering plant of the genus Hyacinthus.
hy-a-line (*hi'a-lin*), *adj.* glassy; transparent.
hy-brid (*hi'brid*), *n.* a mongrel; an animal or plant produced by interbreeding different species; a compound word, the elements of which are derived from different languages.
Hyde Park. A park in Westminster, London, situated two and one-fourth miles south by west of St. Paul's. This was originally the manor of Hyde, belonging to the abbey of Westminster. It became crown property at the dissolution of the monasteries in 1539. It contains about 400 acres.
Hy-dra (*hi'dra*), *n.* in classical mythology, the water serpent with nine heads slain by Hercules; hence any evil grappled with.
Hy-dran-ge-a (*hi-dran'jē-a*), *n.* a genus of shrubs of the saxifrage family.
hy-drant (*hi'drant*), *n.* a plug with a valve connected with a water main.
hy-drate (*'drāt*), *n.* a chemical compound containing a definite quantity of water: *v. t.* to combine with water to form a hydrate.
★**hy-drau-lic** (*hi-draw'lik*, not *hi-drol'ik*), *adj.* pertaining to fluids in motion: *n. pl.* the science of liquids in motion.
hy-dride (*'drid*), *n.* a chemical combination of hydrogen with another element.
hy-dro-car-bons (*-drō-kär'bonz*), *n. pl.* a general name for bitumens, mineral resins and fats which are composed of hydrogen and carbon.
hy-dro-gen (*'drō-jen*), *n.* a colorless, gaseous, inflammable substance, which is the lightest element known.
hy-drog-ra-phy (*-drog'rä-fi*), *n.* the art of measuring and mapping the water surface of the earth.
hy-dro-path-ic (*hī-drō-path'ik*), *adj.* pertaining to hydropathy.
hy-drop-a-thy (*hī-drop'ä-thi*), *n.* the cure of disease by water treatment.
hy-dro-pho-bi-a (*-fō'bi-ä*), *n.* a disease caused by the virus from the saliva of a mad dog.
hy-dro-stat-ic (*hī-drō-stat'ik*), *adj.* pertaining to hydrostatics: *n. pl.* that branch of physics that treats of fluids.
hy-dro-ther-a-py (*-ther'ä-pi*), *n.* treatment of disease by water.
hy-e-na (*hī-ē'nä*), *n.* a bristly-maned wolf-like quadruped.
hy-giene (*'jēn*), *n.* the science of health; sanitation.
hy-gi-en-ic (*-ji-en'ik*), *adj.* pertaining to hygiene.
hy-men (*'men*), *n.* marriage, from *Hymen*, the Grecian god of marriage.
hymn (*him*), *n.* a sacred ode expressive of praise or adoration: *v. t.* to sing hymns to; adore or praise by hymns.
hym-nal (*'nal*), *n.* a collection of hymns for public worship.
hym-nol-o-gy (*-nol'ō-ji*), *n.* the study of hymns.
hyper, a *prefix* meaning *over, beyond, excess, highest.*
hy-per-bo-la (*-pĕr'bō-lä*), *n.* a curve formed by the section of a cone when the cutting plane makes a greater angle with the base than the side of the cone makes.
hy-per-bo-le (*'bō-lē*), *n.* a figure of speech in which there is obvious exaggeration.
hy-per-bol-ic (*-bol'ik*), *adj.* exaggerated; pertaining to, or of the nature of, a hyperbola.
hy-phen (*hī'fen*), *n.* a mark (-) joining two words or syllables: *v. t.* to join by such a mark.
hyp-no-sis (*hip-nō'sis*), *n.* a hypnotic state or trance.
hyp-no-tism (*'nō-tizm*), *n.* a method of inducing a trance-like sleep.
hyp-no-tize (*'nō-tiz*), *v. t.* to produce, or subject to, hypnotism.
hyp-o-chon-dri-a (*hip-ō-kon'dri-ä*), *n.* a disease attended with extreme melancholy and anxiety. [Also *hypochondriasis.*]
hyp-o-chon-dri-ac (*'dri-ak*), *n.* one who is affected with hypochondria: *adj.* pertaining to, or affected with, hypochondria.
hy-poc-ri-sy (*hi-pok'ri-si*), *n.* dissimulation; false profession.
★**hyp-o-crite** (*hip'ō-krit*), *n.* one who practices hypocrisy.
hy-po-der-mic (*hī-pō-dĕr'mik*), *adj.* inserted under the skin: *n.* a medicine thus injected.
hy-pot-e-nuse (*-pot'ē-nūs*), *n.* the side of a right-angled triangle opposite the right angle. [Also *hypothenuse.*]
hy-poth-e-sis (*-poth'ē-sis*), *n.* [*pl.* hypotheses (*-sēz*)], something assumed for the purpose of argument; supposition; conjecture.
hy-po-thet-ic (*-pō-thet'ik*), *adj.* based on hypothesis; conjectural. [Also *hypothetical.*]
hys-sop (*his'up*), *n.* an aromatic plant with blue flowers.
hys-te-ri-a (*his-tē'ri-ä*), *n.* a nervous affection of women characterized by choking sensations or paroxysms.
hys-ter-ic-al (*-ter'i-kal*), *adj.* pertaining to, or affected by, hysterics; violently emotional.
hys-ter-ics (*his-ter'iks*), *n. pl.* hysteria.

I

I (*i*), *pron.* [*pl.* we (*wē*)], *nom. case, sing.* of the pronoun of the first person; the word by which the speaker or writer denotes himself.
i-am-bus (*i-am'bus*), *n.* a metrical foot consisting of two syllables, of which the first is snort and the second is long (⏑ —).
i-bex (*'beks*), *n.* one of a genus of wild goats, having very large recurved horns.
i-bis (*'bis*), *n.* one of a genus of large wading birds, having a long, curved beak.
ice (*is*), *n.* frozen water or other fluid: *v. t.* freeze; preserve in ice; cover with concreted sugar.
ice-berg (*'bĕrg*), *n.* a large mass of ice floating in the sea.
ice floe (*flō*), a smaller sheet of floating ice.
Iceland. Island of north Atlantic Ocean. Was called *Snæland*, the "land of snow," by the viking, Naddodd, who discovered it in 868. On account of the ice floes which then beset the northern coast, Floki, who followed him, called it *Island*, of which *Iceland* is the English translation.
ice pack (*is pak*), a field of broken and drifting ice.
Ichabod (*ik'ä-bod*). From the Hebrew *Iykhabhodh*, which Simonis renders "inglorious."
ich-thy-ol-o-gy (*ik-thi-ol'ō-ji*), *n.* that branch of zoölogy which treats of fishes.
i-ci-cle (*i'si-kl*), *n.* a pendent cone of ice formed by the freezing of dripping water.
i-ci-ly (*'si-li*), *adv.* in an icy manner; coldly.
i-cing (*'sing*), *n.* a coating of concreted sugar.
i-con (*i'kon*), *n.* [*pl.* icons (*'konz*), icones (*'kon-ēz*)], in the Greek church, a sacred image or picture. [Also *eikon, ikon.*]
i-con-o-clast (*i-kon'ō-klast*), *n.* an image breaker; one who attacks superstitions or shams.
i-cy (*i'si*), *adj.* [*comp.* icier, *superl.* iciest], pertaining to, or resembling, or abounding in, ice; cold; chilling; indifferent.
Idaho. A western state of the union. From the Indian words *Edah hoe*, descriptive of the sheen on the mountains, occasioned by the light on the snowy summits, expressed in English "gem of the mountains," or, literally, "the first appearance of the sun after sunrise on the mountain tops."
Iddo. Male name from the Hebrew *Iddo*, signifying "love of Him"; *i. e.*, of the Lord.
i-de-a (*i-dē'ä*), *n.* a mental image or picture; opinion; belief; plan.
Syn. IDEA, thought, imagination. The *idea* is the simple representation of an object; the *thought* is the reflection; and the *imagination* is the combination of ideas; we have *ideas* of the sun, the moon, and all material objects; we have *thoughts* on moral subjects; we have *imaginations* drawn from the *ideas* already existing in the mind.
Ant. ACTUALITY, fact, reality, substance.
i-de-al (*-dē'al*), *adj.* existing in imagination only; visionary; conforming to a standard of perfection; perfect: *n.* a mental conception, or an individual regarded as the standard of perfection.
Syn. IDEAL, imaginary. The *ideal* is not directly opposed to, but abstracted from, the real; the *imaginary*, on the other hand, is directly opposed to the real; it is the unreal thing formed by the imagination. *Ideal* happiness is the happiness which is formed in the mind without having any direct and actual prototype in nature; the *imaginary* is that which is opposite to some positive existing reality.
i-de-al-ism (*-izm*), *n.* in art, the effort to realize the highest type of any natural object; the doctrine that all our knowledge is a knowledge of ideas.
i-de-al-ize (*-iz*), *v. t.* to make ideal; embody in an ideal form: *v. i.* to form ideals.
i-den-tic-al (*i-den'ti-kal*), *adj.* expressing sameness.
i-den-ti-fy (*-den'ti-fi*), *v. t.* [*p. t.* and *p. p.* identified, *p. pr.* identifying], to make, prove to be, or consider as, the same.
i-den-ti-ty (*'ti-ti*), *n.* essential or practical sameness.
i-de-ol-o-gy (*i-dē-ol'ō-ji*), *n.* the science of ideas; the system of philosophy which derives ideas exclusively from sensation.
id-i-o-cy (*id'i-ō-si*), *n.* the state of being an idiot. [Also *idiotcy.*]
id-i-om (*'i-um*), *n.* a turn of expression peculiar to a language.
id-i-o-mat-ic (*-ō-mat'ik*), *adj.* peculiar to a language; given to, or marked by, the use of idioms. [Also *idiomatical.*]
★**id-i-o-syn-cra-sy** (*-i-ō-sin'krä-si*), *n.* [*pl.* idiosyncrasies (*-siz*)], peculiarity of constitution or temperament.
id-i-ot (*'i-ot*), *n.* one of weak intellect; a foolish person. [FOOL.]
i-dle (*i'dl*), *adj.* unemployed; unused; useless; irrelevant; lazy: *v. i.* to be inactive or without employment: *v. t.* to spend in idleness.
Syn. IDLE, lazy, indolent. One is termed *idle* who will do nothing useful; one is *lazy* who will do nothing at all without great reluctance; one is *indolent* who does not care to do anything or set about anything.
Ant. BUSY, industrious.
i-dler (*i'dlĕr*), *n.* one who idles; a lazy person.
i-dol (*i'dol*), *n.* an object of worship.
i-dol-a-ter (*'ä-tĕr*), *n.* an idol-worshipper.
i-dol-a-try (*'ä-tri*), *n.* [*pl.* idolatries (*-triz*)], the paying of divine honors to idols.
i-dol-ize (*i'dol-iz*), *v. t.* to make an idol of; love or admire to excess.
i-dyl (*i'dil*), *n.* a short, highly-wrought pastoral poem. [Also *idyll.*]
i-dyl-lic (*'lik*), *adj.* pertaining to, or of the nature of, an idyl.
if (*if*), *conj.* on the condition; whether; although.
Ignatius (*ig-nā'shi-us*). From the Greek *Ignatios*, "ardent," "fiery." Dutch, *Ignatius;* Fr., *Ignace;* Ger., *Ignaz* or *Ignatius;* Gr., *Ignatios;* It., *Ignacio;* Lat., *Ignatius;* Sp., *Ignacio* or *Inigo.*
ig-nite (*-nit'*), *v. t.* to set on fire; to make incandescent with heat: *v. i.* to take fire.
ig-ni-tion (*-nish'un*), *n.* the act of igniting; the state of being ignited.
ig-no-ble (*-nō'bl*), *adj.* of low birth or station; of mean character or quality.
ig-no-min-i-ous (*-nō-min'i-us*), *adj.* marked with ignomy or public disgrace.

ig-no-min-y (*ig'nō-min-i*), *n.* [*pl.* ignominies (*-iz*)], public disgrace or dishonor; cause or source of disgrace.

★ig-no-ra-mus (*ig-nō-rā'mus*, not *ig-nō-rā'mus*), *n.* an ignorant person.

ig-no-rance (*ig'nō-rans*), *n.* the state of being ignorant; want of knowledge.

ig-no-rant (*-rant*), *adj.* destitute of knolwedge; uninstructed; illiterate.

Syn. IGNORANT, illiterate, not educated, unlettered. *Ignorant* signifies destitute or lacking in education or knowledge; the most learned man is still *ignorant* of many things; *illiterate* is without letters and the knowledge that comes through reading; the *unlettered* man may have acquired some elementary knowledge; the *uneducated* man has never taken any systematic course of mental training.

Ant. EDUCATED, learned, trained, wise.

ig-nore (*-nōr'*), *v. t.* to be ignorant of; treat as unknown; disregard.

Ile de France (*ēl-du-frāns'*), "Isle of France." An ancient government of France. It was the portion of the country about Paris that was most completely under the control of the kings; *i. e.*, the royal domain.

Ilium (*il'i-um*). In ancient geography, a place in Mysia, Asia Minor, identified by the Greeks with the legendary Troy. It was frequently destroyed in prehistoric times; was rebuilt by Greek colonists in the sixth century B. C., and continued (as *New Ilium*) to late Roman times. Its site has been identified by Schliemann at Hissarlik, about 100 miles north by west of Smyrna.

ill (*il*), *adj.* [*comp.* worse, *superl.* worst], bad or evil; diseased; unfriendly; vicious: *n.* evil; misfortune; disease: *adv.* not well; not easily.

il-lic-it (*-lis'it*), *adj.* not authorized or allowed; unlicensed.

il-lim-it-a-ble (*-lim'it-a-bl*), *adj.* immeasurable; vast; infinite.

Illinois (*il-lin-oi'*, *il-lin-oiz'*). State of the United States. One authority gives it as a combination of the Indian word *Illini*, meaning "men," and the French suffix *ois*, meaning "tribe," "band of men."

il-lit-er-a-cy (*-lit'ĕr-a-si*), *n.* ignorance of letters

il-lit-er-ate (*il-lit'ĕr-āt*), *adj.* uneducated. [IGNORANT.]

ill-ness (*'nes*), *n.* the condition of being ill; disease; sickness.

il-lude (*-lūd'*), *v. t.* to mock; deceive; delude.

il-lu-mi-nate (*-lū'mi-nāt*), *v. t.* to give light to; decorate with lights; enlighten; make plain; adorn, as a manuscript: *v. i.* to display lights.

Syn. ILLUMINATE, illumine, enlighten. We *illuminate* by means of artificial lights; the sun *illuminates* the world by its own light; preaching and instruction *enlighten* the minds of men. *Illumine* is but a poetic variation of *illuminate*.

il-lu-mi-na-tion (*-nā'shun*), *n.* supply of light; the act of illuminating, or state of being illuminated; the art of illumining books; a design in an illuminated work; intellectual light.

il-lu-sion (*'zhun*), *n.* deceptive appearance; false show; hallucination.

il-lu-sive (*'siv*), *adj.* deceiving by illusion; deceptive; illusory.

il-lu-so-ry (*'sō-ri*), *adj.* causing illusion; fallacious; deceptive.

★il-lus-trate (*il-lus'trāt*, not *il'lus-trāt*), *v. t.* to make clear or intelligible; explain by examples. [EXPLAIN.]

il-lus-tra-tion (*-trā'shun*), *n.* the act of illustrating; the state of being illustrated; that which illustrates; a picture.

il-lus-tra-tive (*'trā-tiv*), *adj.* tending to illustrate, elucidate, or exemplify.

il-lus-tri-ous (*'tri-us*), *adj.* distinguished by luster or greatness; eminent; renowned; glorious. [DISTINGUISHED, FAMOUS.]

im-age (*im'āj*), *n.* an imitation of any person or thing; likeness; a conception, or idea: *v. t.* to form, or reflect, an image of; represent to the mental vision; imagine.

im-age-ry (*'āj-ri*), *n.* [*pl.* imageries (*-riz*)], representation by images; images collectively; forms of the fancy.

im-ag-i-na-ble (*-aj'i-nà-bl*), *adj.* that may be imagined or conceived.

im-ag-i-na-ry (*'i-nā-ri*), *adj.* existing only in imagination; unreal; utopian. [IDEAL.]

im-ag-i-na-tion (*-nā'shun*), *n.* the image-forming power of the mind; a conception or idea; fancy; invention. [IDEA, FANCY.]

im-ag-i-na-tive (*'i-nā-tiv*), *adj.* proceeding from, exhibiting, or endowed with, imagination.

im-ag-ine (*-aj'in*), *v. t.* to form a mental picture of; produce by the imagination; think; suppose: *v. i.* to form a mental image; fancy; surmise. [APPREHEND, THINK.]

im-be-cile (*im'bē-sil*), *adj.* without strength of mind: *n.* one of feeble mind.

im-be-cil-i-ty (*-sil'i-ti*), *n.* [*pl.* imbecilities (*-tiz*)], mental weakness. [DEBILITY.]

im-bibe (*-bīb'*), *v. t.* to drink in; absorb, as if by drinking: *v. i.* to drink. [ABSORB.]

★im-broi-lio (*-brōl'yō*), *n.* intricate and perplexing state of affairs; strife; complicated plot.

im-brue (*-brōō'*), *v. t.* to wet or moisten; soak; drench.

im-bue (*-bū'*), *v. t.* to cause to absorb; tinge deeply; dye.

im-i-tate (*im'i-tāt*), *v. t.* to produce a semblance of; use as a model or pattern; copy.

im-i-ta-tion (*-tā'shun*), *n.* the act of imitating; that which is produced by imitating: *adj.* not genuine.

im-mac-u-late (*-mak'ū-lāt*), *adj.* without blemish; unspotted; undefiled; pure. [inherent.

im-ma-nent (*im'mā-nent*), *adj.* remaining within;

im-ma-te-ri-al (*-mā-tē'ri-ăl*), *adj.* not consisting of matter; spiritual; unimportant.

im-ma-ture (*-mā-tūr'*), *adj.* not ripe; not fully grown or developed; not finished or perfected; crude.

im-ma-tur-i-ty (*-tūr'i-ti*), *n.* unripeness; incompleteness.

im-meas-ur-a-ble (*im-mezh'ūr-à-bl*), *adj.* not to be measured; immense; limitless; vast.

im-me-di-ate (*-mē'di-āt*), *adj.* next; direct; instant.

im-me-mo-ri-al (*-mē-mō'ri-al*), *adj.* extending beyond the reach of memory, record, or tradition.

im-mense (*-mens'*), *adj.* immeasurable; boundless; vast; very great or large.

im-men-si-ty (*-men'si-ti*), *n.* [*pl.* immensities (*-tiz*)], the character of being immense; vastness in extent or bulk.

im-merge (*-mĕrj'*), *v. t.* to plunge into or under anything, especially a fluid; immerse.

im-merse (*-mĕrs'*), *v. t.* to plunge into or under anything, especially a fluid; sink; dip.

im-mi-grant (*'i-grant*), *adj.* passing or coming into, as a new habitat: *n.* one who, or that which, immigrates.

im-mi-grate (*'i-grāt*), *v. i.* to come into a new habitat or place of residence. [EMIGRATE.]

im-mi-nence (*'i-nens*), *n.* the condition of being imminent; nearness.

im-mi-nent (*'i-nent*), *adj.* threatening or about to fall or occur immediately.

Syn. IMMINENT, impending, threatening. All these terms are used in regard to some evil that is exceedingly near; *imminent* conveys no idea of duration; *impending* excludes the idea of what is momentary. A person may be in *imminent* danger of losing his life in one instant, and the danger may be over the next instant; but an *impending* danger is that which has been long in existence and gradually approaching; a *threatening* evil gives intimations of its own approach; we perceive the *threatening* tempest in the blackness of the sky.

Ant. CONTINGENT, remote, unlikely.

im-mo-bil-i-ty (*-mō-bil'i-ti*), *n.* fixedness in place or state.

im-mod-er-ate (*-mod'ĕr-āt*), *adj.* not moderate; extravagant; intemperate.

im-mod-est (*-mod'est*), *adj.* forward; arrogant; indelicate; uncnaste.

im-mo-late (*'ō-lāt*), *v. t.* to kill as a sacrificial victim; offer in sacrifice; make a sacrifice of.

im-mor-al (*-mor'al*), *adj.* vicious; dissolute; dishonest; unprincipled.

im-mor-tal (*-mōr'tal*), *adj.* not mortal or subject to death; imperishable; ever-living: *n.* one who is immortal.

im-mor-tal-i-ty (*-tal'i-ti*), *n.* exemption from death or oblivion.

im-mor-telle (*-mor-tel'*), *n.* [*pl.* immortelles (*-telz'*)], a plant whose flowers may be dried without losing their form or color.

im-mov-a-ble (*-mōōv'à-bl*), *adj.* incapable of being moved; fixed; unfeeling. [OBSTINATE.]

im-mune (*-mūn'*), *adj.* exempt, as from a disease: *n.* one who is exempt from disease.

im-mu-ni-ty (*-mū'ni-ti*), *n.* [*pl.* immunities (*-tiz*)], exemption from any duty, office, tax or liability.

im-mure (*-mūr'*), *v. t.* to inclose within walls.

im-mu-ta-ble (*-mū'tà-bl*), *adj.* unchangeable; invariable; unalterable; permanent. [PERMANENT.]

imp (*imp*), *n.* a young, little or inferior devil; a mischievous child.

im-pact (*im'pakt*), *n.* collision.

im-pair (*-pâr'*), *v. t.* to make worse; lessen in quality: *v. i.* to deteriorate.

Syn. IMPAIR, injure. *To impair* is a progressive mode of *injuring; an injury* may take place either by degrees or by an instantaneous act; straining of the eyes *impairs* the sight, but a blow *injures* rather than *impairs* the eye.

im-pale (*-pāl'*), *v. t.* to fix on a stake.

im-pal-pa-ble (*-pal'pà-bl*), *adj.* not to be perceived by touch; not material; incorporeal.

im-pan-el (*-pan'el*), *v. t.* summon to serve on a jury; draw from the panel and swear in.

im-par-i-ty (*-par'i-ti*), *n.* inequality; disproportion; want of correspondence.

im-part (*-pārt'*), *v. t.* to bestow a share or portion of; give; make known: *v. i.* to give a share. [COMMUNICATE.]

im-par-tial (*-pär'shal*), *adj.* free from partiality; just; unprejudiced. [CANDID.]

im-pass-a-ble (*-pàs'à-bl*), *adj.* not to be passed.

im-pas-sioned (*-pash'und*), *p. adj.* moved to strong feeling; animated; excited.

im-pas-sive (*-pàs'iv*), *adj.* apathetic.

im-pa-tient (*-pā'shent*), *adj.* intolerant of pain, delay, opposition, control, or circumstances. [EAGER.]

im-peach (*-pēch'*), *v. t.* to call in question; accuse before a tribunal of official misconduct. [ACCUSE.]

im-peach-ment (*'ment*), *n.* the arraignment of a public officer for malfeasance in office; a discrediting or calling in question.

im-pec-ca-ble (*im-pek'à-bl*), *adj.* not liable to sin; faultless.

im-pe-cu-ni-ous (*-pē-kū'ni-us*), *adj.* without money; poor.

im-pede (*-pēd'*), *v. t.* to obstruct; hinder. [OBSTRUCT.]

im-ped-i-ment (*-ped'i-ment*), *n.* that which impedes progress or activity; obstruction; obstacle; hindrance. [DIFFICULTY.]

im-pel (*-pel'*), *v. t.* [*p. t.* and *p. p.* impelled, *p. pr.* impelling], to drive or urge forward or on; constrain to any kind of motion or action. [PERSUADE.]

im-pend (*-pend'*), *v. i.* to hang over; be ready to fall; be at hand.

im-pend-ing (*'ing*), *p. adj.* overhanging; suspended so as to menace; close at hand. [IMMINENT.]

im-pen-e-tra-ble (*-pen'ē-trà-bl*), *adj.* not penetrable; not admitting entrance.

im-pen-i-tence (*-pen'i-tens*), *n.* hardness of heart; stubborn wickedness. [Also *impenitency*.]

im-pen-i-tent (*'i-tent*), *adj.* not contrite; obdurate: *n.* a hardened sinner.

im-per-a-tive (*-per'à-tiv*), *adj.* expressing command; obligatory: *n.* that mood of a verb that expresses command.

im-per-cep-ti-ble (*-pĕr-sep'ti-bl*), *adj.* that cannot be immediately perceived.

im-per-fect (*'fekt*), *adj.* wanting in completeness, correctness, or excellence; defective; faulty.

im-per-fec-tion (*-fek'shun*), *n.* incompleteness; faultiness; a defect or blemish.

im-pe-ri-al (*-pē'ri-al*), *adj.* pertaining to an empire or emperor of superior size or excellence; royal; sovereign.

im-pe-ri-al-ism (*-izm*), *n.* the system of imperial government; the policy of imperial federation; policy of territorial expansion.

im-per-il (*-per'il*), *v. t.* to put in peril; endanger; jeopardize.

im-pe-ri-ous (*-pē'ri-us*), *adj.* domineering, dictatorial, overbearing; urgent; imperative.

Syn. IMPERIOUS, lordly, domineering. A person's temper or his tone is denominated *imperious;* his air or deportment is *lordly;* his tone is *domineering; overbearing* is employed for men in the general relations of society, whether superiors or equals. A man of an *imperious* temper and some talent will frequently be so *overbearing* in the assemblies of his equals as to awe the rest into silence.

im-per-ish-a-ble (*-per'ish-à-bl*), *adj.* indestructible; not subject to decay; permanently enduring.

im-per-me-a-ble (*pĕr'mē-à-bl*), *adj.* not permitting passage, as of a fluid, through its substance; impervious; impenetrable.

im-per-son-al (*'sun-al*), *adj.* wanting personality or conscious individuality; not referring to a particular person: *n.* an impersonal verb.

im-per-son-ate (*'sun-āt*), *v. t.* to invest with personality; to represent the person or character of, especially on the stage.

im-per-ti-nence (*'ti-nens*), *n.* that which is impertinent or irrelevant, as in speech or manners; rudeness.

im-per-ti-nent (*'ti-nent*), *adj.* nonpertinent; of no relation to the matter in hand; uncivil, or offensive.

im-per-turb-a-ble (*-tûrb'à-bl*), *adj.* not easily disturbed, agitated, or disconcerted. [CALM.]

im-per-vi-ous (*'vi-us*), *adj.* not to be passed through or penetrated; impenetrable.

im-pet-u-ous (*-pet'ū-us*), *adj.* rushing with force and violence; precipitate. [VIOLENT, EAGER.]

im-pe-tus (*'pē-tus*), *n.* impulse; impulsion; momentum.

im-pi-e-ty (*-pī'e-ti*), *n.* [*pl.* impieties (*-tiz*)], want of piety; ungodliness; an act of irreverence.

im-pinge (*-pinj'*), *v. i.* to strike or dash; clash; come in collision (with *on, upon,* or *against*).

★im-pi-ous (*im'pi-us*, not *im-pī'us*), *adj.* irreligious; wicked; profane. [IRRELIGIOUS.]

imp-ish (*imp'ish*), *adj.* having the character of an imp.

★im-pla-ca-ble (*im-plā'kà-bl*, not *im-plak'à-bl*), *adj.* not to be pacified or appeased; relentless.

im-plant (*-plant'*), *v. t.* to infix for growth; cause to take root.

im-ple-ment (*'plē-ment*), *n.* that which supplies a want, or is a requisite to an end: *pl.* tools and weapons.

im-pli-cate (*'pli-kāt*), *v. t.* to infold; involve; entangle.

Syn. IMPLICATE, involve. *Implicate* denotes to fold into a thing; and *involve* signifies to roll into a thing; *to implicate* marks something less entangled than *to involve*. In application to human affairs, people are said to be *implicated* who have taken ever so small a share in a transaction; but they are *involved* only when they are deeply concerned.

Ant. EXTRICATE, remove.

im-pli-ca-tion (*-kā'shun*), *n.* entanglement; that which is implied; deduction.

im-plic-it (*-plis'it*), *adj.* implied; resting on implication; trusting in another; tacit; unreserved.

im-plore (*-plōr'*), *v. t.* to entreat (a person, or for a thing) earnestly, humbly, and importunately: *v. i.* to beg; pray; supplicate. [BEG.]

im-ply (*-pli'*), *v. t.* [*p. t.* and *p. p.* implied, *p. pr.* implying], to contain by implication; mean or signify by implication.

im-po-lite (*im-pō-līt'*) *adj.* wanting in good manners; boorish.
im-pol-i-tic (*-pol'i-tik*), *adj.* contrary to good policy; unwise.
im-port (*-pōrt'*), *v. t.* to bring into a country from abroad; bring in from without, as irrelevant matter into a discussion; imply; signify; concern: *v. i.* to be of moment. *n.* (*im'pōrt*) merchandise brought into a country from abroad (usually in *pl.*); meaning; purport; significance; importance.
im-por-tance (*-pôr'tans*), *n.* the quality of being important; high place in public estimation; high self-esteem.
im-por-tant (*'tant*), *adj.* of much import or significance; momentous; of high standing; pompous.
im-por-tu-nate (*-pôr'tū-nāt*), *adj.* persistent; unreasonable or troublesome in solicitation; urgent. [EAGER.]
★**im-por-tune** (*-pôr-tūn'*), *v. t.* to harass with perpetual petitions or demands: *v. i.* to beg persistently or urgently. [SOLICITATION.]
im-pose (*-pōz'*), *v. t.* to lay upon, as a burden, punishment, or charge; palm off: *v. i.* to place a burden or tax; practice deception (with *upon*). [ABUSE.]
im-pos-ing (*'ing*), *p. adj.* adapted to impress forcibly; commanding; stately; grand; impressive.
im-po-si-tion (*-pō-zish'un*), *n.* a laying upon, especially of hands in ordination or confirmation; that which is imposed, levied, or enjoined; a trick, fraud, or deception.
im-pos-si-ble (*-pos'i-bl*), *adj.* that cannot be done; inconceivable.
im-post (*'pōst*), *n.* that which is imposed or levied; a tax, or duty.
im-pos-tor (*-pos'tẽr*), *n.* one who imposes upon others. [DECEIVER.]
im-pos-ture (*-pos'tūr*), *n.* deception.
im-po-tence (*'pō-tens*), *n.* the state of being impotent in body or mind; feebleness.
★**im-po-tent** (*'pō-tent*, not *im-pō'tent*), *adj.* wanting in physical, intellectual, or moral power; weak.
im-pound (*-pound'*), *v. t.* to shut up in a pound or pen; confine.
im-pov-er-ish (*-pov'ẽr-ish*), *v. t.* to make poor; reduce to poverty; cause to deteriorate.
im-prac-ti-ca-ble (*-prak'ti-kȧ-bl*), *adj.* not to be effected by the means employed, or at command.
im-pre-cate (*'prē-kāt*), *v. t.* to invoke, especially an evil or curse, upon; curse; wish evil to.
im-preg-na-bil-i-ty (*-preg-nȧ-bil'i-ti*), *n.* the quality of being unconquerable.
im-preg-na-ble (*'nȧ-bl*), *adj.* not to be captured, as a fortress; not to be overcome, as virtue.
im-preg-nate (*-preg'nāt*), *v. t.* to make pregnant; fecundate; imbue; saturate.
im-pre-sa-ri-o (*ēm-prā-sä'rē-ō*), *n.* the manager of an opera or concert company.
im-press (*-pres'*), *v. t.* to mark, stamp, or print by pressure; to affect forcibly, or stamp deeply on, the mind; compel to enter the public service as soldiers or sailors: *n.* (*im'pres*) a mark made by pressure; an image or figure; an impression or image fixed in the mind.
im-press-i-ble (*'i-bl*), *adj.* capable of being impressed; susceptible of impressions.
im-pres-sion (*-presh'un*), *n.* the mark made by a stamp or mold; style or character formed by external force or influence; an image in the mind; the effect produced by a sensation, passion, or emotion; remembrance, or belief; edition.
im-pres-sion-a-bil-i-ty (*-ȧ-bil'i-ti*), *n.* the quality of being impressionable.
im-pres-sion-a-ble (*-ȧ-bl*), *adj.* capable of receiving impressions; susceptible.
im-pres-sion-ism (*'un-izm*), *n.* the doctrine that natural objects should be painted (in literature described) so as to reproduce only their general effect or impression.
im-pres-sion-ist (*'un-ist*), *n.* one who, in art or in literature, holds the theory of impressionism.
im-press-ive (*-pres'iv*), *adj.* capable of making impression.
im-press-ment (*-pres'ment*), *n.* the act of seizing for public use, or of compelling to enter the pubilc service.
im-print (*-print'*), *v. t.* to mark by pressure; print; impress feebly, as on the mind or memory: *n.* (*im'print*) an impression, impress, or mark left by something.
im-pris-on (*-priz'n*), *v. t.* to put into a prison; restrain or confine in any way.
im-prob-a-ble (*-prob'ȧ-bl*), *adj.* unlikely; not to be expected.
im-prob-i-ty (*-prob'i-ti*), *n.* want of probity or rectitude; dishonesty.
im-promp-tu (*-promp'tū*), *adv.* without preparation; *adj.* extemporaneous: *n.* extemporaneous speech or effort.
im-prop-er (*-prop'ẽr*), *adj.* not well adapted or suited to the purpose; erroneous; unseemly.
im-pro-pri-e-ty (*-prō-prī'ē-ti*), *n.* [*pl.* improprieties (*-tiz*)], the quality of being improper; unsuitableness.
im-prove (*-prōōv'*), *v. t.* to make better; turn to account: *v. i.* to grow better. [AMEND.]
im-prove-ment (*'ment*), *n.* advancement of anything from good to better; profitable use or application of anything; that by which the value of anything is advanced: *pl.* betterments.
im-prov-i-dence (*-prov'i-dens*), *n.* want of foresight or thrift.
im-prov-i-dent (*im-prov'i-dent*), *adj.* lacking foresight or thrift; careless.
im-prov-i-sa-tion (*-sā'shun*), *n.* the act of improvising; an impromptu.
im-pro-vise (*-prō-vīz'*), *v. t.* to compose extemporaneously; bring about on a sudden: *v. i.* to compose extemporaneously; do a thing in an offhand way.
im-pru-dent (*-prōō'dent*), *adj.* wanting prudence; indiscreet; injudicious.
im-pu-dent (*'pū-dent*), *adj.* shameless; immodest; offensively forward.
im-pugn (*-pūn'*), *v. t.* to attack by arguments; contradict.

Syn. IMPUGN, attack. He who *impugns* may sometimes proceed insidiously and circuitously to undermine the faith of others; he who *attacks* always proceeds with more or less violence. When there are no arguments wherewith to *impugn* a doctrine, it is easy *to attack* it with ridicule and scurrility.

Ant. DEFEND, resist.

im-pulse (*'puls*), *n.* force communicated suddenly; the result of an impelling force; a mental force directly urging to action.
im-pul-sive (*'siv*), *adj.* having the power of impelling; actuated by or resulting from, impulse; passionate.
im-pu-ni-ty (*-pū'ni-ti*), *n.* freedom from punishment, injury, or loss.
im-pure (*-pūr'*), *adj.* mixed with extraneous matter; unchaste; unclean; dirty; not accurate.
im-pu-ri-ty (*'ri-ti*), *n.* [*pl.* impurities (*-tiz*)], uncleanness; a physical or moral blemish.
im-pu-ta-tion (*-tā'shun*), *n.* the act of imputing or charging; anything imputed or charged; censure; reproach; insinuation.
im-pute (*-pūt'*), *v. t.* to charge, attribute or ascribe; attribute as derived from another.
in-ac-tive (*in-ak'tiv*) *adj.* not active.
in-ad-e-quate (*-ad'ē-kwāt*), *adj.* not adequate.
in-ad-vert-ent (*-vẽrt'ent*), *adj.* inattentive; heedless; unconscious.
in-al-ien-a-ble (*-āl-yen-ȧ-bl*), *adj.* that cannot, or should not, be alienated, surrendered or transferred to another.
in-ane (*-ān'*), *adj.* empty; senseless; pointless: *n.* infinite void; space.
in-an-i-mate (*-an'i-māt*), *adj.* not animate or animated.
in-an-i-ty (*-an'i-ti*), *n.* [*pl.* inanities (*-tiz*)], emptiness; mental vacuity; frivolity: *pl.* vanities.
in-ap-pre-ci-a-ble (*-ap-prē'shi-ȧ-bl*), *adj.* not to be appreciated or estimated; of no consequence.
in-ar-tic-u-late (*-är-tik'ū-lāt*), *adj.* not uttered with intelligible distinctness; incapable of speech; not articulated.
in-as-much (*-az-much'*), *adv.* in a like degree; seeing that (with *as*); because.
in-at-ten-tive (*-at-ten'tiv*) *adj.* not attentive. [ABSTRACTED.]
in-au-gu-ral (*-aw'gū-ral*), *adj.* pertaining to an inauguration.
★**in-au-gu-rate** (*in-aw'gu-rāt*, not *in-aw'gur-āt*), *v. t.* to invest with office in a formal manner; consecrate; make a formal beginning of; dedicate.
in-aus-pi-cious (*-aws-pish'us*), *adj.* ill-omened; unlucky; unfavorable.
in-breed (*-brēd'*), *v. t.* to breed or develop within; breed from animals closely related.
In-ca (*ing'kȧ*), *n.* the Peruvian emperor, or a member of the royal race in Peru (which claimed descent from the sun) previous to the Spanish conquest under Pizarro, 1531; the aboriginal Peruvian race.
in-cal-cu-la-ble (*in-kal'kū-lȧ-bl*), *adj.* beyond calculation.
in-can-des-cent (*-kan-des'ent*), *adj.* glowing; white with heat.
in-can-des-cent lamp (*lamp*), *n.* a lamp in which the light is produced by a thin strip of nonconducting material contained in a vacuum, and heated to incandescence by an electric current.
in-can-ta-tion (*-kan-tā'shun*), *n.* a magical charm said or sung.
in-ca-pa-ble (*kā'pȧ-bl*) *adj.* not capable.
in-ca-pac-i-tate (*-kȧ-pas'i-tāt*), *v. t* to deprive of capacity or natural power; disqualify; disable.
in-ca-pac-i-ty (*-ti*), *n.* lack of power, physical or mental; legal disqualification.
in-car-cer-ate (*-kär'sẽr-āt*), *v. t.* to imprison; confine.
in-car-na-tion (*-nā'shun*), *n.* the act of clothing with, or assuming, flesh; embodiment in human form.
in-cau-tious (*-kaw'shus*), *adj.* wanting in caution; unwary.
in-cen-di-a-rism (*-sen'di-ȧ-rizm*), *n.* the act of an incendiary; burning; arson.
in-cen-di-a-ry (*'di-ȧ-ri*), *adj.* pertaining to arson or the malicious burning of property; tending to excite passion or violence: *n.* one guilty of arson; one who excites passion or violence.
in-cense (*in-sens'*), *v. t.* to fire; inflame with anger; provoke; irritate; (*in'sens*), perfume with incense: *n.* any aromatic material which exhales perfume when burned; any gratifying odor; homage.
in-cen-tive (*-sen'tiv*), *adj.* inciting; encouraging: *n.* incitement; encouragement; motive; spur.
in-cep-tion (*-sep'shun*), *n.* reception; beginning.
in-cep-tive (*-sep'tiv*), *adj.* beginning; noting beginning: *n.* an inceptive word or phrase.
in-ces-sant (*in-ses'ant*), *adj.* unceasing: ceaseless; continuous.
inch (*inch*), *n.* 1-12th of a foot.
in-cho-ate (*'kō-āt*), *adj.* just begun: incipient; elementary.
in-ci-dence (*'si-dens*), *n.* the direction in which a ray of light or heat falls upon a surface.
in-ci-dent (*'si-dent*), *adj.* apt to occur; appertaining; occurring accidentally; subordinate: *n.* occurrence; that which happens beside the main design; episode. [EVENT, ACCIDENT, CIRCUMSTANCE.]
in-ci-dent-al (*'al*), *adj.* casual; subordinate: *n.* something casual or subordinate: *pl.* minor expenses.
in-cin-er-ate (*-sin'ẽr-āt*), *v. t.* to burn to ashes.
in-cip-i-ent (*-sip'i-ent*), *adj.* beginning to be or to appear; initial.
in-cise (*-sīz'*), *v. t.* to cut in; to engrave.
in-ci-sion (*-sizh'un*), *n.* a cut made with a sharp instrument.
in-ci-sive (*-sī'siv*), *adj.* having the quality of cutting into; sharp; trenchant.
in-cite (*-sīt'*), *v. t.* to move to action; stir up; spur on. [EXCITE, PERSUADE.]
in-cite-ment (*'ment*), *n.* an inciting cause; incentive; impulse.
in-ci-vil-i-ty (*-si-vil'i-ti*), *n.* [*pl.* incivilities (*-tiz*)], lack of civility or courtesy; impoliteness.
in-clem-ent (*-klem'ent*), *adj.* not clement; unmerciful; tempestuous.
in-cli-na-tion (*-kli-nā'shun*), *n.* a leaning; tendency of the mind; disposition; slant; propensity.

Syn. INCLINATION, tendency, propensity, proneness. All these terms are employed to designate the state of the will toward an object; *inclination* denotes its first movement toward an object; *tendency* is a continued *inclination; propensity* denotes a still stronger leaning of the will; and *prone* characterizes an habitual and fixed state of the will toward an object. *Propensity* and *proneness* both designate a downward direction, and consequently refer only to that which is bad and low; a person has a *propensity* to drinking, and a *proneness* to lying. [See *disposition.*]

Ant. DISINCLINATION, repulsion.

in-cline (*-klīn'*), *v. i.* to deviate from the normal; lean; bow; have a tendency: *v. t.* to cause to lean, direct; bow; turn; dispose: *n.* a slope; an inclined plane. [LEAN, ADDICTED, PERSUADE.]
in-close (*-klōz'*), *v. t.* to shut in; encompass; surround; put into an envelope.

Syn. INCLOSE, include. A yard is *inclosed* by a wall; particular goods are *included* in a reckoning. [See *circumscribe.*]

in-clude (*-klōōd'*), *v. t.* to inclose; hold as in an inclosure. [COMPRISE.]
in-clu-sive (*-klōō'siv*), *adj.* inclosing; including.
in-co-her-ence (*-kō-hẽr'ens*), *n.* want of cohesion; incongruity; inconsequence. [Also *incoherency.*]
in-co-her-ent (*'ent*), *adj.* without cohesion; incongruous.
in-com-bus-ti-ble (*-kom-bus'ti-bl*), *adj.* that cannot be consumed by fire: *n.* an incombustible.
in-come (*'kum*), *n.* the gain which proceeds from labor, business, property, or capital.
in-com-men-su-ra-ble (*kom-men'shoo-rȧ-bl*), *adj.* having no common measure; having no common divisor except unity: *n.* one of two (or more) quantities that have no common measure.
in-com-men-su-rate (*-rāt*), *adj.* incommensurable; not sufficient in measure; inadequate.
in-com-mode (*-kom-ōd'*), *v. t.* to give inconvenience to.
in-com-mo-di-ous (*'i-us*), *adj.* troublesome; inconvenient.
in-com-mu-ni-ca-ble (*-mū'ni-kȧ-bl*), *adj.* that cannot be communicated or told.
★**in-com-pa-ra-ble** (*in-kom'pȧ-rȧ-bl*, not *in-kom-pâr'ȧ-bl*), *adj.* not admitting of comparison; unequaled. [RARE.]
in-com-pat-i-ble (*kom-pat'i-bl*), *adj.* incapable of harmonious subsistence or combination; inconsistent; incongruous: *n. pl.* persons or things irreconcilably disagreeing with each other.
in-com-pe-tence (*-kom'pē-tens*), *n.* inability; insufficiency; inadequacy. [Also *incompetency.*]
in-com-pe-tent (*'pē-tent*), *adj.* wanting ability; inadequate; incapacitated; inadmissible.
in-com-plete (*-plēt'*), *adj.* not fully finished or developed; imperfect; defective.
in-com-pre-hen-si-ble (*-prē-hen'si-bl*), *adj.* illimitable; inconceivable. [MYSTERIOUS.]
in-con-ceiv-a-ble (*in-kon-sēv'ȧ-bl*), *adj.* incapable of being conceived or imagined; incredible.
in-con-clu-sive (*-klōō'siv*), *adj.* leading to no conclusion; unconvincing; ineffective. [ABSURD.]
in-con-gru-i-ty (*-grōō'i-ti*), *n.* [*pl.* incongruities (*-tiz*)], want of mutual fitness; unsuitableness of one thing to another.
in-con-gru-ous (*-kong'grōō-us*), *adj.* reciprocally disagreeing; unsuited to one another; inharmonious; inappropriate.
in-con-se-quent (*kon'sē-kwent*), *adj.* not following from the premises; irrelevant.
in-con-sid-er-a-ble (*-sid'ẽr-ȧ-bl*), *adj.* not deserving consideration; unimportant.
in-con-sid-er-ate (*-sid'ẽr-āt*), *adj.* without consideration; thoughtless.
in-con-sis-tent (*-sis'tent*), *adj.* lacking coherence or agreement; discrepant; self-contradicting.

in-con-sol-a-ble (*in kon-sōl'ȧ-bl*), *adj.* not to be consoled or comforted.
in-con-spic-u-ous (*-spik'ū-us*), *adj.* not easily perceived; hardly discernible.
in-con-stant (*'stant*), *adj.* subject to change; unstable; variable; fickle; capricious.
in-con-test-a-ble (*-test'ȧ-bl*), *adj.* not admitting of question or dispute; incontrovertible
in-con-ti-nence (*'ti-nens*), *n.* lack of restraint; licentiousness. [Also *incontinency.*]
in-con-ti-nent (*'ti-nent*), *adj.* unrestrained· unchaste: *n.* an unchaste person.
in-con-tro-ver-ti-ble (*tro-vẽr'ti-bl*), *adj.* not admitting of controversy: indisputable. [INDUBITABLE.]
in-con-ven-ience (*-vēn'yens*), *n.* want of convenience; unfitness; disadvantage [Also *inconvenency.*] *v. t.* to put to inconvenience; incommode; annoy; molest.
Syn. INCONVENIENCE, annoy, molest. We *inconvenience* in small matters, or by omitting such things as might be *convenient;* we *annoy* or *molest* by doing that which is positively painful; we are *inconvenienced* by a person's absence; we are *annoyed* by his presence if he renders himself offensive; we are *molested* by that which is weighty and oppressive; the rude insults of ill-disposed persons may *molest.*
in-con-ven-ient (*'yent*), *adj.* disadvantageous; inopportune.
in-con-vert-i-ble (*vẽrt'i-bl*), *adj.* incapable of being converted into, or exchanged for, something else.
n-cor-po-rate (*-kôr'pō-rāt*), *v. t.* to embody; unite; associate; form into a corporation: *v. i.* to unite with another body so as to form a part of it: *p. adj.* incorporated; united in one body.
in-cor-po-ra-tion (*-pō-rā'shun*), *n.* combination; assimilation; mixture; a corporation.
in-cor-po-re-al (*kor-pō'rē-al*), *adj.* not corporeal; immaterial; intangible.
in-cor-rect (*-kor-ekt'*), *adj.* faulty; not according to fact; inaccurate; improper. [ABSURD.]
in-cor-ri-gi-ble (*'ri-ji-bl*), *adj.* bad beyond correction or amendment; irreclaimable.
in-cor-rupt (*-kor-upt'*), *adj.* free from physical or moral taint: unimpaired; upright; honest.
in-cor-rupt-i-ble (*'i-bl*), *adj.* incapable of physical corruption, decay, or dissolution; not liable to moral perversion.
in-crease (*-krēs'*), *v. i.* to become greater in any respect· *v. t.* to make greater in any respect: *n.* (*in'krēs*), a growing larger; that which is added; offspring.
Syn. INCREASE, grow. To *increase* is either a gradual or an instantaneous act; to *grow* is a gradual process; a stream *increases* by the addition of other waters; but if we say that the river or stream *grows*, it is supposed to *grow* by some regular and continual process of receiving fresh water, as from the running in of different rivulets or smaller streams. [See *add, enlarge.*]
Ant. DECREASE, fade, decline.
in-cred-i-ble (*-kred'i-bl*), *adj.* surpassing belief; hard to believe.
in-cre-du-li-ty (*-krē-dū'li-ti*), *n.* the quality of being incredulous. [UNBELIEF.]
in-cred-u-lous (*-kred'ū-lus*), *adj.* hard of belief; skeptical.
in-cre-ment (*'krē-ment*), *n.* increase; augmentation; produce.
in-crim-i-nate (*-krim'i-nāt*), *v. t.* to charge with a crime; accuse.
in-crust (*in-krust'*), *v. t* to cover with, or as with, a crust. [Also *encrust.*]
in-cu-bate (*'kū-bāt*), *v t.* to sit upon (eggs) to hatch them; hatch out: *v. i.* to brood.
in-cu-ba-tor (*'kū-bā-tẽr*), *n.* one who, or that which, incubates.
in-cu-bus (*'kū-bus*), *n.* [*pl.* incubuses (*-ez*), incubi (*-bī*)], the nightmare; a heavy weight or burden.
in-cul-cate (*-kul'kāt*), *v. t.* to impress upon the mind by frequent admonitions. [TEACH.]
in-cum-bent (*kum'bent*) *adj.* lying upon; imposed as a duty: *n.* the holder of an office.
in-cur (*-kûr'*), *v. t.* [*p t.* and *p. p.* incurred, *p. pr.* incurring], to become liable to; contract, as a debt.
in-cur-a-ble (*-kūr'ȧ-bl*), *adj.* incapable of being cured: *n.* a person diseased beyond cure.
in-cur-sion (*-kûr'shun*), *n.* an inroad; raid; invasion.
in-debt-ed (*-det'ed*), *p. adj.* lying under an obligation.
Syn. INDEBTED, obliged. *Indebted* is more binding and positive than *obliged;* we are *indebted* to whoever confers an essential service; we are *obliged* to him who does us any service. A man is *indebted* to another for the preservation of his life; he is *obliged* to him for an ordinary act of civility.
in-de-cen-cy (*-dē'sen-si*), *n.* [*pl.* indecencies, (*-siz*)] want of decency, modesty, or good manners; that which is indecent, grossly vulgar, or obscene.
in-de-cent (*'sent*), *adj.* immodest; indelicate; obscene.
in-de-ci-sion (*-dē-sizh'un*), *n.* want of decision; irresolution.
in-de-ci-sive (*-sī'siv*), *adj.* not bringing to a decision; inconclusive.
in-de-co-rous (*-dē-kō'rus*), *adj.* violating decorum.
in-de-co-rum (*-kō'rum*), *n.* violation of decorum or propriety.
in-deed (*-dēd'*), *adv.* in fact; in truth.
in-de-fat-i-ga-ble (*in-dē-fat'i-gȧ-bl*), *adj.* not to be wearied out; not yielding to fatigue.
in-de-fea-si-ble (*-fē'zi-bl*), *adj.* not to be defeated or made void.
in-de-fen-si-ble (*-fen'si-bl*), *adj.* that cannot be defended.
in-de-fin-a-ble (*-fīn'ȧ-bl*), *adj.* that cannot be defined.
in-def-i-nite (*-def'i-nit*), *adj.* not defined; not precise; vague; having no particular limit. [EQUIVOCAL.]
in-del-i-ble (*-del'i-bl*), *adj.* not to be blotted out, effaced, or obliterated.
in-del-i-ca-cy (*-del'i-kȧ-si*), *n.* [*pl.* indelicacies (*-siz*)], want of delicacy; that which is offensive.
in-del-i-cate (*'i-kāt*), *adj.* offensive to modesty or propriety; coarse; indecent.
in-dem-ni-fy (*-dem'ni-fī*), *v. t.* [*p. t.* and *p. p.* indemnified, *p. pr.* indemnifying], to secure or insure against loss or damage; reimburse.
in-dem-ni-ty (*'ni-ti*), *n.* [*pl.* indemnities (*-tiz*)], security against loss, damage, or punishment; compensation for loss.
in-dent (*-dent'*), *v. t.* to make a dent or depression in; dent; notch.
in-den-ture (*'tūr*), *n.* a covenant or deed: *v. t.* to bind by indenture, as an apprentice.
in-de-pend-ence (*-dē-pend'ens*), *n.* freedom from support or governance by others; a competency; self-reliance.
Independence day (*dā*), July 4, the anniversary of the Declaration of Independence.
in-de-pend-ent (*'ent*), *adj.* not dependent, supported by, or governed by, another; having a competency; not subject to bias or influence; irrespective.
in-de-struc-ti-ble (*-struk'ti-bl*), *adj.* not to be destroyed.
in-de-ter-mi-nate (*-tẽr'mi-nāt*), *adj.* indefinite; not precise; having an idefinite number of values or solutions. [EQUIVOCAL.]
in-dex (*'deks*), *n.* [*pl.* indexes (*-ēz*), indices (*'di-sēz*)], that which points out or indicates; a table of contents; the exponent: *v. t.* provide with an index.
India. Means the country traversed by the Indus, or rather the Hindu, which name is a Persianized form of the Sanskrit *Sindhu*, "a great river," rendered *Hindos* in the Greek.
In-di-an (*'di-an*), *adj.* pertaining to the Indies, to the West Indies or to the American Indians: *n.* an East Indian, West Indian or Anglo-Indian; one of the aborigines of America, or a Red Indian.
Indiana. From the word Indian, first applied in 1768 to a grant of land north of and near the Ohio river, which was obtained that year by a company of traders from the Indians.
Indianapolis, Ind. Literally, the city of Indiana, from *Indiana* and *polis*, "city." This name was proposed by Judge Jeremiah Sullivan of Jefferson county, Ind., being preferred to *Tecumseh* and *Suwarrow*, which were suggested.
Indian Ocean. Indicative of its geographical position.
in-di-a rub-ber (*'di-ȧ rub'ẽr*), caoutchouc.
in-di-cate (*'di-kāt*), *v. t.* to point out; show; suggest; hint.
in-dic-a-tive (*-dik'ȧ-tiv*), *adj.* pointing out; bringing to notice; noting that mood of the verb which indicates, predicates, or affirms: *n.* the indicative mood.
in-di-ca-tor (*'di-kā-tẽr*), *n.* one who, or that which, indicates.
in-dict (*-dīt'*), *v. t.* to charge with a crime, by the presentment of a grand jury.
in-dict-ment (*'ment*), *n.* a written accusation against a prisoner.
in-dif-fer-ence (*-dif'ẽr-ens*), *n.* the state of being indifferent; absence of preference or interest; unconcernedness; condition of being indifferent in character or quality.
in-dif-fer-ent (*'ẽr-ent*), *adj.* unconcerned; regardless.
Syn. INDIFFERENT, unconcerned, regardless. *Indifferent* respects only the will, *unconcerned* either the will or the understanding, *regardless* the understanding only; we are *indifferent* about matters of minor consideration; we are *unconcerned* or *regardless* about serious matters that have remote consequences; an author will seldom be *indifferent* about the success of his work; nor be *unconcerned* about the influence which his writings may have, nor *regardless* of the estimation put upon his character. [See *abstracted.*]
in-di-gence (*'di-jens*), *n.* the state of being indigent. [Also *indigency.*]
in-dig-e-nous (*-dij'ē-nus*), *a*. born or produced in a country; innate; inherent. [NATIVE.]
in-di-gent (*'di-jent*), *adj.* destitute; needy.
in-di-gest-i-ble (*-jest'i-bl*), *adj.* not digestible.
in-di-ges-tion (*-jes'chun*), *n.* difficulty in digesting food; dyspepsia.
in-dig-nant (*-dig'nant*), *adj.* affected with indignation.
in-dig-na-tion (*-nā'shun*), *n.* anger at what is unworthy, unjust, dishonorable, or base. [ANGER.]
in-dig-ni-ty (*-dig'ni-ti*), *n.* [*pl.* indignities (*-tiz*)], an action intended to lower the dignity of another; insult.
in-di-go (*'di-gō*), *n.* a blue dyestuff obtained from the indigo plant.
in-di-rect (*in-di-rekt'*), *adj.* not straight; not directly resulting from a cause; not straightforward or fair.
in-dis-creet (*in-dis-krēt'*), *adj.* wanting in discretion; imprudent.
in-dis-cre-tion (*-dis-kresh'un*), *n.* want of discretion; imprudence; an imprudent act.
in-dis-crim-i-nate (*-krim'i-nāt*), *adj.* undistinguishing; promiscuous.
in-dis-pens-a-bil-i-ty (*-pen-sȧ-bil'i-ti*), *n.* incapability of being dispensed with.
in-dis-pen-sa-ble (*'sȧ-bl*), *adj.* that cannot be dispensed with; absolutely necessary.
in-dis-po-si-tion (*-pō-zish'un*), *n.* slight illness; disinclination.
★**in-dis-pu-ta-ble** (*in-dis'pū-tȧ-bl*, not *in-dis-pū'tȧ-bl*), *adj.* too evident to admit of dispute; unquestionable. [INDUBITABLE.]
in-dis-so-lu-ble (*'ō-lū-bl*), *adj.* not dissoluble or dissolvable.
in-dis-tinct (*-dis-tingkt'*), *adj.* not distinct to the senses or the mind. [EQUIVOCAL, FAINT.]
in-dis-tin-guish-a-ble (*-ting'gwish-ȧ-bl*), *adj.* incapable of being distinguished.
in-dite (*-dīt'*), *v. t.* to compose; write.
in-di-vid-u-al (*-di-vid'ū-al*), *adj.* pertaining to, or characteristic of, a single person or thing: *n.* a single person, animal, or thing. [PARTICULAR.]
in-di-vid-u-al-ism (*-izm*), *n.* the quality of being individual; a social system in which each individual works for himself alone.
in-di-vid-u-al-i-ty (*-al'i-ti*), *n.* the condition of being individual; distinctive character.
in-di-vid-u-al-ize (*'ū-al-īz*), *v. t.* to invest with individuality; distinguish.
in-di-vis-i-ble (*-viz'i-bl*), *adj.* not separable into parts: *n.* that which is indivisible.
in-doc-tri-nate (*-dok'tri-nāt*), *v. t.* to imbue with doctrines. [TEACH.]
In-do-Eu-ro-pe-an (*-dō-ū-rō-pē'an*), *adj.* pertaining to the family of Aryan languages extending from India over Europe.
in-do-lence (*'dō-lens*), *n.* love of ease; laziness.
in-do-lent (*-lent*), *adj.* indulging in ease; avoiding labor; lazy. [IDLE.]
in-dom-i-ta-ble (*-dom'i-tȧ-bl*), *adj.* untamable; invincible. [OBSTINATE.]
in-dorse (*-dôrs'*), *v. t.* to write on the back of, as a check, etc.; sanction; approve. [Also *endorse.*]
in-du-bi-ta-ble (*-dū'bi-tȧ-bl*), *adj.* too evident to be doubted.
Syn. INDUBITABLE, unquestionable, indisputable, incontrovertible. When a fact is supported by such evidence as admits of no kind of *doubt* it is termed *indubitable;* when the truth of an assertion rests on the authority of a man whose character for integrity stands unimpeached, it is termed *unquestionable* authority; when a thing is believed to exist on the evidence of every man's senses, it is termed undeniable; when a sentiment has always been held as either true or false, without *dispute*, it is termed *indisputable;* when arguments have never been *controverted* they are termed *incontrovertible.*
in-duce (*dūs'*), *v. t.* to lead on; influence; prevail upon; bring on; effect; cause; to infer by induction. [PERSUADE.]
in-duce-ment (*-dūs'ment*), *n.* that which induces; motive.
in-duct (*-dukt'*), *v. t.* to introduce; install into an office.
in-duc-tion (*-duk'shun*), *n.* the act of inducting; the introduction of a person into an office; conclusion drawn from a process of induction; electrical or magnetic influence without direct contact.
in-duc-tive (*'tiv*), *adj.* proceeding by induction; producing induction; operating by induction.
in-due (*-dū'*), *v. t.* to clothe or invest; furnish; supply; endow.
in-dulge (*-dulj'*), *v. t.* to be kind or complaisant to; humor: *v. i.* to gratify one's self. [FOSTER, GRATIFY.]
in-dul-gence (*dul'jens*), *n.* permission; license; gratification; excess; toleration.
in-dul-gent (*'jent*), *adj.* disposed to indulge; compliant.
Syn. INDULGENT, fond. *Indulgence* lies more in forbearing from the exercise of authority; *fondness* in the outward behavior and endearments; an *indulgent* parent is seldom a prudent parent; but a *fond* parent does not rise above a fool; all who have the care of young people should occasionally relax from the strictness of the disciplinarian and show an *indulgence* where a suitable opportunity offers; a *fond* mother takes away from the value of *indulgences* by an invariable compliance with the humors of her children.
in-du-rate (*'dū-rāt*), *v. i.* to grow hard: *v. t.* to make hard; render unfeeling or obdurate.
in-dus-tri-al (*-dus'tri-al*), *adj.* pertaining to productive industry.
in-dus-tri-ous (*'tri-us*), *adj.* characterized by diligence or industry; hard-working. [ACTIVE.]
in-dus-try (*'dus-tri*), *n.* [*pl.* industries (*-triz*)], steady application to business or labor; productive labor.
in-e-bri-ate (*-ē'bri-āt*), *v. t.* to make drunk; intoxicate: *n.* an habitual drunkard.
in-ef-fa-ble (*-ef'ȧ-bl*), *adj.* unspeakable; inexpressible; too sacred for utterance. [UNSPEAKABLE.]
in-ef-fect-ive (*-ef-ekt'iv*), *adj.* not producing the desired effect; ineffectual.
in-ef-fec-tu-al (*-ek'tū-al*), *adj.* not producing the desired effect; unavailing.

in-ef-fi-cient (*in-ef-fish'ent*), *adj.* not producing, or not capable of producing, the desired effect; incapable.
in-el-e-gant (*-el'ē-gant*), *adj.* offensive to good taste.
in-el-i-gi-ble (*'i-ji-bl*), *adj.* unworthy of choice: unsuitable.
in-ept-ly (*-ept'li*), *adv.* unsuitably; foolishly.
in-e-qual-i-ty (*-ē-kwol'i-ti*), *n.* [*pl.* inequalities (*-tiz*)], difference; unevenness; changeableness; inadequacy. [DISPARITY.]
in-eq-ui-ta-ble (*-ek'wi-tȧ-bl*), *adj.* not according to equity; unjust.
in-ert (*-ẽrt'*), *adj.* having no power of motion or action.
in-er-ti-a (*-ẽr'shi-ȧ*), *n.* lack of activity; inertness; sluggishness.
in-es-ti-ma-ble (*-es'ti-mȧ-bl*), *adj.* not to be estimated; beyond measure or price.
in-ev-i-ta-ble (*-ev'i-tȧ-bl*), *adj.* not to be evaded; unavoidable.
in-ex-act (*egz-akt'*), *adj.* not precise, correct, or accurate.
in-ex-cus-a-ble (*-eks-kūz-ȧ-bl*), *adj.* incapable of being excused.
in-ex-haus-ti-ble (*-egs-aws'ti-bl*), *adj.* not to be exhausted or spent.
in-ex-o-ra-ble (*-eks'ō-rȧ-bl*), *adj.* unyielding; unrelenting.
in-ex-pe-di-ent (*-pē'di-ent*), *adj.* unsuitable to circumstances; inadvisable.
in-ex-pen-sive (*-pen'siv*), *adj.* cheap.
in-ex-pe-ri-ence (*-pē'ri-ens*), *n.* want of experience.
in-ex-pert (*-pẽrt'*), *adj.* unskilled.
in-ex-pi-a-ble (*'pi-ȧ-bl*), *adj.* that cannot be expiated.
★**in-ex-pli-ca-ble** (*'pli-kȧ-bl*), *adj.* not to be explained. [MYSTERIOUS.]
in-ex-plo-sive (*-plō'siv*), *adj.* not liable to explode.
in-ex-press-i-ble (*-pres'i-bl*), *adj.* incapable of being expressed. [UNSPEAKABLE.]
in-ex-tin-guish-a-ble (*-ting'gwish-ȧ-bl*), *adj.* unquenchable.
in-ex-tri-ca-ble (*'tri-kȧ-bl*), *adj.* not extricable.
in-fal-li-ble (*-fal'i-bl*), *adj.* incapable of erring.
★**in-fa-mous** (*'fȧ-mus*), *adj.* having a notoriously bad reputation.
Syn. INFAMOUS, scandalous. *Infamous* and *scandalous* are both said of that which is calculated to excite great displeasure in the minds of all who hear it, and to degrade the offenders in the general estimation; but the *infamous* seems to be that which produces greater publicity, and more general reprehension, than the *scandalous.*
in-fa-my (*'fȧ-mi*), *n.* infamous character; public disgrace; ignominy.
in-fan-cy (*'fan-si*), *n.* the state of being an infant.
in-fant (*'fant*), *n.* a young child; popularly a child under two years; in law, a person who has not attained the age of twenty-one: *adj.* pertaining to infancy.
in-fan-ti-cide (*-fan'ti-sīd*), *n.* the murder of an infant.
in-fan-tile (*'fan-tīl*), *adj.* pertaining to infants or infancy.
in-fan-try (*'fan-tri*), *n.* foot soldiers.
in-fat-u-ate (*-fat'ū-āt*), *v. t.* to make extravagantly foolish; to inspire with fatuous passion.
in-fect (*-fekt'*), *v. i.* to communicate some (especially bad) quality to; taint.
in-fec-tion (*-fek'shun*), *n.* the act of infecting; that which infects. [CONTAGION.]
in-fec-tious (*'shus*), *adj.* communicable by infection.
in-fe-lic-i-tous (*-fē-lis'i-tus*), *adj.* unfortunate; unhappy.
in-fe-lic-i-ty (*-lis'i-ti*), *n.* [*pl.* infelicities (*-tiz*)], misfortune: unhappiness; inappropriateness.
in-fer (*-fẽr'*), *v. t.* [*p. t.* and *p. p.* inferred, *p. pr.* inferring], to derive by induction or deduction; imply: *v. i.* to conclude.
in-fer-ence (*'fẽr-ens*), *n.* the act of inferring; the conclusion; deduction; induction. [CONCLUSION.]
in-fer-en-tial (*-en'shal*), *adj.* having the nature of an inference; deduced by inference.
in-fe-ri-or (*-fē'ri-ẽr*), *adj.* lower in place, rank, or quality; secondary: subordinate: *n.* one who ranks below another; a subordinate.
in-fe-ri-or-i-ty (*-ri-or'i-ti*), *n.* lower state or quality.
in-fer-nal (*-fẽr'nal*), *adj.* pertaining to, or resembling, hell; hellish; diabolical; fiendish; outrageous.
in-fest (*-fest'*), *v. t.* to attack; haunt; overrun.
in-fi-del (*'fi-del*), *adj.* rejecting all religion; manifesting unbelief: *n.* one who rejects Christianity as a divine revelation.
in-fi-del-i-ty (*-del'i-ti*), *n.* [*pl.* infidelities (*-tiz*)], disbelief in all religion; breach of trust; adultery. [UNBELIEF.]
in-field (*'fēld*), *n.* in baseball, the space within the base line, 30 yds. by 30 yds.
in-fil-tra-tion (*-fil-trā'shun*), *n.* the act of infiltrating; that which infiltrates.
in-fi-nite (*'fi-nit*), *adj.* indefinitely extensive; immeasurable: *n.* the Infinite Being; an indeterminate. [BOUNDLESS.]
in-fin-i-tes-i-mal (*-fin-i-tes'i-mal*), *adj.* infinitely small: *n.* a quantity less than any assignable quantity.
in-fin-i-tive (*-fin'i-tiv*), *adj.* the term applied to that verb-form which simply expresses the general sense of the verb without limitation to person or number: *n.* the infinitive mood; a verb in the infinitive mood.

in-fin-i-tude (*in-fin'i-tūd*), *n.* the state of being infinite; unlimited extent; infinity.
in-fin-i-ty (*'i-ti*), *n.* [*pl.* infinities (*-tiz*)], the state of being infinite; an infinite quantity.
in-firm (*-fẽrm'*). *adj.* feeble in body or health; weak-minded. [WEAK.]
in-fir-ma-ry (*'mȧ-ri*), *n.* [*pl.* infirmaries (*-riz*)], a hospital for the sick and injured.
in-fir-mi-ty (*'mi-ti*), *n.* [*pl.* infirmities (*-tiz*)], the state of being infirm. [DEBILITY.]
in-flame (*-flām'*), *v. t.* to set on fire; fire with passion; excite; provoke; irritate: *v. i.* to become inflamed.
in-flamed (*-flāmd'*), *p. adj.* heated; exasperated.
in-flam-ma-ble (*-flam'ȧ-bl*), *adj.* easily set on flame; excitable.
in-flam-ma-tion (*-ā'shun*), *n.* a morbid process, characterized, when external, by heat.
in-flam-ma-to-ry (*'ȧ-tō-ri*), *adj.* tending to excite passion, tumult, sedition or inflammation.
in-flate (*-flāt'*), *v. t.* to swell, or distend.
in-flec-tion (*-flek'shun*), *n.* a bend or bending; modulation of the voice; variation of nouns, verbs, etc. [Also *inflexion.*]
in-flex-i-ble (*fleks'i-bl*), *adj.* not to be bent; rigid; stiff; inexorable; stubborn. [OBSTINATE.]
in-flict (*-flikt'*), *v. t.* to cause by, or as if by, striking; cause to be suffered.
in-flu-ence (*'flū-ens*), *n.* energy or potency tending to produce effects insensibly and invisibly; power arising from character or station: *v. t.* to exercise influence on. [INFLUENCE, CREDIT.]
in-flu-en-tial (*-en'shal*), *adj.* having or exerting influence.
in-flu-en-za (*-en'zȧ*), *n.* an epidemic catarrh.
in-flux (*'fluks*), *n.* an inflow; infusion; continuous importation.
in-form (*-fôrm'*), *v. t.* to animate; mold; instruct; appraise; *v. i.* to give information. [TEACH.]
in-form-al (*'al*), *adj.* not according to form, custom or rule; unceremonious.
in-for-mal-i-ty (*-fôr-mal'i-ti*), *n.* [*pl.* informalities (*-tiz*)], want of regular, customary, or legal form.
in-for-ma-tion (*-mā'shun*), *n.* communicated knowledge or intelligence.
Syn. INFORMATION, intelligence, notice, advice. *Information* signifies the thing of which one is *informed*; *intelligence* to understand signifies that by which one is made to understand; *notice* is that which brings a circumstance to our knowledge; *advice* signifies that which is made known.
Ant. IGNORANCE, unfamiliarity.
in-frac-tion (*in-frak'shun*), *n.* a violation, or breach; infringement.
in-fran-gi-ble (*-fran'ji-bl*), *adj.* that cannot be broken, separated, or violated; inviolable.
in-fre-quent (*-frē'kwent*), *adj.* seldom occurring. [RARE.]
in-fringe (*-frinj'*), *v. t.* to violate or break, as a law: *v. i.* to encroach (followed by *on* or *upon*).
in-fu-ri-ate (*-fū'ri-āt*), *v. t.* to enrage; madden.
in-fu-sion (*-fū'zhun*), *n.* a pouring in, or something poured in or mingled; a liquid extract obtained by steeping.
in-gen-ious (*-jēn'yus*), *adj.* having ingenuity or inventive skill; clever. [INGENUOUS.]
in-ge-nu-i-ty (*in-jē-nū'i-ti*), *n.* cleverness in contriving or inventing; skill.
Syn. INGENUITY, wit. *Ingenuity* comprehends invention; *wit* is the fruit of the imagination, which forms new and sudden conceptions of things. One is *ingenious* in matters either of art or science; one is *witty* only in matters of sentiment.
in-gen-u-ous (*in-jen'ū-us*), *adj.* frank; open; sincere; artless; candid.
Syn. INGENUOUS, ingenious. We love the *ingenuous* character on account of the qualities of his heart; we admire the *ingenious* man on account of the endowments of his mind. One is *ingenuous* as a man, or *ingenious* as an author. The *ingenuous* man is frank, candid; the *ingenious* man is clever, skillful. [See *frank.*]
in-glo-ri-ous (*-glō'ri-us*), *adj.* without glory; disgraceful; shameful.
in-got (*'got*), *n.* a cast mass of metal.
in-graft (*-grȧft'*), *v. t.* to insert (a scion) in a stock.
in-grain (*-grān'*), *v. t.* to dye with any deep, lasting color; impregnate deeply: *adj.* (*in'grān*) dyed prior to being manufactured: *n.* a carpet made of cotton warps and wool filling.
in-gra-ti-ate (*-grā'shi-āt*), *v. t.* to insinuate (one's self) into the favor of another. [INSINUATE.]
in-grat-i-tude (*-grat'i-tūd*), *n.* absence of gratitude; insensibility to kindness.
in-gre-di-ent (*-grē'di-ent*), *n.* a component part; part.
in-gress (*'gres*), *n.* entrance.
in-hab-it (*-hab'it*), *v. t.* to dwell in; occupy as a place of residence: *v. i.* to reside: remain. [ABIDE.]
in-hab-it-ant (*'it-ant*), *n.* one who, or that which, inhabits.
in-hale (*-hāl'*), *v. t.* to draw into the lungs.
in-har-mo-ni-ous (*-här-mō'ni-us*), *adj.* unmusical; discordant.
in-her-ent (*-hēr'ent*), *adj.* existing inseparably in something else; innate.
in-her-it (*-her'it*), *v. t.* to possess from an ancestor by right of succession, or by nature: *v. i.* to come into possession of property as the heir.
in-her-it-ance (*-ans*), *n.* the act of inheriting; that which is inherited.

in-hib-it (*in-hib'it*), *v. t.* to restrain; prohibit; interdict.
in-hos-pi-ta-ble (*-hos'pi-tȧ-bl*), *adj.* not hospitable; affording no shelter; barren; cheerless.
in-hu-man (*-hū'man*), *adj.* cruel; unfeeling. [CRUEL.]
Inigo (*in'i-gō*). Another spelling of Innigo or Enneco, and derived probably from *Ignatius*, or corrupted from *Heinrich.*
in-im-i-cal (*-im'i-kal*), *adj.* hostile; adverse.
in-im-i-ta-ble (*'i-tȧ-bl*), *adj.* matchless.
in-iq-ui-tous (*-ik'wi-tus*), *adj.* wicked; unjust. [WICKED.]
in-iq-ui-ty (*'wi-ti*), *n.* wickedness; injustice; unrighteousness. [ABOMINATION.]
in-i-ti-ate (*ish'i-āt*), *v. t.* to instruct in the first principles of anything; set on foot; bring in; acquaint with. [TEACH.]
in-i-ti-a-tion (*-i-ā'shun*), *n.* the act of initiating.
in-i-ti-a-tive (*'i-ȧ-tiv*), *adj.* introductory: *n.* an introductory or first step; power of commencing.
in-ject (*-jekt'*), *v. t.* to throw or cast in: introduce, as a liquid.
in-ju-di-cious (*-jū-dish'us*), *adj.* not judicious, indiscreet.
in-junc-tion (*-junk'shun*), *n.* the act of enjoining; that which is enjoined; command, order, or precept. [COMMAND.]
in-jure (*'jūr*), *v. t.* to hurt; harm; damage. [IMPAIR, ABUSE.]
in-ju-ri-ous (*-jū'ri-us*), *adj.* hurtful; unjust; detrimental.
in-ju-ry (*'jū-ri*), *n.* [*pl.* injuries (*-riz*)], that which occasions harm; detriment; loss; damage. [INJUSTICE.]
in-jus-tice (*-jus'tis*), *n.* the quality of being unjust; violation of another's rights; injury; wrong.
Syn. INJUSTICE, injury, wrong. The violation of *justice* or a breach of the rule of right, constitutes the *injustice;* but the quantum of ill which falls on the person constitutes the *injury;* a *wrong* partakes both of injustice and injury; it is, in fact, an *injury* done by one person to another in express violation of *justice.*
Ant. EQUITY, fairness, right.
ink (*ingk*), *n.* a fluid or viscous material used for writing, printing, etc.: *v. t.* to spread ink upon.
in-kling (*'kling*), *n.* an intimation; hint.
in-land (*in'land*), *adj.* pertaining to, or situated in, the interior of a country: *adj.* toward the interior.
in-lay (*-lā'*), *v. t.* [*p. t.* and *p. p.* inlaid, *p. pr.* inlaying], to ornament (a surface) by laying in pieces of ivory, wood, metal, etc.: *n.* materials for inlaying.
in-let (*-let'*), *v. t.* [*p. t.* and *p. p.* inlet, *p. pr.* inletting], to inlay; insert: *n.* (*in'let*), an entrance; a small bay or creek.
inn (*in*), *n.* a house for the reception and entertainment of travelers; tavern.
in-nate (*'nāt*), *adj.* inborn; native. [NATIVE.]
in-ner (*'ẽr*), *adj.* internal; interior; esoteric.
in-nings (*'ings*), *n. pl.* the turn of a side or player to bat.
★**in-no-cent** (*in'nō-sent*, not *in'no-sunt*), *adj.* free from guilt or wrongdoing; pure; weak in intellect. [CANDID.]
Innocent. From the Latin meaning "harmless." Dutch, *Innocentius;* Fr., *Innocent;* Ger., *Innocenz*, or *Innocentius;* It., *Innocente;* Lat., *Innocentius;* Sp. *Inocencio.*
in-noc-u-ous (*-nok'ū-us*), *adj.* harmless.
in-no-vate (*'ō-vāt*), *v. i.* to make alterations or changes in something already established; introduce new things.
in-nox-ious (*-nok'shus*), *n.* harmless.
Innsbruck (*ins'prook*). Means "at the bridge," on the river Inn.
Inns of Court. Legal societies in London which have the exclusive privilege of calling candidates to the bar, and maintain instruction and examination for that purpose; also the precincts or premises occupied by these societies respectively.
in-nu-en-do (*-ū-en'dō*), *n.* [*pl.* innuendos, -does (*-dōz*)], an oblique hint or insinuation.
in-nu-mer-a-ble (*'mẽr-ȧ-bl*), *adj.* that cannot be counted.
in-nu-tri-tious (*-trish'us*), *adj.* not affording nourishment.
in-oc-u-late (*-ok'ū-lāt*), *v. t.* to communicate a disease to: *v. i.* to practice inoculation.
in-or-di-nate (*-ôr'di-nāt*), *adj.* immoderate; excessive.
in-or-gan-ic (*-gan'ik*), *adj.* destitute of organs; not produced by living organisms. [Also *inorganical.*]
in-quest (*'kwest*), *n.* a coroner's inquiry with a jury into the cause of a death; a judicial inquiry.
in-quire (*-kwīr'*), *v. i.* to seek for or after by questions; make inquiry (with *for*, *into*, *after*, *about*). [ASK.]
★**in-quir-y** (*in-kwīr'i*, not *in'kwir-i*), *n.* [*pl.* inquiries (*'iz*)], the act of inquiring; investigation; research.
in-qui-si-tion (*-kwi-zish'un*), *n.* inquiry; examination; a judicial inquiry in criminal matters.
in-quis-i-tive (*-kwis'i-tiv*), *adj.* given to asking questions. [CURIOUS.]
in-road (*'rōd*), *n.* a hostile incursion.
in-sane (*-sān'*), *adj.* mentally deranged; irrational; foolish.
in-san-i-ty (*-san'i-ti*), *n.* derangement of mind or intellect; lunacy.
★**in-sa-tia-ble** (*in-sā'shȧ-bl*, not *in-sā'shi-ȧ-bl*), *adj.* that cannot be satisfied or appeased.

in-scribe (*in-skrīb'*), *v. t.* to write or engrave upon; address in dedication; draw within.
in-scrip-tion (*-skrip'shun*), *n.* the act of inscribing; that which is inscribed.
in-scru-ta-ble (*skroō'tă-bl*), *adj.* not to be penetrated by inquiry or reason. [MYSTERIOUS.]
in-sect (*'sekt*), *n.* one of a numerous class of articulate animals, the Insecta.
in-sen-sate (*-sen'sāt*), *adj.* destitute of sense or perception; soulless; brutish.
in-sen-si-bil-i-ty (*-si-bil'i-ti*), *n.* the quality of being insensible. [STUPIDITY.]
in-sen-si-ble (*'si-bl*), *adj.* that cannot be felt or perceived; heedless; callous; senseless.
in-sert (*-sĕrt'*), *v. t.* to place in or among; introduce into.
in-ser-tion (*-sĕr'shun*), *n.* the act of inserting; that which is inserted.
in-side (*'sid*), *adj.* interior; being within: *adv.* and *prep.* within; in less time or space: *n.* that which is within; inner part.
Syn. INSIDE, interior. The term *inside* may be applied to bodies of any magnitude, small or large; *interior* is peculiarly appropriate to bodies of great magnitude. We may speak of the *inside* of a nutshell, but not of its *interior*. The *interior* of the church was beautifully decorated.
Ant. OUTSIDE, exterior.
in-sid-i-ous (*-sid'i-us*), *adj.* treacherous; deceitful; operating secretly.
in-sight (*'sīt*), *n.* penetration; intuition.
in-sig-ni-a (*-sig'ni-ă*), *n. pl.* badges of honor or office.
in-sig-nif-i-cant (*-nif'i-kant*), *adj.* without importance, force, influence, or meaning; trivial.
in-sin-u-ate (*-sin'ū-āt*), *v. t.* to ingratiate; suggest or hint indirectly; worm in: *v. i.* work one's self into the confidence of another.
Syn. INSINUATE, ingratiate. A person who *insinuates* adopts every art to steal into the good will of another; but he who *ingratiates* adopts unartificial means to conciliate good will.
in-sip-id (*-sip'id*), *adj.* without flavor; tasteless
in-sist (*-sist'*), *v. i.* to urge or press, as a wish or command.
Syn. INSIST, persist. Both these terms express the idea of resting or keeping to a thing; but *insist* signifies to rest on a point, and *persist* signifies to keep on with a thing, to carry it through. We *insist* on a matter by maintaining it; we *persist* in a thing by continuing to do it.
Ant. DESIST, leave, abandon.
in-sist-ent (*'ent*), *adj.* urgent; conspicuous.
in-so-bri-e-ty (*-sō-brī'ĕ-ti*), *n.* intemperance.
in-so-lent (*'so-lent*), *adj.* overbearing or offensive to others; insulting; grossly rude. [PRIDE.]
in-sol-u-ble (*-sol'ū-bl*), *adj.* that cannot be dissolved; inexplicable.
in-sol-ven-cy (*-sol'ven-si*), *n.* bankruptcy.
Syn. INSOLVENCY, failure, bankruptcy. *Insolvency* is a state; *failure* an act flowing out of that state; and *bankruptcy* an effect of that act. *Insolvency* is a condition of not being able to pay one's debts; *failure* is a cessation of business, from the want of means to carry it on; and *bankruptcy* is a legal surrender of all one's remaining goods into the hands of one's creditors, in consequence of a real or supposed *insolvency*.
in-sol-vent (*'vent*), *adj.* unable to pay all debts; bankrupt: *n.* one who cannot pay all his debts; a bankrupt.
in-som-ni-a (*-som'ni-ă*), *n.* sleeplessness.
in-spect (*-spekt'*), *v. t.* to examine critically; test officially.
in-spi-ra-tion (*-spi-rā'shun*), *n.* the act of drawing air into the lungs; creative influence of genius; elevating influence.
in-spire (*-spīr'*), *v. t.* to draw (air) into the lungs; breathe into; imbue with ideas; exhilarate or enliven: *v. i.* to inhale air or any other influence.
in-spir-it (*-spir'it*), *v. t.* to infuse spirit into; animate; cheer.
in-sta-bil-i-ty (*-stă-bil'i-ti*), *n.* want of stability or firmness.
in-stal-la-tion (*-stol-ā'shun*), *n.* the act of installing; introduction of machinery for use.
in-stance (*'stans*), *v. t.* to refer to, or offer, as an example: *n.* something offered as an illustration or example; earnest solicitation. [EXAMPLE.]
in-stant (*'stant*), *adj.* urgent; immediate; passing; current: *n.* a particular moment of time; point of duration.
Syn. INSTANT, moment. A dutiful child comes the *instant* he is called; a prudent person embraces the favorable *moment*. When they are both taken for the present time, *instant* expresses a much shorter space than *moment*.
in-stan-ta-ne-ous (*-stan-tā'nē-us*), *adj.* acting or occurring in a moment.
in-state (*-stāt'*), *v. t.* to put in office or rank.
★**in-stead** (*in-sted'*, not *in-stĭd'*), *adv.* in room or place (followed by *of*).
in-step (*'step*), *n.* the arched forepart of the upper side of the human foot.
in-sti-gate (*'sti-gāt*), *v. t.* to provoke or urge on (in a bad sense); incite.
in-still (*-stil'*), *v. t.* [*p. t.* and *p. p.* instilled, *p. pr.* instilling], to insinuate gradually, as if by drops; pour in by drops. [TEACH.]
in-stinct (*'stingkt*), *adj.* animated; stimulated from within: *n.* natural impulse in animals.
in-sti-tute (*'sti-tūt*), *v. t.* to establish; fix; originate; set in operation; ordain: *n.* a maxim or principle; scientific or literary society: *pl.* a book of laws or principles.
in-sti-tu-tion (*in-sti-tū'shun*), *n.* the act of instituting; that which is instituted or established.
in-struct (*-strukt'*), *v. t.* to teach; educate; furnish with orders or directions.
Syn. INSTRUCT, teach. To inform is the act of persons in all conditions; *to instruct* and *teach* are the acts of superiors, either on one ground or another; one informs by virtue of an accidental superiority or priority of knowledge; one *instructs* by virtue of superior knowledge or superior station; one *teaches* by virtue of superior knowledge, rather than of station. [See *teach*.]
in-struc-tion (*-struk'shun*), *n.* the act of instructing; an order, etc. [EDUCATION.]
in-struct-ive (*-strukt'iv*), *adj.* tending to instruct.
in-stru-ment (*'strōō-ment*), *n.* that by which anything is effected.
in-stru-men-tal (*-men'tal*), *adj.* pertaining to, or done by, an instrument; conducive to some end; helpful.
in-stru-men-tal-i-ty (*-tal'i-ti*), *n.* [*pl.* instrumentalities (*-tiz*)], an agency; means.
in-sub-or-di-nate (*-sub-ôr'di-nāt*), *adj.* not submitting to authority; mutinous.
★**in-suf-fer-a-ble** (*-suf'ĕr-ă-bl*), *adj.* intolerable.
in-suf-fic-ient (*-fish'ent*), *adj.* not enough.
in-su-lar (*'sū-lĕr*), *adj.* pertaining to an island; isolated; narrow.
in-su-late (*'sū-lāt*), *v. t.* to place alone, or in a detached situation; separate.
in-sult (*'sult*), *n.* an affront or indignity; gross abuse: *v. t.* (*in-sult'*) to treat with gross indignity, contempt, or abuse.
in-su-per-a-ble (*-sū'pĕr-ă-bl*), *adj.* not to be overcome; invincible.
in-sur-ance (*-shūr'ans*), *n.* the act or system of insuring against loss or damage.
in-sure (*-shūr'*), *v. t.* to contract on certain conditions to secure against loss or damage; make sure.
in-sur-gent (*-sûr'jent*), *adj.* rising against constituted authority: *n.* a rebel.
in-sur-rec-tion (*-rek'shun*), *n.* active or open hostility to constituted authority; rebellion.
Syn. INSURRECTION, sedition, rebellion, revolt. There may be an *insurrection* against usurped power, which is always justifiable; but *sedition* and *rebellion* are leveled against power universally acknowledged to be legitimate. *Insurrection* is always open; it is a rising up of many in a mass; but it does not imply any concerted, or any specifically active, measure; *rebellion* is the consummation of *sedition;* the scheme of opposition which has been digested in secrecy breaks out into open hostilities, and becomes *rebellion;* *revolt* is mostly taken either in an indifferent or a good sense for resisting a foreign dominion which has been imposed by force of arms.
in-tact (*-takt'*), *adj.* entire; uninjured.
★**in-tagl-io** (*in-tăl'yō, in-tal'yō*, Italian, *ēn-tăl'yō*), *n.* [*pl.* intaglios (*yōz*), intagli (*yē*)], a gem stone having a design cut in the surface; incised carving.
in-te-ger (*in'tē-jĕr*), *n.* the whole; a whole number; opposed to fraction.
in-te-gral (*'tē-gral*), *adj.* constituting a whole; complete; pertaining to an integer: *n.* the whole made up of parts. [WHOLE.]
in-te-grate (*'tē-grāt*), *v. t.* to bring together the parts of; give the sum total of: *v. i.* to pass from a complex state to a simple one.
in-teg-ri-ty (*-teg'ri-ti*), *n.* uprightness; virtue; honesty; soundness. [or skin.
in-teg-u-ment (*'ū-ment*), *n.* an external covering
in-tel-lect (*'tel-ekt*), *n.* the mind or understanding.
Syn. INTELLECT, genius, talent. *Intellect* is the *intellectual* power improved and exalted by cultivation and exercise; in this sense we speak of a man of *intellect*, or a work that displays great *intellect;* *genius* is the particular bent of the *intellect* which is born with a man, as a *genius* for poetry, painting, music, etc.; *talent* is a particular mode of *intellect* which qualifies its possessor to do some things better than others, etc. [See *understanding*.]
in-tel-lec-tu-al (*-lek'tū-al*), *adj.* pertaining to, or apprehended by, the intellect; mental; ideal.
in-tel-li-gence (*-tel'i-jens*), *n.* intellectual capacity; mind; notification; news. [INFORMATION, UNDERSTANDING.]
in-tel-li-gent (*'i-jent*), *adj.* endowed with intelligence or understanding; clever; discerning.
in-tel-li-gi-ble (*'i-ji-bl*), *adj.* capable of being understood; clear.
in-tem-per-ance (*-tem'pĕr-ans*), *n.* want of moderation or self-restraint. [EXCESS.]
in-tem-per-ate (*'pĕr-āt*), *adj.* characterized by want of moderation or self-restraint; excessive.
in-tend (*-tend'*), *v. t.* to purpose; mean. [DESIGN.]
in-tense (*-tens'*), *adj.* increased to excess; strained; forced; ardent; vehement. [EAGER.]
in-ten-si-fy (*-ten'si-fi*), *v. t.* to render more intense; heighten.
in-ten-si-ty (*'si-ti*), *n.* [*pl.* intensities (*-tiz*)], the state or quality of being intense; the force or energy of any physical agent.
in-ten-sive (*'siv*), *adj.* serving to intensify; giving force or emphasis to.
in-tent (*-tent'*), *adj.* having the mind strained or closely fixed on a subject: *n.* purpose; aim. [EAGER.]
in-ten-tion (*in-ten'shun*), *n.* purpose; fixed design; end or aim; project.
in-ter (*-tĕr'*), *v. t.* [*p. t.* and *p. p.* interred, *p. pr.* interring], to bury.
in-ter-cede (*-sēd'*), *v. i.* to mediate; plead for another; interpose.
in-ter-cept (*-sept'*), *v. t.* to stop and seize on the way; cut off; obstruct.
in-ter-ces-sion (*-sesh'un*), *n.* the act of interceding; mediation.
in-ter-change (*in-tĕr-chānj'*), *v. t.* and *v. i.* to put each of two things in the place of the other; receive and return reciprocally; alternate.
Syn. INTERCHANGE, exchange, reciprocity. *Interchange* is an act; *reciprocity* is an abstract property; by an *interchange* of sentiment, friendships are engendered; the *reciprocity* of good services is what renders them doubly acceptable to those who do them, and to those who receive them.
in-ter-course (*'ter-kōrs*), *n.* connection, correspondence, or communication between individuals, nations, etc.
in-ter-dict (*-dikt'*), *v. t.* to restrain or forbid.
★**in-ter-est** (*'tĕr-est*), *v. t.* to engage the attention; cause to take a share in: *n.* advantage; concern; profit; premium paid for the use of money.
Syn. INTEREST, concern. We have an *interest* in whatever touches or comes near to our feelings or our external circumstances; we have a *concern* in that which demands our attention; *interest* is that which is agreeable; *concern*, on the other hand, is something involuntary or painful.
Ant. APATHY, indifferance.
in-ter-fere (*-fēr'*), *v. i.* to interpose or meddle in the affairs of others; act reciprocally so as to modify the result.
in-ter-im (*'tĕr-im*), *n.* intervening time or period: *adv.* in the meanwhile.
in-te-ri-or (*-tē'ri-ĕr*), *adj.* not exterior; inner; internal: *n.* the inside; the inland. [INSIDE.]
in-ter-jec-tion (*-tĕr-jek'shun*), *n.* an exclamation.
in-ter-lin-e-ar (*-lin'ĕ-ĕr*), *adj.* written or printed between other lines.
in-ter-loc-u-to-ry (*-lok'ū-tō-ri*), *adj.* conversational; intermediate; not final.
in-ter-lo-per (*'tĕr-lō-pĕr*), *n.* an intruder.
in-ter-lude (*'tĕr-lūd*), *n.* a short entertainment given between acts of a play, etc.; a short instrumental passage played between the acts, etc.
in-ter-me-di-ate (*-mē'di-āt*), *adj.* existing or lying in the middle; intervening.
in-ter-ment (*-ment*), *n.* the act of burial. [BURIAL.]
in-ter-mis-sion (*-mish'un*), *n.* interruption; pause. [CESSATION.]
in-ter-mit (*-mit'*), *v. t.* to cause to cease for a time; interrupt; suspend.
in-ter-nal (*-tĕr'nal*), *adj.* pertaining to the center; interior.
★**in-ter-na-tion-al** (*in-tĕr-nash'un-al*), *adj.* pertaining to two or more nations in common.
in-ter-po-late (*'pō-lāt*), *v. t.* to insert in a book or writing new or spurious matter.
in-ter-pose (*-pōz'*), *v. t.* to place between; *v. i.* to intercede; come between. [INTERVENTION.]
in-ter-pret (*'pret*), *v. t.* to explain; expound; construe. [EXPLAIN, DEFINITION.]
in-ter-reg-num (*-reg'num*), *n.* the period between two reigns, etc.; time of abeyance.
in-ter-ro-gate (*-ter'ō-gāt*), *v. t.* to question: *v. i.* to ask questions. [ASK.]
in-ter-ro-ga-tion (*-gā'shun*), *n.* the act of interrogating; a question; a mark (?) denoting a question.
in-ter-rog-a-tive (*-tĕr-rog'ă-tiv*), *adj.* denoting or containing a question: *n.* a word used in asking a question.
in-ter-rog-a-to-ry (*-rog'ă-tō-ri*), *adj.* pertaining to, or expressing, a question.
in-ter-rupt (*-rupt'*), *v. t.* to stop or hinder by breaking in upon. [DISTURB, OBSTRUCT.]
in-ter-rup-tion (*-rup'shun*), *n.* the act of interrupting; hindrance.
in-ter-sec-tion (*-sek'shun*), *n.* the act or state of intersecting; place of crossing.
★**in-ter-stice** (*in-tĕr'stis* or *in'tĕr-stis*), *n.* a narrow space between things closely set; crevice.
in-ter-val (*'tĕr-val*), *n.* time or space between.
Syn. INTERVAL, respite. The term *interval* respects time only; *respite* includes the idea of ceasing from action for a time; *intervals* of ease are a *respite* to one who is oppressed with labor.
in-ter-vene (*-vēn'*), *v. i.* to come, or be situated, between; interpose; interfere.
in-ter-ven-tion (*-ven'shun*), *n.* the act of intervening; mediation.
Syn. INTERVENTION, interposition. The light of the moon is obstructed by the *intervention* of the clouds; the life of an individual is preserved by the *interposition* of a superior.
in-ter-view (*'tĕr-vū*), *v. t.* to visit, to obtain opinions: *n.* a personal conference or meeting. [MEETING.]
in-tes-tate (*-tes'tāt*), *adj.* dying without a will: *n.* one who dies without a will.
in-tes-tine (*'tin*), *adj.* internal; not foreign: *n. pl.* the bowels.
in-ti-ma-cy (*'ti-mă-si*), *n.* [*pl.* intimacies (*-siz*)], close or confidential friendship. [ACQUAINTANCE.]
in-ti-mate (*'ti-mat*), *adj.* close in friendship; well acquainted: *v. t.* (*in'ti-māt*) to indicate; make known.

in-ti-ma-tion (*in-ti-mā'shun*), *n.* an indirect suggestion or hint.
in-tim-i-date (*-tim'i-dāt*), *v. t.* to make afraid. [FRIGHTEN.]
in-to (*tōō*), *prep.* noting passage inward; inclusion or comprehention.
in-tol-er-a-ble (*-tol'ĕr-a-bl*), *adj.* unbearable.
in-tol-er-ance (*'ĕr-ans*), *n.* want of toleration; inability to bear.
in-tol-er-ant (*'ĕr-ant*), *adj.* bigoted; unable to bear or endure (with *of*).
in-to-na-tion (*-tō-nā'shun*), *n.* the act or manner of sounding musical notes.
in-tone (*-tōn'*), *v. t.* to recite in monotone.
in-tox-i-cant (*-toks'i-kant*), *n.* that which intoxicates.
in-toxi--cate (*'i-kāt*), *v. t.* to make drunk by spirituous liquors; excite unduly.
intra, a *prefix* meaning *within*, as *intra*mural, within the walls of a city.
in-tract-a-ble (*-trakt'a-bl*), *adj.* unmanageable. [PERVERSE, OBSTINATE.]
in-tract-ile (*'il*), *adj.* incapable of being drawn out; not extensible.
in-tran-si-tive (*-tran'si-tiv*), *adj.* not passing over to or requiring, an object: said of certain verbs.
in-trench (*-trench'*), *v. t.* to fortify with a trench.
in-trep-id (*-trep'id*), *adj.* bold; fearless. [BOLD.]
in-tri-ca-cy (*'tri-ka-si*), *n.* [*pl.* intricacies (*-siz*)], the quality of being intricate; perplexity.
in-trigue (*in-trēg'*), *v. i.* to carry on a secret plot; engage in clandestine love affairs: *n.* a secret plot; clandestine love affair.
ir-trin-sic (*-trin'sik*), *adj.* pertaining to that which is inherent.
intro, a *prefix* meaning *within, into*, as *intro*cession, a depression or sinking of parts inward.
in-tro-duce (*-trō-dūs'*), *v. t.* to conduct or bring in; bring into acquaintance. [ALLEGE.]
in-tro-duc-tion (*-duk'shun*), *n.* the act of introducing; presentation; a preface. [PREVIOUS.]
in-trude (*-trūd'*), *v. i.* to thrust one's self in: *v. t.* force in.

Syn. INTRUDE, obtrude. It is *intrusion* to go into any society unasked and undesired; it is *obtruding* to put one's self in the way of another by joining the company without invitation.

in-tru-sion (*-trū'zhun*), *n.* the act of intruding; encroachment.
in-tu-i-tion (*-tū-ish'un*), *n.* instinctive knowledge or feeling.
in-tu-i-tive (*'i-tiv*), *adj.* perceived immediately by the mind.
★**in-un-date** (*in-un'dāt*, not *in'un-dāt*), *v. t.* to fill with an overflowing abundance.
in-ure (*-ūr'*), *v. t.* to habituate, or accustom; toughen.
in-vade (*-vād'*), *v. t.* to enter (a country) with a hostile army; infringe upon; violate.
in-val-id (*-val'id*), *adj.* null and void: *n.* (*in'va-lid*) one who is weak or infirm in health: *v. t.* to affect with disease.

Syn. INVALID, patient. An *invalid* is so denominated from lack of health and strength, but the *patient* is one who suffers from bodily pain.

in-val-i-date (*-val'i-dāt*), *v. t.* to weaken or destroy the force of.
in-val-u-a-ble (*-val'ū-a-bl*), *adj.* priceless.
in-va-ri-a-ble (*-vā'ri-a-bl*), *adj.* constant. [PERMANENT.]
in-va-sion (*-vā'zhun*), *n.* the act of invading; hostile incursion.
in-vec-tive (*-vek'tiv*), *n.* a violent utterance of censure, sarcasm, or abuse: *adj.* abusive.
in-veigh (*-vā'*), *v. i.* to rail against persons or things; declaim. [DECLAIM.]
★**in-vei-gle** (*in-vē'gl*, not *in-vā'gl*), *v. t.* to entice; seduce.
in-vent (*-vent'*), *v. t.* to devise or contrive; originate. [FIND.]
in-ven-tion (*-ven'shun*), *n.* the act of inventing; the thing invented. [FICTION.]
in-vent-ive (*-vent'iv*), *adj.* able to invent; quick at contriving.
in-ven-to-ry (*'ven-tō-ri*), *n.* [*pl.* inventories (*-riz*)], a catalogue of goods, etc.: *v. t.* to draw up (an inventory).
in-verse (*-vĕrs'*), *adj.* contrary in tendency, direction, or effect.
in-ver-sion (*-vĕr'shun*), *n.* the act of inverting; the state of being inverted.
in-vert (*-vĕrt'*), *v. t.* to turn upside down.
in-ver-te-brate (*'tē-brāt*), *n.* one of the Invertebrata: *adj.* having no backbone.
in-vest (*-vest'*), *v. t.* to place or lay out, as money; clothe, as with office, authority, or dignity; surround: *v. i.* to make an investment.

Syn. INVEST, endue, or endow. One is *invested* with that which is external; one is *endued* with that which is internal. We *invest* a person with an office or a dignity; a person is *endued* with good qualities; *endow* is but a variation of *endue* and yet it seems to have acquired a distinct office, we may say that a person is *endued* or *endowed* with a good understanding; but as an act of the imagination *endow* is not to be substituted for *endue;* for we do not say that it *endows* but *endues* things with properties.

in-ves-ti-gate (*-ves'ti-gāt*), *v. t.* to ascertain by careful inquiry.
in-ves-ti-ga-tion (*-gā'shun*), *n.* the act of investigating; inquiry; search.
in-ves-ti-ture (*in-ves'ti-tūr*), *n.* the act or right of giving legal possession.
in-vest-ment (*-vest'ment*), *n.* the act of laying out money productively; money so invested.
in-vet-er-ate (*'ĕr-at*), *adj.* deep-rooted; habitual.
in-vid-i-ous (*-vid'i-us*), *adj.* likely to provoke ill will or envy; unpleasant.
in-vig-or-ate (*-vig'ĕr-āt*), *v. t.* to give vigor to; strengthen; animate. [STRENGTHEN.]
in-vin-ci-ble (*-vin'si-bl*), *adj.* unconquerable.
in-vi-o-la-ble (*-vi'ō-lā-bl*), *adj.* that cannot be profaned or injured; unbroken. [Also *inviolate.*]
in-vis-i-ble (*-viz'i-bl*), *adj.* that cannot be seen.
in-vi-ta-tion (*-vi-tā'shun*), *n.* the act of inviting; the words or document by which one is invited.
in-vite (*-vīt'*), *v. t.* to ask, solicit, or summon; persuade; allure. [ATTRACT.]
in-vo-ca-tion (*-vō-kā'shun*), *n.* the act or form of invoking.
in-voice (*'vois*), *n.* a document announcing the dispatch of goods: *v. t.* to state or insert in an invoice.
in-voke (*-vōk'*), *v. t.* to address in prayer or supplication; solicit.
in-vol-un-ta-ry (*-vol'un-tā-ri*), *adj.* without will or choice; not spontaneous.
in-vo-lute (*'vō-lūt*), *adj.* folded or rolled inward; coiled spirally.
in-vo-lu-tion (*-lū'shun*), *n.* the act of involving or infolding; complication.
in-volve (*-volv'*), *v. t.* to complicate; entangle; surround; embroil; result. [IMPLICATE.]
in-vul-ner-a-ble (*-vul'nĕr-a-bl*), *adj.* that cannot be wounded or injured; without any weak point.
in-ward (*'wĕrd*), *adj.* situated within: *adv.* interior; toward the center. [Also *inwards.*]
in-wrought (*-rawt'*), *p. adj.* worked in; adorned.
i-o-dine (*i'ō-din*), *n.* a nonmetallic element, which, when heated, gives off a rich violet vapor.
i-o-do-form (*ō'dō-fōrm*), *n.* a crystalline compound of iodine.
I-on-ic or-der (*ī-on'ik ôr'dĕr*), an order of classic architecture, characterized by the volute of its capital.
i-o-ta (*-ō'tà*), *n.* the Greek letter, which from its being used under the vowels d, n, w (*iota subscriptum*) denotes anything small or insignificant.
Iowa. A French form of the Indian word *Ayuhba,* signifying "the drowsy or the sleepy ones." Written at first *Aioues,* and applied to a tribe of Indians, would seem to be simply *Ajawa,* "across, beyond," as if to say, "the tribe beyond the river."
ip-e-cac (*ip'ē-kak*), *n.* ipecacuanha.
ip-e-cac-u-an-ha (*ip-ē-kak-ū-an'a*), *n.* the root of a South American plant: used in medicine.
Ira (*ī'rà*). A male name, from the Hebrew, *Ira,* "watchful."
i-ras-ci-ble (*-ras'i-bl*), *adj.* easily excited to anger.
i-rate (*-rāt'*), *adj.* angry; enraged.
ire (*īr*), *n.* anger; wrath. [ANGER.]
Ireland. An island west of Great Britain. Was the Roman *Hibernia,* the Greek *Ierne,* and the Celtic *Erin.* The usual explanation of the name is from the Celtic *ïar,* "behind," and hence "to the west," or "western isle."
Irene (*ī-rē'nē*, or *ī-rēn'*). A fema e name. From the Greek *Eirene,* "goddess of peace," literally "peace." Fr., *Irène;* Ger., *Irene:* It., *Irene.*
ir-i-des-cence (*ir-i-des'ens*), *n.* the exhibition of colors like those of the rainbow.
ir-i-des-cent (*'ent*), *adj.* exhibiting iridescence.
i-ris (*ī'ris*), *n.* [*pl.* irises, irides (*-ez, 'ri-dēz*)], the pupil of the eye; the rainbow.
I-rish (*'rish*), *adj.* pertaining to Ireland, its inhabitants, or language.
Irish Sea. So named from its geographical position.
irk (*ĕrk*), *v. t.* to weary: *v. i.* to become tired.
irk-some (*'sum*), *adj.* tedious; wearisome.
Irmgard or **Ermgard** (*irm'gärd*). Anglicized form of the Teutonic *Ermengarde* or *Irmgarde,* meaning a "public benefactor."
★**i-ron** (*ī'urn*), *n.* the most common and useful of the metals; an instrument made of iron: *pl.* fetters: *adj.* pertaining to, resembling, or made of iron: *v. t.* to smooth with an iron implement; furnish with iron; fetter.
i-ron-clad (*-klad*), *n.* a warship protected with iron or steel plates: *adj.* covered or protected with iron armor.
i-ron-i-cal (*ī-ron'i-kal*), *adj.* expressing one thing and meaning another.
i-ron-wood (*'urn-wood*), *n.* a name for the timber of trees of exceptional hardness.
i-ro-ny (*'rō-ni*), *n.* subtle sarcasm.
ir-ra-di-ate (*ir-rā'di-āt*), *v. t.* to shed light upon; illuminate; brighten: *v. i.* emit rays of light.
Ir-ra-tion-al (*-rash'un-al*), *adj.* not rational.

Syn. IRRATIONAL, foolish, absurd, preposterous. *Irrational* is applicable more frequently to the thing than to the person, to the principle than to the practice; *foolish,* on the contrary, is commonly applicable to the person as well as the thing; to the practice rather than the principle; *foolish* is applied to anything, however trivial, which in the smallest degree offends our understanding; the conduct of children is therefore often *foolish,* but not *absurd* and *preposterous;* it is *absurd* for a man to persuade another to do that which he in like circumstances would object to do himself; it is *preposterous* for a man to expose himself to ridicule, and then be angry.

ir-re-claim-a-ble (*ir-rē-klām'a-bl*), *adj.* incapable of being reclaimed.
ir-re-spec-tive (*-rē-spek'tiv*), *adj.* regardless (with *of*).
ir-re-spon-si-ble (*-spon'si-bl*), *adj.* not responsible.
ir-ri-gate (*'i-gāt*), *v. t.* to moisten (land) by causing water to flow over by artificial means.
ir-ri-ta-ble (*'i-tà-bl*), *adj.* easily provoked to anger; easily stimulated.
ir-ri-tate (*'i- āt*), *v. t.* to provoke or make angry; excite heat and redness in. [AGGRAVATE.]
ir-ri-ta-tion (*-ā'shun*), *n.* the act of irritating exasperation; excitement of muscular action by external agency.
ir-rup-tion (*-rup'shun*), *n.* a bursting or rushing in; sudden invasion.
Isaac (*ī'zak*). From the Hebrew *Yitschhak,* which some translate "laughing"; others "sporting." Arabic, *Ishak;* Danish, *Isak;* Dutch, *Izaak;* Fr., *Isaac;* Ger., *Isaak;* Hungarian, *Izsak;* It., *Isacco;* Lat., *Isaacus;* Polish, *Izaak;* Sw., *Isak.*
Isabel (*iz'a-bel*), **Isabella** (*iz-a-bel'là*). According to some this name is the same as *Jezebel,* which Tregelles thinks may mean "without cohabitation"; *i. e.,* "chaste," "modest." Another derivation is that it is the same as *Elizabeth;* but *Isabella* is rather from *Isabel,* the Spanish rendering of *Elizabeth.* Dutch, *Isabelle;* Fr., *Isabelle;* Ger., *Isabelle;* It., *Isabelle;* Lat., *Isabella;* Sp., *Isabel;* Sw., *Isabella.*
Isaiah (*ī-zā'yą*). From the Hebrew *Y'sha-yahu;* from *yesha-Yahu,* "the salvation of Jehovah." Danish, *Iscias;* Dutch, *Jezajas;* Fr., *Isaïe;* Ger., *Esaias;* It., *Isaïa;* Lat., *Esaias;* Port., *Isaias;* Sp., *Isaias.*
Ischl (*ish'l*). A famous watering-place in upper Austria, situated at the junction of the rivers Ischl and Traun, twenty-seven miles east by south of Salzburg. It is the favorite resort of the Austrian royal family and nobility, and contains salt and other baths. It is the central point in the Salzkammergut.
Ishmael (*ish'mā-el*). Hebrew for "God hath heard." Arabic, *Ishmaeel,* or *Ismail;* Fr., *Ismael;* It., *Ismaele;* Lat., *Ishmael.*
Isidore (*iz'i-dōr*). From the Latin, *Isidorus,* which some translate "strong gift." The name signifies "gift of Isis." Dutch, *Isidorus;* Fr., *Isidore;* Gr., *Isadoris;* It., *Isidoro;* Lat., *Isidorus.*
★**i-sin-glass** (*ī'zing-glàs*, not *i'zin-glàs*), *n.* a white semitransparent substance prepared from the sounds or air bladders of the sturgeon, cod, etc.
Is-lam (*is'lam*), *n.* the Mohammedan religion; the whole body of Mohammedans.
Is-land (*ī'land*), *n.* a tract of land surrounded by water.
Island of Desolation. Island in Tierra del Fuego archipelago; so named by Captain Cook owing to the absence of all signs of life.
Isle (*īl*), *n.* an island. [*Poetry.*]
Isle of Bourbon (*bōōr'bun*, Fr. *bōōr-bōn'*). An island in the Indian ocean. When settled by the French, it was so named for the Bourbon family.
Isle of Man. The modern designation of Mona island, in the Irish Sea, by which was meant, agreeably to the Celtic *maen,* "a stone," rocky island.
Isle of St. Helena (*hel'ē-nà*). Island off coast of South Carolina; so named from having been discovered on the Feast of St. Helena, 1502.
Isle of Wight (*wīt*). Island in English channel; originally, the island of the Wyts, or Jutes.
iso, a *prefix* in words of Greek origin, signifying *equal; as isos*celes, having two sides equal.
i-so-late (*ī'sō-lāt*), *v. t.* to place alone.
i-so-la-tion (*-lā'shun*), *n.* the state of being isolated.
i-sos-ce-les (*i-sos'ē-lēz*), *adj.* having equal sides.
Israel (*iz'rā-el*). From the Hebrew, meaning "prevailing with God." The kingdom of the northern tribes of ancient Palestine. Fr., *Israel;* Ger., *Israel;* Lat., *Israel.*
Is-ra-el-ite (*iz'rā-el-īt*), *n.* a descendant of Israel or Jacob; a Jew.
is-sue (*ish'ū*), *n.* the act of passing or flowing out; egress; that which flows or passes out; publication; offspring; essential points in pleading or debate; result: *v. t.* to send out; publish: *v. i.* to come or pass out; flow; proceed; be descended. [OFFSPRING, CONSEQUENCE.]
isth-mi-an (*is'mi-an* or *ist'mi-an*), *adj.* pertaining to an isthmus.
isth-mus (*'mus*), *n.* a neck of land connecting two larger portions.
★**i-tal-ian** (*i-tal'yan*, not *i-tal'yan*), *adj.* pertaining to Italy, its inhabitants or language.
i-tal-ic (*'ik*), *adj.* pertaining to Italy; noting a slender, sloping kind of type (*italic*).
i-tal-i-cize (*'i-sīz*), *v. i.* to write or print in italics.
Italy. A country of southern Europe, so called after Italus, one of the early kings of the country.
Itasca. County and lake in Minnesota, into which flow the head waters of the Mississippi. Name derived from the two Latin words *veritas caput,* "the true head." Schoolcraft notes derivation from *ia,* "to be," and *totosh,* "the female breast," signifying source of the river.
Itch (*ich*), *n.* a parasitic cutaneous disease causing irritation; a constant desire: *v. i.* to feel uneasiness in the skin, causing a desire to scratch; have a constant desire for.
i-tem (*ī'tem*), *n.* a separate article or particular a newspaper paragraph: *adv.* also.
it-er-ate (*it'ĕr-āt*), *v. t.* to repeat.

It-er-a-tion (*it-er-ā'shun*), *n.* repetition.
Ithaca (*ith'ȧ-kȧ*). City in Tompkins county, New York, and village in Gratiot county, Michigan, named for one of the Ionian islands, supposed to be the one celebrated in the Homeric poems as the kingdom of Ulysses.
i-tin-er-ant (*ī-tin'ēr-ant*), *adj.* passing from place to place: *n.* one who goes from place to place.
i-tin-er-a-ry (*'ēr-ā-ri*), *adj.* pertaining to, or done on, a journey: *n.* a traveler's guide or route-book.
Ivan (*ē-vän'*). See *John.*
★**i-vo-ry** (*ī'vō-ri*, not *ī'vri*), *n.* the hard, bony, white dentine which forms the tusks of the elephant, walrus, etc.: *adj.* made of, or like, ivory.
i-vy (*ī'vi*), *n.* a clinging evergreen plant of the genus *Hedera.*

J

jab-ber (*jab'ēr*), *v. i.* to talk rapidly and indistinctly; chatter.
Jabez. From the Hebrew *Yabets*, which Simonis renders, "he will cause pain," *i. e.*, to his mother.
jack (*jak*), *n.* the male of some animals; the knave of cards; a name applied to various kinds of levers or mechanical labor-saving appliances, etc.: *v. t.* to lift with a jack.
jack-al (*'awl*), *n.* a dog-like carnivorous animal.
jack-a-napes (*'ȧ-nāps*), *n.* a conceited fellow.
jack-ass (*'ȧs*), *n.* the male ass; donkey.
jack-daw (*'daw*), *n.* a glossy species of crow.
jack-et (*'et*), *n.* a short tailless coat: *v. t.* to clothe with a jacket.
Jackson, Miss. The state capital. So named in honor of General Andrew Jackson.
Jacksonville, Fla. Named in 1822 in honor of President Andrew Jackson.
Jacob (*jā'kob*). From the Hebrew, *Yaakob*, which Tregelles translates, "taking hold of the heel," "supplanter," "layer of snares." Arab. *Yakoob*, or *Jakub;* Danish, *Jakob;* Dutch, *Jacob*, or *Jakob;* Fr., *Jacob;* Ger., *Jakob;* Hungarian, *Jakob;* It., *Jacob*, or *Jacopo;* Lat., *Jacobus* or *Jacob;* Polish, *Jakob;* Sw., *Jakob.*
jade (*jād*), *n.* a tired or worn-out horse; a vicious woman; silicate of magnesium and lime, of green color: *v. t.* to tire by long-continued labor; harass.
Jaffa (*jaf'fȧ, yäf'fä*) or **Joppa** (*jop'pȧ*). From the Semetic, *Yapho*, "beauty." A seaport of Palestine.
jag (*jag*), *n.* a notch; projecting point: *v. t.* [*p. t.* and *p. p.* jagged, *p. pr.* jagging], to cut into notches or teeth.
jail (*jāl*), *n.* a prison.
jal-ap (*jal'ap*), *n.* the root of *Ipomœa purga.*
jam (*jam*), *n.* a conserve of fruit boiled with sugar; block; crush: *v. t.* to squeeze or crush; press in tightly.
Jamaica (*jȧ-mā'kȧ*). An island of the West Indies; so called from *Xaymaco*, a native West Indian name signifying "the country abounding in springs."
jamb (*jam*), *n.* one of the upright sides of a doorway, window-opening, or fireplace.
James. A name corrupted from *Jacobus.* Danish, *Jakob;* Dutch, *Jacobus;* Fr., *Jacques;* Ger., *Jakob;* Hungarian, *Jakab;* It., *Giacomo;* Lat., *Jacobus;* Polish, *Jakub;* Port., *Diogo* or *Jacobo;* Russ., *Yakof;* Sp., *Jaime;* Sw., *Jakob.* [See *Jacob.*]
James bay. An arm of Hudson bay. Named in memory of James I., in whose reign it was explored.
James river, Va. Named in honor of James I. of England. It was first named the *river of the Holy Ghost.* The Indian name was *pawathanne*, "river of pregnancy." To this stream Captain John Smith gave the spelling of *Powhattan*, stating the chief took his name from the stream.
Jamestown. Town in James City county, Virginia, and the first English settlement in America; named for King James I.
Jan (Dutch, *yän*). An Anglo-Norman form of *John.*
Jane. From the French name *Jeanne*, from root of *John.* Dutch, *Hanna;* Fr., *Jeanne;* Ger., *Johanna;* It., *Giovanni;* Lat., *Jana* or *Johanna;* Sp., *Juana;* Sw., *Johanna.*
Janesville. Town in Lassen county, California, and city in Rock county, Wisconsin, named for Henry F. Janes.
Janet (*jan'et*, or *jȧ-net'*). A diminutive of *Jean.*
jan-gle (*jang'gl*), *v. i.* to quarrel or wrangle; sound discordantly: *n.* a discordant sound; wrangle.
Janiculum (*jan-ik'yū-lum*), or **Mons Janiculus** (*monz ja-nik'u-lus*). Highest of the hills of Rome; situated on the right bank of the Tiber, extends south from the Vatican, and is opposite the Capitoline and the Aventine.
jan-i-tor (*jan'i-tēr*), *n.* a doorkeeper.
Jan-u-a-ry (*jan'ū-ā-ri*), *n.* the first month of the year in the modern calendar; so named from Janus, a god who presided over the beginning of things.
ja-pan (*jȧ-pan'*), *n.* work varnished and lacquered after the Japanese style; a kind of varnish: *v. t.* [*p. t.* and *p. p.* japanned, *p. pr.* japanning], to cover, varnish or lacquer.
Japan. An empire of Asia; name, a European modification, brought about through the Portuguese *Gepuen*, or *Japao*, of the native *Nippon*, or *Niphon*, compounded of *ni*, "sun," "fire," and *pon*, "land," literally "sun-land," or "land of the rising sun," and signifying "the fountain of light."
ja-pon-i-ca (*jȧ-pon'i-kȧ*), *n.* the name of various species of Japanese plants.
Jaqueline (*jak'wē-lin*). The feminine of *James.* Fr., *Jacqueline* (*zhäk-lēn'*); Ger., *Jakobine;* It., *Giacomina* or *Giacobba.*
jar (*jär*), *n.* a vessel; a shake; jolt; harsh sound; conflict: *v. t.* to cause to shake; jolt: *v. i.* to interfere or clash.
jar-di-nière (*zhär-dē-nyâr'*), *n.* an ornamental flower stand.
jar-gon (*jär'gon*), *n.* confused, unintelligible talk.
jas-mine (*jas'min*), *n.* a plant of the genus *Jasminum.*
jas-per (*'pēr*), *n.* an opaque, many-shaded variety of quartz.
Jasper (*jas'pēr*). A male name derived from the Arab *yashb*, or Persian *yashp*, the precious stone jasper; hence, "treasure master." Danish, *Jesper;* Dutch, *Jasper* or *Kasper;* Fr., *Gaspard;* Ger., *Caspar* or *Kaspar;* It., *Gasparo;* Lat., *Gaspar;* Port., *Gaspar;* Sp., *Gaspar;* Sw., *Kasper.*
jaun-dice (*jän'dis*), *n.* a disease characterized by yellowness of the eyeballs, skin, etc.
jaunt (*jänt*), *n.* a short excursion or ramble: *v. i.* to roam or ramble; take a short excursion. [EXCURSION.]
jaun-ty (*'ti*), *adj.* airy; gay; showy.
Java. An island of the Dutch East Indies; name native Malay word signifying "the land of nutmegs."
jave-lin (*-jav'lin*), *n.* a light spear.
jaw (*jaw*), *n.* the bones of the mouth; mouth; a mechanical contrivance.
jay (*jā*), *n.* a crow-like bird.
jeal-ous (*jel'us*), *adj.* full of, or characterized by, jealousy.
jeal-ous-y (*-i*), *n.* suspicious vigilance; earnest care.
Syn. JEALOUSY, envy, suspicion. We are *jealous* of what is our own; we are *envious* of what is another's. *Jealousy* fears to lose what it has; *envy* is pained at seeing others have that which it wants for itself; *suspicion* denotes an apprehension of injury, has more of distrust in it than *jealousy;* the *suspicious* man is altogether fearful of the intentions of another.
jean (*jēn*), *n.* twilled undressed cotton cloth.
Jean. A female name derived from the Fr. *Jeanne*, the feminine form of *Jean*, from root of *John.*
Jeanne. See *Jane.*
Jeannette (*jē-net'*). See *Janet.*
Jedediah (*jed-ē-dī'ȧ*). The Hebrew *Y'dhiydhyah*, from *yadhaydh*, "beloved of Jehovah."
jeer (*jēr*), *v. t.* to scoff at: *v. i.* to speak in a derisive manner: *n.* a scoff; derision.
Jefferson City, Mo. Capital of the state; named in honor of President Thomas Jefferson.
Je-ho-vah (*jē-hō'vȧ*), *n.* Lord; God of the Hebrews.
jel-ly (*jel'i*), *n.* [*pl.* jellies (*'iz*)], any semitransparent, soft gluey substance: *v. i.* to turn to, or become jelly.
Jenet (*jē-net'*). The diminutive of *Jean.* Fr., *Jeannette;* It., *Giovannetta;* Lat., *Joanetta.*
jen-net (*jen'et*), *n.* a small Spanish horse. [Also *genet.*]
jen-ny (*'i*), *n.* a machine for spinning.
jeop-ard (*jep'ērd*), *v. t.* to expose to loss or injury; hazard. [Also *jeopardize.*]
jeop-ard-y (*-i*), *n.* hazard; peril.
Jephthah (*jef'thȧ*). From the Hebrew, meaning, a "discoverer." Fr., *Jephte;* Lat., *Jephtha.*
Jeremiah (*jer-ē-mī'ȧ*), or **Jeremy** (*jer'ē-mi*). From the Hebrew *Yirm-Yah*, which Simonis renders "elevated of the Lord." Danish, *Jeremias;* Dutch, *Jeremias;* Fr., *Jeremis;* Ger., *Jeremias;* It., *Geremia;* Lat., *Jeremias;* Sw., *Jeremias.*
jerk (*jērk*), *v. t.* to give a sudden pull, twist, or push to; *n.* a sudden quick pull, twist, or push.
jer-kin (*jēr'kin*), *n.* a short coat or jacket; close waistcoat.
Jerome (*jer'om* or *jē-rōm'*). A name corrupted from *Hieronymus*, "holy law," or "sacred name." Danish, *Jeronymus;* Dutch, *Hieronymus;* Fr., *Jerome;* Ger., *Hieronymus;* It., *Geronimo* or *Girolamo;* Lat., *Hieronymus;* Port., *Hieronimo;* Sp., *Geronimo;* Sw., *Hieronymus.*
Jerry. A male name, corrupted from *Jeremiah.*
Jer-sey (*jēr'zi*), *adj.* pertaining to the Isle of Jersey, or to its breed of cattle; of or pertaining to New Jersey: *n.* a close-fitting thick woolen shirt; fine yarn wool.
Jersey. Island in English channel. Was originally *Czar-ey*, meaning "Cæsar's island," so called by the Romans in honor of Julius Cæsar.
Jersey City, N. J. Originally incorporated, 1829, and named after the state as the *City of Jersey.* In 1851, under a new charter, the name was transposed.
Jerusalem (*jē-rū'sȧ-lem*). The sacred city of Palestine. Name means "foundation of peace"; derived from the Hebrew, *yarah*, "a foundation," and *shalaim*, or *shalem*, "peace, perfect, whole."
Jesse (*jes'sē*). From the Hebrew *Yishay*, from *yesh*, "wealth." Others render the name "graft." If so, it comes from *yash*, "being," "existence."
Jessica. A female name, probably a diminutive of *Jessie.*
Jessie. A female name. Like the French masculine name *Joan*, formed from root of *John.*
jest (*jest*), *n.* a joke; humorous pleasantry; laughing-stock: *v. i.* to joke; make merriment.
Jes-u-it (*jez'ū-it*), *n.* a member of the Roman Catholic Society of Jesus, founded by Ignatius Loyola, 1534.
jet (*jet*), *n.* a stream suddenly emitted; a deep black variety of lignite, black amber: *v. t.* to spout out: *v. i.* to shoot or jut out.
jet-sam (*'sam*), *n.* that part of a ship's cargo which is thrown into the sea. [Also *jetsom, jetson.*]
jet-ty (*'i*), *n.* [*pl.* jetties (*'iz*)], a structure extending into the water to restrain currents.
Jew (*jū*), *n.* an Israelite; Hebrew. [Fem. *Jewess.*]
jew-el (*'el*), *n.* a valuable ornament; gem; precious stone: *v. t.* to adorn with, or as with, jewels.
jew-el-ry (*'ri*), *n.* jewels collectively; the art or trade of a jeweler.
Jew-ry (*'ri*), *n.* The land of the Jews; ghetto.
jib (*jib*), *n.* a large triangular sail projecting beyond the bowsprit.
jibe. Another form of *gibe.*
jif-fy (*jif'i*), *n.* an instant.
jig (*jig*), *n.* a quick lively dance, or music: *v. i.* to dance a jig: *v. t.* jerk up and down.
jilt (*jilt*), *n.* a coquet or flirt: *v. t.* to encourage (a lover) and then discard him: *v. i.* to play the jilt. [COQUET.]
jim-my (*jim'i*), *n.* a burglar's tool.
jin-gle (*jing'gl*), *n.* a sharp tinkling metallic sound; meaningless rhyme: *v. i.* to sound with a jingle.
jin-go (*'gō*), *n.* a mild oath (with *by*).
jin-rik-i-sha (*-rik'i-shȧ*), *n.* a small Japanese two-wheeled carriage, drawn by one or more men. [Also *jinriksha.*]
job (*job*), *n.* a piece of work: *v. t.* to let out for hire; buy up (goods) and retail them: *v. i.* buy and sell, as a stockholder; perform job work.
Job (*jōb*). From the Hebrew *Iyyobh*, "the persecuted" (man), hence, "sorrowing." Arabic, *Aiyoob* or *Ayyub;* Fr., *Job;* Ger., *Hiob;* Gr., *Iob;* It., *Giobbe;* Lat., *Job* or *Jobus;* Sw., *Job.*
job-ber (*job'ēr*), *n.* a middleman, especially one who acts as agent.
job-ber-y (*'ēr-i*), *n.* [*pl.* jobberies (*-iz*)], low intriguing for private advantage or political ends.
jock-ey (*jok'i*), *n.* [*pl.* jockeys (*'iz*)], one who rides a horse in a race; cheat: *v. t.* to cheat or deceive.
jo-cose (*jō-kōs'*), *adj.* sportive; humorous. [FACETIOUS.]
joc-u-lar (*jok'ū-lēr*), *adj.* making jokes. [FACETIOUS.]
joc-u-lar-i-ty (*-lar'i-ti*), *n.* merriment.
joc-und (*'und*), *adv.* jovial; sportive; gay.
Joel (*jō'el*). Means "acquiescing." Fr., *Joel;* Lat., *Joel.*
jog (*jog*), *v. t.* [*p. t.* and *p. p.* jogged, *p. pr.* jogging], to push or shake slightly; stimulate: *v. i.* to travel along with a slow trotting motion: *n.* a slight push or shake; slow trot; stimulant.
Johanna. A female name derived from *John.*
John. From the Hebrew, *Y'hohhanan*, variously translated, "the lord gave graciously," "whom Jehovah gave," "whom Jehovah bestowed." Danish, *Johann* or *Hans;* Dutch, *Jan;* Fr., *Jean;* Ger., *Johann* (familiarly *Hans*, a contraction of *Johannes*); Gr., *Ioannes;* Hungarian, *Janos;* It., *Jiovanni;* Lat., *Joannes* or *Johannes;* Pol., *Jan;* Port., *Joao;* Russ., *Ivan;* Sp., *Juan;* Sw., *Johan* or *Hans.*
john-ny-cake (*jon-i-kāk*), *n.* a flat maize cake.
Johnstown, N. Y. City in Fulton county, New York, named for its founder, Sir William Johnson.
Johnstown, Pa. City and borough in Cambria county, Pennsylvania, named for an early settler, Joseph Jahns or Yahns.
join (*join*), *v. t.* to unite; connect; associate; add or annex: *v. i.* to adhere; be in contact; be associated with. [ADD.]
join-er (*'ēr*), *n.* one who, or that which, joins.
joint (*joint*), *n.* the place where two or more things join; one of the larger pieces into which a carcass is cut up; a place of low resort: *adj.* produced by the action of two or more; united in or sharing: *v. t.* to form with, or unite by, joints; cut or divide into joints, as meat.
join-ture (*join'tūr*), *n.* landed estate or tenements settled on a woman in consideration of her marriage: *v. t.* to settle a jointure upon.
★**joist** (*joist*, not *jois*), *n.* a horizontal timber of a floor.
joke (*jōk*), *n.* something said or done to excite mirth; jest; sport: *v. t.* to make jokes: *v. i.* to cast jokes at; rally.
Joliet (*jō'li-et*), **Ill.** Named after the French explorer, Louis Joliet.
jol-li-fi-ca-tion (*jol-i-fi-kā'shun*), *n.* merry-making.
jol-li-ty (*'i-ti*), *n.* the state of being jolly.
jol-ly (*'i*), *adj.* full of life and mirth: *adv.* exceedingly: *v. t.* to joke or rally.
jolt (*jōlt*), *v. t.* to shake by sudden jerks: *v. i.* to have a jerky motion: *n.* a sudden jerk.
Jonah (*jō'nȧ*), or **Jonas** (*jō'nas*). From the Hebrew *Yonah*, "a dove"; perhaps given as a term of endearment. Fr., *Jonas;* Ger., *Jonas;* Lat., *Jonas.*
Jonathan (*jon'ȧ-than*). From the Hebrew *Y'honathan*, "the Lord gave," or "given by Jehovah." Fr., *Jonathan;* Lat., *Jonathan.*
★**jon-quil** (*'kwil*), *n.* a bulbous plant with fragrant flowers. [Also *jonquille.*]
Jordan. The chief river of Palestine. The Hebrew name is *yarden*, which Robinson translates "the flowing," "the river," like the German *Rhein*, from *rinnen.*
Joseph (*jō'sef*). From the Hebrew *Yosheph*

signifying "he shall add." Fr., *Joseph;* Ger., *Joseph;* Hungarian, *Jozsef;* It., *Giuseppe;* Lat., *Josephus* or *Joseph;* Polish, *Jozef;* Port., *José;* Sp., *José.*

Josephine (*jō'zef-in*). The feminine of *Joseph.* Fr., *Josèphe* or *Josephine;* Ger., *Josephe* or *Josephine;* It., *Giuseppa* or *Giuseppina;* Lat., *Josepha.*

Joshua (*josh'ū-ȧ*). From the Hebrew *Y'hoshua,* "whose help or salvation is Jehovah," hence, "savior." Dutch, *Josua;* Fr., *Josuè;* Ger., *Josua;* It., *Jiosue;* Lat., *Josua;* Sw., *Josua.*

Josiah (*jō-sī'ȧ*), or **Josias** (*jō-sī-as*). From the Hebrew *Y'shiyyahu,* "whom the Lord gives." Danish, *Josias;* Dutch, *Jozias;* Fr., *Josias;* It., *Giosiade;* Lat., *Josias.*

joss (*jos*), *n.* a Chinese god or idol.

★**jos-tle** (*jos'l,* not *jost'l*), *v. t.* to push against; elbow.

jot (*jot*), *v. t.* [*p. t.* and *p. p.* jotted, *p. pr.* jotting], to make a memorandum of (with *down*): *n.* a tittle.

jour-nal (*jûr'nal*), *n.* record of news or events; the bearing of a machine.

jour-nal-ism (*-izm*), *n.* newspaper or periodical literature; the profession of a journalist.

jour-nal-ist (*-ist*), *n.* an editor, or contributor to a journal or newspaper.

jour-ney (*jûr'ni*), *n.* passage from one place to another: *v. i.* to travel from one place to another.

Syn. JOURNEY, travel, voyage. *Journey* signifies the course that is taken in the space of a day, or in general any comparatively short passage from one place to another; *travel* signifies such a course or passage as requires labor, and causes fatigue; in general any long course; *voyage* is now confined to passage by sea.

joust (*just*), *n.* a mediæval mock combat between two mounted knights: *v. i.* to engage in such a combat.

jov-i-al (*jōv'i-al*), *adj.* convivial; merry.

joy (*joi*), *n.* exhilaration of spirits; gayety; gladness: *v. i.* to rejoice or be glad.

Syn. JOY, gladness, mirth. What creates *joy* and *gladness* is of a permanent nature; that which creates *mirth* is temporary; *joy* is the most vivid sensation in the soul; *gladness* is the same in quality, but inferior in degree; *joy* is awakened in the mind by the most important events in life.

joy-ful (*'fool*), *adj.* full of joy.

joy ride (*rīd*), a recent term used to designate hilarious and reckless driving of a motor car. [*Colloquial.*]

Juan (*jū-ȧn',* Spanish *hōō-ȧn'*). See *John.*

Juan de Fuca (*jū'ȧn de fū'kȧ*), **Strait of, Wash.** So named by Apostulus Valerianos, after Juan de Fuca, an old Greek sailor who navigated its waters in 1592.

Juan Fernandez (*jū'ȧn fẽr-nan'dez,* Spanish *hōō-ȧn' fer-nän'deth*). An island in the South Pacific; perpetuates the name of its discoverer. Also known as Selkirk's Island, after Alexander Selkirk, its sole inhabitant from September, 1704, to February, 1707.

ju-bi-la-tion (*jū-bi-lā'shun*), *n.* a shouting for joy; declaration of triumph.

ju-bi-lee (*'bi-lē*), *n.* the 50th anniversary of any event.

Judah (*jū'dȧ*), **Judas** (*jū'das*), **Jude** (*jūd*). Hebrew meaning "confession." Fr., *Zuda* or *Jude;* Ger., *Judas;* Hungarian, *Juda;* It., *Guida;* Lat., *Judas;* Polish, *Judas;* Sw., *Judas.*

Ju-da-ism (*'dā-izm*), *n.* the religious rites and doctrines of the Jews; conformity to Jewish rites and doctrines.

judge (*juj*), *n.* the presiding official in a court of law; arbitrator; connoisseur: *v. t.* to examine and pass sentence upon; distinguish; consider: *v. i.* to come to a conclusion; hear and determine a case.

★**judg-ment** (*juj'ment,* not *juj'munt*), *n.* the act of judging; a judicial decision; mental faculty of deciding; criticism; opinion; judgment day.

Syn. JUDGMENT, discretion, prudence. *Judgment* is conclusive; it decides by positive inference; it enables a person to discover the truth; *discretion* is intuitive; it discerns or perceives what is in all probability right; a person is *prudent* who does not inconsiderately expose himself to danger; a measure is *prudent* that guards against the chance of evil; the impetuosity of youth naturally impels them to be *imprudent.* [See *decision.*]

Ant. Jollity, heedlessness, recklessness.

ju-di-cial (*jū-di'shal*), *adj.* pertaining to courts of justice or to the administration of justice; impartial.

ju-di-cia-ry (*-dish'ȧ-ri*), *adj.* pertaining to courts of justice: *n.* judges collectively.

ju-di-cious (*'us*), *adj.* prudent; discreet.

Judith (*jū'dith*). From the Hebrew *Y'hudhiyth,* "in the Jewish tongue," also, "praising." It., *Giuditta;* Lat., *Juditha.*

jug (*jug*), *v. t.* to put into a jug: *n.* an earthenware vessel with a handle, used to carry liquids.

jug-gle (*jug'l*), *v. t.* to cheat by artifice: *v. i.* to conjure: *n.* a trick by sleight of hand.

★**ju-gu-lar** (*jū'gū-lẽr,* not *jug'yū-lẽr*), *adj.* pertaining to the neck or throat or jugular vein: *n.* a jugular vein.

juice (*jōōs*), *n.* sap; the fluid parts of animal bodies.

jui-cy (*jōō'si*), *adj.* full of juice.

Julia (*jū'li-ȧ* or *jūl'yȧ*). The feminine of *Julius.* Dutch, *Julia;* Fr., *Julie;* Ger., *Julie;* It., *Jiulia;* Lat., *Julia;* Sp., *Julia;* Sw., *Julia.*

Jul-ian (*jūl'yan*), *adj.* pertaining to Julius Cæsar, or to the Julian calendar as adjusted by Julius Cæsar 46 B.C.

Julian. A name derived from the Latin *Julianus,* formed from *Julius.* Julian is a feminine as well as a masculine name. Dutch, *Julianus;* Fr., *Julien;* Ger., *Julian;* It., *Giuliano;* Lat., *Julianus;* Port., *Juliao;* Sp., *Julian* or *Juliano;* Sw., *Julian.*

Juliana (*jū-li-an'ȧ*). A female name derived from *Julian.* Dutch, *Juliana;* Fr., *Julienne;* Ger., *Juliane;* It., *Giuliana;* Lat., *Juliana;* Port., *Juliana;* Sp., *Juliana;* Sw., *Juliana.*

Julien. See *Julian.*

Julienne. See *Julia.*

Juliet (*jū'-li-et*). A diminutive formed from *Julia.*

Julius (*jū'li-us*). The Roman name, said to be derived from *Julus* or *Iulus,* "sprung from *Iulus.*" Dutch, *Julius;* Fr., *Jules;* Ger., *Julius;* It., *Giulio;* Lat., *Julius;* Port., *Julio;* Sp., *Julio.*

Ju-ly (*-lī*), *n.* the seventh month of the modern calendar; so named by Marc Antony in honor of Julius Cæsar, who was born in it.

jum-ble (*jum'bl*), *n.* a confused mass: *v. t.* to mix without order: *v. i.* to mix.

jump (*jump*), *n.* a spring or bound; the space jumped: *v. t.* to cause to spring or bound: leap over: *v. i.* to spring.

junc-tion (*jungk'shun*), *n.* the act of being joined; union; a point or place of union.

junc-ture (*'tūr*), *n.* the point or line at which two bodies are joined; occasion.

June (*jōōn*), *n.* the sixth month of the modern calendar; named from Juno, the queen goddess.

Jungfrau (*yoong'frow*) **mountain.** A noted Alpine peak, "the maiden," or "the fair one," so called from its spotless white.

jun-gle (*jung'gl*), *n.* a dense tropical thicket.

Juniata (*jū-ni-at'ȧ*) **river, Pa.** Named from a tribe of Indians inhabiting its banks, extinguished by the Iroquois. The root of the word means "a stone." *Onajutta-haga,* "the Juniata people," is the name found on early maps.

jun-ior (*jōōn'yẽr*), *adj.* younger; of lower standing; pertaining to youth: *n.* the younger of two; one of lower standing.

ju-ni-per (*jōō'ni-pẽr*), *n.* a shrub, the berries of which are used in flavoring gin.

junk (*jungk*), *n.* short pieces of old cable, rope; hard salt ship beef; a Chinese flat-bottomed vessel.

jun-ket (*jung'ket*), *n.* a variety of sweetmeat; excursion; picnic: *v. i.* to participate in an excursion or picnic.

jun-ta (*jun'tȧ*), *n.* a legislative assembly or council.

jun-to (*'tō*), *n.* [*pl.* juntos (*'tōz*)], a secret council of state; faction; cabal.

ju-ris-dic-tion (*jū-ris-dik'shun*), *n.* legal authority; extent of power; district over which any authority extends.

ju-ris-pru-dence (*-prōō'dens*), *n.* legal science; system of laws of a country.

ju-rist (*'rist*), *n.* one skilled in legal science.

ju-ror (*'rẽr*), *n.* a juryman.

ju-ry (*'ri*), *n.* a body of men, usually twelve, selected according to law and sworn to inquire into or decide on, the evidence before them.

★**just** (*just,* never *jest*), *adj.* conformable to divine or human laws; upright; impartial; fair: *adv.* exactly; barely; almost; perfectly.

jus-tice (*jus'tis*), *n.* rectitude in dealing with others; impartiality; a judge or magistrate.

jus-ti-fi-a-ble (*'ti-fī-ȧ-bl*), *adj.* defensible.

jus-ti-fi-ca-tion (*-fi-kā'shun*), *n.* the act of justifying; vindication or defense; the act of acceptance of a man by God as justified by the merits of Jesus Christ.

jus-ti-fy (*'ti-fī*), *v. t.* to show or prove to be just or right; vindicate; pardon: *v. i.* to conform to each other by proper spacing, as lines of type. [APOLOGIZE.]

Justin (*jus'tin*). A masculine name derived from the Roman *Justinus,* formed from *Justus.*

Justina (*jus-tī'nȧ*). A feminine name formed from *Justin.*

jut (*jut*), *v. i.* [*p. t.* and *p. p.* jutted, *p. pr.* jutting], to project beyond the main body.

jute (*jōōt*), *n.* the fiber of an East Indian plant used for ropes.

Jutland. The continental part of Denmark. Name means the land of the Jutes.

ju-ve-nes-cent (*jōō-vē-nes'ent*), *adj.* becoming young.

ju-ve-nile (*'vē-nil*), *adj.* youthful; like, or suitable to, youth: *n.* a young person. [YOUTHFUL.]

ju-ve-nil-i-ty (*-nil'i-ti*), *n.* youthfulness.

juxta, a *prefix* meaning *near,* as *juxta*position.

K

Kaaba (*kȧ-ā'bȧ*), or **Caaba** (*kä'ābȧ*). A cube-shaped, flat-roofed building in the center of the Great Mosque at Mecca, the most sacred shrine of the Mohammedans.

Kaf-fir (*kaf'ẽr*), *n.* any member of one of the Bantu tribes of South Africa; the Kaffir language.

Kaffraria (*kȧf-frā'ri-ȧ*). Country of the Kaffirs, or "unbelievers."

kai-ser (*kī'zẽr*), *n.* the title of the emperors of Germany and Austria.

Kalamazoo (*kal-ȧ-mȧ-zōō'*). City, river, and county in Michigan. According to one authority, name is derived from the Indian word *Negikanamazo,* meaning "otter-tail"; "beautiful water" and "boiling water" are other versions.

kale (*kāl*), *n.* a cabbage with open curled leaves; sea kale.

★**ka-lei-do-scope** (*kȧ-lī'dō-skōp*), *n.* an optical instrument which by an arrangement of mirrors causes objects viewed through it to appear in a variety of symmetrical and beautiful patterns.

Ka-na-ka (*kȧ-nä'kȧ*), *n.* a Sandwich Islander.

Kanawha (*kȧ-naw'wȧ*) **river, W. Va.** So named from a tribe of Indians (branch of the Nanticokes), evoluting in its spelling through *Conoys, Conoise, Canawese, Cohnawas, Canaways,* to *Kanawha.*

kan-ga-roo (*kang-gȧ-rōō'*), *n.* a herbivorous marsupial mammal peculiar to Australia, having short fore legs and long powerful hind legs, with which it leaps.

Kansas. A north central state of the United States. Named in 1854 from its principal river, so called from a tribe of Indians, formerly in that locality, known as the *Konsos* or *Kows.* The word means "smoky water."

Kansas City, Mo. The name given in the spring of 1839, at a meeting of the "Town Company," an organization for starting towns and locating steamboat landings on the Missouri river.

ka-o-lin (*kā'ō-lin*), *n.* china or porcelain clay.

kar-at. Same as *carat.*

Karnak (*kär'nȧk*). A village in Egypt, on the eastern bank of the Nile, on the site of Thebes, famous for its remains of antiquity.

Katahdin (*kä-tä'din*). Mountain in Maine. An Indian word, *Ktaadn* or *Katahdu,* meaning, according to different authorities, "highest land," "big mountain," "greatest or chief mountain."

Kathleen (*kath-lēn'*). An Irish diminutive of *Catherine.*

ka-yak (*kā'yak*), *n.* an Eskimo sealskin canoe. [Also *kaiak, kajak.*]

Kearsarge (*kẽr'särj*), **Mt., N. H.** Name corruption of the Indian *keas,* "high," *auke,* "a place," "a high place"; another derivation traces it from the Indian *Koowassadchu,* "pine or peaked mountain."

keel (*kēl*), *n.* the chief and lowest timber of a vessel extending from stem to stern and supporting the whole frame; hence, a ship; a low, flat-bottomed coal barge: *v. t.* to furnish with a keel: *v. i.* turn up the keel; give up.

keel-boat (*'bōt*), *n.* a large covered freight boat.

keel-haul (*'hawl*), *v. t.* to drag under water beneath the bottom of a ship from one side to the other: formerly a naval punishment; reprimand sternly.

keen (*kēn*), *adj.* sharp; eager; piercing; bitter; acute: *n.* a shrill, bitter wail. [ACUTE, SHARP, EAGER.]

keep (*kēp*), *v. t.* [*p. t.* and *p. p.* kept, *p. pr.* keeping], to have the care of; guard; do; observe; supply with the necessaries of life; confine: *v. i.* to remain in any state or condition: *n.* subsistence.

Syn. KEEP, preserve, save. The idea of having in one's possession is common to all these terms; which is, however, the simple meaning of *keep; to preserve* signifies *to keep* with care, and free from all injury; *save* is *to keep* laid up in a safe place, free from destruction. [See *hold.*]

Ant. Demolish, destroy, wreck.

keep-sake (*'sāk*), *n.* something kept as a souvenir of the giver.

keeve (*kēv*), *n.* a large vat or tub.

keg (*keg*), *n.* a small barrel.

kelp (*kelp*), *n.* the calcined ashes of seaweeds, from which iodine is obtained; a large coarse seaweed or wrack.

kemp (*kemp*), *n.* coarse rough hair or wool; refuse of fur.

ken (*ken*), *n.* view; knowledge: *v. t.* [*p. t.* and *p. p.* kenned, *p. pr.* kenning], to know; descry. [*Scotch.*]

Kenilworth (*ken'il-wẽrth*). A town in Warwickshire, England, five miles north of Warwick. It has been immortalized by Sir Walter Scott.

Kennebec (*ken-ē-bek'*) **river, Me.** So named from the Indian *quinninippiohke,* "long place of water." This was the Indian name of Moosehead lake.

Kennebunk (*ken-ē-bunk'*), **Me.** Similar to Kennebec, an adaptation of another pronunciation.

ken-nel (*'el*), *n.* a house for a dog or pack of hounds: *v. t.* to confine in a kennel: *v. i.* to live in a kennel.

Kenneth (*ken'neth*). The English form of the Gaelic name *Coinneach;* perhaps from *caoin-neach,* a "kind, gentle, or mild man."

Kenosha (*kē-nō'shȧ*), **Wis.** Algonquin derivation from *kenose,* "long," meaning "a long fish."

Kensington (*ken'sing-tun*). A borough of London; originally the town of the Kensings, the old form of which was *Cynesige.*

Kent. A county of England; so named from the ancient British word *chent* or *cant* ("a corner"), "because" says Camden, "England at this point stretched itself out in a corner to the northeast." The Roman name was *Cantium.*

Kentucky. One of the Southern states of the United States; so named, in 1782, from its principal river. Indian word, *Kain-tuk-ee,* "at the head of the river."

Keokuk (*kē'ō-kuk*). City and county in Iowa, named for an Indian chief, the word meaning "running or watchful fox."

ker-nel (*kẽr'nel*), *n.* a grain or seed; the edible substance of a nut or fruit stone; essence.

ker-o-sene (*ker'ō-sēn*), *n.* refined petroleum.

ker-sey (*kẽr'zi*), *n.* a coarse smooth-faced cloth.

ketch-up (*kech'up*), *n.* a sauce prepared from tomatoes, mushrooms, etc.

★**ket-tle** (*ket'l*, not *kit'l*), *n.* a metallic vessel for boiling liquids.
ket-tle-drum (*'drum*), *n.* a hemispherical copper drum.
Kew (*kū*). The name of this place has undergone many transitions. The name is probably derived from the word *quay*, a landing place.
Keweenaw (*kē'wē-naw*) **point, Mich.** So named from a portage called by the Indians *Kewauenau*, the "place where we cross by land carrying the canoe."
Kew observatory. Since 1871 the central meteorological observatory of Great Britain. It is at Old Richmond park, between Kew and Richmond.
key (*kē*), *n.* a portable metal instrument for operating a lock; an instrument by which something is turned, secured, or operated upon; clef; solution; literal translation: *v. t.* to fasten or connect with a key.
key-note (*'nōt*), *n.* the fundamental note; ruling principle.
key-stone (*'stōn*), *n.* central stone of an arch.
Key West. City in Monroe county, Florida. A corruption of *cayo hueso*, a Spanish term meaning "a bone reef or island."
Keziah (*kē-zī'ȧ*). A feminine name derived from *Kezia*, daughter of Job, from the Hebrew, *kt'siya*, signifying "cassia," a bark similar to cinnamon.
kha-ki (*kä'ki*), *adj.* of the color of dust or ashes: *n.* a light drab or brownish cotton cloth used for military uniforms.
khan (*kän*), *n.* an Asiatic prince, chief, or governor; a caravanserai.
khe-dive (*kā-dēv'*), *n.* the official title of the viceroy of Egypt. This word, from the Persian *khidiw*, according to the best authorities, means "prince."
kick (*kik*), *n.* a blow with the foot; a recoil: *v. t.* to strike with the foot: *v. i.* to recoil; resist.
kid (*kid*), *n.* the young of the goat, or its soft skin, used for gloves, etc.; a child: *adj.* made of kid: *v. i.* to bring forth a kid: *v. t.* to furnish or cover with kid; humbug.
kid-nap (*'nap*), *v. t.* to get forcible and illegal possession of. [ABDUCT.]
kid-ney (*'ni*), *n.* [*pl.* kidneys (*'niz*)], one of two oblong, flattened organs which separate the urine from the blood; anything resembling a kidney; sort or kind.
kill (*kil*), *v. t.* to deprive of life; destroy; slay.
★**kiln** (*kil*, not *kiln*), *n.* a furnace, oven, or pile for burning, drying, or hardening.
kilt (*kilt*), *n.* a short petticoat or philibeg of the Scottish highlanders: *v. t.* to form into broad, flat plaits; tuck up. [*Scotch*].
ki-mo-no (*ki-mō'no*), *n.* the loose outer robe of the Japanese.
kin (*kin*), *n.* consanguinity; relationship; kindred; a Chinese lute.
kind (*kīnd*), *adj.* benevolent; indulgent; affectionate; sympathetic: *n.* genus or species; quality; variety; sort. [HUMANE, PLEASANT.]
kin-der-gar-ten (*kin'dēr-gär-ten*), *n.* a school for young children in which they are taught by diverting object lessons, etc.
kin-dle (*kin'dl*), *v. t.* to set fire to; inflame.
kind-ly (*kīnd'li*), *adj.* benevolent; sympathetic; beneficial: *adv.* in a kindly manner. [PLEASANT.]
kind-ness (*'nes*), *n.* the state or quality of being kind; a kind act. [MERCY.]
kin-dred (*kin'dred*), *adj.* of like nature or character; cognate: *n.* relationship by birth or marriage; consanguinity.
kin-e-mat-ics (*kin-ē-mat'iks*), *n.* the science of pure motion.
ki-net-ic (*ki-net'ik*), *adj.* pertaining to, or imparting, motion; active: *n. pl.* that branch of dynamics which treats of the action of forces in causing or influencing motion.
★**ki-ne-to-graph** (*ki-nē'to-graf*), *n.* an apparatus for taking photographs of moving objects and afterward reproducing them on a screen, as if in actual motion.
ki-ne-to-scope (*ki-nē'to-skōp*) *n.* a device for presentng pictures of moving objects in such rapid succession as to give the impression of the actual movements of the original.
king (*king*), *n.* a male sovereign or ruler.
king-dom (*'dum*), *n.* the territory ruled by a king or queen; royal authority; sphere of influence; primary division.
king-fish-er (*'fish-ēr*), *n.* a fish-eating bird with bright blue and green or slate-blue and white plumage.
king-ly (*'li*), *adj.* worthy of a king. [ROYAL.]
kink (*kingk*), *n.* a twist in a rope or thread when doubled; whim: *v. t.* and *v. i.* to form kinks.
kins-folk (*kins'fōk*), *n.* relatives.
kip-per (*kip'ēr*), *n.* a salmon after spawning; a salmon, herring, etc., cut open, salted, and smoke dried: *v. t.* to cure, as a salmon.
kir-tle (*kēr'tl*), *n.* an upper garment; petticoat: *v. t.* to array in a kirtle.
Kiskiminetas (*kis-kē-min'ē-tas*) **river, Pa.** So named from an Indian word, *Kithanne*, translated, "place of the largest stream."
kiss (*kis*), *n.* a salute or caress with the lips; a slight touch: *v. t.* to salute with the lips; touch slightly: *v. i.* to caress mutually with the lips.
kit (*kit*), *n.* a small wooden tub; a small violin; traveling necessaries, outfit, etc.; set.
kitch-en (*kich'en*), *n.* a room set apart for cooking; ship's galley: *adj.* pertaining to the kitchen.
kitch-en-ette (*'en-et*), *n.* a small kitchen.
kite (*kīt*), *n.* a rapacious bird of prey; a light frame of wood covered with paper or linen for flying in the air; a light lofty sail.
kith (*kith*), *n.* acquaintance.
Kittatinny (*kit'tȧ-tin-ni*) **mountains, Pa.** The Indian word *Kitadini*, that is, "largest mountain."
kit-ten (*kit'n*), *n.* a young cat.
Kittery (*kit'tēr-i*) **Point, Me.** Named after the small hamlet of Kittery, England. Kittery Point was settled in 1623, and it is claimed was the first settled and the oldest town in the state.
klep-to-ma-ni-a (*klep-tō-mā'ni-ȧ*), *n.* a form of insanity manifesting itself in an irresistible propensity to steal.
klep-to-ma-ni-ac (*'ni-ak*), *n.* one who is under the influence of kleptomania.
knack (*nak*), *n.* adroitness; dexterity.
knap-sack (*nap'sak*), *n.* a leather or cloth traveling case carried on the back.
knave (*nāv*), *n.* a dishonest or deceitful person.
knav-er-y (*'ēr-i*), *n.* [*pl.* knaveries (*-iz*)], dishonesty; fraud; deceit. [DISHONEST.]
knead (*nēd*), *v. t.* to work into a mass, as dough; operate upon in massage; mold.
knee (*nē*), *n.* the articulation of the leg and thigh bones; anything resembling a knee: *v. t.* to connect or strengthen with knees.
knee-cap (*'kap*), *n.* a flattened oval bone on the forepart of the knee joint; patella.
kneel (*nēl*), *v. i.* [*p. t.* and *p. p.* knelt. *p. pr.* kneeling], to bend, or fall upon, the knees.
knell (*nel*), *n.* the sound of a bell when struck, especially a funeral bell; an ill omen: *v. t.* and *v. i.* to sound or toll, as a funeral bell.
knick-er-bock-ers (*nik'ēr-bok-ērz*), *n. pl.* wide breeches gathered in below the knee.
knick-knack (*'nak*), *n.* a little ornamental trifle; kickshaw.
knife (*nīf*), *n.* [*pl.* knives (*nīvz*)], a cutting instrument with a sharp-edged blade set in a handle: *v. t.* to stab with a knife.
knight (*nīt*), *n.* one who holds nonhereditary rank next below a baronet, entitling him to the prefix *Sir;* a champion; lover; one of the pieces in chess: *v. t.* to confer the honor of knighthood upon.
knight-er-rant (*-er'ant*), *n.* [*pl.* knights-errant], in the middle ages, a knight who went in quest of adventure, to show his prowess, chivalry, etc.
knight-hood (*'hood*), *n.* the character, rank, or dignity, of a knight.
knit (*nit*), *v. t.* [*p. t.* and *p. p.* knitted, *p. pr.* knitting], to tie, unite, or draw together; weave together by needles: *v. i.* contract.
knob (*nob*), *n.* the rounded handle of a door, etc.; round protuberance: knoll.
knock (*nok*), *n.* a blow or stroke with something hard or heavy; rap: *v. t.* to give a blow to; drive or strike against: *v. i.* to strike a blow with something hard or heavy.
knock-out (*'out*), *n.* a mechanical device for throwing out finished work; a blow that knocks down.
knoll (*nōl*), *n.* a rounded hillock; hilltop.
knot (*not*), *n.* an interweaving or tying of thread or cord, etc.; entanglement; difficulty; a hard part in a piece of wood; a nautical mile equal to 2,025 yds.; bond of union; group: *v. t.* to tie in a knot; unite firmly or closely: *v. i.* to form knots or joints; make knots for fringe.
knot-ty (*'i*), *adj.* [*comp.* knottier, *superl.* knottiest], full of knots; rugged; difficult.
know (*nō*), *v. t.* [*p. t.* knew, *p. p.* known, *p. pr.* knowing], to perceive with the mind; understand clearly; have knowledge of; distinguish: *v. i.* to be informed.

Syn. KNOW, be acquainted with. We may *know* things or persons in various ways; we may *know* them by name only; or we may *know* their internal properties or characters, etc.; one is *acquainted with* either a person or a thing, only in a direct manner, and by an immediate intercourse in one's own person.

knowl-edge (*nol'ej*), *n.* clear perception of a truth or fact; acquaintance; information.

Syn. KNOWLEDGE, science, learning, erudition. *Knowledge* is a general term which simply implies the thing known; *science* is a systematic species of *knowledge* which consists of rule and order; *learning* is that species of *knowledge* which one derives from schools, or through the medium of personal instruction; *erudition* is scholastic *knowledge* obtained by profound research. [See *acquaintance*.]

Ant. IGNORANCE, illiteracy.

Knoxville, Tenn. Named after Gen. Henry Knox of Massachusetts, secretary of war during Washington's administration.
knuc-kle (*nuk'l*), *n.* the projecting joint of the fingers; the knee joint of a calf or pig: *v. i.* to bend the fingers; yield or submit.
ko-dak (*kō'dak*), *n.* a portable camera for taking instantaneous photographs: *v. t.* to take an instantaneous picture of.
Kokomo (*kō'kō-mō*), **Ind.** Name is an Indian word meaning "a young grandmother."
Ko-ran. See *Alcoran*.
kow-tow (*kou-tou'*), *n.* a Chinese form of salutation: *v. i.* salute by the kowtow. [Also *kotow*.]
Kremlin (*krem'lin*). A citadel of Moscow, Russia.
kreut-zer (*kroit'sēr*), *n.* an Austrian copper coin equal to ½ of a cent; formerly a German coin equal to ⅔ of a cent.
Kurdistan or **Koordistan** (*kōōr-dis-tän'*). Means the country of the Koords.
Kyrle (*kērl*). A masculine name derived from *Karl* or *Carl*, from root of *Charles*.

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Laban (*lā'ban*). A masculine name, from the Hebrew *Labhan*, signifying "white."
la-bel (*lā'bel*), *n.* a small slip of paper, etc., attached to anything to indicate its destination, ownership, etc.: *v. t.* to mark with a label; classify.
la-bi-al (*lā'bi-al*), *adj.* formed by the lips: *n.* a letter representing a sound so formed.
la-bor (*'bēr*), *n.* toil or exertion, physical or mental; effort; parturition: *v. t.* to cause to toil; fabricate: *v. i.* to exert muscular strength; use mental efforts; suffer the pains of childbirth. [WORK.]
★**lab-o-ra-to-ry** (*lab'ō-rȧ-tō-ri*, not *lab'rā-tō-ri*), *n.* [*pl.* laboratories (*-riz*)], a place where scientific experiments and operations are carried on.
la-bo-ri-ous (*lȧ-bō'ri-us*), *adj.* difficult; toilsome.
Labrador (*lab-rȧ-dôr'*). A northeastern peninsula of North America. Its name is believed to testify to the early maritime enterprise of the Portuguese, who called it *Terra de Lavradores*, the "land of the laborers."
labyrinth (*lab'i-rinth*), *n.* an intricate arrangement; perplexity. From the Greek *labyrinthos*, "a maze of intricate passages"; especially, a subterranean structure having many intricate passages.
lace (*lās*), *n.* an ornamental fabric of fine linen, cotton thread, gold or silver, etc., curiously woven: *v. t.* to fasten with a lace; adorn with lace; beat.
lac-er-ate (*las'ēr-āt*), *v. t.* to rend; wound.
lach-ry-mal (*lak'ri-mal*), *adj.* pertaining to tears.
lach-ry-mose (*'ri-mōs*), *adj.* tearful; sad.
lack (*lak*), *v. t.* to be destitute of: *v. i.* to be in need; to be deficient; come short: *n.* want; failure. [WANT.]
lack-a-dai-si-cal (*-ȧ-dā'zi-kal*), *adj.* affectedly pensive or sentimental.
Lackawanna (*lak-ȧ-won'nȧ*) **creek, Pa.** Named from the Delaware Indian words *lechau-hanne*, "the stream that forks."
lack-ey (*'i*), *n.* a menial attendant; footman: *v. t.* to wait upon, as a lackey: *v. i.* to act servilely.
la-con-ic (*lȧ-kon'ik*), *adj.* expressing much in few words.
lac-quer (*lak'ēr*), *n.* a varnish consisting of shellac dissolved in alcohol and variously colored: *v. t.* to varnish with lacquer.
La Crosse (*lȧ krôs'*). City and county in Wisconsin A French name given to the town because before its settlement the ground was a favorite place for ball playing with the Indians, the game being called by the French *la crosse*.
lac-ta-tion (*lak-tā'shun*), *n.* secretion of milk; the act or period of suckling.
lac-te-al (*'tē-al*), *adj.* pertaining to, or like, milk; conveying chyle: *n. pl.* the lymphatic vessels which convey chyle from the intestines to the thoracic duct.
lad (*lad*), *n.* a boy or youth; comrade.
lad-der (*'ēr*), *n.* a framework consisting of two parallel side pieces connected by bars, etc., forming steps at suitable distances.
lad-die (*'i*), *n.* a lad. [*Scotch.*]
lade (*lād*), *v. t.* [*p. t.* laded, *p. p.* laded, laden, *p. pr.* lading], to load; burden; heave or throw out.
la-dle (*lā'dl*), *n.* a deep spoon for serving out liquids: *v. t.* to dip up with a ladle.
Ladrone (*lȧ-drōn'*) **islands.** In the North Pacific. So designated from the circumstance that when Magellan touched upon one of the lesser isles of the group, in 1520, the natives stole some of his goods; whereupon he called the islands the *Ladrones*, which is Spanish for "thieves."
la-dy (*lā'di*), *n.* [*pl.* ladies (*'diz*)], a well-bred woman; the daughter of a duke, marquis, or earl; mistress of a house.
la-dy-bird (*-bērd*), *n.* a red coleopterous insect marked with black spots.
lag (*lag*), *v. i.* [*p. t.* and *p. p.* lagged, *p. pr.* lagging], to move slowly; loiter; stay behind: *v. t.* cause to be arrested or punished: *adj.* long delayed; last: *n.* retardation of mechanical movement. [LINGER.]
la-ger beer (*lä'gēr bēr*), a German beer that is stored before using.
lag-gard (*lag'ērd*), *n.* a slow person; loiterer: *adj.* backward; slow.
la-goon (*lā-gōōn'*), *n.* a shallow lake formed at the mouth of a river or near the sea; marsh or fen.
lair (*lār*), *n.* the covert of a wild beast.
la-i-ty (*lā'i-ti*), *n.* the people, as distinguished from the clergy.
lake (*lāk*), *n.* a large body of water surrounded by land; a pigment.
Lake district, England. A region in Westmoreland and Cumberland, England, which abounds in lakes inclosed by mountains. The district is a celebrated tourist center, and is associated with the poetry of Wordsworth.
Lake Huron. See *Huron*.
Lake Michigan. See *Michigan*.
Lake of the Woods. Lake in Minnesota. Originally named *Lac des Bois* by the French, "lake of the woods," because of the heavily wooded islands in the lake.

Lake Ontario. See *Ontario.*
Lake Superior. The uppermost and chief of the Great Lakes.
Lake Winnipeg. See *Winnipeg.*
lamb (*lam*), *n.* the young of a sheep; one who is gentle or innocent; an inexperienced speculator: *v. i.* to bring forth lambs.
lam-bent (*'bent*), *adj.* playing about; flickering; touching lightly.
Lambert (*lam'bĕrt*). Corrupted from the Old German name *Lamdbert, Lantprecht;* from *landbrecht,* "one distinguished among the people." Dutch, *Lambert* or *Lambertus;* Fr., *Lambert;* Ger., *Lambert;* Lat., *Lambertus.*
Lambeth (*lam'beth*) **palace.** The London residence of the archbishop of Canterbury, situated in Lambeth, near the Thames, one and one-half miles southwest of St. Paul's. It contains a valuable library.
lamb-kin (*'kin*), *n.* a little lamb.
lam-bre-quin (*lam'bre-kin*), *n.* a festooned drapery, hanging from the upper part of a window, doorway, etc.
lamb-skin (*'skin*), *n.* the skin of a lamb dressed with the fleece on and frequently colored.
lambs-wool (*lamz'wool*), *n.* the wool of lambs; a beverage composed of ale, with nutmeg, sugar, and the pulp of roasted apples.
lame (*lām*), *adj.* crippled or disabled in the limbs; not sound or efficient: *v. t.* to cripple or disable.
la-ment (*lā-ment'*), *v. i.* to mourn for: *v. i.* to express sorrow. [COMPLAIN, DEPLORE.]
★**lam-en-ta-ble** (*lam'en-tā-bl,* not *lā-ment'ā-bl*), *adj.* to be lamented; mournful; pitiable.
La Moille (*lā moil'*) **river, Vt.** Discovered and named by Champlain as *la mouette,* "the mew or gull," which were seen in great numbers on its waters.
lamp (*lamp*), *n.* a vessel for burning oil; any device for producing artificial light.
lamp-black (*'blak*), *n.* finely divided charcoal or soot: *v. t.* to apply lampblack to.
lam-poon (*lam-pōōn'*), *n.* personal written satire designed to bring its subject into contempt: *v. t.* to satirize by a lampoon.
lance (*lăns*), *n.* a long shaft of wood with a spear head; a thrust with a lancet: *v. t.* to pierce with a lance; cut open with a lancet.
Lancelot (*lan'sē-lot*). Sometimes rendered "servant," or "little lance"; if so, the bearer was so called from carrying a lance or pike. The name seems to be a diminutive formed from Latin *lancea,* "a lance," "javelin," a word which Varro thinks of Spanish origin. Fr., *Lancelot;* Lat., *Lancelottus.*
lan-cet (*'set*), *n.* a surgeon's knife; a lancet-shaped or pointed window.
land (*land*), *n.* the solid portion of the surface of the globe; the earth; a country or district; real estate: *v. t.* to set on shore; capture and bring on shore; win: *v. i.* to come or go on shore; disembark.
Syn. LAND, country. The term *land* in its proper sense excludes the idea of habitation; the term *country* excludes that of the earth, or the parts of which it is composed; hence we speak of the *land* as rich or poor according to what it yields; of a *country* as rich or poor according to what its inhabitants possess.
lan-dau (*lan'dō*), *n.* a kind of carriage.
land-grab-ber (*land'grab-ĕr*), *n.* one who gets possession of public land by means of fraud.
land-lord (*'lôrd*), *n.* one who has tenants holding under him; the keeper of a hotel or inn.
land-lub-ber (*'lub-ĕr*), *n.* one not a sailor.
land-scape (*'skāp*), *n.* the general aspect of a country, or a picture representing it.
lane (*lān*), *n.* a narrow path, as between hedges, walls, etc.
★**lan-guage** (*lang'gwāj,* not *lang'gwij*), *n.* human speech; the speech of one nation or race as distinguished from that of another; style or expression peculiar to an individual.
Languedoc (*lan'gwē-dok,* French *lāN'gu-dōk*). An ancient government of southern France. It was named from the language of the South of France; the *langue d'oc,* or Provencal.
lan-guid (*lang'gwid*), *adj.* wanting energy. [FAINT.]
lan-guish (*'gwish*), *v. i.* to become weak or spiritless; pine away.
lank (*langk*), *adj.* lean; slender.
lank-y (*'i*), *adj.* tall and thin.
Lansing (*lan'sing*), **Mich.** Named in honor of Abram Jacob Lansing of Rensselaer county, New York, a large landholder of this section.
lan-tern (*lan'tĕrn*), *n.* a transparent case for holding or carrying a light; the light room of a lighthouse.
lan-tern-jawed (*-jawd*), *aaj.* having a long thin face.
lap (*lap*), *n.* part of the body or clothes from the waist to the knees of a person seated; a name for various pieces of mechanism; one length of a course which has to be passed over more than once in a race; the act of lapping: *v. t.* to bend and spread over; lick up: *v. i.* to lie partially on something else.
lap-dog (*'dog*), *n.* a small pet dog.
la-pel (*lā-pel'*), *n.* part of a coat which laps over.
lap-i-da-ry (*lap'i-dā-ri*), *n.* [*pl.* lapidaries (*-riz*)], an artificer who cuts and sets precious stones; a connoisseur or dealer in gems.
La Porte (*lā-pōrt'*). City and county in Indiana. A French word meaning "door" or "opening" between two stretches of forest connecting two prairies.
lapse (*laps*), *v. i.* to glide or slip slowly away; fall by degrees; commit a slight fault or fail in duty; *n.* a gliding or passing away slowly; slight fault or mistake.
lap-wing (*lap'wing*), *n.* a plover-like bird.
lar-board (*lär'bôrd*), *n.* the term used formerly for the *port* or left-hand side of a ship.
lar-ce-ny (*'se-ni*), *n.* theft.
larch (*lärch*), *n.* a coniferous tree.
lard (*lärd*), *n.* the fat of swine melted down: *v. t.* to cover with lard; insert strips of bacon in before roasting: hence, to mix.
lar-der (*lär'd ĕr*), *n.* a pantry; household provisions.
large (*lärj*), *adj.* great in size; bulky; wide; extensive; comprehensive.
Syn. LARGE, wide, broad. A field is said to be *wide* both from its figure and the extent of it; space in the cross directions; in like manner, a house is *large* from its extent in all directions; it is said to be *wide* from the extent which it runs in front; what is *broad* is in sense, and mostly in application, *wide; large* is opposed to small; *wide* to close; *broad* to narrow. [See *great.*]
Ant. LITTLE, mean, narrow, small.
lar-gess (*lar'jes*), *n.* a gift or bounty.
lar-i-at (*lar'i-at*), *n.* a rope or lasso, especially of horsehair.
lark (*lärk*), *n.* a noted song bird of the genus Alauda; a frolic.
lark-spur (*'spĕr*), *n.* a plant with showy blue spurred flowers.
lar-va (*lär'vä*), *n.* [*pl.* larvæ (*'vē*)], an insect in the first stage of its metamorphosis after leaving the egg.
lar-yn-ge-al (*lar-in'jē-al*), *adj.* pertaining to, or situated near, the larynx.
lar-ynx (*'ingks*), *n.* the upper part of the trachea or windpipe.
las-civ-i-ous (*las-siv'i-us*), *adj.* lustful; wanton; exciting lust.
lash (*lash*), *v. t.* to strike with a sounding blow; whip; scourge with satire; fasten or bind with cord or rope: *v. i.* to apply the whip; flog: *n.* the thong of a whip; a scourge; sarcasm or satire.
lass (*las*), *n.* a young woman; girl.
las-si-tude (*las'i-tūd*), *n.* weariness; languor. [FATIGUE.]
las-so (*'ō*), *n.* a rope, usually of hide, with a noose, used for catching wild horses and cattle: *v. t.* to catch with a lasso.
last (*läst*), *adj.* coming after all others in time, place, or order; lowest; utmost; least likely: *adv.* on the last time or occasion; finally: *v. i.* to remain in existence or operation; endure: *n.* a wooden implement for shaping boots and shoes.
last-ing (*'ing*), *adj.* durable; permanent: *n.* a twilled fabric used for making women's shoes. [DURABLE, PERMANENT.]
Las Vegas (*lăs vā'gas*). City in San Miguel county, New Mexico. A Spanish name meaning "the plains," or the "meadows," and given this city on account of its situation in the midst of a fertile meadow.
latch (*lach*), *n.* a door catch: *v. t.* to secure or fasten with a latch.
latch-et (*'et*), *n.* a shoestring.
late (*lāt*), *adj.* [*comp.* later, *superl.* latest], coming after the usual time; tardy; long delayed; recently deceased: *adv.* after delay; recently.
la-tent (*lā'tent,*) *adj.* concealed; invisible. [SECRET.]
lat-er-al (*lat' ĕr-al*), *adj.* pertaining to, proceeding from, or acting upon, the side.
Lateran (*lat'ĕr-an*), **The.** Now an ecclesiastical palace in the eastern part of Rome. The present edifice dates from the sixteenth to eighteenth centuries. The palace was originally named from the Roman family, *Lateranus,* to which, until the time of Nero, it belonged.
lath (*lăth*), *n.* a strip of wood.
lathe (*lāth*), *n.* a machine for turning and polishing articles of wood, metal, etc.
lath-er (*lath' ĕr*), *n.* froth made by moistened soap; profuse sweating: *v. t.* to cover with lather.
Lat-in (*lat'in*), *adj.* pertaining to, written, or expressed in, Latin; pertaining to Latium, ancient Rome, its inhabitants or language, or the races and languages derived from Rome: *n.* an ancient Roman; the language of ancient Rome and its literature.
La-tin-i-ty (*lă-tin'i-ti*), *n.* purity of Latin style or idiom.
Lat-in-ize (*lat'in-iz*), *v. t.* to give Latin terminations, or characteristics, to; translate into Latin.
lat-i-tude (*'i-tūd*), *n.* distance on the earth's surface as measured by degrees north or south from the equator; breadth; extent; freedom from rules; laxity.
lat-i-tu-di-na-ri-an (*-tū-di-nā'ri-an*), *adj.* wide in range or scope; tolerant in speculative religious opinions: *n.* one who holds latitudinarian views.
Latitudinarians. The name applied by contemporaries to a school of theologians within the English church in the latter half of the seventeenth century. It grew out of the earlier movement in favor of a more liberal constitution for the church.
lat-ter (*lat' ĕr*), *adj.* the second of two things previously mentioned; recent; modern.
lat-tice (*'is*), *n.* crossed openwork of metal or wood; *v. t.* to furnish or cross with a lattice.
laud (*lawd*), *v. t.* to praise highly; extol: *n.* praise; worship or hymn of praise.
laud-a-ble (*lawd'ä-bl*), *adj.* commendable.
Syn. LAUDABLE, praiseworthy, commendable. Things are *laudable* in themselves; they are *praiseworthy* or *commendable* in this or that person; that which is *laudable* is entitled to encouragement and general approbation; an honest endeavor to be useful to one's family or one's self is at all times *laudable;* what is *praiseworthy* obtains the respect of all men.
laud-a-num (*'ä-num*), *n.* a preparation of opium.
laud-a-to-ry (*'ä-tō-ri*), *adj.* expressing praise.
★**laugh** (*laf*), *n.* a convulsive sound caused by merriment: *v. i.* to express merriment, etc., by a laugh; appear gay, pleasant, etc.; jeer (with *at*): *v. t.* to express or utter with laughter.
laugh-a-ble (*'ä-bl*), *adj.* exciting a laugh; ridiculous; ludicrous; comical.
laugh-ing-stock (*-ing-stok*), *n.* object of laughter.
laugh-ter (*'tĕr*), *n.* convulsive merriment.
Launcelot. Another spelling of *Lancelot.*
★**launch** (*länch*), *v. t.* to move or cause to slide into the water, as a vessel; hurl; dart; send forth: *v. i.* to put to sea; expatiate in language; plunge; enter on a new career: *n.* a large open pleasure boat usually propelled by steam, gas, or electricity.
★**laun-dress** (*län'dres*), *n.* a washerwoman.
laun-dry (*'dri*), *n.* [*pl.* laundries (*'driz*)], a place where clothes are washed and ironed.
Laura (*law-rä*). A feminine name derived from Latin *laurus,* "a laurel or baytree," dedicated to Apollo, used in triumphs, and worn by emperors and poets in garlands. *Laura* corresponds to the Greek name *Daphne.*
lau-re-ate (*law'rē-āt*), *adj.* decked or invested with laurel: *n.* one crowned with laurel; poet-laureate.
lau-rel (*'rel*), *n.* an evergreen shrub; crown or wreath of laurel: hence honor; distinction.
Laurence, Lawrence. From the Latin name *Laurentius,* formed from *laureo* "to crown with laurel." Danish, *Lorenz;* Dutch, *Laurens;* Fr., *Laurent;* Ger., *Laurenz, Lorenz* and *Laurentius;* It., *Lorenzo.*
Lauterbrunnen (*lou'ter-broon-nen*). A valley and parish in the Bernese Oberland, Switzerland, thirty-three miles southeast of Bern. It is noted for the Staubbach, Trummelbach, and other falls.
★**la-va** (*lä'vä,* not *lav'ä*), *n.* molten volcanic matter.
lav-a-to-ry (*lav'ä-tō-ri*), *n.* [*pl.* lavatories (*-riz*)], a place for washing; retiring room.
lave (*lāv*), *v. t.* and *v. i.* to bathe or wash.
lav-en-der (*lav'en-dĕr*), *n.* an aromatic plant.
Lavinia (*lä-vin'i-ä*). Formed as a feminine name from *Latinus,* mythical Roman king.
lav-ish (*lav'ish*), *adj.* profuse; extravagant: *v. t.* to expend or bestow with profusion; squander; waste. [EXTRAVAGANT, EXCESS.]
law (*law*), *n.* a rule of action established by authority; edict, statute, or custom; act or enactment of a legislative body; jurisprudence; judicial process; rule or axiom of science or art; established principle.
law-ful (*'fool*), *adj.* agreeable or conformable to law; just; legal.
law-less (*'les*), *adj.* not obedient to or controlled by law; not according to law.
lawn (*lawn*), *n.* a plot of grass kept closely mown; fine cambric used for the sleeves of a bishop's gown: hence the office of a bishop.
lawn-ten-nis (*'ten'is*), *n.* an outdoor game played with rackets, balls, and a net.
Lawrence. See *Laurence.*
law-suit (*'sūt*), *n.* an action at law.
law-yer (*'y ĕr*), *n.* one skilled in legal knowledge; one, especially a solicitor, who practices in the lawcourts.
lax (*laks*), *adj.* loose; vague; weak.
lax-a-tive (*'ä-tiv*), *adj.* loosening; purgative.
lay (*lā*), *v. t.* [*p. t.* and *p. p.* laid, *p. pr.* laying], to put or place; spread over; settle; calm; bring forward; impose; impute: *v. i.* to produce eggs: *n.* share of profits; a simple song: *adj.* pertaining to the people, as distinguished from the clergy; nonprofessional.
Syn. LAY OR TAKE HOLD OF, catch, seize, snatch, grasp, gripe. *To lay* or *take hold of* is here the generic expression; it denotes simply getting into one's possession, which is the common idea in the signification of all these terms, which differ in regard to the motion in which the action is performed; *to catch* is *to lay hold of* with an effort; *to seize* is *to lay hold of* with violence; *to snatch* is *to lay hold of* by a sudden effort. [See *put, lie.*]
lay-man (*'man*), *n.* [*pl.* laymen (*'men*)], one of the people, as distinguished from a clergyman; a nonprofessional man.
laz-a-ret-to (*laz-ä-ret'ō*), *n.* a hospital for persons suffering with infectious diseases; a ship's storeroom. [Also *lazaret.*]
Lazarus (*laz'ä-rus*). From the Hebrew *Elazar,* "God aids," *i. e.,* whom God aids. Fr., *Lazare;* Gr., *Lazaros;* It., *Lazzaro;* Lat., *Lazarus.*
la-zy (*lā'zi*), *adj.* [*comp.* lazier, *superl.* laziest], idle; indolent; slothful. [IDLE.]
lea (*lē*), *n.* a meadow.
leach (*lēch*), *v. t.* to pass water through (ashes) to form lye.
lead (*led*), *n.* a soft, heavy, ductile, bluish-gray metal; a plummet for sounding depths at sea; a thin strip of type metal for separating lines: *adj.* consisting, wholly or partially, of lead: *v. t.* to furnish with lead.

lead (*lēd*), *v. t.* [*p. t.* and *p. p.* led, *p. pr.* leading], to conduct with the hand; guide or conduct; precede; allure: *v. i.* to take precedence; act as a leader; play the first card or domino: *n.* guidance; precedence; the right to play first.
Syn. LEAD, conduct, guide. One *leads* by helping a person onward in any manner, as *to lead* a child by the hand; *to conduct* and *guide* are different modes of *leading*, the former by virtue of one's office or authority, the latter by one's knowledge or power; as *to conduct* an army; *to guide* a traveler in an unknown country. [See *persuade*.]
Ant. REBUFF, repel.

lead-en (*led'n*), *adj.* made of, or colored like, lead; heavy; sluggish.

lead-er (*lēd'ẽr*), *n.* one who leads; the chief editorial article of a newspaper; tendon.

leaf (*lēf*), *n.* [*pl.* leaves (*lēvz*)], one of the thin flat parts of a plant; anything thinly beaten; part of a book containing two pages.

league (*lēg*), *n.* an alliance for mutual interests; confederacy; 3 geographical miles: *v. t.* to combine for mutual interests: *v. i.* to confederate. .

leak (*lēk*), *n.* a hole which lets in water: *v. i.* to let water in or out through a hole, etc.

leak-age (*'āj*), *n.* the state of a vessel that leaks; allowance for loss by leakage.

lean (*lēn*), *v. i.* [*p. t.* and *p. p.* leaned, leant, *p. pr.* leaning], to incline or deviate from an upright position: *v. t.* to cause to lean; rest: *adj.* thin; sterile.
Syn. LEAN, incline, bend. In the proper sense, *lean* and *incline* are both said of the position of bodies; *bend* is said of the shape of bodies; that which *leans* rests on one side, or in a sideward direction; that which *inclines*, *leans* or turns only in a slight degree; that which *bends* forms a curvature.
Ant. STAND STRAIGHT.

Leander (*lē-an'dẽr*). From the Greek *Leiandros*, translated "man of renown."

leap (*lēp*), *v. t.* [*p. t.* and *p. p.* leaped, leapt, *p. pr.* leaping], to pass over by leaping; jump or spring over: *v. i.* to jump; vault: *n.* the act of leaping; the space passed in leaping.

leap year (*yēr*), a year of 366 days, when February has 29 days; every year divisible by 4, except those divisible by 100 but not by 400.

learn (*lẽrn*), *v. t.* [*p. t.* and *p. p.* learned, learnt, *p. pr.* learning], to acquire knowledge of; fix in the mind: *v. i.* to gain or receive knowledge or skill.

learn-ing (*'ing*), *n.* skill in literature, languages, or science; knowledge acquired. [KNOWLEDGE.]

lease (*lēs*), *n.* a written contract for the letting of land or tenements for a specified number of years; period: *v. t.* to let by a written contract; take a lease of.

leash (*lēsh*), *n.* a brace and a half; three; a band by which anything is held: *v. t.* to tie or bind by a leash.

least (*lēst*), *adj.* smallest in degree, size, value importance, etc.: *adv.* in the lowest or smallest degree.

leath-er (*leth'ẽr*), *n.* the tanned and curried skin of an animal; anything made of, or resembling, leather.

leath-ern (*'ẽrn*), *adj.* made of, or resembling, leather.

leave (*lēv*), *n.* permission granted; departure; farewell: *v. t.* [*p. t.* and *p. p.* left, *p. pr.* leaving], to depart from; forsake, abandon; bequeath: *v. i.* to depart; go away.
Syn. LEAVE, quit, relinquish. We *leave* that to which we may intend to return; we *quit* that to which we return no more; we *relinquish* it unwillingly; we *leave* persons or things; we *quit* and *relinquish* things only. [See *abandon*, *desist*.]
Ant. KEEP, cherish, retain, stay.

leav-en (*lev'n*), *v. t.* to produce fermentation in; taint; imbue: *n.* any influence working silently and strong that causes changes in things or opinions.

Leavenworth, Kan. In 1820, a fort was established at this place by the United States government under the charge of Col. Henry H. Leavenworth of the 3d U. S. regiment, and named Fort Leavenworth. About this fort a town formed to which the fort's name was applied.

lech-er-y (*lech'ẽr-i*), *n.* lustfulness; lewdness.

lec-tern (*lek'tẽrn*), *n.* the reading desk of a church.

lec-ture (*'tūr*), *n.* a formal discourse on any subject; reprimand: *v. i.* to deliver a lecture: *v. t.* to reprimand.

ledge (*lej*), *n.* a shelf; ridge; layer; edge.

ledg-er (*'ẽr*), *n.* the principal account book of a mercantile house.

leech (*lēch*), *n.* an aquatic worm furnished with a sucker, used in medicine for bleeding; formerly the name for a physician: *v. t.* to bleed with leeches.

Leech lake, Minn. Applied from the meaning of its Indian name *gahsuhgusgwah*, *chemakang*, "the place of leeches."

leek (*lēk*), *n.* a biennial plant of the onion family with a bulbous root.

leer (*lēr*), *n.* a sly, sidelong look indicative of malice, triumph, or lasciviousness: *v. i.* to look with a leer.

lee-ward (*lē'wẽrd*), *n.* in the direction toward which the wind blows: *n.* lee side.

left (*left*), *adj.* opposite to *right*: *n.* the side opposite to *right*: *p. t.* and *p. p.* of *leave*.

left-hand-ed (*'hand-ed*), *adj.* using the left hand with greater strength or dexterity than the right; awkward; malicious.

leg (*leg*), *n.* one of the limbs by which men and animals walk, especially in man the portion of the limb between the knee and the ankle.

leg-a-cy (*leg'a-si*), *n.* [*pl.* legacies (*-siz*)], a gift by will of money or property; bequest.

le-gal (*lē'gal*), *adj.* pertaining to law; permitted or authorized by law; legitimate.

le-gal-i-ty (*lē-gal'i-ti*), *n.* conformity to law.

★**leg-ate** (*leg'āt*, not *lē'gāt*), *n.* a papal ambassador; envoy.

le-ga-tion (*lē-gā'shun*), *n.* an embassy; ambassador; the official residence of an ambassador.

leg-end (*lej'end*), *n.* a romantic story; myth; fable; inscription, as on a coin. [FICTION.]

leg-er-de-main (*-ẽr-de-mān'*), *n.* sleight of hand.

leg-gings (*leg'ingz*), *n. pl.* long gaiters.

leg-i-ble (*lej'i-bl*), *adj.* capable of being read; clear; distinct.

le-gion (*lē'jun*), *n.* a division of the ancient Roman army; a great number; host; suborder.

leg-is-late (*lej'is-lāt*), *v. i.* to make or enact a law: *v. t.* to effect by legislation.

leg-is-la-tion (*-lā'shun*), *n.* the act of making a law or laws.

le-git-i-ma-cy (*lē-jit'i-mā-si*), *n.* the state of being legitimate; lawfulness of birth.

le-git-i-mate (*'i-māt*), *adj.* lawful; born in wedlock; real; logically correct: *v. t.* to make, or sanction as, lawful; render legitimate.

leg-ume (*leg'yūm*), *n.* a two-valved seed vessel having its seeds attached to one side only, as a pea pod.

Lehigh river, Pa. Corruption of the Delaware word *lechau*, "a fork," a reference to this stream being one of the forks of the Delaware; also traceable as applied to the forked piece of land over which the Indians made a portage when coming down the river.

★**lei-sure** (*lē'zhur*), *n.* spare time: *adj.* free from business; unoccupied.

lem-on (*lem'un*), *n.* the acid fruit of *Citrus Limonum*; the color of a lemon: *adj.* pertaining to, or of the color of, a lemon.

lem-on-ade (*-ād*), *n.* a beverage of sweetened or aërated water flavored with lemon.

Lemuel (*lem'ū-el*). From the Hebrew *L'muel*, from *l'mu-El*, "by God," *i. e.*, created by God.

lend (*lend*), *v. t.* [*p. t.* and *p. p.* lent, *p. pr.* lending], to grant to another for temporary use; accommodate: *v. i.* to make a loan.

length (*length*, not *lenth*), *n.* the measure of anything from end to end; extent; duration; reach.

length-y (*'i*), *adj.* long and tiresome.

le-ni-ent (*lē'ni-ent*), *adj.* mild; merciful.

len-i-ty (*len'i-ti*), *n.* mildness; humanity. [MERCY.]

lens (*lenz*), *n.*, a convex, or concave, glass, adapted for changing the direction of rays of light; the crystalline humor of the eye.

Lent (*lent*), *n.* a fast of 40 days (excluding Sundays), from Ash Wednesday to Easter eve.

Leo (*lē'ō*) or **Leon** (*lē'on*). Latin, "a lion." Fr., *Léon*; It., *Leone*; Lat., *Leo*.

Leonard (*len'ẽrd*). From the Old German name *Leonhard*, "as strong as a lion." Dutch, *Leonard*; Fr., *Léonard*; Ger., *Leonhard*; It., *Leonardo* or *Lionardo*; Lat., *Leonardus*.

le-o-nine (*lē'ō-nin*), *adj.* like a lion; powerful; kingly.

Leonora. See *Eleanor*.

leop-ard (*lep'ẽrd*), *n.* a large catlike beast of prey, with a beautiful spotted skin.

Leopold (*lē'ō-pōld*). Wachter renders this name "bold as a lion." It is doubtless the same name as the Old German *Leopold*, *Leupold*, *Leodpold*, *Luitpold*; Fr., *Léopold*; Ger., *Leopold*; It., *Leopoldo*; Lat., *Leopoldus*.

lep-er (*lep'ẽr*), *n.* one affected with leprosy.

lep-ro-sy (*'rō-si*), *n.* [*pl.* leprosies (*-siz*)], a chronic skin disease characterized by ulcers and white scaly scabs.

le-sion (*lē'zhun*), *n.* injury; morbid change in a function or organism.

less (*les*), *adj.* (used as *comparative* of *little*), not so much; smaller: *adv.* in a smaller or lower degree: *n.* a smaller quantity: *suffix* meaning *absence of a quality*, *without*, as *soulless*, *worthless*, etc.

less-en (*'en*), *v. t.* to make less; reduce. [ABATE.]

less-er (*'ẽr*), *adj.* a double comparative of *less*.

les-son (*les'n*), *n.* that which a pupil learns, or repeats, or does, for a tutor; exercise; precept.

lest (*lest*), *conj.* that not; for fear that.

let (*let*), *v. t.* [*p. t.* and *p. p.* let, *p. pr.* letting], to permit; grant to a tenant; lease; give out on contract: *v. i.* to be hired or leased; suffer something to be done: *n.* an obstacle.

le-thal (*lē'thal*), *adj.* deadly; fatal.

le-thar-gic (*lē-thār'jik*), *adj.* affected by lethargy; sluggish; drowsy; dull.

leth-ar-gy (*leth'ar-ji*), *n.* morbid drowsiness; unnatural prolonged slumber; apathy.

Le-the (*lē'thē*). In classic mythology, the stream of forgetfulness of the underworld, whose waters, when drunk, produced loss of memory; hence oblivion forgetfulness.

Letitia (*lē-tish'i-ā* or *lē-tish'ā*) or **Lettice** (*let'tis*). A feminine name derived from Latin, *Lætitia*, "joy," "gladness," "mirth," Danish, *Lætitsia*; Dutch, *Lætitia*; Old Fr., *Letice*; Lat., *Lætitia*.

let-ter (*let'ẽr*), *n.* a mark or character used to represent a sound; written or printed communication; a printing type: *pl.* knowledge; erudition: *v. t.* to impress or inscribe letters upon.
Syn. LETTER, epistle. *Letter* is a term altogether familiar; it may be used for whatever is written by one friend to another; even those which were written by the ancients, as the *letters* of Cicero, Pliny, and Seneca, but in strict propriety those are entitled *epistles*, as a term most adapted to whatever has received the sanction of ages, and by the same rule, likewise, whatever is peculiarly solemn in its contents has acquired the same epithet, as the *epistles* of St. Paul.

Levant (*lē-vant'*). Levant means simply "the east," though it is generally confined in its use to the eastern parts of the Mediterranean, as the coasts of Egypt, Syria, and Asia Minor.

lev-ee (*lev'ē*), *n.* a morning reception held by a sovereign or personage of high rank; properly, one attended by gentlemen only; a river embankment: *v. t.* to embank.

lev-el (*'el*), *n.* a horizontal plane or line; surface without inequalities; an instrument for indicating a horizontal line or plane: *adj.* even; horizontal; smooth: *v. t.* to make even; point in taking aim.

lev-er (*lev'ẽr* or *lē'vẽr*), *n.* a bar of metal, etc., turning on a support (fulcrum) for raising a weight.

lev-er-age (*-āj*), *n.* the mechanical power gained by using a lever; lever action.

le-vi-a-than (*lē-vī'a-than*), *n.* a large unidentified aquatic animal; anything huge, as a whale, etc.

lev-i-ta-tion (*lev-i-tā'shun*), *n.* lightness, buoyancy.

lev-i-ty (*lev'i-ti*), *n.* lightness of disposition, conduct, etc.; inconsistency; trifling gayety; lightness of weight.

lev-y (*'i*), *v. t.* [*p. t.* and *p. p.* levied, *p. pr* levying], to raise or collect, as an army or tax; seize in execution: *v. i.* to make a levy: *n.* the act of raising money or men; amount or number raised.

lewd (*lūd*), *adj.* licentious; libidinous.

Lewellin (*le-wel'lin*). Means "like a lion." Lat., *Leolinus*.

Lewis or **Louis** (*lōō'is*). Like the French name, *Louis*, corrupted from *Ludovicus*, from the Old German name *Ludwig*, "illustrious warrior," or the "fortress or defense of the people." Dutch, *Lodewijk*; Fr., *Louis*; Ger., *Ludwig*; It., *Luigi* or *Lodovico*, or *Ludovico*; Lat., *Ludovicus*; Sp., *Luis*; Sw., *Ludwig*.

lex-i-cog-ra-pher (*leks-i-kog'rā-fẽr*), *n.* the editor or compiler of a dictionary or lexicon.

lex-i-con (*i-kon*) *n.* A dictionary, as of Latin, Greek or Hebrew. [DICTIONARY.]

li-a-bil-i-ty (*lī-ā-bil'i-ti*), *n.* [*pl.* liabilities (*-tiz*)], the state of being liable: *pl.* debts.

li-a-ble (*'ā-bl*), *adj.* exposed to damage, danger, expense, etc.; contingently subject.

li-ar (*lī'ẽr*), *n.* one addicted to lying.

li-ba-tion (*-bā'shun*), *n.* the act of pouring wine or oil on the ground, as a sacrifice to some deity, the liquid so poured out.

li-bel (*'bel*), *n.* defamation of character or reputation: *v. t.* to publish a libel against; defame the character of; exhibit a charge against in a court of law.

lib-er-al (*lib'ẽr-al*), *adj.* generous; munificent; free from narrowness in ideas: *n.* an opponent of conservatism. [BENEFICENT, FREE.]

lib-er-al-i-ty (*-al'i-ti*), *n.* [*pl.* liberalities (*-tiz*)], the quality of being liberal; generosity; magnanimity; mental breadth.

lib-er-ate (*'ẽr-āt*), *v. t.* to set free. [ABSOLVE.]

Liberia (*lī-bē'ri-a*). A republic on western coast of Africa. Name means "the country of the free." It was colonized by emancipated slaves.

lib-er-tine (*lib'ẽr-tin*), *n.* a debauchee: *adj.* unrestrained, morally or socially; licentious.

lib-er-ty (*'ẽr-ti*), *n.* [*pl.* liberties (*-tiz*)], freedom; special privilege or exemption; immunity. [FREEDOM.]

li-bid-i-nous (*li-bid'i-nus*), *adj.* lustful.

li-bra-ri-an (*-brā'ri-an*), *n.* the custodian of a library.

★**li-bra-ry** (*lī'brā-ri*, not *lī'brī*), *n.* [*pl.* libraries (*-riz*)], an arranged collection of books; the building where such a collection is kept.

li-bret-to (*-bret'tō*), *n.* a book containing the words of an opera, oratorio, etc.; the text itself.

li-cense (*lī'sens*), *n.* permission; leave; unrestrained liberty: *v. t.* to authorize by a legal permit.

li-cen-ti-ate (*-sen'shi-āt*), *n.* one licensed to preach or practice a profession.

li-cen-tious (*'shus*), *adj.* unrestrained, morally or legally; lascivious; dissolute.

★**li-chen** (*lī'ken* or *lich'en*), *n.* one of an order of cellular flowerless (cryptogamic) plants of fungoid nature growing parasitic on stones, algæ, etc.; a kind of skin eruption.

lick (*lik*), *v. t.* to pass the tongue over; lap up; vanquish; chastise: *v. i.* to make a licking movement: *n.* the act of licking; quick or careless stroke; superficial saline deposit.

Licking, Ky. So called from the translation of its Indian name *mahonink*, "the place of the lick," referring to buffalo licks on its banks, now the noted Blue Lick springs.

★**lic-o-rice** (*lik'o-ris*, not *lik'ō-rish*), *n.* the root or inspissated juice of the licorice plant (*Glycyrrhiza glabra*).

lid (*lid*) *n.* a movable cover closing an aperture; top; eyelid.

lie (*lī*), *v. i.* [*p. t.* lay, *p. p.* lain, *p. pr.* lying], to rest in a recumbent position; lean or press; rest or remain.
Syn. LIE, lay. *To lie* is neuter, and desig-

nates a state; *to lay* is active, and denotes an action on an object; it is properly to cause *to lie;* a thing *lies* on the table; some one *lays* it on the table.

lie (*lī*), *v. i.* [*p. t.* and *p. p.* lied, *p. pr.* lying], to utter a falsehood; represent falsely: *n.* a falsehood; willful misstatement.

lief (*lēf*), *adv.* willingly; rather.

liege (*lēj*), *adj.* bound by feudal service or tenure: *n.* a vassal; liege lord, or sovereign.

lien (*lēn* or *lī'en*), *n.* a legal claim upon property; security for payment.

lieu (*lū*), *n.* place; stead.

lieu-ten-ant (*-ten'ant*), *n.* an officer ranking next below a captain in the army and a commander in the navy; a deputy.

life (*līf*), *n* animate existence; vitality; union of soul and body; period between birth and death.

lift (*lift*), *v. t.* to raise from the ground; elevate: *v. i.* to exert strength in raising: *n.* the act of lifting; promotion; a machine for raising or lifting.

Syn. LIFT, heave, hoist. We *lift* with or without an effort; we *heave* and *hoist* always with an effort; we *lift* a child up to let him see anything more distinctly; workmen *heave* the stones or beams which are used in a building; sailors *hoist* the longboat into the water.

Ant. ABASE, degrade, lower.

lig-a-ment (*lig'ȧ-ment*), *n.* a strong elastic tissue connecting the extremities of movable bones; bond or tie.

lig-a-ture (*lig'ȧ-tūr*), *n.* a narrow bandage or tie; two or more letters cast on one shank (*fi*, *æ*); a slur, or notes joined by a slur.

light (*līt*), *n.* the imponderable agent by which objects are rendered visible by its action on the retina; day; that which emits light: *adj.* clear; bright; not heavy; unincumbered; gay; trifling; short in weight; well leavened and raised: *v. t.* to set fire to; inflame; illuminate: *v. i.* to receive or reflect; rest or settle; fall upon by chance; happen.

Light Brigade, Charge of the. A celebrated charge made by the Light Brigade of 670 men, under Lord Cardigan, the British commander, on a Russian battery at Balaklava, October 25, 1854.

light-en (*'en*), *v. t.* to make light; illuminate; flash out; render less heavy: *v. i.* to brighten; shine out.

light-house (*'hous*), *n.* a structure furnished with a brilliant light to indicate points of danger to mariners at night.

light-ning (*'ning*), *n.* a sudden flash of electricity, usually accompanied by thunder.

lig-ne-ous (*lig'nē-us*), *adj.* woody.

lig-num-vi-tæ (*-num-vī'tē*), *n.* the very heavy hard wood of a South American tree (*Guaicum officinale*) or of similar West Indian and Australasian trees.

like (*līk*), *adj.* similar; resembling; equal or nearly equal; disposed: *adv.* in the same manner as; probably: *v. t.* have a taste for; enjoy: *n.* a counterpart. [EQUAL, LOVE.]

lik-en (*līk'n*), *v. t.* to compare.

like-ness (*'nes*), *n.* similarity; portrait.

Syn. LIKENESS, resemblance, similarity or similitude. *Likeness* respects either external or internal properties; *resemblance* respects only the external properties; *similarity* respects the circumstances or properties; we speak of a *likeness* between two persons; of a *resemblance* in the cast of the eye; of a *similarity* in age and disposition. *Similitude* is a higher term than *similarity* when used in a moral sense.

Ant. DIFFERENCE, dissimilarity, unlikeness.

li-lac (*lī'lak*), *n.* a shrub of the genus Syringa, with pale pinkish purple flowers; a color.

Lillian. A feminine name, from the Latin *lilium*, "a lily."

Lil-li-pu-tian (*lil-i-pū'shan*), *adj.* very diminutive, from Swift's *Gulliver's Travels.* [Also *Liliputian.*]

lil-y (*lil'i*), *n.* a plant of the genus Lilium, with bulbous roots and handsome flowers: *adj.* unsullied; lily-white.

Lima (*lī'mȧ*, Spanish *lē'mä*), **Peru.** Probably so named from *lomnech*, "a barren spot." Taylor says it is corruption of *Rimac*, the Indian name of the plain on which the city stands.

limb (*lim*), *n.* a jointed or articulated part of an animal body; branch of a tree; leg: *v. t.* to dismember.

lim-ber (*'bẽr*), *n.* the detachable forepart of a gun carriage: *adj.* pliant: *v. t.* to attach a limber to (a gun carriage); make pliant.

lime (*līm*), *n.* a calcareous earth obtained by the action of heat upon limestone; bird lime; a tree of the orange kind yielding an edible juicy fruit; the linden tree: *v. t.* to supply lime to.

lime-light (*'līt*), *n.* a brilliant light produced by the action of lighted hydrogen and oxygen upon lime.

lim-er-ick (*lim'ẽr-ik*), *n.* a jocose, usually punning, verse of five lines, the first, second and fifth lines of which rhyme.

lime-stone (*līm'stōn*), *n.* a rock having carbonate of lime as its basis.

lim-it (*lim'it*), *n.* a border or boundary; utmost extent: *v. t.* restrict. [BOUND, FINITE.]

lim-i-ta-tion (*-i-tā'shun*), *n.* restriction.

limn (*lim*), *v. t.* to paint or draw; illuminate, as books and manuscripts.

Limoges (*lē-mōzh'*). A city of east central France; so called from Lat., *Lemovicum*, "the dwelling of the Lemovici," or "dwellers among the elms."

li-mou-sine (*lē-mōō-zēn'*) *adj.* designating a type of motor car having a landau-like carriage body, but with the top projecting over the driver's seat: *n.* a motor car with a limousine body.

limp (*limp*), *adj.* flexible; flaccid: *n.* a halt in walking: *v. i.* to walk with a halt.

Lina. A feminine name derived from some name ending in *lina*, as *Carolina*, *Catalina*, *Paulina*; and perhaps sometimes from the Italian name *Madalena*, or the Spanish *Madelena.*

linch-pin (*linch'pin*), *n.* the pin which goes through the end of the axle of a wheel, and keeps it in its place.

Lincoln, Neb. At the time it was made the capital city it received the name Lincoln as a compliment to President Abraham Lincoln, having been previously named *Lancaster.*

Lincoln's Inn Fields. The largest square in London. It is near the junction of High Holborn and Chancery lane, and is surrounded by lawyers' offices, Lincoln's Inn, the Royal College of Surgeons and the Soane museum.

Linda. A feminine name, abbreviated from *Belinda.*

lin-den (*lin'den*), *n.* a tree with heart-shaped leaves, and small clusters of cream-colored flowers.

line (*līn*), *n.* length without breadth; a slender string or cord; fishing line; extended row; 1-12th of an inch; short letter; mark in the hand or face; descent: *v. t.* to draw lines upon; place along side by side; cover on the inside.

lin-e-age (*lin'ē-āj*), *n.* ancestral line of descent from a common progenitor; family.

lin-e-al (*'ē-al*), *adj.* composed of lines; in direct line from an ancestor.

lin-e-a-ment (*'ē-ȧ-ment*), *n.* feature; outline.

lin-e-ar (*'ē-ẽr*), *adj.* pertaining to, or composed of, lines; having a straight direction.

lin-en (*'en*), *n.* a cloth made of flax; articles made of linen: *adj.* made of, or resembling, linen.

lin-ger (*ling'gẽr*), *v. i.* to loiter.

Syn. LINGER, tarry, loiter, lag, saunter. *To linger* is to stop altogether, or to move but slowly forward; *to tarry* is properly to suspend one's movements; the former proceeds from reluctance to leave the spot on which we stand; the latter from motives of discretion; *to loiter* is to move slowly and reluctantly; *to lag* is to move slower than others; *to saunter* is altogether the act of an idler; those who have no object in moving either backward or forward will *saunter* if they move at all.

Ant. HASTEN, hurry, quicken, speed.

lin-go (*ling'gō*), *n.* language; dialect.

lin-gual (*'gwal*), *adj.* pertaining to, or formed by, the tongue: *n.* a letter, or sound, so articulated, as *s*, *th*, etc.

lin-i-ment (*lin'i-ment*), *n.* a medicated liquid for rubbing into the skin.

lin-ing (*līn'ing*), *n.* an inside covering; contents.

link (*lingk*), *n.* a single ring or division of a chain; a land measure 7.92 inches; connection: *pl.* flat sandy soil; golfing grounds; *v. t.* to connect by, or as by, a link: *v. i.* to be connected.

li-no-leum (*li-nō'lē-um*), *n.* a floor cloth composed of ground cork, linseed oil, and chloride of sulphur.

lin-o-type (*lin'ō-tīp*), *n.* a machine for composing and casting stereotyped words or lines for printing.

lin-seed (*lin'sēd*), *n.* the seed of flax, from which *linseed oil* is expressed.

lint (*lint*), *n.* scraped linen used for dressing wounds.

lin-tel (*lin'tel*), *n.* the horizontal top piece of a door or window.

li-on (*lī'un*), *n.* a large, powerful carnivorous mammal of the genus Felis, found in Africa and southern Asia: *pl.* noted persons or places: *adj.* (in composition) noble; majestic; courageous.

Lionardo. Same as *Leonardo.* [See *Leonard.*]

Lionel (*lī'ō-nel*). A name formed from a word, *leonellus*, a diminutive of the Latin *leo*, "a lion."

Lion of Lucerne (*lī'un ov lōō-sẽrn'*). A famous piece of sculpture, by Thorwaldsen, commemorating the heroism and devotion of nearly 800 Swiss guards who died to save Louis XVI., in the attack on the Tuileries, August 10, 1792. The colossal figure of the crouching lion, transfixed and dying but still faithfully defending the lilied shield of France, is carved in the round in a recess in the face of an upright, vine-draped rock, in a little park in Lucerne, Switzerland.

lip (*lip*), *n.* one of the two borders of the mouth; edge of anything; mouth; lip-like organ; speech: *v. t.* to touch with the lips; kiss; utter.

liq-ue-fac-tion (*lik-wē-fak'shun*), *n.* the process of liquefying; state of being melted.

liq-ue-fy (*'wē-fī*), *v. t.* to melt or make liquid: *v. i.* to become liquid.

liq-uid (*lik'wid*), *adj.* clear; tearful; not solid; readily flowing: *n.* liquid substance; one of the consonants *l*, *m*, *n*, *r*.

liq-ui-date (*'wi-dāt*), *v. t.* to pay off as a debt; arrange, as the affairs of a bankrupt.

liq-uor (*lik'ẽr*), *n.* an alcoholic beverage; a liquid: *v. t.* to treat with a solution: *v. i.* to take intoxicating drinks. [*Slang.*]

Lisbon (*liz-bun*). The capital of Portugal. In Portuguese, *Lisboa*, is derived from the old name *Olisipo*, supposed to contain the Phenician word *hippo*, a "fortress," or "walled town."

lisle (*līl*), *n.* a fine thread or lace.

lisp (*lisp*), *v. i.* to pronounce *s* and *z* nearly like *th;* speak: *v. t.* to utter imperfectly or affectedly: *n.* the imperfect utterance of *s* and *z*.

lis-som (*lis'um*), *n.* supple; lithesome.

list (*list*), *n.* a catalogue, roll, or register; inclination to one side; small square molding: *pl.* an inclosure for a tournament: *v. t.* to catalogue, register, or enroll; cover with strips of cloth; sew together; cause to tilt over to one side; listen to: *v. i.* to enlist; choose; careen; hearken.

lis-ten (*lis'n*), *v. i.* to attend to closely, so as to hear; hearken.

list-less (*list'les*), *adj.* indifferent; languid. [ABSTRACTED, FAINT.]

lit-a-ny (*lit'ȧ-ni*), *n.* a solemn responsive form of supplication.

li-ter (*lē'tẽr*), *n.* [Fr.] in the metric system, a measure of capacity equal to 61.026 cubic inches, or a little more than one quart.

lit-er-al (*lit'ẽr-al*), *adj.* consisting of, or expressed by, letters; following the exact words; exact; plain.

lit-er-a-ry (*'ẽr-ȧ-ri*), *adj.* pertaining to, or appropriate to, literature or men of letters; versed in, or engaged in, literature.

lit-e-ra-ti (*lit-e-rā'tī*), *n. pl.* the learned.

★**lit-er-a-ture** (*'ẽr-ā-tūr*), *n.* the written or printed literary productions of a country or period; literary work; learning.

lithe (*līth*), *adj.* supple; pliant.

lithe-some (*'sum*), *adj.* nimble; lissom.

lith-o-graph (*lith'ō-grăf*), *n.* a print reproduced from a drawing on stone: *v. t.* to draw, or engrave on stone, and transfer to paper.

lith-og-ra-phy (*-og'rȧ-fi*), *n.* the art of making a design on stone so that ink impressions can be taken from it.

lit-i-gate (*lit'i-gāt*), *v. t.* to contest in a court of law: *v. i.* to engage in a lawsuit.

·**li-ti-gious** (*li-tij'us*), *adj.* given to carrying on lawsuits; quarrelsome.

lit-mus (*lit'mus*), *n.* a purple dye, obtained from certain lichens.

lit-ter (*lit'ẽr*), *n.* straw, hay, etc., used for horses' bedding; a framework with a bed, for carrying a person in a recumbent position; state of confusion or untidiness; number of young produced at one birth, as pigs, etc.: *v. t.* to supply with litter; cover with straw; scatter about carelessly: *v. i.* to bring forth a litter of young.

lit-te-ra-teur (*lē-tā-rȧ-tẽr'*), *n.* a literary man.

lit-tle (*lit'l*), *adj.* [*comp.* less, *superl.* least], small in size, quantity, duration, or importance; insignificant; young; mean: *adv.* in a small degree; not much: *n.* a small size, quantity, etc.

Syn. LITTLE, small, diminutive. What is *little* is so in the ordinary sense in respect to size; it is properly opposed to great; the *small* is that which is less than others in point of bulk; it is opposed to the large; the *diminutive* is that which is less than it ought to be; as a person is said to be *diminutive* in stature who is below the ordinary stature.

Ant. GREAT, large, broad, noble.

Little Rock, Ark. Name a local application from the town's occupying the top of a rocky cliff, which is much more conspicuous than the other cliffs of the river bank; also traceable from an igneous slate rock in the river bed at this point, visible only at low stages of the water.

li-tur-gic (*li-tẽr'jik*), *adj.* pertaining to a liturgy. [Also *liturgical.*]

lit-ur-gy (*lit'ẽr-ji*), *n.* [*pl.* liturgies (*-jiz*)], the prescribed forms or ritual for public worship.

live (*liv*), *v. t.* to exist or have life; pass or enjoy life; reside; endure; subsist: *adj.* (*līv*) having life; quick; effective; ignited; kept for use; energetic. [ABIDE.]

live-li-hood (*līv'li-hood*), *n.* means of living.

live-ly (*'li*), *adj.* active; brisk; animated; sprightly; vivid; forcible. [ACTIVE.]

live-oak (*'ōk*), *n.* an American oak valuable for shipbuilding.

liv-er (*liv'ẽr*) *n.* one who lives; a glandular organ secreting bile.

liv-er-y (*'ẽr-i*), *n.* [*pl.* liveries (*-iz*)], a particular costume worn by servants; the state of being kept and fed at a stipulated rate, as horses.

Livia (*liv'i-ȧ*). From the Roman *Livia.* Fr., *Livie;* It., *Livia;* Lat., *Livia.*

liv-id (*'id*), *adj.* black and blue; discolored as by a blow; ashy pale.

liz-ard (*liz'ẽrd*), *n.* a reptile having a slender scaly body, and four well-developed limbs, each with five toes.

Llano Estacado (*lä'nō ās-tä-kä'dō*). An elevated plateau in northwest Texas and New Mexico. Spanish words, meaning "staked plain," applied to this plateau on account of the stake-like boles of the yucca plant which grows there.

lla-nos (*'nōz*), *n. pl.* the extensive level grassy plains or steppes of South America.

Llewellyn (*lū-el'lin*). From the Celtic, meaning "lightning."

Lloyd's (*loidz*). A London underwriters' association for the furtherance of commerce, especially for marine insurance and the publication of shipping news. It originated in meetings at Lloyd's coffee house about 1688.

lo (*lō*), *interj.* behold! see!

load (*lōd*), *v. t.* to put on as much as can be carried; charge, as a gun: *n.* a burden; weight; freight; incumbrance. [WEIGHT.]

load-stone (*'stōn*), *n.* magnetic oxide of iron; magnet. [Also *lodestone.*]

loaf (*lōf*), *v. i.* to idle away time: *n.* [*pl.* loaves (*lōvz*)], a large cake of bread.

loam (*lōm*), *n.* rich vegetable mold, mixed with clay and sand: *v. t.* to cover with loam.
loan (*lōn*). *n.* a sum of money lent for a period, repayable with interest; something granted for temporary use: *v. i.* to lend money.
loath (*lōth*), *adj.* unwilling; reluctant.
loathe (*lōth*), *v. t.* to regard with abhorrence or disgust; detest: *v. i.* to feel nausea. [ABHOR, DISGUST.]
lob-by (*lob'i*), *n.* [*pl.* lobbies (*'iz*)], a small hall or waiting room; passage opening before an apartment; that part of the hall of a legislative chamber to which the public have access: *v. i.* [*p. t.* and *p. p.* lobbied, *p. pr.* lobbying], to solicit the votes of members of a legislature to carry a particular measure.
lob-by-ist (*-ist*), *n.* a person not a member who tries to influence the votes of members of a legislative body.
lobe (*lōb*), *n.* any rounded and projecting part; a subdivision of an organ.
lob-ster (*lob'stẽr*), *n.* an edible marine decapod crustacean.
lo-cal (*lō'kal*), *adj.* pertaining to place; restricted to a particular place: *n.* a newspaper paragraph of local interest; a suburban train.
lo-cal-i-ty (*-kal'i-ti*), *n.* [*pl.* localities (*-tiz*)], existence in, or limitation to, a place; position.
lo-cal op-tion (*op'shun*), the restriction of the sale of intoxicating liquors by the majority of the voters of a district.
lo-cate (*lō'kāt*), *v. t.* to place; establish; mark out and determine the position of: *v. i.* to settle.
lo-ca-tion (*-kā'shun*), *n.* place; plot of ground marked out by boundaries.
lock (*lok*), *n.* a mechanical device furnished with a spring and bolt for fastening a door; tress: *v. t.* to fasten or secure with a lock; shut up: *v. i.* to become fast by a lock.
lock-et (*'et*), *n.* a small gold or silver case attached to a necklace or chain.
lock-jaw (*'jaw*), *n.* a spasmodic disease by which the lower jaw is drawn up and becomes fixed; tetanus.
lock-out (*'out*), *n.* the exclusion of workmen from a factory by an employer to compel them to accept his terms: *v. t.* to close a factory against.
lock-up (*'up*), *n.* a temporary prison; calaboose; jail.
lo-co-mo-tion (*lō-kō-mō'shun*), *n.* the act or power of moving from place to place.
lo-co-mo-tive (*'tiv*), *adj.* pertaining to locomotion; not stationary: *n.* a steam engine for drawing railway cars.
lo-cust (*'kust*), *n.* a migratory and destructive winged insect resembling the grasshopper; a tree of the bean family.
lo-cu-tion (*-kū'shun*), *n.* speech; phrase.
lode (*lōd*), *n.* a vein containing metallic ore.
lodge (*loj*), *v. t.* to furnish with a temporary dwelling: *v. i.* to reside for a time; be deposited or fixed: *n.* a small house in a park; hut of an American Indian.
Lodovico or **Lodovic.** See *Lewis.*
loft (*loft*), *n.* a room directly beneath a roof.
loft-y (*'i*), *adj.* [*comp.* loftier, *superl.* loftiest], very high; proud; stately; sublime. [HIGH.]
log (*log*), *n.* an undressed piece of timber; a log-book: *v. t.* to enter in a log-book.
log-a-rithm (*'a-rithm*), *n.* the exponent of the power to which a fixed number (the base) must be raised in order to produce a given number.
log-book (*'book*), *n.* a ship's diary, or journal, recording the progress of a vessel.
log-ger-head (*'ẽr-hed*), *n.* a blockhead; dolt.
★**log-gia** (*lod'jā*), *n.* a covered gallery or portico.
log-ic (*loj'ik*), *n.* the science of correct reasoning, especially of inference.
log-ic-al (*loj'i-kal*), *adj.* pertaining to, or used in, logic; according to the rules of logic.
lo-gi-cian (*lō-jish'un*), *n.* one skilled in logic.
lo-gis-tics (*-jis'tiks*), *n. pl.* sexagesimal arithmetic; the science of moving and supplying armies.
log-rol-ling (*log'rōl-ing*), *n.* the act of rolling logs; united action in carrying legislative schemes for mutual benefit.
loin (*loin*), *n.* the lower part of the back of a quadruped or man: *pl.* the reins.
loi-ter (*loi'tẽr*), *v. t.* to hide (with *away*): *v. i.* to spend time idly; delay; linger. [LINGER.]
loll (*lol*), *v. i.* to lounge at ease; hang out the tongue.
Lombard (*lom'bärd*) **street.** The name of a street in the city of London, often used figuratively to mean the banking or financial world.
Lombardy (*lom'bär-di*). The country of the *Longobardi*, so called from their long beards. A territorial division of northern Italy.
London. The origin of this name cannot be ascertained with any certainty. Its most probable derivation is from *Llyn-Din*, the "town on the lake." The capital of England.
lone (*lōn*), *adj.* solitary; retired; by one's self; unmarried or in widowhood.
lone-ly (*'li*), *adj.* [*comp.* lonelier, *superl.* loneliest], deserted; solitary; unfrequented.
lone-some (*'sum*), *adj.* secluded from society; depressed; unfrequented; drearily solitary.
long (*lông*), *adj.* not short; extended in time, or length: *adv.* to a great length or period: *v. i.* to desire eagerly. [DESIRE, EAGER.]
★**lon-gev-i-ty** (*lon-jev'i-ti*), *n.* extended age.
long-hand (*lông'hand*), *n.* ordinary handwriting, as distinguished from *shorthand.*

Long Island, N. Y. Name applied by the Dutch in reference to its long and narrow conformation, *Lange Eylandt.*
Long Island sound. The arm of the Atlantic separating Long island from the mainland.
lon-gi-tude (*lon'ji-tūd*), *n.* distance east and west on the earth's surface measured from a meridian or place, estimated in degrees; on the ecliptic, distance in degrees from the vernal equinox.
look (*look*), *v. i.* to direct the eye to anything, in order to view it; direct the mind or attention to; appear: *v. t.* to turn the eyes upon: *n.* the act of looking; mien; aspect.
Syn. LOOK, glance, appear. We speak of taking a *look*, or catching a *glance; appearance* implies the simple act of coming into sight.
Lookout, Cape, N. C. Name traceable to coast captains, who, when this land was seen, were to be on the "lookout" for the stormy Cape Hatteras and its long shoals.
loom (*lōōm*), *n.* a frame or machine for weaving cloth.
loon (*lōōn*), *n.* the great northern diver.
loon-y (*'i*), *adj.* crazed.
loop (*lōōp*), *n.* a folding or doubling of string, rope, etc.
loop-hole (*'hōl*), *n.* a narrow aperture for observation or defense; means of evasion.
loose (*lōōs*), *adj.* not fast; unbound; not fixed; not tight: *v. t.* to set free; unbind; disengage; relax. [SLACK.]
loos-en (*lōōs'n*), *v. t.* to free from tightness, restraint, or tension.
loot (*lōōt*), *v. t.* to pillage or plunder, especially a captured city: *n.* booty thus taken.
lop (*lop*), *v. t.* to cut off (a part of anything), especially branches of a tree: *v. i.* to hang down.
lop-sid-ed (*'sīd-ed*), *adj.* heavier on one side.
lo-qua-cious (*lō-kwā'shus*), *adj.* talkative.
lo-quac-i-ty (*-kwas'i-ti*), *n.* talkativeness.
Lora. A form of *Laura*, which occurs as early as 1208.
lord (*lôrd*), *n.* a ruler or governor; master; a baron in the British peerage: *v. t.* to invest with authority: *v. i.* to domineer. [IMPERIOUS.]
lore (*lōr*), *n.* learning; instruction; space between the eye and bill of a bird.
Lorenz or **Lorenzo.** See *Laurence.*
Loretta. A diminutive of *Lora.*
★**lor-gnette** (*lôr-nyet'*), *n.* a long-handled opera glass; a pair of eyeglasses fixed to a long handle, into which they shut.
lorn (*lôrn*), *adj.* forsaken; forlorn.
Los Angeles (*lōs an'jel-ez*, Spanish *lōs äng'hel-es*). A city and county of southern California. Originally called by the Spaniards *Pueblo de la Reina de los Angeles* (the town of the queen of the angels), hence *Los Angeles*, "the angels."
lose (*lōōz*), *v. t.* to be deprived of; cease to have in possession: *v. i.* to fail of success; yield.
Syn. LOSE, miss. What is *lost* is supposed to be entirely and irrecoverably gone; but what is *missed* may be only out of sight or not at hand at the time when it is wanted.
Ant. ADVANTAGE, gain, profit.
loss (*lôs*), *n.* detriment; injury; privation; failure; defeat; that which is lost.
lot (*lot*), *n.* fortune; destiny; portion or parcel: *v. t.* to separate into lots; assign; catalogue. [DESTINY.]
lo-tion (*lō'shun*), *n.* a medicated fluid for outward application.
lot-ter-y (*lot'ẽr-i*), *n.* [*pl.* lotteries (*-iz*], a distribution of prizes by chance; drawing of lots.
Lotty. A feminine name corrupted from *Charlotte.*
lo-tus (*lō'tus*), *n.* a flower of a genus of the waterlily family, especially the sacred lotus of the ancient Nile.
loud (*loud*), *adj.* high or full sounding; noisy; ostentatious in dress or manner.
Louis. See *Lewis.*
Louisa (*lōō-ē'zä*). A comparatively modern name formed from *Lewis.* Fr., *Louise;* Ger., *Luise;* It. *Luigia;* Lat., *Luisa;* Sp., *Luisa;* Sw., *Ludovika.*
Louise (*lōō-ēz'*). See *Louisa.*
Louisiana (*lōō-ē-zē-ä'nä*, not *lōō-ē-zē-an'a*). Named by La Salle in honor of Louis XIV., king of France. One of the gulf states of the United States.
Louisville (*lōō'i-vil, lōō'is-vil*), **Ky.** Name given by act of the Virginian legislature in 1780, in honor of Louis XVI. of France, then assisting the American colonies in their revolutionary struggle.
lounge (*lounj*), *v. i.* to saunter about in a lazy manner; loll.
louse (*lous*), *n.* [*pl.* lice (*līs*)], a parasitic insect of various species, especially those of the genus Pediculus, parasitic on man.
lout (*lout*), *n.* an awkward fellow.
Louvre (*lōō'vr*). A castle, in Paris, of the kings of France from or before the thirteenth century, and the chief royal palace until Louis XIV. built Versailles. A great part of the interior has been occupied since 1793 by the famous museum, and successive governments have employed the best artists at their command for its decoration.
lov-a-ble (*luv'a-bl*), *adj.* worthy of love.
love (*luv*), *n.* a strong feeling of affection, especially to one of the opposite sex: *v. t.* to regard with strong affection: *v. i.* to be in love; have strong affection.
Syn. LOVE, affection, attachment, attraction, charity, devotion, fondness, friendship, liking, regard, tenderness. *Affection* is kindly feeling, deep, tender, and constant, going out to some person or object. *Love* is an intense and absorbing emotion, drawing one toward a person or object; it is the yearning or outgoing of soul toward something that is regarded as excellent, beautiful, or desirable; *love* may be briefly defined as strong and absorbing *affection* for, and *attraction* toward, a person or object. *Charity* has so far swung aside from this original meaning that probably it never can be recalled; *love* is more intense, absorbing, and tender than *friendship; love* normally leads to marriage, and subsists throughout all happy wedded life. *Love* can never properly denote mere animal passion; *love* of articles of food is better expressed by *liking*, as *love*, in its full sense, expresses something spiritual and reciprocal, such as can have no place in connection with objects that minister merely to the senses. [See *admire.*]
love-feast (*luv'fēst*), *n.* a religious feast of the nature of the Agape.
love-ly (*'li*), *adj.* exciting love or admiration; amiable; beautiful: *adv.* so as to inspire love or admiration.
low (*lō*), *adj.* not high; depressed; shallow; not noisy; subdued: *adv.* not on high; deeply; softly: *v. i.* o bellow like cattle.
low church (*chûrch*), pertaining to the evangelical section of the English church, or to its doctrines.
Lowell (*lō'el*), **Mass.** Named from Francis Cabot Lowell of Boston, who was distinguished by his successful effort in introducing the cotton manufacture into the states. Indian name of locality, *Wamasit.*
low-er (*'ẽr*), *v. t.* to lessen or bring down: *v. i.* to become lower; sink; (*lou'er*) to appear dark, gloomy, or threatening. [ABASE].
low-er-most (*lō'ẽr-mōst*), *adj.* lowest.
low-ing (*'ing*), *n.* the bellow of cattle.
low-land (*'land*), *adj.* pertaining to a low or level country: *n. pl.* a level country.
low-li-ness (*'li-nes*), *n.* the state of being lowly.
low-ly (*'li*), *adj.* [*comp.* lowlier, *superl.* lowliest], low in rank or size; humble; modest.
loy-al (*loi'al*), *adj.* faithful in allegiance to one's sovereign or country; true to plighted faith or duty.
loy-al-ist (*-ist*), *n.* one who adheres to and supports the authority of his sovereign or country.
loz-enge (*loz'enj*), *n.* an oblique-angled parallelogram; a rhomb; a sweetmeat.
lub-ber (*lub'ẽr*), *n.* an awkward, clumsy fellow; a raw sailor.
lu-bri-cate (*lū'bri-kāt*), *v. t.* to make smooth or slippery,
Lucerne (*lōō-sẽrn'*). A canton of Switzerland. Named from a lighthouse or beacon, *lucerna*, formerly placed on a tower in the middle of the river Rheus.
Lucian (*lū'shi-an* or *lū'shan*). From the Latin, meaning "light." Fr., *Lucien;* It., *Luciano;* Lat., *Lucianus.*
lu-cid (*'sid*), *adj.* clear; readily understood; shining; transparent. [CLEAR.]
lu-ci-fer, (*'si-fẽr*), *n.* a match ignited by friction.
Lucifer. Venus, as the morning star; Satan.
Lucile (*lū-sēl'*). A feminine name formed from *Lucilius*, name of the celebrated Roman satirist; derived, no doubt, from *Lucius.*
Lucius (*lū'shi-us*). The Roman name is said to be derived from *lux, lucis*, "light." Fr., *Luce* or *Lucius;* Ger., *Lucius;* It., *Lucio;* Lat., *Lucius.*
luck (*luk*), *n.* casual event or accident; fortune, either good or bad; success.
Lucknow (*lūk'nou*, commonly *luk'nō*). A division and city of British East India. From the native name *laksneanaui*, "the fortunate."
luck-y (*'i*), *adj.* [*comp.* luckier, *superl*, luckiest], having good luck or fortune; successful; auspicious.
lu-cra-tive (*lū'kra-tiv*), *adj.* profitable.
Lucretia (*lū-krē'shi-a*), or **Lucrece** (*lū'krēs*). A name derived from *Lucretia*, a celebrated Roman lady, daughter of Lucretius, and wife of Tarquinius Collatinus.
Lucy or **Lucie** (*lū'si*). The feminine of *Lucius.* Dutch, *Lucie;* Fr., *Lucie;* Ger., *Lucie;* It., *Lucia;* Lat., *Lucia;* Sp., *Lucia.*
lu-di-crous (*'di-krus*). *adj.* exciting mirth; comical; droll. [ABSURD.]
Ludovico or **Ludivicus.** See *Lewis.*
Ludwig. See *Lewis.*
luff (*luf*), *n.* the act of sailing close to the wind; luff-tackle: *v. i.* to steer nearer to the wind.
lug (*lug*), *v. t.* to pull or draw along: *v. i.* to drag move heavily; pull laboriously.
lug-gage (*'āj*), *n.* effects of a traveler; baggage.
lu-gu-bri-ous (*lū-gū'bri-us*), *adj.* mournful.
Luigi. See *Lewis.*
Luise. See *Louisa.*
Luke. From the Latin name *Lucas*, meaning a "light." Some maintain that the original name was *Lucius.* Danish, *Lucas;* Dutch, *Lucas;* Fr., *Luc;* Ger., *Lucas;* Hung., *Lucats;* It., *Luca;* Lat., *Lucas;* Sw., *Lucas.*
luke-warm (*lūk' ărm*), *adj.* moderately warm.
lull (*lul*), *v. t.* to soothe to sleep; quiet: *v. i.* to become calm: *n.* abatement; temporary calm.
lull-a-by (*'a-bī*), *n.* [*pl.* lullabies (*-bīz*)], a cradle-song.
lum-ba-go (*lum-bā'gō*), *n.* rheumatism of the muscles of the loins.
lum-ber (*'bẽr*), *n.* rubbish; forest timber sawed for market: *v. i.* to cut down timber and prepare it for market.
lu-mi-na-ry (*lū'mi-nā-ri*), *n.* [*pl.* luminaries (*-riz*)], a body emitting light, especially a heavenly body

lu-mi-nous (*lū'mi-nus*), *adj.* emitting or radiating light; bright; clear; perspicuous.
lump (*lump*), *n.* a small shapeless mass; aggregate; gross; a swelling; *v. t.* to throw or unite in the gross.
lu-na-cy (*lū'nā-si*), *n.* [*pl.* lunacies (*-siz*)], mental unsoundness: *adj.* pertaining to lunacy, or to lunatics.
lu-nar (*'nēr*), *adj.* pertaining to, measured by, or influenced by, the moon: *n.* lunar distance.
lu-na-tic (*'nā-tik*), *adj.* affected with, or characteristic of, lunacy: *n.* one who is insane.
lunch (*lunch*), *n.* a light meal between breakfast and dinner. [Also *luncheon*.] *v. i.* to take lunch.
lung (*lung*), *n.* one of two organs of respiration in air-breathing vertebrates.
lunge (*lunj*), *n.* a sudden thrust or pass with the sword; sudden urch: *v. i.* to make a lunge.
lurch (*lērch*), *n.* a sudden roll to one side, as of a ship; tendency: *v. i.* to roll suddenly to the one side.
lure (*lūr*), *v. t.* to allure: *n.* anything used as an enticement; bait.
lur-id (*'id*), *adj.* grayish-orange; wan; ghastly; pale; gloomy.
lurk (*lērk*), *v. i.* to lie in wait; be concealed.
lus-cious (*lush'us*), *adj.* sweet to excess; delightful to the taste or sense; fulsome.
lush (*lush*), *adj.* rich and juicy: *n.* intoxicating drink.
lust (*lust*), *n.* strong desire to possess or enjoy; concupiscence: *v. i.* to desire strongly; have inordinate desires (with *after*).
lus-ter (*lus'tēr*), *n.* brightness; splendor; brilliancy of reflected light; renown.
lus-tral (*lus'tral*), *adj.* pertaining to, or used in, purification.
lust-y (*'i*), *adj.* [*comp.* lustier, *superl.* lustiest], robust; vigorous; healthy.
lute (*lūt*), *n.* a stringed musical instrument of the guitar family.
Lu-ther-an (*lōō'thēr-an*), *adj.* pertaining to Luther, the German reformer, or to the Lutheran church and its doctrines: *n.* a member of the Lutheran church.
Luxembourg (*luks'em-bûrg*, Dutch *lüks'em-burg*), **Palace of the.** A palace in Paris, built by Debrosse (1615-20) for Maria de' Medici.
Luxor (*luks'ôr, lōōks'ôr*). From *El-Kasur*, "the palaces." A village in upper Egypt, situated on the Nile, on part of the site of the ancient Thebes. It is celebrated for its antiquities.
lux-u-ri-ant (*lugz-ū'ri-ant*), *adj.* characterized by luxuriance; superabundant; superfluous. [EXUBERANT.]
lux-u-ri-ate (*'ri-āt*), *v. i.* to grow exuberantly; live luxuriously; indulge unrestrainedly.
lux-u-ri-ous (*'ri-us*), *adj.* pertaining to luxury; indulging in, or administering to, luxury.
lux-u-ry (*luk'shū-ri*), *n.* extravagant indulgence in the pleasures of the senses, dress, etc.
ly-ce-um (*lī-sē'um*), *n.* a literary seminary; an academy; a literary association.
Lycoming (*lī-kom'ing*) **river, Pa.** Adaptation of the Indian name *legaui-hanne*, *i. e.*, "sandy stream."
Lydia (*lid'i-ā*). A Latin name mentioned in *Horace;* so called as coming from *Lydia*, in Asia Minor. Danish, *Lydia;* Dutch, *Lydia;* Fr., *Lydie;* Gr., *Ludia;* It., *Lidia;* Lat., *Lydia.*
lye (*lī*), *n.* an alkaline solution.
ly-ing-in (*lī-ing-in'*), *adj.* pertaining to childbirth: *n.* parturition.
lymph (*limf*), *n.* a colorless alkaline nutritive fluid in animal bodies.
lynch (*linch*), *v. t.* to judge and punish by lynch law.
Lynchburg, Va. From the original patentee, John Lynch, brother of Charles Lynch, the reputed originator of what is known as "lynch law."
lynch law. The practice of punishing men for crimes or offenses by private, unauthorized persons, without a legal trial.
Lynn, Mass. So called from an English town of the same name. The Anglo-Saxon meant, originally, "deep pool."
lynx (*links*), *n.* a fierce catlike animal, proverbial for its keenness of sight.
lyre (*lir*), *n.* a musical instrument of the harp kind.
lyr-ic (*lir'ik*), *adj.* pertaining to, or adapted to singing to, a lyre: *n.* a lyric composition.

M

Mabel, Mabell (*mā'bel*). A feminine name derived from *Mabilia*, Latinized from *Amabel*, a corruption of the French *animable*, "lovely." Lat., *Mabilia*, or *Amabilis*.
mac-ad-am-ize (*mak-ad'am-īz*), *v. t.* to cover (a road) with small broken stone, so as to form a smooth hard, rounded, surface.
Macao (*mā-kā'ō, mā-kou'*). A Portuguese city in China. Anciently there was a temple here sacred to an idol named Ama.
mac-a-ro-ni (*mak-a-rō'ni*), *n.* a paste composed chiefly of fine flour and made into long thin tubes.
mac-a-roon (*-rōōn'*), *n.* a small cake made of flour, eggs, almonds, and sugar.
mace (*mās*), *n.* a massive staff usually surmounted with a crown; a heavy billiard cue.
mac-er-ate (*mas'ēr-āt*), *v. t.* to soften or separate the parts of by steeping in a fluid; mortify or harass.
Mach-i-a-vel-ian (*mak-i-a-vel'yan*), *adj.* crafty; double-dealing: *n.* a cunning, unprincipled politician.
mach-i-na-tion (*mak-i-nā'shun*), *n.* a plot; artifice.
ma-chine (*ma-shēn'*), *n.* any contrivance to increase and regulate motive power; an engine.
ma-chin-ist (*'ist*), *n.* a constructor of machines; one skilled in the principles of machinery.
★**mack-er-el** (*mak'ēr-el*, not *mak'rel*), *n.* an edible marine fish, mottled with green and blue.
Mackinac. County in Michigan and town in same county. Name derived from the Indian word *michilimackinac*, meaning "island of the great turtle," or in other dialects, "island of the giant fairies."
Mackinaw straits. Strait connecting Lakes Michigan and Huron. Name has same origin as *Mackinac.*
mack-in-tosh (*mak'in-tosh*), *n.* an india-rubber waterproof overcoat.
Macon (*mā'kun*), **Ga.** Named in honor of Hon. Nathaniel Macon of North Carolina.
mad (*mad*), *adj.* [*comp.* madder, *superl.* maddest], mentally disordered or distracted; insane.
Madagascar. Properly *Malagasy*, the "island of the Malagese," because the natives belong to the Malay race. An island east of southern Africa.
mad-am (*mad'am*), *n.* [*pl.* mesdames (*mā-dām'*)], a complimentary title, or form of courteous address to a lady.
mad-den (*'n*), *v. t.* to make mad or furious: *v. i.* to become mad or furious.
ma-dei-ra (*mā-dē'rā*), *n.* a rich wine made in the island of Madeira.
Madeira (Port. *mā-dā'ē-rā*). A Portuguese term signifying "timber"; indicating that the island was formerly covered by an immense forest. One of a group of islands of the same name in Atlantic west of Africa.
Madeline. A feminine name softened down from *Magdalen.*
ma-de-moi-selle (*mā-dm-wā-zel'*), *n.* [Fr.] a title of courtesy given in France to a young lady.
Madge. A feminine baptismal name derived from *Margaret.*
mad-ness (*mad'nes*), *n.* insanity.
Syn. MADNESS, frenzy, rage, fury. *Madness* is a confirmed derangement in the organ of thought; *frenzy* is only a temporary derangement from the violence of any disease or other cause. *Rage* refers more immediately to the agitation that exists within the mind; *fury* refers to that which shows itself outwardly; a person contains or stifles his *rage;* but his *fury* breaks out into some external mark of violence.
ma-don-na (*mā-don'nā*), *n.* [*pl.* madonnas (*'nāz*)], a picture of the Virgin Mary, usually with the infant Christ.
Madrid (*mā-drid'*, Spanish *mā-drēth'*). Capital of Spain since 1560. The name is usually explained from the Arabic *madarat*, a "town."
Mælstrom (*māl'strum*). A celebrated whirlpool or violent current in the Arctic Ocean, near the western coast of Norway, between the islands Moskenaso and Varo. Etymologically it is the "grinding stream," from the Norwegian *male*, "to grind."
mag-a-zine (*mag-a-zēn'*), *n.* a warehouse; chamber in a gun; a periodical literary or scientific publication.
Magdalen (*mag'dā-len*) or **Magdalene.** A name derived from *Mary Magdalen*, meaning "of Magdala," a place in Palestine. Dutch, *Magdalena;* Fr., *Madeleine* or *Madelene;* Ger., *Magdalena;* It., *Maddalena* or *Madalena;* Lat., *Magdalena;* Sp., *Magdalena.*
ma-gen-ta (*mā-jen'tā*), *n.* a red aniline dye.
mag-got (*mag'ot*), *n.* the footless larva of a fly; grub; whim.
mag-ic (*maj'ik*), *n.* the pretended art of working by the power or assistance of supernatural beings; *adj.* pertaining to, produced by, or exercising, magic.
ma-gi-cian (*mā-jish'an*), *n.* one skilled in magic.
mag-ic lan-tern (*maj'ik lan'tērn*), an optical instrument for producing magnified objects on a screen.
mag-is-te-ri-al (*maj-is-tē'ri-al*), *adj.* pertaining to, or suitable to, a master or magistrate; authoritative.
mag-is-tra-cy (*'is-trā-si*), *n.* [*pl.* magistracies (*-siz*)], the office or dignity of a magistrate; magistrates collectively.
mag-is-trate (*'is-trāt*), *n.* a civil officer invested with certain judicial and executive powers.
★**Mag-na Char-ta** (*mag'na kär'ta*). The Great Charter, forming the basis of civil liberty, granted by King John of England to the barons, 1215. Also the Great Charter granted by Henry III. and confirmed by Edward I.
mag-nan-i-mous (*-nan'i-mus*), *adj.* great of mind; elevated in soul or sentiment; generous.
mag-nate (*'nāt*), *n.* a person of rank or distinction; nobleman.
mag-ne-si-a (*-nē'shi-a*), *n.* a white tasteless earthy powder, the oxide of magnesium.
mag-net (*'net*), *n.* the loadstone; a magnetized steel bar.
mag-net-ic (*'ik*), *adj.* pertaining to, exhibiting, or produced by, the magnet or magnetism.
mag-net-ism (*'net-izm*), *n.* that property possessed by various bodies, as iron or steel, of attracting or repelling each other according to certain physical laws.
mag-nif-i-cence (*mag-nif'i-sens*), *n.* grandeur of appearance; splendor; pomp.
Syn. MAGNIFICENCE, splendor, pomp. *Magnificence* lies not only in the number and extent of the objects presented, but in the degree of richness as to their coloring and quality; *splendor* is but a characteristic of *magnificence*, attached to such objects as dazzle the eye by the quantity of light, or the beauty and strength of coloring; *pomp* signifies in general formality and ceremony.
mag-nif-i-cent (*'i-sent*), *adj.* grand in appearance; splendid; pompous; sublime.
mag-ni-fy (*'ni-fī*), *v. t.* to make great or greater; increase the apparent dimensions of.
mag-nil-o-quent (*-nil'ō-kwent*), *adj.* pompous in style or speech; bombastic.
mag-ni-tude (*'ni-tūd*), *n.* comparative size or bulk; extent of dimensions; importance.
★**mag-no-li-a** (*-nō'li-a*), *n.* a handsome sweet-scented flowering shrub.
mag-pie (*'pī*), *n.* a chattering bird of the crow genus.
Mag-yar (*'yär*), *adj.* pertaining to the Hungarian race or language.
ma-hog-a-ny (*mā-hog'ā-ni*), *n.* a tree of tropical America yielding a dark reddish-brown wood, used for furniture; a dining table.
Mahony (*mā-hō'ni*) or **Mahoning river, Pa.** Name derived from the Delaware Indian word, *mahoninк*, "at the lick."
maid (*mād*), *n.* a young unmarried woman.
maid-en (*'en*), *n.* an unmarried woman; virgin; girl: *adj.* pertaining to, or like, a maiden; pure; innocent; unsullied; unused.
maid-en-hair (*-hâr*), *n.* a handsome and delicate-leafed fern.
Maiden lane. A street in London, between Covent Garden and the Strand. The name is said to have been given from an image of the Virgin which once stood there.
maid-en-ly (*-li*), *adj.* like, or suitable to, a maiden; modest: *adv.* in a maidenlike manner.
mail (*māl*), *n.* defensive body armor of steel, net, or plate-work; government system for conveying letters, etc.: *v. t.* to post, or send by post.
maim (*mām*), *v. t.* to cripple or mutilate: *n.* an injury to the body by crippling or mutilation.
main (*mān*), *adj.* chief; principal; leading; direct: *n.* the ocean. [CHIEF.]
Maine. A state in the Union; said to be named for the private estate of Henrietta Maria, in Maine, a province of France.
main-tain (*-tān'*), *v. t.* to support; sustain; defend; vindicate. [ASSERT, ALLEGE.]
main-te-nance (*'tē-nans*), *n.* sustenance; support; vindication; champerty.
maize (*māz*), *n.* Indian corn.
ma-jes-tic (*mā-jes'tik*), *adj.* having dignity of person or mien; stately; noble; sublime.
maj-es-ty (*maj'es-ti*), *n.* [*pl.* majesties (*-tiz*)], sovereignty; grandeur; nobility; sublimity.
ma-jol-i-ca (*mā-jol'i-kā*), *n.* a fine, soft, enameled kind of pottery.
ma-jor (*mā'jēr*), *adj.* greater in number, extent, or quality: *n.* a military officer next in rank above a captain.
ma-jor do-mo (*-dō'mō*), the steward of a household.
ma-jor gen-er-al (*-jen'ēr-al*), *n.* an officer next in rank below a lieutenant general.
ma-jor-i-ty (*mā-jor'i-ti*), *n.* more than half; full legal age (21); rank, etc., of a major.
make (*māk*), *v. t.* to create; fashion; fabricate; compose; produce or effect: *v. i.* to tend or move; have effect; contribute; be active.
Syn. MAKE, form, produce, create. *To make* is the most general and unqualified term; *to form* signifies to give a *form* to a thing, that is, to make it after a given *form; to produce* is to bring forth into the light, to call into existence; *to create* is to bring into existence by an absolute exercise of power.
Ant. DESTROY, demolish, obliterate.
make-shift (*māk'shift*), *n.* a temporary expedient.
mal-a-dy (*mal'ā-di*), *n.* [*pl.* maladies (*-diz*)], a disease, especially a deep-seated or lingering disorder. [DISORDER.]
mal-a-ga (*'ā-gā*), *n.* a variety of wine.
Malakoff (*mā-lā-kōf'*). The Malakoff, near Sebastopol, which was so hotly contested in the Crimean war, was so called from the name of an innkeeper who built a liquor shop on the hill in 1831.
mal-ap-ro-pos (*mal-ap-rō-pō'*), *adv.* unseasonably.
ma-la-ri-a (*mā-lā'ri-ā*), *n.* disease produced by the bite of malaria-infested mosquitoes; chills and fever.
Ma-lay (*mā-lā'*), *adj.* pertaining to the inhabitants of Malay, or to their language.
Malcolm (*mal'kum*). Derived from the Gaelic *maol-Cholum*, "the servant of Columba." *Maol* signifies literally, "the brow of a rock," "a bald head;" then "a shorn head," "a monk."
mal-con-tent (*mal'kon-tent*), *adj.* discontented, especially with established authority.
male (*māl*), *adj.* pertaining to the sex that begets young; not female: *n.* one of the male sex.
mal-e-dic-tion (*mal-ē-dik'shun*), *n.* denunciation of evil; execration; curse.
mal-e-fac-tor (*'ē-fak-tēr*), *n.* an evil doer; criminal. [CRIMINAL.]
mal-ev-o-lence (*mal-ev'ō-lens*), *n.* spitefulness; ill will.

mal-ev-o-lent (*mal-ev'ō-lent*), *adj.* malicious; malignant; hostile.

Syn. MALEVOLENT, malicious, malignant. *Malevolence* has a deep root in the heart, and is a settled part of the character; we denominate the person *malevolent* to designate the ruling temper of his mind; *maliciousness* may be applied as an epithet to particular parts of a man's character or conduct; one may have a *malicious* joy or pleasure in seeing the distress of another; *malignity* is not so often employed to characterize the person as the thing; the *malignity* of a design is estimated by the degree of mischief which was intended to be done.

Ant. AMIABLE, friendly, kind, well-disposed.

mal-fea-sance (*mal-fē'zans*),. *n* an illegal act or deed.

mal-ice (*mal'is*), *n.* evil intention to injure others; deliberate mischief; spite.

ma-li-cious (*ma-lish'us*), *adj.* bearing ill-will or spite; prompted by hatred. [MALEVOLENT.]

ma-lign (*-līn'*), *v. t.* to speak evil of; slander: *adj* hurtful; pestilential. [ABUSE]

ma-lig-nant (*-lig'nant*), *adj.* malicious; pernicious; intending or effecting evil; virulent. [MALEVOLENT.]

ma-lig-ni-ty (*-lig'ni-ti*), *n.* the state of being malignant; malice; virulence. [ACRIMONY.]

mall (*mawl*), *n.* a large, heavy, wooden mallet or beetle; a public walk shaded by trees.

mal-le-a-ble (*mal'ē-a-bl*), *adj.* capable of being extended by hammering or rolling.

mal-let (*'et*), *n.* a wooden hammer.

★**mal-prac-tice** (*mal-prak'tis*, not *mal'prak-tis*), *n.* evil practice; illegal or immoral conduct.

malt (*mawlt*), *n.* barley or other grain steeped in water, fermented, and kiln dried for brewing.

Malta (*mawl'tà*, It. *mäl'tä*). Anciently *Melita*, "the place of refuge." One of a group of islands in the Mediterrancan south of Sicily.

mal-treat (*mal-trēt'*), *v. t.* to treat ill or roughly. [ABUSE.]

mal-ver-sa-tion (*-vĕr-sā'shun*), *n.* fraudulent practices, especially those committed in an office of trust

Malvina (*mal-vī'nā*). A feminine name derived from *Malmhin*, name of the daughter of Toscar; from *maol-mhin*, "smooth brow."

ma-ma (*mà-mà'* or *mà'mà*). See *mamma.*

Mamaroneck (*mà-mar'ō-nek*), **N. Y.** So called from the name of an Indian chief, *Mamaronock.*

mam-ma (*mà-mà'*, or *mà'mà*), *n.* a family name for mother. [Also *mama.*]

Mam-ma-li-a (*mam-ā'li-à*), *n. pl.* the highest class of the Vertebrata, containing those animals which suckle their young.

mam-mon (*-un*), *n.* wealth; worldly gain: from Mammon, the Syrian god of riches.

mam-moth (*'moth*), *n.* an extinct species of huge fossil elephants: *adj.* gigantic.

man (*man*), *n.* [*pl.* men (*men*)], a human being; an adult male of the human species; mankind; to furnish with men; guard.

man-a-cle (*'à-kl*), *n.* a handcuff: *v. t.* to place handcuffs upon; shackle.

man-age (*'āj*), *v. t.* to conduct or carry on; govern; render docile or tractable; use cautiously; wield: *v. i.* to conduct affairs. [CONDUCT, CONCERT.]

man-age-a-ble (*'āj-a-bl*), *adj.* easy to be managed; docile.

man-age-ment (*'āj-ment*), *n.* the act or art of managing; control; skill in direction; administration. [CARE.]

Manayunk (*man-à-yungk'*), **Pa.** From the Delaware Indian *meneiunk*, "place of drinking liquor," which was also the Indian name of the Schuylkill river.

Manchester, N. H. Named after a manufacturing town in England. This name is derived from the Celtic *maen*, "a stone or rock," and the Anglo-Saxon *ceastre* or *chester*, "a castle or fortification."

Manchuria (*man-chōō'ri-à*). The European name of the region inhabited by the Manchua, a Tungusic tribe, who established the dynasty which has ruled China for the last three centuries.

Mandalay (*man'dà-lā*) or **Mandale.** The capital of Burma, founded in 1860. The usual etymology is from the Pali *mandala*, a "flat plain," but, according to Colonel Yule, the name was that of an isolated conical hill, rising high above the alluvial plain of the Irawadi, and crowned by a gilt pagoda.

man-da-mus (*-dā'mus*) *n.* [Latin, "we command"], a writ issued by a superior court directing the person or inferior court to whom it is issued to perform some specified act.

man-date (*'dāt*), *n.* an order; command; papal rescript.

man-da-to-ry (*'dà-tō-ri*), *adj.* containing a mandate; directory.

man-do-lin (*'dō-lin'*), *n.* a musical instrument of the guitar kind.

mane (*mān*), *n.* the long hair on the neck of certain quadrupeds, as the horse.

★**ma-neu-ver, ma-nœu-vre** (*mà-nōō'vĕr*), *n.* adroit management or operation in military or naval affairs; stratagem: *v. i.* to manage with adroitness or address.

man-ful (*man'fool*), *adj.* sturdy, brave. [MANLY.]

man-ga-nese (*man'gà-nēz*), *n.* a gray-colored, hard and brittle metallic element.

★**mange** (*mānj*, not *manj*), *n.* a cutaneous disease of dogs, cattle, etc.

man-ger (*mān'jĕr*), *n.* a feeding trough for horses or cattle.

man-gle (*mang'gl*), *v. t.* to lacerate; mutilate; hack; to smooth with a mangle: *n.* a machine for smoothing linen.

man-gler (*mang'glĕr*), *n.* a meat-chopping machine; one who mangles.

Manhattan. The island on which New York city is built. An Indian word, said by some authorities to mean "little island"; by others, "the people of the whirlpool," referring to Hell Gate.

man-hood (*man'hood*), *n.* human nature; manliness.

★**ma-ni-a** (*mā'ni-à*, not *mān'yà*), *n.* violent insanity; intense excitement; excessive or unreasonable desire.

ma-ni-ac (*'ni-ak*), *adj.* affected with mania: *n.* a madman.

man-i-cure (*man'i-kūr*), *n.* the care of the hands, nails, etc.

man-i-fest (*'i-fest*), *adj.* clear; plain; apparent: *v. t.* to make manifest; place beyond doubt. [APPARENT, DISCOVER.]

man-i-fes-to (*-fes'tō*), *n.* [*pl.* manifestos (*'tōz*)], a public declaration concerning political measures or intentions.

man-i-fold (*'i-fōld*), *adj.* various in kind or quality; numerous; multiplied: *v. t.* to reduplicate by means of a manifold writer.

man-i-fold wri-ter (*-rī'tĕr*), an apparatus for reduplicating a writing by means of thin tracing paper.

man-i-kin (*'i-kin*), *n.* a dwarf; a model of the human body for anatomical study.

ma-nil-a, ma-nil-la (*mà-nil'à*), *n.* a kind of cheroot; a hemp used for ropes, matting, etc.

Manila (*mà-nil'à*, Spanish *mà-nē'lä*). The capital of the Philippines, was founded in 1571, by Legaspi, on the site of a native village of the same name, which is derived from a shrub called *nila*, *Manila* thus meaning, "nila is," or "here is nila."

ma-nip-u-late (*mà-nip'ū-lāt*), *v. t.* to operate or work by means of the hands; treat: *v. i.* to use the hands, especially in scientific operations, or mechanical processes.

Manitoba (*man-i-tō'bà, man-i-tō-bā',*). The central province of the Canadian Dominion, formerly called the Red River Settlement; takes its name from Lake Manitoba, whose islands were believed by the natives to be the habitation of the Manito or Great Spirit.

Manitou (*man'i-tōō*). County in Michigan, river in Wisconsin, and town in El Paso county, Colorado.

Mankato (*man-kā'tō*) **river, Minn.** A Sioux Indian word signifying "green earth."

man-ly (*'li*), *adj.* having the characteristics of a man; courageous; noble; dignified; resolute; *adv.* like a man.

Syn. MANLY, manful. *Manly*, or like a *man*, is opposed to juvenile, and of course applied properly to youths; but *manful* or full of *manhood*, is opposed to effeminate, and is applicable more properly to grown persons.

man-na (*'à*), *n.* a name given by the Israelites to the food miraculously supplied in the wilderness.

man-ner (*'ĕr*), *n.* method; mode of action; habit; custom; sort: *pl.* deportment; morals; behavior. [See *custom.*]

Syn. MANNERS, morals, *Manners* respect the minor forms of acting with others and toward others; *morals* include the important duties of life. By an attention to good *manners* we render ourselves good companions; by an observance of good *morals* we become good members of society.

man-ner-ism (*'izm*), *n.* a peculiarity of style, action, or bearing, especially if constrained or affected.

man-of-war (*man-ov-wawr*), *n.* [*pl.* men-of-war], a large ship of war.

★**man-or** (*man'ĕr*), *n.* the district over which a feudal lord held authority, and subject to the jurisdiction of his court-baron.

man-sard roof (*man'sārd rōōf*), a roof which has on all sides two slopes, the lower being steeper than the upper.

manse (*mans*), *n.* the residence of a Presbyterian parochial minister. [*Scotch.*]

Mansfield. City in Richland county, Ohio, named for Col. Jared Mansfield, at one time surveyor general of the United States.

man-sion (*man'shun*), *n.* a large dwelling house.

man-slaugh-ter (*-slaw'tĕr*), *n.* the unlawful killing of a human being, but without malice or premeditation.

man-tel (*'tel*), *n.* a narrow ornamental slab above a fireplace. [Also *mantelpiece.*]

man-tle (*man'tl*), *n.* a loose cloak or cape; a conical network that becomes incandescent when heated: *v. t.* to cover with, or as with, a mantle; conceal.

man-u-al (*'ū-al*), *adj.* pertaining to, or performed by, the hands. *n.* a handy compendium.

man-u-fac-to-ry (*-fak'tō-ri*), *n.* [*pl.* manufactories (*-riz*)], the place where goods are manufactured.

man-u-fac-ture (*'tūr*), *v. t.* to make or fabricate from raw materials: *n.* the conversion of raw materials into articles for use; the thing manufactured.

ma-nure (*mà-nūr'*), *n.* any fertilizing substance used for enriching the soil.

man-u-script (*man'ū-skript*), *adj.* written: *n.* a book or paper written by hand.

man-y (*men'i*), *adj.* [*comp.* more, *superl.* most], numerous; consisting of a great number: *n.* a great number; multitude; people.

map (*map*), *n.* a representation of the earth or of the heavens: *v. t.* to delineate or lay down in a map; describe clearly.

ma-ple (*mā'pl*), *n.* a tree of several species of the genus *Acer*, from one of which the rock-maple sugar is extracted.

mar (*mär*), *v. t.* to disfigure; injure; damage: *n.* a blemish or disfigurement; injury.

ma-ras-mus (*mà-raz'mus*), *n.* atrophy.

mar-a-thon (*mar'à-thon*), *n.* a foot-race of 26 miles, 385 yards, so called because an Athenian youth ran that distance from Marathon to Athens, bearing the news of the defeat of the Persians; place abounding in fennel, *marathos.*

ma-raud (*mà-rawd'*), *v. i.* to rove in search of plunder.

mar-ble (*mär'bl*), *n.* a hard limestone of various colors capable of taking a fine polish: *adj.* made of, or like, marble; cold; hard.

Marc. See *Mark.*

Marcellus (*mär-sel'lus*). From the Latin, meaning "of Mars." Fr., *Marcellus;* It., *Marcello;* Lat., *Marcellus.*

mar-cel wave (*mär-sel' wāv*), in hairdressing, a style of waving the hair in tiers, made with a grooved curling iron, introduced by Marcel.

march (*märch*), *n.* a regular, measured walk, especially of soldiers; steady onward movement: *v. t.* to cause to move in a regular measured walk, as troops: *v. i.* to move with regular steps, or in military form.

March. The third month of the modern calendar. Named after *Mars*, the god of war.

mar-chion-ess (*mär'shun-es*), *n.* the wife or widow of a marquis.

mar-co-ni-gram (*mär-cō'ni-gram*), *n.* a wireless message transmitted by the Marconi system.

Marcus. See *Mark.*

Marcy, Mount, N. Y. Named in compliment to Gov. W. L. Marcy of N. Y. The Indian name is *Tahawus*, "he splits the sky," an allusion to its great height, compared with its neighbors.

mare (*mär*), *n.* the female of the horse.

Margaret (*mär'gà-ret*). From the Greek, meaning "a pearl." Dutch, *Margaretha;* Fr., *Marguerite;* Ger., *Margarethe;* Gr., *Margarites;* It., *Margarita;* Lat., *Margarita.*

Margaretta. Formed from *Margaret.*

Margery. A baptismal name from *Margaret.*

mar-gin (*'jin*), *n.* border; the part of a page at the edge not printed upon; reserved amount: *v. t.* to furnish with a margin.

mar-gin-al (*-al*), *adj.* pertaining to, or placed on, a margin.

Maria. A name derived from one of the Greek forms of *Miriam. Maria* is found as a masculine name as well as a feminine name.

Marian (*mā'ri-an*). A diminutive of *Mary.*

Marianne (*mā-ri-an'*), Sometimes corrupted from *Marian*; at other times from *Mary Anne.*

Marie (*mā-rē'*). The French form of *Mary.*

Marietta (*mā-ri-et'tà*), **Ohio.** A composite word, from *Marie Antoinette*, queen of Louis XVI. of France, in whose honor it was named.

mar-i-gold (*mar'i-gōld*), *n.* a plant of various genera with showy yellow flowers.

ma-rine (*mà-rēn'*), *adj.* pertaining to, living in, or formed by, the sea; naval; *n.* a soldier who serves on a warship; the navy of a nation.

mar-i-ner (*mar'i-nĕr*), *n.* a sailor. [SEAMAN.]

Marion (*mar'i-on*). A masculine form of *Mary.*

mar-i-tal (*'i-tal*), *adj.* pertaining to marriage.

★**mar-i-time** (*'i-tim*), *adj.* pertaining to, connected with, or bordering upon, the sea; naval.

mar-jo-ram (*mär'jō-ram*), *n.* a genus of aromatic plants, containing the sweet marjoram.

mark (*märl.*), *n.* a visible sign by which anything is known; impression; evidence; target: *v. t.* to make a mark upon; take notice of; single out: *v. i.* to keep a score; take note.

Syn. MARK, trace, vestige, footstep, track. The *mark* is said of a fresh and uninterrupted line; the *trace* is said of that which is broken by time; a carriage in driving along the sand leaves *marks* of the wheels, but in a short time all *traces* of its having been there will be lost. The *vestige* is a species of *mark* or *trace* caused by the feet of men, or, which is the same thing, by the works of active industry; as the *vestiges* of buildings. *Footstep* is employed only for the steps of an individual. The *track* is made by the steps of many.

Mark. Derived from *Mars*, meaning "of Mars." Danish, *Marcus;* Dutch, *Marcus;* Fr., *Marc;* Ger., *Marcus;* Gr., *Markos;* Hung., *Mark;* It., *Marco;* Lat., *Marcus;* Sp., *Marcos;* Sw., *Markus.*

Mark, St., Basilica of. A famous basilica of Venice, founded in 830 to receive the relics of the evangelist brought from Alexandria, rebuilt in 976, and given its definite form in 1052.

mar-ket (*mär'ket*), *n.* a public place for the sale or purchase of commodities; market place.

marks-man (*märks'man*), *n.* [*pl.* marksmen (*'men*)], one skillful in shooting.

mar-line (*mär'lin*), *n.* a two-stranded cord used for winding around ropes, splicing, etc.

Marmaduke. From Anglo-Saxon *mara-mihtig*, "very mighty or powerful."

mar-ma-lade (*'ma-lād*), *n.* a confection made of oranges or other fruit.

Marmora (*mär'mō-rà*), **Sea of.** A sea between European and Asiatic Turkey. Named from an adjacent island celebrated for its marble, *marmor.*

ma-roon (*mà-rōōn'*), *n.* formerly a fugitive slave

in the West Indies: *v. t.* to place and abandon on a desert island: *adj.* of a brownish-crimson color.

★**mar-quis** (*mär'kwis*), *n.* a nobleman ranking next below a duke. [Also *marques*; fem. *marchioness.*]

mar-riage (*mar'āj*), *n.* the act of legally uniting a man and woman in wedlock; marriage ceremony.

mar-row (*'ō*), *n.* the medulla or oily tissue which fills the cavities of bones; the essence of anything.

mar-ry (*'i*), *v. t.* to unite as husband and wife; wed: *v. i.* to enter into the state of wedlock.

marsh (*märsh*), *n.* a swampy tract of land.

mar-shal (*mär'shal*), *n.* an official of high rank who superintends and regulates state ceremonials.

mart (*märt*), *n.* a market; purchase and sale.

Martha (*mär'thä*). Littleton derives this name from a Syriac word signifying "lady" (*domina*). Dutch, *Martha;* Fr., *Marthe;* Ger., *Martha;* It., *Marta;* Lat., *Martha;* Sp., *Martha;* Sw., *Martha.*

Martha's Vineyard, Mass. Named by Bartholomew Gosnold, on one of his voyages, but in whose honor it is not known. The Indian name was *Capawac.* An island southeast of Massachusetts.

mar-tial (*'shal*), *adj.* pertaining to, or adapted for, war; military.

Syn. MARTIAL, warlike, military, soldier-like. We speak of *martial* array, *martial* preparations, *martial* law, a court-*martial;* but of a *warlike* nation, meaning a nation which is fond of war; a *warlike* spirit or temper, also a *warlike* appearance, inasmuch as the temper is visible in the air and carriage of a man; we speak of *military* in distinction from naval, as *military* expeditions, *military* movements, and the like; the conduct of an individual is *soldier-like* or otherwise.

mar-tin (*'tin*), *n.* one of several species of birds allied to the swallow.

Martin (*mär'tin*). From the Latin name, *Martinus;* from *Martius;* from *Mars,* "warlike." Dutch, *Martinus;* Fr., *Martin;* Ger., *Martin;* It., *Martino;* Lat., *Martinus;* Sp., *Martin;* Sw., *Martin.*

Martinez (*mär-tē'neth*). Spanish, meaning "the son of Martin."

mar-tin-gale (*'tin-gāl*), *n.* a broad strap passing from the nose-band to the girth of a horse, between its fore legs, to keep its head down; a lower stay for the jib-boom or flying jib-boom.

Martinsburg. Town in Berkeley county, West Virginia, named for Col. Tom Martin, a nephew of Lord Fairfax, a wealthy landowner.

mar-tyr (*'tėr*), *n.* one who testifies by his death to his faith or principles: *v. t.* to put to death for adherence to some belief.

mar-tyr-dom (*-dum*), *n.* the death or sufferings of a martyr.

mar-vel (*'vel*), *n.* something extraordinary and astonishing; a prodigy: *v. i.* to be struck with astonishment; wonder. [WONDER.]

mar-vel-ous (*-us*), *adj.* exciting wonder; incredible.

Mary. From the Hebrew, meaning "bitter." Danish, *Marie;* Dutch, *Maria;* Fr., *Marie;* Ger., *Maria* or *Marie;* Gr., *Maria;* Hungarian, *Maria;* It., *Maria;* Lat., *Maria;* Polish, *Marya;* Port., *Maria;* Sp., *Maria;* Sw., *Maria.*

Maryland. One of the South-Atlantic states of the United States. It was intended that the country granted by the charter of Charles I. in his patent to Lord Baltimore, June 30, 1632, should be called *Crescentia,* but when presented to the king for signature, in conformity to his wishes, the name of the province was changed to that of *Terra Mariæ,* "Mary's land," in honor of his queen, Henrietta Maria, daughter of Henry IV. of France.

mas-cot (*mas'kot*), *n.* a person or thing that brings good fortune.

★**mas-cu-line** (*mas'kū-lin,* not *mas'kū-līn*), *adj.* pertaining to, having the qualities of, or suitable for, a man; manly.

mash (*mash*), *n.* a soft or pulpy mass; a mixture of bran and water for horses: *v. t.* to mix with hot water (as malt) in brewing.

mash-er (*'ėr*), *n.* one who impertinently endeavors to make himself attractive to, or engage the attention of, women.

mask (*mask*), *n.* a cover or partial cover to conceal the face; pretext or subterfuge; a masquerade: *v. t.* to conceal with, or as with, a mask. [PRETENSE.]

ma-son (*mā'sn*), *n.* a builder in stone; a Freemason.

Ma-son-ic (*mā-son'ik*), *adj.* pertaining to Freemasons or to their craft.

mas-quer-ade (*mas'kėr-ād*), *n.* a ball or festive gathering where masks are worn; a disguise: *v. i.* to cover with a mask or disguise: *v. i.* to take part in a masquerade.

mass (*mas*), *n.* a large quantity; lump; the celebration of the Eucharist in the Roman Catholic church: *pl.* common people.

Massachusetts. Natick Indian word *Masasuset,* contraction of *massa,* "great," *adchu,* "mountain," *et,* "near," "the place of the great hills" (reference to the Blue Hills). One of the New England states.

★**mas-sa-cre** (*'ä-kėr*), *n.* indiscriminate slaughter with unnecessary cruelty: *v. t.* to slaughter indiscriminately. [CARNAGE.]

mas-sage (*'äj* or *mä-säzh'*), *n.* a method of medical treatment by rubbing or kneading the body.

mas-seur (*ma-sėr'*), *n.* one who performs the operation of massage. (Fem. *masseuse.*) [*French.*]

mas-sive (*mas'iv*), *adj.* weighty; heavy; bulky; imperfectly and irregularly crystallized.

mast (*mast*), *n.* a long round piece of timber or iron tube, raised vertically on the keel of a vessel to support the sails.

mas-ter (*mas'tėr*), *n.* one who rules or commands others; director: *adj.* pertaining to a master; chief: *v. t.* to subdue or overcome: *v. i.* excel.

mas-ter-y (*-i*), *n.* dominion; preëminence; eminent skill.

mas-ti-cate (*mas'ti-kāt*), *v. t.* to grind with the teeth; chew.

mas-tiff (*mas'tif*), *n.* a large variety of dog.

mas-to-don (*mas'tō-don*), *n.* an extinct genus of mammals, allied to the elephant.

mas-tur-ba-tion (*-tur-bā'shun*), *n.* self-pollution.

mat (*mat*), *n.* a texture of various fibrous materials, used for cleansing the feet: *v. t.* to cover with mats; entangle or interweave.

Matanzas (*mä-tan'zas,* Spanish *mä-tän'thäs*) **inlet, Fla.** From the Spanish, meaning, "massacre," applied by Menendez to commemorate his destruction of Ribaut and his followers.

match (*mach*), *n.* anything that readily ignites; a lucifer; anything which agrees with or suits another thing: *v. t.* to be equal to.

match-mak-er (*'mäk-ėr*), *n.* one who seeks to arrange marriages.

mate (*māt*), *n.* a companion or associate; an equal; the male and female of animals associated for propagation; checkmate: *v. t.* to match; be equal to; marry.

ma-te-ri-al (*mä-tē'ri-al*), *adj.* consisting of matter; not spiritual; essential: *n.* the substance of which anything is made. [PHYSICAL.]

ma-te-ri-al-ism (*-izm*), *n.* the doctrine that all spiritual phenomena are the result of organized matter.

ma-te-ri-al-ize (*-iz*), *v. t.* to invest with material characteristics.

ma-ter-nal (*-tėr'nal*), *adj.* motherly.

ma-ter-ni-ty (*'ni-ti*), *n.* the character or relationship of a mother.

math-e-mat-ic-al (*math-ē-mat'i-kal*), *adj.* pertaining to, or performed by, mathematics; theoretically precise. [Also *mathematic.*]

math-e-mat-ics (*-mat'iks*), *n.* the science of number and space.

Mathilde (*mä-tēld'*). A French form of *Matilda.*

Matilda (*mä-til'dä*) **or Maud.** From the Old German *magd-hild,* "noble virgin or maid." Danish, *Mathilde;* Dutch, *Mathilda;* Fr., *Mathilde;* It., *Matilda;* Lat., *Mathilda;* Sp., *Matilde;* Sw., *Matilda.*

mat-in (*mat'in*), *adj.* pertaining to the morning or to matins.

mat-i-née (*-i-nā'* or *mä-tē-nā'*), *n.* a reception or musical or dramatic performance held in the daytime.

mat-ri-cide (*'ri-sīd*), *n.* the murder of a mother by a son or daughter; one who murders one's mother.

ma-tric-u-late (*mä-trik'ū-lāt*), *v. t.* to admit to the membership of a college or university by entering one's name in a register.

mat-ri-mo-ni-al (*mat-ri-mō'ni-al*), *adj.* pertaining to marriage; nuptial; connubial.

mat-ri-mo-ny (*'ri-mō-ni*), *n.* marriage.

ma-trix (*mā'triks*), *n.* [*pl.* matrices (*mat'ri-sēz*)], the womb; the cavity in which anything is formed or cast; a mold.

ma-tron (*mā'trun*), *n.* a married woman, especially one who has borne children; the lady superintendent of a hospital or institution.

ma-tron-ly (*-li*), *adj.* matronlike; elderly; sedately.

mat-ter (*mat'ėr*), *n.* that which occupies space, and is perceptible by the senses; body; substance: *v. i.* to signify; be of importance.

Matterhorn. The most precipitous peak in the Alps, derives its lowly name from the meadow (*matt*) at its base, on which the village of Zermatt, "at the meadow," is situated.

Matthew (*math'ū*). From the Hebrew *mattah-Yah,* "the gift of Jehovah." Danish, *Matthæus;* Dutch, *Mattheus;* Fr., *Mathieu;* Gr., *Matthaios;* Hungarian, *Mate;* It., *Matteo;* Lat., *Matthæus;* Polish, *Mateusz;* Sp., *Mateo;* Sw., *Matthaus.*

Matthias (*math-ī'as*). Originally the same as *Matthew.* Dutch, *Matthijs;* Fr., *Matthias* Ger., *Mathias;* It., *Mattia;* Lat., *Matthias;* Sp., *Matias.*

mat-ting (*mat'ing*), *n.* mats collectively; material for mats; ornamental mat-work.

mat-tock (*'ok*), *n.* a pickax having one of its ends flat.

★**mat-tress** (*'res*), *n.* a quilted hair or straw stuffed bed; a spring mattress.

ma-ture (*mä-tūr'*), *adj.* ripe; full-grown; ready for application or use: *v. t.* to bring or hasten to maturity: *v. i.* to become ripe.

ma-tu-ri-ty (*-tū'ri-ti*), *n.* the state or quality of being mature; ripeness; full development.

mat-u-ti-nal (*mat-ū-tī'nal*), *adj.* pertaining to the morning; early.

Mauch Chunk (*mōk chungk'*). Borough and river in Carbon county, Pennsylvania. An Indian name, meaning, according to different authorities, "on the mountain," or "bear's cave."

Maud, Maude. Corrupted from *Matilda.*

maud-lin (*mawd'lin*), *adj.* easily moved to tears; weakly and foolishly sentimental.

maul (*mawl*), *n.* a large wooden hammer: *v. t.* to wound or bruise in a rough manner.

Maurice (*maw'ris,* French, *mō-rēs'*). Some derive this name from *Amalric,* others from *Mauritius,* but it is rather the reverse, for the island had its name from Prince Maurice. The name is probably from Fr., *du marais,* "from the marsh." Danish, *Moritz;* Dutch, *Maurits* or *Mauritius;* Fr., *Maurice;* Ger., *Moritz;* It., *Maurizio* or *Mauricio;* Lat., *Mauritius* or *Mauricius;* Sp., *Mauricio;* Sw., *Moritz.*

Mauritius (*maw-rish'i-us*). Named for Maurice, prince of Orange. An island in the Indian Ocean.

★**mau-so-le-um** (*maw-sō-lē'um*), *n.* a stately tomb or monument, especially that of Mausolus, king of Caria, erected by his widow Artemisia.

★**mauve** (*mōv*), *n.* a soft lilac or purple color.

maw (*maw*), *n.* the stomach of animals; the craw of a bird.

mawk-ish (*mawk'ish*), *adj.* loathsome; affectedly sentimental.

max-im (*maks'im*), *n.* an established principle or truth; proverb; aphorism.

Maximilian (*maks-i-mil'yan, maks-i-mil'i-an*). A name said to be compounded of *maximus,* "greatest," and the name *Æmilianus.* Dutch, *Maximiliaanus;* Fr., *Maximilien;* Ger., *Maximilian;* It., *Massimiliano;* Lat., *Maximilianus;* Sp., *Maximiliano;* Sw., *Maximilian.*

max-i-mum (*'i-mum*), *n.* the greatest number, quantity, or degree, attainable.

Maximus (*maks'i-mus*). Latin, meaning "greatest." Fr., *Maxime;* It., *Massimo;* Lat., *Maximus;* Sp., *Maximo.*

may (*mā*), *v. aux.* [*p. t.* might (*mīt*)], to be able; be allowed.

May. The fifth month in the modern calendar. Named after *Maia,* the mother of Mercury, to whom sacrifices were offered on the first day of this month.

Mayfair (*mā'fâr*). A fashionable locality in London, east of Hyde Park. All streets north of Piccadilly now lead into the district of Mayfair, which takes its name from a fair which used to be held in Shepherd's market and its surrounding streets.

may-or (*mā'ėr*), *n.* the chief magistrate of a city or borough. [Fem. *mayoress.*]

may-or-al-ty (*-al'ti*), *n.* the office, or term of office, of a mayor.

maze (*māz*), *n.* bewilderment; a labyrinth: *v. t.* to bewilder.

ma-zy (*mā'zi*), *adj.* intricate; bewildering; winding.

mead (*mēd*), *n.* a fermented liquor of honey, water, and spices; a meadow. [*Poetry.*]

mead-ow (*med'ō*), *n.* a tract of rich pasture land; land yielding hay.

mea-ger (*mē'gėr*), *adj.* thin; scanty; poor; barren; lean; weak.

meal (*mēl*), *n.* edible ground grain; a repast.

meal-y (*'i*), *adj.* consisting of, sprinkled with, or having the qualities of, meal.

mean (*mēn*), *adj.* wanting in dignity or honor; vulgar; inferior; insignificant; humble; sordid; stingy; middle; excessive: *n.* the middle point: *v. t.* to have in the mind or intention; signify: *v. i.* to have an intention. [DESIGN.]

me-an-der (*mē-an'dėr*), *v. i.* to wind or flow around: *v. i.* to have a winding course; be intricate.

mean-time (*mēn'tīm*), *adv.* in the intervening time. [Also *meanwhile.*]

mea-sles (*mē'zlz*), *n.* an infectious disease characterized by fever and small red spots on the skin.

meas-ure (*mezh'ūr*), *n.* the standard by which the volume or extent of anything is compared; extent or dimensions of a thing; *pl.* strata or beds: *v. t.* to ascertain the extent, size, or volume of: *v. i.* to take measurements.

meat (*mēt*), *n.* animal food.

me-chan-ic (*mē-kan'ik*), *n.* a skilled workman: *pl.* the science of the laws of matter and motion, especially the science of machinery.

mech-a-ni-cian (*mek-ä-nish'an*), *n.* one skilled in mechanics or machinery.

mech-an-ism (*'an-izm*), *n.* parts of a machine; mechanical construction.

med-al (*med'al*), *n.* a coinshaped piece of metal impressed with a device or inscription to commemorate some event, distinguished person, etc.

me-dal-lion (*mē-dal'yun*), *n.* a large antique medal; a round or oval tablet with figures in bas-relief.

med-dle (*med'l*), *v. i.* to interpose or interfere officiously.

me-di-an (*mē'di-an*), *adj.* pertaining to, or connected with, the middle of anything.

me-di-ate (*-āt*), *v. i.* to interpose as a mutual friend between parties to effect a reconciliation.

me-di-a-to-ri-al (*-ä-tō'ri-al*), *adj.* pertaining to a mediator or mediation; intercessory.

★**me-di-æ-val** (*mē-di-ē'val*), *adj.* pertaining to, or characteristic of, the middle ages (8th to 15th centuries A. D.). [Also *medieval.*]

med-i-cal (*med'i-kal*), *adj.* pertaining to, or connected with, medicine.

me-dic-i-nal (*mē-dis'i-nal*), *adj.* having the properties of, or used in, medicine.

med-i-cine (*med'i-sin*), *n.* the science which relates to the treatment and alleviation of disease; a specific for the cure of disease.

Medina (*mā-dē'nä*). A city in Hedjas, Arabia, the second holy city of the Mohammedans. It is celebrated as the place where Mohammed took refuge at the flight, 622 A. D., and where he died and was buried. The Great Mosque contains Mohammed's tomb.

me-di-o-cre (*mē'di-ō-kėr*), *adj.* of medium excellence; ordinary.

med-i-tate (*med'i-tāt*), *v. i.* to muse or ponder; think abstractedly: *v. t.* to think upon; design; purpose. [CONTEMPLATE.]

med-i-ta-tive (*med'i-tā-tiv*), *adj.* disposed to meditations.

Mediterranean Sea. Modern name expresses the meaning of Latin *medius*, "middle," and *terra*, "earth." The sea between the two continents, Europe and Africa.

me-di-um (*mē'di-um*), *n.* a mean; anything intervening; agency; space or substance in which bodies exist or move.

med-ley (*med'li*), *n.* mixture or confused mass of different ingredients. [DIFFERENCE.]

meed (*mēd*), *n.* recompense; reward.

meek (*mēk*), *adj.* [*comp.* meeker, *superl.* meekest], gentle; submissive; yielding; mild of temper; humble; patient.

meer-schaum (*mēr'shawm*), *n.* a clay like silicate of magnesia from which pipe bowls are made; a pipe of this material.

meet (*mēt*), *v. t.* confront; encounter; fall in with; receive; satisfy; come upon; answer: *v. i.* to assemble; be united: *adj.* fit; suitable. [FIT.]

mel-an-cho-li-a (*mel-an-kō'li-ȧ*), *n.* a form of insanity characterized by great depression of spirits.

mel-an-chol-y (*'an-kol-i*), *n.* great depression of spirits; melancholia: *adj.* depressed in spirits; hypochondriac. [DEJECTION, GRIEF.]

Melbourne (*'bûrn*). The largest city of Australia. Named after Lord Melbourne in 1837.

mel-io-rate (*mēl'yō-rāt*), *v. t.* to improve or make better.

mel-lif-lu-ent (*mel-if'lū-ent*), smooth; sweetly flowing. [Also *mellifluous*.]

mel-low (*'ō*), *adj.* fully ripe; not hard, harsh, or rigid; half tipsy.

me-lo-di-ous (*mē-lō'di-us*), *adj.* full of, or produced by, melody; musical.

mel-o-dra-ma (*mel-ō-drȧ'mȧ*), *n.* a play characterized by highly sensational or romantic incidents.

mel-o-dy (*'ō-di*), *n.* [*pl.* melodies (*-diz*)], the arrangement of different musical sounds for a single voice or instrument; tune.

mel-on (*'un*), *n.* a plant of the cucumber family with its edible fruit.

melt (*melt*), *v. t.* and *v. i.* to change from a solid to a liquid state.

mem-ber (*mem'bẽr*), *n.* a limb or organ; essential part of anything.

mem-brane (*'brān*), *n.* a thin fold or layer of tissue forming the covering of some part or organ.

me-men-to (*mē-men'tō*), *n.* [*pl.* mementos (*'tōz*)], a souvenir; memorial.

mem-oir (*mem'wär*), *n.* a history written from personal experience and knowledge; a biography.

mem-o-ra-ble (*'ō-rȧ-bl*), *adj.* worthy of remembrance; remarkable; notable.

mem-o-ran-dum (*-ō-ran'dum*), *n.* a note to assist the memory; brief record.

me-mo-ri-al (*mē-mō'ri-al*), *adj.* commemorative; preservative of, or contained in, the memory.

mem-o-ry (*mem'ō-ri*), *n.* [*pl.* memories (*-riz*)], that faculty of the mind by which it retains the knowledge of previous occurrences, facts, thoughts, etc., and recalls them.

Syn. MEMORY, remembrance, recollection, reminiscence. *Memory* is the power of recalling images once made on the mind; *remembrance* is the exercise of *memory* in a conscious agent; it may be the effect of repetition or habit; *recollection* carries us back to distant periods; *reminiscence* is altogether an abstract exercise of the *memory* which is employed on purely intellectual ideas in distinction from those which are awakened by sensible objects; the mathematician makes use of *reminiscence* in deducing unknown truths from those which he already knows.

Ant. FORGETFULNESS, oblivion, unconsciousness.

Memphis (*mem'fis*). In ancient geography, the early capital of Egypt. It was on the western bank of the Nile, south of Cairo. It is said to have been built by Menes. From *Ma-m-Phthah*, "the place of the Egyptian god Phthah."

Memphis, Tenn. Name adopted from the ancient city of *Memphis;* not from any local similarity.

Memphremagog (*mem-frē-mā'gog*), **Lake, Vt.** An application of the Algonquin name *mem-plowbouque*, "a large expanse of water."

men-ace (*men'ās*), *n.* a threat: *v. t.* to threaten. [THREAT.]

men-ag-er-ie (*-ȧzh'ẽr-i* or *-aj'e-ri*), *n.* a place where wild animals are kept; a collection of wild animals for exhibition.

mend (*mend*), *v. t.* to repair; make good or better; reform; increase: *v. i.* to grow better; improve. [AMEND.]

men-da-cious (*men-dā'shus*), *adj.* given to falsehood; lying; false.

men-di-cant (*'di-kant*), *adj.* practicing begging; reduced to beggary: *n.* a beggar; a begging friar.

Mendocino (*men-dō-sē'nō*), **Cape, Cal.** So named by Cabrillo in 1542 (*Cabo Mendocino*), in honor of the viceroy of Spain, who had employed him.

Mendota (*men-dō'tȧ*), **Minn.** So called from a tribe of Indians, *Mendota*, meaning "the mouth," alluding to their dwelling at the mouth of the Minnesota river.

me-ni-al (*mē'ni-al*), *adj.* pertaining to a retinue of servants: *n.* one who performs servile work. [SERVANT].

★**men-in-gi-tis** (*men-in-jī'tis*), *n.* inflammation of the meninges.

Menominee (*mē-nom'i-nē*) **river, Wis.** From an Indian tribe, the *Malominees* or *Menominees*, their derivative name being *Monomonick*, "wild rice," or *Monomoniking*, "in the place of wild rice."

men-su-ra-tion (*men-sū-rā'shun*), *n.* the act or process of taking the measure or dimensions of anything: measurement.

men-tal (*'tal*), *adj.* pertaining to the mind.

men-thol (*'thol*), *n.* a crystalline substance resembling camphor: used as a counter-irritant.

men-tion (*'shun*), *n.* a brief notice; casual remark; hint: *v. t.* to speak briefly of; name.

men-tor (*'tẽr*), *n.* a wise and faithful counselor: from *Mentor*, the friend and tutor of Ulysses.

★**me-nu** (*me-nü'*), *n.* a bill of fare.

mer-can-tile (*mẽr'kan-til*), *adj.* commercial.

Syn. MERCANTILE, commercial. *Mercantile*, from *merchandise*, respects the actual transaction of business, or a transfer of *merchandise* by sale or purchase; *commercial* comprehends the theory and practice of *commerce;* hence we speak in a peculiar manner of a *mercantile* house, a *mercantile* situation, and the like; but of a *commercial* education, a *commercial* people, and the like.

mer-ce-na-ry (*'sē-nā-ri*), *n.* [*pl.* mercenaries (*-riz*)], a soldier hired into foreign service; one who serves for pay: *adj.* serving for pay or reward; venal; sordid.

mer-chan-dise (*'chan-dīz*), *n.* goods, wares, or commodities, bought and sold.

mer-chant (*'chant*), *n.* one who traffics or carries on trade on a large scale: *adj.* pertaining to, or employed in, trade.

mer-ci-ful (*mẽr'si-fool*), *adj.* full of mercy; tenderhearted; compassionate. [HUMANE.]

mer-ci-less (*-les*), *adj.* destitute of mercy; unfeeling; cruel.

mer-cu-ri-al (*-kū'ri-al*), *adj.* active; volatile; fickle; pertaining to, made of, or caused by, mercury.

mer-cu-ry (*kū-ri*), *n.* quicksilver.

mer-cy (*'si*), *n.* [*pl.* mercies (*'siz*)], the disposition to forgive, spare, or pity; clemency.

Syn. MERCY, benevolence, benignity, blessing, clemency, compassion, favor, forbearance, forgiveness, gentleness, grace, kindness, lenience, leniency, lenity, mildness, pardon, pity, tenderness. *Mercy* is the exercise of less severity than one deserves, or in a more extended sense. *Grace* is *favor*, *kindness*, or *blessing* shown to the undeserving; *forgiveness*, *mercy*, and *pardon* are exercised toward the ill-deserving. There may be *mercy* without *pardon*, as in the mitigation of sentence. *Clemency* is a colder word than *mercy*, and without its religious associations, signifying *mildness; leniency* or *lenity* denotes an easy-going avoidance of severity; these words are more general and less magisterial than *clemency;* we should speak of the *leniency* of a parent, the *clemency* of a conqueror.

mere (*mēr*), *adj.* [*superl.* merest], such and no more; simple; entire; absolute.

Meredith (*mer'ē-dith*). The English form of the Welsh name *Meredydd*.

mer-e-tri-cious (*mer-ē-trish'us*), *adj* pertaining to prostitutes; lustful; alluring by false show.

merge (*mẽrj*), *v. t.* to absorb or swallow up: *v. i.* to be swallowed up or lost.

mer-ger (*mẽr'jẽr*), *n.* the legal consolidation of two estates, forming them into one estate.

me-rid-i-an (*mē-rid'i-an*), *adj.* pertaining to midday: *n.* midday; an imaginary great circle of the sphere passing through the poles of the heavens and the zenith and nadir of any given place, and cutting the equator at right angles.

★**me-ringue** (*mē-rang'*), *n.* a light confection of eggs, sugar, cream, or jam.

me-ri-no (*mē-rē'nō*), *n.* [*pl.* merinos (*'nōz*)], a breed of sheep with a fine wool.

mer-it (*mer'it*), *n.* excellence; deserved reward: *pl.* essential character: *v. t.* to earn; be entitled to. [DESERT].

mer-i-to-ri-ous (*mer-i-tō'ri-us*), *adj.* having merit; deserving of reward or praise.

mer-lin (*mẽr'lin*), *n.* a small falcon.

Merlin. The English form of the British name *Merddhin*. Probably derived through the French.

mer-maid (*mẽr'mād*), *n.* a fabled marine creature having the upper part like a woman and the lower part like a fish.

Merrimack (*mer'ri-mak*). River, county, and town in Hillsboro county, New Hampshire. From the Indian, meaning "sturgeon," or "swift water."

mer-ri-ment (*'i-ment*), *n.* mirth; fun; frolic; gayety

mer-ry (*'i*), *adj.* [*comp.* merrier, *superl.* merriest], full of mirth and good humor; gay.

mer-ry-go-round (*mer'i-gō-round*), *n.* a circular frame fitted with wooden horses or seats, on which persons ride at fairs, etc.

Merthyr-Tydvil (*mẽr'thẽr tid'vil*). A town in South Wales. Named after the daughter of an ancient British king.

mesh (*mesh*), *n.* an opening or interstice of a net; brewer's grains.

mes-mer-ism (*mez'mẽr-izm*), *n.* the art of inducing an abnormal state of the nervous system in which the thoughts and actions of the patient are controlled by the will of the operator; animal magnetism.

mes-mer-ize (*-iz*), *v. t.* to induce the mesmeric state.

★**mesne** (*mēn*), *adj.* middle; intervening.

mess (*mes*), *n.* a number of persons who sit down to table together, especially soldiers or sailors; a state of dirt or confusion: *v. i.* to eat together.

mes-sage (*'āj*), *n.* a communication, written or verbal, sent from one person to another.

mes-sen-ger (*'en-jẽr*), *n.* one who conveys a message.

Mes-si-ah (*-ī'ȧ*), *n.* Christ, the Anointed One. [Also *Messias*.]

me-tab-o-lism (*mē-tab'ō-lizm*), *n.* the continuous process by which living cells or tissues undergo chemical change.

met-a-car-pus (*met-ȧ-kär'pus*), *n.* that part of the hand which is between the wrist and the fingers.

met-al (*'al*), *n.* an elementary substance having certain physical characteristics, as luster, ductility, malleability, insolubility, is fusible by heat, and a conductor of electricity.

me-tal-lic (*mē-tal'ik*), *adj.* pertaining to, consisting of, or like, metal.

met-al-lur-gy (*met'al-ẽr-ji*), *n.* the art or process of working metals and of separating them from their ores.

met-a-mor-phism (*met-ȧ-môr'fizm*), *n.* the process by which stratified rocks under pressure, heat, chemical action, etc., have changed from their original structure, as limestone to marble.

met-a-mor-pho-sis (*'fō-sis*), *n.* change of form, shape, or structure; transformation, as of a chrysalis into a butterfly. [TRANSFIGURE.]

met-a-phor (*'ȧ-fẽr*), *n.* a figure of speech by which one word is employed for another of which it is the image; a compressed simile.

met-a-phys-ics (*-fiz'iks*), *n.* mental philosophy.

me-temp-sy-cho-sis (*mē-temp-si-kō'sis*), *n.* transmigration of the soul after death into the body of another man or lower animal.

me-te-or (*mē'tē-ẽr*), *n.* a transient luminous body in the sky; falling or shooting star.

me-te-or-ic (*-or'ik*), *adj.* pertaining to, formed of, or like, a meteor.

me-te-or-ite (*'tē-ẽr-īt*), *n.* a stone or metallic body which has fallen upon the earth from space.

me-te-or-ol-o-gist (*-ol'ō-jist*), *n.* one who is skilled in meteorology.

me-te-or-ol-o-gy (*-ji*), *n.* the science of the atmosphere and its various phenomena.

me-ter (*mē'tẽr*), *n.* an instrument for registering the measurement of the substance passing through it.

me-ter, me-tre, *n.* a rhythmic arrangement of syllables in verse; unit of length in the decimal system equal to 39.37 inches.

me-thinks (*mē-thingks'*), *v. i.* [*p. t.* methought], it appears, or seems, to me.

meth-od (*meth'od*), *n.* regular arrangement of things; system; order; classification.

me-thod-ic-al (*mē-thod'i-kal*), *adj.* characterized by, or arranged with regard to, method; systematic.

Methuselah (*mē-thū'sē-lȧ*). Hebrew, "driving away death." Fr., *Mathusalem;* Lat., *Methusela*.

meth-yl (*meth'il*), *n.* the hydrocarbon radical of methyl alcohol, or wood spirit.

me-tre. See *meter*.

★**met-ric** (*met'rik*, not *mē'trik*), *adj.* pertaining to the decimal system of weights and measures.

met-ric-al (*'ri-kal*), *adj.* pertaining to meter, measurement, or rhythm.

met-ro-graph (*'rō-grȧf*), *n.* an apparatus for indicating the mileage run by a locomotive, and the number and time of stoppages at stations, etc.

met-ro-nome (*'rō-nōm*), *n.* an instrument which beats musical time by means of a short pendulum.

me-trop-o-lis (*mē-trop'ō-lis*), *n.* the capital or chief city of a kingdom or country.

met-ro-pol-i-tan (*met-rō-pol'i-tan*), *adj.* pertaining to the capital city of a kingdom or country, or to an archbishopric.

met-tle (*met'l*), *n.* constitutional ardor or spirit; fortitude.

met-tle-some (*-sum*), *n.* high spirited.

Metz. A city of Germany. Named from the *Meomatrici*, a tribe.

mew (*mū*), *n.* the cry of a cat; a sea gull: *pl.* stables for carriage horses: *v. t.* to shed or molt (the feathers): *v. i.* to cry like a cat.

Mexico. The modern Spanish spelling is *Mejico*. It took its name from a temple of *Mexitl*, the Aztec war god. A republic of North America.

Mexico, Gulf of. A large gulf of the Atlantic lying south of the United States and east of Mexico.

mez-zo-tint (*mez'ō-tint*), *n.* a variety of copper engraving. [Also *mezzotinto*.]

Miami (*mi-ȧ'mi, mī-am'i*). County in Indiana, Kansas, and Ohio, city in Dade county, Florida, and Saline county, Missouri, town in Ottawa reservation, Indian territory, and river in Florida and Ohio.

mi-ca (*mī'kȧ*), *n.* a mineral divisible into thin transparent plates.

Michael (*mī'kel, mī'kā-el*). From the Hebrew, *Miykhael*, from *miy-k'-El*, "who is like God." Fr., *Michel;* Ger., *Michael;* Hungarian, *Mihaly;* It., *Michele;* Lat., *Michael;* Polish, *Michal;* Port., *Miguel;* Russ., *Mikhail;* Sp., *Miguel*.

Michigan (*mish'i-gan*). One of the middle western states of the Union, named from the lake on its western border, the Indian word, signifying "a weir of fish," given the lake from its fancied resemblance to a fish-trap.

micro, a *prefix* meaning *small*, as *microcosm*, a small universe or community.

mi-crobe (*mī'krōb*), *n.* a minute microscopical organism found in the blood of animals, especially those suffering from disease.
mi-cro-cosm. See under *micro.*
mi-cro-cous-tic (*-kous'* or *-kōōs'tik*), *adj.* pertaining to, or serving to increase, indistinct sounds: *n.* an instrument for the deaf, to augment faint sounds.
mi-crom-e-ter (*-krom'ē-tĕr*), *n.* an instrument for measuring minute distances, or apparent diameters.
mi-cro-scope (*'krō-skōp*), *n.* an optical instrument for magnifying minute objects so as to render them visible for purposes of investigation.
★**mi-cros-co-py** (*mī-kros'kō-pi*), *n.* the use of the microscope; microscopic investigation.
mid (*mid*), *adj.* middle: *prefix*, as *mid*day: *n.* a midshipman.
mid-die (*'l*), *adj.* equally distant from the extremes.
mid-dling (*'ling*), *adj.* of middle rank, size, or quality; moderate: *n. pl.* the coarser part of flour.
mid-dy (*'di*), *n.* [*pl.* middies (*'diz*)], a midshipman.
mid-riff (*'rif*), *n.* the diaphragm separating the cavity of the chest from the stomach.
midst (*midst*), *n.* the middle.
mid-wife (*mid'wīf*), *n.* a woman who assists at childbirth: *v. t.* to assist in childbirth.
mien (*mēn*), *n.* external appearance; air; look; carriage.
might (*mīt*), *n.* power; strength; force: *p. t.* of *may.* [POWERFUL.]
mi-gnon-ette (*min-yun-et'*), *n.* a fragrant annual with greenish flower and orange-colored stamens.
mi-grate (*mī'grāt*), *v. i.* to remove or pass from one place of abode or resort to another; roving; nomadic. [EMIGRATE.]
Milan (*mil'an, mil-an'*). A city of northern Italy. The French and English form of the Italian *Milano*, called *Mailand* in German, is a corruption of the Celto-Roman name *Mediolanum*, the capital of the Insubrian Gauls, which signified the town in the "middle of the plain," *lanum* being the equivalent of the Latin *planum.*
milch (*milch*), *adj.* yielding milk.
mild (*mild*), *adj.* gentle in temper and disposition; gentle; soft. [MERCY.]
mil-dew (*mil'dū*), *n.* a disease of plants produced by small fungi; spots of mold on cloth, etc., caused by damp: *v. t.* to taint with mildew.
Mildred (*mil'dred*). A female name, from Anglo-Saxon *mild-red*, "mild in counsel." Lat., *Mildreda.*
mile (*mīl*), *n.* a measure of length varying in different countries: the English statute mile, in use in this country, contains 1,760 yds., the geographical or nautical mile 1-60th of a degree of latitude or 2,025 yds. (nearly).
mile-age (*'āj*), *n.* an allowance for expenses per mile; length in miles.
Miles. From *Milesius*, Latinized from the Irish *mile, milead*, "a soldier," "a champion." Gaelic, *milidh*, "a hero," a "renowned person."
Millicent. A feminine name, which in Latin is found written *Milicentia, Melissa*, and *Melitta.* It comes from the Greek, which signifies both a "bee" and "honey."
mil-i-tant (*mil'i-tant*), *adj.* warlike; fighting; serving as a soldier.
mil-i-ta-ry (*'i-tā-ri*), *adj.* pertaining to soldiers or to arms; warlike; martial. [MARTIAL.]
mil-i-tate (*'i-tāt*), *v. i.* to be, or stand, opposed; operate against (with *against*).
milk (*milk*), *n.* a white fluid secreted by the mammary glands of female mammals for the nourishment of their young: *v. t.* to draw milk from.
milk-sop (*'sop*), *n.* an effeminate, weak person.
mill (*mil*), *n.* a machine for grinding and reducing a substance to small particles; a manufactory.
Milledgeville, Georgia. Named after Governor Milledge, a soldier of the Revolution.
mil-len-ni-al (*mil-len'i-al*), *adj.* of, or pertaining to, the millennium.
mil-len-ni-um (*'i-um*), *n.* the space of 1,000 years, especially that period during which Satan will be bound and Christ will reign on earth.
mil-ler (*'ĕr*), *n.* one who keeps or works a flour mill.
milli, a *prefix* meaning *1,000th part of*, as *milli*ampere, the 1,000th part of an ampere.
mil-li-ner (*mil'i-nĕr*), *n.* one who makes women's bonnets, hats, headdresses. etc.
mil-li-ner-y (*'i-ner-i*), *n.* the articles made and sold by a milliner.
mil-lion (*'yun*), *n.* the number of ten hundred thousand; an indefinitely large number.
mil-lion-aire (*-ār'*), *n.* a person who is worth a million; one very rich.
mill-race (*'rās*), *n.* a current of water that drives a mill.
mill-stone (*'stōn*), *n.* one of two flat cylindrical stones for grinding grain.
Milwaukee (*mil-waw'kē*), **Wis.** Named from the river, which was called by the Algonquins *Minnwaukee*, or *Me-ne-wau-kee*, "good earth," "good country," "rich or beautiful country."
mim-ic (*mim'ik*), *adj.* inclined to imitate; imitative: *n.* one who mimics or imitates: *v. t.* to imitate, or ridicule by imitation.
mim-ic-ry (*-ri*), *n.* ludicrous imitation for sport or ridicule; close external likeness.
Mina. Abbreviated from *Wilhelmina*, or from the English form, *Williamina.*
min-a-ret (*min'ā-ret*), *n.* a tall, slender turret from which a crier calls the people to prayers.
mince (*mins*), *v. t.* to cut or chop into minute pieces; extenuate or suppress.
mince-meat (*'mēt*), *n.* meat chopped very fine, especially with suet, raisins, lemon peel, etc.
Mincing lane. A street in London connecting Fenchurch street with Great Tower street, the center of colonial (wholesale) trade.
mind (*mīnd*), *n.* the intellectual or rational faculty in man; the understanding or intellect; soul.
mind-ful (*'fool*), *adj.* bearing in mind; observant; attentive.
mine (*mīn*), *poss. pron.* belonging to me: *n.* an excavation in the earth from which minerals, precious stones, etc., are extracted: *v. i.* to carry on mining operations: *v. t.* to dig out; excavate.
min-er-al (*min'ĕr-al*), *n.* any inorganic body found on the surface of, or in, the earth: *adj.* pertaining to, consisting of, or impregnated with, a mineral.
min-er-al-o-gy (*-al'ō-ji*), *n.* the science of minerals.
Minerva (*mi-nĕr'vā*). So named from *Minerva*, goddess of wisdom, war, and all the liberal arts.
min-gle (*ming'gl*), *v. t.* to intermix; join or combine; *v. i.* to be mixed or united with. [MIX.]
min-i-a-ture (*min'i-ā-tūr*), *n.* a very small painting, especially a portrait on ivory, etc.: *adj.* diminutive: minute.
min-im (*'im*), *n.* the smallest liquid measure; a single drop.
min-i-mize (*min'i-mīz*), *v. t.* to reduce to a minimum.
min-i-mum (*'mum*), *n.* [*pl.* minima (*-mā*)], the least quantity; trifle.
min-ing (*min'ing*), *p. adj.* pertaining to mines; burrowing in the earth: *n.* the act of making mines or working them.
min-ion (*min'yun*), *n.* a size of type intermediate between nonpareil and brevier (see type); a servile flatterer or dependent.
min-is-ter (*'is-tĕr*), *n.* a servant; ambassador; a clergyman or pastor of a church authorized to preach and administer the sacraments: *v. t.* to supply; administer: *v. i.* to serve in some office, clerical or lay.
Syn. MINISTER, agent. The *minister* gives his counsel, and exerts his intellectual powers in the service of another; but the *agent* executes the orders or commissions given him; a *minister* is employed by government in political affairs; an *agent* is employed by individuals in commercial and pecuniary affairs.
min-is-te-ri-al (*-tē'ri-al*), *adj.* pertaining to ministry or service, official or clerical.
min-is-tra-tion (*-trā'shun*), *n.* the act of ministering; administration; service.
min-is-try (*'is-tri*), *n.* [*pl.* ministries (*-triz*)], the agency or service of a minister of religion; the office, duties, or functions of a minister of state.
mink (*mingk*), *n.* a carnivorous mammal allied to the weasel, yielding a valuable fur.
Minneapolis, Minn. So called from Dakota Indian words, *minni*, "water," *ha*, "curling," and the Greek word *polis*, "a city," namely "city of the curling water," alluding to the falls of St. Anthony.
Minnehaha (*min-nē-hā'hā*) **river, Minn.** A Dakota Indian compound word *minne*, "water," *rara*, "to laugh," *Minnerara.* Hennepin, in 1680, from a false pronunciation, gave the present ending, "haha."
Minnesota (*min-nē-sō'tà*). One of the north central states of the Union, named from the St. Peter's river, the Indian name of which was *Minnisotah, minni*, "water," *sotah*, "muddy or slightly turbid."
min-now (*'ō*), *n.* a fresh-water fish of small size.
mi-nor (*mī'nĕr*), *adj.* smaller; less; inconsiderable; *n.* one of either sex who is under the age of 21.
Minorca (*mi-nôr'kà*) **island.** In accordance with the Latin *minor*, "the lesser island." The second largest of the Balearic islands.
mi-nor-i-ty (*mi-nor'i-ti*), *n.* [*pl.* minorities (*-tiz*)], the smallest number: opposed to majority; the state of being a minor.
min-o-taur (*min'ō-tawr*), *n.* in classic mythology, a monster with the head of a bull and the body of a man.
min-strel (*'strel*), *n.* a poet or musician.
mint (*mint*), *n.* the place where money is coined by government authority; an odoriferous plant yielding a pungent essential oil: *v. t.* to coin or stamp (money).
★**min-u-et** (*min'ū-et*, not *min-ū-et'*), *n.* a slow graceful dance; music for such a dance.
mi-nus (*mī'nus*), *n.* the sign (—) of subtraction.
mi-nute (*-nūt'*), *adj.* very small; precise: *n.* (*min'it*) 1-60th part of an hour or of a degree; an official note; memorandum. [CIRCUMSTANTIAL.]
mi-nu-ti-æ (*mi-nū'shi-ē*), *n. pl.* smaller or minor details or particulars.
minx (*mingks*), *n.* a pert, wanton girl.
Mira. See *Myra.*
mir-a-cle (*mir'ā-kl*), *n.* a supernatural occurrence or act; wonder or marvel. [WONDER.]
mi-rac-u-lous (*mi-rak'ū-lus*), *adj.* performed supernaturally; wonderful.
★**mi-rage** (*mē-razh'*), *n.* an optical atmospheric illusion by which the image of a distant object is seen as if inverted.
mire (*mīr*), *n.* deep mud; wet clayey earth: *v. t.* to soil with mire; plunge and fix in mud: *v. i.* to sink in mud.
Miriam (*mir'i-am*). From the Hebrew *Miryam*, the etymology of which is doubtful.
mir-ror (*mir'ĕr*), *n.* a looking-glass; speculum; pattern: *v. t.* to reflect as in a mirror.
mirth (*mĕrth*), *n.* noisy gayety; social merriment; hilarity; jollity. [JOY.]
mis, *prefix* meaning *wrong, wrongly, ill, error, diverg-ence.*
mis-ad-ven-ture (*mis-ad-ven'tūr*), *n.* an unlucky accident; misfortune. [ACCIDENT.]
mis-al-li-ance (*-a-li'ans*), *n.* an improper alliance by marriage.
mis-an-thrope (*'an-thrōp*), *n.* a hater of mankind.
mis-ap-pre-hend (*-ap-rē-hend'*), *v. t.* to misunderstand; misconceive.
mis-carry (*-kar'i*), *v. i.* to go wrong; be unsuccessful; bring forth young prematurely.
mis-cel-la-ny (*'e-lā-ni*), *n.* [*pl.* miscellanies (*-niz*)], a mixture of various kinds.
mis-chance (*-chans'*), *n.* misfortune; mishap. [CALAMITY.]
mis-chief (*'chif*), *n.* harm; injury; hurt; damage; misfortune.
★**mis-chie-vous** (*'chē-vus*), *adj.* producing injury or damage; hurtful: inclined to mischief.
mis-con-ceive (*-kon-sēv'*), *v. t.* to conceive wrongly; misjudge; misapprehend.
mis-con-cep-tion (*-sep'shun*), *n.* false opinion; misapprehension.
mis-cre-ant (*'krē-ant*), *n.* an unscrupulous villain; vile wretch: *adj.* unscrupulous.
mis-de-mean-or (*-dē-mēn'ĕr*), *n.* evil conduct; a crime less than a felony.
mi-ser (*mī'zĕr*), *n.* a man who denies himself the comforts of life to hoard up money. [FRUGALITY.]
mis-er-a-ble (*miz'ĕr-a-bl*), *adj.* wretched; very unhappy; worthless; despicable; very poor.
mis-er-y (*'ĕr-i*), *n.* extreme pain, distress, or misfortune; great unhappiness.
mis-fit (*mis'fit*), *n.* nonfitting clothing; a person in a position for which he is unfitted.
mis-for-tune (*-fôr'tūn*), *n.* bad fortune, calamity. [CALAMITY, ACCIDENT.]
mis-giv-ing (*-giv'ing*), *n.* evil premonition. [ANXIETY.]
mis-hap (*-hap'*), *n.* evil accident. [CALAMITY, ACCIDENT.]
mis-lay (*mis-lā'*), *v. t.* to lose.
mis-place (*mis-plās'*), *v. t.* to put in a wrong place; place on an improper or undeserving object.
mis-rep-re-sent (*-rep-rē-zent'*), *v. t.* to represent falsely or incorrectly, willfully, or through carelessness.
miss, *n.* a young unmarried girl or woman; failure to hit, reach, perceive, or obtain: *v. t.* to fail to hit. [LOSE.]
mis-sal (*'al*), *n.* the book containing the order of service for the Roman Catholic mass.
mis-sile (*mis'il*), *n.* a weapon or thing thrown, or designed to be thrown, to injure another.
mis-sion (*mish'un*), *n.* the act of sending, or state of being sent with certain powers, especially to propagate religion; embassy.
mis-sion-a-ry (*-ā-ri*), *n.* a person who is sent to propagate religion, especially in foreign parts: *adj* pertaining to missions or missionaries.
Mississippi. State of the Union, county in Arkansas and Missouri, and the largest river in the United States. An Indian word, meaning "great water," or "gathering in of all the waters," and "an almost endless river spread out."
mis-sive (*'iv*), *n.* a letter or message: *adj.* sent specially.
Missoula (*mi-zōō'là*). County, river, and city in Montana. The name is said to mean the same as *Missouri*, "muddy water."
Missouri (*mis-sōō'ri, miz-zōō'ri*, commonly *mis-ōō'rà*). A state of the Union, named from river of the same name. *Mis-souri*, compound word, from two very different languages—*mis* (Algonquin), "great," *souri* (Dakota, commonly called Sioux), meaning "muddy;" in Eng., "big muddy."
mist (*mist*), *n.* visible watery vapor in the atmosphere, at or near the earth's surface; fog: *v. i.* to rain in minute drops.
mis-take (*mis-tāk'*), *v. t.* [*p. t.* mistook, *p. p.* mistaken, *p. pr.* mistaking], to misunderstand; misconceive; misjudge: *v. i.* to err in judgment or opinion: *n.* an error. [ERROR.]
Mis-ter (*'tĕr*), *n.* a title of address prefixed to a man's name (abbreviated in writing *Mr.*).
★**mis-tle-toe** (*miz'l-tō*, not *mis'l-tō*), *n.* an evergreen plant parasitic on apple trees, and on the oak.
mis-tress (*mis'tres*), *n.* a woman who exercises authority or governs; sweetheart.
mist-y (*mist'i*), *adj.* characterized by, or obscured with, mist; dim; obscure; clouded.
mis-un-der-stand (*mis-un-dĕr-stand'*), *v. t.* to take in a wrong sense; misconceive.
mis-use (*mis-ūz'*), *n.* wrong use. [ABUSE.]
mite (*mīt*), *n.* a minute insect of the division Arcadia; a very small object or quantity.
mi-ter, mi-tre (*mī'tĕr*), *n.* the headdress of the high priest of the Jews; the junction of moldings at an angle of 45 degrees: *v. t.* to adorn with a miter; join at 45 degrees.
mit-i-gate (*mit'i-gāt*), *v. t.* to render less severe, rigorous or painful; soften; alleviate. [ALLAY.]
mit-ten (*'n*), *n.* a fingerless winter glove; a fingerless cover for the hand or wrist.
mix (*miks*), *v. t.* to unite or blend into one mass or compound; join: *v. i.* to associate; mingle.
Syn. MIX, mingle, blend, confound. *Mix* is here a general and indefinite term, signifying simply to put together; but we may *mix* two or

several things; we *mingle* several objects; things are *mixed* so as to lose all distinction; but they may be *mingled* and yet retain a distinction; to *blend* is only partially *to mix*, as colors *blend* which fall into each other; *to confound* is *to mix* in a wrong way, as objects of sight are *confounded* when they are erroneously taken to be joined.

mix-ture (*miks'tūr*), *n.* the state of being mixed; a compound or mass formed by mixing.

miz-zen (*miz'n*), *n.* the hindmost of the fore-and-aft sails of a vessel.

mne-mon-ics (*nē-mon'iks*), *n. pl.* the art or science of assisting the memory.

moan (*mōn*), *v. i.* to utter a low sound from, or as from, pain or sorrow: *n.* a low, prolonged expression of sorrow or pain. [GROAN.]

moat (*mōt*), *n.* a ditch around a fortress, etc.: *v. t.* to surround with a moat.

mob (*mob*), *n.* the populace; a rude disorderly crowd: *v. t.* to attack in a disorderly crowd; crowd about and annoy.

mo-bile (*mō'bil*), *adj.* easily moved. [ACTIVE.]

Mobile (*mō-bēl'*). A town in Alabama from which Mobile bay takes its name.

mob-i-lize (*mōb'i-līz*), *v. t.* to call (troops) into active service.

moc-ca-sin (*mok'a-sin*), *n.* a deerskin sandal or shoe worn by the North American Indians; a poisonous American snake.

mo-cha (*mō'kȧ*), *n.* a kind of coffee from Mocha, a seaport of Arabia.

mock (*mok*), *v. t.* to ridicule; mimic in sport, contempt, or derision: *adj.* false; counterfeit.

mo-dal (*mō'dal*), *adj.* pertaining to mode or form; indicating some mode of expression.

mo-dal-i-ty (*-dal'i-ti*), *n.* the fact of being a mode; in law, the quality of being suspended by a condition.

mode (*mōd*), *n.* form; custom; fashion; manner; variety of a syllogism.

mod-el (*mod'el*), *n.* a pattern of something to be made, or reproduced; exam le for imitation: *adj.* serving as a pattern or model: *v. t.* to form after a model. [COPY.]

mod-er-ate (*mod'ẽr-āt*), *v. t.* to keep within bounds; lessen: *v. i.* to become less violent or intense: preside as a moderator: *adj.* calm; reasonable; mild.

mod-ern (*'ẽrn*), *adj.* pertaining to the present time; recent: *n. pl.* people of modern times. [NEW.]

mod-est (*'est*), *adj.* restrained by a due sense of propriety; diffident; decent; chaste.

Syn. MODEST, bashful, diffident. *Modesty* is a proper distrust of ourselves; *bashfulness* is a state of feeling which betrays itself in a downcast look or a timid air; *diffidence* is a culpable distrust; *diffidence* altogether unmans a person, and disqualifies him for his duty. [Se. *humble.*]

mod-i-fi-ca-tion (*-i-fi-kā'shun*), *n.* the act of modifying; slight change in form.

mod-i-fy (*'i-fī*), *v. t.* tb change slightly in form; vary; qualify; reduce.

★**mo-diste** (*mō-dēst'*), *n.* a fashionable dressmaker.

mod-u-late (*mod'ū-lāt*), *v. t.* to vary the sound of; change the key or mode of: *v. i.* to pass from one musical key to another.

Mo-ham-me-dan (*mō-ham'ed-an*), *adj.* pertaining to Mohammed, or to Mohammedanism: *n.* an adherent of Mohammedanism.

Mohawk. River, township, and village in Herkimer county, New York, said by one authority to have been named for a tribe of Indians, the word meaning "eats what lives," indicating that they were cannibals.

Mohegan (*mō-hē'gan*) **lake, N. Y.** Named from a tribe of Indians whose name was from *maingan*, "a wolf."

moi-e-ty (*moi'e-ti*), *n.* one of two equal parts or shares; half.

moire (*mwär*), *n.* watered silk.

moist (*moist*), *adj.* containing water or other liquid; humid; damp.

mois-ture (*mois'tūr*), *n.* a moderate degree of dampness; slight wetness.

Syn. MOISTURE, humidity, dampness. *Moisture* is used in general to express any small degree of infusion of a liquid into a body; *humidity* is employed scientifically to describe the state of having any portion of such liquid; hence we speak of the *moisture* of a table, the *moisture* of paper, but the *humidity* of the air, or of a wall that has contracted moisture of itself. *Dampness* is that species of *moisture* that arises from the gradual contraction of a liquid in bodies capable of retaining it; in this manner a cellar is *damp*.

mo-lar (*mō'lẽr*), *n.* a double tooth or grinder: *adj.* used for, and capable of, grinding.

mo-las-ses (*-las'ez*), *n.* treacle.

mold, mould (*mōld*), *n.* a minute fungoid growth of decaying animal or vegetable matter; the matrix in which anything is cast or shaped: *v. t.* fashion in, or as in, a mold. [FORM.]

Moldavia (*mol-dā'vi-ȧ*). The country traversed by the Moldau, a section of the Roumania.

mold-er, mould-er (*mōld'ẽr*), *v. t.* to turn into dust by natural decay: *v. i.* to crumble to mold; waste away by degrees: *n.* one who molds.

mold-ing, mould-ing (*'ing*), *n.* the act of molding; anything made in or by a mold.

mole (*mōl*), *n.* a dark-colored mark or small protuberance on the skin; a small soft-furred burrowing animal.

mol-e-cule (*mol'ē-kūl*), *n.* the smallest quantity of an element or compound which can exist separately.

mo-lest (*mō-lest'*), *v. t.* to annoy or interfere with; trouble; vex. [INCONVENIENCE, ABUSE, TROUBLE.]

mol-li-fy (*mol'i-fī*), *v. t.* to calm; soften; assuage.

Molly. A baptismal name derived from *Mary.*

molt, moult (*mōlt*), *v. i.* to cast the feathers, hair, skin, etc.

mol-ten (*mōl'tn*), *adj.* melted; made of melted metal.

mo-ment (*mō'ment*), *n.* the smallest possible portion of time; an instant. [INSTANT.]

mo-men-ta-ry (*'men-tā-ri*), *adj.* lasting only for, or done in, a moment.

mo-men-tous (*-men'tus*), *adj.* very important.

mo-men-tum (*-men'tum*), *n.* impetus; the product of the mass by the velocity of a moving body.

mon-ad (*mon'ad*), *n.* an ultimate atom; a simple primary constituent of matter.

Monadnock (*mō-nad'nok*). A mountain in New Hampshire. An Indian word, meaning "spirit place," or, possibly, "bad," as signifying the difficulty of the ascent.

mon-arch (*'ärk*), *n.* a supreme ruler; sovereign; the chief of its class or kind: *adj.* supreme.

mon-arch-y (*'ärk-i*), *n.* [*pl.* monarchies (*-iz*)], government in which the supreme power, either absolute or limited, is vested in a monarch, kingdom, or empire.

mon-as-ter-y (*'ȧs-ter-i*), *n.* a home for religious retirement for men. [CLOISTER.]

mon-as-tic (*mon-as'tik*), *adj.* pertaining to monasteries, monks, their rules, etc. [Also *monastical.*]

Monday. The second day of the week. The "day of the moon," so called from Lat. name, *dies lunæ.*

mon-e-ta-ry (*mun'ē-tā-ri*), *adj.* pertaining to money. [FINANCIAL.]

mon-e-tize (*'ē-tīz*), *v. t.* to convert into money; give a standard or current value to.

mon-ey (*mun'i*), *n.* coin; specie; gold, silver, or other metal stamped by legal authority and used as currency. The first silver money was coined at Rome, A. U. C. 482. The mint was in the temple of Juno Moneta, and this circumstance occasioned the origin of our word *money.*

Syn. MONEY, cash. *Money* is applied to everything which serves as a circulating medium; *cash* is, in a strict sense, put for coin only.

mon-eyed (*'id*), *adj.* possessed of money; wealthy.

mon-grel (*mung'grel*), *adj.* of a mixed breed or kind: *n.* anything of mixed breed or kind.

Monica (*mon'ē-ka*). A feminine name. It may be from Italian *monaca*, "a nun," or a feminine formed from its root, Latin, *monachus*, "a monk."

mon-ism (*mon'izm*), *n.* the doctrine of the unity of substance; the identity of matter and mind.

mon-ist (*'ist*), *n.* a supporter or advocate of monism.

mo-ni-tion (*mō-nish'un*), *n.* admonition; warning; notice.

mon-i-tor (*mon'i-tẽr*), *n.* one who warns or admonishes; a genus of large lizards.

monk (*mungk*), *n.* a man who devotes himself exclusively to a religious life and lives in community with others similarly bound by vows to chastity, obedience, and poverty.

mon-key (*mung'ki*), *n.* [*pl.* monkeys (*'kiz*)], a quadrumanous mammal, of the species Simiidæ; a name for various mechanical contrivances.

monk-ish (*mungk'ish*), *adj.* pertaining to, or resembling, a monk; monastic.

mono, a *prefix* meaning *one, single, alone:* as *mono*basic: *adj.* having only a single atom or equivalent of base, *mono*cle, an eyeglass for one eye. [Also *mon.*]

Monocacy (*mō-nŏk'-ȧ-si*) **river, Md.** From the Indian name *menagassi*, "creek of many bends."

mo-noc-u-lar (*mō-nok'ū-lẽr*), *adj.* adapted for use for one eye; with one eye only.

mo-nog-a-my (*mō-nog'ȧ-mi*), *n.* marriage of one wife only; marrying only once.

mon-o-gram (*mon'ō-gram*), *n.* a cipher or character formed by the interweaving of two or more letters.

mon-o-graph (*'ō-grȧf*), *n.* a paper or treatise written on one particular subject or some branch of it.

mon-o-lith (*'ō-lith*), *n.* a pillar or column formed of a single stone.

mon-o-logue (*'ō-log*), *n.* a dramatic scene in which one person only speaks; soliloquy.

mon-o-ma-ni-a (*-mā'ni-ȧ*), *n.* mental derangement in regard to one subject only.

Monongahela (*mō-non-gȧ-hē'lȧ*) **river, Pa.** So called from the Indian name *menawngihella*, "falling-in bank," "a river without islands."

mon-o-plane (*mon'ō-plān*), *n.* a flying machine having one or more supporting surfaces on the same plane.

mo-nop-o-list (*mō-nop'ō-list*), *n.* one who has a monopoly, or monopolizes.

mo-nop-o-lize (*'ō-līz*), *v. t.* to acquire the possession of so as to be the only seller; to engross the whole of.

mon-o-rail (*mon'ō-rāl*), *n.* a system of railway in which only one rail is used, the cars being kept erect by the sustaining force of swiftly revolving gyroscopes.

mon-o-the-ism (*mon'ō-thē-izm*), *n.* the doctrine of, or belief in, the existence of one God.

mon-o-tone (*mon'ō-tōn*), *n.* recitation on a single note or key: *v. t.* to recite (as prayers) on a single note.

mo-not-o-ny (*mō-not'ō-ni*), *n.* dull uniformity of tone; unvarying or irksome sameness.

mon-sieur (*mo-sẽr'*, French *mo-syẽ'*) *n.* [*pl.* messieurs (*mesh'yẽrz*, French *me-syẽ'*)], a French title of courtesy, equivalent to *Sir* or *Mr.*

mon-soon (*mon-sōōn'*), *n.* a periodical wind in the Indian Ocean.

mon-ster (*'stẽr*), *n.* anything out of the usual course of nature; prodigy; something greatly deformed. [WONDER.]

mon-stros-i-ty (*-stros'i-ti*), *n.* [*pl.* monstrosities (*-tiz*)], the state or quality of being monstrous; an unnatural production.

mon-strous (*'strus*), *adj.* out of the common course of nature; wonderful; huge; horrible. [ENORMOUS, ABSURD.]

Montana (*mon-tä'nä*). Spanish *montana*, "a mountain," literally, a hilly country. A western state of the Union. Name proposed in 1864 by Hon. James M. Ashley, who was chairman of the committee on territories, suggested by territory's embracing such a large portion of the Rocky mountains and its spurs.

Montauk (*mon-tawk'*) **Point, N. Y.** So called from the Indian *manati-auke, manati*, "country," *auke*, "island," the "island country."

Mont Blanc (*mŏn blän'*). Means, "white mountain." The highest mountain of the Alps, situated on the frontiers of France and Italy, eternally covered with snow.

Monterey (*mon-te-rā'*), **Cal.** Named in 1603 by Vizcaino in honor of Monte Rey, viceroy of Spain, who had dispatched the expedition under Vizcaino.

Monte Rosa (*mon'te rō'sä*). Meaning "rosy mountain." The highest mountain of the Alps next to Mont Blanc.

Montgomery (*mont-gum'ẽr-i*), **Ala.** After General Richard Montgomery, who was killed at Quebec, Canada, 1775.

month (*munth*), *n.* one of the twelve divisions of the year, either calendar or lunar.

Montpelier (*mont-pē'li-ẽr*), **Vt.** From the French, translated a "little or lesser mountain," probably suggested from Montpellier, a town in France.

Montreal (*mont-rē-awl'*). A city in Quebec province, Canada. In 1535, Jacques Cartier, on his second voyage, ascended the St. Lawrence as far as Quebec, where he left his ship, and reached an Iroquois village called Hochelaga, perched on an eminence, which from its splendid position he called *Mont Royal*, the "royal mount," now *Montreal.*

mon-u-ment (*mon'ū-ment*), *n.* anything that perpetuates the memory of a person or event.

mon-u-men-tal (*-men'tal*), *adj.* pertaining to, or serving as, a monument; lasting.

moo (*mōō*), *v. i.* to make the noise of a cow; low: *n.* the lowing of a cow.

mood (*mōōd*), *n.* style; manner; temper of mind; variation in the form of a verb to express the manner of action or being. [HUMOR.]

mood-y (*'i*), *adj.* [*comp.* moodier, *superl.* moodiest], abstracted and pensive; out of temper; sad.

moon (*mōōn*), *n.* the satellite that revolves around the earth; satellite of a planet: *v. i.* to wander and look about in an abstracted and listless manner.

moon-sail (*'sāl*), *n.* a sail carried above a skysail. [Also *moonraker.*]

moon-shine (*'shīn*), *n.* moonlight; show without reality; smuggled spirits.

moon-stone (*'stōn*), *n.* a translucent stone of yellowish or yellow-white color exhibiting beautiful pearly reflections.

moon-struck (*'struk*), *adj.* lunatic.

moor (*mōōr*), *n.* an extensive tract of waste land covered with heather: *v. t.* to secure (a ship) by a cable and anchor.

moor-ing (*'ing*), *n.* the act of securing a vessel to a particular place; the cables, anchors, etc., laid at the bottom of a harbor.

moose (*mōōs*), *n.* a large North American deer resembling the European elk.

Moosehead lake, Me. Indian name *Kennebec*, meaning "long lake," also *Seboomook*, meaning "shape of the moose's head."

moot (*mōōt*), *v. t.* to propose for discussion: *v. i.* to argue or plead on a supposed case: *n.* a discussion on a supposed case: *adj.* subject to, or open for, discussion or debate.

mop (*mop*), *n.* an instrument for washing floors, decks: *v. t.* to rub or dry with a mop.

mope (*mōp*), *v. i.* to be silent, dull, or dispirited.

mo-raine (*mō-rān'*), *n.* a line of rocks and gravel at the edges and base of glaciers.

mor-al (*mor'al*), *adj.* pertaining to morality or morals; conformed to right; virtuous: *n. pl.* conduct of life; behavior. [MANNERS.]

mo-rale (*mō-räl'*), *n.* moral condition; that mental state which renders a man capable of endurance and of exhibiting courage in the presence of danger.

mo-ral-i-ty (*mō-ral'i-ti*), *n.* [*pl.* moralities (*-tiz*)], the doctrine or practice of the duties of life; ethics; virtue.

mor-al-ize (*mor'al-īz*), *v. t.* to apply or explain in a moral sense; render moral: *v. i.* to make reflections on good or evil.

mo-rass (*mō-rȧs'*), *n.* a swamp; fen.

Moravia (*mō-rā'vi-ȧ*). The country traversed by the Morava, a section of Austria-Hungary.

mor-bid (*mŏr'bid*), *adj.* pertaining to disease; sickly; unhealthy. [SICK.]

mor-dant (*môr'dant*), *adj.* biting into or fixing colors; sarcastic; caustic: *n.* a substance that serves to fix certain colors in dyeing.

Mordecai (*môr'dē-ki*). From the Hebrew, *Mord'khay*, which Tregelles derived from the Persian, meaning "little man," or from *Merodach*, "worshiper of Mars."

more (*môr*), *adj.* [*comp.* of many and much, *superl.* most], greater in number, quality, extent: *adv.* to a greater degree, etc.; again; *n.* a greater quantity, number.

mo-reen (*mô-rēn'*), *n.* a stout woolen embossed or figured fabric.

more-o-ver (*môr-ō'vẽr*), *adv.* besides; further.

Morgan. Some translate this name "by the sea," or "sea-dweller," or "seaman"; doubtless from Welsh *mor*, "the sea," *gan*, "bringing forth."

mor-ga-nat-ic (*môr-ga-nat'ik*), *adj.* noting the marriage of a man of royal rank with a woman of inferior degree, whose children are legitimate but cannot inherit their father's rank or possessions.

morgue (*môrg*), *n.* a place where the bodies of persons unknown found dead are exposed for identification.

mor-i-bund (*mor'i-bund*), *adj.* dying.

Moritz. See *Maurice.*

morn-ing (*môrn'ing*), *n.* the early part of the day: morn [*Poetry.*] *adj.* pertaining to, occurring, or performed, in, the morning.

mo-roc-co (*mō-rok'ō*), *n.* a fine kind of grained leather of goatskin or sheepskin.

Morocco. More correctly *Marocco.* The European name of the north African sultanate called by the natives *Maghrib el Aksa*, "the furthest west," or *El Gharb*, "the west."

mo-rose (*-rōs'*), *adj.* sullen; austere; gloomy.

mor-phi-a (*môr'fi-ā*), *n.* the narcotic principle of opium.

mor-phin-ism (*'fin-izm*), *n.* a morbid state occasioned by the excessive use of morphia.

mor-phol-o-gy (*-fol'ō-ji*), *n.* the science of the forms in the organisms of animals and plants.

mor-ris (*mor'is*), *n.* a Moorish dance with tambourines, bells, castanets.

mor-row (*'ō*), *n.* the next day.

mor-sel (*môr'sel*), *n.* a small piece.

mor-tal (*môr'tal*), *adj.* subject to death; causing death; fatal; punishable with death: *n.* a human being; man, as subject to death. [DEADLY.]

mor-tal-i-ty (*-tal'i-ti*), *n.* the condition of being mortal; mankind; frequency or number of deaths in ratio to population.

mor-tar (*'tẽr*), *n.* a vessel in which substances are pounded with a pestle; a building cement of lime, sand, and water.

mort-gage (*môr'gāj*), *n.* a deed conveying property to a creditor as security for the payment of a debt: *v. t.* to convey or make over to a creditor as security.

mor-ti-fi-ca-tion (*-ti-fi-kā'shun*), *n.* gangrene; subjugation of the passions and appetites by abstinence; humiliation.

mor-ti-fy (*'ti-fī*), *v. t.* produce gangrene in; subdue by penance or austerities; humble; depress; chagrin: *v. i.* to be subdued; practice austerities. [ABASE.]

mor-tise (*'tis*), *n.* a hole made in wood to receive a tenon: *v. t.* to cut or make a mortise in.

mort-main (*môrt'mān*), *n.* alienation of lands or tenements to any corporate body.

mor-tu-a-ry (*mor'tū-a-ri*), *n* [*pl.* mortuaries (*-riz*)], a building for the dead pending burial: *adj.* pertaining to the burial of the dead.

mo-sa-ic (*mō-zā'ik*), *adj.* pertaining to, or consisting of, mosaic work: *n.* a design, or form, of artistic work.

Moscow (*mos'kō*). Capital of Poland. Name derived from *Muscovea* or *Muscovy*, an old name for Russia, now called in Russian *Moskva*, from the small River Moskva on which it stands.

Moses (*mō'zez*). From the Greek *Mosheh*, "outdrawer, deliverer." Salmasius derives the name from the Coptic *moou-sē*, *moou*, "water," *sē*, "from," or "to take or draw."

mosque (*mosk*), *n.* a Mohammedan temple.

mos-qui-to (*mos-kē'tō*), *n.* an insect of the genus *Culex*, the females of which puncture the skin, causing great cutaneous irritation and pain.

Mosquito Coast, Nicaragua. Owes its name to the troublesome insects (Spanish *mosca*, from the Latin *musca*, "a fly") which infest this neighborhood.

moss (*mos*), *n.* soft, peaty moorland; a lichen.

most (*mōst*), *adj.* [*superl.* of more], greatest in number, quantity, or degree: *n.* the greatest number, part, quantity, or value.

mote (*mōt*), *n.* a very small particle.

moth (*môth*), *n.* a lepidopterous insect or its larvæ, which feed upon cloth fur, etc.

moth-er (*muth'ẽr*), *n.* female parent, especially one of the human race; one who has given birth to a child; origin or source: *adj.* native; producing others.

moth-er-in-law (*-in-law*), *n.* the mother of one's husband or wife.

moth-er-of-pearl (*-ov-pẽrl*), *n.* the hard, silvery internal layer of various kinds of shells.

mo-tion (*mō'shun*), *n.* the act, process, or state of moving; passage of a body from one place to another; animal life and action: *v. i.* to make a significant movement or gesture.

Syn. MOTION, movement. We speak of a state of *motion* as opposed to a state of rest, of perpetual *motion*, the laws of *motion*, and the like; on the other hand, we say, to make a *movement* when speaking of an army, a general *movement* when speaking of an assembly.

mo-tive (*mō'tiv*), *adj.* causing motion: *n.* that which moves or excites to action; inducement; reason. [CAUSE, PRINCIPLE.]

mo-tive pow-er (*pou'ẽr*), any natural agent, as wind, water, steam, electricity, etc., employed to produce motion in a machine.

mo-tiv-i-ty (*-tiv'i-ti*), *n.* the power of producing motion.

mot-ley (*mot'li*), *adj.* covered with parts of various colors; heterogeneous.

mo-tor (*mō'tẽr*), *n.* that which produces motion, or power, especially a machine which performs mechanical work: *adj.* imparting motion.

mot-tle (*mot'l*), *v. t.* to mark with spots of various colors; variegate.

mot-to (*'ō*), *n.* [*pl.* mottoes (*'ōz*)], a concise sentence added to a device, or prefixed to anything, suggesting some guiding principle, etc.

mound (*mound*), *n.* an artificial bank of earth or stone, originally for defensive purposes; hillock.

mount (*mount*), *n.* a hill or mountain; a rocky mass or elevation rising above the level of the surrounding land: *v. t.* to raise on high; climb; ascend; bestride: *v. i.* to rise up; get on horseback.

Mount Vernon. Residence of Gen. George Washington, and city in Lawrence county, Missouri, named for the foregoing, which was originally built by Lawrence Washington for Admiral Vernon, for whom it was named.

Mount Zion (*zī'on*), or **Sion** (*sī'on*). A hill on which was situated the old city of Jerusalem; the "city of David." The name has been applied to Jerusalem as a whole, and symbolically to the Christian church and heaven.

moun-tain (*moun'tin*), *n.* a large mass of rock or earth rising above the level of the adjacent country.

moun-tain-eer (*-ēr'*), *n.* one who dwells among, or climbs, mountains: *v. i.* to climb mountains.

Mount Desert (*dez-ẽrt'*) **island, Me.** Named by Champlain *Isle de Monts Deserts*, owing to barrenness of its craggy heights.

mount-e-bank (*mount'ē-bangk*), *n.* a quack-doctor; boastful pretender.

mourn (*mōrn*), *v. i.* to grieve; lament; be sorrowful; wear mourning: *v. t.* to grieve for; bewail.

mourn-ful (*'fool*), *adj.* causing, or expressing, sorrow; doleful; sad.

mourn-ing (*'ing*), *n.* expression of grief; lamenting; the dress of a mourner. [GRIEF.]

mouse (*mous*), *n.* [*pl.* mice (*mīs*)], a small rodent of the genus *Mus*, that infests houses, granaries, etc.

mouth (*mouth*), *n.* the opening in the head of an animal by which it receives food and utters sounds: *v. t.* to utter with an affected swelling or pompous voice.

mouth-ful (*'fool*), *n.* [*pl.* mouthfuls (*-foolz*)], as much as can be put into the mouth at one time; small quantity.

mouth-piece (*'pēs*), *n.* that part of an instrument which is held in or applied to the mouth; a spokesman.

mov-a-ble (*mōōv'a-bl*), *adj.* capable of being moved or conveyed.

move (*mōōv*), *v. t.* to cause to change place or position; impel; set in motion; rouse to action: *v. i.* to change place or position: *n.* the act of moving; artifice or scheme. [STIR.]

Syn. MOVING, affecting, pathetic. The good or bad feelings may be *moved;* the tender feelings only are *affected.* A field of battle is a *moving* spectacle; the death of a friend is an *affecting* spectacle; the *pathetic* applies only to what is addressed to the heart; hence an address is *pathetic.* [See *motion, persuade.*]

mow (*mō*), *v. t.* to cut down with, or as with, a scythe: *v. i.* to cut grass with a scythe.

mow (*mou*), *n.* a heap of hay, etc., stowed in a barn; the compartment in a barn where hay, etc., are stored: *v. t.* to stow in a mow.

much (*much*), *adj.* [*comp.* more, *superl.* most], great in quantity or amount; long in duration; many in number: *adv.* to a great degree or extent.

mu-ci-lage (*mū'si-lāj*), *n.* a gummy or gelatinous substance; gum of plants.

mu-ci-lag-i-nous (*-laj'i-nus*), *adj.* pertaining to, resembling, or secreting, mucilage or gum.

muck (*muk*), *n.* moist dung; anything filthy or vile: *v. t.* to manure with dung.

mu-cous (*mū'kus*), *adj.* pertaining to, resembling, or secreting, mucus; viscous or slimy.

mu-cous mem-brane (*mem'brān*), the moist, glandular lining of the cavities and canals of the human body.

mu-cus (*'kus*), *n.* the viscid fluid secreted by the mucous membrane.

mud (*mud*), *n.* soft wet earth; mire.

mud-dle (*'l*), *v. t.* to make a mess of, or confuse; cloud or stupefy: *n.* a confused state.

muff (*muf*), *n.* a warm, soft, cylindrical cover of fur, etc., to keep the hands warm in cold weather.

muf-fin (*'in*), *n.* a soft, light, spongy round cake.

muf-fle (*'l*), *v. t.* to wrap up closely and warmly; cover or conceal the face of; cover up so as to deaden sound. *v. i.* to speak indistinctly.

mug (*mug*), *n.* an earthenware or metallic drinking vessel; the face.

mug-gy (*'i*), *adj.* warm, damp, and close; moldy.

mug-wump (*mug'wump*), *n.* an independent member of the Republican party.

mu-lat-to (*mū-lat'ō*), *n.* [*pl.* mulattoes (*'ōz*)], the offspring of parents, one of whom is negro and the other white. [Feminine, *mulattress.*]

mul-ber-ry (*mul'ber-i*), *n.* [*pl.* mulberries (*-iz*)], the tree or fruit of the genus Morus; dark purple.

mulch (*mulch*), *n.* half rotten straw, litter: *v. t.* to cover, or protect, with mulch.

mulct (*mulkt*), *v. t.* to punish with a fine: *n.* a fine, especially for some misdemeanor.

mule (*mūl*), *n.* the offspring of a male ass and a mare; a stubborn, obstinate person.

mull (*mul*), *n.* a headland or cape; a snuff-box made of the end of a horn; a very thin, soft kind of muslin: *v. t.* to warm, spice, and sweeten.

mult, multi, *prefixes* meaning many: as, *mult*angular, having many angles, *multi*florous, having many flowers.

mul-ti-ple (*mul'ti-pl*), *adj.* consisting of many parts: *n.* a number or quantity which contains another an exact number of times without a remainder.

mul-ti-plex (*mul'ti-pleks*) *adj.*, multiple, manifold; combining many in one.

mul-ti-pli-ca-tion (*mul-ti-pli-kā'shun*), *n.* the act or process of multiplying.

mul-ti-plic-i-ty (*-plis'i-ti*), *n.* the state of being manifold; a great number.

mul-ti-ply (*'ti-pli*), *v. t.* to cause to increase in number: *v. i.* make more by natural generation, production, or addition.

mul-ti-tude (*'ti-tūd*), *n.* a great number; crowd; assembly; populace (with *the*).

mul-ti-tu-di-nous (*-tū'di-nus*), *adj.* pertaining to, or consisting of, a multitude; numerous.

mum (*mum*), *adj.* silent: *n.* silence; a kind of strong ale: *interj.* be silent!

mum-ble (*'bl*), *v. t.* and *v. i.* to mutter or speak indistinctly; chew gently with closed lips.

mum-mer-y (*'ẽr-i*), *n.* masquerading; buffoonery; hypocritical parade or disguise.

mum-my (*''*), *n.* [*pl.* mummies (*'iz*)], a dead body embalmed after the manner of the ancient Egyptians.

mumps (*mumps*), *n.* a contagious febrile disease characterized by the swelling of the glands of the neck: *pl.* the sulks.

munch (*munch*), *v. t.* and *v. i.* to chew with an audible crunching noise.

Muncy, Pa. Named from the creek on which it is located, the water taking the name from the *Minsi* Indians. *Minsink*, "dwelling place of the Minsi."

mun-dane (*mun'dān*), *adj.* pertaining to the world.

Munich (*mū'nik*). The English name of the capital of Bavaria, which is called *München* in German. Both forms have been independently obtained from the old name *Munichen*, found in 1058, which is from Old High German *munich*, "a monk," the town having been built on lands belonging to the monks of the convent of Schaftlarn.

mu-nic-i-pal (*mū-nis'i-pal*), *adj.* pertaining to a city, corporation, state, or local self-government.

mu-nic-i-pal-i-ty (*-pal'i-ti*), *n.* [*pl.* municipalities (*-tiz*)], a corporate town or city; a division of the country. [*French.*]

mu-nif-i-cence (*-nif'i-sens*), *n.* the quality or state of being munificent; liberality.

mu-nif-i-cent (*'i-sent*), *adj.* characterized by great liberality in giving; bountiful. [BENEFICENT.]

mu-ni-tions (*-nish'unz*), *n. pl.* military stores or materials.

mu-ral (*'ral*), *adj.* pertaining to, growing on, or resembling, a wall.

mur-der (*mûr'dẽr*), *n.* homicide with malice aforethought: *v. t.* to kill with premeditated malice.

Murfreesboro (*mûr'frēz-bur-ō*). City in Rutherford county, Tennessee, and town in Hertford county, North Carolina, named for Col. Hardy Murfree, an officer of the Revolution.

mu-ri-at-ic (*mū-ri-at'ik*), *adj.* derived from sea salt.

Muriel, Muriel. From the Greek *Myron*, "myrrh."

murk-y (*mûrk'i*), *adj.* dark; gloomy; obscure.

mur-mur (*mûr'mûr*), *n.* a low indistinct sound, as of a running stream: *v. i.* to make a low continued noise like the hum of bees.

mur-rain (*mur'ān*), *n.* an infectious and fatal disease among cattle.

mus-car-dine (*mus'kär-din*), *n.* a fungus which causes fatal disease in silkworms.

mus-ca-tel (*'ka-tel*), *n.* a variety of rich wine; the grapes which produce it; a sweet, fragrant pear. [Also *Muscadel, Muscadine.*]

mus-cle (*'l*), *n.* a highly contractile organ of fibrous tissue by which movement in an animal body is effected.

mus-cu-lar (*'kū-lẽr*), *adj.* pertaining to, consisting of, or performed by, muscles; strong; vigorous; brawny.

mus-cu-lar-i-ty (*-lar'i-ti*), *n.* the quality or state of being muscular.

muse (*mūz*), *v. i.* to study in silence; meditate; be absent-minded: *v. t.* to meditate on. [CONTEMPLATE.]

mu-se-um (*mū-zē'um*), *n.* a collection of natural, scientific, or literary curiosities, or of works of art; the building containing such a collection.

mush (*mush*), *n.* boiled Indian maize meal.

mush-room (*'rōōm*), *n.* an edible fungus, *Agaricus campestris*, or similar edible fungi; an upstart: *adj.* upstart; ephemeral.

mu-sic (*mū'zik*), *n.* the art or science of harmonic sounds; harmony or melody.
mu-si-cian (*-zish'an*), *n.* one skilled in the science of music; one who sings, or plays on a musical instrument.
musk (*musk*), *n.* a strong-scented substance obtained from the male musk-deer.
Muskegon (*mus-kē'gun*) **river, Mich.** So called from the Indian name, meaning "plenty of fish."
mus-ket (*mus'ket*), *n.* the firearm formerly used by infantry.
Muskingum (*mus-king'gum*). River and county in Ohio. An Indian word meaning "moose-eye river," so called because of the number of moose and elk which inhabited the country.
musk-rat (*musk'rat*), *n.* an aquatic rodent of North America which emits a musky secretion.
mus-lin (*muz'lin*), *n.* a fine, thin cotton cloth or fabric: *adj.* made of muslin.
muss (*mus*), *n.* a confused struggle; disorder: *v. t.* to disorder, as clothing.
mus-sel (*'el*), *n.* a marine edible bivalve.
Mus-sul-man (*'ul-man*), *n.* [*pl.* Mussulmans (*-manz*)], a Mohammedan, or Moslem.
must (*must*), *n.* unfermented expressed grape juice: *v. t.* to make moldy and sour: *v. i.* to be obliged morally or physically.
mus-tache (*mus-tāsh'*), *n.* hair worn on a man's upper lip. [Also *moustache.*]
mus-tang (*'tang*), *n.* the small, hardy, semiwild horse of the prairies.
mus-tard (*'tērd*), *n.* a plant and its seed of the genus Sinapis; a condiment made from the seed.
mus-ter (*'tēr*), *n.* an assembly of troops, for review or active service; register of troops mustered; assemblage: *v. t.* to assemble, as troops, for review or active service.
must-y (*'i*), *adj.* [*comp.* mustier, *superl.* mustiest], spoiled with damp, mold, or age; spiritless.
mu-ta-bil-i-ty (*mū-tā-bil'i-ti*), *n.* the quality of being subject to change; instability.
mu-ta-ble (*'tā-bl*), *adj.* susceptible of change.
mute (*mūt*), *adj.* silent; dumb: *n.* one who is dumb or remains silent; a consonant which is not pronounced, or intercepts the sound.
mu-ti-late (*mū'ti-lāt*), *v. t.* to cut off a limb or essential part of; render imperfect; maim.
mu-ti-la-tion (*-lā'shun*), *n.* the act of mutilating.
mu-ti-neer (*-ti-nēr'*), *n.* one who is guilty of mutiny: *v. i.* to mutiny.
mu-ti-nous (*'ti-nus*), *adj.* disposed to, or guilty of, mutiny; seditious.
mu-ti-ny (*'ti-ni*), *n.* insurrection against, or forcible resistance to, constituted authority: *v. i.* to rise against constituted authority.
mut-ter (*mut'ēr*), *v. i.* to utter words in a low voice with compressed lips; murmur: *v. t.* to utter indistinctly: *n.* indistinct utterance; murmur.
mut-ton (*'n*), *n.* the flesh of sheep.
mu-tu-al (*mū'tū-al*), *adj.* reciprocal.
Syn. MUTUAL, common. This word is often confounded with *common*. *Mutual* is used in referring to a thing that belongs to only two people; as, John and I have a *mutual* dislike; he dislikes me and I dislike him. We cannot say John and I have a *mutual* dislike for Mary. *Common* is used with reference to a third object or person; as, Mary is our *common* friend; she is your and my friend. Dickens' use of this word in "Our *Mutual* Friend" is condemned by many good authorities.
mu-tu-al-ism (*-izm*), *n.* the ethical doctrine of mutual dependence in social development.
muz-zle (*muz'l*), *n.* snout; the mouth of a gun, etc.; a fastening or cover for the mouth of a dog: *v. t.* to secure the mouth of with a muzzle.
my (*mī*), *poss. pron.* belonging to me.
Myles. Another spelling of *Miles*.
my-o-pi-a (*mi-ō'pi-ā*), *n.* shortsightedness.
Myra (*mī'rā*). A feminine name. The termination of some other Christian name; or from the Greek, *myron*, "myrrh."
myr-i-ad (*mir'i-ad*), *n.* the number of 10,000; a very large number: *adj.* innumerable.
myrrh (*mēr*), *n.* the aromatic gummy resin of *Balsamodendron myrrha*, growing in Arabia and Abyssinia.
myr-tle (*mēr'tl*), *n.* a fragrant evergreen shrub of the genus Myrtus.
my-self (*mi-self'*), *pron.* [*pl.* ourselves (*our-selvz'*)], I or me in person: used emphatically or reflexively.
mys-te-ri-ous (*mis-tē'ri-us*), *adj.* not clear to the understanding; obscure; incomprehensible.
Syn. MYSTERIOUS, abstruse, cabalistic, dark, enigmatical, hidden, incomprehensible, inexplicable, inscrutable, mystic, mystical, obscure, occult, recondite, secret, transcendental. That is *mysterious* in the true sense which is beyond human comprehension. That is *mystic* or *mystical* which has associated with it some *hidden* or *recondite* meaning, especially of a religious kind; that is *dark* which we can not personally see through; that is *secret* which is *hidden*. [See *secret, dark.*]
mys-ter-y (*'tēr-i*), *n.* [*pl.* mysteries (*-iz*)], something secret; obscure, or unexplained; that which is beyond human comprehension.
mys-tic (*'tik*), *adj.* pertaining to, or containing, mystery or mysticism; emblematical; occult. [Also *mystical.*] [OBSCURE, MYSTERIOUS.]
mys-ti-cism (*mis'ti-sizm*), *n.* the doctrines of the Mystics; obscurity of thought or teaching.
mys-ti-fi-ca-tion (*-fi-kā'shun*), *n.* the act of mystifying; the state of being mystified.
mys-ti-fy (*'ti-fī*), *v. t.* [*p. t.* and *p. p.* mystified, *p. pr.* mystifying], to involve in mystery; obscure; bewilder; puzzle.
myth (*mith*), *n.* a legend; poetic fiction; a fabulous narrative. [FICTION.]
myth-o-log-ic-al (*-ō-loj'i-kal*), *adj.* pertaining to mythology; mythical.
myth-ol-o-gist (*-ol'ō-jist*), *n.* a student of, or one skilled in, mythology.
myth-ol-o-gy (*'ō-ji*), *n.* [*pl.* mythologies (*-jiz*)], the collected body or system of the traditions or legends of a people; a treatise on myths.

N

nab (*nab*), *v. t.* [*p. t.* and *p. p.* nabbed, *p. pr.* nabbing], to catch or seize unexpectedly.
na-bob (*nā'bob*), *n.* in India, a deputy or administrator under the Mogul empire; a very wealthy man.
na-dir (*nā'dēr*), *n.* that part of the heavens directly under our feet, or directly opposite to the zenith.
nag (*nag*), *n.* a small saddle horse: *v. t.* to scold or find fault with continually: *v. i.* to find fault constantly.
Nahant (*nā-hant'*, *nā-hant'*). Town and watering-place in Essex county, Massachusetts. According to different authorities an Indian word meaning "at the point," or "two things united," the latter meaning given because the town is formed of two islands connected by a beach.
★na-iad (*nā'yad*), *n.* a water nymph.
nail (*nāl*), *n.* the horny substance at the ends of the human fingers and toes; a pointed piece of metal usually furnished with a head for fastening woodwork, etc.; *v. t.* to fasten with nails; to expose, as to *nail* a lie.
na-ive (*nā-ēv'*), *adj.* artless; ingenuous; unaffectedly simple.
na-ive-té (*nā-ēv-tā'*), *n.* natural, unaffected simplicity or ingenuousness.
na-ked (*nā'ked*), *adj.* unclothed; bare; unarmed; defenseless; exposed to view; plain.
nam-by-pam-by (*nam'bi-pam'bi*), *adj.* weakly sentimental or affectedly pretty or fine.
name (*nām*), *n.* that by which a person or thing is called; designation; character; reputation: *v. t.* to give an appellation or designation to; specify; mention by name.
Syn. NAME, call. *Name* is employed for distinguishing or addressing one by *name*. To *call* signifies properly to address one loudly, consequently we may *name* without *calling*, when we only mention a *name* in conversation; and we may *call* without *naming*. [See *nominate.*]
name-sake (*'sāk*), *n.* one having the same name.
Nancy (*nan'si*, French *nän-sē'*). Name formed from *Nan* for *Ann*.
nan-keen (*nan-kēn'*), *n.* a buff-colored cotton cloth, originally from China.
Nantucket. Island and county in Massachusetts. This name appeared upon the maps in 1630 as *Natocka*, and some authorities state that it is derived from an Indian word meaning "far away."
Naomi (*nā-ō'mī*, *nā'ō-mī*). From the Hebrew *naomi*, signifying "my pleasantness."
nap (*nap*), *n.* a short slumber; doze; a game at cards; the woolly substance on the surface of cloth: *v. i.* to doze.
nape (*nāp*), *n.* the back of the neck.
na-per-y (*nā'pēr-i*), *n.* table linen; linen underclothing.
naph-tha (*naf'thá*), *n.* a clear, volatile, inflammable, bituminous, liquid hydrocarbon exuding from the earth, or distilled from coal tar, etc.; rock oil.
nap-kin (*nap'kin*), *n.* a small cloth, especially one used at table for wiping the hands, etc.
Naples (*nā'plz*). A French corruption of the Italian *Napoli*, which preserves, with little change, the old Greek name *Neapolis*, "the new city," which in spite of its name is one of the oldest cities in Italy, having been founded by colonists from the still older settlement at Cumæ.
Napoleon (*na-pō'lē-on*, French *nä-pō-lā-ôn'*). From the French name *Napoleone*, which has been translated "of the new city."
nap-py (*nap'i*), *adj.* covered with nap or pile; drowsy.
Nar-cis-sus (*när-sis'us*), *n.* a genus of ornamental bulbous plants with handsome fragrant flowers, including the daffodils.
Narcissus. From the Greek, meaning a "daffodil." Fr., *Narcisse;* It., *Narcisso;* Lat., *Narcissus.*
nar-co-sis (*-kō'sis*), *n.* stupefaction from the effects of a narcotic.
nar-cot-ic (*-kot'ik*), *adj.* producing coma or torpor: *n.* a medicine to alleviate pain and produce sleep.
Narragansett (*när-rá-gan'set*). Summer resort in Washington county, Rhode Island. An Anglicization of the Indian name of a tribe, *Naiagansett*, which in their language means "people of the point."
nar-rate (*nar-rāt'*), *v. t.* to tell; recite; give an account of; write, as a story.
nar-ra-tion (*-rā'shun*), *n.* the act of narrating; statement, written or verbal.
nar-ra-tive (*nar'rá-tiv*), *adj.* pertaining to narration: *n.* recital of a story or event; tale.
nar-row (*nar'ō*), *adj.* of little breadth or extent, limited; straitened; contracted in mind: *v. t.* to lessen the breadth or extent of: *v. i.* to become narrow. [CONTRACTED.]
na-sal (*nā'zal*), *adj.* pertaining to, affected by, or pronounced through, the nose: *n.* a letter pronounced through the nose.
nas-cent (*nas'ent*), *adj.* beginning to grow or exist.
Nashua (*nash'ū-a*), **N. H.** So called from the river, its Indian name meaning "between."
Nashville, Tenn. First named, as a settlement, *Nashborough*, in honor of Francis Nash of North Carolina, a brigadier general in the Continental army. In June, 1784, changed to *Nashville*.
Nas-tur-tium (*-tûr'shum*), *n.* a genus of plants, including the watercresses.
nas-ty (*'ti*), *adj.* [*comp.* nastier, *superl.* nastiest], dirty; nauseous; filthy; obscene; foul; serious.
na-tal (*nā'tal*), *adj.* pertaining to one's birth or birthday; indigenous. [NATIVE.]
Natal (*nā-tăl'*). Received its name from Vasco da Gama, because he discovered it on the Feast of the Nativity. A British colony in South Africa.
na-ta-tion (*nā-tā'shun*), *n.* the act or art of swimming.
na-ta-to-ri-al (*nā-tā-tō'ri-al*), *adj.* swimming, or adapted for swimming. [Also *natatory.*]
Natchez (*nach'ez*). City in Adams county, Mississippi, named for the Indian tribe, the word meaning "hurrying men," or "one running to war."
Nathan (*nā'than*). From the Hebrew *nathan*, signifying "given." Fr., *Nathan;* Ger., *Nathan;* Lat., *Nathan;* Sp. *Natan.*
Nathanael or **Nathaniel** (*nā-than'ā-el* or *nā-than'i-el*). From the Hebrew, meaning the "gift of God." Dutch, *Nathaniel;* Fr., *Nathaniel;* Ger., *Nathaniel;* Lat., *Nathanael;* Sp., *Natanael.*
na-tion (*nā'shun*), *n.* the inhabitants of one country, or united under the same government.
na-tion-al (*na'shun-al*), *adj.* pertaining to a nation; public; general; attached to one's country.
na-tion-al-ism (*-al-izm*), *n.* the state of being national; national idiom, characteristic, or independence.
na-tion-al-i-ty (*-al'i-ti*), *n.* national character; patriotism; nation.
na-tive (*nā'tiv*), *adj.* pertaining to the time and place of birth; not acquired: *n.* one who is born in a certain country or place.
Syn. NATIVE, indigenous, innate, natal, natural, original. *Native* denotes that which belongs to one by birth; *natal* that which pertains to the event of birth; *natural* denotes that which rests upon inherent qualities of character or being. We speak of one's *native* country, or of his *natal* day; of *natural* ability, *native* genius.
na-tiv-i-ty (*-tiv'i-ti*), *n.* time, place and manner of birth.
nat-ty (*nat'i*), *adj.* tidy; neat; smart.
nat-u-ral (*nat'ū-ral*), *adj.* pertaining to nature; inborn; not artificial. [NATIVE, PHYSICAL.]
nat-u-ral his-to-ry (*his'tō-ri*), the scientific description of the earth and its various productions, especially the animal kingdom.
nat-u-ral-ism (*-izm*), *n.* mere state of nature; natural religion.
nat-u-ral-ist (*-ist*), *n.* one skilled in natural history one who believes in naturalism.
nat-u-ral-ize (*-iz*), *v. t.* to make natural; acclimatize; invest (a foreigner) with the privileges of a natural-born citizen or subject.
★na-ture (*nā'tūr*), *n.* the universe; essential qualities; species; natural order of things.
Naugatuck (*naw'gá-tuk*), **Conn.** Indian word expressive of "form of the rivers," "point between two rivers." Another source gives the word as *neguttugk*, meaning "one tree."
naught (*nawt*), *n.* nothing: *adj.* worthless: *adv.* in no degree.
naugh-ty (*naw'ti*), *adj.* bad; perverse or mischievous.
★nau-se-a (*naw'shē-á* or *naw'shá*, not *naw'sē-á*), *n.* a strong sensation of sickness; seasickness; loathing or disgust. [DISGUST.]
★nau-se-ate (*naw'shē-āt* or *naw'sē-āt*), *v. t.* to affect with nausea; loathe: *v. i.* to feel disgust; be inclined to vomit.
nau-seous (*'shus*), *adj.* loathsome; abhorrent.
nau-ti-cal (*naw'ti-kal*), *adj.* pertaining to ships, sailors, or navigation; maritime. [Also *nautic.*]
nau-ti-lus (*'ti-lus*), *n.* [*pl.* nautili (*-li*)], any member of a genus of cephalopods, including those furnished with a chambered spinal univalve shell; a kind of diving bell.
Nauvoo (*naw-vōō'*). City in Hancock county, Illinois, named in obedience to a "revelation" made to Joseph Smith, one of its Mormon founders.
na-val (*nā'val*), *adj.* pertaining to ships or a navy; consisting of ships; maritime.
nave (*nāv*), *n.* the middle or body of a church; the center of a wheel.
nav-el (*'el*), *n.* the depression in the center of the lower part of the abdomen, indicating where the umbilical cord was joined to the fœtus.
nav-i-ga-ble (*nav'i-gá-bl*), *adj.* capable of being navigated.
nav-i-gate (*-gāt*), *v. i.* to pass on the water by a ship or vessel: *v. t.* to pass over in a ship or boat.
nav-i-ga-tion (*-gā'shun*), *n.* the act of navigating; the science of navigating ships.

na-vy (*nā'vi*), *n.* the ships of war belonging to a nation, or their officers and men.
nay (*nā*), *adv.* no; not only so, but: *n.* a refusal or denial.
Naz-a-rene (*naz-à-rēn'*), *n.* a native of Nazareth; applied to Jesus Christ, his followers, and the early Christians as a term of contempt.
Naz-a-rite (*'à-rīt*), *n.* a Jew devoted by vow to God to a life of purity.
neap (*nēp*), *adj.* low; applied to the tides which occur in the beginning of the second and fourth quarters of the moon.
near (*nēr*), *adj.* not far distant in time, place, or degree; close; intimate; dear; familiar; literal: *v. t.* to approach; come near to. [ADJACENT, CLOSE.]
neat (*nēt*), *n.* cattle of the bovine genus: *adj.* pertaining to bovine animals; tidy; trim and clean; simple and elegant; chaste.
Nebraska. State and river in the United States. An Indian word meaning "shallow, or broad water."
neb-u-la (*neb'ū-lȧ*), *n.* [*pl.* nebulæ (*-lē*)], a faint misty patch of light in the heavens produced by groups of stars or by masses of diffused gaseous matter.
neb-u-lar (*'ū-lẽr*), *adj.* pertaining to nebulæ.
nec-es-sa-ry (*nes'es-sā-ri*), *adj.* that cannot be otherwise; essential; indispensable: *n.* [*pl.* necessaries], things requisite. [NECESSITIES.]
ne-ces-si-tate (*nē-ses'i-tāt*), *v. t.* to make necessary; compel; constrain. [COMPEL.]
ne-ces-si-ty (*'i-ti*), *n.* the state of being necessary; that which is unavoidable; compulsion: *pl.* things necessary.
Syn. NECESSITIES, necessaries. *Necessity* is the mode or state of circumstances, or the thing which circumstances render *necessary;* the *necessary* is that which is absolutely and unconditionally *necessary.* Habit and desire create *necessities;* nature only requires *necessaries.*
Ant. USELESS THINGS.
neck (*nek*), *n.* that part of the body between the head and trunk; a long narrow part, as of land or a vessel.
neck-lace (*'lās*), *n.* a string of beads or ornaments, as pearls, etc., worn round the neck.
nec-rol-o-gy (*-rol'ō-ji*), *n.* a register, or account, of the dead.
nec-ro-man-cy (*'rō-man-si*), *n.* the pretended art of predicting future events by communication with the dead.
nec-tar (*nek'tẽr*), *n.* in classic mythology, the wine of the gods.
nec-ta-re-ous (*-tā'rē-us*), *adj.* producing, or sweet like, nectar.
nec-tar-ine (*'tẽr-in*), *n.* a variety of peach.
need (*nēd*), *n.* necessity; urgent want; poverty: *v. t.* to want: *v. i.* to be necessary. [WANT.]
nee-dle (*nē'dl*), *n.* a small sharp-pointed steel instrument furnished with an eye to hold thread.
needs (*nēdz*), *adv.* necessarily; indispensably.
ne'er (*nār*), *adv.* contraction of never.
ne-fa-ri-ous (*nē-fā'ri-us*), *adj.* extremely wicked; vile; infamous. [WICKED.]
ne-ga-tion (*nē-gā'shun*), *n.* denial; absence of certain qualities.
neg-a-tive (*neg'à-tiv*), *adj.* implying negation; denying; refusing; having the power of veto: *n.* a word expressing denial: *v. t.* to prove the contrary of; dismiss or reject by vote.
neg-lect (*-lekt'*), *n.* omission; habitual negligence; disregard: *v. t.* to omit by carelessness or design; slight.
Syn. NEGLECT, omit. What we *neglect* ought not to be *neglected;* but what we *omit* may be *omitted* or otherwise, as convenience requires. We *neglect* an opportunity, we *neglect* the means, the time, the use, and the like; we *omit* a word, a sentence, a figure, and the line may be *omitted* as convenience requires. [See *disregard.*]
Ant. CARE, direct, worry.
★**neg-li-gée** (*-li-zhā'*), *n.* a loosely fitting dress or gown: *adj.* carelessly arranged or attired.
neg-li-gence (*'li-jens*), *n.* carelessmess.
neg-li-gent (*-jent*), *adj.* careless; remiss; heedless.
neg-li-gi-ble (*'li-ji-bl*), *adj.* that may be neglected; of little account or value.
ne-go-ti-a-ble (*nē-gō'shi-à-bl*), *adj.* capable of being negotiated, transferred, or exchanged.
ne-go-ti-ate (*nē-gō'shi-āt*), *v. i.* to treat with others in business or private affairs: *v. t.* to conclude by treaty, bargain, or agreement.
ne-gro (*'grō*), *n.* [*pl.* negroes (*'grōz*)], an African black. [Fem. *negress.*] *adj.* pertaining to, or characteristic of, negroes.
Nehemiah (*nē-hē-mī'à*). From the Hebrew *N'hhemyah*, from *n'hhem-yah*, "whom Jehovah comforts"; that is, "aids" Danish, *Nehemias;* It., *Neemia;* Lat., *Nehemias;* Sp., *Nehemias.*
neigh (*nā*), *v. i.* to utter the cry, or whinny, of a horse: *n.* the cry of a horse.
neigh-bor (*nā'bẽr*), *n.* one who dwells near to another; an intimate: *adj.* near to another. [NEIGHBORING.]
neigh-bor-hood (*-hood*), *n.* adjacent district; vicinity; the state of being neighbors.
Syn. NEIGHBORHOOD, vicinity. *Neighborhood* is employed in reference to the inhabitants, or in regard to inhabited places, to denote nearness of persons to each other or to objects in general; but *vicinity* is employed to denote nearness of one object to another, whether person or thing.
neigh-bor-ly (*nā'bẽr-li*), *adj.* like, or becoming, a neighbor; social; civil; friendly: *adv.* in the manner of a neighbor.
nei-ther (*nē'* or *nī'thẽr*), *pron.* and *conj.* not either.
Nellie, Nelly. Names derived from *Ellen*, and sometimes from *Helen.*
ne-o, a *prefix* meaning *new, young, recent:* as *neo*plastic, recently formed.
ne-ol-o-gism (*nē-ol'ō-jizm*), *n.* a new word or phrase introduced into a language; new religious doctrines.
ne-o-phyte (*'ō-fīt*), *n.* a novice; one recently baptized; a convert: *adj.* recently entered.
neph-ew (*nef'ū*), *n.* the son of a brother or sister.
nep-o-tism (*nep'ō-tizm*), *n.* a preference shown in bestowing patronage to one's relatives in the church or public service.
nerve (*nẽrv*), *n.* one of the gray fibers which convey sensation from all parts of the body to the brain and originate motion; *v. t.* to invigorate or strengthen.
★**ner-vine** (*nẽr'vin*, not *nẽr'vēn*), *n.* a tonic for the nerves.
ner-vous (*'vus*), *adj.* pertaining to, or composed of, nerves; having weak nerves; easily agitated.
nest (*nest*), *n.* the bed or dwelling chosen by a bird for incubation, and the rearing of its young.
nes-tle (*nes'l*), *v. i.* to lie close and snug; take shelter: *v. t.* to cherish.
nes-tling (*'ling*), *n.* a young bird in the nest or just taken from it: *adj.* recently hatched.
net (*net*), *n.* an instrument of twine knotted into meshes for catching birds, fish, etc.; anything resembling or made like a net; *v. t.* take with a net; snare.
neth-er (*neth'ẽr*), *adj.* lying beneath; lower; belonging to the regions below.
Netherlands. Which means "low lands," is the English name of the Dutch kingdom at the mouth of the Rhine which the French call *Les Pays Bas. Koningrijk der Nederlanden* is the official Dutch name of the kingdom as constituted after the war of 1830, when the Belgians acquired their independence.
net-tle (*net'l*), *n.* a stinging plant of the genus Urtica: *v. t.* to provoke or irritate.
★**neu-ral-gi-a** (*nū-ral'ji-à*, not *nū-ral'jà*), *n.* acute pain in a nerve.
neu-ras-the-ni-a (*-ras-thē'ni-à*), *n.* brain and nerve exhaustion, as from influenza, etc.
neu-ro, a *prefix* meaning *nerve:* as *neuro*graphy, a treatise on the nerves.
neu-rot-ic (*nū-rot'ik*), *adj.* pertaining to, seated in, or affecting, the nerves; characterized by a morbid hysterical style.
neu-ter (*'tẽr*), *adj.* of neither sex; intransitive: *n.* a flower having neither pistil nor stamens.
neu-tral (*'tral*), *adj.* unbiased; indifferent; taking no part on either side in a contest.
neu-tral-i-ty (*-tral'i-ti*), *n.* the state of being neutral.
Nevada (*nē-vä'dà*). State of the Union, county in Arkansas and California. Named from the mountain range, the *Sierra Nevada*, running through the state. Spanish words *serrado*, "serrated or saw-toothed," *nevada*, "snowy," *i. e.*, "snowy mountains," the application taker from the *Sierra Nevada* mountains of Granada, Spain.
nev-er (*nev'er*), *adv.* not at any time; in no degree.
Neversink highlands, N. J. So called by the sailors of outgoing craft, from the circumstance of their being the highest seashore elevations.
Neversink river, N. Y. From the Indian *newasink*, "mad river," also stated to be a local application, because the stream is less affected by drought than others.
never-the-less (*-the-les'*), *adv.* notwithstanding; in spite of that.
Nevskii Prospekt (*nef'ski-i pros-pekt'*). The finest and most important street in St. Petersburg, noted for its fine buildings. Length, about three and one-half miles.
new (*nū*), *adj.* recent in origin; modern; novel; lately made, produced, invented, or discovered.
Syn. NEW, novel, modern, fresh, recent. All these epithets are applied to what has not long existed; *new* expresses this idea simply, without any qualifications; *novel* is something strange or unexpected; the *modern* is the thing of to-day, as distinguished from that which existed in fore times; the *fresh* is that which is so *new* as not to be the worse for use, or that which has not been before used or employed; the *recent* is that which is so *new* as to appear as if it were just made or done
Ant. AGED, ancient, antique, old, venerable.
Newark (*nū'ẽrk*), **N. J.** Suggested by the settlement's first minister, Rev. Abraham Pierson, from Newark-on-Trent, England, where he was "Episcopally ordained."
New Bedford. City in Bristol county, Massachusetts, the name of the owner of the town site being Russell, the family name of the duke of Bedford.
New Berne, or **Newbern, N. C.** From Berne, Switzerland, the native place of Christopher, Baron de Graafewidt, who in 1720 emigrated to and settled near this place.
New Brunswick (*brunz'wik*). A maritime province of the Dominion of Canada. Received its name in compliment to the house of Brunswick.
new-el (*nū'el*), *n.* in a winding staircase, the centra upright pillar around which the steps turn.
New England. Name applied to the northeastern section of the United States, embracing Maine, New Hampshire, Vermont, Massachusetts, Connecticut and Rhode Island.
new-fan-gled (*nū-fang'gld*), *adj.* new-fashioned.
Newfoundland (*nū'fund-land*). An island in Atlantic, east of British North America. The earliest of the colonial possessions of Great Britain. The name originally applied to the regions discovered by the two Cabots, and included a great portion of the North American coast.
New Hampshire. One of the New England states. Name given, in 1629, by John Mason, in compliment to his native county in England.
New Harmony. Town in Posey county, Indiana, settled by the "Harmonists," and named for their sect.
New Haven. County and town in same county, in Connecticut, settled by people from Boston, who called it a "new haven." Originally *Quinnippaq*, from the Indian name of the river *Quinnepyooghg*, "long water place." The present name substituted "by the court," September 5, 1640.
New Holland. The name given to Australia previous to its settlement by the British.
New Jersey. One of the North Atlantic states of the Union. Named in compliment to Carteret, who had defended the Isle of Jersey (Cæsarea, one of the Channel islands) against the Long Parliament. Originally called *New Sweden* (when a Dutch possession).
New London. City and county in Connecticut, and town in Stanley county, North Carolina, named for the city in England.
New Mexico. A southwestern state of the Union. A distinguishing name from "*old*" Mexico, it having been a former possession of Mexico. The territory was called *Nova Mexicana* by Antonio de Espejo at the time of the settlement of Santa Fé.
New Orleans (*nū ôr'lē-anz*), **La.** Translation of the French name *Nouvelle Orleans*, given in honor of the Duc d'Orleans, regent of France.
Newport, R. I. In honor of the English admiral Christopher Newport (under James I.).
news (*nūz*), *n.* recent intelligence. This word is made up of the first letter of each point of the compass: North, east, west, south. This, therefore, is usually given as the origin of the term *news*, which comes from all points of the compass.
Syn. NEWS, tidings. *News* is unexpected, it serves to gratify idle curiosity; *tidings* are expected; they serve to allay anxiety. In time of war the public are eager after *news;* and they who have relatives in the army are anxious to have *tidings* of them.
news-pa-per (*'pā-pẽr*), *n.* a paper published periodically, usually daily or weekly, containing the most recent intelligence.
newt (*nūt*), *n.* an eft; salamander.
New York. A middle eastern state of the Union. So named in honor of James, duke of York, afterward James II.
New York City, N. Y. Named from the state. The island on which the main part of the city is located is known as Manhattan island.
New Zealand (*zē'land*). A group of islands southeast of Australia. Name given by Dutch navigators, the word *zeeland* denoting "sea-land," being significant of the low countries.
next (*nekst*), *adj.* [*superl.* of nigh], nearest in time, place, degree, or rank: *adv.* immediately succeeding. [ADJACENT.]
Niagara (*nī-ag'à-rà*). The largest cataract in North America, situated north-northwest of Buffalo, N. Y. From the Indian word *neagara*, meaning "across the neck," an allusion to a strip of land between lakes Erie and Ontario.
nib (*nib*), *n.* a bird's beak; the point of anything, especially a pen.
nib-ble (*'l*), *v. t.* and *v. i.* to bite by little at a time; continue to bite at gently and quickly, as a fish.
nib-lick (*nib'lik*), *n.* a heavy, iron, round-headed golf club.
nice (*nīs*), *adj.* fastidious; precise; squeamish; minutely discriminative. [EXACT.]
Nice (*nēs*). A town on the Riviera, French form of the Italian *Nizza.*
ni-ce-ty (*nī'sē-ti*), *n.* delicate management; fastidious delicacy; precision; minute accuracy.
niche (*nich*), *n.* a recess in a wall for a statue.
Nicholas (*nik'ō-las*). From the Latin name, *Nicolaus*, signifying "conqueror of the people." Dutch, *Nicolaas* (more frequently *Klaas*); Fr., *Nicolas;* Ger., *Nicolaus;* Gr., *Nikolaos;* Hun., *Miklos;* It., *Niccolo* or *Nicolo;* Lat., *Nicolaus;* Port., *Nicolao;* Russ., *Nikolai* or *Nikolas;* Sp., *Nicolas;* Sw., *Nils.*
nick (*nik*), *n.* exact or critical point of time; winning throw at dice: *v. t.* to cut in nicks or notches.
nick-el (*'el*), *n.* a grayish-white ductile metal; a five-cent coin, made of nickel and copper alloy.
nick-el-o-de-on (*nik-el-ō'dē-on*) *n.* a place of amusement, generally charging no admission fee, containing various automatic machines, such as cinematographs, graphophones, etc., which may be used by patrons for a small charge.
nick-name (*'nām*), *n.* a name given in derision or familiarity: *v. t.* to give a nickname to; call by an opprobrious name.
Nicodemus (*nik-ō-dē'mus*). From the Greek meaning, "victory of the people," or the "con-

queror of the people." Fr., *Nicodème;* Gr., *Nikodemos;* Lat., *Nicodemus.*
nic-o-tine (*nik'o-tin*), *n.* an acrid, poisonous alkaloid extracted from tobacco. [Also *nicotin.*]
niece (*nēs*), *n.* the daughter of a brother or sister.
Niel (*nēl*). An Anglo-Saxon form of *Nigel.*
Nigel (*nī'gel*). A name derived from the Latin *nigellus,* "somewhat black;" a diminutive of *niger,* "black."
nig-gard (*nig'ērd*), *adj.* meanly covetous; parsimonious; miserly.
nig-gard-ly (*-li*), *adv.* in a miserly manner. PENURIOUS.]
nigh (*nī*), *adj.* near in time or place; adjacent; closely allied by blood or friendship: *adv.* near; almost: *prep.* near to. [ADJACENT, CLOSE.]
night (*nīt*), *n.* the time from sunset to sunrise; period of darkness; death.
night-in-gale (*'in-gāl*), *n.* a small bird which sings with a sweet note at night; philomel.
night-mare (*'mâr*), *n.* a dreadful dream accompanied with oppression on the chest and a feeling of helplessness; an incubus.
night-rid-er (*-rīd'ēr*), *n.* one of a band of masked mounted men who travel at night to intimidate and do violence as by burning barns, etc.
ni-hil-ism (*nī'hil-izm*), *n.* skepticism which denies that anything, even existence, can be known.
ni-hil-ist (*-ist*), *n.* a supporter of nihilism.
Nile. A river of Egypt, Africa. Called in Old Egyptian either *Hapi* or *P-iero,* "the river," of which *Nehar Misraim,* "the river of Egypt," or simply *Nahal,* "the valley" or "stream," were Semitic translations. The Greek name *Nilus* was probably a corruption of the Phenician name *Nahal.*
nim-ble (*nim'bl*), *adj.* quick and active; alert; lively; brisk. [ACTIVE.]
nim-bus (*nim'bus*), *n.* in art, the halo or cloud of light surrounding the heads of divinities.
nine (*nīn*), *adj.* containing one more than eight: *n.* the sum of 1 and 8.
nine-teen (*'tēn*), *adj.* consisting of 9 and 10: *n.* the sum of 9 and 10.
nine-ty (*'ti*), *adj.* containing 9 ten times: *n.* the number containing 9 times 10; the symbol (XC, 90) expressing such a number.
nin-ny (*nin'i*), *n.* a simpleton.
ninth (*nīnth*), *adj.* the ordinal of 9: *n.* one of 9 equal parts.
Niobrara (*nī-ō-brä'rä*) **river, Neb.** From the Indian *ni,* "water," *abrara,* "wide," "the broad water."
nip (*nip*), *n.* a pinch, as with the nails or teeth; a blast as by cold: *v. t.* to pinch; blast or destroy.
nip-per (*'ēr*), *n.* one who, or that which, nips; one of the four foreteeth of a horse; a small boy: *pl.* small pincers.
nip-ple (*nip'l*), *n.* that part of the breast of a woman from which milk is drawn by a child; a teat.
nit (*nit*), *n.* the egg of any small insect.
Nita (*nē'tä*). A feminine name derived from *Annita,* a diminutive of *Ann.*
ni-tric ac-id (*nī'trik as'id*), a powerful acid used in chemistry, obtained by the action of sulphuric acid upon nitrate of potash; aqua fortis.
nitro, a *prefix* meaning *containing nitrogen:* as *nitro*-hydrochloric acid or aqua regia.
ni-tro-gen (*nī'trō-jen*), *n.* a gas which, with argon, constitutes 4-5ths by volume of the atmosphere, and constitutes the basis of nitric acid.
ni-trog-e-nous (*-troj'ē-nus*), *adj.* pertaining to, or containing, nitrogen.
ni-tro-glyc-er-ine (*-glis'ēr-in*), *n.* a highly explosive, oily liquid, prepared by the action of nitric and sulphuric acids upon glycerine. [Also *nitroglycerin.*]
ni-trous (*'trus*), *adj.* resembling, obtained from, or impregnated with, niter.
no (*nō*), *adv.* a word of denial or refusal: opposed to yes: *adj.* none.
Noah (*nō'ä*). From the Hebrew, *noah,* signifying "rest." Arabic, *Nooh* or *Nuh;* Dutch, *Noach* or *Noak;* Fr., *Noé;* Ger., *Noah;* Gr., *Noe;* Sw., *Noa.*
nob (*nob*), *n.* a knob; the head; a fop.
no-bil-i-ty (*nō-bil'i-ti*), *n.* the state or quality of being noble; noble birth; grandeur; dignity.
no-ble (*nō'bl*), *adj.* high in excellence or worth; illustrious; magnanimous; generous.
no-bod-y (*'bod-i*), *n.* no one; a person of no importance or influence.
noc-tur-nal (*nok-tûr'nal*), *adj.* pertaining to, done, or happening at, night.
nod (*nod*), *n.* a quick inclination of the head; a command: *v. t.* incline or bend: *v. i.* to give a quick forward motion of the head.
nod-dle (*'l*), *n.* the head.
node (*nōd*), *n.* a knot; knob; one of the two points at which the orbit of a planet intersects the ecliptic.
nod-ule (*'ūl*), *n.* a little knot or irregular rounded lump.
Noel (*nō'el*). From Fr. *Noel,* so named from being born on Christmas (*Noel*). Lat., *Natalis, Noelius.*
noise (*noiz*), *n.* sound; clamor; outcry; frequent or public conversation.
noi-some (*noi'sum*), *adj.* injurious to health; noxious; disgusting. [HURTFUL.]
nom-ad (*nom'ad*), *n.* one of a tribe that wanders about in search of game, pasture, etc.: *ad*. wandering.
no-men-cla-ture (*nō'men-klā-tūr*), *n.* the names or technical terms used in any art or science. [DICTIONARY.]
nom-i-nal (*nom'i-nal*), *adj.* pertaining to, or containing, names; existing only in name.
nom-i-nate (*-nāt*), *v. t.* to propose for an office; appoint.
Syn. NOMINATE, name. *To nominate* and *to name* are both to mention by *name;* but the former is to mention for a specific purpose; the latter is to mention for general purposes; persons only are *nominated;* things as well as persons are *named;* one *nominates* a person in order to propose him, or appoint him, to an office; but one *names* a person casually, in the course of conversation, or one *names* him in order to make some inquiry respecting him.
non, *prefix* meaning *not.*
non-age (*non'āj*), *n.* minority.
★**non-cha-lance** (*nōn-shä-lons',* French *nôn-shä-läns'*), *n.* coolness; indifference.
non-de-script (*non'dē-skript*), *n.* a person or thing that cannot be easily described or classed: *adj.* abnormal; novel; odd.
none (*nun*), *adj.* not any; not one: *n.* and *pron.* no one; nothing.
non-en-ti-ty (*non-en'ti-ti*), *n.* [*pl.* nonentities (*-tiz*)], a thing not existing; a person of no importance or influence.
★**non-pa-reil** (*non-pȧ-rel',* not *non-pȧ-rēl'*), *adj.* without an equal: *n.* unequaled excellence; a kind of printing-type.
non-plus (*'plus*), *v. t.* to throw into complete perplexity; puzzle.
non-sense (*'sens*), *n.* language without meaning; anything absurd. [ABSURD.]
non-suit (*'sūt*), *n.* the withdrawal of a suit during trial either voluntarily or by judgment of the court on the discovery of error or defect in the pleadings: *v. t.* to subject to a nonsuit.
noo-dle (*nōō'dl*), *n.* a simpleton; a strip of dried dough, served in soup or as a baked dish.
nook (*nook*), *n.* a small recess or secluded retreat; a corner.
noon (*nōōn*), *n.* the middle of the day, 12 o'clock; height: *adj.* pertaining to noon.
noon-day (*'dā*), *adj.* pertaining to noon, or midday: *n.* noon. [Also *noontide.*]
noose (*nōōs*), *n.* a running knot which binds the closer the more tightly it is drawn: *v. t.* to catch or tie in a noose; ensnare.
nor (*nôr*), *conj.* a negative particle correlative to *neither* or *not.*
Nora, Norah (*nō'rä*). Irish feminine names corrupted from *Onora,* from the English name *Honora.* As an English name *Nora* may sometimes be an abbreviation of *Leonora.*
Norfolk, Va. Named from the county in England of that name. (A.-S. *Northfolc,* northern people.)
nor-mal (*nôr'mal*), *adj.* according to rule; regular; perpendicular.
Norman (*nôr'man*). Means "born in Normandy," or "of Norman extraction." Lat., *Normannus.*
Normandy (*nôr'man-di*). French *Normandie.* A former government of northern France; it was occupied early in the tenth century by the Northmen, whose name on French soil gradually changed to *Norman.*
north (*nôrth*), *n.* one of the four cardinal points; the point opposite to the south: *adj.* pertaining to, situated in, or coming from, the north: *adv.* to the north.
North Carolina (*kar-ō-lī'nȧ*). A South Atlantic state of the Union. North and South Carolina were originally *Carolina.* The name was given in 1564, at the time of the first colonization by the Huguenots in the reign of Charles IX. of France.
nor-thern (*nôr'thērn*), *adj.* in, from, or toward, the north. [Also *northerly.*]
North Sea. Name indicative of its position geographically. An arm of the Atlantic east of England and west of Norway and Denmark.
Norwalk, Conn. Named from the Indian *nayaug,* "the middle land," "a tract between two rivers."
nose (*nōz*), *n.* the organ of smell; scent; a snout; nozzle: *v. t.* to smell or scent.
nose-gay (*'gā*), *n.* a bouquet.
no-sol-o-gy (*nō-sol'ō-ji*), *n.* the systematic classification of diseases.
nos-tal-gi-a (*nos-tal'ji-ȧ*), *n.* homesickness.
nos-tril (*'tril*), *n.* one of the two openings in the nose.
nos-trum (*'trum*), *n.* a quack medicine.
no-ta-ble (*nō'tȧ-bl*), *adj.* worthy of notice; memorable; notorious.
no-ta-ry (*'tȧ-ri*), *n.* [*pl.* notaries (*-riz*)], an official authorized to attest deeds, contracts, etc.
no-ta-tion (*-tā'shun*), *n.* the act or practice of recording by marks or symbols.
notch (*noch*), *n.* a small hollow cut; indentation: *v. t.* to cut into small hollows.
note (*nōt*), *n.* a memorandum; short letter; a paper acknowledging a debt and promising payment: *v. t.* to make a note of; mark.
not-ed (*'ed*), *p. adj.* well-known; celebrated; remarkable. [DISTINGUISHED.]
noth-ing (*nuth'ing*), *n.* not anything; a thing of no value, use, or importance; a cipher: *adv.* in no degree.
no-tice (*nō'tis*), *n.* mental or visual observation; attention; remark; advice; information: *v. t.* to see or observe.
Syn. NOTICE, remark, observe. *To notice* is a more cursory action than *to remark;* we may *notice* a thing by a single glance, or on merely turning one's head; but *to remark* supposes a reaction of the mind on an object. We *observe* things in order to judge of, or draw conclusions from, them. We *remark* things as matters of fact; we *observe* them in order to judge of, or draw conclusions from them. [See *intelligence.*]
no-tice-a-ble (*nō'tis-ȧ-bl*), *adj.* worthy of observation; remarkable.
no-ti-fi-ca-tion (*-ti-fi-kā'shun*), *n.* the act of giving notice; notice given; document by which information is communicated.
no-ti-fy (*'ti-fī*), *v. t.* [*p. t.* and *p. p.* notified, *p. pr.* notifying], to give notice to; make known. [ANNOUNCE.]
no-tion (*'shun*), *n.* an idea or conception; opinion; belief; inclination; a clever contrivance. [CONCEPTION.]
no-to-ri-e-ty (*-tō-rī'ē-ti*), *n.* the state of being notorious. [Also *notoriousness.*]
no-to-ri-ous (*-tō'ri-us*), *adj.* publicly known; usually in a bad sense.
not-with-stand-ing (*not-with-stand'ing*), *prep.* in spite of: *conj.* although: *adv.* however; yet.
nou-me-non (*nou'mē-non*), *n.* [*pl.* noumena (*-nä*)], essence; the substance or reality existing under the phenomenal.
noun (*noun*), *n.* the name of anything; a substantive.
nour-ish (*nur'ish*), *v. t.* to feed or bring up; support; maintain: *v. i.* to promote growth. [CHERISH.]
Nova Scotia (*nō'vȧ skō'shi-ȧ*), or *New Scotland,* name given by James I. to the French colony of Acadia, when he granted it by patent to Sir William Alexander, a Scotchman, on the pretext of its having been discovered by Cabot in the reign of Henry VII. A maritime province of Canada.
Nova Zembla (*zem'blä*). "New land." An uninhabited island in the Arctic Ocean north of Russia.
nov-el (*nov'el*), *adj.* of recent origin or introduction; new; strange or unusual: *n.* a fictitious tale or romance. [NEW, FICTION.]
nov-el-ist (*'el-ist*), *n.* a writer of novels.
nov-el-ty (*'el-ti*), *n.* newness; something new.
November. The ninth month in the Roman calendar. Lat. *novem,* "nine."
nov-ice (*nov'is*), *n.* a beginner.
now (*nou*), *adv.* at the present time; quite recently.
no-wise (*nō'wīz*), *adv.* not in any manner or degree.
★**nox-ious** (*nok'shus,* not *nok'shi-us*), *adj.* harmful; pernicious; deadly. [HURTFUL.]
noz-zle (*noz'l*), *n.* a projecting mouthpiece.
nu-cle-us (*nū'klē-us*), *n.* the central mass around which matter accretes or grows; the head of a comet.
nude (*nūd*), *adj.* bare; naked; in law, made without consideration.
nudge (*nuj*), *v. t.* to touch gently, as with the elbow.
nu-ga-to-ry (*nū'gȧ-tō-ri*), *adj.* trifling; useless.
nug-get (*nug'et*), *n.* a lump or mass of metal, especially of gold in auriferous soil.
nui-sance (*nū'sans*), *n.* anything offensive, injurious, or annoying. [ABOMINATION.]
null (*nul*), *adj.* of no legal force; void.
nul-li-fi-ca-tion (*-i-fi-kā'shun*), *n.* the act of nullifying.
nul-li-fy (*'i-fī*), *v. t.* [*p. t.* and *p. p.* nullified, *p. pr.* nullifying], to annul or render void. [ABOLISH.]
nul-li-ty (*'i-ti*), *n.* want of existence, force, or validity.
numb (*num*), *adj.* deprived of sensation or motion; torpid: *v. t.* to benumb.
num-ber (*'bēr*), *n.* a unit; one, or more than one; multitude; one of a series; a collection of things; *v. t.* to count; mark with a number.
nu-mer-al (*nū'mēr-al*), *adj.* pertaining to, consisting of, or denoting, number: *n.* a symbol or word expressing a number. [Also *numerical.*]
Syn. NUMERAL, numerical. *Numeral,* or belonging to *number,* is applied to a class of words in grammar, as a *numeral* adjective or a *numeral* noun; *numerical,* or containing *number,* is applied to whatever other objects respect *number;* a *numerical* difference, is that which subsists between any two *numbers,* or is expressed by *numbers.*
nu-mer-ate (*-āt*), *v. t.* to reckon or enumerate; point or read, as figures.
nu-mer-ous (*'mēr-us*), *adj.* consisting of a great number.
nu-mis-mat-ic (*-mis-mat'ik*), *adj.* pertaining to coins or medals: *n. pl.* the science and study of coins and medals.
num-skull (*num'skul*), *n.* a blockhead.
nun (*nun*), *n.* a female devoted to a religious life and seclusion under a vow of chastity.
nun-ci-o (*'shi-ō*), *n.* a papal ambassador.
nun-ner-y (*nun'ēr-i*), *n.* [*pl.* nunneries (*-iz*)], a religious house for nuns.
★**nup-tial** (*nup'shal,* not *nūp'chal*), *adj.* pertaining to, or constituting, marriage.
nurse (*nûrs*), *n.* a woman who cares for infants; one who tends the sick or infirm: *v. t.* to tend or suckle, as an infant; bring up. [CHERISH.]
nur-ture (*nûr'tūr*), *n.* that which nourishes; diet; food; *v. t.* to bring up; nourish. [CHERISH, TEACH.]
nut (*nut*), *n.* the fruit of certain trees; a piece of metal grooved for screwing onto the end of a bolt.
nut-meg (*nut'meg*), *n.* the aromatic kernel of the fruit of an East Indian tree.
nu-tri-ent (*nū'tri-ent*), *adj.* promoting growth.
nu-tri-ment (*'tri-ment*), *n.* nourishment.
nu-tri-tion (*-trish'un*), *n.* that which nourishes; food.
nu-tri-tious (*'us*), *adj.* affording nutrition.

nu-tri-tive (*nū'tri-tiv*), *adj.* pertaining to, or having the quality of, nutrition.
nymph (*nimf*), *n.* a goddess of nature inhabiting the mountains, woods, streams.

O

oak (*ōk*), *n.* a tree of many species.
oak-um (*'um*), *n.* old ropes untwisted and pulled into loose hemp.
oar (*ōr*), *n.* a light pole with a broad blade, for rowing a boat: *v. t.* and *v. i.* to row.
o-a-sis (*ō-ā'sis*), *n.* [*pl.* oases (*'sēz*)], a fertile spot in a barren sandy desert.
oat (*ōt*), *n.* a grassy plant of the geaus Avena, the grain of which is used as food [usually in *pl.*].
oat-en (*'en*), *adj.* made of oats.
oath (*ōth*), *n.* a solemn declaration of truth-telling with an appeal to God as witness.
Obadiah (*ō-bā-dī'ā*). From the Hebrew *Obhadhyah*, "servant or worshiper of Jehovah."
ob-du-ra-cy (*ob'dū-rā-si*), *n.* obdurate conduct or quality.
ob-du-rate (*'dū-rāt*), *adj.* hardened against moral influence. [OBSTINATE.]
o-be-di-ence (*ō-bē'di-ens*), *n.* submission to authority; dutifulness. [dutiful.
o-be-di-ent (*'di-ent*), *adj.* submissive to authority;
Syn. OBEDIENT, submissive, obsequious. One is *obedient* to command, *submissive* to power or the will, *obsequious* to persons. *Obedience* is always taken in a good sense.
★**o-bei-sance** (*-bē'sans*), *n.* a bow or curtsey; act of reverence.
ob-e-lisk (*ob'ē-lisk*), *n.* a lofty, four-sided stone pillar gradually tapering as it rises, and terminating in a pyramidal top; a reference mark (†).
Oberlin (*ō'bēr-lin*). Village in Lorain county, Ohio, named for Jean Frederick Oberlin, a philanthropist.
o-bese (*ō-bēs'*), *adj.* corpulent.
★**o-bes-i-ty** (*-bes'i-ti*), *n.* excessive corpulence, especially of an unhealthy kind. [Also *obeseness.*]
o-bey (*-bā'*), *v. t.* [*p. t.* and *p. p.* obeyed, *p. pr.* obeying], to submit to the rule or authority of: *v. i.* to yield; do as bidden.
o-bit-u-a-ry (*ō-bit'ū-ā-rī*), *n.* [*pl.* obituaries (*-riz*)], a register of deaths; an account of a deceased person.
ob-ject (*ob-jekt'*), *v. t.* to urge against; oppose: *v. i.* to make objections: *n.* (*ob'jekt*) anything placed before the mind or senses.
Syn. OBJECT, oppose. *To object* to a thing is to propose or start something against it; but *to oppose* it is to set one's self up steadily against it. *Ant.* FAVOR, further.
ob-jec-tion (*-jek'shun*), *n.* the act of objecting; adverse reason; difficulty raised. [DEMUR.]
ob-jec-tion-a-ble (*-ā-bl*), *adj.* liable or open to objection; reprehensible.
ob-jec-tive (*'tiv*), *adj.* pertaining to an object; external to the mind: *n.* the accusative case.
ob-jec-tiv-ism (*'tiv-izm*), *n.* in art and literature, the representation of persons and incidents as they really appear.
ob-jur-gate (*-jūr'gāt*), *v. t.* to chide or reprove.
ob-la-tion (*-lā'shun*), *n.* an offering or sacrifice.
ob-li-ga-tion (*-li-gā'shun*), *n.* the binding power of a vow, promise, or contract; the state of being indebted for a favor. [DUTY, INDEBTED.]
★**ob-li-ga-to-ry** (*ob'li-gā-tō-ri*), *adj.* morally or legally binding.
o-blige (*ō-blij'*), *v. t.* to constrain by force, morally, legally, or physically. [COMPEL.]
o-bli-ging (*-bli'jing*) *adj.* disposed to do favors. [CIVIL.]
ob-lique (*ob-lēk'*), *adj.* deviating from a right line; not parallel.
ob-lit-er-ate (*-lit'ēr-āt*), *v. t.* to efface or wear out; destroy by the effects of time. [BLOT.]
ob-liv-i-on (*-liv'i-un*), *n.* the state of being blotted out from memory; forgetfulness. [FORGETFULNESS.]
ob-liv-i-ous (*'i-us*), *adj.* forgetful. [ABSTRACTED.]
ob-long (*'lông*), *adj.* longer than broad: *n.* a geometrical figure of such shape.
ob-lo-quy (*'lō-kwi*), *n.* reproachful language; calumny; slander; reproach. [REPROACH.]
ob-nox-ious (*-nok'shus*), *adj.* deserving of censure or disapproval; hateful; offensive; unpopular.
Syn. OBNOXIOUS, offensive. In the sense of giving offense *obnoxious* implies as much as hateful, *offensive* little more than displeasing; a man is *obnoxious* to a party whose interest or principles he is opposed to; he may be *offensive* to an individual merely on account of his manners or any particular actions.
★**o-boe** (*ō'bo*), *n.* a musical wind instrument of the reed class; hautboy; an organ stop.
ob-scene (*ob-sēn'*), *adj.* offensive to chastity; impure in language or action; indecent; filthy.
ob-scure (*-skūr'*), *adj.* without light or distinctness; dark; not easily understood: *v. t.* to darken or dim; disguise.
Syn. OBSCURE, abstruse, ambiguous, cloudy, complex, complicated, dark, deep, dense, difficult, dim, doubtful, mysterious, profound. That is *obscure* which the eye or mind can not clearly discern or see through. That which is *complicated* is likely to be *obscure*, but that may be *obscure* which is not at all *complicated* and scarcely *complex*. In that which is *obscure* there may be nothing to hide; it is hard to see to the bottom of the *profound*. [See *mysterious*, *eclipse*, *dark*.]
ob-se-cr ŭt (*ob'sē-krāt*), *v. t.* to implore.
★**ob-se-quies** (*'sē-kwiz*), *n. pl.* funeral rites. [FUNERAL.]
ob-se-qui-ous (*-sē'kwi-us*), *adj.* servile; compliant to excess. [OBEDIENT.]
ob-ser-va-tion (*ob-zēr-vā'shun*), *n.* the act of observing; attention; that which is observed; remark; note.
ob-serv-a-to-ry (*-zĕrv'ā-tō-ri*), *n.* [*pl.* observatories (*-riz*)], a building fitted up for astronomical research.
ob-serve (*-zĕrv'*), *v. t.* to keep in view; take notice of; celebrate: *v. i.* to make observations.
Syn. OBSERVE, watch. We *observe* a thing in order to draw an inference from it; we *watch* anything in order to discover what may happen; we *observe* with coolness. [See *notice*, *see*.]
ob-so-les-cent (*-sō-les'ent*), *adj.* becoming obsolete. [OBSOLETE.]
ob-so-lete (*'sō-lēt'*), *adj.* gone out of date; disused; imperfectly developed.
Syn. OBSOLETE, ancient, antiquated, archaic, obsolescent, old, out of date, rare. Some of the *oldest* or most *ancient* words are not *obsolete*, as father, mother, etc. A word is *obsolete* which has quite gone out of reputable use; a word is *archaic* which is falling out of reputable use.
ob-sta-cle (*ob'stā-kl*), *n.* an obstruction; an impediment. [DIFFICULTY.]
ob-stet-ric (*-stet'rik*), *adj.* pertaining to midwifery: *n. pl.* the science of midwifery.
ob-sti-na-cy (*'sti-nā-si*), *n.* the state or quality of being obstinate; stubbornness.
ob-sti-nate (*'sti-nāt*), *adj.* pertinaciously adhering to one's opinion or purpose; stubborn.
Syn. OBSTINATE, contumacious, decided, dogged, firm, fixed, headstrong, heady, immovable, indomitable, inflexible, intractable, obdurate, opinionated, pertinacious, refractory, resolute, stubborn, The *headstrong* person is not to be stopped in his own course of action, while the *obstinate* and *stubborn* is not to be driven to another's way. The most amiable person may be *obstinate* on some one point; the *stubborn* person is for the most part habitually so; *refractory* implies more activity of resistance; the *stubborn* horse balks; the *refractory* animal plunges, rears, and kicks; *contumacious* refers to a proud and insolent defiance of authority, as of the summons of a court. *Pertinacious* demand is contrasted with *obstinate* refusal. [See *perverse*.]
Ant. COMPLIANT, docile, obedient, wavering.
ob-strep-er-ous (*-strep'ĕr-us*), *adj.* clamorously noisy; turbulent.
ob-struct (*-strukt'*), *v. t.* to block up or impede; hinder from passing; interrupt.
Syn. OBSTRUCT, arrest, bar, barricade, check, choke, clog, embarrass, hinder, impede, interrupt, oppose, retard, stay, stop. To *obstruct* is literally to build up against; the road is *obstructed* by fallen trees; we may *hinder* one's advance by following and clinging to him; anything that makes one's progress slower, whether from within or from without, *impedes*; to *arrest* is to cause to *stop* suddenly.
ob-tain (*-tān'*), *v. t.* to get possession of; gain; acquire; win; procure: *v. i.* to be established in practice or use.
ob-trude (*-trōōd'*), *v. t.* to thrust in or upon; urge or offer with unreasonable importunity. [INTRUDE.]
ob-tru-sive (*-trōō'siv*), *adj.* inclined or apt to intrude.
ob-tuse (*-tūs'*), *adj.* not pointed or acute; greater than a right angle; dull. [STUPIDITY.]
ob-verse (*-vĕrs'*), *adj.* bearing the head, said of a coin or medal: *n.* opposed to reverse.
ob-vi-ate (*'vi-āt*), *v. t.* to remove, as difficulties or objections.
ob-vi-ous (*'vi-us*), *adj.* evident. [APPARENT.]
oc-ca-sion (*ok-kā'zhun*), *n.* occurrence; state or position of affairs; opportunity.
Syn. OCCASION, opportunity. The *occasion* is that which determines our conduct, and leaves us no choice; it amounts to a degree of necessity; the *opportunity* is that which invites to action; it tempts us to embrace the moment for taking the step. [See *cause*.]
oc-ca-sion-al (*'zhun-al*), *adj.* occurring at regular intervals.
Syn. OCCASIONAL, casual. *Occasional* carries with it more the idea of unfrequency, and *casual* that of unfixedness, or the absence of all design. Our acts of charity may be *occasional*; but they ought not to be *casual*.
Oc-ci-dent (*ok'si-dent*), *n.* the West; the countries west of Asia and the Turkish dominions.
oc-cult (*-kult'*), *adj.* hidden; secret; invisible. [SECRET, MYSTERIOUS.]
oc-cu-pan-cy (*'ū-pan-si*), *n.* the act of taking and holding in possession.
oc-cu-pant (*'ū-pant*), *n.* one who has possession.
oc-cu-pa-tion (*-pā'shun*), *n.* the act or state of occupying; business, employment, or calling.
oc-cu-py (*'ū-pi*), *v. t.* to take possession of; hold or keep in possession. [HOLD.]
oc-cur (*ok-kûr'*), *v. i.* to happen or take place; come to the mind; be found or met with.
oc-cur-rence (*-kur'ens*), *n.* an accident, event, or incident. [EVENT.]
o-cean (*ō'shun*), *n.* the vast expanse of salt water covering more than 3-5ths of the globe.
o-cher (*'kĕr*), *n.* a fine yellow or brown colored clay: used as a pigment.
Ocklawaha (*ok-lā-wā'hā*) **river, Fla.** The Seminole Indian name, meaning "muddy place."
Ocklockonee (*ok-lok'ō-nē*) **river, Fla.** From the Indian (Seminole), meaning "yellow water."
Ocmulgee (*ok-mul'gē*) **river, Ga.** So called from the Creek Indian name, *oko-mulgi*, "the turbulent stream."
Oconee (*ō-kō'nē*) **river, Ga.** From the Seminole Indian word *eknoni*, "a water course," a "small river."
octa, a *prefix* meaning *eight*, as *octa*chord, an instrument of 8 strings; a system of 8 sounds. [Also *octo*.]
oc-ta-gon (*ok'tà-gon*), *n.* a plane figure of 8 sides and 8 angles.
oc-tave (*'tāv*), *n.* an eighth or an interval of 12 semitones.
Octave. See *Octavius*.
Octavia (*ok-tā'vi-ā*). Feminine of *Octavius*. Fr., *Octavie*; It., *Octavia*; Lat., *Octavia*.
Octavius (*ok-tā'vi-us*). Latin name, signifying "the eighth," *i. e.*, the eighth son in order of birth. Fr., *Octave*; It., *Octavio*; Lat., *Octavius*; Sp., *Octavio*.
October. The tenth month of the modern calendar. Name means "the eighth month" (of the ancient calendar), from the Latin *octo*, "eight."
oc-to-pus (*'tō-pus*), *n.* [*pl.* octopuses (*-ez*)], a genus of *Cephalopods* having 8 arms, containing the cuttlefish.
oc-u-lar (*'ū-lĕr*), *adj.* pertaining to, depending on, or formed by, the eye; known from actual sight.
oc-u-list (*'ū-list*), *n.* one who is skilled in the treatment of eye diseases.
odd (*od*), *adj.* not paired or matched with another; not even; unusual; peculiar. [RARE.]
Odd Fellows. A fanciful name assumed by the original founders of the society.
od-di-ty (*'i-ti*), *n.* a person or thing that is peculiar.
odds (*odz*), *n. pl.* inequality; advantage; superiority.
ode (*ōd*), *n.* a short song; lyric poem.
o-di-ous (*ō'di-us*), *adj.* offensive; unpopular. [HATEFUL.]
o-di-um (*'di-um*), *n.* hatred; dislike.
o-dor (*'dĕr*), *n.* a scent; estimation.
o-dor-if-er-ous (*-dĕr-if'ĕr-us*), *adj.* diffusing fragrance.
o-dor-ous (*'dĕr-us*), *adj.* emitting an odor or scent; fragrant.
of (*ov*), *prep.* from; out of; belonging to; according to; proceeding from.
off (*ôf*), *adj.* most distant: *adv.* away from: *prep.* not on; distant from: *interj.* begone!
of-fal (*of'al*), *n.* refuse; waste meat.
of-fend (*-fend'*), *v. t.* to displease or make angry: *v. i.* do anything displeasing.
of-fend-er (*-ĕr*) *n.* one who offends or transgresses; a delinquent.
Syn. OFFENDER, delinquent. Those who go into a wrong place are *offenders*; those who stay away when they ought to go are *delinquents*.
of-fense (*-fens'*), *n.* any cause of anger or displeasure; insult; injury; assault. [ABOMINATION.]
of-fen-sive (*-fen'siv*), *adj.* causing displeasure; disagreeable: *n.* act of attacking. [OBNOXIOUS.]
of-fer (*'ĕr*), *v. t.* to present for acceptance or refusal; proffer: *v. i.* express a willingness: *n.* a proposal made; price offered. [GIVE, ALLEGE.]
of-fice (*of'is*), *n.* public or private business; employment; function; apartment for the transaction of business.
of-fi-cer (*'i-sĕr*), *n.* a person commissioned to perform a certain public duty.
of-fi-cial (*-fish'al*), *adj.* pertaining to an office or public duty: *n.* one who holds a civil office.
of-fi-ci-ate (*'i-āt*), *v. i* to perform the duties of an office.
of-fi-cious (*-fish'us*), *adj.* too forward in offering services; meddling. [ACTIVE.]
off-ing (*ôf'ing*), *n.* that part of the sea with deep water off the shore.
off-spring (*'spring*), *n.* a child, children, or descendants.
Syn. OFFSPRING, progeny, issue. *Offspring* is a familiar term applicable to one or many children; *progeny* is employed only as a collective noun for a number; *issue* is used in an indefinite manner without particular regard to number. When we speak of the children themselves we denominate them the *offspring*; when we speak of the parents, we denominate the children their *progeny*. The *issue* is said only in regard to a man that is deceased; his property descends to his male *issue* in a direct line.
★**of-ten** (*of'n*, not *ôf-ten*), *adv.* many times; frequently.
Ogdensburg, N. Y. Named from Samuel Ogden, the first proprietor.
o-gle (*ō'gl*), *v. t.* to look fondly at with a side glance: *n.* a side glance.
o-gre (*ō'gĕr*), *n.* an imaginary man-eating monster or giant. [Fem. *ogress*.]
Ohio. State in the Union, river and county in

Indiana, Kentucky, and West Virginia. An Indian word meaning "the beautiful river."
ohm (*ōm*), *n.* the unit of electrical resistance.
oil (*oil*), *n.* a highly inflammable fatty liquid obtained from various animal and vegetable substances: *v. t.* to lubricate with oil.
oint-ment (*oint'ment*), *n.* an unctuous substance applied to a wound or injured part.
Okechobee (*ō-kē-chō'bē*) **lake, Fla.** Seminole Indian word meaning "grassy lake." [Also spelled *Okitchobi.*]
Okefinokee (*ō-kē-fin-ō'kē*) **swamp, Ga.** A Choctaw word, *okefinocau*, "quivering water."
Oklahoma (*ōk-lä-hō'mȧ*). A southwestern state of the Union, A Choctaw word signifying "red people," *okla*, "people," *homa*, "red." Another word is given meaning "home for all Indians."
ok-ra (*ok'rȧ*), *n.* a West Indian plant, the pods of which are used in soups, etc. [Also *okro*, *ochra.*]
old (*ōld*), *adj.* [*comp.* older, *superl.* oldest], aged; decayed by time; ancient; out of date; long practiced. [ELDERLY, OBSOLETE.]
Old Bailey, The. The principal criminal court of England, situated on the street named Old Bailey, which runs from Newgate to Ludgate hill, not far from St. Paul's, London.
Old Dominion (*dō-min'yun*). A name popularly given to the state of Virginia. Its origin is variously explained. Perhaps the best account is that Captain John Smith called Virginia "Old Virginia" to distinguish it from "New Virginia," as the New England colony was called.
★**old-en** (*ōld-n*, not *ōld-en*), *adj.* ancient; bygone.
Old Jewry. One of the localities allotted in olden times as a residence for the Jews. The terminal *ry* is the Old English *ru* or *ra*, having a collective signification, as in rooker*y*, eyr*y* (egger*y*), poult*ry*, etc.
Old Point Comfort. Town in Elizabeth county, Virginia, so named by Capt. Christopher Newport, because he found it a safe haven after a severe storm; the "Old" added to distinguish it from New Point Comfort, a few miles away.
o-le-ag-i-nous (*ō-lē-aj'i-nus*), *adj.* oily; unctuous.
o-le-an-der (*-an'dẽr*), *n.* an evergreen shrub with handsome fragrant flowers.
o-le-fi-ant (*ō-le'fi-ant*), *adj.* noting a gas formed by heating 2 volumes of sulphuric acid with 1 volume of alcohol.
oleo, a *prefix* meaning *oily*, *pertaining to oil*, or *oily*.
o-le-o-mar-ga-rine (*ō-lē-ō-mär'gȧ-rin*), *n.* imitation butter made from milk and animal fat, etc.
ol-fac-to-ry (*ol-fak'tō-ri*), *adj.* pertaining to, or used in, smelling: *n.* organ of smell (usually *pl.*)
ol-i-gar-chy (*'i-gär-ki*), *n.* [*pl.* oligarchies (*-kiz*)], government in which the supreme power is in the hands of a few.
ol-ive (*'iv*), *n.* a plant of the genus Olea, or its oily fruit.
Olive. Derived, perhaps, through the French, from the Latin *olivia*, the "olive tree," an emblem of peace.
ol-ive branch (*branch*), the branch of the olive; the emblem of peace.
Oliver (*ol'i-vẽr*). From French *olivier*, an olive tree, from the Latin *olivia*. Dutch, *Olivier;* Fr., *Olivier;* It., *Oliviero* or *Uliviero;* Lat., *Olivarus* or *Olivarius;* Sp., *Oliverio;* Sw., *Olivier*.
Olivia (*ō-liv'i-ȧ*). The feminine of *Oliver*. Danish, *Olivia;* Dutch, *Olivia;* Fr., *Olivie;* Ger., *Olivia;* Sw., *Olivia*.
Olympia (*ō-lim'pi-ȧ*). In ancient geography, a valley in Elis, Peloponnesus, Greece, situated on the Alpheus.
Olympia, Olympias (*ō-lim'pi-as*). From the Greek, meaning "belonging to Olympus," "divine." Fr., *Olympe;* Gr., *Olympias;* Lat., *Olympias* or *Olympai*.
Omaha (*ō'mȧ-haw*). City in Douglas county, Nebraska. An Indian word, meaning "up-stream"; also the name of a tribe designated as "up stream people."
★**o-me-ga** (*ō-mē'gȧ*), *n.* the last letter of the Greek alphabet; hence the last; end.
om-e-let (*om'ē-let*), *n.* a kind of pancake of eggs, etc.
o-men (*ō'men*), *n.* a sign of some future event: *v. t.* to portend or prognosticate.
Syn. OMEN, prognostic, presage. The *omen* and *prognostic* are both drawn from external objects; the *presage* is drawn from one's own feelings; the *omen* is drawn from objects that have no necessary connection with the thing they are made to represent; it is the fruit of the imagination, and rests on superstition; the *prognostic*, on the contrary, is a sign which partakes in some degree of the quality of the thing denoted.
om-i-nous (*om'i-nus*), *adj.* foreboding evil; inauspicious.
o-mis-sion (*ō-mish'un*), *n.* neglect or failure to do something required; something omitted.
o-mit (*-mit'*), *v. t.* to leave out; neglect; fail to mention. [NEGLECT.]
om-ni-bus (*om'ni-bus*), *n.* a public four-wheeled carriage for passenger traffic.
om-nip-o-tence (*-nip'ō-tens*), *n.* unlimited power.
om-nip-o-tent (*'ō-tent*), *adj.* having unlimited power.
om-ni-pres-ence (*-ni-prez'ens*), *n.* universal presence.
om-nis-cient (*-nish'ent*), *adj.* knowing all things; infinitely wise.
om-niv-o-rous (*om-niv'ō-rus*), *adj.* feeding upon animal and vegetable food; all-devouring.
on (*on*), *prep.* upon; in contact with the upper part; at; near: *adv.* forward; onward.
once (*wuns*), *adv.* at one time; formerly; one time.
one (*wun*), *adj.* single in number; some way; individual: *n.* the number one or its symbol; an individual.
Oneida (*ō-nī'dȧ*) **lake, N. Y.** The name of an Indian tribe, the word signifying "the people of the beacon stone," so named from a tradition concerning a certain stone which followed them in their wanderings.
on-er-ous (*on'ẽr-us*), *adj.* burdensome; weighty; oppressive.
on-ion (*un'yun*), *n.* a bulbous-rooted plant of the genus Ailinn: used in cookery.
on-ly (*ōn'li*), *adj.* single; one and no more: *adv.* singly; merely.
on-o-mat-o-pœ-ia (*on-ō-mct-ō-pē'yȧ*), *n.* the formation of words to resemble the sounds made by the thing signified.
Onondaga (*on-on-daw'gȧ*) **lake, N. Y.** So called from a tribe of Indians, the *On-ti-ah-an-taque*, the word meaning "the place of the hills," also translated as "the marsh at the foot of the hill."
on-set (*on'set*), *n.* an assault; attack.
on-slaught (*'slawt*), *n.* a furious attack.
Ontario (*on-tā'ri-ō*). One of the Great lakes, county in New York, and a village in Vernon county, Wisconsin. An Indian word, said by one authority to mean "beautiful lake."
on-to-log-ic-al (*-tō-loj'i-kal*), *adj.* pertaining to that branch of metaphysics that investigates the essence of things.
o-nus (*ō-nus*), *n.* a burden; duty; obligation.
on-ward (*on'wẽrd*), *adj.* advancing; progressing: *adv.* in advance.
on-yx (*on'iks*), *n.* a variety of agate.
oo-long (*ōō'lông*), *n.* a Chinese black tea, the flavor of which resembles green tea. [Also *oulong.*]
ooze (*ōōz*), *n.* soft mud or slime; gentle flow; liquor of a tan vat.
o-pal (*ō'pal*), *n.* a precious stone of milky hue, exhibiting a play of various colors.
o-pal-es-cent (*-es'ent*), *adj.* resembling opal in its reflection of light.
o-paque (*-pāk'*), *adj.* not transparent.
Opelika (*op-ē-lī-kȧ*), **Ala.** A county seat; so called from the swamp's name, the Seminole name of which was *opilualaikata*, "a large swamp."
o-pen (*ō'pen*), *adj.* not shut; unfastened; clear of trees; expanded; uncovered; unsealed: *v. i.* to unclose itself; commence; begin to appear. [FRANK.]
o-pen-ing (*-ing*), *n.* an aperture; cavity.
op-er-a (*op'ẽr-a*), *n.* a musical drama.
op-er-ate (*'ẽr-āt*), *v. i.* to work; produce a certain effect: *v. t.* to cause to perform certain work.
op-er-at-ic (*-at'ik*), *adj.* pertaining to the opera.
op-er-a-tive (*'er-ā-tiv*), *adj.* having the power of acting; efficacious; vigorous.
Ophelia (*ō-fē'li-ȧ*, *ō-fēl'yȧ*). From the Greek, meaning "help," "usefulness." Fr., *Ophelié;* Gr., *Ophelia;* Lat., *Ophelia*.
oph-thal-mi-a (*of-thal'mi-ȧ*), *n.* inflammation of the eye or eyeball. [Also *ophthalmitis.*]
oph-thal-mic (*'mik*), *adj.* pertaining to the eye.
o-pi-ate (*ō'pi-āt*), *n.* a medicine compounded with opium to induce sleep or rest: *adj.* narcotic.
o-pin-ion (*-pin'yun*), *n.* belief or judgment; estimation; persuasion.
o-pin-ion-a-ted (*-ā-ted*), *adj.* firm or obstinate in one's opinions.
Syn. OPINIONATED, egotistic, conceited, egoistical. An *opinionated* man is not only fond of his own *opinion*, but full of his own *opinion;* he has an *opinion* on everything, which is the best possible *opinion;* a *conceited* man has a *conceit* or an idle fond *opinion* of his own talent; it is not only high in competition with others, but it is so high as to be set above others; the *egoistical* man makes himself the darling theme of his own contemplation. [See *obstinate.*]
o-pi-um (*ō'pi-um*), *n.* the dried juice of the capsules of the white poppy.
o-pos-sum (*ō-pos'um*), *n.* an American and Australian marsupial carnivorous mammal.
op-po-nent (*op-pō'nent*), *adj.* opposite; adverse; antagonistic: *n.* one who opposes.
op-por-tune (*-por-tūn'*), *adj.* well-timed; seasonable.
op-por-tu-ni-ty (*-tū'ni-ti*), *n.* convenient time or occasion. [OCCASION.]
op-pose (*-pōz'*), *v. t.* to act against; contend with; resist; place as an obstacle against; check. [OBJECT, OBSTRUCT, COMBAT.]
op-po-site (*'pō-zit*), *adj.* placed or standing in front; contrary; adverse; antagonistic.
op-po-si-tion (*-zish'un*), *n.* the act or state of opposing; hostile resistance; contrariety; obstacle. [ANTIPATHY.]
op-press (*-pres'*), *v. t.* to burden; crush by hardship or severity; lie heavily upon. [ABUSE.]
op-pro-bri-um (*-prō'bri-um*), *n.* reproach with disdain or contempt; ignominy.
op-pugn (*-pūn'*), *v. t.* to oppose. [CONFUTE.]
op-tic (*'tik*), *adj.* pertaining to vision. [Also *optical.*] *n. pl.* the science of the properties of light and vision.
op-ti-cian (*-tish'un*), *n.* one skilled in optics; one who makes or sells optical instruments.
op-ti-mism (*op'ti-mizm*), *n.* the doctrine that everything in the present state of existence is for the best.
op-ti-mist (*'ti-mist*), *n.* one who holds the doctrine of optimism.
op-tion (*'shun*), *n.* power or right of choice; wish, selection. [ALTERNATIVE.]
op-u-lence (*'ū-lens*), *n.* wealth.
op-u-lent (*'ū-lent*), *adj.* wealthy; rich.
or (*ôr*), *conj.* the correlative of *either*.
or-a-cle (*or'ȧ-kl*), *n.* among the ancients, the response of a deity or inspired priest to some inquiry; temple.
o-rac-u-lar (*ō-rak'ū-lẽr*), *adj.* of the nature of an oracle; uttering oracles; dogmatically magisterial.
o-ral (*'ral*), *adj.* verbal.
or-ange (*ôr'enj*), *n.* a tree (*Citrus aurantium*) with a deep golden-colored and juicy fruit.
Orange Free State. Formerly a republic of South Africa, so called because the original settlers were emigrants from the principality of Orange, in Holland. Now called Orange River Colony.
Orangemen (*ôr'enj-men*). Irish Protestants. The name was given about the end of the seventeenth century by Roman Catholics to the Protestants of Ireland, on account of their support of the cause of William III. of England, prince of Orange.
o-ra-tion (*ō-ra'shun*), *n.* a formal public speech delivered on an occasion of special importance.
or-a-tor (*or'ȧ-tẽr*), *n.* one who makes an oration; an eloquent speaker.
or-a-to-ri-o (*-tō'ri-ō*), *n.* a musical composition having a sacred theme as its subject.
or-a-to-ry (*'ȧ-tō-ri*), *n.* the art of an orator.
orb (*ôrb*), *n.* a circular body; sphere; the eye; circuit.
or-bic-u-lar (*ôr-bik'u-lẽr*), *adj.* orb-shaped.
or-bit (*'bit*), *n.* the bony cavity of the eye; the path described by a heavenly body during its periodical revolution.
or-chard (*'chẽrd*), *n.* an inclosure of fruit trees.
or-ches-tra (*'kes-trȧ*), *n.* in a modern theater, etc., the place occupied by the musicians; the body of musicians.
or-ches-tra-tion (*-trā'shun*), *n.* musical arrangement or instrumentation for an orchestra.
or-chid (*'kid*), *n.* a handsome flower, often of fantastic shape, of the genus Orchis.
or-dain (*-dān'*), *v. t.* to appoint; institute; invest with ministerial or priestly functions.
★**or-de-al** (*'dē-al*, not *ôr-dē'al*), *n.* an ancient method of trial by fire, water, combat, etc., to determine the guilt or innocence of an accused person; hence a severe trial or test.
or-der (*'dẽr*), *n.* method or regular arrangement; settled mode of procedure; rule; regulation; command; class; rank; degree: *v. t.* to regulate or manage; command; conduct; direct: *v. i.* to give a command or order. [CLASS, COMMAND.]
or-der-ly (*'dẽr-li*), *adj.* well regulated; methodical; *n.* soldier who attends upon an officer to carry his orders: *adv.* methodically.
or-di-nal (*'di-nal*), *adj.* noting order: *n.* a number noting order.
or-di-nance (*'di-nans*), *n.* an established rule, rite, or law.
or-di-na-ry (*'di-nā-ri*), *adj.* according to established order; usual; customary; commonplace.
or-di-nate (*'di-nāt*), *n.* a straight line in a curve terminated on both sides by the curve and bisected by the diameter.
or-di-na-tion (*-nā'shun*), *n.* the act of conferring holy orders; the state of being ordained or appointed.
ord-nance (*ôrd'nans*), *n.* artillery.
ore (*ōr*), *n.* metal as extracted from the earth in its natural state or combined with some other substance.
Oregon (*or'ē-gon*). State of the Union, and a county in Missouri. The name said to have been derived from *Origanum*, a species of wild sage found along the coast in the state, but another authority states that it is derived from the Spanish *Oregones*, which name was given the Indian tribes inhabiting that region, by a Jesuit priest, the word meaning "big-eared men."
or-gan (*ôr'gan*), *n.* an instrument; that part of a living structure by means of which some function is discharged; a wind musical instrument.
or-gan-ic (*-gan'ik*), *adj.* pertaining to, composed of, containing, or produced by, organs; instrumental. [Also *organical.*]
or-gan-ism (*'gan-izm*), *n.* organical structure.
or-gan-ist (*'ist*), *n.* a performer on the organ.
or-gan-ize (*'gan-iz*), *v. t.* to arrange or distribute into parts with the proper officials.
or-gy (*'ji*), *n.* a drunken revel.
o-r-iel (*ō'ri-el*), *n.* a large bay window.
o-ri-ent (*'ri-ent*), *v. t.* to define the position of with reference to the East.
O-ri-ent (*'ri-ent*), *adj.* Oriental: *n.* the East.
O-ri-en-tal-ist (*-en-tal-ist*), *n.* one who is skilled in Oriental languages, subjects, etc.
o-ri-en-ta-tion (*-tā'shun*), *n.* the determination of the position of the east; eastward position.
or-i-fice (*or'i-fis*), *n.* a mouth or aperture.
Syn. ORIFICE, perforation. These terms are both scientifically employed to designate certain cavities in the human body; but the former respects that which is natural, the latter that which is artificial; all the vessels of the human body have their *orifices*, which are so constructed as to open or close of themselves. Surgeons are frequently obliged to make *perforations* into the bones

Origen (*or'i-jen*). Meaning, "descended from Horus," an Egyptian deity. Fr., *Origène;* Gr., *Origenes;* Lat., *Origenes.*
or-i-gin (*'i-jin*), *n.* beginning; first existence; source; cause; derivation.
o-rig-i-nal (*ō-rij'i-nal*), *adj.* first in order; not copied: *n.* that from which anything is copied. [NATIVE.]
o-rig-i-nal-i-ty (*-nal'i-ti*), *n.* original state or quality.
o-rig-i-nate (*-rij'i-nāt*), *v. t.* to bring into existence: *v. i.* to rise; commence.
o-ri-ole (*ō'ri-ōl*), *n.* the golden-thrush.
Orkney (*ôrk'nē*) **isles.** A group of islands north of Scotland. Name expresses the Gaelic for the "isles of whales, or porpoises."
Orlando (*ôr-lan'dō*). A form of *Roland.* It., *Orlando;* Lat., *Orlandus.*
Orleans (*ôr'lē-anz.* French, *ôr-lā-än'*). Means "Aurelian's city," from *Aurelianum,* named after the Emperor Aurelian.
or-na-ment (*'nȧ-ment*), *n.* anything that adorns or beautifies: *v. t.* to adorn.
or-nate (*-nāt'*), *adj.* ornamented.
or-ni-thol-o-gy (*-ni-thol'ō-ji*), *n.* the scientific study of the structure, habits, etc., of birds.
o-ro-tund (*ō'rō-tund*), *adj.* characterized by fullness, clearness, strength, and smoothness: *n.* a quality of voice thus characterized.
or-phan (*ôr'fan*), *n.* a child bereft of one or both parents.
or-phan-age (*-āj*), *n.* the state of an orphan; an institution for orphans.
Orson. A masculine name, derived, like the Italian *Orso,* from the Latin *ursus,* "a bear."
or-tho-dox (*'thō-doks*), *adj.* holding, or in accordance with, the received or established belief or doctrine.
or-tho-dox-y (*-doks-i*), *n.* conformity to orthodox belief or opinion.
or-tho-ë-py (*-thō'ē-pi*), *n.* correct pronunciation.
or-thog-ra-phy (*-thog'rȧ-fi*), *n.* the art of spelling and writing words correctly
Osage (*ō-sāj*) **river, Mo.** Indian word, "the strong."
Osawattomie (*os-ȧ-wot'ō-mē*), **Kan.** A composite word, *Osa* and *Wottomie,* formed from the names of the rivers Osage and Pottawottomie.
Oscar. From the Old German name *Oskar,* "very renowned."
os-cil-late (*'sil-lāt*), *v. i.* and *v. t.* to swing backward and forward; vibrate.
os-cu-late (*'kū-lāt*), *v. t.* and *v. i.* to kiss; touch.
o-sier (*ō'shẽr*), *n.* a willow, the twigs of which are used in basket making.
Oskaloosa (*os-kȧ-lōō'sȧ*) **Kan.** A compound word, *Oska,* name of an Indian chief, *Loosa,* his wife.
Osmund. Some translate this name "house peace." Wachter renders it "excellent, gallant, brave man."
os-si-fi-ca-tion (*os-i-fi-kā'shun*), *n.* conversion of soft animal tissue into bone.
os-si-fy (*'i-fī*), *v. t.* to convert into bone or into a bone-like substance: *v. i.* to become bone.
os-ten-si-ble (*-ten'si-bl*), *adj.* apparent; held forth to view; plausible.
os-ten-ta-tion (*-tā'shun*), *n.* outward show or appearance; ambitious or vain display. [PRIDE.]
os-ten-ta-tious (*'shus*), *adj.* fond of show; intended for vain display; gaudy.
os-te-ol-o-gy (*-tē-ol'ō-ji*), *n.* that part of anatomy treating of bones, their structure, etc.
os-te-op-a-thist (*-op'ȧ-thist*), *n.* one who practices osteopathy.
os-te-op-a-thy (*-op'ȧ-thi*), *n.* a system of therapeutics in which the treatment is by manipulation of the bones, muscles, and nerve centers; the treatment of bone disease.
os-tra-cize (*'trȧ-sīz*), *v. t.* to banish by popular vote; exclude from public or private favor. [BANISH.]
os-trich (*'trich*), *n.* a swift running African bird, valued for its feathers.
Oswald (*oz'wald*). From Old German *os-walt,* "illustrious magistrate, prefect or administrator."
Oswego (*os-wē'gō*), **N. Y.** Named from the river, the Iroquois name being *oswageh,* "flowing out."
oth-er (*uth'ẽr*), *adj.* noting something besides; different; contrary.
oth-er-wise (*-wīz*), *adv.* in another manner; in other respects: *conj.* else.
Otho (*ō'thō*), or **Otto** (*ot-tō*). Some translate *Otho* "happy," and *Otto* "rich," but they would seem to be the same name. It comes from Old German *od,* "excelling," "happy," "fortunate." Dutch, *Otto;* Fr., *Othon;* Ger., *Otto;* It., *Ottone;* Lat., *Otho;* Sp., *Otonio;* Sw., *Otto.*
Ottawa (*ot'ȧ-wȧ*). The capital of the Dominion of Canada, stands on the river Ottawa, which preserves the name of the *Ottawa* or *Otaua* tribe, an Algonquin term meaning "traders."
Ottoman (*ot'tō-man*) **empire.** The official title of the realm subject to the sultan, takes its name from *Othman,* the emir under whom the Turks first advanced into Europe.
ought (*awt*), *v. i.* to be under obligation; be fit, necessary, or proper: *n.* anything.
ounce (*ouns*), *n.* a weight 1-16th of a pound avoirdupois; 1-12th of a pound troy.
our (*our*), *pron.* pertaining to, or belonging to, us.
★**oust** (*oust,* not *ōōst*), *v. t.* to eject. [BANISH.]
out (*out*), *adv.* without; not within or at home; abroad; gone forth.
out-break (*out'brāk*), *n.* a breaking out; an eruption.
out-cast (*out'kȧst*), *adj.* cast out; rejected: *n.* one who is cast or driven out; an exile.
out-crop (*'krop*), *n.* the exposure of strata at the earth's surface.
out-cry (*'krī*), *n.* clamor; tumult.
out-do (*-dōō'*), *v. t.* to excel.
out-law (*'law*), *n.* one who is deprived of legal benefits and protection: *v. t.* to deprive of legal benefits and protection.
out-lay (*'lā*), *n.* expense. [EXPENSE.]
out-line (*'līn*), *n.* a line bounding or defining a figure; first sketch: *v. t.* to sketch out.
out-live (*-liv'*), *v. t.* to live longer than.
out-rage (*'rāj*), *n.* open and excessive violence; wanton abuse or mischief: *v. i.* to act in an outrageous manner.
out-ra-geous (*-rā'jus*), *adj.* violent; excessive; exceeding all bounds.
out-right (*'rīt*), *adv.* completely; at once.
out-side (*'sīd*), *n.* the external part of anything; superficies; utmost: *adj.* exterior.
out-stand-ing (*-stand'ing*), *adj.* projecting; unpaid.
out-ward (*'wẽrd*), *adj.* external; to or from the exterior; visible; extrinsic.
Syn. OUTWARD, external, exterior. *Outward,* or inclined to the *out,* after the manner of the *out,* indefinitely describes the situation; *external* is employed only in regard to such objects as are conceived to be independent of man as a thinking being; hence, we may speak of the *outward* part of a building, of a board, and the like; but of *external* objects acting on the mind, or of an *external* agency; when we speak of anything which has two coats, it is usual to designate the *outermost* by the name of the *exterior.*
out-wit (*-wit'*), *v. i.* to overreach, or defeat, by superior skill or cunning.
out-work (*'wẽrk*), *n.* a defense constructed beyond the main body of a fort, etc.
o-val (*ō'val*), *adj.* shaped like an egg; elliptical: *n.* anything egg-shaped.
o-va-ry (*'vȧ-ri*), *n.* [*pl.* ovaries (*-riz*)], the organ in a female animal in which the ova or first germs of future life are formed; the hollow seed-case of a plant.
o-va-tion (*-vā'shun*), *n.* an enthusiastic demonstration of public esteem.
ov-en (*uv'n*), *n.* a place or apparatus for baking or heating.
o-ver (*ō'vẽr*), *prep.* superior in position, authority, dignity, excellence, or value; above; upon: *adv.* in excess: *adj.* beyond; superior.
★**o-ver-alls** (*-awlz*), *n. pl.* loose trousers worn to protect others.
o-ver-awe (*-aw'*), *v. t.* to awe exceedingly.
o-ver-flow (*-flō'*), *v. t.* to flow over.
over-hear (*-hēr'*), *v. t.* to hear by accident or by artifice.
o-ver-pow-er (*-pou'ẽr*), *v. t.* to bear down or crush by superior force; vanquish. [BEAT.]
o-ver-pro-duc-tion (*-prō-duk'shun*), *n.* supply in excess of the demand.
o-ver-seer (*-sēr'*), *n.* the superintendent of some department of a business.
o-vert (*'vẽrt*), *adj.* open; public.
o-ver-take (*ō-vẽr-tāk'*), *v. t.* to catch by pursuit; come upon as a punishment.
o-ver-throw (*-thrō'*), *v. t.* to turn upside down; demolish; vanquish; destroy: *n.* (*ō'vẽr-thrō*), ruin; defeat. [BEAT, SUBVERT.]
o-ver-turn (*-tûrn'*), *v. t.* to turn or throw over from a base or foundation. [SUBVERT.]
o-ver-whelm (*-hwelm'*), *v. t.* to crush or destroy utterly.
o-ver-wise (*ō'vẽr-wīz*), *adj.* affectedly wise.
Ovid (*ov'id*). From the Latin, meaning "goat," or "sheep," or both. Dutch, *Ovidius;* Fr., *Ovide;* Ger., *Ovidius;* It., *Ovidio;* Lat., *Ovidius.*
o-vip-a-rous (*ō-vip'ȧ-rus*), *adj.* producing young by eggs.
o-void (*'void*), *adj.* egg-shaped. [Also *ovoidal.*]
o-vum (*'vum*), *n.* [*pl.* ova (*'va*)], the germ or body in the ovary which, when impregnated, develops into the fœtus.
owe (*ō*), *v. t.* to be indebted, or under obligation to; be obliged to pay: *v. i.* to be in debt.
Owego (*ō-wē'gō*), **N. Y.** Delaware Indian word, *ahwaga,* "where the valley widens."
Owen. Probably from the Irish name *Eogan,* signifying "youth."
owl (*oul*), *n.* a raptorial nocturnal bird characterized by its hoot: *v. i.* to smuggle.
own (*ōn*), *adj.* belonging to; peculiar or proper to: *v. t.* to possess or hold by right.
ox (*oks*), *n.* [*pl.* oxen (*'n*)], an animal of the bovine genus, especially a castrated bull.
Oxford. Anglo-Saxon *Oxnaford,* the "ford of the oxen," is a name of the same class as *Shefford,* the "sheep ford," *Hertford* and *Swinford* in England, or *Ochsenfurt* and *Schweinfurt* in Germany.
ox-ide (*'īd*), *n.* a compound of oxygen and a base.
ox-i-dize (*'i-dīz*), *v. t.* to convert into an oxide: *v. i.* to be converted into an oxide. [Also *oxidate.*]
ox-y-gen (*'i-jen*), *n.* a colorless inodorous gas.
o-yer (*ō'yẽr*), *n.* a hearing or trial of legal causes.
o-yes (*'yes*), *interj.* the introductory cry of an official or public crier demanding silence. [Also *oyez.*]
oys-ter (*ois'tẽr*), *n.* a bivalve mollusk of the genus Ostrea, much esteemed as a delicacy.
Ozark (*ō-zärk'*). County and city in Christian county, Missouri, and village in Dale county, Alabama. A corruption of the French *aux arcs,* meaning "with bows," a term descriptive of the Indians who inhabited the country.
o-zone (*ō'zōn*), *n.* an allotropic form of oxygen present in the atmosphere.

P

pa (*pä*), *n.* abbreviation of *papa.*
pace (*pās*), *n.* a step; manner of walking; a linear measure, varying from 30 in. to 60 in.: *v. t.* to measure by steps or paces: *v. i.* to amble.
pa-cif-ic (*pȧ-sif'ik*), *adj.* peace-making; conciliatory; mild; peaceful; tranquil.
pa-cif-i-ca-tion (*-i-kā'shun*), *n.* the act of peacemaking; conciliation.
Pacific Ocean. Is the English translaton of *Mar Pacifico,* or *Oceano Pacifico,* the somewhat inappropriate name bestowed by Magellan, in 1521, on the great ocean which he was the first to traverse.
pac-i-fy (*pas'i-fī*), *v. t.* [*p. t.* and *p. p.* pacified, *p. pr.* pacifying], to calm or appease; reconcile.
pack (*pak*), *n.* a large bundle tied up for carriage; load; burden; set of playing cards; number of dogs kept for hunting: *v. t.* to bind and press together.
pack-age (*'āj*), *n.* a bundle or bale of goods.
pack-et (*'et*), *n.* a small pack, or parcel; a vessel sailing between two or more ports at regular intervals for the conveyance of passengers, mails, and merchandise.
pact (*pakt*), *n.* an agreement.
pad (*pad*), *n.* a soft cushion; a thick mass of sheets of paper for writing upon: *v. t.* stuff with padding.
pad-ding (*'ing*), *n.* material used for stuffing.
pad-dle (*'l*), *v. i.* to row slowly; play in the water: *v. t.* to propel by paddle or oar; to spank: *n.* a short broad oar; an oar blade; one of the floats for propelling a steamship.
pad-dock (*'uk*), *n.* a small field or inclosure for horses, etc.; a large toad or frog.
pad-lock (*pad'lok*), *n.* a lock with a link to pass through a staple or eye: *v. t.* to fasten with a padlock.
Paducah (*pȧ-dū'kȧ*), **Ky.** So called from the name of an Indian chief, *Paducah.*
pæ-an (*pē'an*), *n.* a triumphal song.
pæ-do-bap-tism (*-dō-bap'tizm*), *n.* infant baptism. [Also *pedobaptism.*]
pa-gan (*pā'gan*), *n.* a heathen; idolator: *adj.* heathen; idolatrous.
page (*pāj*), *n.* a boy attending on a person of distinction; a boy in livery; one side of the leaf of a book.
pag-eant (*paj'ent*), *n.* a theatrical show or spectacle.
pa-go-da (*pȧ-gō'dȧ*), *n.* a Buddhist temple.
pai-dol-o-gy (*pā-dol'ō-ji*), *n.* scientific child study.
pail (*pāl*), *n.* an open vessel of wood or metal, furnished with a handle, for carrying water, etc.
pain (*pān*), *n.* physical or mental suffering; penalty: *pl.* diligent effort; throes of parturition: *v. t.* to cause physical or mental suffering; render uneasy.
paint (*pānt*), *v. t.* to represent by delineation and colors; depict: *v. i.* to practice painting; rouge: *n.* a coloring substance.
Syn. PAINT, depict. *To paint* is employed either literally to represent figures on paper, or to represent circumstances and events by means of words; *to depict* is used only in this latter sense, but the former word expresses a greater exercise of the imagination than the latter; it is the art of the poet *to paint* nature in lively colors; it is the art of the historian or narrator *to depict.*
paint-er (*'ẽr*), *n.* one whose occupation is to paint; an artist who is skilled in depicting subjects in colors.
pair (*pâr*), *n.* two things of a kind, similar in form, suited to each other, and used together.
★**pa-ja-mas** (*pȧ-jä'mȧz*), *n. pl.* loose trousers; a kind of sleeping costume.
pal-ace (*pal'ās*), *n.* the residence of a sovereign or bishop; a magnificent house or building.
pal-a-ta-ble (*-ȧ-tȧ'bl*), *adj.* agreeable to the taste; savory.
pal-a-tal (*'ȧ-tal*), *adj.* pertaining to, or uttered by means of, the palate: *n.* a letter pronounced by means of the palate.
pal-ate (*'āt*), *n.* the roof of the mouth; taste or relish.
pa-la-tial (*pȧ-lā'shal*), *adj.* pertaining to, or suitable to, a palace; royal.
pal-a-tine (*'ȧ-tin*), *adj.* invested with royal privileges and rights: *n.* one who is thus invested.
pa-la-ver (*pȧ-lä'vẽr*), *n.* superfluous or idle talk; chatter: *v. i.* to confer; chatter.
pale (*pāl*), *adj.* not of a fresh or ruddy complexion; wan; wanting in colors: *n.* a stake: *v. i.* to turn pale: *v. t.* to inclose with pales.
pa-le-on-tol-o-gy (*pā-lē-on-tol'ō-ji*), *n.* that branch of geology which treats of fossil remains.
Palestine (*pal'es-tīn*). The country of the Hebrews. From Gr. *Palæstina,* a name indicating that the Greek mariners first knew Canaan as the land of the Philistines inhabiting the coast. The latter arrived, probably from Cyprus, after the Hebrew conquest and before the time of Rameses III., on whose monuments they appear as *Pulista.*

pal-ette (*pal'ĕt*), *n.* a thin oval wood or porcelain plate for mixing and holding colors.
pal-frey (*pawl'frē*), *n.* a small saddle horse for a lady's use.
pal-imp-sest (*pal'imp-sest*), *n.* a parchment manuscript which, after the writing upon it has been partially erased, is used again.
pal-i-sade (*pal-i-sād'*) *n.* a fence or fortification formed of stakes driven into the ground and pointed at the top: *v. t.* to inclose or fortify with stakes.
Palisades (*pal-i-sādz'*), **The.** A basaltic bluff extending along the western shore of the Hudson in the states of New Jersey and New York. It commences opposite the northern part of New York City, and continues northward about eighteen miles. Height, 200 to 500 feet.
pall (*pawl*), *n.* a cloak or mantle; a coffin covering: *v. i.* to become insipid; lose strength: *v. t.* to make insipid.
pal-la-di-um (*pal-ā'di-um*), *n.* any safeguard of a liberty, or privilege; a rare grayish metal found with platinum.
pal-let (*'et*), *n.* a name for various tools used in gilding, pottery, etc.; a small rough bed.
pal-li-ate (*'i-āt*), *v. t.* to excuse or cover over; extenuate; lessen or abate.
pal-li-a-tive (*'i-ā-tiv*), *adj.* tending to lessen or mitigate.
pal-lid (*'id*), *adj.* pale; wan.
Pall Mall (*pel-mel'*). A fine street in London, leading from Trafalgar square to the Green park. Its name is a modern spelling of *paille maille*, the title of a French game of ball somewhat similar to croquet, first played in this London thoroughfare about 1621.
pal-lor (*pal'ẽr*), *n.* lack of color.
palm (*päm*), *n.* the inner part of the hand; a tree of various species of the order Palmæ.
pal-met-to (*pal-met'ō*), *n.* a species of palm tree, the cabbage-tree palm.
★**pal-mis-try** (*pal'mis-tri*, not *pä'mis trī*), *n.* the pretended art of foretelling the future by examination of the lines and marks of a person's hand.
Palo Alto (*pä'lō ăl'tō*). Town in Santa Clara county, California. A Spanish phrase meaning "high stick."
pal-pa-ble (*pal'pă-bl*), *adj.* easily perceived; obvious.
pal-pi-tate (*'pi-tāt*), *v. i.* to beat or throb.
pal-sy (*pawl'zi*), *n.* paralysis: *v. t.* [*p. t.* and *p. p.* palsied, *p. pr.* palsying], to paralyze.
pal-try (*'trĭ*), *adj.* worthless; contemptible.
Pamlico sound, N. C. Named from a tribe of Indians called the *Pamlicoes*.
pam-per (*'pĕr*), *v. t.* to feed luxuriously; satiate.
pam-phlet (*'flet*), *n.* a small unbound book, usually on some current topic, of one or more sheets stitched together. This word is derived from the name of a Greek authoress, Pamphylia, who compiled a history of the world in thirty-five little books.
pan, a *prefix* meaning *all, universal:* as *pan*-Anglican.
pan (*pan*), *n.* a broad shallow vessel; that part of an old flintlock which held the priming.
pan-a-ce-a (*pan-a-sē'ä*), *n* a universal remedy or medicine.
Panama (*pan-ä-mä'*, Spanish *pä-nä-mä'*). Was the native name of a village on the Pacific coast of the Gulf and Isthmus of Panama. Here, in 1518, Davila founded the oldest existing city in America.
Panama bay. The bay of "mudfish."
pan-cake (*pan'kāk*), *n.* a thin cake of batter fried.
pan-cre-as (*pang'krē-as*), *n.* a large fleshy gland (the sweetbread) situated under and behind the stomach, secreting a fluid that assists in the process of digestion.
pan-cre-a-tin (*'krē-ā-tin*), *n.* an albuminoid principle in the fluid of the pancreas.
pan-de-mo-ni-um (*-dē-mō'ni-um*), *n.* a place or abode of general disorder.
pan-der (*'dẽr*), *v. i.* to act as an agent for the gratification of the passions.
pane (*pān*), *n.* a square of glass; a piece in variegated work.
★**pan-e-gyr-ic** (*pan-ē-jir'ik*), *n.* an ovation or eulogy in praise of some person or event; encomium. [ENCOMIUM.]
pan-el (*'el*), *n.* a thin board on which a picture is painted; a schedule containing the names of persons summoned to serve as jurors; the jury.
pang (*pang*), *n.* a violent sudden pain; agony, mental or physical.
pan-ic (*pan'ik*), *n.* a sudden fright; a kind of millet.
pan-ni-er (*'ni-ẽr*), *n.* one of two baskets suspended across the back of a horse, for carrying market produce.
pan-o plied (*'ō-plid*), *adj.* furnished with a complete suit of armor.
pan-o-ram-a (*-ō-rā'mä*), *n.* a picture, viewed from a central standpoint, of several scenes unrolled and made to pass before the spectator.
pan-sy (*'zi*), *n.* the heart's-ease.
pant (*pänt*), *v. i.* to breathe rapidly; *n.* rapid breathing.
pan-ta-loon (*pan'tä-lōōn*), *n.* a buffoon in a pantomime; *pl.* a pair of tight trousers.
pan-the-ism (*'thē-izm*), *n.* the doctrine that the universe in its totality is God.
Pan-the-on (*'thē-on*), *n.* a temple dedicated to all the gods, especially that of ancient Rome dedicated to Mars and Jupiter.
pan-ther (*pan'thẽr*), *n.* a fierce feline carnivorous animal. [Fem. *pantheress*.]
★**pan-to-mime** (*pan'tō-mīm*, not *pan'tō-mīn*), *n.* a representation in dumb show.
pan-try (*'trĭ*), *n.* a provision closet.
Paolo. See *Paul*.
pap (*pap*), *n.* soft food for infants; a nipple, teat, or breast; pulp of fruit.
★**pa-pa** (*pä-pä'*, or *pä'pä*), *n.* a word of endearment for father.
pa-pa-cy (*pā'pä-si*), *n.* the office, dignity, or authority, of the pope; popes collectively.
pa-pal (*'pal*), *adj.* pertaining to the pope, or the church of Rome.
pa-per (*pā'pẽr*), *n.* a thin flexible substance made of various materials, as linen, straw, etc., used for writing or printing upon; essay or literary contribution.
★**pa-pier ma-ché** (*pā-pyā'-mā-shā'*) *n.* paper pulp molded and made into trays, etc., and japanned.
pa-poose (*pä-pōōs'*), *n.* a young child [North Am-
Papua (*pä'pōō-ä*). An island north of Australia. A Portuguese term for "frizzled," alluding to the enormous frizzled heads of hair worn by the natives.
★**pa-py-rus** (*pä-pī'rus*, not *pap'ir-us*), *n.* [*pl.* papyri (*'rī*)], a species of Egyptian reed, from which the ancients made paper; a manuscript on papyrus.
par (*pär*), *n.* state of equality; nominal and market value.
par-a-ble (*par'ä-bl*), *n.* a comparison or similitude.
pa-rab-o-la (*pä-rab'ō-lä*), *n.* one of the conic sections formed by the intersection of the cone by a plane parallel to one of its sides.
par-a-chute (*par'ä-shōōt*), *n.* an umbrella-shaped apparatus for descending from a balloon.
pa-rade (*pä-rād'*), *n.* ostentatious display; show; military display: *v. t.* to marshal in military order; *v. i.* to exhibit.
par-a-dise (*par'ä-dīs*), *n.* the garden of Eden; any place of happiness; heaven.
par-a-dox (*'ä-doks*), *n.* something apparently absurd or incredible, yet true.
par-a-dox-ic-al (*'i-kal*), *adj.* of the nature of a paradox. [ABSURD.]
★**par-af-fin** (*'ä-fin*), *n.* a white crystalline substance obtained by distillation from wood, shale, etc.
par-a-gon (*'ä-gon*), *n.* something of extraordinary excellence; model or pattern of perfection: *v. t.* to equal or compare.
par-a-graph (*'ä-gräf*), *n.* a small subdivision of a connected discourse.
Paraguay (*par'ä-gwā*). River and republic of South America, meaning "the river of waters," referring to its numerous tributaries.
par-al-lel (*'ä-lel*), *adj.* lying side by side; extended in the same direction and equidistant at all points: *v. t.* to place so as to be parallel; correspond to; equal.
par-al-lel-o-gram (*'ō-gram*), *n.* a 4-sided figure whose opposite sides are parallel and equal.
pa-ral-y-sis (*pä-ral'i-sis*), *n.* loss of the power of sensation in one or more parts of the body; palsy.
par-a-lyze (*'ä-līz*), *v. t.* to affect with paralysis; unnerve; render useless or ineffective.
par-a-mount (*par'ä-mount*), *adj.* superior to all others; eminent or chief: *n.* the highest in rank or authority.
par-a-noi-a (*par-ä-noi'ä*), *n.* a form of monomania.
par-a-pet (*'ä-pet*), *n.* a wall breast-high; a rampart to protect troops from the fire of an enemy.
par-a-pher-na-li-a (*-fẽr-nā'li-ä*), *n.* ornaments of dress generally; equipment; trappings.
par-a-phrase (*'ä-frāz*), *n.* a free translation or explanation: *v. t.* make a free translation of.
par-a-site (*'ä-sīt*), *n.* an animal or plant nourished by another to which it attaches itself. [FLATTERER.]
par-a-sit-ic (*-sit'ik*), *adj.* of the nature of a parasite; meanly servile or fawning.
par-a-sol (*'ä-sol*), *n.* a lady's sunshade.
par-boil (*pär'boil*), *v. t.* to boil partially.
par-cel (*'sel*), *n.* a small bundle or package; little part: *v. t.* to divide into parts.
parch (*pärch*), *v.. t.* to scorch; burn slightly; dry to excess.
parch-ment (*'ment*), *n.* the skin of a sheep, goat, etc., dressed and prepared for writing upon; a deed: *adj.* made of, or like, parchment.
par-don (*pär'dn*), *v. t.* to forgive; absolve: *n.* forgiveness; absolution. [FORGIVE, MERCY, ABSOLVE, EXCUSE.]
par-don-a-ble (*-ä-bl*), *adj.* that may be pardoned. [VENIAL.]
pare (*pār*), *v. t.* to cut away little by little; reduce or diminish.
par-e-gor-ic (*par-ē-gor'ik*), *n.* a tincture of opium to assuage pain: *adj.* mitigating pain.
par-ent (*pār'ent*), *n.* a father or mother; origin.
par-ent-age (*-āj*), *n.* extraction; birth.
pa-ren-tal (*pä-ren'tal*), *adj.* pertaining to, or becoming, parents; fond.
pa-ren-the-sis (*pä-ren'the-sis*), *n.* [*pl.* parentheses (*sēz*)], an explanatory word or clause inserted in a sentence, which is grammatically complete without it: indicated by the marks ( ).
par-en-thet-ic-al (*par-en-thet'i-kal*), *adj.* expressed in a parenthesis; using parentheses.
par-e-sis (*par'ē-sis*), *n.* insanity with general motor paralysis; softening of the brain.
pa-ri-e-tal (*pä-rī'ē-tal*), *adj.* pertaining to a wall or side; forming the wall or side (said of the large lateral bones of the head).
Paris (*par'is*, Fr. *pä-rē'*). The capital of France, so called from the name of the Celtic tribe *Parisii*. It was called by the Romans *Lutetia Parisiorum*, the "bright city of the Parisii," from the white stone used in building.
par-ish (*par'ish*), *n.* an ecclesiastical district under the particular charge of priest, clergyman, or minister.
pa-rish-ion-er (*pä-rish'un-ẽr*), *n.* one who belongs to a parish.
par-i-ty (*'i-ti*), *n.* equality; likeness.
park (*pärk*), *n.* a large piece of ground used as a public place for recreation.
Parkersburg. City in Wood county, West Virginia, named for Alexander Parker of Pennsylvania.
par-lance (*pär'lans*), *n.* conversation; idiom of conversation.
par-ley (*'li*), *n.* a conference, especially with an enemy: *v. i.* to hold a conference, especially with an enemy with a view to peace.
★**Par-lia-ment** (*'li-ment*), *n.* the supreme legislative assembly of Great Britain and Ireland.
par-lia-men-ta-ri-an (*-men-tā'ri-an*), *n.* one who is versed in parliamentary law and usages.
par-lia-men-ta-ry (*'tä-ri*), *adj.* pertaining to, enacted by, or in accordance with the usages of, Parliament.
par-lor (*'lẽr*), *n.* reception room; drawing room.
Parnell (*pär'nel*). A feminine name corrupted from *Petronilla*.
pa-ro-chi-al (*pä-rō'ki-al*), *adj.* pertaining to a parish; narrow-minded.
par-o-dy (*par'ō-di*), *n.* a burlesque imitation of a serious poem.
pa-role (*pä-rōl'*), *n.* a word of honor, especially one given by a prisoner of war that in return for conditional freedom he will return to custody on a specified day.
par-ox-ysm (*par'oks-izm*), *n.* a sudden spasm, or fit of acute pain; sudden action or convulsion.
par-quet, parquette (*pär-ket'*), *n.* the floor space of a theater between the orchestra-rail and dress-circle.
par-ri-cide (*par'i-sīd*), *n.* the murderer of a father or mother.
par-rot (*'ot*), *n.* a tropical bird with a hooked bill, characterized by its brilliant plumage and its power of imitating the human voice.
par-ry (*'i*), *v. t.* [*p. t.* and *p. p.* parried, *p. pr.* parrying], to ward off, as a blow.
Parry Islands. A group of islands in the Arctic Ocean, named for the famous arctic navigator, Sir W. E. Parry.
parse (*pärs*), *v, t.* to resolve by grammatical rules (a sentence) into its component parts, and show the relation of the various parts of speech.
par-si-mo-ni-ous (*pär-si-mō'ni-us*), *adj.* frugal to excess; miserly; penurious.
par-si-mo-ny (*'si-mō-ni*), *n.* closeness in expenditure; niggardliness. [FRUGALITY.]
pars-ley (*pärs'li*), *n.* a culinary herb.
pars-nip (*'nip*), *n.* a plant with an edible carrot-like root.
par-son (*pär'sn*), *n.* the incumbent of a parish; a clergyman.
par-son-age (*-āj*), *n.* an ecclesiastical benefice; the residence of an incumbent of a parish.
part (*pärt*), *n.* something less than the whole; piece; portion; proportional quantity; regions; quarters: *v. t.* to distribute; separate: *v. i.* to be separated or divided; take leave.
Syn. PART, piece, patch. Things may be divided into *parts* without any express separation; but when divided into *pieces* they are actually cut asunder; hence we may speak of a loaf as divided into twelve *parts* when it is conceived only to be so; and divided into twelve *pieces* when it is really so; the *patch* is that which is always broken and disjointed, a something imperfect; many things may be formed out of a *piece*. [See *divide*.]
Ant. WHOLE.
par-take (*pär-tāk'*), *v. i.* [*p. t.* partook, *p. p.* partaken *p. pr.* partaking], to take a part or share in common with others.
par-tial (*'shal*), *adj.* inclined to favor one side or party; biased.
par-ti-al-i-ty (*-shi-al'i-ti*), *n.* the state or quality of being partial. [PREJUDICE.]
par-tic-i-pant (*-tis'i-pant*), *adj.* sharing: *n.* one who shares or partakes.
par-tic-i-pate (*'i-pāt*), *v. i.* to partake: *v. t.* to have part of; share.
★**par-ti-ci-ple** (*pär'ti-sip-l*, not *pärt'sip-l*), *n.* a word which partakes of the nature of a verb and of an adjective.
par-ti-cle (*'ti-kl*), *n.* an atom; the smallest part into which a body can be divided; a word noninflected or not used alone. [colors.
par-ti-col-ored (*pär'ti-kul-ẽrd*), *adj.* having various
par-tic-u-lar (*-tik'ū-lẽr*), *adj.* distinct from others; individual; peculiar or special; exclusive.
Syn. PARTICULAR, individual. *Particular* is much more specific than *individual;* the *particular* confines us to one object only of many; but *individual* may be said of any one object among many. [See *circumstantial*.]
Ant. COMMON, normal, ordinary.

par-tic-u-lar-i-ty (*pär-tik-ū-lar'i-ti*), *n.* circumstantiality.
par-tic-u-lar-ize (*'ū-lẽr-īz*), *v. t.* to give the particulars of: *v. i.* be attentive to single things or details.
par-ti-san (*pär'ti-zan*), *n.* an adherent of a party or faction: *adj.* pertaining to, or biased in favor of, a party, etc. [FOLLOWER.]
par-ti-tion (*-tish'un*), *n.* the act or state of being divided; a dividing wall: *v. t.* divide by walls.
part-ner (*'nẽr*), *n.* one who is associated with another. [COLLEAGUE, ACCESSORY.]
★**par-tridge** (*pär'trij*, not *pat'rij*), *n.* a well-known gallinaceous bird of the genus Perdix, preserved as game.
par-tu-ri-tion (*-tū-rish'un*), *n.* the act of bringing forth young.
par-ty (*'ti*), *n.* a number of persons united together for a particular purpose; faction.
par-ty wall (*-wawl*), a common wall separating two tenements.
Pasadena (*pas-ȧ-dē'nȧ*). City in Los Angeles county, California. An Indian word meaning "crown of the valley."
Paschal (*pas'kal*, French *päs-käl'*). Means "belonging to Easter," or "born at Easter." Gr., *Pascal;* It., *Pasquale;* Lat., *Paschalis;* Sw., *Pascual.*
pash-a (*pash'ȧ*), *n.* a Turkish title given to high officials. [Also *pacha.*]
pass (*pȧs*), *v. i.* to move from one place or state to another; be progressive; disappear: *v. t.* to go beyond, or through, or by: *n.* a narrow passage.
pas-sage (*pas'āj*), *n.* the act of passing; course or journey.
Passaic (*pas-sā'ik*). County, city, and river in New Jersey; name derived either from the Indian word *Passaic* or *Passajeek*, "a valley," or from the Indian equivalent of "peace."
Passamaquoddy (*pas-sȧ-mȧ-kwod'di*). Bay on coast of Maine. An Indian word meaning "pollock ground," or "pollock-plenty space."
pas-sen-ger (*'en-jẽr*), *n.* one who travels in or on a conveyance; one who passes.
pass-ing (*pȧs'ing*), *p. adj.* departing: *adv.* exceedingly: *n.* the act of going by; transit.
pas-sion (*pash'un*), *n.* violent agitation of mind in anger; love; ardor; intense desire.
pas-sion-ate (*-āt*), *adj.* moved by passion; angry; excitable.
pas-sive (*'iv*), *adj.* suffering without resisting; not acting; submissive; quiescent.
Pass-o-ver (*pȧs'ō-vẽr*), *n.* a Jewish feast commemorative of the passing of the destroying angel over the houses of the Israelites when he slew the first-born of the Egyptians.
pass-port (*'pōrt*), *n.* a license to travel in a foreign country.
Passumpsic (*pas-sump'sik*) **river, Vt.** Indian word meaning "much clear river."
pass-word (*'wẽrd*), *n.* a word by means of which friends are distinguished from strangers or enemies.
past (*pȧst*), *p. adj.* having formerly been; gone by; completed: *n.* the time gone by: *adv.* along: *prep.* beyond.
paste (*pāst*), *n.* a mixture of flour, etc., with water, used as a cement; a composition for making artificial gems: *v. t.* to fasten with paste.
paste-board (*'bōrd*), *n.* thick stiff paper.
pas-tel (*pas'tel*), *n.* a colored crayon.
pas-teur-ize (*pas'tūr-īz*), *v. t.* to inoculate with the bacillus which produces a specific disease.
pas-til (*'til*), *n.* a small cone of aromatic paste used for fumigating a room; a medicated lozenge.
pas-time (*pȧs'tīm*), *n.* diversion; sport.
pas-tor (*'tẽr*), *n.* a clergyman or minister having spiritual charge of a church and congregation.
pas-tor-al (*-al*), *adj.* pertaining to shepherds: *n.* a kind of dramatic poem.
pas-try (*pās'tri*), *n.* articles of food, as pies, etc., made of light puffy dough.
pas-ture (*pas'tūr*), *n.* land under grass for grazing cattle: *v. t.* to supply with grass or pasture: *v. i.* to graze.
past-y (*pāst'i*), *adj.* like paste; a small pie, usually of meat covered with a pie crust.
pat (*pat*), *n.* a light quick blow with the hand; *adj.* apt; exact.
Patagonia (*pat-ȧ-gō'ni-ȧ*). The southernmost portion of South America. So styled by Magellan in accordance with the Spanish word *patagon*, meaning a "large, clumsy foot." It was from the fact of seeing the impressions of the large shoes of the aborigines that he at once concluded the country must be inhabited by giants.
Patapsco (*pȧ-taps'kō*) **river, Md.** So called from the Indian name *patapsqui*, "black water."
patch (*pach*), *n.* a piece applied to cover a hole or rent; a plot of ground: *v. t.* to put a patch on; mend clumsily. [PART.]
pate (*pāt*), *n.* the head; crown of the head.
pat-en (*pat'en*), *n.* the plate used for the bread at the Eucharist.
pat-ent (*pat'ent*, or *pā'tent*), *adj.* apparent; secured by letters patent: *n.* a privilege granted by letters patent, as a title of nobility, or the sole right in an invention: *v. t.* to grant or secure by letters patent.
pa-ter-nal (*pȧ-tẽr'nal*), *adj.* pertaining to, or exhibiting the characteristics of, a father; hereditary.
pa-ter-ni-ty (*-tẽr'ni-ti*), *n.* paternal relation; authorship.

Paternoster Row (*pā'tẽr nos'tẽr rō*). A street in London, north of St. Paul's, long famous as a center of book publishing. It is said to be so named from the prayer books or rosaries sold in it.
Paterson. City in Passaic county, New Jersey, named for William Paterson, an early governor.
path (*pȧth*), *n.* a road; footway, track; course of conduct or action.
pa-thet-ic (*pȧ-thet'ik*), *adj.* affecting the emotions or passions; touching. (Also *pathetical.*) [MOVING.]
pa-thol-o-gy (*'ō-ji*), *n.* the science of diseases.
pa-thos (*pā'thos*), *n.* expression of deep feeling; that which excites the mental emotions.
pa-tience (*'shens*), *n.* the quality of being patient or calmly enduring.
Patience. Found as a masculine as well as a feminine name. The name explains itself.
pa-tient (*'shent*), *adj.* suffering pain, hardship, affliction, insult, etc., with calmness and equanimity. [INVALID.]
pa-tois (*pȧ-twä'*), *n.* provincial dialect.
pa-tri-arch (*pā'tri-ärk*), *n.* the founder or head of a family; an aged man.
pa-tri-cian (*pȧ-trish'an*), *n.* one of the senators of ancient Rome; a nobleman: *adj.* senatorial; noble.
Patrick (*pat'rik*). From the Latin *Patricius*, meaning "patrician," "noble." Dutch, *Patricius;* Fr., *Patrice;* It., *Patrizio;* Sp., *Patricio.*
pat-ri-mo-ny (*'ri-mō-ni*), *n.* an estate or right inherited from a father or one's ancestors.
★**pa-tri-ot** (*pā'tri-ot*), *n.* one who loves, and is devoted to, his native country and its welfare.
pa-tri-ot-ism (*'tri-ot-izm*), *n.* love of one's country.
pa-tris-tic (*pȧ-tris'tik*), *adj.* pertaining to the theology and writings of the fathers of the Christian church. [Also *patristical.*]
pa-trol (*pȧ-trōl'*), *n.* a corporal's guard that marches round at night to preserve order; a mounted policeman: *v. t.* to go round as a patrol.
★**pa-tron** (*pā'trun*, not *pat'run*), *n.* a guardian or protector: *adj.* giving aid or exercising guardianship; tutelary.
pat-ron-ize (*pat'run-īz*), *v. t.* to act as a patron toward; support or protect; frequent as a customer.
pat-ro-nym-ic (*pat-rō-nim'ik*), *adj.* derived from the name of an ancestor: *n.* a name derived from an ancestor.
pat-ter (*'ẽr*), *v. i.* to strike with a quick succession of light sounds, as hail.
pat-tern (*'ẽrn*), *n.* a model, sample, or specimen. [COPY, EXAMPLE.]
pat-ty (*'i*), *n.* a small pie.
pau-ci-ty (*paw'si-ti*), *n.* smallness of number or quantity.
Paul (*pawl*, French *pōl*, German *powl*) A name derived from the Hebrew, signifying "small in stature." Danish, *Paul* or *Paulus;* Dutch, *Paulus;* Fr., *Paul;* Ger., *Paul;* Gr., *Paulos;* Hungarian, *Pal;* It., *Paola;* Lat., *Paulus;* Polish, *Pawel;* Port., *Paulo,* Russ., *Pavel;* Sp., *Pablo;* Sw., *Paul.*
Paulina (*paw-lē'nȧ, paw-lī'nȧ*). The feminine of *Paul.* Fr., *Pauline;* Ger., *Pauline;* It., *Paolina;* Lat., *Paulina.*
Pauline (*paw-lēn'*, French *pō-lēn'*). A French name derived from the Roman name *Paulina.*
paunch (*pänch*, or *pawnch*), *n.* the belly.
pau-per (*paw'pẽr*), *n.* a dependent poor person.
pau-per-ize (*-īz*), *v. t.* to make a pauper of.
pause (*pawz*), *n.* cessation; temporary stop: *v. i.* to make a short stop; wait. [DEMUR.]
pave (*pāv*), *v. t.* to cover or lay with stones, bricks, etc.
pave-ment (*pāv'ment*), *n.* a paved roadway or floor.
pa-vil-ion (*pȧ-vil'yun*), *n.* an ornamental dome-shaped building; a large tent; summer house.
paw (*paw*), *n.* the foot of an animal with claws; the hand: *v. t.* to scrape with the forefoot.
pawn (*pawn*), *n.* something given as security for the redemption of a pledge; a common piece at chess: *v. t.* to give in pledge.
pawn-bro-ker (*'brō-kẽr*), *n.* one who lends money on the security of goods pawned with him.
pay (*pā*), *v. t.* to discharge a debt to; give an equivalent for; compensate: *n.* money given for service rendered.
Payette (*pā-et'*) **river, Idaho.** Named by a French trapper, José Payette.
pay-mas-ter (*'mȧs-tẽr*), *n.* one who pays or from whom wages are received.
pea (*pē*), *n.* [*pl.* peas, or pease (*pēz*)], a leguminous plant of the genus Pisum and its edible seed.
Peabody Institute. An institute at Baltimore, founded by George Peabody, and containing a library, conservatory of music, art gallery, etc.
peace (*pēs*), *n.* a state of rest or tranquillity; calm; freedom from war or disturbance.
Syn. PEACE, quiet, calm, tranquillity. *Peace* implies an exemption from public or private broils; *quiet* implies a freedom from noise or interruption; *calm* is a species of *quiet* which respects objects in the natural or the moral world; it indicates the absence of violent motion as well as violent noise; *tranquillity* expresses the situation as it exists in the present moment; it is sometimes applicable to society, sometimes to natural objects. [See *calm.*]
Ant. AGITATION, excitement, restlessness, tumult.
peace-a-ble (*'ȧ-bl*), *adj.* disposed to peace; calm, quiet.
peace-ful (*'fool*), *adj.* pacific; quiet. [CALM.]

peach (*pēch*), *n.* a tree with its downy edible fruit: *v. i.* to betray one's accomplices.
pea-cock (*pē'kok*), *n.* a gallinaceous bird with handsome plumage.
peak (*pēk*), *n.* the sharp-pointed summit or jutting part of a mountain or hill; pointed end.
peal (*pēl*), *n.* a loud sound, as of thunder, bells, etc.: *v. i.* to give forth loud or solemn sounds.
pea-nut (*pē'nut*), *n.* the groundnut.
pear (*pâr*), *n.* the juicy edible fruit of the pear tree (*Pyrus communis*).
pearl (*pẽrl*), *n.* a hard, smooth, grayish-white iridescent gem found in the mother-of-pearl oyster: *adj.* pertaining to, or formed of, pearls.
Pearl river, Miss. The Indian name was *Tallahatchie*, signifying "river of pearls," of river stones, obtained from a peculiar shell taken from the bottom of the canoes; supposed to be a kind of oyster.
pearl-y (*'i*), *adj.* resembling, or containing, pearls; clear.
peas-ant (*pez'ant*), *n.* a countryman; rustic laborer: *adj.* rural.
peat (*pēt*), *n.* decayed vegetable matter, resembling turf, cut out of bogs, and used as fuel.
peb-ble (*peb'l*), *n.* a roundish stone.
pe-can (*pē-kan'*), *n.* a species of North American hickory and its fruit.
pec-ca-bil-i-ty (*pek-ȧ-bil'i-ti*), *n.* the state of being subject to sin.
pec-ca-dil-lo (*-dil'ō*), *n.* a trifling fault.
peck (*pek*), *n.* 1-4th of a bushel; quick, sharp stroke with the beak: *v. t.* to strike with the beak.
Pecos (*pā'kōs*) **river, Tex.** Named by the Spaniards, from *pecoso*, "freckled," a local suggestion in the appearance of its waters.
pec-tic ac-id (*pek'tik as'id*), an acid found in various fruits.
pec-to-ral (*'tō-ral*), *adj.* pertaining to, or worn on, the chest.
pec-u-late (*'ū-lāt*), *v. i.* to appropriate public money to one's own use; embezzle.
pe-cul-iar (*pe-kūl'yẽr*), *adj.* one's own; appropriate; individual; strange. [RARE.]
pe-cul-iar-i-ty (*-yar'i-ti*), *n.* [*pl.* peculiarities (*-tiz*)], something peculiar or characteristic.
pe-cun-ia-ry (*pe-kūn'yȧ-ri*), *adj.* pertaining to, or consisting of, money; monetary [FINANCIAL.]
ped-a-gog-ic (*ped-ȧ-goj'ik*), *adj.* pertaining to a pedagogue or to the science of teaching. [Also *pedagogical.*]
ped-a-gogue (*'ȧ-gog*), *n.* a schoolmaster; pedant.
ped-a-go-gy (*'ȧ-gō-ji*), *n.* the science of teaching.
ped-al (*ped'al*), *n.* a key or lever attached to a musical instrument and moved by the foot, to modify or swell the tone.
ped-ant (*'ant*), *n.* one who makes an ostentatious display of his learning.
ped-ant-ry (*'ant-ri*), *n.* ostentatious display of learning.
ped-dle (*'l*), *v. i.* to travel about selling small wares: *v. t.* to retail in small quantities.
ped-dler, ped-ler, ped-lar (*'lẽr*), *n.* one who peddles.
ped-es-tal (*'es-tal*), *n.* the base of a column, statue, etc.
pe-des-tri-an (*pē-des'tri-an*), *adj* going on foot; walking: *n.* one who journeys on foot.
ped-i-gree (*ped'i-grē*), *n.* lineage; genealogy.
pe-do-bap-tism. Same as *pædobaptism.*
ped-om-e-ter (*ped-om'ē-tẽr*), *n.* a watch-shaped instrument for recording distances in walking.
Pedro. See *Peter.*
ped-un-cle (*-ung'kl*), *n.* a flower-stalk.
Peekskill. Village in Westchester county, New York, named for Jan Peek, a Dutch mariner of the seventeenth century.
peel (*pēl*), *v. t.* to strip the skin, bark, or rind from: *n.* skin or rind.
peep (*pēp*), *v. i.* to chirp or cry, as young birds; to look through a crevice or hiding place.
peer (*pēr*), *n.* one of the same rank; an equal; associate.
peer-age (*'āj*), *n.* the rank or dignity of a peer; peers collectively.
peer-less (*'les*), *adj.* without an equal.
peev-ish (*pēv'ish*), *adj.* fretful; difficult to please. [CAPTIOUS.]
peg (*peg*), *n.* a small pointed wooden pin; a piece of wood serving as a nail.
Pekin (*pē-kin'*) or **Peking** (*pē-king'*). Chinese. *Pehking.* The "north court" or "northern capital," of China, so called since 1421, when the third Ming emperor transferred hither the court from Nanking, the "southern court."
pelf (*pelf*), *n.* money; wealth (used in a bad sense).
pel-i-can (*pel'i-kan*), *n.* a large aquatic bird with a huge ax-shaped bill.
pel-let (*'et*), *n.* a little ball.
pell-mell (*'mel*), *adv.* with confused violence.
pel-lu-cid (*-ū'sid*), *adj.* perfectly clear; transparent.
Syn. PELLUCID, transparent. *Pellucid* is said of that which is pervious to the light, or of that into which the eye can penetrate; *transparent* is said of that which is throughout bright; a stream is *pellucid;* it admits light but it is not *transparent* for the eye. [See *candid.*]
pelt (*pelt*), *n.* a raw hide; a blow from something thrown: *v. t.* to strike by throwing something.
pel-vis (*'vis*), *n.* the bony cavity in the lower part of the abdomen.
Pembina (*pem'bē-nȧ*), **N. D.** Name a contraction

of Ojibway Indian word *anepeminan*, a red berry growing in that vicinity, which Michaux regards as a variety of the cranberry of the east.

pem-mi-can (*pem'i-kan*), *n.* lean meat, dried, pounded, and pressed into cakes.

pen (*pen*), *n.* a small inclosure; coop; an instrument for writing: *v. t.* to shut up in a small inclosure; write.

pe-nal (*pē'nal*), *adj.* enacting, inflicting, or incurring punishment for crime; punitive.

pen-al-ty (*pen'al-ti*), *n.* fine or forfeit.

pen-ance (*pen'ans*), *n.* self-imposed suffering, as an expression of contrition for sin.

pence (*pens*), *pl.* of penny.

pen-cil (*pen'sil*), *n.* a pointed instrument of black lead, colored chalk, etc.: *v. t.* to write, sketch, paint, or mark with a pencil.

pend-ant (*pend'ant*), *n.* anything hanging for ornamentation; an earring or locket; a pennant.

pend-ent (*'ent*), *adj.* hanging; projecting; swinging.

pend-ing (*ing*), *adj.* undecided; hanging in suspense.

Pend Oreille (*pend ō-rēl'*) **lake, Idaho.** So called from the French, meaning "earring," suggested by its shape.

pen-du-lum (*'dū-lum*), *n.* a heavy body suspended so that it may vibrate backward and forward about a fixed point by the force of gravity, as in a clock.

Penelope (*pē-nel'ō-pē*). The Greek name which some render "female weaver"; others define it "a web," and "a garment," because the wife of Ulysses was the best weavereress. Fr., *Pénélope;* Gr., *Penelope;* Lat., *Penelope.*

pen-e-tra-ble (*'ē-tra-bl*), *adj.* that may be penetrated; susceptive of impression.

pen-e-trate (*'ē-trāt*), *v. t.* to pierce into; enter; bore or perforate.

pen-e-tra-tion (*-trā'shun*), *n.* the act of penetrating; mental acuteness.

pen-guin (*'gwin*), *n.* a large sea fowl with rudimentary wings.

pen-in-su-la (*pen-in'sū-lā*), *n.* a portion of jutting land nearly surrounded by water, and connected with the mainland by an isthmus.

pen-in-su-lar (*'su-lēr*), *adj.* pertaining to, or shaped like, a peninsula.

pen-i-tence (*pen'i-tens*), *n.* sorrow for sin; state of being penitent.

pen-i-tent (*'i-tent*), *adj.* repentant: *n.* one who is penitent.

pen-i-ten-tia-ry (*-ten'shā-rī*), *adj.* pertaining to penance: *n.* a house of correction; a state prison.

pen-knife (*'nīf*), *n.* a small pocket-knife.

pen-man-ship (*'man-ship*), *n.* the art, or style, of writing.

pen-nant (*'ant*), *n.* a long narrow strip of bunting at the mastheads of men-of-war.

Pennsylvania. One of the eastern states of the Union. William Penn originally designed calling the territory *New Wales*, but afterward suggested the word *Sylvania*, as suitable for a land covered with forests. The king of England, in 1681, prefixed the word *Penn* in honor of William Penn; literal translation, "Penn's woods."

Pennsylvania ave. The principal avenue of Washington, D. C. Its most important section lies between the capitol and the treasury.

pen-ny (*-i*), *n.* [*pl.* pennies (*'iz*), denoting number, pence (*pens*), denoting amount or value], a bronze coin equal to 1-12 of a shilling, or 2 cents. [*English.*]

pen-ny-weight (*-wāt*), *n.* a weight equal to 24 grains troy.

Penobscot (*pē-nob'skot*), **Me.** Name derived from the Indian word *penobskeag*, meaning "rocky place," or "river of rocks." Also said to be the name of an Indian tribe.

pe-nol-o-gy (*pē-nol'ō-ji*), *n.* the scientific study of punishments, prison management, etc.

Pensacola (*pen-sa-kō'lā*). Bay and city in Escambia county, Florida. Name said to be derived from the Indian word *Pan-sha-okla*, meaning "hair people." The French gave to the bay the name of *Port-de-Aucloss*, also *Bai de St. Mariette.*

pen-sion (*'shun*), *n.* a stated allowance paid for past services, as to the state, etc.: *v. t.* to grant a pension to.

pen-sive (*'siv*), *adj.* thoughtful; sad.

pent [*p. t.* and *p. p.* of pen], to shut up.

penta, a *prefix* meaning *five:* as *pentachord.*

pen-ta-gon (*pen'ta-gon*), *n.* a figure of 5 sides and 5 angles.

pen-tam-e-ter (*-tam'ē-tēr*), *n.* a verse consisting of 5 feet.

Pen-ta-teuch (*'ta-tūk*), *n.* the first 5 books of the Old Testament.

Pen-te-cost (*'tē-kost*), *n.* a Jewish festival kept the 50th day after the second day of the Passover.

pent-house (*'hous*), *n.* a shed with a slanting roof projecting from a main wall or building.

pe-nult (*pē-nult'*), *n.* the last syllable of a word but one. [Also *penultima.*]

pe-nult-i-mate (*'i-māt*), *adj.* last but one.

pe-num-bra (*-num'brā*), *n.* a partial shadow on the exterior of the perfect shadow of an eclipse.

pe-nu-ri-ous (*-nū'ri-us*), *adj.* miserly; sordid.

Syn. PENURIOUS, economical, saving, sparing, thrifty, niggardly. To be *economical* is a virtue in those who have but narrow means; he who is *saving* when young will be *avaricious* when old; *sparing* is keeping out of that which ought to be spent; *thrifty* is accumulating by means of *saving; penurious* is suffering as from *penury* by means of *saving; niggardly* is not spending or letting go but in the smallest possible quantities.

pen-u-ry (*pen'ū-ri*), *n.* want of the necessities of life; poverty.

pe-o-ny (*pē'ō-ni*), *n.* a perennial plant with handsome flowers, of the genus Pæonia. [Also *pæony.*]

peo-ple (*'pl*), *n.* [*pl.* people, peoples (*'plz*), persons generally; community; inhabitants: *v. t.* to stock with people.

Peoria (*pē-ō'ri-ā*). County and city in Illinois and nation in Indian territory. An Indian word meaning "place where there are fat beasts."

pep-per (*pep'ēr*), *n.* a hot pungent spice made of the ground seeds of *Piper nigrum.*

pep-per-mint (*-mint*), *n.* an aromatic herb; the cordial prepared from it.

pep-sin (*'sin*), *n.* a nitrogenous ferment contained in gastric juice.

per-ad-ven-ture (*pēr-ad-ven'tūr*), *adv.* by chance.

per-am-bu-la-tion (*-am-bū-lā'shun*), *n.* the act of passing through; a survey made by traveling.

per-ceive (*-sēv'*), *v. t.* to obtain knowledge of by the senses; understand; discern. [SEE.]

per cent (*-sent'*), by the hundred.

per-cent-age (*-sent'āj*), *n.* proportional allowance; per cent.

per-cep-ti-ble (*-sep'ti-bl*), *adj.* that may be perceived.

per-cep-tion (*-sep'shun*), *n.* idea, notion, or conception.

per-cep-tive (*'tiv*), *adj.* having the faculty of perceiving.

perch (*pērch*), *n.* a fresh-water fish; anything on which birds sit or roost.

per-chance (*pēr-chāns'*), *adv.* perhaps.

Percival (*pēr'si-val*). An old masculine baptismal name, derived from a local name in Normandy. It probably means "companion of the chalice."

per-co-late (*'kō-lāt*), *v. i.* to pass through small spaces.

per-cus-sion (*-kush'un*), *n.* violent collision; shock produced by the collision of bodies.

Percy. A name derived from *Perci*, a parish and canton near St. Lo, in Normandy.

per-di-tion (*-dish'un*), *n.* total destruction; ruin, utter loss of the soul or of happiness in a future state.

per-e-grin-a-tion (*per-ē-grin-ā'shun*), *n.* the act of traveling about.

Peregrine (*per'ē-grin*). From the Latin, meaning "foreign," "pilgrim," "traveler." Danish, *Peregrinus;* Dutch, *Peregrinus;* It., *Peregrino;* Lat., *Peregrinus;* Sw., *Peregrinus.*

Père-la-Chaise or **Père Lachaise** (*pâr lā-shāz'*). The Parisian cemetery so named is the site of a great monastery founded by Louis XIV., of which Père la Chaise, a favorite confessor of that luxurious monarch, was the first superior. He died in 1709. After the Revolution the grounds were laid out for a cemetery.

per-emp-to-ry (*per'emp-tō-ri*), *adj.* positive; final; decisive; precluding discussion or hesitation.

per-en-ni-al (*-en'i-al*), *adj.* lasting through the year; perpetual.

per-fect (*pēr'fekt*), *adj.* complete; without defect or blemish; blameless; pure: *v. t.* to complete or finish. [COMPLETE.]

per-fect-i-ble (*-fek'ti-bl*), *adj.* capable of being made perfect.

per-fec-tion (*-fek'shun*), *n.* the state of being perfect; supreme excellence.

per-fid-i-ous (*-fid'i-us*), *adj.* false to trust; treacherous; faithless. [FAITHLESS.]

per-fi-dy (*'fi-di*), *n.* violation of a trust reposed; breach of faith.

per-fo-rate (*'fō-rāt*), *v. t.* to pierce or bore through; make a hole through. [ORIFICE.]

per-force (*-fōrs'*), *adv.* by force; violently.

per-form (*-fōrm'*), *v. t.* to do or carry out; execute; achieve; fulfill: *v. i.* to act a part. [EFFECT, EXECUTE.]

per-form-ance (*'ans*), *n.* the act of performing; execution; completion. [PRODUCTION.]

per-fume (*-fūm'*), *v. t.* to impregnate with a pleasant odor; scent: *n.* (*pēr'fūm*) a sweet-smelling scent.

per-fum-er-y (*'ēr-i*), *n.* perfumes in general.

per-func-to-ry (*-fungk'tō- .*), *adj.* done carelessly or negligently with the purpose of getting rid of the duty; negligent.

per-haps (*-haps'*), *adv.* possibly.

per-i-car-di-um (*per-i-kār'di-um*), *n.* the membrane that surrounds the heart.

per-i-hel-ion (*-hēl'yun*), *n.* [*pl.* perihelia (*-yā*)], that point in the orbit of a planet, or a comet, nearest the sun.

per-il (*'il*), *n.* exposure to injury; danger; jeopardy; risk: *v. t.* to expose to danger or risk. [DANGER.]

per-il-ous (*-us*), *ad .* full of peril; hazardous.

per-im-e-ter (*per-im'ē-tēr*), *n.* the outer boundary of a plane surface.

pe-ri-od (*pē'ri-ud*), *n.* a cycle; interval of time; a dot (.) to mark the end of a sentence. [TIME.]

pe-ri-od-ic-al (*-od'i-kal*), *adj.* occurring at regular intervals. [Also *periodic.*] *n.* a publication issued at stated intervals.

pe-ri-o-dic-i-ty (*-ō-dis'i-ti*), *n.* the state or quality of being periodical.

per-i-os-te-um (*per-i-os'tē-um*), *n.* the vascular nervous membrane which covers the bones.

per-i-pa-tet-ic (*-pa-tet'ik*), *adj.* walking about: *n.* one who is accustomed or compelled to walk.

pe-riph-er-y (*pē-rif'ēr-i*), *n.* [*pl.* peripheries (*-iz*)], the circumference of a circle, ellipse, or similar figure.

per-i-scope (*per'i-skōp*), *n.* an instrument for seeing over intervening objects.

per-ish (*'ish*), *v. i.* to lose life or vitality; decay or die: be destroyed or come to nothing.

per-ish-a-ble (*per'ish-a-bl*), *adj.* liable to perish; mortal.

per-i-stal-tic (*per-i-stal'tik*), *adj.* pertaining to the peculiar worm-like movement of the intestines.

per-i-sys-to-le (*-sis'tō-lē*), *n.* the interval that ensues on the contraction of the heart before the dilation (diastole) which follows.

per-i-to-ne-um (*-tō-nē'um*), *n.* a thin serous membrane which covers the abdominal viscera.

per-i-wig (*per'i-wig*), *n.* a small wig.

per-i-win-kle (*-wing'kl*), *n.* a perennial creeping plant; a small univalve mollusk.

per-jure (*pēr'jūr*), *v. i.* to swear falsely. [FORSWEAR.]

perk (*pērk*), *v. t.* to make trim or smart: *v. i.* to hold up the head in a smart or saucy manner; peer.

per-ma-nence (*pēr'mā-nens*), *n.* the state or quality of being permanent; duration. [Also *permanency.*]

per-ma-nent (*-nent*), *adj.* lasting; durable; continuing in the same state.

Syn. PERMANENT, abiding, constant, durable, fixed, immutable, invariable, lasting, perpetual, stable, steadfast. *Durable* is said almost wholly of material substances that resist wear; *lasting* is said of either material or immaterial things. *Permanent* is a word of wider meaning; a thing is *permanent* which is not liable to change; as, a *permanent* color; *immutable* is a higher word, applied to that which resists both time and change. [See *durable.*]

per-me-a-ble (*'mē-ā-bl*), *adj.* that may be passed through.

per-me-ate (*'mē-āt*), *v. t.* to penetrate and pass through the pores or interstices of.

per-mis-si-ble (*-mis'i-bl*), *adj.* that may be permitted.

per-mis-sion (*-mish'un*), *n.* the act of permitting; leave; license.

per-mit (*-mit'*), *v. t.* to allow without command; consent to; tolerate. [CONSENT, ADMIT.]

per-mu-ta-tion (*-mū-tā'shun*), *n.* the exchange of one thing for another.

Pernambuco (*per-nam-bōō'kō*). An important city of Brazil. Means "the mouth of hell," in allusion to the violent surf always distinguished at the mouth of its chief river, the Amazon.

per-ni-cious (*pēr-nish'us*), *adj.* highly injurious or hurtful; destructive. [HURTFUL.]

per-o-ra-tion (*per-ō-rā'shun*), *n.* the concluding part of an oration.

per-ox-ide (*pēr-oks'id*), *n.* the oxide of a base which contains the largest proportion of oxygen.

per-pen-dic-u-lar (*-pen-dik'ū-lēr*), *adj.* standing at right angles to a given line or surface; perfectly upright.

per-pe-trate (*'pē-trāt*), *v. t.* to commit; perform (in a bad sense).

Syn. PERPETRATE, commit. One may *commit* offenses of various degrees and magnitude but one *perpetrates* crimes only, and those of the more heinous kind.

Ant. BE INNOCENT.

per-pet-u-al (*-pet'ū-al*), *adj.* never ceasing; not temporary. [PERMANENT.]

per-pet-u-ate (*'ū-āt*), *v. t.* to make perpetual; preserve from extinction or oblivion.

per-pe-tu-i-ty (*-pē-tū'i-ti*), *n.* the state of being perpetual; endless duration.

per-plex (*-pleks'*), *v. t.* to make difficult to be understood; puzzle. [EMBARRASS, DISTRESS.]

per-plex-i-ty (*'i-ti*), *n.* embarrassment; doubt; intricacy. [ANXIETY.]

per-qui-site (*'kwi-zit*), *n.* a gift or allowance in addition to regular wages or salary.

per-se-cute (*'sē-kūt*), *v. t.* to harass or ill treat, especially for religious opinions. [ABUSE.]

per-se-cu-tion (*-kū'shun*), *n.* the act of persecuting; the state of being persecuted.

Persepolis (*pēr-sep'ō-lis*). In ancient geography, one of the capitals of the Persian empire, situated not far from the Kur, about thirty-five miles northeast of the modern Shiraz.

per-se-ver-ance (*-sē-vēr'ans*), *n.* the act or state of persevering; continuance in grace.

per-se-vere (*-sē-vēr'*), *v. i.* to persist in any enterprise or business undertaken; continue steadfastly. [CONTINUE.]

Persia (*pēr'shā* or *pēr'zhā*). Name given by the Greeks to a region of western Asia, the capital of which was Persepolis, originally overrun by a wild branch of the Aryan race, the *Parsa*, meaning in the native tongue "the tigers." The Persian name for the country is *Iran.*

per-sim-mon (*-sim'un*), *n.* an American plum-like fruit; the tree yielding it.

★per-sist (*pēr-sist'*, not *pēr-zist'*), *v. i.* to continue steadily in any course commenced; persevere. [CONTINUE, INSIST.]

per-sist-ence (*-sist'ens*), *n.* the state or quality of being persistent; obstinacy. [Also *persistency.*]

per-son (*'sn*), *n.* a human being or individual.

per-son-al-i-ty (*-al'i-ti*), *n.* that which constitutes distinction of persons.

per-son-ate (*-āt*), *v. t.* to represent by an assumed character; counterfeit.

per-son-i-fi-ca-tion (*pĕr-son-i-fi-kā'shun*), *n.* the act of personifying.
per-son-i-fy (*'i-fī*), *v. t.* to represent as endowed with personal qualities.
per-son-nel (*pĕr-son-el'*), *n.* the persons employed in any public service.
per-spec-tive (*pĕr-spek'tiv*), *adj.* pertaining to, or in accordance with, the art of perspective: *n.* a vista or view; the art of depicting objects on a plane so that they appear as if viewed in reality.
per-spi-cac-i-ty (*-spi-kas'i-ti*), *n.* acuteness of sight or discernment.
per-spi-cu-i-ty (*-kū'i-ti*), *n.* freedom from obscurity; mental clearness; lucidity. [CLEARNESS.]
per-spi-ra-tion (*-spi-rā'shun*), *n.* excretion by the pores of the skin; sweat.
per-spire (*-spīr'*), *v. i.* to excrete by the pores of the skin; sweat.
per-suade (*-swād'*), *v. t.* to influence by argument, advice, entreaty, etc.; exhort; induce.
Syn. PERSUADE, allure, bring over, coax, convince, dispose, entice, impel, incite, incline, induce, influence, lead, move, prevail on or upon, urge, win over. Of these words *convince* alone has no direct reference to moving the will; one may be *convinced* of his duty without doing it; to *persuade* is to bring the will of another to a desired decision; one may be *convinced* that the earth is round; *coax* is a slighter word than *persuade*, as, a child *coaxes* a parent to buy him a toy; he is *won over* chiefly by personal influence.
Ant. DISCOURAGE, deter, repel.
per-sua-sion (*-swā'zhun*), *n.* the act or art of persuading; the state of being persuaded.
per-sua-sive (*'siv*), *adj.* having the power to persuade: influencing the will or passions.
pert (*pĕrt*), *adj.* saucy; forward.
per-tain (*pĕr-tān'*), *v. i.* to belong, or have relation.
Perth Amboy, N. J. One of its landed proprietors was James Drummond, the earl of Perth, who named the original settlement *Towne of Perth;* the point of land at the mouth of the Raritan was known as *Ambo Point*, and early attachment or combination gave its present name.
per-ti-na-cious (*-ti-nā'shus*), *adj.* unyielding; obstinate; resolute. [TENACIOUS, OBSTINATE.]
per-ti-nent (*'ti-nent*), *adj.* fitting or appropriate; relevant.
per-turb (*-tûrb'*), *v. t.* to agitate; disturb; disquiet.
Peru (*pē-rōō'*). A republic of South America. Received its name from its principal river, the Rio Paro, upon which stands the ancient city of Paruru. The Brazilian term *para*, however modified, is at all times suggestive of a river.
pe-ruse (*-rōōz'*), *v. t.* to read with care and attention; examine.
per-vade (*pĕr-vād'*), *v. t.* to penetrate; extend or be diffused all over; permeate.
per-va-sion (*-vā'zhun*), *n.* the act of pervading.
per-verse (*-vĕrs'*), *adj.* obstinate; untractable; petulant.
Syn. PERVERSE, contrary, factious, fractious, froward, intractable, obstinate, petulant, stubborn, wayward. *Perverse* signifies willfully wrong or erring. The *stubborn* or *obstinate* person will not do what another desires or requires; the *petulant* person frets; the *perverse* individual is willfully *intractable*. *Wayward* refers to a *perverse* disregard for morality and duty. [See *petulant.*]
per-ver-sion (*-vĕr'shun*), *n.* a turning from truth or propriety; misapplication.
per-ver-si-ty. Same as *perverseness.*
per-vert (*-vĕrt'*), *v. t.* to turn from the true end or proper purpose; misapply: *n.* (*per'vert*) one who has been perverted. [ABUSE.]
per-vi-ous (*'vi-us*), *adj.* admitting passage; permeable.
pes-ky (*pes'ki*), *adj.* troublesome; annoying.
pes-si-mism (*pes'i-mizm*), *n.* the tendency to exaggerate in thought the evils of life (opposed to *optimism*).
pes-si-mist (*-mist*), *n.* one who looks on the worst side of everything.
pest (*pest*), *n.* a fatal epidemic disease; plague; anything very michievous, or injurious.
pes-ter (*pes'tĕr*), *v. t.* to annoy.
pes-tif-er-ous (*-tif'ĕr-us*), *adj.* conveying pestilence; physically or morally noxious.
pes-ti-lence (*'ti-lens*), *n.* an infectious or contagious disease.
pes-ti-lent (*'ti-lent*), *adj.* noxious to health, morals, or society.
pes-ti-len-tial (*-len'shal*), *adj.* pertaining to, or producing, a pestilence; pernicious; destructive. [CONTAGIOUS.]
pes-tle (*pes'l*), *n.* an instrument for pounding substances in a mortar.
pet (*pet*), *n.* any person or animal that is fondled: *adj.* favorite: *v. t.* to fondle.
pet-al (*'al*), *n.* one of the separate parts of the corolla of a flower; a flower leaf.
pe-tard (*pē-tärd'*), *n.* a bell-shaped explosive machine used for bursting open gates, etc.
Peter (*pē'tĕr*). From the Greek, signifying a "rock," properly, a "stone." Danish, *Peder;* Dutch, *Pieter;* Fr., *Pierre;* Ger., *Peter;* Gr., *Petros;* Hung., *Peter;* It., *Pietro;* Lat., *Petrus;* Polish, *Piotr;* Port., *Pedro;* Russ., *Piotr;* Sp., *Pedro;* Sw., *Peter.*
Petersburg or **St. Petersburg.** Properly *Peterburg* or *St. Peterburg*, the capital of Russia, was founded by Peter the Great, who, having in 1702 taken the Swedish forts on the Neva, in the following year laid the foundations of a fort which he called *Peterburg* (Fort Peter), on an island in the Neva, the nucleus and now the most densely populated portion of the city.
Petersburg, Va. Originally named *Peter's Point*, after the trader Peter Jones, who opened a depot here.
pe-ti-tion (*pē-tish'un*), *n.* an earnest supplication or prayer; a paper or document containing a written request: *v. t.* to solicit earnestly.
pet-it ju-ry (*pet'i jōō-ri*), a trial jury as distinguished from a grand jury. [Also *petty jury.*]
pet-rel (*'rel*), *n.* a web-footed, strong-winged, oceanic bird.
pet-ri-fac-tion (*-ri-fak'shun*), *n.* the process of changing animal or vegetable substance into stone; a fossil.
pet-ri-fy (*'ri-fī*), *v. t.* to change into stone; fix in silent amazement or fear: *v. i.* to become stone or of a stony hardness.
pe-tro-le-um (*pē-trō'lē-um*), *n.* an inflammable dark yellowish-brown bituminous liquid issuing from certain rocks; mineral oil.
pet-ti-coat (*pet'i-kōt*), *n.* a woman's loose underskirt.
pet-ti-fog-ger (*'i-fog-ĕr*), *n.* a lawyer who practices in petty cases.
pet-tish (*'ish*), *adj.* fretful; petulant.
pet-ty (*'i*), *adj.* trifling; small; inconsiderable; unimportant; contemptible.
pet-u-lant (*'ū-lant*), *adj.* peevish; capricious. [PERVERSE.]
Pe-tu-ni-a (*pē-tū'ni-ȧ*), *n.* a South American genus of ornamental plants with handsome flowers.
pew (*pū*), *n.* an inclosed seat in a church: *v. t.* to furnish with pews.
pew-ter (*pū'tĕr*), *n.* an alloy of tin, lead, antimony, etc.: *adj.* made of pewter.
pha-lanx (*fā'langks*), *n.* [*pl.* phalanges (*-lan'jēz*)], any close compact body: *pl.* the small bones of the fingers and toes.
phan-tasm (*fan'tazm*), *n.* a vision or specter.
phan-tom (*'tum*), *n.* an apparition; spirit; fancied vision.
Pharaoh (*fā'rō, fā'rā-ō*). A title given to the Egyptian kings. From the Hebrew *Paroh*, which has been variously translated "son of the sun," "mouth of the sun," "voice of God," and "sun" only. The proper meaning of the word is "the king" or "great house."
phar-i-sa-ic (*far-i-sā'ik*), *adj.* pertaining to, or characteristic of, the Pharisees; hypocritical.
Phar-i-see (*'i-sē*), *n.* one who observes the letter rather than the spirit of the law; a mere formalist.
phar-ma-ceu-tic (*fär-mȧ-sū'tik*), *adj.* pertaining to pharmaceutics. [Also *pharmaceutical.*] *n. pl.* pharmacy.
phar-ma-cy (*'mȧ-si*), *n.* the art of preparing and compounding medicines; a drug store.
phar-ynx (*far'ingks*), *n.* the muscular or membranous sac at the upper part of the œsophagus.
phase (*fāz*), *n.* [*pl.* phases (*'ez*)], aspect; appearance; transparent green quartz. [Also *phasis.*]
pheas-ant (*fez'ant*), *n.* a gallinaceous bird with brilliant plumage, and preserved for sport.
Phebe. See *Phœbe.*
phe-nix (*fē'niks*), *n.* a fabulous bird, said to live 500 years in the Arabian desert, and to rise rejuvenescent from its ashes after immolating itself on a funeral pyre: hence the emblem of immortality. [Also *Phœnix.*]
phe-nom-e-nal (*fē-nom'ē-nal*), *adj.* pertaining to, or consisting of, phenomena.
phe-nom-e-nal-ism (*-izm*), *n.* the metaphysical doctrine that visible things are really phenomena.
phe-nom-e-non (*'ē-non*), *n.* [*pl.* phenomena (*'ē-nȧ*)], an appearance, especially one of unusual occurrence.
★**phi-al** (*fī'al*), *n.* a small glass bottle or vessel: *v. t.* to put or keep in a phial. [Also *vial.*]
Philadelphia (*fil-ȧ-del'fi-ȧ*), **Pa.** From two Greek words meaning "loved or friendly," and "brother," applied as "brotherly love." The Indian name of the locality was *coaquannok*, "grove of tall pine trees."
phil-an-throp-ic (*fil-an-throp'ik*), *adj.* loving mankind; benevolent. [Also *philanthropical.*]
phil-an-thro-pist (*-an'thrō-pist*), *n.* one who loves and seeks to benefit mankind.
phil-an-thro-py (*-pi*), *n.* love of mankind; benevolence.
phi-lat-e-list (*fi-lat'ē-list*), *n.* a collector of postage stamps: *adj.* pertaining to philately.
Philemon (*fi-lē'mon*). Means "saluting." Fr., *Philémon;* Gr., *Philemon;* It., *Filemone;* Lat., *Philemon.*
Philetus (*fi-lē'tus*). From the Greek, meaning "beloved." Gr., *Philetos;* It., *Fileto;* Lat., *Philetus.*
Philibert (*fil'ē-bĕrt*) or **Philebert.** From the Teutonic, signifying "famously bright." Danish, *Philibert;* Fr., *Philibert;* It., *Filiberto;* Lat., *Philebertus.*
Philip (*fil'ip*). From the Greek name signifying "fond of horses." Dutch, *Philippus;* Fr., *Philippe;* Ger., *Philipp;* Gr., *Philippos;* Hungarian, *Filep;* It., *Filippo;* Lat., *Philippus;* Polish, *Filip;* Port., *Felippe;* Russ., *Philipp* or *Filip;* Sp., *Felipe;* Sw., *Filip.*
Philippa (*fi-lip'pȧ*). A feminine name formed from *Philip.* Dutch, *Philippa;* Ger., *Philippine;* Gr., *Philippa;* It., *Filippa;* Lat., *Philippa;* Sp., *Felipa;* Sw., *Filippina.*
Philippi (*fil-ip'ī*). In a recent geography a city of Macedonia. Named after Philip of Macedon.
phi-lip-pic (*fi-lip'ik*), *n.* a speech of vehement invective.
Philippines (*fil'ip-inz*). Were discovered by Magellan on the feast of St. Lazarus, 1521, and hence called by him *Archipelago de San Lazaro*, a name changed in 1542 to *Islas Filipinas* in honor of Philip II., in whose reign the Spanish colonization of the islands was begun.
Phil-is-tine (*fil'is-tīn* or *-is'tin*), *n.* an uncultured person or one of narrow views: *adj.* uncultured; narrow-minded; prosaic.
Phillis. Derived from the Greek *Phyllis*, name of a countrywoman introduced in Vergil's *Eclogeus*, and a nurse of Lycurgus, king of Thrace, and of a nurse of the emperor Domitian. It means "a green branch covered with leaves", "a leaf", "foliage", "a heap of leaves."
phil-ol-o-gy (*-ol'ō-ji*), *n.* the scientific study of languages, their structure and mutual relations.
phil-o-pro-gen-i-tive-ness (*-ō-prō-jen'i-tiv-nes*), *n.* the instinctive love of offspring.
phil-os-o-pher (*-os'ō-fĕr*), *n.* a student of philosophy; one noted for calm judgment and practical wisdom.
phil-o-soph-ic (*-ō-sof'ik*), *adj.* pertaining to, or in accordance with, philosophy; rational; wise; calm. [Also *philosophical.*]
phil-os-o-phize (*-os'ō-fīz*), *v. i.* to reason like a philosopher.
phil-os-o-phy (*'ō-fi*), *n.* the knowledge of the causes of all phenomena, both of mind and matter.
phil-ter, phil-tre (*'tĕr*), *n.* a love charm or potion.
Phineas (*fin'ē-as*). From the Hebrew *Piynhhas*, "mouth of brass." Fr., *Phinéas;* It., *Fineo;* Lat., *Phineas;* Sp., *Phinees.*
phlegm (*flem*), *n.* mucus secreted in the air passages of the throat; coldness; sluggishness.
★**phleg-mat-ic** (*fleg-mat'ik*), *adj.* abounding in phlegm; sluggish; dull. [Also *phlegmatical.*]
Phlox (*floks*), *n.* a genus of North American bright-colored flowering plants.
Phœbe (*fē'bē*). From the Greek name, meaning "clear, pure, bright." Fr., *Phèbe;* Gr., *Phoibe;* It., *Febe;* Lat., *Phœbe.*
pho-net-ic (*fō-net'ik*), *adj.* pertaining to the voice or sounds: *n. pl.* the science of sounds, especially of the human voice.
phon-ics (*fon'iks*), *n. pl.* the science of sounds; acoustics.
pho-no-gram (*fō'nō-gram*), *n.* articulate sound as recorded by the phonograph; a written character representing a particular sound.
pho-no-graph (*'no-grȧf*), *n.* an instrument to record or reproduce articulate speech or sounds.
pho-nog-ra-phy (*-nog'rȧ-fi*), *n.* a description of sounds uttered by the human voice; a system of shorthand.
phos-phate (*fos'fāt*), *n.* a salt of phosphoric acid.
phos-phor-es-cence (*-fōr-es'ens*), *n.* emission of light under certain conditions by substances at common temperatures; faint light.
phos-phor-es-cent (*'ent*), *adj.* luminous.
phos-phor-ic (*-for'ik*), *adj.* pertaining to, like, or obtained from, phosphorus. [Also *phosphorous.*]
phos-phor-us (*'fōr-us*), *n.* a yellowish, wax-like, inflammable, nonmetallic element, luminous in the dark.
photo, a *prefix* meaning *light.*
pho-toch-ro-my (*fō'tok-rō-mi*), *n.* the art or process of photographing in colors.
pho-to-graph (*'tō-grȧf*), *n.* a photographic picture: *v. t.* to take a picture of by means of photography.
★**pho-tog-ra-phy** (*-tog'rȧ-fi*), *n.* the art or process of producing pictures by the action of light on certain substances sensitized by various chemical processes.
★**pho-to-grav-ure** (*-tō-grāv-ūr'*), *n.* the process of producing by photography on a sensitized surface an incised engraved metal plate from which impressions may be printed.
phrase (*frāz*), *n.* a part of a sentence; brief, pithy expression; idiom; style or manner: *v. t.* to style; express in peculiar words.
phra-se-ol-o-gy (*frā-zē-ol'ō-ji*), *n.* style, manner, or peculiarity, of expression; a collection of phrases.
phren-o-log-ic-al (*fren-ō-loj'i-kal*), *adj.* pertaining to phrenology.
phre-nol-o-gist (*frē-nol'ō-jist*), *n.* one who believes in, or is skilled in, phrenology.
phre-nol-o-gy (*'ō-ji*), *n.* the science of the human mind or brain, as connected with the moral, intellectual, and sensual dispositions of the individual.
★**phthis-ic** (*tiz'ik*), *n.* asthma; phthisis.
phthis-ic-al (*'i-kal*), *adj.* pertaining to, or caused by, phthisic or phthisis.
★**phthi-sis** (*thī'sis*), *n.* pulmonary consumption.
phy-lac-ter-y (*fi-lak'tĕr-i*), *n.* [*pl.* phylacteries (*-iz*)], a small square box containing the law; worn by pious Jews upon the forehead and left wrist.
Phyllis. See *Phillis.*
phys-ic (*fiz'ik*), *n.* the science of medicine; a cathartic: *v. t.* to administer medicine.
phys-ic-al (*'i-kal*), *adj.* pertaining to nature, or to material things.
Syn. PHYSICAL, bodily, corporal, corporeal

material, natural, sensible, tangible, visible. Whatever is composed of, or pertains to, matter may be termed *material; physical* applies to *material* things considered as parts of a system or organic whole; hence, we speak of *material* substances, *physical* forces, *physical* laws. *Bodily, corporal*, and *corporeal* apply primarily to the human body; we speak of *bodily* sufferings, *bodily* presence, *corporal* punishment, the *corporeal* frame.

phy-si-cian (*fi-zish'an*), *n.* one legally qualified to prescribe remedies for diseases.

★**phys-i-cist** (*fiz'i-sist*), *n.* a student of natural science.

phys-ics (*'iks*), *n. pl.* physical science or natural philosophy.

phys-i-og-no-my (*-i-og'nō-mi*), *n.* the face; outward appearance.

phys-i-o-log-ic-al (*-i-ō-loj'i-kal*), *adj.* pertaining to physiology.

phys-i-ol-o-gist (*-i-ol'ō-jist*), *n.* one who is skilled in physiology.

phys-i-ol-o-gy (*-ol'ō-ji*), *n.* the science that treats of the vital functions performed by the organs of animals and plants.

phy-sique (*fi-zēk'*), *n.* physical organization.

pi, pie (*pi*), *n.* disarranged or jumbled type: *v. t.* to jumble or throw into disorder.

★**pi-an-ist** (*pi-ăn'ist*), *n.* a performer on the piano.

★**pi-an-o** (*pi-ăn'ō*), *n.* a pianoforte.

pi-an-o-for-te (*-fôr-tā*), *n.* a stringed musical instrument, the notes of which are produced by hammers acted upon by keys.

pi-az-za (*-az'ȧ*), *n.* an open square surrounded by buildings or colonnades.

pi-ca (*pī'kȧ*), *n.* a size of type, used as a standard of measurement in printing.

pic-a-yune (*pik'ȧ-yōōn*), *n.* a small silver coin equal to 6¼ cents.

Piccadilly (*pik'kȧ-dil-li*). The great thoroughfare in London between Hyde Park corner and the Haymarket. The name originally comes from the picardils or small stiff collars once worn by English gallants.

pic-ca-lil-li (*'ȧ-lil-i*), *n.* a kind of pickle.

pic-ca-nin-ny (*'ȧ-nin-i*), *n.* [*pl.* piccaninnies (*-iz*)], a negro baby or child.

pic-co-lo (*'ō-lō*), *n.* a small flute having its notes an octave higher than the ordinary flute.

pick (*pik*), *n.* a sharp pointed iron tool; choice or selection: *v. t.* to pierce; choose or select: *v. i.* to eat, or do anything, leisurely. [ALTERNATIVE, CHOOSE.]

pick-ax, pick-axe (*'aks*), *n.* an excavating tool, pointed at one end and broad at the other.

pick-er-el (*'ĕr-el*), *n.* a small pike.

pick-et (*'et*), *n.* pale of a fence; a stake to which a horse is fastened; a military guard to give notice of the approach of an enemy.

pick-le (*'l*), *n.* a mixture of brine and water, etc., for preserving food: *v. t.* to preserve in, or as in, pickle.

pic-nic (*'nik*), *n.* a short excursion into the country.

pic-to-ri-al (*pik-tō'ri-al*), *adj.* pertaining to, or illustrated by, pictures.

pic-ture (*'tūr*), *n.* a painting or drawing representing a person or thing.

pic-tur-esque (*-esk'*), *adj.* giving vivid impression of nature or reality; graphic; romantic.

pie (*pi*), *n.* printer's type confusedly mixed; meat or fruit covered with crust and baked.

pie-bald (*'bawld*), *adj.* having patches of different colors.

piece (*pēs*), *n.* a part of anything; certain quantity; literary or artistic composition: *v. t.* to patch: *v. i.* to join. [PART.]

piece-meal (*'mēl*), *adj.* made of pieces or parts; single: *adv.* in pieces or parts.

pied (*pid*), *adj.* variegated or spotted.

pier (*pēr*), *n.* a mass of masonry supporting an arch, bridge, etc.

pierce (*pērs*), *v. t.* to penetrate, especially with a pointed instrument; affect deeply; explore; dive into: *v. i.* to enter.

Pierre. See *Peter.*

Pietermaritzburg (*pē-tĕr-măr'its-burg*). Capital of Natal, South Africa. Named after two Boer leaders.

Pietro. See *Peter.*

pi-e-ty (*pī'ē-ti*), *n.* the quality of being pious; reverence for, and duty toward, God.

pig (*pig*), *n.* the young of swine; a swine; pork.

pi-geon (*pi'jun*), *n.* a bird of the genus Columba.

pi-geon-hole (*hōl*), *n.* a compartment for papers, etc.

pi-geon-toed (*-tōd*), *adj.* having the toes turned inward.

pig-head-ed (*pig'-hed-ed*), *adj.* stupidly obstinate.

pig-ment (*'ment*), *n.* paint; coloring matter.

pig-my. Same as *pygmy.*

pig-tail (*'tāl*), *n.* hair twisted into the form of a long queue.

pike (*pik*), *n.* a weapon with a shaft and spear-head; a voracious fresh-water fish.

Pike's Peak. One of the highest summits of the Rocky mountains, situated in Colorado, seventy miles south by west of Denver.

pi-las-ter (*pi-las'tĕr*), *n.* a square column or pillar, inserted partly in a wall.

pile (*pil*), *n.* a large beam driven into the ground to make a firm foundation; mass or heap: *v. t.* to heap up. [HEAP.]

pil-fer (*pil'fĕr*), *v. t.* to steal in small quantities.

pil-grim (*pil'grim*), *n.* a traveler.

pil-grim-age (*-āj*), *n.* a journey, especially to some sacred place.

pill (*pil*), *n.* a small ball of some medicinal substance; something disagreeable that must be accepted.

pil-lage (*'āj*), *n.* the act of plundering; spoil: *v. t.* to plunder or spoil; lay waste.

pil-lar (*'ĕr*), *n.* a column to support a structure; monument.

Syn. PILLAR, column. The word *pillar* is the most general in its application to any structure, whether rude or otherwise; the term *column*, on the other hand, is applied to whatever is ornamental, as, the Grecian order of *columns.*

Pillars of Hercules. In ancient geography, the two opposite promontories, *Calpe* (Gibralvar) in Europe and *Abyla* in Africa, situated at the eastern extremity of the Strait of Gibraltar, sentinels, as it were, at the outlet from the Mediterranean into the unknown Atlantic.

pil-lo-ry (*pil'ō-ri*), *n.* [*pl.* pillories (*-iz*)], a wooden frame supported by an upright post, having holes through which the head and hands of a person exposed to disgrace were passed and secured: *v. t.* to place in a pillory.

pil-low (*'ō*), *n.* a case filled with feathers, etc.

pi-lot (*pi'lot*), *n.* one who conducts a vessel in or out of a harbor or where navigation is difficult or dangerous; a guide: *v. t.* to guide or direct as a pilot.

pi-men-to (*pi-men'tō*), *n.* allspice.

pim-ple (*pim'pl*), *n.* a small pustule.

pim-pled (*'pld*), *adj.* having, or full of, pimples. [Also *pimply.*]

pin (*pin*), *n.* a short piece of wire, used for fastening articles together; anything driven to hold parts together: *v. t.* to fasten with, or as with, a pin.

pin-a-fore (*pin'ȧ-fōr*), *n.* a loose apron or covering to protect children's dresses.

pin-cers. Same as *pinchers.*

pinch (*pinch*), *v. t.* to squeeze or nip; oppress or distress: *v. i.* to bear hard; be straitened: *n.* a squeeze or nip. [PRESS.]

pinch-ers (*pinch'ĕrz*), *n.* an instrument for drawing out nails, etc.; nippers. [Also *pincers.*]

Pincian (*pin'chan*) **hill.** A hill in the northern part of Rome, extending in a long ridge east from the Tiber. One of the famous "seven hills."

pine (*pīn*), *n.* a cone-bearing tree of the genus Pinus; timber of the pine: *v. i.* to waste away from distress, anxiety, etc.

pine-ap-ple (*pin'ap-l*), *n.* a tropical plant and its cone-shaped fruit.

pin-ion (*pin'yun*), *n.* the last joint of a bird's wing; a wing; the smaller of two geared wheels: *v. t.* to bind or secure, as by binding the arms; confine or fetter.

pink (*pingk*), *n.* a shade of light-red color; a flower.

pin-money. Catherine Howard, wife of Henry VIII., introduced pins into England from France. As they were expensive at first, a separate sum for this luxury was granted to the ladies by their husbands. Hence the expression *pin-money.*

pin-na-cle (*'ȧ-kl*), *n.* a small polygonal turret or elevation above the rest of the building.

pint (*pīnt*), *n.* 1-8th of a gallon.

pi-o-neer (*pi-o-nēr'*), *n.* one who goes before to prepare the way for another: *v. i.* act as a pioneer.

pi-ous (*'us*), *adj.* dutiful to God, or to parents; religious; devout.

pip (*pip*), *n.* the seed of certain fruit; a disease in fowls.

pipe (*pīp*), *n.* any long hollow tube; a tube of clay, wood, etc., with a bowl at one end for smoking tobacco: *v. t.* to play on, or call by, a pipe.

pip-pin (*pip'in*), *n.* a variety of apple.

★**pi-quan-cy** (*pē'kan-si* or *pik'an-si*), *n.* the state or quality of being piquant.

pi-quant (*'kant*), *adj.* pungent; severe.

pique (*pēk*), *n.* slight anger or resentment; wounded pride: *v. t.* to wound the pride of.

pi-ra-cy (*pī'rȧ-si*), *n.* the act or crime of a pirate; infringement of copyright.

pi-rate (*'rat*), *n.* a robber on the high seas; one who infringes the law of literary or artistic copyright: *v. t.* to take without permission or compensation: *v. i.* to practice piracy.

pir-ou-ette (*pir-ōō-et'*), *n.* a whirling or turning about on one toe.

Piscataqua (*pis-kat'ȧ-kwȧ*) **river, N. H.** Named from the Indian *piscataquanke*, "a great deer place."

pis-ca-to-ri-al (*-kȧ-tō'ri-al*), *adj.* pertaining to fishing. [Also *piscatory.*]

pis-mire (*pis'mīr*), *n.* an ant.

pis-til (*'til*), *n.* the seed-bearing organ in the center of a flower.

pis-til-late (*-āt*), *adj.* having a pistil.

pis-tol (*'tul*), *n.* a small handgun: *v. t.* to shoot with a pistol.

pis-ton (*'tun*), *n.* a small solid cylinder of metal or wood, fitting exactly and moving up and down in the barrel of a pump, or the cylinder of a steam engine.

pis-ton rod (*rod*), the rod moving the piston and connecting it with the external machinery.

pit (*pit*), *n.* a deep hole in the earth: *v. t.* to mark with small hollows or depressions; set in competition.

pit-a-pat (*-ȧ-pat'*), *adv.* with quick beating: *n.* a palpitation; a quick light step.

pitch (*pich*), *n.* the solid black resinous substance obtained from boiled tar; a casting forward or down: *v. i.* to fall headlong: *v. t.* to encamp; throw.

pitch-blende (*pich'blend*), *n.* a black oxide of uranium: used in coloring glass a pale sea-green; it is the chief source of radium.

pitch-er (*'ĕr*), *n.* one who pitches; an earthen vessel for holding water; an instrument for piercing the ground.

pitch-fork (*'fôrk*), *n.* a pronged fork for pitching hay, straw, etc.: *v. t.* to lift or throw with.

pitch wheel (*hwēl*), a toothed wheel that works in another.

pitch-y (*'i*), *adj.* like, or smeared with, pitch.

pit-e-ous (*pit'ē-us*), *adj.* exciting pity; sorrowful; sad.

Syn. PITEOUS, doleful, woeful, rueful. *Piteous* is applicable to one's external expression of bodily or mental pain; a child makes *piteous* lamentations when it suffers from hunger, or has lost its way; *doleful* applies to those sounds which convey the idea of pain; there is something *doleful* in the tolling of a funeral bell or in the sound of a muffled drum; *woeful* applies to the circumstances and situations of men; a scene is *woeful* in which we witness a large family of young children suffering under the complicated horrors of sickness and want; *rueful* applies to the outward indications of inward sorrow depicted in the looks or countenance.

Ant. COMMANDING, exalted, glorious, happy, superb.

pit-fall (*'fawl*), *n.* a pit lightly covered so that wild beasts may fall into it; a trap.

pith (*pith*), *n.* the soft spongy substance in the center of plants; marrow; quintessence.

pith-y (*'i*), *adj.* of the nature of, or full of, pith; forcible.

pit-i-a-ble (*pit'i-ȧ-bl*), *adj.* deserving pity.

pit-i-ful (*'i-fool*), *adj.* moving compassion; insignificant.

pit-i-less (*'i-les*), *adj.* without pity or compassion; merciless.

pit-tance (*'ans*), *n.* a small allowance, especially of money.

Pittsburg. City in Pennsylvania, was originally called *Fort du Quesne*, after a French governor of Canada. Afterward, in 1758, when the French had been driven out by Washington, it was renamed *Fort Pitt*, after William Pitt, earl of Chatham, the name *Pittsburg* being adopted in 1769.

pit-y (*pit'i*), *n.* sympathy with distress; compassion: *v. t.* to sympathize with: *v. i.* to be compassionate.

Syn. PITY, compassion. *Pity* is excited principally by the weakness or degraded condition of the subject; *compassion* by his uncontrollable and inevitable misfortunes. [See *mercy.*]

Ant. HARSHNESS, cruelty, hardness, scorn.

Pius. From the Latin, meaning "pious." Fr., *Pie.*, Ger., *Pius;* It., *Pio;* Lat., *Pius.*

piv-ot (*piv'ut*), *n.* the short shaft on which anything turns.

pla-ca-bil-i-ty (*plā-kȧ-bil'i-ti*), *n.* the quality of being placable.

pla-ca-ble (*'kȧ-bl*), *adj.* that may be appeased or pacified; forgiving.

pla-card (*plȧ'kärd*), *n.* a bill placed on a wall, etc., as an advertisement: *v. t.* to advertise by a placard.

place (*plās*), *n.* a special spot or locality; broadway or square; situation; site; residence; office: *v. t.* to put in any place, office, etc. [PUT.]

pla-cen-ta (*plā-sen'tȧ*), *n.* the vascular organ that connects the fœtus in the womb with the mother.

plac-er (*plas'ĕr*), *n.* a mineral deposit which is not a vein.

plac-id (*plas'id*), *adj.* calm; peaceful. [CALM.]

plack-et (*plak'et*), *n.* a petticoat; a slit in a skirt or petticoat; a woman's pocket.

pla-gi-a-rism (*plā'ji-ȧ-rism*), *n.* the act of taking another's ideas, etc., and passing them off as one's own.

pla-gi-a-rist (*-rist*), *n.* one who steals the writings, ideas, etc., of another and passes them off as his own; literary theft. [Also *plagiary.*]

plague (*plāg*), *n.* a malignant epidemic; anything very troublesome or annoying: *v. t.* to infest with disease; trouble or annoy. [ABOMINATION.]

pla-guy (*plā'gi*), *adj.* vexatious.

plaid (*plad*), *n.* a checkered woolen cloth, originally worn as a garment by the highlanders of Scotland.

plain (*plān*), *adj.* level; flat; even; smooth; clear; evident: *n.* level ground. [APPARENT, FRANK.]

plaint (*plānt*), *n.* lamentation.

plain-tiff (*plān'tif*), *n.* one who commences a suit in a court of law.

plain-tive (*'tiv*), *adj.* expressing grief or sorrow; sad.

★**plait** (*plāt*), *n.* a flat fold; braid: *v. t.* to fold; braid; interweave. [Also *pleat.*]

plan (*plan*), *n.* a drawing on a flat surface; scheme or project: *v. t.* form in design; outline.

plane (*plān*), *adj.* flat; level; even; without elevations or depressions: *n.* a flat or even surface; a carpenter's tool for smoothing wood: *v. t.* to make level.

plan-et (*plan'et*), *n.* a heavenly body revolving around the sun.

plan-e-ta-ry (*'ē-tā-ri*), *adj.* pertaining to, consisting of, or produced by, planets; erratic.

plank (*plangk*), *n.* a long board; an item in a political program or policy.

plant (*plant*), *n.* any vegetable organism; the machinery, or fixtures of any trade or business; a

swindle: *v. t.* to put into the ground for growth, as seed; establish.
Plantagenet (*plan-taj'ē-net*), **House of.** A line of English kings (1154-1399) founded by Henry II., son of Geoffrey, count of Anjou, and Matilda, daughter of Henry I. of England. The name is said to have been assumed by the first count of the line from his having caused himself to be scourged with branches of broom (*planta genesta*)as penance for some crime he had committed.
plan-tain (*'tān*), *n.* a tropical broad-leaved tree yielding an edible fruit similar to the banana.
plan-ta-tion (*-tā'shun*), *n.* a place planted with trees.
plant-er (*plant'ĕr*), *n.* one who plants; the owner of a plantation.
plaque (*plak*), *n.* a metal or terra-cotta plate upon which flowers, figures, etc., are enameled or painted.
plash (*plash*), *n.* a puddle; pond: *v. t.* to splash or dash with water; interweave the branches or twigs of, as, to *plash* a hedge.
plas-ma (*plaz'mȧ*), *n.* the colorless fluid of the blood in which the red corpuscles float.
plas-ter (*plȧs'tẽr*), *n.* a composition of lime, sand, and water, for coating walls: *v. t.* to overlay or cover with, or as with, plaster.
plas-tic (*'tik*), *adj.* capable of being formed or molded; giving form.
plat. Same as *plait.*
Plata, Rio de la (*rē'ō dâ lä plä'tä*). River of northern South America. Literally, "river of the silver," so named by Sebastian Cabot, in 1526, by reason of a few gold and silver ornaments, the earnest of the wealth of Peru, which he obtained by barter from the natives, and which he hoped were an indication of an eldorado in the interior.
plate (*plāt*), *n.* a thin piece of metal; a small, shallow vessel used at table for eating from: *v. t.* to coat with a more valuable metal.
pla-teau (*plȧ-tō'*), *n.* [*pl.* plateaux (*-tōz'*)], elevated broad flat land; table-land.
plate glass (*plāt'glȧs*), a fine kind of glass cast in thick plates: used for mirrors, etc.
plat-en (*plat'en*), *n.* the flat part of a printing press, by which the impression is made.
plat-form (*'fôrm*), *n.* a flat floor of wood, stone, etc., raised above the level of the ground; political program or policy.
plat-i-nize (*plat'i-nīz*), *v. t.* to coat with platinum.
plat-i-nous (*-nus*), *adj.* containing platinum.
plat-i-num (*'i-num*), *n.* a grayish-white metal very hard and ductile.
plat-i-tude (*'i-tūd*), *n.* insipidity; dullness; a weak, empty, trite remark.
pla-toon (*plȧ-tōōn'*), *n.* two files of soldiers forming a subdivision.
Platte (*plat*). River in Nebraska, Colorado and Wyoming. A French word meaning "dull, flat, shallow," singularly applicable to this stream.
plat-ter (*plat'ĕr*), *n.* a large flat dish.
plau-dit (*plaw'dit*), *n.* applause.
plau-si-ble (*'zi-bl*), *adj* specious; superficially pleasing.
play (*plā*), *n.* any exercise or occupation for amusement; exertion of powers: *v. i.* to engage in some exercise for amusement.
play-ful (*plā'fool*), *adj.* sportive; lively.
Syn. PLAYFUL, gamesome, sportive. *Playful* is applicable to youth or childhood, when there is the greatest disposition to play. *Gamesome* and *sportive* are applied to persons of maturer years, the former in the bad sense, and the latter in the good sense. A person may be said to be *gamesome* who gives in to idle jests, or *sportive* who indulges in harmless sport.
pla-za (*plä'zȧ*), *n.* an open square or market place.
plea (*plē*), *n.* an excuse or apology; urgent entreaty.
plead (*plēd*), *v. i.* argue before a court of law; supplicate earnestly: *v. t.* discuss or defend by arguments; offer as an excuse. [APOLOGIZE, ALLEGE.]
pleas-ant (*plez'ant*), *n.* grateful to the mind or senses; delightful; agreeable; cheerful; facetious.
Syn. PLEASANT, agreeable, attractive, good-natured, kind, kindly, pleasurable. Whatever has active qualities adapted to give pleasure is *pleasant;* in this sense *pleasant* is nearly akin to *kind*, but *kind* refers to act or intent, while *pleasant* stops with the disposition; there are *good-natured* people who by reason of rudeness and ill-breeding are not *pleasant* companions. We can say of one usually *good-natured*, "on that occasion he did not meet me with a *pleasant* face." [See *facetious.*]
pleas-ant-ry (*-ri*), *n.* merriment; lively talk; gayety; a laughable trick or joke.
please (*plēz*), *v. t.* to gratify; give pleasure to; gain approbation from: *v. i.* to afford pleasure or gratification; like or choose. [SATISFY.]
pleas-ur-a-ble (*plezh'ūr-ȧ-bl*), *adj.* gratifying; delightful.]PLEASANT.]
pleas-ure (*'ūr*), *n.* gratification; agreeable emotions, mental or physical. [COMFORT.]
pleat. Another form of *plait.*
ple-be-ian (*plē-bē'an*), *adj.* pertaining to the common people: *n.* one of the common people.
pledge (*plej*), *n.* anything placed as a security or guaranty; pawn: *v. t.* to give as security, deposi in pawn; drink to the health of. [DEPOSIT.]
ple-na-ry (*plē'nȧ-ri*), *adj.* full; complete.
plen-i-po-ten-ti-a-ry (*plen-i-pō-ten'shi-ā-ri*), *adj.* having full power: *n.* an ambassador to a foreign court invested with full powers. [AMBASSADOR.]
plen-i-tude (*plen'i-tūd*), *n.* fullness.
plen-te-ous (*'tē-us*), *adj.* abundant; amply sufficient.
plen-ti-ful (*'ti-fool*), *adj.* yielding abundance; copious.
plen-ty (*'ti*), *n.* abundance.
ple-o-nasm (*plē'ō-nazm*), *n.* use of more words than necessary in speaking or writing.
pleth-o-ra (*pleth'ō-rȧ*), *n.* excessive fullness of blood; overabundance.
pleu-ra (*plōō'rȧ*), *n.* [*pl.* pleuræ (*'rē*)], a delicate serous membrane covering the interior of the thorax and each lung.
pleu-ri-sy (*'ri-si*), *n.* inflammation of the pleura.
plex-us (*pleks'us*), *n.* a network of veins, nerves, etc.
pli-a-bil-i-ty (*plī-ȧ-bil'i-ti*), *n.* the state or quality of being pliable. [Also *pliableness.*]
pli-a-ble (*'ȧ-bl*), *adj.* easily bent; flexible; easy to be persuaded. [FLEXIBLE.]
pli-ant (*'ant*), *adj.* flexible; easily bent; yielding to moral suasion. [FLEXIBLE.]
pli-ers (*'ĕrz*), *n.* a kind of small pinchers for seizing and bending, especially small articles.
plight (*plīt*), *n.* a dangerous or distressed condition; predicament: *v. t.* to pledge, as one's faith.
plinth (*plinth*), *n.* the lowest square-shaped part of the base of a column, pedestal, etc.
Pliny (*plin'i*). From the Roman naturalist Caius Plinius. Fr., *Pline;* Ger., *Plinius;* It., *Plinio;* Lat., *Plinius.*
plod (*plod*), *v. i.* [*p. t.* and *p. p.* plodded, *p. pr.* plodding], to travel laboriously; drudge or toil; study closely.
plot (*plot*), *n.* a complicated scheme; chain of incidents in a play, novel: *v. t.* to devise: *v. i.* to conspire.
plow, plough (*plou*), *n.* an agricultural implement for turning up the soil; a grooving-plane: *v. t.* to turn up with a plow; furrow.
plow-share, plough-share (*'shâr*), *n.* the iron part of a plow that cuts the soil.
pluck (*pluk*), *v. t.* to pull off, out, or up; snatch; pick or gather: *n.* a short pull; courage. [DRAW]
pluck-y (*'i*), *adj.* [*comp.* pluckier, *superl.* pluckiest], having courage or pluck.
plug (*plug*), *n.* a piece of wood, etc., used for stopping a hole: *v. t.* to stop with a plug.
plum (*plum*), *n.* a tree, *Prunus domestica*, or its well-known fruit; a raisin; $500,000, hence a large fortune.
plum-age (*plūm'āj*), *n.* a bird's feathers.
plumb (*plum*), *n.* a heavy body, usually of lead, suspended at the extremity of a line to indicate the perpendicularity of work done, as a wall, etc.: *v. t.* to adjust by a plumb line; make perpendicular.
plumb-er (*'er*), *n.* one who is engaged in the business of plumbing.
plumb-ing (*'ing*), *n.* the art or occupation of putting into buildings, pipes, traps, etc.
plumb line (*'līn*), a line attached to a mass of lead to indicate the perpendicular; perpendicular line.
plume (*plōōm*), *n.* a feather; crest: *v. t.* adorn with plumes.
plum-met (*plum'et*), *n.* a leaden weight attached to a string used for sounding depths, etc.
plump (*plump*), *adj.* round and sleek with fullness of flesh; in good condition: *v. i.* to grow plump: *v. t.* to make plump; fatten.
plum-y (*plūm'i*), *adj.* feathered.
plun-der (*plun'dĕr*), *n.* booty; pillage: *v. t.* to take by open force; spoil; rob.
plunge (*plunj*), *v. t.* to put suddenly into water or any other liquid; immerse: *v. i.* dive; throw the body forward and the legs up, as a horse.
plu-per-fect (*plū'pĕr-fekt*), *adj.* noting an event or action occurring prior to some other event or action.
plu-ral (*'ral*), *adj.* consisting of more than one: *n.* that form of a word that expresses more than one.
plu-ral-i-ty (*plū-ral'i-ti*), *n.* the majority; the greatest of three or more numbers.
plus (*plus*), *n.* the sign (+) used to denote addition; *adj.* more (by a certain amount); increased (by a specified addition); above zero.
plush (*plush*), *n.* a kind of shaggy cloth with a pile; woolen velvet.
plu-toc-ra-cy (*plū-tok'rȧ-si*), *n.* rule or government by the rich.
plu-to-crat (*plū'tō-krat*), *n.* one who exercises political power or influence by virtue of his wealth.
ply (*plī*), *v. t.* to worl on closely; practice diligently or earnestly: *v. i.* to run regularly between two ports.
Plymouth (*plim'uth*). Town in Plymouth county, Massachusetts, the landing place of the Pilgrims, which was named for the town in England where they were most hospitably entertained before sailing for America. The English town was so called because built at the mouth of the river Plym.
★**pneu-mat-ic** (*nū-mat'ik*), *adj.* pertaining to, consisting of, containing, like, or moved by, air. [Also *pneumatical.*]
pneu-mat-ics (*'iks*), *n. pl.* the science that treats of the mechanical properties of air and similar elastic fluids.
pneu-mo-nia (*nū-mō'ni-ȧ*), *n.* acute inflammation of the lung
poach (*pōch*), *v. i.* to trespass upon preserves; cook (eggs) by breaking them into boiling water.
pock (*pok*), *n.* a pustule on the skin containing eruptive matter.
pock-et (*'et*), *n.* a small bag inserted in a garment for carrying small articles.
Pocomoke (*pō'kō-mōk*) **river, Md.** So called from its Indian name *pockhammokik*, "broken by knobs", "small hill."
pod (*pod*), *n.* the pericarp or the covering of the seed of certain plants, as the pea, etc.: *v. i.* to produce pods.
pod-o-phyl-lin (*pod-ō-fil'in*), *n.* a purgative resin obtained from the root of the May apple.
★**po-em** (*pō'em*, not *pō'um*), *n.* a metrical or poetical composition; a poetic conception
po-e-sy (*'ē-si*), *n.* the art of composing poems.
po-et (*'et*), *n.* the author of a poem; one gifted in writing poetry; one who is strongly imaginative. [Fem. *poetess.*]
po-et-ic (*-et'ik*), *adj.* pertaining to, suitable to, or expressed in, poetry; sublime. [Also *poetical.*]
po-et-ry (*'et-ri*), *n.* a metrical composition produced or embellished by creative imagination.
Poet's Corner. A space in the east side of the south transept of Westminster Abbey, containing the tablets, statues, busts, or monuments of Shakespeare, Ben Jonson, Chaucer, Milton, Spenser, and other British poets, actors, divines, and great men. Some of them are buried near or under their monuments.
poign-an-cy (*poin'an-si*), *n.* the state or quality of being poignant.
poign-ant (*'ant*), *adj.* stimulating to the palate; irritating; very painful.
poin-set-ti-a (*-set'i-ȧ*), *n.* a Mexican plant with handsome flowers.
point (*point*), *n.* the sharp end of any instrument; mark or dot; indivisible part; mark in punctuation: *v. t.* to sharpen: *v. i.* to indicate; show clearly.
point-blank (*'blangk*), *adj.* horizontal; straightforward to the mark; direct.
Point Comfort, Va. Name given to the locality in 1607 by the first colonists on their voyage of exploration up the James river; called *Poynt Comfort* on account of the good channel and safe anchorage it offered.
point-ing (*'ing*), *n.* punctuation; the act or operation of filling in the crevices of masonry with mortar.
Point Judith, R. I. So called from Judith Quincy, wife of John Hull, the coiner of the rare old pine-tree shillings of 1652.
Point Pinos (*pē'nōs*), **Cal.** Named *Pinta de Pinos* by Vizcaino, in 1603, from the prevalence of the pine-tree.
Point Reyes (*point rā'ēs*), **Cal.** So called from *Tres Reyes*, name of the vessel commanded by Aguilar of Vizcaino's Spanish expedition, 1603.
poise (*poiz*), *n* weight; balance; equilibrium: *v. t.* to balance; weigh; ascertain or examine: *v. i.* to be in a state of equilibrium.
Syn. POISE, balance. *To poise* is properly to keep the weight from pressing on either side; *to balance* is to keep the *balance* even. The idea of bringing into an equilibrium is common to both terms, but a thing is *poised* as respects itself; it is *balanced* as respects other things.
Ant. FALL.
poi-son (*poi'zn*), *n.* anything noxious or destructive to life, health, or morality; venom: *v. t.* to infect with, or kill by, poison.
Syn. POISON, venom. A *poison* must be administered inwardly to have its effect; a *venom* will act by an external application; the juice of the hellebore is a *poison;* the tongue of the adder and the tooth of the viper contain *venom.*
poi-son-ous (*-us*), *adj.* having the qualities of poison; deadly; injurious to health.
Poitiers or **Poictiers** (*poi-tērz'*, French *pwä-ti-ā'*). Town in France, so named from the *Pictones*, or *Pictavi*, a Celtic people.
poke (*pōk*), *n.* a thrust or push: *v. t.* to thrust or push against.
pok-er (*'ĕr*), *n.* a metal bar for stirring fires; a card game.
po-ky (*pō'ki*), *adj.* lacking spirit or interest; slow; stupid.
Poland. An inversion of *Land-Pole*, the Slavonic for "men of the plains," who first overran this territory. It is called *Polen* or *Pohlen* in German, *Pologne* in French, and *Polska* in Polish.
po-lar (*'lĕr*), *adj.* pertaining to, or situated near, either of the poles, especially the north pole, pertaining to the magnetic poles.
po-lar-i-ty (*-lar'i-ti*), *n.* the property possessed by certain bodies, as in electrified or magnetized bodies, by which they arrange themselves in certain directions or tend to given poles.
pole (*pōl*), *n.* a long staff; a measure; one of the extremities of the imaginary axis of the earth.
pole-cat (*'kat*), *n.* a small carnivorous animal which emits a strong offensive odor.
po-lem-ic (*pō-lem'ik*), *n.* a controversialist: *pl.* the art of controversy.
po-lem-ic-al (*'i-kal*), *adj.* controversial.
pole-star (*pōl'stär*), *n.* the north star (*Polaris*), situated in Ursa Minor, within 1½ degrees of the true pole; a guide.

po-lice (*pō-lēs'*), *n.* in a city, town, or district, an organized force of civil officers for preserving order. [force.

po-lice-man (*pō-lēs'man*), *n.* a member of a police

pol-i-cy (*pol'i-si*), *n.* [*pl.* policies (*-siz*)], the art or method of government; management of public affairs; a warrant for money in the public funds.

pol-ish (*'ish*), *v. t.* to make smooth or glossy by friction: *v. i.* to become polished: *n.* a smooth, glossy surface; refinement or elegance of manners. [POLITE.]

po-lite (*po-līt'*), *adj.* well-bred; refined in manner; courteous or obliging.

Syn. POLITE, polished, refined. *Politeness* and *polish* do not extend to anything but externals; *refinement* applies as much to the mind as the body; rules of conduct, and good society, will make a man *polite;* lessons in dancing will serve to give a *polish; refined* manners or principles will naturally arise out of *refinement* of men. [See *genteel.*]

Ant. CRUDE, rough, rude.

pol-i-tic (*'i-tik*), *adj.* shrewd; specious; sagacious: especially in policy.

po-lit-i-cal (*pō-lit'i-kal*), *adj.* pertaining to politics, or to a nation or state; derived from government.

po-lit-i-cal e-con-o-my (*ē-kon'ō-mi*), the science that treats of wealth, its nature, production, distribution, and consumption, and the laws which regulate and govern these.

pol-i-ti-cian (*pol'i-tish-un*), *n.* one who is skilled in politics; a statesman.

pol-i-ty (*'i-ti*), *n.* the form or constitution of the civil government of a state; constitution.

poll (*pōl*), *n.* the head, especially the back part of it; a register of persons, especially those entitled to vote at elections; an election; place where votes are cast: *v. t.* to cast or deposit in a ballot box; *to poll a jury* is to examine each member individually as to his concurrence in the verdict.

pol-lard (*pol'ẽrd*), *n.* a tree lopped or polled; a stag that has cast its antlers.

pol-len (*'en*), *n.* the fertilizing powder in the cell of the anthers of flowers.

poll tax (*pōl taks*), a capitation tax.

pol-lute (*pol-lūt'*), *v. t.* to defile; render unclean; taint with guilt; corrupt; violate. [CONTAMINATE.]

pol-lu-tion (*-lū'shun*), *n.* the act of polluting; the state of being polluted; defilement; legal or ceremonial uncleanness.

po-lo (*pō'lō*), *n.* a game similar to hockey, played on horseback.

po-lo-naise (*pō-lō-nāz'*), *n.* a dress, body and skirt made in one; a Polish air or dance.

pol-troon (*pol-trōōn'*), *n.* a coward.

pol-y, a *prefix* meaning *many, much.*

pol-y-an-dry (*pol-i-an'dri*), *n.* the practice of a woman having more than one husband at the same time (opposed to *polygamy.*)

po-lyg-a-mist (*pō-lig'ȧ-mist*), *n.* one who practices or upholds polygamy.

po-lyg-a-mous (*'ȧ-mus*), *adj.* pertaining to, or practicing, polygamy.

★**po-lyg-a-my** (*pō-lig'ȧ-mi*, not *pol'ig-ā-mi*), *n.* the practice of having more than one wife at the same time. [guages.

pol-y-glot (*pol'i-glot*), *adj.* containing many lan-

pol-y-gon (*'i-gon*), *n.* a figure having many angles.

pol-y-pus (*'i-pus*), *n.* [*pl.* polypi (*-pī*)], a fleshy tumor in the nose or uterus; a polyp.

pol-y-syl-la-ble (*-sil'ȧ-bl*), *n.* a word consisting of three or more syllables.

pol-y-tech-nic (*-tek'nik*), *adj.* noting, including, or giving instruction in, the arts and sciences: *n.* a school for imparting instruction in the arts and sciences.

pol-y-the-ism (*'i-thē-izm*), *n.* the doctrine of a plurality of gods, each taking a part in the government of the world.

po-made (*pō-mād'*), *n.* a perfumed ointment for dressing the hair. [Also *pomatum.*]

pome-gran-ate (*pum'gran-āt*), *n.* a tree (*Punica granatum*) yielding an orange-like, edible fruit with a thick rind and numerous seeds.

pom-mel (*pum'el*), *n.* the knob on a sword-hilt; the high part of a saddle-bow: *v. t.* to beat with anything thick or bulky; bruise.

po-mol-o-gy (*pō-mol'ō-ji*), *n.* the science of cultivating fruit and fruit trees, especially apples; a treatise on fruits.

pomp (*pomp*), *n.* ostentatious display; grandeur; parade. [MAGNIFICENCE.]

Pompey (*pom'pi*). From the Latin, meaning "of Pompeii," *i. e.,* the city of Pompeii. Danish, *Pompejus;* Dutch, *Pompejus;* Fr., *Pompée;* It., *Pompeo;* Lat., *Pompeius.*

Pompey's Pillar. A Corinthian column of beautifully polished red granite at Alexandria, standing on a pedestal or foundation of masonry.

pom-pous (*pom'pus*), *adj.* stately; grand; self-important; ostentatious.

pond (*pond*), *n.* a pool of standing water.

pon-der (*pon'dẽr*), *v. t.* to weigh mentally: *v. i.* to deliberate.

pon-der-a-ble (*'dẽr-ȧ-bl*), *adj.* capable of being weighed.

pon-der-ous (*'dẽr-us*), *adj.* very heavy; weighty; important; dull.

pon-gee (*pon-jē'*), *n.* an inferior kind of silk.

pon-iard (*pon'yẽrd*), *n.* a small dagger: *v. t.* to stab with a poniard.

Pontchartrain (*pont-chär-trān'*). Lake in Louisiana, named for a French count who was an early explorer of the Mississippi valley.

Ponte Vecchio (*pon'tē vek'kē-ō*). A bridge in Florence, over the Arno; a picturesque structure with three wide arches, rebuilt in 1345. The roadway is bordered on both sides by quaint little shops, except over the middle arch, where there is an opening. Over the south row of shops is carried a gallery, built by Vascari, connecting the Pitti palace with the Uffizi and the Palazzo Vecchio.

pon-tiff (*pon'tif*), *n.* a high priest; the pope.

pon-tif-ic-al (*'i-kal*), *adj.* pertaining to a pontiff, high priest, or pope; papal.

pon-toon (*pon-tōōn'*), *n.* a buoyant, flat-bottomed structure supporting a floating military bridge; a bridge of boats; a lighter.

po-ny (*pō'ni*), *n.* [*pl.* ponies (*'niz*)], a small horse; student's key to translation of Latin or Greek lessons.

pool (*pōōl*), *n.* a small body of water; the stakes in certain games or the receptacle for them: *v. t.* to unite or aggregate together.

poop (*pōōp*), *n.* the stern of a ship: *v. t.* to break heavily over the stern of, said of waves.

poor (*pōōr*), *adj.* necessitous; having little or no means; destitute of riches; without strength.

pop (*pop*), *n.* a short, smart, quick sound: *v. t.* to thrust suddenly; pawn: *v. i.* to make a short, smart, quick sound.

pop-corn (*'kôrn*), *n.* any variety of Indian corn or maize having small ears and small, hard grains. The grains "*pop*" and expand when exposed to the heat of a fire.

pope (*pōp*), *n.* the bishop of Rome and head of the Roman Catholic church; a title of priests of the Greek church; a variety of perch.

pop-in-jay (*pop'in-jā*), *n.* a parrot; fop.

pop-lar (*pop'lẽr*), *n.* a tree of rapid growth, with a white soft wood.

pop-lin (*'lin*), *n.* a fabric of silk and worsted.

Popocatepetl (*pō-pō-kȧ-tā-pet'l*). The loftiest volcano in Mexico, means the "smoking mountain." From the Aztec *popoca,* "he smokes," and *tepetl,* a "mountain."

pop-py (*pop'i*), *n.* any plant of the genus Papaver, with bright showy flowers.

pop-u-lace (*'ū-lās*), *n.* the common people.

pop-u-lar (*'ū-lẽr*), *adj.* pertaining to, suitable for, or pleasing to, the common people; easily understood; plebeian.

pop-u-lar-ize (*-īz*), *v. t.* to render popular.

pop-u-late (*'ū-lāt*), *v. t.* to furnish with inhabitants.

pop-u-la-tion (*-lā'shun*), *n.* the inhabitants of a country, place, town, etc., collectively.

Pop-u-list (*-list*), *n.* a member of a political party in the United States known as the Populist or People's party.

pop-u-lous (*'ū-lus*), *adj.* thickly peopled.

por-ce-lain (*pôr'sē-lin*), *n.* a fine white, thin, semi-transparent kind of earthenware.

porch (*pōrch*), *n.* a vestibule supported by pillars; portico.

por-cu-pine (*pôr'kū-pīn*), *n.* a rodent covered with spines. of the genus Hystrix.

pore (*pōr*), *n.* a minute hole in the skin through which perspiration passes to the surface: *v. i.* to look with close and steady attention, as on a book.

pork (*pōrk*), *n.* the flesh of swine, either fresh or salted.

pork-er (*'ẽr*), *n.* a pig.

por-ous (*pōr'us*), *adj.* having pores.

por-phy-ry (*pôr'fi-ri*), *n.* originally a reddish igneous rock found in Egypt.

por-poise (*pôr-pus*), *n.* a cetaceous mammal of the genus Phocæna; the sea hog.

por-ridge (*por'ij*), *n.* oatmeal boiled slowly in water until it thickens.

port (*pōrt*), *n.* a harbor; harem; deportment or carriage; the left side of a ship: *v. t.* to turn to the port or left side of a ship, as, to *port* the helm. [HARBOR.]

port-a-ble (*pōrt'ȧ-bl*), *adj.* that may be easily carried by hand or about the person.

port-age (*'āj*), *n.* carriage; cost of carriage.

port-al (*'al*), *n.* a gate or entrance; an arch over a gateway or door.

Porta Maggiore (*pōr'tä mäd-jō're*). The finest and most imposing ancient gate in the walls of Rome.

por-tend (*por-tend'*), *v. t.* to indicate in advance; presage. [AUGUR.]

por-tent (*'tent*), *n.* an omen, especially of ill.

por-tent-ous (*'us*), *adj.* ominous; foreshadowing evil; wondrous.

por-ter (*pōr'tẽr*), *n.* a door or gate keeper; a dark-colored malt beer; one who carries parcels, etc., for hire. [Fem. *porteress.*

por-ter-age (*-āj*), *n.* money charged for carriage by a porter.

port-fol-io (*pōrt-fōl'yō*), *n.* a portable case for loose papers, drawings, etc.

port-hole (*'hōl*), *n.* a window-shaped hole in the side of a ship, especially of a man-of-war.

por-ti-co (*pōr'ti-kō*), *n.* [*pl.* porticos (*-kōz*)], a walk covered by a roof supported on columns; a columned porch.

por-tion (*'shun*), *n.* a piece or part; allotment; dividend: *v. t.* to divide; allot.

Portland, Me. In 1786, "an act for erecting that part of the town of Falmouth in the county of Cumberland commonly known as the Neck into a town by the name of *Portland.*" The name was recommended from its being the oldest English name in that section, given to a large island in the harbor, the name of the main channel (Portland sound) and the mainland opposite (Portland head).

Portland, Ore. Named in compliment to Portland, Me. F. W. Pettygrove and Gen. A. L. Lovejoy, in 1843, were the purchasers of what was afterward Portland, and of which ground they were the first occupants. As a native of Maine, Pettygrove desired to compliment Maine in naming the locality, and similar motives prompted his partner to call it Boston (his native place). The controversy was settled by tossing an old American red cent; the one who threw the most heads in three flips should name the town. The score is recorded; Lovejoy, tails, two, heads, one; Pettygrove, heads, two; and so we have *Portland* instead of *Boston, Ore.*

Portland Vase. A famous urn of blue transparent cameo-cut glass, ten inches high. It was discovered about 1630 in a sarcophagus in a tomb in the Monte del Grano, near Rome. It is so called from its possessors, the Portland family.

port-ly (*pōrt'li*), *adj.* stately of mien; corpulent.

port-man-teau (*-man'tō*), *n.* a bag or trunk for carrying clothes or traveling necessities.

Porto Rico (*pōr'tō rē'kō*). Spanish for "rich port." West Indian island belonging to the Union.

por-trait (*pōr'trāt*), *n.* a picture or representation of an individual or face drawn from life.

por-trai-ture (*'trā-tūr*), *n.* the art or practice of drawing or painting portraits; vivid delineation in words.

por-tray (*-trā'*), *v. t.* to paint or draw the likeness of; describe in words.

Portsmouth, N. H. Named from Portsmouth, England; the governor of which, Captain John Mason, was the original proprietor of its namesake.

Port Royal, S. C. Named from the bay, called *Royale* by Ribaut, "because of the fairness and largeness thereof" of its waters.

Portugal (*pōr'tū-gal*, Port. *pōr-too-gäl'*). The *Portus Galliæ* of the Romans; literally, "the gates of Gaul," as approached from the Mediterranean and Atlantic seas. A country of southwestern Europe.

Por-tu-guese (*pōr-tū-gēz'*), *adj.* pertaining to Portugal, its inhabitants, or language.

pose (*pōz*), *n.* attitude or position: *v. i.* to assume an attitude: *v. t.* to puzzle or perplex.

pos-er (*pōz'ẽr*), *n.* a puzzling question; one who, or that which, poses or puzzles.

po-si-tion (*pō-zish'un*), *n.* the state of being set or placed; situation; attitude.

Syn. POSITION, posture. The *position* is that in which a body is placed in respect to other bodies; as the standing with one's face or back to an object is a *position;* but a *posture* is that *position* which a body assumes in respect to itself, as a sitting or reclining *posture.* [See *tenet.*]

pos-i-tive (*poz'i-tiv*), *adj.* clearly expressed; actual; direct; explicit; overconfident; dogmatical: *n.* that which may be affirmed; reality; a photograph with the natural lights and shades restored. [CONFIDENT, DEFINITE.]

pos-i-tiv-ism (*'i-tiv-izm*), *n.* a French philosophical and religious system originated by Auguste Comte (1798-1857), called also Comtism, and the religion of humanity.

pos-se (*pos'ē*), *n.* an improvised force of men.

pos-sess (*poz-es'*), *v. t.* to have as an owner; be master of; occupy; seize. [HAVE, HOLD.]

pos-ses-sion (*-esh'un*), *n.* the having, holding, or detention of property; the thing possessed.

pos-sess-ive (*-es'iv*), *adj.* noting possession.

pos-sess-or (*'ẽr*), *n.* owner; one who possesses.

pos-set (*pos'et*), *n.* milk curdled with wine, etc.

pos-si-bil-i-ty (*-i-bil'i-ti*), *n.* the state of being possible; contingency. [ACCIDENT.]

pos-si-ble (*'i-bl*), *adj.* that may happen or exist.

post (*pōst*), *n.* a piece of timber, etc., set erect, usually to support something else; a messenger or postman; the mail; a postoffice: *v. t.* to inform fully: *v. i.* to travel with speed or a relay of horses.

post-age (*'āj*), *n.* the fee for the conveyance of letters by post.

post-al (*'al*), *adj.* pertaining to the postoffice or mail service.

post-er (*'ẽr*), *n.* a large advertising bill.

pos-te-ri-or (*pos-tē'ri-ẽr*), *adj.* subsequent in time or place; hinder: *n. pl.* the hinder parts of an animal.

pos-ter-i-ty (*-ter'i-ti*), *n.* [*pl.* posterities (*-tiz*)], succeeding generations; descendants.

pos-tern (*pōs'tẽrn*), *n.* a small gate or door; private entrance.

post-hu-mous (*post'hū-mus*), *adj.* born after the death of the father; published after the death of an author.

pos-til-ion (*pōs-til'yun*), *n.* the rider on the near leader in a carriage.

post-mas-ter (*pōst'mȧs-tẽr*), *n.* the superintendent of a post office; one who supplies post horses.

post-me-rid-i-an (*-mē-rid'i-an*), *adj.* after noon.

post-pone (*-pōn'*), *v. t.* to delay; defer.

post-pone-ment (*'ment*), *n.* the act of deferring to a future time; temporary delay.

post-script (*'skript*), *n.* a paragraph added to a letter after the writer's signature.

pos-tu-late (*pos'tū-lāt*), *v. t.* to assume without proof; solicit: *n.* a self-evident problem.

pos-ture (*'tūr*), *n.* attitude; placing or position of

parts of the body; state: *v. i.* to place the body in particular postures. [ACTION, POSITION.]

po-sy (*pō'zi*), *n.* a bunch of flowers: originally a motto or verse sent with a bouquet.

pot (*pot*), *n.* a metal vessel for holding or boiling liquids, etc.

pot-ash (*pot'ash*), *n.* a powerful alkali obtained from the ashes of certain plants.

po-ta-tion (*pō-tā'shun*), *n.* drinking bout; a draft or drink.

★**po-ta-to** (*pō-tā'tō*, not *pō-tā'tu*), *n.* [*pl.* potatoes (*-tōz*)], the edible tuber of a South American plant, widely cultivated; the plant itself.

po-tent (*'tent*), *adj.* powerful; having great authority or influence. [POWERFUL.]

po-ten-tate (*'ten-tāt*), *n.* one who possesses great power; sovereign or monarch.

po-ten-tial (*-ten'shal*), *adj.* existing in possibility, not in reality; latent.

poth-er (*poth'ĕr*), *n.* confusion; bustle: *v. i.* to make a stir: *v. t.* to confuse; tease.

po-tion (*pō'shun*), *n.* a draft; dose.

Potomac (*pō-tō'mak*). River forming the boundary line between Maryland, Virginia, and West Virginia. Indian *patowmek* or *potowmak*, "they are coming by water"; another translation, "place of the burning pine," allusion to a council fire.

pot-pour-ri (*pō-pōō-rē'*), *n.* a medley, especially of musical airs; a dish composed of various kinds of meats and vegetables.

Potsdam (*pots'dam*, German *pōts'dȧm*). Prussian city situated at the junction of the Nuthe with the Havel, sixteen miles southwest of Berlin. It is an imperial residence, and contains many palaces. The name is a corruption of the Slavonic *poddubami*, "under the oaks."

pot-tage (*pot'āj*), *n.* a kind of soup.

pot-ter (*'ĕr*), *n.* a maker of pottery.

pot-ter-y (*'ĕr-i*), *n.* [*pl.* potteries (*-iz*)], earthenware of all kinds; the place where it is manufactured.

pot-to-roo (*-ō-rōō'*), *n.* the kangaroo rat of Australia. [Also *potoroo.*]

pouch (*pouch*), *n.* a small bag; pocket; bag or sack of an animal.

Poughkeepsie (*pō-kip'si*). City in Dutchess county, New York. Derived from the Delaware Indian word, *apokeepsingk*, meaning "safe and pleasant harbor," or "shallow inlet," "safe harbor for small boats."

poul-tice (*pōl'tis*), *n.* a soft preparation of bread, meal, etc., applied to a sore or inflamed part of the body; a cataplasm.

poul-try (*'tri*), *n.* domestic fowls.

pounce (*pouns*), *n.* a fine powder formerly used for drying ink on paper: *v. t.* to sprinkle with pounce: *v. i.* to fall upon and seize with the claws.

pound (*pound*), *n.* a standard weight equal to 16 ounces avoirdupois, or 12 ounces troy; a monetary unit equal to 20 shillings, or about $4.86; an inclosure for confining stray cattle: *v. t.* to shut in or confine in a pound; beat; pulverize as in a mortar: *v. i.* to plod.

pour (*pōr*), *v. t.* to empty, as a liquid, out of a vessel; discharge in a continuous stream: *v. i.* to stream; rush tumultuously.

Syn. POUR, spill, shed. We *pour* with design; we *spill* by accident; we *pour* water over a plant or a bed; we *spill* it on the ground; *to shed* is done in great quantities.

pout (*pout*), *n.* a thrusting out of the lips; fit of sullenness

pov-er-ty (*pov'ĕr-ti*), *n.* the state of being poor; indigence; necessity.

pow-der (*pou'dĕr*), *n.* any dry substance in fine particles: *v. t.* to reduce to, or sprinkle with, powder; salt.

pow-er (*pou'ĕr*), *n.* the faculty of doing or performing something; ability; energy; force; strength; rule or authority.

pow-er-ful (*-fool*), *adj.* having great power; mighty; forcible; strong; efficacious.

Syn. POWERFUL, potent, mighty. *Powerful* is applicable to strength as well as power; a *powerful* man is one who by size and make can easily *overpower* another; and a *powerful* person is one who has much in his *power; potent* is used only in this latter sense, in which it expresses a larger extent of *power*; a *potent* monarch is much more than a *powerful* prince; *mighty* expresses a still higher degree of *power; might* is *power* unlimited by any consideration or circumstance; a giant is called *mighty* in the physical sense, and genius is said to be *mighty* which takes everything within its grasp.

pow-wow (*pou'wou*), *n.* a North American Indian priest or conjurer; an incantation.

pox (*poks*), *n.* an eruptive disease characterized by pustules; syphilis.

prac-ti-ca-bil-i-ty (*prak-ti-kȧ-bil'i-ti*), *n.* the state of being practicable.

prac-ti-ca-ble (*'ti-kȧ-bl*), *adj.* that may be done, used, or passed over; feasible; possible.

prac-ti-cal (*'ti-kal*), *adj.* pertaining to action or use; useful.

prac-tice (*prak'tis*), *n.* frequent or customary action; use: *v. t.* to form a habit; exercise a profession. [CUSTOM. EXERCISE.]

prac-ti-tion-er (*-tish'un-ĕr*), *n.* one who is engaged in the exercise of any profession.

Prado (*prä'dō*). The chief fashionable promenade of Madrid.

præ-i-pe (*pres'i-pē*), *n.* a writ requiring something to be done, or the reason why it is not performed.

præ-tor (*prē'tor*), *n.* a Roman magistrate ranking next to a consul.

prag-mat-ic (*prag-mat'ik*), *adj.* meddling; officious; assuming business airs. [Also *pragmatical.*]

Prague (*prȧg*). The capital of Bohemia; is the English form of the German *prag*, or *praha*, which in Czech means the "threshold," referring, it is supposed, to a reef of rocks in the bed of the Moldau. The suburb of Warsaw on the right bank of the Vistula similarly goes by the name of *Praga*, the "threshold."

prai-rie (*prā'ri*), *n.* an extensive treeless tract of level or slightly undulating land covered with tall coarse grass.

Prairie du Chien (*prā'rē du shēn*. French, *prā-rē' dü shē-ăN'*), **Ia.** French words, translated "dog prairie," from the local habitations of the prairie dogs.

praise (*prāz*), *n.* approbation; commendation; *v. t.* to bestow commendation upon; honor; worship; glorify. [LAUDABLE.]

prance (*prans*), *n.* a spring or bound: *v. i.* to spring or bound; strut about in a lively or bellicose manner.

prank (*prangk*), *n.* a freak or frolic; mischievous trick.

prate (*prāt*), *v. i.* to prattle; talk idly; be loquacious: *v. t.* to utter without sense or meaning.

Prater (*prä'ter*). A noted public park in Vienna.

prat-tle (*prat'l*), *n.* childish or empty talk: *v. i.* to talk much and lightly; chatter.

prax-is (*praks'is*), *n.* an example or series of examples for exercise.

pray (*prā*), *v. t.* and *v. i.* to ask earnestly; address or petition.

prayer (*prâr*), *n.* a solemn address to the Supreme Being.

preach (*prēch*), *v. i.* to pronounce a public discourse on a sacred subject: *v. t.* to teach publicly.

pre-am-ble (*prē'am-bl*), *n.* an introduction or preface.

preb-end (*preb'end*), *n.* the stipend granted to a canon out of the estate of a cathedral or collegiate church.

pre-ca-ri-ous (*prē-kā'ri-us*), *adj.* depending upon the will or pleasure of another; uncertain.

pre-cau-tion (*prē-kaw'shun*), *n.* caution taken beforehand; preventive measure.

pre-cede (*prē-sēd'*), *v. t.* to go before in time, place, rank, or importance.

★**pre-ced-ence** (*prē-sēd'ens*, not *pres'ē-dens*), *n.* the act of going before in time, rank, etc.; priority; relative rank in social etiquette. [Also *precedency.*]

★**pre-ced-ent** (*'ent*), *adj.* going before; anterior: *n.* (*pres'ē-dent*) a parallel case in the past.

pre-cen-tor (*-sen'tĕr*), *n.* the leader of a cathedral choir, etc.; the leader of the psalmody in a Presbyterian church.

pre-cept (*prē'sept*), *n.* an authoritative command; rule of action or moral conduct; maxim. [DOCTRINE, COMMAND.]

pre-ces-sion (*-sesh'un*), *n.* a going forward, especially the slow but continual shifting of the equinoctial points along the ecliptic from east to west (*precession of the equinoxes*).

pre-cinct (*prē'singkt*), *n.* an outward limit or boundary.

pre-cious (*presh'us*), *adj.* of great price or value; costly; highly esteemed; worthless (*in irony*). [RARE.]

prec-i-pice (*pres'i-pis*), *n.* a steep descent, especially one nearly or quite perpendicular.

pre-cip-i-tant (*pre-sip'i-tant*), *adj.* falling headlong; hasty: *n.* any chemical substance that causes something held in solution by a liquid to fall down in a solid state.

pre-cip-i-tate (*-sip'i-tāt*), *v. t.* to throw headlong; urge on violently; hurry on rashly: *adj* (*-tat*) headlong; overhasty; rash.

pre-cip-i-tous (*'i-tus*), *adj.* very steep; headlong; rash; hasty.

pre-cise (*prē-sīs'*), *adj.* exact; strict; accurate; definite.

pre-clude (*-klōōd'*), *v. t.* to shut out; hinder from access; obviate.

pre-clu-sion (*-klōō'zhun*), *n.* the act of precluding; the state of being precluded.

pre-co-cious (*-kō'shus*), *adj.* prematurely ripe or developed.

pre-coc-i-ty (*-kos'i-ti*), *n.* the state or quality of being precocious; premature development.

pre-cog-ni-tion (*prē-kog-nish'un*), *n.* previous knowledge or thought.

pre-cur-sor (*prē-kûr'sĕr*), *n.* one who or that which precedes; forerunner; omen.

pred-a-to-ry (*pred'ȧ-tō-ri*), *adj.* rapacious; plundering; pillaging.

pred-e-ces-sor (*pred-ē-ses'ĕr*), *n.* one who has preceded another in the same office, business, position, etc.; an ancestor.

pre-des-ti-nate (*prē-des'ti-nāt*), *v. t.* to ordain beforehand by an unchangeable purpose.

pre-des-ti-na-tion (*-nā'shun*), *n.* the act of foreordaining; the doctrine that God has from all eternity decreed whatever comes to pass, especially by an unchangeable purpose, the eternal life or death of man.

pred-i-ca-ble (*pred'i-kȧ-bl*), *adj.* capable of being predicated: *n.* in logic a term that can be predicated of others.

pre-dic-a-ment (*prē-dik'ȧ-ment*), *n.* in logic a category; a peculiar situation; critical condition.

pred-i-cate (*pred'i-kāt*), *v. t.* to affirm one thing of another; found: *n.* in logic, that which is affirmed or denied of the subject.

pre-dict (*prē-dikt'*), *v. t.* to declare a future event; to prophesy. [FORETELL.]

pre-di-lec-tion (*prē-di-lek'shun*), *n.* preference beforehand; prepossession; partiality.

pre-dis-pose (*-dis-pōz'*), *v. t.* to incline beforehand; adapt previously.

pre-dom-i-nant (*prē-dom'i-nant*), *adj.* having superior influence, etc.; superior; controlling.

pre-dom-i-nate (*'i-nāt*), *v. i.* to be superior in strength, power, authority, etc.; prevail.

pre-ëmpt (*prē-empt'*), *v. t.* to secure or occupy by preëmption; establish a right or claim to before others.

pref-ace (*pref'ās*), *n.* the introduction to a book, etc.; preamble: *v. t.* to introduce by preliminary remarks: *v. i.* to say or do something introductory.

pref-a-to-ry (*'ȧ-tō-ri*), *adj.* pertaining to, or of the nature of, a preface; introductory.

pre-fect (*prē'fekt*), *n.* a civil magistrate or governor.

pre-fec-ture (*-tûr*), *n.* the office, jurisdiction, or official residence of a prefect.

pre-fer (*prē-fĕr'*), *v. t.* to regard or esteem more than something else, *adj.* preferable. [CHOOSE, ELIGIBLE.]

★**pref-er-ence** (*pref'ĕr-ens*), *n.* the act of preferring; the thing preferred; choice of one thing more than another; predilection. [ALTERNATIVE.]

pref-er-en-tial (*-en'shal*), *adj.* having a preference.

★**pre-fer-ment** (*prē-fĕr'ment*), *n.* promotion, especially in the church.

pre-fix (*prē'fiks*), *n.* a letter, word or syllable placed at the beginning of a word: *v. t.* (*prē-fiks'*) to place before, or at, the beginning of.

preg-nant (*preg'nant*), *adj.* being with young; fruitful; teeming; fertile.

pre-hen-sile (*prē-hen'sil*), *adj.* adapted for holding or seizing.

prej-u-dice (*prej'ū-dis*), *n.* previous and unfavorable bias; prejudgment without due examination: *v. t.* to bias the mind of; create a prejudice against

Syn. PREJUDICE, bias, partiality, prepossession, presumption. A *prejudice* or *prepossession* is grounded often on feeling, fancy, associations. A *prejudice* against foreigners is very common in retired communities. A *prepossession* is always favorable, a *prejudice* always unfavorable, unless the contrary is expressly stated. [injurious.

prej-u-di-cial (*-dish'al*), *adj.* disadvantageous; **prel-a-cy** (*prel'ȧ-si*), *n.* the office or status of a prelate; episcopacy.

★**prel-ate** (*prel'āt*, not *prē'lāt*), *n.* an ecclesiastical dignitary having episcopal authority.

pre-lec-tion (*prē-lek'shun*), *n.* a lecture, etc., read before students or others.

pre-lim-i-na-ry (*-lim'i-nȧ-ri*), *adj.* preceding the main discourse or business; introductory: *n.* an introduction; something preceding. [PREVIOUS.]

pre-lude (*prē'lūd* or *prel'ūd*), *n.* a short piece of music played as an introduction to a larger piece.

pre-ma-ture (*prē-mȧ-tūr'*), *adj.* arriving, occurring, or done, before the proper time.

pre-med-i-tate (*prē-med'i-tāt*), *v. t.* to design, conceive, or deliberate, beforehand.

pre-mi-er (*prē'mi-ĕr*), *adj.* first; chief: *n.* the prime minister.

pre-mise (*prē-mīz'*), *v. t.* to explain previously; *n.* (*prem'is*) a proposition antecedently assumed and laid down.

pre-mi-um (*prē'mi-um*), *n.* a recompense or reward; prize or bounty; bonus.

pre-mon-i-to-ry (*prē-mon'i-tō-ri*), *adj.* giving warning beforehand.

pre-oc-cu-pied (*prē-ok'ū-pīd*), *p. adj.* engrossed; already occupied. [ABSTRACTED.]

prep-a-ra-tion (*prep-ȧ-rā'shun*), *n.* the act of preparing or fitting for a particular purpose; state of being prepared; readiness.

pre-par-a-to-ry (*prē-par'ȧ-tō-ri*), *adj.* previously necessary; introductory. [PREVIOUS.]

pre-pense (*prē-pens'*), *adj.* premeditated.

pre-pon-der-ant (*-pon'dĕr-ant*), *adj.* outweighing.

pre-pon-der-ate (*'dĕr-āt*), *v. i.* to outweigh; exceed in power or influence: *v. t.* to incline to one side.

prep-o-si-tion (*prep-ō-zish'un*), *n.* a word placed before a noun or pronoun to indicate its relation to some other word in the sentence.

pre-pos-i-tive (*prē-poz'i-tiv*), *adj.* placed before: *n.* a word or particle placed before another word.

pre-pos-sess (*prē-poz-es'*), *v. t.* to occupy beforehand; bias.

pre-pos-sess-ing (*'ing*), *p. adj.* tending to win or secure favor; attractive.

pre-pos-ses-sion (*-zesh'un*), *n.* prior possession; preconceived opinion or judgment. [PREJUDICE.]

pre-pos-ter-ous (*prē-pos'tĕr-us*), *adj.* contrary to nature or reason; ridiculous; absurd. [IRRATIONAL, ABSURD.]

pre-rog-a-tive (*-rog'ȧ-tiv*), *n.* an exclusive or peculiar privilege, especially of a sovereign.

pre-sage (*prē'sāj*), *n.* a foreboding or presentiment: *v. t.* (*pre-sāj'*) to forebode; predict. [AUGUR, OMEN.]

pres-by-o-pi-a (*pres-bi-ō'pi-ȧ*), *n.* long-sightedness, while near objects are indistinctly seen.

pres-by-ter (*pres'bi-tĕr*), *n.* an elder, minister, or priest.

pres-by-ter-y [illegible], *n.* in the Presbyterian [illegible].

pre-sci-ent [illegible].

Prescott, Ariz. A [illegible] W[illegible] H. P[illegible].

pre-scribe [illegible] to write medical directions, give law. [DICTATE.]

pre-scrip-tion (*-skrip'shun*), *n.* the act of prescribing: a written direction for the preparation of a medicine. [USAGE.]

pres-ence (*prez'ens*), *n.* the state or quality of being present; quickness at expedients.

pres-ent [illegible] [GIFT.]

pres-en-ta-tion [illegible], *n.* the act of [illegible].

pre-sen-tient [illegible], *adj.* having previous [illegible].

pre-sen-ti-ment [illegible], *n.* previous appre[illegible].

pre-sent-ment [illegible], *n.* the act of pre[illegible].

pres-er-va-tion [illegible], *n.* the act of [illegible] the state of being preserved from [illegible].

pre-ser-va-tive [illegible], *adj.* having the [illegible] that which preserves. [Also *preservatory.*]

pre-serve [illegible], *v. t.* to keep from injury; defend: [illegible] fruit, etc., seasoned and kept in sugar. [KEEP.]

pre-side (*prē-zīd'*), *v. i.* to direct or control, especially at a public meeting; superintend.

pres-i-den-cy [illegible], *n.* the office, dignity, [illegible] of a president.

pres-i-dent [illegible], *n.* one who presides over a [illegible] or assembly: the highest [illegible] of a [illegible].

pres-i-den-tial [illegible], *adj.* pertaining to a [illegible].

press [illegible]

Syn. PRESS, [illegible] constructed in a similar form; one *gripes* with teeth, claws, or any instrument that can gain hold of the object.

press-gang [illegible], *n.* a detachment from a ship's [illegible].

press-ing [illegible], *adj.* exerting pressure, urgent: [illegible].

press-man [illegible], *n.* a printer who works at the [illegible].

pres-ti-dig-i-ta-tion [illegible], *n.* sleight [illegible].

pres-tige [illegible], *n.* moral influence due to [illegible].

pre-sume [illegible] to take for granted on [illegible] to venture without [illegible].

pre-sump-tion [illegible], *n.* strong probability: [illegible] or overconfidence. [PREJUDICE, PRIDE.]

pre-sump-tive [illegible], *adj.* taken by previous sup[illegible].

Syn. PRESUMPTIVE, [illegible] to presume.

Ant. [illegible].

pre-sump-tu-ous [illegible] to excess: [illegible] [PRESUMPTIVE.]

pre-sup-pose [illegible] to take for granted [illegible].

pre-tend [illegible] [FEIGN.]

pre-tend-er [illegible], *n.* one who lays claim to anything [illegible] guise of a right; one who makes a [illegible].

★**pre-tense** [illegible], *n.* false or [illegible].

Syn. PRETENSE, [illegible].

pre-ten-sion [illegible], *n.* a claim, true or false: [illegible] [PRETENSE.]

pre-ten-tious [illegible], *adj.* assuming an air of [illegible].

pre-text [illegible] [PRETENSE.]

Pretoria (*pr-tō'ri-ä*). The capital of the Transvaal, was named in honor of Andries Pretorius, a Boer leader whose son became the first president of the republic.

pret-ti-ness (*prit'ti-nes*), *n.* attractiveness without dignity; neatness with taste; agreeable manner.

pret-ty [illegible], *adj.* [comp. prettier, superl. prettiest] pleasing without being absolutely beautiful; pleasing: *adv.* fairly; moderately; tolerably.

pret-zel [illegible], *n.* a hard wheaten biscuit.

pre-vail [illegible], *v. i.* to succeed; gain the advantage. [PERSUADE.]

prev-a-lence [illegible], *adj.* superior strength, influence, or efficacy; preponderance.

prev-a-lent [illegible], *adj.* powerful; predominant; [illegible].

pre-var-i-cate [illegible], *v. i.* to evade the truth; quibble. [EVADE.]

pre-vent [illegible], *v. t.* to hinder, obstruct, or impede; obviate.

Syn. PREVENT, anticipate. *To prevent* is literally to come beforehand, and *anticipate* to take beforehand; *to prevent* is the act of a person toward other persons or things; *to anticipate* is the act of a being either toward himself or another.

Ant. ALLOW, encourage, further.

pre-ven-tion (*-ven'shun*), *n.* the act of preventing; hindrance or obstruction.

pre-ven-tive (*'tiv*), *adj.* tending to prevent: *n.* that which prevents.

pre-vi-ous (*prē'vi-us*), *adj.* going before; anterior.

Syn. PREVIOUS, preliminary, preparatory, introductory. *Previous* applies to actions and proceedings in general; as a *previous* question, a *previous* inquiry, a *previous* determination; *preliminary* is employed only for matters of contract; a *preliminary* article, a *preliminary* condition, are what precede the final settlement of any question; *preparatory* is employed for matters of arrangement; the disposing of men in battle is *preparatory* to an engagement; *introductory* is employed for matters of science or discussion; as remarks are *introductory* to the main subject in question.

Ant. CONCLUDE, subsequent, later, succeeding.

pre-vi-sion (*-vizh'un*), *n.* foreknowledge.

prey (*prā*), *n.* plunder; booty: *v. i.* to take booty or plunder. [BOOTY.]

price (*prīs*), *n.* the current value of a commodity; cost; value; recompense. [COST.]

prick (*prik*), *n.* a puncture; dot or point: *v. t.* puncture; spur or incite.

pric-kle (*'l*), *n.* a sharp point growing from the bark of a plant.

prick-ly (*'li*), *adj.* full of prickles.

pride (*prīd*), *n.* inordinate self-esteem.

Syn. PRIDE, arrogance, assumption, conceit, haughtiness, insolence, ostentation, presumption, self-conceit, self-esteem, self-respect, vainglory, vanity. *Pride* is an absorbing sense of one's own greatness; *haughtiness* thinks highly of itself and poorly of others; *arrogance* claims much for itself and concedes little to others; *haughtiness* feels one's own superiority to others; *disdain* sees contemptuously the inferiority of others to one's self; *presumption* claims place or privilege above one's right; *pride* deems nothing too high; *insolence* is open and rude expression of contempt and hostility; *vanity* is eager for admiration and praise, is elated if they are rendered, and pained if they are withheld, and seeks them; *pride* could never solicit admiration or praise; *conceit* is somewhat stronger than *self-conceit; self-conceit* is ridiculous; *conceit* is offensive; *vainglory* is more pompous and boastful than *vanity.*

Ant. HUMILITY, meekness, diffidence.

priest (*prēst*), *n.* one who officiates in sacred offices, especially by offering sacrifice. [Fem. *priestess.*]

priest-craft (*'kráft*), *n.* the policy pursued by priests for the aggrandizement of their order and material interests.

priest-hood (*'hood*), *n.* the priestly order; office or character of a priest.

prig (*prig*), *n.* a conceited fellow who gives himself airs of wisdom.

prim (*prim*), *adj.* precise; affectedly nice; formally neat.

pri-ma-cy (*prī'mà-si*), *n.* the office or dignity of a primate.

★**pri-ma don-na** (*prē'mä don'ä*), the principal female singer in an opera.

pri-mage (*prī'māj*), *n.* a small allowance paid to the captain and crew of a vessel for loading or unloading a cargo, etc.

pri-mal (*prī'mal*), *adj.* first.

pri-ma-ry (*'mà-ri*), *adj.* chief, original, principal: *n.* that which is first in rank, place or importance.

pri-ma-ry col-ors (*kul'ērz*), yellow, red, blue.

pri-mate (*'māt*), *n.* the highest dignitary in a national church.

prime (*prīm*), *adj.* first in order of rank, time or importance: *n.* the spring of life.

prime num-ber (*num'bēr*), a number not divisible without remainder by any number except itself and unity.

prim-er [illegible], *n.* a manual of elementary instruction: one of two sizes of type.

pri-me-val [illegible], *adj.* of the earliest age or time; original.

prim-ing (*prīm'ing*), *n.* the first coat of paint; powder in the nipple of a firearm.

prim-i-tive (*prim'i-tiv*), *adj.* pertaining to the beginning; old-fashioned.

pri-mo-gen-i-ture [illegible], *n.* seniority of birth; right of the eldest son to succeed to real estate.

pri-mor-di-al (*-mōr'di-al*), *adj.* existing from the beginning; first in order; original: *n.* first principle or element.

primp (*primp*), *v. t.* to deck (one's self) in a prim or affected manner; prink.

prim-rose (*prim'rōz*), *n.* an early spring flower.

prince (*prins*), *n.* a ruler or sovereign; the son of a king or sovereign; the chief of a body of men.

Prince Edward island. In the Gulf of St. Lawrence, was formerly called *St. John's island.* In 1798 the local legislature passed an act, confirmed in 1799 by the king in council, changing the name to *Prince Edward island,* in compliment to Prince Edward, afterward duke of Kent, and father of Queen Victoria, who was then commander of the forces in British North America.

Prince of Wales island. Island belonging to Alaska. Named after the prince regent, afterward George IV. of England.

prin-cess (*prin'ses*), *n.* the daughter of a sovereign; the wife of a prince.

prin-ci-pal (*prin'si-pal*), *adj.* chief; essential: *n.* a principal person or thing; a capital sum lent at interest. [CHIEF.]

prin-ci-pal-i-ty (*-si-pal'i-ti*), *n.* the territory of a prince; royal state; supreme power.

prin-ci-pal-ly (*'si-pal-li*), *adv.* chiefly.

prin-ci-ple (*'si-pl*), *n.* source or origin; element; foundation of morality or religion; uprightness.

Syn. PRINCIPLE, motive. The *principle* lies in conscious and unconscious agents; the *motive* only in conscious agents; all nature is guided by certain *principles;* man is put into action by certain *motives.*

prink (*pringk*), *v. t.* to dress up, or deck out, in a showy or ostentatious fashion.

print (*print*), *n.* a mark or character made by impression; anything produced by printing: *v. t.* to impress; fix or stamp deeply: *v. i.* to practice the art of printing.

printer's devil, the youngest apprentice in a printing office, whose duty it is to do all the dirty jobs. The early printers were by many believed to practice the black art.

print-ing (*'ing*), *n.* the art or act of impressing figures or characters on paper, etc.; typography.

pri-or (*prī'ēr*), *adj.* coming before, in time; former; *adv.* previously: *n.* a superior officer.

pri-or-ate (*-āt*), *n.* the office, dignity, or government of a prior.

pri-or-i-ty [illegible], *n.* the state of being first in rank, time, or place; first claim.

pri-or-y (*'ēr-i*), *n.* [*pl.* priories (*-iz*)], a religious house, in dignity below an abbey.

Priscilla (*pris-sil'lä*). A diminutive of the Latin *priscus,* "old," "ancient." Dutch, *Priscilla;* Fr., *Priscilla;* It., *Priscilla;* Lat., *Priscilla.*

prism (*prizm*), *n.* a solid whose bases are similar, equal, and parallel, and whose sides are parallelograms.

pris-mat-ic (*priz-mat'ik*), *adj.* pertaining to, like, formed by, or separated by, a prism.

pris-on (*priz'n*), *n.* a public building for the confinement of criminals.

pris-tine (*pris'tin*), *adj.* pertaining to an early period; first; original; primitive.

prith-ee [illegible], corruption of "I pray thee."

pri-va-cy [illegible], *n.* a state of retirement; place of seclusion; secrecy.

Syn. PRIVACY, retirement, seclusion. *Privacy* is opposed to publicity; he who lives in *privacy* is one who follows no public line, who lives so as to be little known; *retirement* is opposed to openness or freedom of access; he who lives in *retirement* withdraws from the society of others, he lives by himself; *seclusion* is the excess of *retirement;* he who lives in *seclusion* bars all access to himself; he shuts himself from the world.

Ant. COMPANY, society, publicity.

pri-vate (*prī'vāt*), *adj.* peculiar to one's self: personal; alone: *n.* a common soldier.

pri-va-teer (*-và-tēr'*), *n.* a private vessel licensed by the government to seize and plunder the ships of an enemy: *v. i.* to cruise in a privateer.

pri-va-tion (*-vā'shun*), *n.* the state of being deprived of something.

priv-a-tive (*priv'à-tiv*), *adj.* causing privation; taking away: *n.* that which depends on the absence of something else.

priv-et (*priv'et*), *n.* an evergreen shrub.

priv-i-lege (*'i-lej*), *n.* peculiar advantage, right, or immunity; prerogative: *v. t.* to exempt. [RIGHT.]

priv-y (*'i*), *adj.* private; secret; clandestine: *n.* a necessary house.

prize (*prīz*), *n.* a reward gained in a competition lottery, etc.; a lever used for forcing or raising heavy bodies, etc.: *v. t.* to value; esteem; to force with a lever. [VALUE.]

prize fight (*fīt*), a boxing match for stakes.

prob-a-bil-i-ty (*prob-à-bil'i-ti*), *n.* appearance of truth; likelihood.

pro-bate (*prō-bāt*), *n.* the official proof of wills.

pro-ba-tion (*-bā'shun*), *n.* evidence; proof; moral trial; novitiate.

probe (*prōb*), *n.* a surgical instrument for examining a wound: *v. t.* to examine with a probe

prob-i-ty (*prob'i-ti*), *n.* integrity; sincerity.
prob-lem (*'lem*), *n.* a question for solution: a proposition requiring something to be demonstrated.
prob-lem-at-ic-al (*-at'i-kal*), *adj.* questionable; doubtful.
pro-bos-cis (*prō-bos'is*), *n.* the elongated snout of certain animals and insects.
pro-ce-dure (*-sē'dūr*), *n.* manner of proceeding; conduct; process.
pro-ceed (*-sēd'*), *v. i.* to pass from one step or place to another; advance; issue; make progress: *n. pl.* (*'sēdz*) money resulting from a commercial transaction.
proc-ess (*pros'es*), *n.* progressive course; series of measures or changes; operation.
pro-ces-sion (*prō-sesh'un*), *n.* a train of persons in a formal march.
pro-ces-sion-al (*-al*), *adj.* pertaining to, or consisting in, a procession.
pro-claim (*-klām'*), *v. t.* to announce officially; publish. [ANNOUNCE.]
proc-la-ma-tion (*prok-lȧ-mā'shun*), *n.* an official announcement to the public; edict. [DECREE.]
pro-cliv-i-ty (*prō-kliv'i-ti*), *n.* an inclination; tendency.
pro-cras-ti-nate (*-kras'ti-nāt*), *v. t.* to put off to a future time; defer: *v. i.* to be dilatory.
pro-cre-ate (*'krē-āt*), *v. t.* to generate and produce; beget.
pro-cre-a-tion (*-ā'shun*), *n.* the begetting and production of young.
Pro-crus-te-an (*-krus'tē-an*), *adj.* pertaining to Procrustes, a fabled robber of ancient Greece.
proc-tor (*prok'tẽr*), *n.* one employed to manage the affairs of another.
pro-cur-a-ble (*prō-kūr'ȧ-bl*), *adj.* obtainable.
proc-u-ra-tion (*prok-ū-rā'shun*), *n.* the act of obtaining young women for immoral purposes.
proc-u-ra-tor (*'ū-rā-tẽr*), *n.* one who manages another's affairs, especially legal interests.
pro-cure (*prō-kūr'*), *v. t.* to get or obtain; cause. [PROVIDE.]
prod (*prod*), *n.* a goad; prick: *v. t.* [*p. t.* and *p. p.* prodded, *p. pr.* prodding], to goad.
prod-i-gal (*'i-gal*), *adj.* extravagant in expenditure; lavish; wasteful: *n.* a spendthrift; one who is lavish or wasteful. [EXTRAVAGANT.]
prod-i-gal-i-ty (*-gal'i-ti*), *n.* the state of being prodigal; extravagance; lavishness. [EXCESS.]
pro-di-gious (*prō-dij'us*), *adj.* enormous; adapted to excite wonder. [ENORMOUS.]
prod-i-gy (*prod'i-ji*), *n.* anything wonderful or extraordinary; a miracle; portent. [WONDER.]
pro-duce (*prō-dūs'*), *v. t.* to exhibit or bring to view; yield or bring forth; manufacture; extend: *n.* (*prod'ūs*) that which is yielded or brought forth; result. [EFFECT, ALLEGE, MAKE.]
prod-uct (*prod'ukt*), *n.* work; result; the result of multiplying two or more numbers together.
pro-duc-tion (*prō-duk'shun*), *n.* that which is produced: act of producing: fruit; result.

Syn. PRODUCTION, performance, work. The term *production* cannot be employed without specifying or referring to the source from which it is *produced*, or the means by which it is *produced;* as the *production* of art, the *production* of the inventive faculty; a *performance* cannot be spoken of without referring to the individual by whom it has been *performed;* hence we speak of this or that person's *performance.* When we wish to specify anything that results from *work* or labor, it is termed a *work;* in this manner we speak either of the *work* of one's hands, or a *work* of the imagination.

pro-duc-tive (*'tiv*), *adj.* having the power of producing; generative; fertile.
prof-a-na-tion (*prof-ȧ-nā'shun*), *n.* the act of treating sacred things with disrespect or irreverence.
pro-fane (*prō-fān'*), *adj.* secular; irreverent; irreligious; blasphemous: *v. t.* to treat with irreverence; desecrate. [IRRELIGIOUS.]
pro-fess (*-fes'*), *v. t.* to make open declaration of; acknowledge or avow; declare publicly.
pro-fes-sion (*-fesh'un*), *n.* the act of professing; calling or vocation. [BUSINESS.]
pro-fes-sion-al (*-al*), *adj.* pertaining to a profession: *n.* one who makes his living by his art.
pro-fes-sion-al-ism (*-izm*), *n.* the cultivation of athletic sports for pecuniary considerations.
pro-fess-or (*prō-fes'ẽr*), *n.* one who publicly teaches any branch of knowledge.
pro-fess-or-ship (*-ship*), *n.* the office or position of a professor.
prof-fer (*prof'ẽr*), *v. t.* to offer for acceptance; tender: *n.* an offer made.
pro-fi-cien-cy (*prō-fish'en-si*), *n.* degree of advancement in any branch of knowledge, science, or art.
pro-fi-cient (*'ent*), *adj.* thoroughly qualified, or skilled: *n.* an expert.
pro-file (*'fil*), *n.* a head or portrait in a side view, outline or contour.
prof-it (*prof'it*), *n.* pecuniary gain; benefit or advantage; emolument: *v. t.* to benefit; improve.
prof-it-a-ble (*-ȧ-bl*), *adj.* yielding or bringing profit; lucrative; advantageous.
prof-li-ga-cy (*'li-gȧ-si*), *n.* a profligate course of life. [Also *profligateness.*]
prof-li-gate (*'li-gāt*), *adj.* abandoned to vice; dissolute; openly vicious.

Syn. PROFLIGATE, abandoned, reprobate. A *profligate* man has lost all by his vices, and consequently to his vices alone he looks for the regaining those goods of fortune which he has squandered; an *abandoned* man is altogether *abandoned* to his passions, which, having the entire sway over him, naturally impel him to every excess; the *reprobate* man is one who has been *reproved* until he becomes insensible to *reproof* and is given up to the malignity of his own passions.

pro-found (*prō-found'*), *adj.* deep in skill or knowledge; abstruse; deep; intense. [OBSCURE.]
pro-fun-di-ty (*-fun'di-ti*), *n.* depth of place, knowledge, skill, etc. [DEPTH.]
pro-fuse (*-fūs'*), *adj.* liberal to excess; exuberant. [EXTRAVAGANT.]
pro-fu-sion (*-fū'zhun*), *n.* lavishness; excess; abundance. [EXCESS.]
pro-gen-i-tor (*-gen'i-tẽr*), *n.* an ancestor; forefather. [FOREFATHER.]
prog-e-ny (*proj'en-i*), *n.* offspring; descendants; lineage. [OFFSPRING.]
prog-nos-ti-cate (*prog-nos'ti-kāt*), *v. t.* to foretell: *v. i.* indicate the future by present signs. [FORETELL, OMEN.]
★**pro-gram, pro-gramme** (*prō'gram,* not *prō'grum*), *n.* a course of action prepared or announced beforehand.
prog-ress (*prog'res*), *n.* a moving or going forward; advancement: *v. i.* (*prō-gres'*), to move forward.
pro-gres-sion (*prō-gresh'un*), *n.* motion onward; intellectual advance; progress.
pro-gress-ive (*-gres'iv*), *adj.* moving forward; improving.
pro-hib-it (*-hib'it*), *v. t.* to forbid; interdict by authority; hinder.
pro-hi-bi-tion-ist (*-hi-bish'un-ist*), *n.* one who desires to prohibit the sale of intoxicating liquors.
pro-hib-i-tive (*-hib'i-tiv*), *adj.* tending to prohibit.
proj-ect (*proj'ekt*), *n.* a design or scheme: *v. t.* (*prō-jekt'*) to throw or cast forward: *v. i.* to put out.
pro-ject-ile (*prō-jekt'il*), *n.* a body thrown forward, especially through the air; a bullet, shot.
pro-jec-tion (*-jek'shun*), *n.* that which juts out; a plan or delineation represented on a plane.
pro-lapse (*-laps'*), *n.* a falling down or out of some part of the body: *v. i.* to fall down or out; project too much. [Also *prolapsus.*]
pro-le-ta-ri-an (*prō-lē-tā'ri-an*), *adj.* pertaining to the common people; low; vulgar: *n.* one of the lowest class of society.
pro-le-ta-ri-at (*'ri-at*), *n.* proletarians collectively.
pro-lif-er-ous (*prō-lif'ẽr-us*), *adj.* producing another by budding.
pro-lif-ic (*-lif'ik*), *adj.* productive; fertile.
pro-lix (*prō-liks'* or *prō'liks*), *adj.* tedious and verbose; not concise. [DIFFUSE.]
pro-logue (*'log*), *n.* an introduction or preface: *v. t.* to introduce by a preface.
pro-long (*-long'*), *v. t.* to lengthen; extend.
pro-lon-ga-tion (*-long-gā'shun*), *n.* extension in time or space; delay or postponement.
prom-en-ade (*prom-ē-näd'*), *n.* a walk for pleasure; a public place for walking: *v. i.* walk for pleasure.
prom-i-nence (*prom'i-nens*), *n.* the state or quality of being prominent; a projection.
prom-i-nent (*'i-nent*), *adj.* projecting; conspicuous; chief; protuberant.

Syn. PROMINENT, conspicuous. What is *prominent* is, in general, on that very account *conspicuous*; but many things may be *conspicuous* which are not expressly *prominent;* nothing is *prominent* but what projects beyond a certain line; everything is *conspicuous* which may be seen by many.

pro-mis-cu-ous (*prō-mis'kū-us*), *adj.* confused; mingled; indiscriminate.
prom-ise (*prom'is*), *n.* an engagement to do or not to do something: *v. i.* to assure one by a promise: *v. t.* afford reason to expect.

Syn. PROMISE, engagement, word. In *promises* the faith of an individual is admitted upon his *word*, and built upon as if it were a deed; in *engagements* the intentions of an individual for the future are all that are either implied or understood; as a *promise* and *engagement* can be made only by *words* the *word* is often put for either, or for both, as the case requires.

prom-is-so-ry (*'is-ō-ri*), *adj.* containing a promise or covenant to do, or not to do, something.
prom-is-so-ry note (*nōt*), a written promise to pay a certain sum at a specified date in consideration of value received.
prom-on-to-ry (*'on-tō-ri*), *n.* a high cape; a point of land jutting into the sea.
pro-mote (*prō-mōt'*), *v. t.* to advance, forward, or elevate; excite.
pro-mot-er (*'ẽr*), *n.* one who promotes, especially one who makes it his business to float new companies.
pro-mo-tion (*-mō'shun*), *n.* the act of promoting; state of being promoted; advancement.
prompt (*prompt*), *adj.* ready and quick to act as occasion demands; immediate; done without delay. [DILIGENT, ACTIVE, READY.]
prompt-i-tude (*prompt'i-tūd*), *n.* quickness of decision and action; readiness; alacrity.
pro-mul-gate (*prō-mul'gāt*), *v. t.* to publish. [PUBLISH, ANNOUNCE.]
prone (*prōn*), *adj.* lying with the face downward; not erect; inclined; disposed. [ADDICTED.]
prone-ness (*'nes*), *n.* the state of being prone; propensity. [INCLINATION.]
prong (*prông*), *n.* a sharp-pointed instrument; the spike of a fork.
pro-nom-i-nal (*prō-nom'i-nal*), *adj.* pertaining to, or of the nature of, a pronoun.
pro-noun (*'noun*), *n.* a word which refers to, or is used in the place of, a noun.
pro-nounce (*-nouns'*), *v. t.* to articulate; utter formally, or rhetorically. [UTTER, SPEAK.]
pro-nounced (*-nounst'*), *p. adj.* strongly marked or decided.
pro-nun-ci-a-tion (*-nun-si-ā'shun*), *n.* the act or manner of articulating words or syllables.
proof (*prōōf*), *n.* testimony or convincing evidence; test; experiment; reason. [TESTIMONY.]
prop (*prop*), *n.* a support or stay: *v. t.* to sustain. [STAFF.]
prop-a-gan-da (*-ȧ-gan'dȧ*), *n. pl.* any methods for the propagation of doctrines, principles, etc., religious or secular.
prop-a-gate (*'ȧ-gāt*), *v. t.* to continue or spread by generation or successive production; extend: *v. i.* to be produced by generation, or by new shoots or plants.
prop-a-ga-tion (*-gā'shun*), *n.* the act of propagating; spreading or extension.
pro-pel (*prō-pel'*), *v. t.* [*p. t. and p. p.* propelled, *p. pr.* propelling], to drive forward; urge onward by force.
pro-pel-ler (*'ẽr*), *n.* one who, or that which, propels; a screw-propeller; vessel so propelled.
pro-pen-si-ty (*-pen'si-ti*), *n.* natural tendency. [INCLINATION.)
prop-er (*prop'ẽr*), *adj.* noting a particular person or thing; peculiar; fit or suitable; correct; appropriate.
prop-er-ty (*'ẽr-ti*), *n.* [*pl.* properties (*-tiz*)], exclusive right of possession; the thing owned; estate.
proph-e-cy (*prof'ē-si*), *n.* a prediction of something to take place in the future.
proph-e-sy (*'ē-si*), *v. t.* [*p. t.* and *p. p.* prophesied, *p. pr.* prophesying], to foretell future events, especially by divine inspiration: *v. i.* to utter prophecies; preach. [FORETELL.]
proph-et (*'et*), *n.* one who foretells future events.
pro-phet-ic (*prō-fet'ik*), *adj.* pertaining to prophecy; predictive. [Also *prophetical.*]
proph-y-lac-tic (*prof-i-lak'tik*), *adj.* guarding, or preserving, against disease: *n.* a preventive of disease.
★**pro-pin-qui-ty** (*prō-ping'kwi-ti*), *n.* nearness of place, time, or relationship.
pro-pi-ti-ate (*-pish'i-āt*), *v. t.* to conciliate; make propitious: *v. i.* to atone.
pro-pi-tious (*-pish'us*), *adj.* favorable; disposed to be merciful.
pro-por-tion (*prō-pōr'shun*), *n.* comparative relation of one thing to another; ratio; rate: *v. t.* to form symmetrically; apportion.
pro-por-tion-al (*-al*), *adj.* having the same ratio: *n.* a quantity or number in proportion.
pro-por-tion-ate (*'shun-āt*), *adj.* adjusted to something else according to a certain rate: *v. t.* to adjust according to a settled rate.

Syn. PROPORTIONATE, commensurate, adequate. *Proportionate* is here a term of general use; the others are particular terms, employed in a similar sense, in regard to particular objects; that is *proportionate* which rises as a thing rises, and falls as a thing falls; that is *commensurate* which is made to rise to the same measure or degree; that is *adequate* which is made to come up to the height of another thing.

pro-pos-al (*-pōz'al*), *n.* that which is offered for consideration or acceptance; offer of marriage.
pro-pose (*-pōz'*), *v. t.* to bring forward or offer for consideration: *v. i.* to make an offer of marriage.
prop-o-si-tion (*prop-ō-zish'un*), *n.* an offer of terms; a theorem or problem for solution.
pro-pound (*prō-pound'*), *v. t.* to offer for consideration. [ANNOUNCE.]
pro-pri-e-ta-ry (*-prī'ē-tā-ri*), *adj.* belonging to a proprietor or proprietary: *n.* a possessor in his own right; proprietors collectively.
pro-pri-e-tor (*'ē-tẽr*), *n.* one who has a legal right to anything; owner. [Fem. *proprietress.*]
pro-pri-e-ty (*'ē-ti*), *n.* conformity to established rules or custom; decorum; fitness.
pro-pul-sive (*-pul'siv*), *adj.* having power to propel. [Also *propulsory.*]
pro-rogue (*-rōg'*), *v. t.* to terminate a session of; to postpone.
pro-sa-ic (*-zā'ik*), *adj.* like prose; commonplace; uninteresting. [Also *prosaical.*]
pro-sce-ni-um (*-sē'ni-um*), *n.* that part of the stage from the curtain to the orchestra.
pro-scribe (*-skrīb'*), *v. t.* to punish with civil death; outlaw; interdict.
prose (*prōz*), *n.* ordinary spoken or written language; unmetrical composition.
pros-e-cute (*pros'ē-kūt*), *v. t.* accuse of a crime before a legal tribunal: *v. i.* to carry on a legal prosecution.
pros-e-cu-tion (*-kū'shun*), *n.* pursuit; the institution and carrying on of a legal suit; prosecutor or prosecutors collectively.
pros-e-cu-tor (*'ē-kū-tẽr*), *n.* one who carries on a legal suit with another.
pros-e-lyte (*'ē-līt*), *n.* a convert to some religion or belief: *v. t.* to make proselytes of. [CONVERT.]
pros-e-ly-tism (*'ē-li-tizm*), *n.* the act of proselytising; conversion to a creed or system.
pros-o-dy (*pros'ō-di*), *n.* that part of grammar that

treats of quantity, accent, and the laws of versification.

pros-pect (*pros'pekt*), *n.* a view of something distant; scene; object of view; expectation: *v. t.* to search or explore. [VIEW.]

pro-spec-tive (*prō-spek'tiv*), *adj.* looking forward; acting with, or characterized by, foresight.

pros-pec-tor (*pros'pek-tẽr*), *n.* one who searches for valuable minerals.

pro-spec-tus (*prō-spek'tus*), *n.* an outline of a proposed undertaking; sketch, or plan.

pros-per (*pros'pẽr*), *v. t.* to render successful; favor: *v. i.* to thrive; succeed.

pros-per-i-ty (*pros-per'i-ti*), *n.* successful progress in any business or enterprise; good fortune.

pros-per-ous (*pẽr'us*), *adj.* successful; thriving.

pros-ti-tute (*'ti-tūt*), *v. t.* to devote to infamous or improper purposes: *adj.* prostituted: *n.* a woman who indulges in lewdness. A base mercenary or hireling. [ABUSE.]

pros-trate (*'trāt*), *adj.* lying at full length; extended on the ground: *v. t.* to lay flat.

pros-y (*prōz'i*), *adv.* tedious; dull.

pro-te-an (*prō'tē-an*), *adj.* readily assuming different shapes.

pro-tect (*-tekt'*), *v. t.* to cover over, defend, shield; shelter; support. [DEFEND.]

pro-tec-tion (*-tek'shun*), *n.* defense; shelter, security; passport.

pro-tec-tion-ism (*-izm*), *n.* the doctrine that certain home industries and produce should be encouraged by the imposition of duties on foreign imports.

pro-tec-tion-ist (*-ist*), *n.* one who advocates or supports protectionism; one who opposes free trade unless it be reciprocal.

pro-tect-or (*-tekt'ẽr*), *n.* one who or that which protects.

pro-tect-or-ate (*-tekt'ẽr-āt*), *n.* government or defense by a protector.

★**pro-té-gé** (*-tā-zhā'*), *n.* one who is under the protection, guardianship, or care of another.

pro-te-ids (*'tē-idz*), *n. pl.* a class of nitrogenous compounds, as albumen, fibrin, casein, etc., which form animal tissue.

pro-te-in (*'tē-in*), *n.* the gelatinous, semitransparent substance obtained from albumen, fibrin, or casein, the essential principle of food.

pro-test (*-test'*), *v. i.* to affirm with solemnity; remonstrate: *v. t.* to make a solemn declaration or affirmation of: *n.* (*prō'test*) a solemn declaration of opinion against something.

Prot-es-tant (*prot'es-tant*), *n.* a member of any of those bodies of Christians that protest against the spiritual supremacy of the church of Rome. The second diet of Spires, in 1529, declared that the religious differences could only be decided by an ecclesiastical council, thus disallowing the right of private judgment. A solemn protest was made against this decision by many princes of Germany, April 19, 1529, in consequence of which the members of the Reformed churches have since been known as Protestants. The protest was drawn up by Luther and Melanchthon.

prot-es-ta-tion (*-tā'shun*), *n.* a formal declaration of dissent; solemn affirmation.

pro-to-plasm (*prō'tō-plazm*), *n.* a semifluid albuminous substance, regarded as the ultimate basis of physical life, from which all living organisms are formed and developed.

pro-to-plas-mic (*-plaz'mik*), *adj.* pertaining to, or formed of, protoplasm.

pro-to-type (*'tō-tīp*), *n.* the original from which others are copied.

Pro-to-zo-a (*-zō'ȧ*), *n. pl.* the first or lowest division of the animal kingdom, containing animals of the simplest type of organization.

pro-tract (*-trakt'*), *v. t.* to draw out or lengthen in time; prolong; defer.

pro-trac-tion (*-trak'shun*), *n.* the act of protracting; delay.

pro-tract-or (*-trakt'ẽr*), *n.* a mathmetical instrument for laying down angles on paper; a muscle that draws forward any part.

pro-trude (*-trūd'*), *v. t.* to thrust out or push forward: *v. i.* to shoot forward; project.

pro-tru-sion (*-trū'zhun*), *n.* the act of protruding; the state of being protruded.

pro-tru-sive (*'siv*), *adj.* thrusting or impelling forward.

pro-tu-ber-ant (*-tū'bẽr-ant*), *adj.* swelling; prominent.

proud (*proud*), *adj.* having excessive self-esteem; arrogant; ostentatious; haughty.

prove (*prōōv'*), *v. t.* to ascertain or try by an experiment or test; ascertain the genuineness of; experience.

prov-en (*'en*), *adj.* proved.

Provence (*prō-väns'*). An ancient government of southeastern France. The *Provencia* of Caesar, a name reminding us that it was the first province acquired by Rome beyond the Alps.

prov-en-der (*prov'en-dẽr*), *n.* dry food for beasts, as hay, etc.

prov-erb (*prov'ẽrb*), *n.* a short, familiar, pithy saying; adage.

pro-ver-bi-al (*prō-vẽr'bi-al*), *adj.* pertaining to proverbs; widely spoken of or well known.

pro-vide (*prō-vīd'*), *v. t.* to make ready beforehand; furnish: *v. i.* to procure supplies.

Syn. PROVIDE, procure, furnish, supply. *Provide* and *procure* are both actions that have a special reference to the future; *furnish* and *supply* are employed for that which is of immediate concern; one *provides* a dinner in the contemplation that some persons are coming to partake of it; one *procures* help in the contemplation that it may be wanted; we *furnish* a room, as we find it necessary for the present purpose; one *supplies* a family with any article of domestic use.

Ant. NEGLECT.

pro-vid-ed (*prō-vīd'ed*), *conj.* on condition.

prov-i-dence (*prov'i-dens*), *n.* economy; prudence; foresight. [FRUGALITY.]

Providence, R. I. Name given by Roger Williams in recognition of "God's merciful providence to me in my distress." The Indian name of the locality was *Mooshansick*.

prov-i-dent (*'i-dent*), *adj.* careful for the future; prudent; economical. [CAREFUL.]

prov-i-den-tial (*-den'shal*), *adj.* effected by, or proceeding from, divine providence.

prov-ince (*'ins*), *n.* a division of an empire or state; a dependent country; region.

pro-vin-cial (*prō-vin'shal*), *adj.* pertaining to, or characteristic of, a province; rustic: *n.* one who belongs to a province; countryman.

pro-vi-sion (*-vizh'un*), *n.* measures taken beforehand; accumulation of stores: *pl.* food: *v. t.* to supply with food.

pro-vi-sion-al (*-al*), *adj.* provided for present use; temporary.

pro-vi-so (*-vī'zō*), *n.* a conditional clause or stipulation in a deed.

prov-o-ca-tion (*prov-ō-kȧ'shun*), *n.* that which excites to anger or resentment; act of provoking.

pro-vo-ca-tive (*prō-vō'kȧ-tiv*), *adj.* tending to provoke; inciting : *n.* anything that tends to provoke.

pro-voke (*-vōk'*), *v. t.* to excite; enrage or irritate; exasperate. [AGGRAVATE, AWAKEN, EXCITE.]

prov-ost (*prov'ust*), *n.* the head of a college; superintendent or president.

prow (*prou*), *n.* the bow of a ship.

prow-ess (*'es*), *n.* bravery; valor.

prowl (*proul*), *v. i.* to wander stealthily, as for prey or plunder: *n.* a roving for prey or plunder.

prox-i-mate (*proks'i-māt*), *adj.* immediate.

prox-im-i-ty (*-im'i-ti*), *n.* immediate nearness in place, blood, or alliance.

prox-y (*'i*), *n.* [*pl.* proxies (*'iz*)], the agency of a substitute.

prude (*prōōd*) *n.* a woman who affects great reserve, coyness, and excessive virtue.

pru-dence (*prōō'dens*), *n.* the quality of being prudent; wisdom applied to practice. [JUDGMENT, WISDOM, FRUGALITY.]

Prudence. A feminine name given by Puritans. From the Latin *prudentia*, "wisdom," "prudence," "discretion," "knowledge."

pru-dent (*'dent*), *adj.* practically wise; cautious; circumspect.

pru-den-tial (*-den'shal*), *adj.* proceeding from, or influenced by, prudence.

prud-er-y (*prōōd'ẽr-i*), *n.* affected niceness or scrupulousness in conduct; manners of a prude.

prud-ish (*prōōd'ish*), *adj.* like a prude; affectedly precise, nice, or scrupulous.

prune (*prōōn*), *n.* a dried plum: *v. t.* to cut superfluous twigs or branches from; trim.

pru-nel-la (*proo-nel'ȧ*), *n.* a smooth woolen stuff used for shoes and gaiters.

pru-ri-ent (*'ri-ent*), *adj.* having an eager desire for, or characterized by, lewdness; itching.

Prussia. Is the Latinized form of the German name *Preussen*, itself a corruption of an older Lithuanian name. Old Prussia was the duchy formed in the eastern corner of the modern kingdom out of the possessions of the Teutonic knights, whose inhabitants in the tenth century were called *Hrutheni* or *Pruzzi*, which, according to Zeuss, is a Lettish name meaning "neighbors."

prus-sic ac-id (*prus'ik as'id*), hydrocyanic acid, a deadly poison.

pry (*pri*), *v. i.* to inspect closely or with keen scrutiny. [CURIOUS.]

psalm (*säm*), *n.* a sacred song.

psalm-o-dy (*'ō-di*), *n.* the art or practice of singing psalms.

Psal-ter (*sawl'tẽr*), *n.* the Book of Psalms; the prayer book version of the Psalms.

pseu-do, a *prefix* meaning *false*, spurious, as *pseudo*-blepsis, false or deceptive vision.

★**pseu-do-nym** (*sū'dō-nim*), *n.* a fictitious name.

pshaw (*shaw*), *interj.* an expression of contempt, etc.

★**psy-chi-cal** (*sī'ki-kal*), *adj.* pertaining to, or connected with, the human soul, spirit, or mind.

psy-cho-log-ic-al (*-kō-loj'i-kal*), *adj.* pertaining to psychology.

psy-chol-o-gist (*-kol'ō-jist*), *n.* one skilled in psychology.

psy-chol-o-gy (*-kol'ō-ji*), *n.* the science that treats of mental phenomena, and their classification and analysis; mental philosophy.

psy-cho-phys-ics (*-kō-fiz'iks*), *n.* the science which treats of the correlation of mind and matter.

Ptol-e-ma-ic (*tol-ē-mā'ik*), *adj.* pertaining to Ptolemy, the Greek geographer and astronomer.

Ptolemy (*tol'ē-mi*). From the Greek, meaning "warlike," or "mighty in war." Dutch, *Ptolemeus;* Fr., *Ptolémée;* Ger., *Ptolemaus;* Gr., *Ptolemaios;* It., *Tolomeo;* Lat., *Ptolemæus.*

pto-ma-ines (*tō'mȧ-ins*), *n. pl.* a class of alkaloids of a highly poisonous nature, originating in decaying or dead matter.

pu-ber-ty (*pū'bẽr-ti*), *n.* the age at which the generative powers begin to be developed.

pub-lic (*pub'lik*), *adj.* pertaining to a nation, state or community; belonging to the people: *n.* the people in general.

pub-li-can (*'li-kan*), *n.* one who keeps a public house.

pub-li-ca-tion (*-li-kā'shun*), *n.* the act of publishing or making public.

★**pub-li-cist** (*'li-sist*), *n.* a writer on international law, or on current events of political or social interest.

pub-lic-i-ty (*-lis'i-ti*), *n.* the state of being public; notoriety.

pub-lish (*'lish*), *v. t.* to make known; announce or proclaim; divulge; print and offer for sale; put into circulation.

Syn. PUBLISH, promulgate, divulge, reveal, disclose. *To publish* is the most general of these terms, conveying in its extended sense the idea of making known; but it is in many respects indefinite; we may *publish* to many or few; but *to promulgate* is always to make known to many. We may *publish* that which is a domestic or a national concern; we *promulgate* properly only that which is of general interest; we *divulge* things mostly not to be known; we commonly *divulge* the secrets or the crimes of another; we *reveal* the secret or the mystery of a transaction; we *disclose* the whole affair from beginning to end, which has never been properly known or accounted for. [See *announce, declare.*]

Ant. CONCEAL, hide, hush, suppress.

puck-er (*puk'ẽr*), *v. t.* and *v. i.* to gather into small folds; wrinkle: *n.* a small fold or wrinkle.

pud-ding (*pood'ing*), *n.* a soft kind of food made of flour and various ingredients.

pud-dle (*pud'l*), *n.* a small pool of dirty water.

pueb-lo (*pweb'lō*), *n.* [*pl.* pueblos (*'lōz*)], a building constructed of adobe or sun-dried brick.

Pueblo. County and important manufacturing city, in same county, in Colorado. A Spanish word meaning "a collection of people, a town or village."

pu-er-ile (*pū'ẽr-il*), *adj.* pertaining to children; juvenile; boyish; trifling. [YOUTHFUL.]

pu-er-il-i-ty (*-il'i-ti*), *n.* the quality of being puerile; childishness.

puff (*puf*), *n.* a short quick blast; sudden forcible breath; a fungous ball filled with dust: *v. i.* to swell with air: *v. t.* to praise in exaggerated terms.

puff-ing (*'ing*), *n.* exaggerated praise; quick and hard breathing.

puff-y (*'i*), *adj.* distended with air or other light matter; windy; bombastic; tumid.

pug (*pug*), *n.* a monkey; a small dog with face and nose like a bulldog.

pug-ging (*'ing*), *n.* the act or operation of working up clay for bricks.

pu-gil-ism (*pū'jil-izm*), *n.* the art or practice of boxing or fighting with the fists; prize fighting.

pug-na-cious (*pug-nā'shus*), *adj.* disposed to fight; quarrelsome.

pug-nac-i-ty (*-nas'i-ti*), *n.* inclination to fight; quarrelsomeness.

★**pu-is-sant** (*pū'is-ant* or *pū-is'ant*, not *pwē'sant*), *adj.* powerful; strong.

puke (*pūk*), *v. i.* and *v. t.* to vomit.

pule (*pūl*), *v. t.* to whine.

pul-ing (*pūl'ing*), *adj.* whining; infantile.

pull (*pool*), *v. t.* to draw toward one; pluck; rend or tear: *v. i.* to tug. [DRAW.]

pull, *n.* a term much used to indicate a person who possesses political or other influence.

pul-let (*'et*), *n.* a young hen.

pul-ley (*'i*), *n.* a small wheel turning about an axis, and having a groove in which a rope works.

pul-mo-na-ry (*pul'mō-nā-ri*), *adj.* pertaining to, or affecting, the lungs.

pulp (*pulp*), *n.* the soft fleshy part of bodies, as of fruit; any soft uniform mass.

pul-pit (*pool'pit*), *n.* an elevated or inclosed desk in a church from which the sermon is delivered; preachers or preaching.

pulp-y (*pulp'i*), *adj.* consisting of, or like, pulp; soft; succulent.

pul-sate (*pul'sāt*), *v. i.* to throb or beat.

pul-sa-tive (*'sȧ tiv*), *adj.* beating or throbbing. [Also *pulsatory.*]

pulse (*puls*), *n.* the rhythmic beating of the heart or arteries; vibration: *v. i.* to beat or throb, as the pulse.

pul-ver-ize (*'vẽr-īz*), *v. t.* to reduce to powder.

pum-ice (*pum'is*), *n.* a hard, light, spongy, volcanic lava or rock.

pump (*pump*), *n.* a machine for raising water or other liquid; a slipper: *v. t.* to raise (water or a liquid) by means of a pump.

★**pump-kin** (*pump'kin*, not *pung'kin*), *n.* a plant of the gourd family and its fruit.

pun (*pun*), *n.* a play upon words: *v. i.* to play upon words similar in sound but having a different meaning.

punch (*punch*), *n.* a tool for stamping or perforating; a beverage: *v. t.* to strike with the fist.

Punch and Judy. A contraction for *Pontius* and *Judas*. It is a relic of an old miracle play in which the actors were Pontius Pilate and Judas Iscariot.

punc-til-io (*pungk-til'yō*), *n.* a nice point in conduct or ceremony; formal exactness.

punc-til-ious (*'yus*), *adj.* very nice or precise in conduct or ceremony; exact to excess.

punc-tu-al (*pungk'tū-al*), *adj.* observing, or done at, the exact time. [EXACT.]
punc-tu-al-i-ty (*-al'i-ti*), *n.* the characteristic of keeping the exact time of an appointment or engagement.
punc-tu-ate (*'tū-āt*), *v. t.* to mark with points; divide into sentences by points.
punc-tu-a-tion (*-ā'shun*), *n.* the act or art of dividing sentences by points or stops.
punc-ture (*'tūr*), *n.* a small hole or wound made by a pointed instrument: *v. t.* to make a hole in.
pun-gent (*pun'jent*), *adj.* stinging or pricking; piercing; keen; biting; sarcastic; caustic.
pun-ish (*pun'ish*), *v. t.* to cause loss or pain to, as a penalty for a crime or fault; chastise; correct. [AVENGE.]
pun-ish-ment (*-ment*), *n.* pain, loss, or penalty, inflicted for a crime or fault. [CORRECTION.]
pu-ni-tive (*pū'ni-tiv*), *adj.* pertaining to, or inflicting, punishment.
Punjab or **Punjaub** (*pun-jāb'*). This great northwest Indian territory derives its name from two Persian words, signifying "five rivers." The five affluents of the Indus which give rise to the name are the *Jhelum*, the *Chenab*, the *Ravi*, the *Beas*, and the *Sutlej*.
pun-ster (*pun'stēr*), *n.* one addicted to, or skilled in, punning.
punt (*punt*), *n.* a flat-bottomed boat for fishing.
pu-ny (*pū'ni*), *adj.* [*comp.* punier, *superl.* puniest], inferior in strength or size; weak; feeble.
pu-pil (*'pil*), *n.* a young person who is under the care of a tutor; scholar; ward.
pup-pet (*pup'et*), *n.* a small doll or image.
pup-py (*'i*), *n.* a whelp; young dog; a conceited young man.
pur-blind (*pûr'blīnd*), *adj.* seeing obscurely.
pur-chase (*pûr'chās*), *v. t.* to obtain by paying an equivalent; acquire; buy; move or raise by the application of some mechanical power: *n.* the act of purchasing; mechanical advantage. [BUY.]
pure (*pūr*), *adj.* free from moral or physical defilement; chaste; unpolluted. [CLEAN.]
pur-ga-tion (*pûr-gā'shun*), *n.* the act of purging; the act of clearing from imputed guilt.
pur-ga-tive (*'gā-tiv*), *adj.* serving to purge.
pur-ga-to-ry (*pûr'ga-tō-ri*), *n.* in the Roman Catholic church, the state after death.
purge (*pûrj*), *v. t.* to cleanse or free from impurities or guilt.
purg-ing (*'ing*), *n.* diarrhœa or dysentery; looseness of the bowels.
pu-ri-fi-ca-tion (*pū-ri-fi-kā'shun*), *n.* the act of purifying; state of being purified.
pu-ri-fi-ca-tive (*pū'ri-fi-kā-tiv*), *adj.* able or tending to purify. [Also *purificatory*.]
pu-ri-form (*'ri-fôrm*), *adj.* like pus.
pu-ri-fy (*'ri-fī*), *v. t.* to render pure; free from impurities, corruptions, or barbarisms.
pur-ist (*pūr'ist*), *n.* one who is scrupulously precise in matters of literary style or the choice of correct words.
pu-ri-tan (*pū'ri-tan*), *n.* one who professes great purity in religious doctrine and practice.
pu-ri-tan-ic-al-ly (*-tan'i-kal-i*), *adv.* after the manner of the Puritans.
pu-ri-tan-ism (*'ri-tan-izm*), *n.* the doctrines and practices of the Puritans.
pu-ri-ty (*'ri-ti*), *n.* the state or quality of being pure; chastity; cleanness.
purl (*pûrl*), *n.* a warm spiced ale, or gin; the continued murmuring sound of a shallow stream: *v. t.* to invert (stitches) in knitting: *v. i.* to ripple or flow with a gentle murmur.
pur-lieus (*pûr'lūz*), *n. pl.* adjacent districts.
pur-loin (*-loin'*), *v. t.* to steal.
pur-ple (*'pl*), *adj.* of the color of blended blue and red; regal; livid; dyed with blood: *n.* purple color; purple robe.
pur-port (*'pōrt*), *n.* meaning; design; signification: *v. t.* to mean or signify.
pur-pose (*'pus*), *n.* design; end or aim desired: *v. t.* to intend or resolve; design: *v. i.* to have an intention. [DESIGN.]
purr (*pûr*), *n.* the low murmuring of a cat when pleased: *v. t.* to signify by purring: *v. i.* to utter a low murmuring sound.
purse (*pûrs*), *n.* a small bag or receptacle for money; sum of money; treasury: *v. t.* to pucker or wrinkle.
pur-su-ant (*pûr-sū'ant*), *adj.* done in consequence or in prosecution of anything; agreeable: *adv.* in consequence of.
pur-sue (*-sū'*), *v. t.* to follow for some end; take and proceed in; prosecute; chase; seek: *v. i.* to go on or continue. [FOLLOW.]
pur-suit (*-sūt'*), *n.* the act of pursuing; prosecution; chase; occupation; attainment.
★**pur-sui-vant** (*'swē-vant*), *n.* an attendant or follower; state messenger.
pu-ru-lent (*pū'rōō-lent*), *adj.* consisting of, or containing, pus.
pur-vey (*pûr-vā'*), *v. t.* to provide; procure: *v. i.* to purchase provisions.
pur-vey-ance (*'ans*), *n.* the procuring of provisions; provisions provided.
pur-view (*'vū*), *n.* extent; proviso; body of a statute.
pus (*pus*), *n.* the white, or yellowish-white, matter secreted in sores, etc.
push (*poosh*), *v. t.* to press against with force, urge forward; drive by pressure: *v. i.* to press hard: *n.* thrust; force applied; effort.
pu-sil-la-nim-i-ty (*pū-sil-à-nim'i-ti*), *n.* cowardice.
pu-sil-lan-i-mous (*pū-sil-an'i-mus*), *adj.* cowardly: mean-spirited; faint-hearted.
puss (*poos*), *n.* a cat; hare. [Diminutive, *pussy*.]
pus-tule (*pus'tūl*), *n.* a small elevation of the skin, or pimple, containing pus.
put (*poot*), *v. t.* to place in, or bring into, any state or condition; cause; drive into action; incite.
Syn. PUT, place, lay, set. One *puts* things generally, but the way of *putting* is not defined; we may *put* a thing into one's room, one's desk, one's pocket, and the like; but *to place* is *to put* in a specific manner, and for a specific purpose; one *places* a book on a shelf; *to lay* and *set* are still more specific than *place;* the former being applied only to such things as can be made *to lie;* and *set* only to such as can be made *to stand;* a book may be said *to be laid* on the table when *placed* in a downward position, and *set* on a shelf when *placed* on one end.
pu-ta-tive (*pū'tā-tiv*), *adj.* reputed.
pu-tre-fac-tion (*pū-trē-fak'shun*), *n.* the act or process of putrefying; decomposition; rottenness.
pu-tre-fy (*'trē-fī*), *v. t.* to cause to rot or decay by the decomposition of organic bodies; rot: *v. i.* to become putrid.
pu-tres-cent (*-tres'ent*), *adj.* pertaining to putrefaction; becoming rotten.
pu-trid-i-ty (*-trid'i-ti*), *n.* putrid state. [Also *putridness*.]
put-ter (*put'ēr*), *n.* in golf, a club used for playing a short, careful stroke.
put-ty (*'i*), *n.* a compound of whiting and linseed oil used in glazing.
puz-zle (*puz'l*), *n.* something that tries the ingenuity, perplexes, or causes embarrassment: *v. i.* to be puzzled: *v. t.* to perplex.
py-e-mi-a, pyæmia (*pī-ē'mi-à*), *n.* blood poisoning.
pyg-my (*pig'mi*), *n.* one of a small race mentioned by Herodotus, and found in central Africa by numerous modern travelers. [Also *pigmy*.]
py-lor-ic (*pī-lor'ik*), *adj.* pertaining to the pylorus.
py-lo-rus (*-lō'rus*), *n.* the lower and right opening of the stomach, leading to the small intestines.
pyr, a *prefix*, meaning *fire*, as *pyr*acanth, a plant with flame colored flowers. [Also *pyro*, as *pyro*scope.]
pyr-a-mid (*pir'à-mid*), *n.* a solid body standing on a triangular, square, or polygonal base, having its triangular sides terminating in a point at the apex.
py-ram-i-dal (*pi-ram'i-dal*), *adj.* shaped like a pyramid. [Also *pyramidic, pyramidical*.]
pyre (*pīr*), *n.* a funeral pile.
Pyrenees (*pir'ē-nēz*). The mountain chain separating France from Spain is the *Mons Pyrenæus* of the Greek and Roman geographers. The name first appears in Herodotus, who supposed *Pyrene* was the name of the place where the Danube flowed. The etymology is unknown, being probably pre-Aryan. Many guesses have been made from Basque, Celtic, and Greek sources, explaining the name as the "high," "steep," "pine clad," or "burnt," mountains. The most probable derivation is from *biren* or *pyren*, a local word, doubtless ultimately Basque or Iberian, which signifies "a summit" or "ridge."
★**py-ri-tes** (*pi-rī'tēz*), *n.* a native compound of sulphur with iron, copper, etc.
py-ro-col-lo-di-on (*pī-rō-kol-lō'di-un*), *n.* a smokeless powder, used by Russia.
pyr-o-ma-ni-a (*pir-ō-mā'ni-à*), *n.* an insane impulse to destroy by fire.
py-rom-e-ter (*pī-rom'ē-tēr*), *n.* an instrument for measuring the temperature or expansion of bodies under the influence of heat.
py-ro-tech-nic (*pī-rō-tek'nik*), *adj.* pertaining to fireworks or the art of making them.
py-ro-tech-nics (*'niks*), *n.* fireworks or the art of making them. [Also *pyrotechny*.]
pyr-rhic (*pir'ik*), *n.* a metrical foot of two syllables; an ancient Greek military dance: *adj.* pertaining to such a dance.
py-thon (*pī'thon*), *n.* a large nonvenomous serpent nearly allied to the boa.
pyth-o-nism (*pith'ō-nizm*), *n.* the art of predicting future events by divination, after the manner of the ancient oracle at Delphi.
pyx (*piks*), *n.* the box in which selected coins are placed at the mint to be tested prior to their issue as currency.

Q

quack (*kwak*), *n.* the cry of the duck; a pretender to medical skill: *v. i.* to cry like a duck.
quack-er-y (*'ēr-i*), *n.* boastful pretension to skill in medicine; false pretensions to any art; imposture; empiricism.
quad (*kwod*), *n.* the court of a college, prison, etc.; a quadrat.
quad-ra (*'rà*), *n.* a square border or fillet of an Ionian column. *Prefix* meaning *four*. [Also *quadr, quadri, quadru*.]
quad-ra-ges-i-ma (*-rà-jes'i-mà*), *n.* Lent.
quad-ran-gle (*'rang-gl*), *n.* an open square surrounded by buildings; a plane figure with 4 angles and 4 sides.
quad-ran-gu-lar (*'gū-lēr*), *adj.* having the form of a quadrangle.
quad-rant (*'rant*), *n.* the 4th part of a circle, an arc of 90 degrees; an instrument for taking elevations.
quad-rate (*kwod'rāt*), *adj.* having 4 equal sides and 4 right angles.
quad-rat-ic (*-rat'ik*), *adj.* pertaining to, or involving, a square.
quad-ra-ture (*'rà-tūr*), *n.* the act of squaring; the reduction of a figure to a square, exactly or approximately.
quad-ren-ni-al (*-ren'ni-al*), *adj.* comprising, or occurring, every 4 years.
quad-ri-lat-er-al (*-ri-lat'ēr-al*), *n.* a plane figure with 4 sides and 4 angles.
qua-drille (*kwà-dril'* or *kà-dril'*), *n.* a dance by four sets of couples; a game at cards played by four persons.
quad-ril-lion (*kwod-ril'yun*), *n.* the French system of numeration, followed in the United States, a thousand trillions.
quad-roon (*-rōōn'*), *n.* the offspring of a mulatto and a white.
quad-ru-ped (*'roo-ped*), *n.* a four-footed animal: *adj.* four-footed.
quad-ru-ple (*'roo-pl*), *adj.* fourfold: *v. t.* to multiply by four; *v. i.* to increase fourfold.
quaff (*kwåf*), *v. t.* to drink or swallow in large quantities: *v. i.* to drink luxuriously.
quag-mire (*kwag'mīr*), *n.* wet, boggy ground, yielding under the feet.
quail (*kwāl*), *v. i.* to sink in spirit or by dejection; lose heart; cower: *n.* a gallinaceous bird.
quaint (*kwānt*), *adj.* singular and antique; not expressed or shown in the usual way; odd; neat. [ANTIQUE.]
quake (*kwāk*), *v. i.* to tremble or shake; be agitated: *n.* a tremble or shudder.
Quaker. (*'ēr*). This name was originally applied by a Derby, England, magistrate to the members of the Society of Friends, because George Fox, the founder, admonished him and those present to tremble at the name of the Lord.
qual-i-fi-a-ble (*kwol'i-fī-à-bl*), *adj.* that may be qualified.
qual-i-fi-ca-tion (*-fi-kā'shun*), *n.* any quality, endowment, or acquirement which fits a person for any office or occupation.
Syn. QUALIFICATION, accomplishment. The *qualification* serves the purpose of utility; the *accomplishment* serves to adorn; by the first we are enabled to make ourselves useful; by the second we are enabled to make ourselves agreeable.
qual-i-fy (*'i-fī*), *v. t.* to render fit or capable for any office, occupation, etc.: *v. i.* to become qualified. [COMPETENT.]
qual-i-ta-tive (*'i-tā-tiv*), *adj.* pertaining to quality; determining the nature of component parts.
qual-i-ty (*'i-ti*), *n.* [*pl.* qualities (*-tiz*)], peculiar power or property; attribute; disposition; rank; superior birth.
qualm (*kwäm*), *n.* a sudden fit of sickness; nausea; scruple.
quan-da-ry (*kwon'dà-ri*), *n.* a state of difficulty or perplexity; fix.
quan-ti-ta-tive (*'ti-tā-tiv*), *adj.* pertaining to quantity. [Also *quantitive*.]
quan-ti-ty (*'ti-ti*), *n.* any indeterminate bulk, weight, or number; large portion, sum, or mass.
quar-an-tine (*kwor'an-tēn*), *n.* the time (usually 40 days) during which a vessel from foreign parts suspected to be infected with contagious disease is prohibited from intercourse with the shore: *v. t.* to place under quarantine.
quar-rel (*'el*), *n.* an angry dispute, petty fight; altercation: *v. i.* to dispute violently.
Syn. QUARREL, broil, feud. *Quarrel* is the general and ordinary term; *broil* and *feud*, including active hostility, are particular terms, but the former respects the complaints and charges which are reciprocally made; *broil* respects the confusion and entanglement which arises from a contention and collision of interest; *feud* respects the hostilities which arise out of the variance. [See *feud*.]
quar-rel-some (*-sum*), *adj.* inclined to quarrel; contentious; easily provoked; irascible.
quar-ry (*'i*), *n.* a place where stone is dug out for building purposes, etc.: *v. t.* to dig or take from a quarry.
quart (*kwawrt*), *n.* 2 pints, or 1-4th of a gallon; a sequence of 4 cards in the game of piquet.
quar-ter (*kwawr'tēr*), *n.* the 4th part; mercy: *pl.* lodgings, especially for soldiers: *v. t.* to divide into four equal parts; furnish with lodgings, as soldiers.
quar-ter-deck (*-dek*), *n.* that part of a ship which is abaft the mainmast.
quar-ter-ly (*'li*), *adj.* consisting of, or containing, a quarter: *adv.* once each quarter of the year: *n.* a publication issued every quarter.
quar-ter-mas-ter (*'tēr-màs-tēr*), *n.* in the navy, a petty officer who attends to the steerage, signals, stowage, etc., of ships.
quar-tet (*-tet'*), *n.* anything in fours; musical composition in 4 parts for 4 voices or instruments.
quar-to (*'tō*), *n.* [*pl.* quartos (*'tōz*)], a book having the sheet folded into 4 leaves (abbreviated *4 to.*): *adj.* having 4 leaves in a sheet.
quartz (*kwawrts*), *n.* a mineral compound of pure silica.
★**quash** (*kwosh*, not *qwash*), *v. t.* to crush; subdue suddenly, or completely; annul. [ABOLISH.]
qua-si, a *prefix* meaning *as it were, apparently, nearly*.
quas-si-a (*kwosh'i-à*), *n.* a South American tree yielding bark and wood of excessive bitterness.

qua-ter-ni-on (*kwȧ-tĕr'ni-un*), *n.* the number 4; set of 4, a file of 4 soldiers.
qua-tre-foil (*kȧ'tĕr-foil*), *n.* in heraldry, four-leaved grass; an ornamental figure in architectural tracery divided by cusps into 4 leaves.
qua-ver (*kwā'vẽr*), *v. i.* to shake or tremble; vibrate.
quay (*kē*), *n.* a wharf for loading or unloading vessels.
Quebec (*kwē-bek'*). The former capital of Canada, arose around a blockhouse built by Champlain in 1608. The name is believed to refer to the "narrowing" of the river at this point to which Champlain alludes. Another account says it was named after Quebesq in Brittany, "the village on the point"; while a third derives it from an Algonquin term signifying "take care of the rock."
queen (*kwēn*), *n.* a female ruler; consort of a king.
Queen Charlotte Island. Named in compliment to the queen of George III.
queen-ly (*'li*), *adj.* like, or befitting, a queen.
queen-post (*-pōst*), *n.* one of two vertical timbers in a roof rising from the tie beam.
queen reg-nant (*reg'nant*), a queen in her own right.
Queensland. A state of Australia; named for Queen Victoria.
Queenstown. An Irish seaport; named for Queen Victoria.
queer (*kwēr*), *adj.* odd; singular; droll; strange; out of health.
quell (*kwel*), *v. t.* to crush or subdue; put an end to; calm; allay.
quench (*kwench*), *v. t.* to put out or extinguish; check; allay.
Quentin. See *Quintin.*
quer-i-mo-ni-ous (*kwer-i-mō'ni-us*), *adj.* complaining; querulous; discontented.
que-rist (*kwē'rist*), *n.* one who asks questions.
querl (*kwĕrl*), *v. t.* to coil.
quer-u-lous (*kwer'ū-lus*), *adj.* complaining; discontented.
que-ry (*kwē'ri*), *n.* a question: *v. t.* to examine by questions; mark with a query: *v. i.* to ask questions. [QUESTION.]
quest (*kwest*), *n.* search; inquiry; jury of inquest: *v. t.* to search or seek for.
ques-tion (*kwes'chun*), *n.* an inquiry; act of asking; interrogation: *v. t.* to ask or interrogate: *v. i.* to ask a question.
Syn. QUESTION, query. *Questions* and *queries* are both put for the sake of obtaining an answer; but the former may be for a reasonable or unreasonable cause; a *query* is mostly a rational question; idlers may put *questions* from mere curiosity; learned men put *queries* for the sake of information. [See *ask.*]
Ant. ANSWER, reply, response.
ques-tion-a-ble (*-ȧ-bl*), *adj.* that may be questioned; doubtful; suspicious. [EQUIVOCAL.]
★**queue** (*kū*), *n.* the tail of a wig.
quib-ble (*kwib'l*), *n.* a petty evasion or cavil: *v. i.* to evade the truth by artifice or evasion; play on words.
quick (*kwik*), *adj.* rapid; hasty; active; nimble; ready: *adv.* quickly. [ACTIVE.]
quick-en (*'en*), *v. i.* to impart life; vivify; show signs of life in the womb: *v. t.* to increase the speed of; to resuscitate; stimulate; cheer.
quick-en-ing (*'en-ing*), *adj.* vivifying.
quick-lime (*'līm*), *n.* lime burnt and unslacked.
quick-sand (*'sand*), *n.* sand easily moved or readily yielding to pressure.
quick-sil-ver (*'sil-vẽr*), *n.* fluid mercury: *v. t.* to overlay with an amalgam of mercury and tinfoil.
quid (*kwid*), *n.* a plug of tobacco for chewing; a sovereign.
quid-di-ty (*'i-ti*), *n.* [*pl.* quiddities (*-tiz*)], the essence of anything; a trifling nicety.
quid-nunc (*'nungk*), *n.* one who pretends to a knowledge of current events.
qui-esce (*kwi-es'*), *v. i.* to be silent.
qui-es-cence (*'ens*), *n.* repose or rest; mental quietude. [Also *quiescency.*]
qui-et (*kwi'et*), *adj.* free from motion, disturbance, or alarm; still; calm; peaceable; gentle; not showy: *n. t.* to calm or pacify. [EASE, PEACE, CALM.]
qui-e-tus (*-ē'tus*), *n.* rest; death; final settlement or discharge.
quill (*kwil*), *n.* the large strong feather of a bird's wing.
quilt (*kwilt*), *n.* a kind of coverlet or counterpane: *v. t.* to stitch together, as two pieces of cloth.
quilt-ing (*'ing*), *n.* the act or process of making a quilt; material for quilting; quilted work.
qui-nine (*kwi'nin, kwi'nin,* or *kwi'nēn*), *n.* an alkaline substance obtained from the bark of the cinchona tree.
quin-quen-ni-al (*kwin-kwen'i-al*), *adj.* recurring once in, or lasting, five years.
Quinsigamond (*kwin-sig'ȧ-mond*) **lake, Mass.** Indian word meaning "fishing place for pickerel."
quin-sy (*'zi*), *n.* inflammation of the tonsils or the throat.
quint (*kwint*), *n.* a set or sequence of five.
quin-tes-sence (*kwin-tes'ens*), *n.* the pure, concentrated essence of anything; vital or essential part.
quin-tet (*-tet'*), *n.* a musical composition in five obligato parts. [Also *quintette, quintetto.*]
quin-til-lion (*-til'yun*), *n.* in the United States, a thousand quadrillions; in the English system, a million raised to the fifth power.
Quintin, Quintyne (*kwin'tin*). From the Latin name *Quintinus,* formed from the name *Quintus.*
Quintus (*kwin'tus*). The Roman name signifying "the fifth," *i. e.,* the fifth son in order of birth.
quip (*kwip*), *n.* a short sarcastic turn or retort; jeer: *v. i.* to scoff; jeer.
quire (*kwir*), *n.* 24 sheets; an obsolete form of choir.
Quirinal (*kwi'ri-nal* or *kwir-i'nal*) The farthest north and the highest of the seven hills of ancient Rome, lying northeast of the Capitoline and northwest of the Viminal. It has its name from an old Sabine sanctuary of *Quirinus* (Mars). On the hill stands the palace of the *Quirinal,* the former summer palace of the pope.
quirk (*kwĕrk*), *n.* an artful evasion; subterfuge; quibble.
quit (*kwit*), *v. t.* to depart from; discharge. [LEAVE, ABANDON.]
quite (*kwīt*), *adj.* wholly; completely.
quiv-er (*kwiv'ẽr*), *n.* a case for arrows; a trembling or shivering: *v. i.* to tremble, shake, or shiver.
quix-ot-ic (*kwiks-ot'ik*), *adj.* chivalrous or romantic to extravagance.
quix-ot-ic-al-ly (*i-kal-li*), *adv.* in a quixotic manner.
quiz (*kwiz*), *n.* an enigma or obscure question designed to puzzle any one: *v. t.* to puzzle; make fun of. It is said that Daly, the manager of a Dublin playhouse, laid a wager that a new word of no meaning should be the common talk and puzzle of the city in twenty-four hours. In consequence of this the letters *q u i z* were chalked by him on all the walls of Dublin, with an effect that won the wager.
quiz-zic-al (*'i-kal*), *adj.* given to, or of the nature of, quizzing; comical.
quoin (*koin*), *n.* external angle of a building; wedge-shaped wooden block to tighten the pages of type within the chase.
★**quoit** (*kwoit* or *koit*), *n.* a circular ring of iron to be pitched at a fixed object: *pl.* the game thus played.
★**quo-rum** (*kwō'rum,* not *kwō'rum*), *n.* the number of members of a body or corporation competent to transact business by law or constitution.
quo-ta (*kwō'tȧ*), *n.* the part or share assigned to each.
quo-ta-tion (*-tā'shun*), *n.* the act of quoting; that which is quoted; current price.
quote (*kwōt*), *v. t.* to adduce (a passage) from some author or speaker, for authority or illustration; give the current price of. [CITE.]
quoth (*kwōth*), *v. i.* said.
quo-tient (*kwō'shent*), *n.* the number resulting from the division of one number by another.

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rab-bet (*rab'et*), *n.* a groove cut longitudinally in the edge of a plank: *v. t.* to groove and unite by a rabbet.
rab-bi (*'i* or *ī'*), *n.* [*pl.* rabbis (*'iz*)], a Jewish doctor or interpreter of the law. [*Pl.* also *rabbin.*]
rab-bin-ic (*-bin'ik*), *adj.* pertaining to the rabbis, their doctrines, learning, and language.
rab-bin-ism (*'in-izm*), *n.* rabbinic phraseology.
rab-bit (*'it*), *n.* a burrowing rodent animal, esteemed for food and its fur.
rab-ble (*'l*), *n.* a noisy crowd or mob, especially of the lower orders.
rab-id (*'id*), *adj.* mad; enthusiastic to excess.
ra-bi-es (*rā'bi-ēz*), *n.* canine madness; madness caused by the bite of a dog; hydrophobia.
rac-coon (*rak-kōōn'*), *n.* a badgerlike animal of North America with a valuable fur. [Also *racoon.*]
race (*rās*), *n.* a rapid course, as of an animal or river; contest of speed; career; descent or lineage: *v. i.* to run swiftly; contend in running.
Rachel (*rā'chel*). From the Hebrew *Rahhel,* usually translated "a ewe." Fuerstius translates the name "mutterschaft," *i. e.,* motherhood, maternity. Fr., *Rachel;* Ger., *Rahel* or *Rachel;* It., *Rachele;* Lat., *Rachel;* Sp., *Raquel;* Sw., *Rachel.*
ra-cial (*rā'shal*), *adj.* pertaining to race or lineage.
rack (*rak*), *n.* an instrument for stretching or straining; a grating above a manger for holding hay: *v. t.* torture; wrest; perplex; exhaust.
rack-et (*'et*), *n.* a clattering noise; a network bat used in tennis.
ra-coon. Same as *raccoon.*
rac-quet. Another form of *racket.*
ra-cy (*rā'si*), *adj.* having a strong flavor; mentally exciting; piquant.
rad-die (*rad'l*), *n.* a hedge of branches interwoven: *v. t.* to interweave.
ra-di-al (*rā'di-al*), *adj.* pertaining to, like, or used as, a ray; pertaining to the radius of the forearm.
ra-di-ance (*'di-ans*), *n.* brightness shooting in rays; brilliant brightness; splendor.
Syn. RADIANCE, brilliancy. *Radiance* denotes the emission of rays, and is, therefore, peculiarly applicable to bodies naturally luminous, like the heavenly bodies; and *brilliancy* denotes the whole body of light emitted, and may, therefore, be applied equally to natural and artificial light.
ra-di-ant (*'di-ant*), *adj.* emitting rays of light or heat; shining; brilliant.
ra-di-ate (*'di-āt*), *v. t.* to send out, as rays: *v. i.* to emit, or issue forth in rays: *adj.* having rays.
ra-di-a-tion (*-ā'shun*), *n.* the emission or diffusion of rays of light or heat from one luminous or heated body to another.
ra-di-a-tor (*rā'di-ā-tẽr*), *n.* a chamber, coil, drum, etc., in an apartment for radiating warmth into the apartment.
rad-i-cal (*rad'i-kal*), *adj.* pertaining to the root or origin: *n.* a simple underived word.
rad-i-cate (*'i-kat*), *v. t.* to plant deeply and firmly: *v. i.* to take root: *adj.* deeply planted or rooted.
ra-di-o-ac-tive (*rā'di-ō-ak'tiv*), *adj.* emitting Becquerel rays; exhibiting the properties possessed by radium.
ra-di-o-fy (*-fī*), *v. t.* [*p. t.* and *p. p.* radiofied, *p. pr.* radiofying], to cause to become radio-active by exposing to the influence of radium.
ra-di-o-graph (*-grȧf*), *n.* a picture obtained by means of radiography: *v. t.* to produce (a likeness) of by means of radiography.
ra-di-og-ra-phy (*rā-di-og'rȧ-fi*), *n.* the art or process of producing pictures by the action of Roentgen rays upon certain sensitive salts.
ra-di-o-te-leg-ra-phy (*-tē-leg'rȧ-fi*), *n.* telegraphing through the air without aid of wires; wireless telegraphy.
★**rad-ish** (*rad'ish,* not *red'ish*), *n.* a plant with an edible root, used as a salad.
ra-di-um (*rā'di-um*), *n.* a recently discovered element possessing the property of giving off luminous and actinic rays, accompanied by heat, without apparent loss of energy or weight.
ra-di-us (*rā'di-us*), *n.* [*pl.* radii (*-i*)], a straight line from the center to the circumference of a circle.
ra-dix (*'diks*), *n.* a root; a primitive word; base of a system of logarithms.
Rafael. See *Raphael.*
Rafaele or **Raffaelle.** See *Raphael.*
raff (*rȧf*), *n.* a jumble; refuse; the rabble.
raf-fle (*raf'l*), *n.* a kind of lottery: *v. t.* to dispose of by raffle: *v. i.* to take part in a raffle.
raft (*rȧft*), *n.* pieces of timber fastened together for transport by floating; a floating wooden framework: *v. t.* to carry on a raft.
raft-er (*'ẽr*), *n.* an inclined beam supporting the roof of a house.
rafts-man (*rafts'man*), *n.* a man who manages a raft upon a river.
rag (*rag*), *n.* a fragment of cloth. [fellow.
rag-a-muf-fin (*'ȧ-muf-in*), *n.* a low, disreputable
rage (*rāj*), *n* excessive and uncontrolled anger; vehemence; extreme violence. [ANGER, MADNESS.]
rag-ged (*rag'ed*), *adj.* rent or worn into rags; clothed in tattered garments; destitute; rough.
ra-gout (*rȧ-gōō'*), *n.* a dish of stewed and highly seasoned meat.
rag-time (*'tīm*), *n.* syncopated time, characteristic of negro melodies.
Rahway (*raw'wȧ*), **N. J.** From the river; its name traditionally traced to a Raritan chief named *Rahwack,* who had his habitation near the river's mouth.
raid (*rād*), *n.* a hostile or predatory incursion: *v. t.* to make a raid upon.
rail (*rāl*), *n.* wooden or iron fence; a wading bird with a harsh cry: *v. i.* to brawl: *v. t.* to inclose with rails. [ABUSE.]
rail-ing (*'ing*), *n.* material for rails; fence made of posts and rails: *adj.* insulting or reproaching.
rail-ler-y (*'ẽr-i*), *n.* good-humored irony or satire; banter.
rail-way (*'wā*), *n.* a way or road laid with two parallel iron or steel rails along which cars are drawn by steam power, electricity, etc.
rai-ment (*rā'ment*), *n.* clothing.
rain (*rān*), *n.* water in drops discharged from the clouds: *v. i.* to fall in drops from the clouds: *v. t.* to pour down like rain.
rain-bow (*'bō*), *n.* the bright-colored arc formed in the heavens.
rain-fall (*'fawl*), *n.* the amount of rain that falls on any given area.
Rainier (*rā'nēr*). Town in Columbia county, Oregon, and mountain in Washington, named for Rear-Admiral Rainier.
rain-y (*rān'i*), *adj.* abounding with rain.
raise (*rāz*), *v. t.* to cause to rise; lift up; elevate; levy; collect.
rai-sin (*rā'zn*), *n.* a dried grape.
rake (*rāk*), *n.* a toothed implement for smoothing the soil; a rascal: *v. t.* to gather or smooth with a rake.
rak-ish (*rāk'ish*), *adj.* dissolute; debauched.
Raleigh (*raw'li*), **N. C.** A city, named in honor of Sir Walter Raleigh, who located a colony on Roanoke island, July 23, 1587.
ral-ly (*ral'i*), *v. t.* [*p. t.* and *p. p.* rallied, *p. pr.* rallying], to collect and arrange, as troops in confusion; reunite: *v. i.* to return to order; recover strength.
Ralph. From the Teutonic, meaning "warrior-wolf." Dutch, *Rudolf;* Fr., *Raoul;* It., *Raolfo;* Lat., *Radulphus;* Sp., *Rodolfo;* Sw., *Rudolf.*
ram (*ram*), *n.* the male of the sheep: a military engine for battering: *v. t.* to push or press with force.
ram-ble (*'bl*), *v. i.* to wander or rove about; visit many places. [EXCURSION.]
ram-i-fi-ca-tion (*ram-i-fi-kā'shun*), *n.* a division or separation into branches; subdivision.
ram-i-fy (*'i-fī*), *v. t.* to divide into branches, or divisions: *v. i.* to shoot into branches.
ramp-age (*ramp'āj*), *v. i.* to prance about with unrestrained spirits; be furious: *n.* a state of excitement.

ramp-ant (*ramp'ant*), *adj.* overleapingrest raint or natural bounds.
ram-part (*ram'pärt*), *n.* a mound or wall surrounding a fortified plaee.
ram-rod (*'rod*), *n.* a rod used for ramming down the charge of a gun.
ram-shac-kle (*'shak-l*), *adj.* loose; out of repair.
ranch (*ranch*), *n.* a cattle farm. [Also *ranche*, *rancho* (Mexican).]
ran-cid (*ran'sid*), *adj.* having a rank, unpleasant smell; sour or musty.
★**ran-cor** (*rang'kẽr*, not *ran'kẽr*), *n.* implacable enmity; deep spite or malice.
ran-cor-ous (*-us*), *adj.* malignant; spiteful.
Randolph. Properly *Radolph*, the same as the German names *Radulph*, *Radolf*, *Radolph;* from Old German *rad-ulph*, "help or counsel."
ran-dom (*ran'dum*), *n.* want of direction or method; chance: *adj.* done haphazard; left to chance.
range (*rānj*), *v. t.* to set or arrange in a row; place in proper order; rove over: *n.* a rank or row; order or class.
Rangeley. Town and plantation in Franklin county, Maine, and one of the Androscoggin lakes in the same state, named for an Englishman, an early settler and large landowner.
ran-ger (*rān'jẽr*), *n.* a rover; the chief official or keeper of a park or forest; a variety of dog.
Rangoon (*rān-gōōn'*). The chief town and port of Burma, is called in Burmese *Ran-kun*, the "end of the war," literally, enmity exhausted. A name given in 1763, by Alompra, the founder of the Burmese dynasty, who, after the destruction of the city of Pegu, established the capital of the kingdom near the famous golden pagoda called Da-gun, with which *Ran-kun* may probably be connected by assonance.
rank (*rangk*), *n.* station or position; grade; dignity; eminence: *v. t.* to draw up in line: *v. i.* to hold a certain position: *adj.* excessive. [CLASS.]
ran-kle (*'l*), *v. i.* to grow more rank or strong; fester; become mentally disquieted or irritated.
★**ran-sack** (*ran'sak*, not *ram'sack*), *v. t.* to search minutely; rummage; plunder.
ran-som (*'sum*), *v. t.* to free from captivity, slavery, or punishment, by a payment; atone for: *n.* price paid for release from captivity.
rant (*rant*), *v. i.* to bluster or be noisily wordy; rave in extravagant or violent language: *n.* noisy, empty declamation.
Raoul. See *Ralph.*
rap (*rap*), *v. i.* to strike a quick, sharp blow; knock: *v. t.* to strike sharply: *n.* a quick, sharp blow.
ra-pa-cious (*rȧ-pā'shus*), *adj.* given to plunder; seizing forcibly; subsisting on prey; greedy.
Syn. RAPACIOUS, ravenous, voracious. *Rapacious* is the quality peculiar to beasts of prey, or what is like beasts of prey. A lion is *rapacious* when it seizes on its prey; it is *ravenous* in the act of consuming it. The word *ravenous* respects the haste with which one eats; the word *voracious* respects the quantity which one consumes: a *ravenous* person is loath to wait for the dressing of his food; he consumes it without any preparation; a *voracious* person not only eats in haste, but he consumes great quantities, and continues to do so for a long time.
ra-pac-i-ty (*-pas'i-ti*), *n.* the quality of being rapacious. [Also *rapaciousness.*]
rape (*rāp*), *n.* a seizing and carrying away by force; the seizure and carnal knowledge of a woman against hɔr will.
Raphael (*raf'ȧ-el*, *rā'fā-el*, *rā'fȧ-el*). From the Hebrew *R'phael*, "healed of God," or "whom God healed." Fr., *Raphael;* Ger., *Raphael;* It., *Rafaele* or *Raffaelle;* Lat., *Raphael;* Sp., *Rafael.*
rap-id (*rap'id*), *adj.* very quick or swift; expeditious: *n. pl.* a swift current in a river where the channel is descending.
Rapidan (*rap-i-dan'*) **river, N. C.** Corruption of *Rapid Anne*, the suffix being given in honor of Queen Anne of England.
ra-pi-er (*rā'pi-ẽr*), *n.* a long thin sword, used for thrusting.
rap-ine (*rap'in*, or *'īn*), *n.* the act of plundering or seizing forcibly; pillage; violence.
Rappahannock (*rap-pȧ-han'nuk*) **river, Va.** Indian *lappihanne*, "river of quick, rising water," also noted as *toppehannock.*
rap-port (*-pōrt'*), *n.* harmonious relation; affinity.
rap-proche-ment (*rȧ-prōsh'mäɴ*), *n.* the act of ɔoming together; an understanding.
rap-scal-lion (*rap-scal'yun*), *n.* a rascal.
rapt (*rapt*), *p. adj.* transported; ravished.
rap-ture (*rap'tūr*), *n.* extreme pleasure or delight; ecstasy; enthusiasm.
rare (*râr*), *adj.* [*comp.* rarer, *superl.* rarest], scarce; uncommon; unusual; thinly scattered.
Syn. RARE, curious, extraordinary, incomparable, infrequent, odd, peculiar, precious, remarkable, scarce, singular, strange, unique. *Rare* is *infrequent* of its kind; *unique* is alone of its kind; great poems are *rare; Paradise Lost* is *unique; rare* has the added sense of *precious*, which is sometimes, but not necessarily, blended with that above given; as, a *rare* gem; *extraordinary*, signifying greatly beyond the ordinary, is a neutral word; as, *extraordinary* genius, *extraordinary* wickedness. [See *obsolete.*]
Ant. COMMON, ordinary, plentiful.
rare-bit (*'bit*), *n.* a dainty morsel.
rar-e-fac-tion (*rar-ē-fak'shun*), *n.* the act of rarefying or rendering less dense.
rar-e-fy (*rar'e-fī*), *v. t.* to make rare, thin, or less dense; expand: *v. i.* to become less dense.
rare-ly (*râr'li*), *adv.* seldom.
rare-ness (*'nes*), *n.* the state or quality of being rare.
Raritan (*rar'i-tan*) **river, N. J.** From a local tribe of Indians, the *Raritans.*
rar-i-ty (*'i-ti*), *n.* a rare article; exceptional excellence; rareness.
ras-cal (*ras'kal*), *n.* a mean fellow; a scoundrel; one who is guilty of mean offenses.
ras-cal-i-ty (*-kal'i-ti*), *n.* the state of being a rascal; petty villainy or dishonesty.
rash (*rash*), *adj.* hasty; incautious; precipitate: *n.* a slight cutaneous eruption. [FOOLHARDY.]
rash-er (*'ẽr*), *n.* a slice of bacon.
rasp (*rȧsp*), *v. t.* to rub with, or as with, a rough instrument; file with a rasp: *n.* a kind of rough file.
rasp-ber-ry (*raz'bẽr-i*), *n.* [*pl.* raspberries (*-iz*)], a shrub and its well-known fruit.
rat (*rat*), *n.* an animal of the mouse family but larger and more voracious.
rat-a-ble (*rāt'ȧ-bl*), *adj.* assessed at a certain value; liable to be assessed.
ra-tan. Same as *rattan.*
ratch (*rach*), *n.* a toothed bar into which a click drops.
ratch-et (*'et*), *n.* the detent which stops a ratchet wheel.
ratch-et wheel (*hwēl*), a circular ratch.
rate (*rāt*), *n.* ratio or proportion; price fixed or stated; comparative value; degree: *v. i.* to make an estimate: *v. t.* to make a rate upon. [ESTIMATE.]
rath-er (*rȧth'ẽr*), *adv.* sooner; more willingly; on the contrary; preferably to the other.
rat-i-fi-ca-tion (*rat-i-fi-kā'shun*), *n.* the act of ratifying; confirmation.
rat-i-fy (*'i-fī*), *v. t.* to approve and sanction; settle or confirm; establish.
ra-ti-o (*rā'shi-ō*), *n.* [*pl.* ratios (*-ōz*)], the relation or proportion of one thing or quantity to another.
ra-ti-oc-i-nate (*rash-i-os'i-nāt*), *v. i.* to reason deductively; argue.
ra-ti-oc-i-na-tion (*-i-nā'shun*), *n.* the act or process of reasoning; act of deducing conclusions from premises.
ra-tion (*rā'shun*), *n.* an allowance: *v. t.* to furnish with rations.
ra-tion-al (*rash'un-al*), *adj.* agreeable to, or consistent with, reason.
ra-tion-a-le (*rash-un-ā'lē*), *n.* a series of reasons assigned for any opinion, action, etc.
ra-tion-al-ism (*'un-al-izm*), *n.* a system or doctrine which, rejecting revelation, makes reason the sole guide in the interpretation of Scripture and dogma.
ra-tion-al-ist (*-ist*), *n.* one who upholds or supports rationalism.
ra-tion-al-i-ty (*-al'i-ti*), *n.* the quality of being rational; power of reasoning; reasonableness.
ra-tion-al-ize (*'al-īz*), *v. t.* to interpret as a rationalist; convert to rationalism: *v. i.* to rely solely on reason or act as a rationalist.
rat-lins (*rat'linz*), *n. pl.* small horizontal ropes, extending over the shrouds, forming ladder-like steps. [Also *ratline.*]
rat-tan (*rat-tan'*), *n.* one of the long, smooth, reed-like stems of several species of palms.
rat-tle (*rat'l*), *v. i.* to produce rapidly sharp noises: *v. t.* to cause to make a rapid, sharp noise: *n.* a succession of rapid, sharp noises.
rat-tler (*rat'lẽr*), *n.* one who, or that which, rattles; a rattlesnake.
rat-tle-snake (*-snāk*), *n.* a venomous snake with hard bony rings on the tail producing a rattling sound when in motion.
rau-cous (*raw'kus*), *adj.* hoarse.
rav-age (*rav'āj*), *v. t.* to lay waste; pillage; plunder or sack: *n.* destruction by violence or decay; devastation; ruin.
rave (*rāv*), *v. i.* to wander in the mind or be delirious.
rav-el (*rav'l*), *v. t.* to unweave or untwist; involve or entangle: *v. i.* to be unwoven or untwisted.
ra-ven (*rā'vn*), *n.* a large bird of the crow family noted for its deep black color: *adj.* raven-colored.
rav-en (*rav'n*), *v. t.* to obtain, or seize, by violence; devour with greediness or voracity: *n.* violence; plunder; prey.
rav-en-ous (*'n-us*), *adj.* devouring with rapacity; eagerly voracious; eager for gratification. [RAPACIOUS.]
ra-vine (*rȧ-vēn'*), *n.* a long, deep hollow, worn by the action of a stream or torrents.
rav-ish (*rav'ish*), *v. t.* to seize and to carry away by force; have sexual intercourse with by force and without her consent. [ABUSE.]
rav-ish-ment (*'ish-ment*), *n.* forcible violation of chastity; rape; abduction; transport; rapture.
raw (*raw*), *adj.* uncooked; crude; sore; in the natural state.
raw-boned (*'bōnd*), *adj.* with little flesh on the bones.
raw-hide (*'hīd*), *n.* a cowhide whip.
ray (*rā*), *n.* a line or pencil of light proceeding from a radiant point; light.
Raymond. A name derived from the Teutonic, *ram-mund*, "a strong man." Fr., *Raymond;* It., *Raimondo;* Lat., *Raymundus;* Sp., *Raymundo* or *Ramon.*
raze (*rāz*), *v. t.* to level to the ground; blot out; efface; graze or shave.
ra-zor (*rā'zẽr*), *n.* a sharp-edged cutting instrument used for shaving.
reach (*rēch*), *v. t.* to touch with the extended hand; stretch forth; arrive at; gain: *v. i.* endeavor to obtain something.
read (*rēd*), *v. t.* [*p. t.* and *p. p.* read (*red*), *p. pr* reading], to observe and apprehend the meaning of (something written, printed, or inscribed); peruse: *v. i.* to perform the act of reading.
read (*red*), *adj.* well-informed or acquainted with books.
read-a-ble (*rēd'ȧ-bl*), *adj.* fit to be read; worth reading; legible.
read-er (*'ẽr*), *n.* one who reads; one who reads prayers in church; a corrector of the press; a university lecturer; a reading book.
read-i-ness (*red'i-nes*), *n.* the state of being ready; promptness; cheerfulness.
read-ing (*rēd'ing*), *n.* perusal of books; lecture; public recital; variation.
read-y (*red'i*), *adj.* [*comp.* readier, *superl.* readiest], prepared at the moment; quick; prompt; fit for a purpose.
Syn. READY, apt, prompt. *Ready* is in general applied to that which has been intentionally prepared for a given purpose; *prompt* is applied to that which is at hand so as to answer the immediate purpose; *apt* is applied to that which is fit, or from its nature has a tendency to produce effects. [See *active*, *easy.*]
re-al (*rē'al*), *adj.* actually existing; not fictitious; genuine; true.
re-al es-tate (*es-tāt'*), lands and all appertaining to them.
re-al-ism (*'al-izm*), *n.* the representation of nature or social life as it actually appears.
re-al-ist (*-ist*), *n.* one who holds the doctrine of, or practices, realism.
re-al-i-ty (*-al'i-ti*), *n.* [*pl.* realities (*-tiz*)], actual existence; fact; truth.
re-al-i-za-tion (*-al-i-zā'shun*), *n.* the act of realizing, or of making and believing something real.
re-al-ize (*'al-īz*), *v. t.* to bring into act or being; make real; convert into real property or money.
re-al-ly (*'al-li*), *adv.* with actual existence; in truth.
realm (*relm*), *n.* royal jurisdiction or territory; kingdom; empire; state. [STATE.]
re-al-ty (*'al-ti*), *n.* real estate.
ream (*rēm*), *n.* 20 quires, or 480 sheets of paper; 516 sheets (printer's *ream*).
reap (*rēp*), *v. i.* to perform the operation of reaping: *v. t.* to gather in.
rear (*rēr*), *n.* the part behind the rest; last in order; background: *v. t.* to raise or lift up: *v. i.* to assume an erect posture.
rear ad-mi-ral (*-ad'mi-ral*), in the United States navy, an officer ranking next below the admiral.
rea-son (*rē'zn*), *n.* that mental faculty in man which enables him to deduce inferences from facts, and to distinguish between right and wrong; right judgment: *v. i.* to exercise the faculty of reason. [CAUSE.]
rea-son-a-ble (*-ȧ-bl*), *adj.* endowed with reason; rational; equitable; moderate; fair.
rea-son-ing (*-ing*), *n.* the exercise of the faculty of reason; argumentation.
re-bate (*-bāt'*), *v. t.* to make blunt; make obtuse: *n.* a return to shippers by transportation companies of part of freight charges.
Rebecca, Rebekah (*rē-bek'kȧ*). From the Hebrew *Ribhkah*, signifying a "rope with a noose"; from Arabic *rabkat*, which Tregelles says means "one who ensnares men by her beauty." Fr., *Rebecca;* It., *Rebecca;* Lat., *Rebecca;* Sp., *Rebeca.*
reb-el (*reb'el*), *n.* one who revolts from his allegiance to or defies, constituted authority: *adj.* rebellious: *v. i.* (*rē-bel'*), to revolt; rise against authority.
re-bel-lion (*rē-bel'yun*), *n.* insurrection against, or open resistance to, lawful or constituted authority; revolt. [INSURRECTION, CONTUMACY.]
re-bel-lious (*'yus*), *adj.* opposing lawful or constituted authority.
re-bound (*rē-bound'*), *v. i.* to start or leap back; reëcho; to reverberate: *n.* the act of rebounding.
re-buff (*-buf'*), *n.* a beating back; sudden check or resistance; defeat; refusal: *v. t.* to beat back. [REFUSE.]
re-buke (*-būk'*), *n.* reprimand or reproof; chiding; chastisement: *v. t.* to reprimand or chide.
re-bus (*rē'bus*), *n.* [*pl.* rebuses (*-ez*)], an enigmatical representation of a word or phrase by pictures or figures instead of words.
re-but (*rē-but'*), *v. t.* to beat back; oppose by argument or proof; repel: *v. i.* in law, to put in or return an answer.
re-but-tal (*'al*), *n.* the act of rebutting.
re-cal-ci-trant (*rē-kal'si-trant*), *adj.* refractory.
re-call (*-kawl'*), *v. t.* to call back; remember; revoke; withdraw: *n.* a revocation.
re-cant (*-kant'*), *v. t.* to withdraw or retract; abjure.
re-can-ta-tion (*-kan-tā'shun*), *n.* the act of recanting; a declaration recalling and contradicting a former one.
re-ca-pit-u-late (*-kȧ-pit'ū-lāt*), *v. t.* to go over, or summarize, as the chief points of a discourse. [REPEAT.]
re-ca-pit-u-la-tion (*-lā'shun*), *n.* the act of recapitulating.
re-ca-pit-u-la-to-ry (*'ū-lȧ-tō-ri*), *adj.* repeating again in brief.

re-cede (*rē-sēd'*), *v. i.* to fall back or retrograde; retreat: *v. t.* to cede back. [ABATE.]
re-ceipt (*sēt'*), *n.* the act of receiving; reception; a recipe: *v. t.* to sign in acknowledgment of.
re-ceive (*-sēv'*), *v. t.* to take or obtain from another in any manner; accept; obtain; entertain.
re-ceiv-er (*'ėr*), *n.* one who, or that which, receives; a person appointed by a court to manage property in controversy.
re-cen-cy (*rē'sen-si*), *n.* lateness of time; newness. [Also *recentness.*]
re-cen-sion (*rē-sen'shun*), *n.* review or revision, especially critical revision of the text of an author.
re-cent (*'sent*), *adj.* of late origin or occurrence; new; modern. [NEW.]
re-cep-ta-cle (*-sep'tȧ-kl*), *n.* a vessel or place into which anything is received.
re-cep-tion (*'shun*), *n.* welcome; entertainment; admission; formal or official receiving of a person.
re-cep-tive (*'tiv*), *adj.* having the quality of receiving or containing; capable of receiving mental impressions.
re-cess (*-ses'*), *n.* state of being in retirement; cavity in a room or alcove; niche.
re-ces-sion (*-sesh'un*), *n.* the act of receding or withdrawal; cession back.
★**rec-i-pe** (*res'i-pē*), *n.* a medical prescription; formula for compounding anything.
re-cip-i-ent (*rē-sip'i-ent*), *n.* one who receives: *adj.* receiving.
re-cip-ro-cal (*'rō-kal*), *adj.* mutual; alternating; mutually interchangeable.
re-cip-ro-cate (*'rō-kāt*), *v. t.* to give and receive mutually: *v. i.* to alternate; interchange.
re-cip-ro-ca-tion (*-kā'shun*), *n.* interchange of acts; reciprocal motion.
rec-i-proc-i-ty (*res-i-pros'i-ti*), *n.* reciproeal obligation or right. [INTERCHANGE.]
re-ci-sion (*rē-sizh'un*), *n.* the act of cutting off.
re-cit-al (*-sīt'al*), *n.* the act of reciting; rehearsal; narrative; a musical entertainment by one performer.
rec-i-ta-tion (*res-i-tā'shun*), *n.* a public reading; delivery of a composition committed to memory; the composition so delivered.
rec-i-ta-tive (*-tȧ-tēv'*), *adj.* pertaining to recitation; words spoken in the sounds of the musical scale; chant.
re-cite (*rē-sīt'*), *v. t.* to repeat aloud from memory; enumerate. [REPEAT.]
reck (*rek*), *v. t.* and *v. i.* to care for; heed.
reck-less (*'les*), *adj.* heedless of consequences; careless; thoughtless.
reck-on (*'n*), *v. t.* to count or compute; estimate by rank: *v. i.* to calculate. [CALCULATE.]
reck-on-ing (*-ing*), *n.* computation; calculation.
re-claim (*rē-klām'*), *v. t.* to call back; demand the return of.
Syn. RECLAIM, reform. *Reclaim* signifies to call back to its right place that which has gone astray; *reform* signifies to *form* anew that which has changed its *form;* they are allied only in their application to the moral character. A man is *reclaimed* from his vicious courses by the force of advice or exhortation; he may be *reformed* by various means, external or internal.
re-cline (*-klīn'*), *v. t.* to cause to lean or lie back; lean to one side: *v. i.* to rest or repose.
Syn. RECLINE, repose. When we *recline* we put ourselves into a particular position; but when we *repose* we put ourselves into that position which will be most easy.
re-cluse (*rē-klūs'*), *n.* one who lives in retirement; hermit.
rec-og-ni-tion (*rek-og-nish'un*), *n.* remembrance; recollection; formal avowal.
rec-og-ni-za-ble (*rek'og-nī-zȧ-bl*), *adj.* capable of being recognized.
re-cog-ni-zance (*rē-kog'ni-zans* or *rē-kon'i-zans*), *n.* avowal; acknowledgment; badge or token.
rec-og-nize (*rek'og-nīz*), *v. t.* to know again; acknowledge; avow.
rec-ol-lect (*-ol-ekt'*), *v. t.* to call to memory; (*rē-kol-ekt'*), to gather together again.
rec-ol-lec-tion (*rek-ol-ek'shun*), *n.* memory; that which is remembered. [MEMORY.]
rec-om-mend (*-om-end'*), *v. t.* to commend to another; introduce favorably; advise.
rec-om-men-da-tion (*-en-dā'shun*), *n.* the act of recommending; favorable introduction.
re-com-mit (*rē-kom-it'*), *v. t.* to commit anew; refer back to a committee.
rec-om-pense (*rek'om-pens*), *n.* an equivalent given in return; reward; compensation: *v. t.* to give back as an equivalent. [COMPENSATION.]
rec-on-ci-la-ble (*-on-si'lȧ-bl*), *adj.* capable of being reconciled.
rec-on-cile (*'on-sil*), *v. t.* to restore to friendship or favor after estrangement; adjust; harmonize. [CONCILIATE.]
rec-on-cil-i-a-tion (*-sil-i-ā'shun*), *n.* renewal of friendship; expiation or atonement.
rec-on-dite (*'on-dīt*), *adj.* deep; abstruse; hidden from view; secret. [MYSTERIOUS.]
re-con-nais-sance (*rē-kon'is-ans*), *n.* the act of reconnoitering.
★**rec-on-noi-ter, rec-on-noi-tre** (*rek-on-noi'tėr*, not *rē-kon-oi'tėr*), *v. t.* to make a survey of, especially for military purposes.
re-cord (*rē-kord'*), *v. t.* to remember, or cause to be remembered; register or enroll; celebrate: *n.* (*rek'ėrd*), register; formal writing or copy of an official document.
re-count (*rē-kount'*), *v. t.* to go over or narrate in detail.
re-coup (*rē-kōōp'*), *v. t.* to indemnify or make good; diminish by keeping back a part.
re-course (*rē-kōrs'*), *n.* a going to for aid or protection; application of effort for a particular purpose or end.
re-cov-er (*-kuv'ėr*), *v. t.* to regain; retrieve; cure; obtain as compensation: *v. i.* to regain health, strength, or any former state.
Syn. RECOVER, retrieve, repair, recruit. We *repair* that which has been injured; we *recruit* that which has been diminished; we *recover* property from those who wish to deprive us of it; we *retrieve* our misfortunes, or our lost reputation.
re-cov-er-y (*'ėr-i*), *n.* the act of recovering; restoration to health.
Syn. RECOVERY, restoration. *Recovery* is the regaining of any object which has been lost or missing; *restoration* is the getting back what has been taken away, or that of which one has been deprived. What is *recovered* may be *recovered* with or without the use of means; the *restoration* is effected by foreign agency.
rec-re-ant (*rek'rē-ant*), *adj.* cowardly; mean-spirited; apostate; false: *n.* a mean-spirited creature; a coward; an apostate.
rec-re-ate (*'rē-āt*), *v. t.* to reanimate, especially after toil; gratify: *v. i.* to take recreation: *v. t.* (*rē-krē-āt'*) to create anew.
rec-re-a-tion (*rek-rē-ā'shun*), *n.* refreshment after toil, etc.; amusement: *n.* (*rē-krē-ā'shun*) the act of creating anew; a new creation.
re-crim-i-nate (*rē-krim'i-nāt*), *v. i.* to return one accusation with another: *v. t.* to accuse in return.
re-crim-i-na-to-ry (*'i-nā-tō-ri*), *adj.* retorting an accusation or charge.
re-cru-des-cence (*-kroo-des'ens*), *n.* the state of becoming sore again; a sharp relapse.
re-cruit (*-krōōt'*), *v. t.* to supply with new soldiers: *v. i.* to obtain fresh supplies; recover health: *n.* a soldier newly enlisted; supply of any want. [RECOVER.]
rec-tan-gle (*rek'tang-gl*), *n.* a 4-sided figure with 4 right angles, or angles of 90 degrees.
rec-ti-fi-ca-tion (*-ti-fi-kā'shun*), *n.* the act of setting right.
rec-ti-fy (*'ti-fī*), *v. t.* to set right; adjust; refine by distillation.
rec-ti-lin-e-al (*-ti-lin'ē-al*), *adj.* bounded by straight lines; right or straight lined; straight.
rec-ti-tude (*'ti-tūd*), *n.* rightness of principles and practice; honesty; moral integrity.
rec-tor (*'tėr*), *n.* a clergyman.
rec-tor-y (*'tėr-i*), *n.* the house of a rector.
rec-tum (*'tum*), *n.* the lowest part of the great intestine.
re-cum-bent (*rē-kum'bent*), *adj.* reclining; idle.
re-cu-per-ate (*-kū'pėr-āt*), *v. t.* and *v. i.* to recover.
re-cur (*-kėr'*), *v. i.* return to the mind; return; happen at a stated interval; have recourse.
re-cu-sant (*'kū-zant*), *adj.* refusing to acknowledge the royal supremacy in religion; nonconforming: *n.* a nonconformist.
red (*red*), *n.* one of the primary colors, varying from scarlet to pink: *adj.* red-colored.
red-breast (*red'brest*), *n.* the robin.
red-den (*'n*), *v. t.* to make red: *v. i.* to become red; blush.
red-dish (*'ish*), *adj.* somewhat red.
re-deem (*rē-dēm'*), *v. t.* to ransom from bondage; rescue; make atonement for; perform; recover.
re-deem-er (*'ėr*), *n.* one who redeems.
re-demp-tion (*-demp'shun*), *n.* repurchase; release; ransom.
re-demp-tion-er (*-ėr*), *n.* an emigrant to the United States who sells his services for a certain term, as payment for his passage out from Europe.
red-i-vi-vus (*red-i-vī'vus*), *adj.* come to life again.
red-let-ter day (*-let'ėr dā*). A day that is fortunate or auspicious; so called in allusion to the custom of marking holy days, or saints' days, in the old calendars with red letters.
red-o-lent (*'ō-lent*), *adj.* emitting a sweet smell; fragrant.
re-doubt (*rē-dout'*), *n.* a field-work for strengthening or fortifying a military position without flanks.
re-doubt-a-ble (*'ȧ-bl*), *adj.* formidable; valiant; terrible to enemies.
re-dound (*-dound'*), *v. i.* to tend or contribute; be in excess.
red-ow-a (*red'ō-ȧ*), *n.* a Bohemian dance; music for such a dance.
re-dress (*rē-dres'*), *v. t.* to amend or set right; compensate; relieve from; to dress again: *n.* the reparation of wrong; relief.
re-dress-i-ble (*'i-bl*), *adj.* capable of being redressed.
Red river. From the color of its waters it was called by the French *Riviere Rouge*, "Red river"; called by the Spaniards *Rio Rozo de Natchitoches.*
Red Sea. Translates the unexplained classical names *Erythrasan sea* and *Mare Rubrum.* To the early Portuguese mariners the name *Mar Vermelho* seemed to be appropriate, because of the red streaks of water, due probably to floating infusoria.
red-sear (*red'sēr*), *v. t.* to break or crack under the hammer, as iron when hot.
red-tape (*'tāp*), *n.* excessive official formality.
re-duce (*rē-dūs'*), *v. t.* to bring into a lower state; degrade; diminish; conquer; shorten. [ABASE, ABBREVIATE.]
re-du-ci-ble (*-dū'si-bl*), *adj.* capable of being reduced.
re-duc-tion (*-duk'shun*), *n.* diminution; conquest or subjugation; the changing of quantities from one denomination to another.
re-dun-dance (*-dun'dans*), *n.* superfluity; excess. [Also *redundancy.*] [EXCESS.]
re-du-pli-cate (*-dū'pli-kāt*), *v. t.* to double again; repeat; multiply.
re-du-pli-ca-tion (*-kā'shun*), *n.* the act of redupli cating.
reed (*rēd*), *n.* a large, coarse grass of the genus Arundo.
reef (*rēf*), *n.* that part of a sail which can be reduced by being drawn in by small ropes running in eyelet holes; a chain of rock lying at or near the surface of the water: *v. t.* to reduce the size of a sail.
reef-er (*'ėr*), *n.* a midshipman; a rough kind of jacket.
reek (*rēk*), *n.* smoke; steam: *v. i.* to emit smoke or steam.
reek-y (*'i*), *adj.* smoky; made foul by smoke or steam.
reel (*rēl*), *n.* a turning frame for winding yarn, etc.: *v. t.* to wind on a reel: *v. i.* to stagger; perform a reel.
reeve (*rēv*), *n.* a bailiff or steward; the female of the ruff.
re-fec-tion (*rē-fek'shun*), *n.* a light repast.
re-fec-to-ry (*'tō-ri*), *n.* an eating room or hall.
re-fer (*-fėr'*), *v. t.* [*p. t.* and *p. p.* referred, *p. pr.* referring], to submit to another person or authority for information, corroboration, or decision: *v. i.* to allude; have relation; appeal; hint. [ALLUDE.]
★**ref-er-able** (*ref'ėr-ȧ-bl*, not *rē-fėr'ȧ-bl*), *adj.* that may be referred; ascribable.
ref-er-ee (*ref-ėr-ē'*), *n.* one to whom anything is referred for decision; an umpire.
ref-er-ence (*'ėr-ens*), *n.* the act of referring; allusion; one who, or that which, is referred to.
ref-er-en-dum (*ref'ėr-en-dum*), *n.* the referring of a legislative act to the decision of a vote of the people.
re-fine (*rē-fīn'*), *v. t.* to separate from impurities; clear from dross: *v. i.* to become fine or pure; improve in accuracy or delicacy. (*refined,*) [POLITE.]
re-fine-ment (*'ment*), *n.* elegance; polish; purity of taste, mind, morals, etc.; affectation of elegant or subtle improvements. [CULTIVATION.]
re-fin-er-y (*'ėr-i*), *n.* [*pl.* refineries (*-iz*)], a place where anything is refined or purified.
re-fit (*-fit'*), *v. t.* to make fit for use again: *v. i.* to repair damages, especially damages of ships.
re-flect (*-flekt'*), *v. t.* to throw back, especially rays of light or heat after striking on any substance; consider in mind. [CONSIDER.]
re-flec-tion (*-flek'shun*), *n.* that which is reflected; the turning of thought back upon past experiences or ideas; attentive consideration. [INSINUATION.]
re-flect-ive (*-flekt'iv*), *adj.* throwing back images or rays; considering the operations of the mind or things of the past; reflexive.
re-flex (*'fleks*), *adj.* bent or turned back; directed backward: *n.* reflected light, etc.
re-flex-i-ble (*'i-bl*), *adj.* capable of being reflected.
re-flex-ive (*'iv*), *adj.* reflective; having respect to something past; referring back to the grammatical subject.
re-flux (*'fluks*), *n.* a flowing back.
re-form (*-fōrm'*), *v. t.* to make better; change or return to a former good state: *v. i.* to abandon evil for that which is good: *n.* change for the better; correction.
Syn. REFORM, reformation. Whatever undergoes such a change as to give a new *form* to an object occasions a *reform;* when such a change is produced in the moral character, it is termed a *reformation;* the concerns of a state require occasional *reform;* those of an individual require *reformation.* [See *reclaim.*]
ref-or-ma-tion (*ref-ōr-mā'shun*), *n.* amendment, political redress. [REFORM.]
Reformation, *n.* the great religious movement (16th century) under Martin Luther. [REFORM.]
re-form-a-to-ry (*rē-fōrm'ȧ-tō-ri*), *adj.* tending to reform: *n.* an institution for the detention and reformation of juvenile offenders.
re-fract (*-frakt'*), *v. t.* to break the natural course of, or bend from, a straight line.
re-fract-ed (*'ed*), *p. adj.* bent back at an acute angle; bent from a direct course.
re-frac-tion (*-frak'shun*), *n.* the change from a straight line.
re-frac-to-ry (*'tō-ri*), *adj* sullenly or perversely obstinate; difficult of fusion, etc. [OBSTINATE.]
re-frain (*-frān'*), *v. t.* to restrain: *v. i.* to forbear; abstain from action: *n.* burden of a song repeated at the end of each stanza.
re-fran-gi-ble (*-fran'ji-bl*), *adj.* capable of being refracted.
re-fresh (*-fresh'*), *v. t.* to revive after fatigue or exhaustion; reinvigorate; restore.
re-fresh-ment (*'ment*), *n.* the act of refreshing, state of being refreshed; that which refreshes, as food or rest.

re-frig-er-ate (*rē-frij'ẽr-āt*), *v. t.* to cool, or keep cool, as by a refrigerator.
re-frig-er-a-tor (*'ẽr-ā-tẽr*), *n.* an apparatus or vessel for preserving or cooling things.
ref-uge (*ref'ūj*), *n.* protection from danger or distress; shelter or asylum; stronghold.
ref-u-gee (*ū-jē'*), *n.* one who flees for protection, especially from political or religious persecution.
re-ful-gent (*rē-ful'jent*), *adj.* casting a bright light; brilliant; splendid.
re-fund (*-fund'*), *v. t.* to pay back again.
re-fus-al (*-fūz'al*), *n.* the act of refusing; rejecting; right to take the preference; option.
re-fuse (*-fūz'*), *v. t.* to deny or reject, as a demand or request: *v. i.* to decline to accept; not to comply: *n.* (*ref'ūs*), waste or worthless matter.
Syn. REFUSE, decline, reject, repel, rebuff. We *refuse* what is asked of us, for want of inclination to comply; we *decline* what is proposed from motives of discretion; we *reject* what is offered to us, because it does not fall in with our views; *to repel* is *to reject* with violence; *to rebuff* is *to refuse* with contempt. [See *deny*.]
ref-u-ta-tion (*ref-ū-tā'shun*), *n.* the act of refuting; that which is refuted.
re-fute (*rē-fūt'*), *v. t.* to prove to be false or erroneous; repel; disprove. [CONFUTE.]
re-gain (*-gān'*), *v. t.* to recover possession of; get back; reach again.
re-gal (*rē'gal*), *adj.* pertaining to, or characteristic of, a king; kingly; royal. [ROYAL.]
re-gale (*-gāl'*), *v. t.* to entertain with something to delight the senses; feast sumptuously: *v. i.* to feast.
★**re-ga-li-a** (*-gā'li-ȧ*), *n. pl.* the ensigns of sovereignty; decorations of an order or office.
re-gard (*rē-gärd'*), *v. t.* to observe particularly; heed; esteem. *pl.* good wishes. [CONSIDER, LOVE.]
re-gard-ful (*'fool*), *adj.* taking notice.
re-gard-less (*'les*), *adj.* heedless. [INDIFFERENT.]
re-gat-ta (*-gat'ȧ*), *n.* a sailing or rowing match for prizes.
re-gen-cy (*rē'jen-si*), *n.* the office or jurisdiction of a regent; a body intrusted with the duties of a regent.
re-gen-er-ate (*-jen'ẽr-āt*), *v. t.* to renew the heart of and cause to turn to the love of God; produce anew: *adj.* renewed; reformed.
re-gen-er-a-tion (*-ā'shun*), *n.* formation of new tissue to supply that which has been lost.
re-gent (*rē'jent*), *adj.* exercising vicarious authority: *n.* one who governs in the interim during the minority, absence, or disability of the sovereign.
Regent's (*rē'jents*) **park.** One of the largest parks of London, situated in the northwestern part of the city. It is 472 acres in extent, and contains the zoölogical gardens.
Regent street. One of the principal streets of the West End of London, extending from Portland place to Waterloo place.
reg-i-ci-dal (*rej'i-sī-dal*), *adj.* pertaining to a regicide or to regicide.
reg-i-cide (*'i-sīd*), *n.* the murder, or murderer, of a king.
★**ré-gime** (*rā-zhēm'*), *n.* mode, system or rule of government, social or political.
reg-i-men (*rej'i-men*), *n.* systematic regulation of diet or habit; rule.
reg-i-ment (*rej'i-ment*), *n.* a number of companies of soldiers united into one body under the command of a colonel.
Regina (*rē-jī'nȧ*). A feminine name, probably signifying "queen," from the Latin. Arthur translates it "queenlike."
Reginald (*rej'i-nald*). From the Old German name *Reginald*, "noble hero."
re-gion (*rē'jun*), *n.* a tract of land; country.
reg-is-ter (*rej'is-tẽr*), *v. t.* to record in any way: *v. i.* to enter one's name in a register: *n.* an official written record; that which registers, records, or regulates.
reg-is-trar (*-trär*), *n.* an official who keeps a register or record.
reg-is-tra-tion (*-trā'shun*), *n.* the act of inserting in a register.
reg-is-try (*'is-tri*), *n.* the place where a register is kept.
reg-nant (*'nant*), *adj.* reigning; exercising royal authority; prevalent.
re-gret (*rē-gret'*), *n.* mental sorrow or concern for anything, as for past conduct; remorse: *v. t.* to remember with sorrow. [COMPLAIN, GRIEF.]
reg-u-lar (*reg'ū-lẽr*), *adj.* according to rule, order, or established usage; consistent: *n.* a soldier belonging to a standing army.
reg-u-lar-i-ty (*-lar'i-ti*), *n.* conformity to rule; uniformity; method or certain order.
reg-u-late (*'ū-lāt*), *v. t.* to make regular; put in good order; adjust by rule. [GOVERN.]
reg-u-la-tion (*-lā'shun*), *n.* the act of regulating; order; method; rule.
re-gur-gi-tate (*rē-gûr'ji-tāt*), *v. i.* to be thrown or poured back.
re-hears-al (*-hẽrs'al*), *n.* a recital in private prior to a public performance.
re-hearse (*-hẽrs'*), *v. t.* to repeat, as what has already been said or written; tell or narrate. [REPEAT.]
reign (*rān*), *v. i.* to exercise sovereign authority; rule; be predominant: *n.* supreme power or influence. [EMPIRE.]
re-im-burse (*rē-im-bûrs'*), *v. t.* to refund.
rein (*rān*), *n.* the strap of a bridle; an instrument for curbing, restraining, or governing; power.
rein-deer (*'dēr*), *n.* a large arctic deer.
re-in-force (*rē-in-fōrs'*), *v. t.* to supply with new strength, support, or assistance. [Also *reënforce.*]
re-in-forced con-crete (*-fōrst kon'krēt*), concrete strengthened by rods of iron for building purposes.
Reinhold. See *Reynold.*
re-in-state (*-in-stāt'*), *v. t.* to restore to a former state.
re-it-er-a-tion (*-it-ẽr-ā'shun*), *n.* repetition.
re-ject (*rē-jekt'*), *v. t.* to throw away as useless or vile; refuse; renounce; discard. [REFUSE.]
re-jec-tion (*-jek'shun*), *n.* the act of rejecting.
re-joice (*-jois'*), *v. i.* to feel or express joy or gladness; exult: *v. t.* to make joyful.
re-join (*-join'*), *v. t.* to unite again after separation: *v. i.* to answer a reply.
re-join-der (*'dẽr*), *n.* an answer to a reply; in law the defendant's answer to the plaintiff's replication. [ANSWER.]
re-lapse (*-laps'*), *v. i.* to fall back from a state of convalescence; return to a former bad state or habit: *n.* a falling into a former bad state.
re-late (*-lāt'*), *v. t.* to tell; describe; recite; narrate: *v. i.* to refer.
re-la-tion (*-lā'shun*), *n.* mutual connection between two or more things; proportion or ratio; kinsman or kinswoman. [CONNECTION.]
re-la-tion-ship (*-ship*), *n.* the state of being related by kindred, affinity, or other alliance.
rel-a-tive (*rel'ȧ-tiv*), *adj.* having, or expressing, relation; pertinent: *n.* that which has relation to something else; a person connected by kinship.
re-lax (*rē-laks'*), *v. t.* to slacken; make less close; render less tense: *v. i.* become less severe or close.
Syn. RELAX, remit. In regard to our attempts to act, we may speak of *relaxing* our endeavors, and *remitting* our labors or exertions; in regard to our dealings with others, we may speak of *relaxing* in discipline, *relaxing* in the severity or strictness of our conduct, of *remitting* a punishment or a sentence.
re-lax-a-tion (*-ā'shun*), *n.* diminution of tension; diversion or recreation.
re-lay (*-lā'*), *v. t.* [*p. t.* and *p. p.* relaid, *p. pr.* relaying], to lay a second time: *n.* new supply; a subsidiary electric circuit.
re-lease (*-lēs'*), *v. t.* to set free; discharge; free from obligation or penalty: *n.* liberation from restraint, penalty, pain, etc. [ABSOLVE.]
rel-e-gate (*rel'ē-gāt*), *v. t.* to banish; consign. [COMMIT.]
re-lent (*rē-lent'*), *v. i.* to grow less hard or severe; become more tender; yield.
rel-e-van-cy (*rel'ē-van-si*), *n.* applicability; pertinence. [Also *relevance.*]
rel-e-vant (*'ē-vant*), *adj.* applicable; related; pertinent.
re-li-a-ble (*rē-lī'ȧ-bl*), *adj.* trustworthy.
re-li-ance (*'ans*), *n.* confidence; trust.
re-li-ant (*'ant*), *adj.* having reliance.
rel-ic (*rel'ik*), *n.* that which is left after the loss or decay of the rest; memorial or souvenir.
rel-ict (*'ikt*), *n.* a widow.
re-lief (*rē-lēf'*), *n.* aid; redress; the projection of a sculptured design from the plane surface.
re-liev-a-ble (*-lēv'ȧ-bl*), *adj.* capable of being relieved.
re-lieve (*-lēv'*), *v. t.* to free from pain, suffering, grief, etc.; mitigate; alleviate; help; release from a post of duty. [HELP.]
re-li-gion (*rē-lij'un*), *n.* any system of faith or worship; love and obedience toward God; piety.
re-li-gious (*'us*), *adj.* godly; pious; devotional; conscientiously exact or strict.
re-lin-quish (*-ling'kwish*), *v. t.* to forsake or abandon; quit; renounce. [ABANDON, LEAVE.]
rel-i-qua-ry (*rel'i-kwā-ri*), *n.* [*pl.* reliquaries (*-riz*)], a depository for relics; a casket or small chest for holding relics.
rel-ish (*rel'ish*), *v. t.* to like the taste of; use with pleasure; enjoy: *v. i.* to have a pleasing taste: *n.* savor; zest; pleasure.
re-luc-tant (*rē-luk'tant*), *adj.* unwilling; disinclined.
re-ly (*-lī'*), *v. i.* [*p. t.* and *p. p.* relied, *p. pr.* relying], to lean upon a person with confidence; trust or have confidence in a person or thing.
re-main (*-mān'*), *v. i.* to continue; stay; last; endure: *n. pl.* a dead body. [CONTINUE, BODY.]
re-mand (*-mȧnd'*), *v. t.* to recommit or send back; remit in custody to a future time.
re-mark (*-märk*)', *v. t.* to note or observe; express; say: *n.* observation; comment. [NOTICE.]
re-mark-a-ble (*'ȧ-bl*), *adj.* worthy of notice or remark; extraordinary; strange; famous; uncommon. [EXTRAORDINARY.]
re-me-di-al (*-mē'di-al*), *adj.* affording, or intended for, a remedy.
rem-e-dy (*rem'ē-di*), *n.* [*pl.* remedies (*diz*)], a restorative; an efficacious medicine: *v. t.* to repair or remove something evil from. [CURE.]
re-mem-ber (*rē-mem'bẽr*), *v. t.* to recall to mind; attend to.
re-mem-brance (*'brans*), *n.* power of remembering; memory; recollection. [MEMORY.]
re-mind (*-mīnd'*), *v. t.* to bring to the remembrance of; put in mind.
rem-i-nis-cence (*rem-i-nis'ens*), *n.* recovery of ideas; memory; that which is remembered. [MEMORY.]
re-miss (*rē-mis'*), *adj.* careless in the performance of duty or business; heedless; dilatory.
re-mis-sion (*-mish'un*), *n.* the act of remitting; pardon; abatement.
re-mit (*-mit'*), *v. t.* to pardon; send back: *v. i.* to abate in violence or force. [RELAX, FORGIVE.]
re-mit-tal (*'al*), *n.* surrender; transmission.
re-mit-tance (*'ans*), *n.* that which is remitted; the sending of money, bills, etc., in payment; the sum so transmitted.
re-mit-tent (*'ent*), *adj.* increasing and abating alternately.
rem-nant (*rem'nant*), *n.* that which is left after a part has been removed; remainder.
re-mon-e-tize (*rē-mun'ē-tīz*), *v. t.* to restore to circulation in the shape of money.
re-mon-strance (*-mon'strans*), *n.* strong representation against something complained of; expostulation.
re-mon-strate (*'strāt*), *v. i.* to urge against some act or course complained of; expostulate. [EXPOSTULATE.]
re-morse (*re-môrs'*), *n.* anguish of mind caused by the sense of guilt; sympathetic sorrow; compunction.
re-mote (*-mōt'*), *adj.* distant in time or space; far; primary; alien; foreign; inconsiderable. [DISTANT.]
re-mov-a-ble (*-mōōv'ȧ-bl*), *adj.* capable of being removed.
re-mov-al (*'al*), *n.* the act of removing or displacing; change of place; dismissal.
re-move (*mōōv'*), *v. t.* to put from its place; withdraw; cut off, or kill: *v. i.* to change place.
re-mu-ner-ate (*-mū'nẽr-āt*), *v. t.* to reward as an equivalent for service; recompense.
re-mu-ner-a-tion (*-ā'shun*), *n.* payment for service; recompense; reward. [COMPENSATION.]
re-mu-ner-a-tive (*'nẽr-ā-tiv*), *adj.* yielding an equivalent return for outlay; lucrative; profitable.
★**Re-nais-sance** (*rē-nās-ans'*), *n.* revival of letters and arts in the 15th century.
re-nal (*rē'nal*), *adj.* pertaining to the kidneys.
re-nas-cent (*rē-nas'ent*), *adj.* coming again into being.
rend (*rend*), *v. t.* [*p. t.* and *p. p.* rent, *p. pr.* rending], to tear apart with violence; split; lacerate.
ren-der (*ren'dẽr*), *v. t.* to return; pay back; make up; deliver.
★**ren-dez-vous** (*ren'de-vōō* or *rän'dā-vōō*), *n.* appointed place of meeting, especially for warships or troops: *v. i.* to assemble.
ren-di-tion (*ren-dish'un*), *n.* surrender; translation. [DEFINITION.]
Rene (*rē-nā'*). From the French. Like the Italian name *Renato*, derived from the Latin, *renatus*, "renewed," "born, risen or begun again." Fr., *Réné;* It., *Renato;* Lat., *Renatus.*
Renee. Feminine of *Réné.* Sometimes Anglicized in pronunciation as *ren'ne.* Fr., *Rénée;* It., *Renata;* Lat., *Renata.*
ren-e-gade (*ren'ē-gād*), *n.* one who renounces his faith; apostate; traitor; deserter.
re-new (*rē-nū'*), *v. t.* to make new again; restore; renovate; reinvigorate: *v. i.* to be made new; begin afresh; grow again.
re-nounce (*rē-nouns'*), *v. t.* to disown; reject publicly and finally; repudiate; reject. [ABANDON.]
ren-o-vate (*ren'ō-vāt*), *v. t.* to make new again; restore to a previous condition.
re-nown (*rē-noun'*), *n.* celebrity; fame; distinction: *v. t.* to make famous. [FAME.]
re-nowned (*-nound'*), *p. adj.* celebrated; famous; illustrious; distinguished. [FAMOUS.]
rent (*rent*), *n.* a tear; fissure; schism; periodical payment for the use of property. [*p. t.* and *p. p.* of rend.]
rent-al (*'al*), *n.* amount of rent; schedule of rents of an estate; rent roll.
rent roll (*rent' rōl*), a schedule of income derived from rents.
re-nun-ci-a-tion (*rē-nun-si-ā'shun*), *n.* disavowal; rejection.
re-pair (*rē-pâr'*), *v. i.* betake one's self: *v. t.* to restore; mend; renovate; make amends. [RECOVER.]
★**rep-a-ra-ble** (*rep'ȧ-rȧ-bl*, not *rē-pâr'ȧ-bl*), *adj.* capable of being repaired.
rep-a-ra-tion (*-ȧ-rā'shun*), *n.* restoration to a good condition; amends or compensation.
rep-ar-tee (*rep-ȧr-tē'*), *n.* a ready, witty reply.
re-past (*rē-pȧst'*), *n.* a meal; victuals.
re-pay (*-pā*), *v. t.* to pay back. [RESTORE.]
re-peal (*-pēl'*), *v. t.* to revoke or abrogate; annul: *n.* revocation. [ABOLISH.]
re-peat (*-pēt'*), *v. t.* to do or speak a second time; reiterate; recite: *n.* repetition.
Syn. REPEAT, recite, rehearse, recapitulate. *To recite* is *to repeat* in a formal manner; *to rehearse* is *to repeat* or *recite* by way of preparation; *to recapitulate* is *to repeat* the chapters or principal heads of any discourse.
re-peat-er (*'ẽr*), *n.* one who, or that which, repeats; revolver.
re-pel (*-pel'*), *v. t.* to drive back; resist: *v. i.* to act in opposition to force impressed. [REFUSE.]
re-pel-lent (*'ent*), *adj.* driving back; tending or able to repel; repulsive.
re-pent (*-pent'*), *v. i.* to feel pain or sorrow on account of something done or left undone.
re-pent-ance (*-pent'ans*), *n.* contrition.
re-pent-ant (*'ant*), *adj.* penitent.

★**rep-er-toire** (*rep-ēr-twär'*), French **ré-per-toire** (*rā-pâr-twär'*), *n.* a repository; stock of dramas, songs, etc., ready for use.
rep-er-to-ry (*-tō-ri*), *n.* a storehouse; treasury.
rep-e-ti-tion (*-ē-tish'un*), *n.* the act of repeating; recital from memory. [complain.
re-pine (*rē-pīn'*), *v. i.* to fret one's self; murmur;
re-plen-ish (*-plen'ish*), *v. t.* to fill up again; fill or stock in abundance.
re-plete (*-plēt'*), *adj.* completely filled; full.
re-plev-y (*-plev'i*), *v. t.* to recover by writ goods wrongfully seized.
★**rep-li-ca** (*rep'li-kȧ*), *n.* a copy of an original picture or statue executed by the same artist or sculptor.
rep-li-ca-tion (*-kā'shun*), *n.* a reply; echo; repetition; the plaintiff's answer to the plea of the defendant.
re-ply (*rē-plī'*), *v. i.* to answer; respond: *n.* an answer; response. [ANSWER.]
re-port (*-pōrt'*), *v. t.* to give an account of; relate: *v. i.* to make a statement: *n.* rumor; hearsay; noise. [FAME, ANNOUNCE.]
re-por-to-ri-al (*-pōr-tō'ri-al*), *adj.* pertaining to, or constituted by, reporters.
re-pose (*-pōz'*), *v. t.* refresh by rest; compose: *v. i.* to sleep; recline: *n.* sleep; quiet. [RECLINE, EASE.]
re-pos-i-to-ry (*-poz'i-tō-ri*), *n.* [*pl.* repositories (*riz*)], a warehouse for the storing and safe keeping of goods.
rep-re-hend (*rep-rē-hend'*), *v. t.* to censure.
rep-re-hen-si-ble (*-hen'si-bl*), *adj.* deserving censure; culpable.
rep-re-hen-sive (*'siv*), *adj.* given to, or containing, reproof. [Also *reprehensory.*]
rep-re-sent (*rep-rē-zent'*), *v. t.* show; describe; give an account of; personate or act the part of.
rep-re-sen-ta-tion (*-zen-tā'shun*), *n.* portrayal; description; likeness; body of representatives. [SHOW.]
rep-re-sen-ta-tive (*'tȧ-tiv*), *adj.* typical: *n.* member of the popular branch of Congress or of a state legislature.
re-press (*rē-pres'*), *v. t.* to check or restrain; crush.
Syn. REPRESS, restrain, suppress. *To repress* is to *press* back or down; *to restrain* is to *strain* back or down; the former is the general, the latter the specific term. We always *repress* when we *restrain*, but not vice versa. *Repress* is used mostly for *pressing* down, so as to keep that inward which wants to make its appearance; *restraint* is an habitual *repression* by which a thing is kept in a state of lowness; to *suppress*, which is to keep under, or keep from appearing or being perceptible, is also said in respect of ourselves or others; as to *repress* one's feelings; to *suppress* laughter, sighs, etc.
re-pres-sion (*-presh'un*), *n.* the act of repressing.
re-prieve (*-prēv'*), *v. t.* to grant a respite to; delay the execution of: *n.* temporary suspension of a criminal sentence.
rep-ri-mand (*rep'ri-mȧnd*), *v. t.* to reprove severely; reprove publicly and officially: *n.* severe reproof.
re-pris-al (*rē-prīz'al*), *n.* something done or seized by way of retaliation for an injury or wrong suffered.
re-proach (*-prōch'*), *v. t.* to censure severely; upbraid: *n.* severe blame mingled with contempt.
Syn. REPROACH, contumely, obloquy. The idea of contemptuous or angry treatment of others is common to all these terms; but *reproach* is the general, *contumely* and *obloquy* are the particular terms. *Reproach* is either deserved or undeserved; the name of Puritan is applied as a term of *reproach* to such as affect greater purity than others; *contumely* is always undeserved; *obloquy* is always supposed to be deserved or otherwise; it is applicable to those whose conduct calls for general censure, and whose name, therefore, has almost become a *reproach*. [See *abuse, blame, discredit.*]
rep-ro-bate (*rep'rō-bāt*), *v. t.* to condemn strongly; disown: *adj.* wholly given up to sin: *n.* a profligate person. [CONDEMN, PROFLIGATE, ABANDONED.]
rep-ro-ba-tion (*-bā'shun*), *n.* abandonment to eternal destruction; condemnation.
re-proof (*rē-proōf'*), *n.* censure; rebuke.
re-prove (*-proōv'*), *v. t.* to censure or blame; reprimand; rebuke. [BLAME, CONDEMN.]
rep-tile (*rep'til*), *n.* an animal, of the class Reptilia, that creeps or crawls on the ground.
re-pub-lic (*rē-pub'lik*), *n.* a state or country in which the supreme power is vested in representatives elected by popular vote.
re-pub-lic-an (*'lik-an*), *adj.* pertaining to, characteristic of, or consisting of, a republic.
Re-pub-lic-an (*'lik-an*), *n.* a member of the Republican political party.
re-pub-lic-an-ism (*-izm*), *n.* the principles of a republican government.
re-pub-li-ca-tion (*-li-kā'shun*), *n.* the act of republishing; reimpression of a printed book.
re-pub-lish (*'lish*), *v. t.* to publish anew; print a new edition of.
re-pu-di-ate (*-pū'di-āt*), *v. t.* to disown or disclaim; refuse to pay or acknowledge; disavow.
re-pug-nance (*-pug'nans*), *n.* aversion; reluctance; dislike. [Also *repugnancy.*] [ANTIPATHY.]
re-pug-nant (*'nant*), *adj.* highly distasteful or offensive; contrary; hostile.
re-pulse (*puls'*), *v. t.* to drive back; beat off; repel: *n.* refusal; denial.
re-pul-sion (*rē-pul'shun*), *n.* the act of driving back; state of being repelled. [ANTIPATHY.]
re-pul-sive (*'siv*), *adj.* tending to repel; forbidding; disgusting.
★**rep-u-ta-ble** (*rep'ū-tȧ-bl*), *adj.* esteemed; honorable; respectable.
rep-u-ta-tion (*-tā'shun*), *n.* good name or character; honor; credit. [FAME, CHARACTER.]
re-pute (*rē-pūt'*), *v. t.* to estimate; deem: *n.* estimation; character.
re-quest (*-kwest'*), *n.* desire expressed; petition; prayer; demand; entreaty: *v. t.* to ask for.
★**re-qui-em** (*rē'kwi-em*), *n.* a mass or musical setting of a mass, for the repose of the soul of a person deceased.
re-quire (*rē-kwīr'*), *v. t.* to ask for or claim as by right or authority; demand; exact; need. [DEMAND.]
req-ui-site (*rek'wi-zit*), *adj.* needful; indispensable: *n.* anything requisite.
req-ui-si-tion (*-wi-zish'un*), *n.* demand, especially a written one: *v. t.* to demand.
re-quit-al (*rē-kwīt'al*), *n.* retaliation. [COMPENSATION.]
re-quite (*-kwīt'*), *v. t.* ro make return for treatment, good or evil; recompense; retaliate; revenge.
re-s.ind (*rē-sind'*), *v. t.* to annul; revoke.
res-cue (*res'kū*), *v. t.* to set free from danger, restraint, or violence; liberate; deliver: *n.* deliverance from danger. [DELIVER.]
★**re-search** (*rē-sērch'*, not *rē'sērch*), *n.* laborious, careful inquiry or investigation: *v. t.* to investigate carefully and diligently.
re-sem-blance (*-zem'blans*), *n.* likeness. [LIKENESS.]
re-sem-ble (*-zem'bl*), *v. t.* to have a likeness to; have similarity to.
re-sent (*-zent'*), *v. t.* to consider as an injury or affront; take ill; be angry in consequence of.
re-sent-ment (*'ment*), *n.* strong anger or displeasure; deep sense of injury. [ANGER.]
res-er-va-tion (*rez-ēr-vā'shun*), *n.* anything kept back or reserved; public land reserved for some particular use.
re-serve (*rē-zērv'*), *v. t.* to keep in store; hold back for future use: *n.* that which is retained for future use; taciturnity; modesty: *pl.* troops kept for the support of an army.
★**res-er-voir** (*rez'ēr-vwôr*), *n.* a place where anything (usually fluids and liquids) is collected and stored up for use.
re-side (*rē-zīd'*), *v. i.* to dwell or inhabit; live. [ABIDE.]
res-i-dence (*rez'i-dens*), *n.* place of abode; domicile; act of residing. [HABITATION.]
re-sid-u-a-ry (*rē-zid'ū-ā-ri*), *adj.* pertaining to, or constituting, the residue.
res-i-due (*rez'i-dū*), *n.* remainder.
re-sid-u-um (*rē-zid'ū-um*), *n.* that which is left after a chemical process.
re-sign (*-zīn'*), *v. t.* to yield to another; surrender formally. [ABANDON.]
res-ig-na-tion (*rez-ig-nā'shun*), *n.* the act of resigning; calm submission or acquiescence.
re-sil-i-ent (*rē-zil'i-ent*), *adj.* springing back.
res-in (*rez'in*), *n.* a solid inflammable substance obtained from various trees which exude it in the form of gum.
re-sist (*rē-zist'*), *v. t.* to oppose; withstand; thwart; strive against: *v. i.* to make opposition.
re-sist-ance (*-zist'ans*), *n.* opposition; power of a body that acts in opposition to another.
re-sist-ant (*'ant*), *adj.* offering resistance: *n.* one who, or that which, resists.
re-sist-i-ble (*'i-bl*), *adj.* capable of resisting.
re-sist-less (*'les*), *n.* irresistible.
res-o-lu-ble (*rez'ō-lū-bl*), *adj.* capable of being melted or resolved.
res-o-lute (*'ō-lūt*), *adj.* determined; decided; firm; steady. [DECIDED, OBSTINATE.]
res-o-lute-ness (*-nes*), *n.* the state or quality of being resolute.
res-o-lu-tion (*-lū'shun*), *n.* analysis; fixed determination; constancy of purpose. [COURAGE.]
re-solv-a-ble (*rē-zolv'ȧ-bl*), *adj.* capable of being resolved.
re-solve (*-zolv'*), *v. t.* to reduce to constituent parts; analyze; free from doubt or difficulty: *v. i.* to determine; pass a formal resolution. [DETERMINE.]
re-solv-ent (*-zolv'ent*), *adj.* having the power of resolving; causing solution.
res-o-nant (*rez'ō-nant*), *adj.* returning sound.
re-sort (*rē-zôrt'*), *v. i.* to betake one's self; go often: *n.* a place much frequented. [FREQUENT.]
re-sound (*-zound'*), *v. i.* and *v. t.* to reverberate; be reëchoed; spread the fame or renown of.
re-source (*-sōrs'*), *n.* source of help or supply; an expedient to which one resorts. [EXPEDIENT, ALTERNATIVE.]
re-spect (*rē-spekt'*), *n.* regard; expression of esteem; deference; manner of treating others: *v. t.* to honor or esteem. [HONOR, ADMIRE.]
re-spect-a-ble (*'ȧ-bl*), *adj.* capable, or worthy, of respect; held in good repute.
re-spect-ful (*'fool*), *adj.* characterized by respect.
re-spect-ing (*'ing*), *prep.* concerning.
re-spect-ive (*'iv*), *adj.* relating to a particular person or thing; not absolute: relative.
res-pi-ra-tion (*res-pi-rā'shun*), *n.* the act or process of breathing; relief from toil.
re-spir-a-to-ry (*rē-spīr'ȧ-tō-ri*), *adj.* pertaining to or serving for, respiration.
re-spire (*-spīr'*), *v. i.* to draw air into the lungs and expel it again: *v. t.* breathe; inhale.
res-pite (*res'pit*), *n.* pause or temporary cessation of anything: *v. t.* suspend the execution of. [INTERVAL.]
re-splen-dent (*rē-splen'dent*), *adj.* shining with brilliant luster; intensely bright.
re-spond (*-spond'*), *v. i.* to answer or reply.
re-spond-ent (*'ent*), *adj.* giving response: *n.* one who answers or replies.
re-sponse (*rē-spons'*), *n.* the act of answering; reply. [ANSWER.]
re-spon-si-ble (*-spon'si-bl*), *adj.* involving responsibility; answerable; liable.
re-spon-sive (*'siv*), *adj.* answering; correspondent.
re-spon-so-ry (*'sō-ri*), *adj.* containing answer.
rest (*rest*), *n.* cessation from motion or disturbance; quiet; peace; repose; sleep; death: *v. i.* repose; be quiet; sleep. [EASE, CESSATION.]
★**res-tau-rant** (*res'tō-rȧnt* or *-tō-räɴ*), *n.* a house for refreshment; an eating house.
rest-ful (*'fool*), *adj.* full of rest; quiet.
res-ti-tu-tion (*res-ti-tū'shun*), *n.* the act of making good any loss, injury, or damag ; compensation.
rest-ive (*rest'iv*), *adj.* unwilling to go forward; stubborn; obstinate; uneasy.
re-stor-a-ble (*rē-stōr'ȧ-bl*), *adj.* capable of being restored.
res-to-ra-tion (*res-tō-rā'shun*), *n.* the act of restoring; renewal; repair. [RECOVERY.]
re-stor-a-tive (*rē-stōr'ȧ-tiv*), *adj.* capable of restoring: *n.* a reinvigorating medicine.
re-store (*-stōr'*), *v. t.* to bring back to its former strength; repair; rebuild; heal or cure.
Syn. RESTORE, return, repay. We *restore* upon a principle of equity; we *return* upon a principle of justice and honor; we *repay* upon a principle of undeniable right. We cannot always claim that which ought to be *restored;* but we can not only claim but enforce the claim in regard to what is to be *returned* or *repaid.*
Ant. KEEP, retain.
re-strain (*-strān'*), *v. t.* to check; repress. [REPRESS.]
re-straint (*-strānt'*), *n.* the act of restraining; state of being restrained; limitation.
re-strict (*-strikt'*), *v. t.* to confine or limit. [BOUND.]
re-strict-ive (*'iv*), *adj.* imposing restraint.
re-sult (*-zult'*), *v. i.* to follow as a consequence; to come to a decision; ensue; decree: *n.* conclusion. [CONSEQUENCE.]
re-sume (*rē-zūm'*), *v. t.* to take up again after interruption; begin again; take back.
re-sump-tion (*rē-zump'shun*), *n.* the act of resuming.
res-ur-rec-tion (*rez-ûr-ek'shun*), *n.* a rising again from the dead; moral revival.
★**re-sus-ci-tate** (*rē-sus'i-tāt*), *v. t.* to revive from apparent death; revivify.
re-tail (*rē-tāl'*), *v. t.* to sell in small quantities; sell second-hand.
re-tain (*-tān'*), *v. t.* to hold or keep in possession; detain. [HOLD.]
re-tain-er (*'ēr*), *n.* one who, or that which, retains; a dependent; attendant; preliminary retaining fee paid to counsel. [ACCESSORY.]
re-tal-i-ate (*-tal'i-āt*), *v. t.* to return by giving like for like (usually in an ill sense). [AVENGE.]
re-tal-i-a-tive (*'i-ā-tiv*), *adj.* returning like for like; vindictive. [Also *retaliatory.*]
re-tard (*-tärd'*), *v. t.* to hinder or obstruct; delay; keep back.
Syn. RETARD, hinder. We *retard* or make slow the progress of any scheme toward completion; we *hinder* or keep back the person who is completing the scheme; we *retard* a thing, therefore, often by *hindering* the person; but we frequently *hinder* without *retarding.* [See *obstruct.*]
Ant. QUICKEN, expedite, aid, further.
retch (*rech*), *v. i.* to try to vomit; strain in vomiting.
re-ten-tion (*rē-ten'shun*), *n.* the act of holding back; power of retaining, especially ideas.
re-ten-tive (*'tiv*), *adj.* having the power to retain.
ret-i-cent (*ret'i-sent*), *adj.* silent; reserved.
re-tic-u-lar (*rē-tik'ū-lēr*), *adj.* formed with interstices.
ret-i-cule (*ret'i-kūl*), *n.* a lady's handbag or workbag; a telescopic eyepiece.
ret-i-na (*ret'i-nȧ*), *n.* one of the coats of the eye, containing the ends of the sensory nerves which receive the impressions which give rise to vision.
ret-i-nue (*'i-nū*), *n.* the suite or attendants of a prince or person of distinction; train.
re-tire (*rē-tīr'*), *v. i.* to go to a place of privacy; withdraw; retreat; recede; withdraw from business, official, or active life; to go to bed.
re-tire-ment (*-tīr'ment*), *n.* the act of retiring; state of being retired; privacy; solitude. [PRIVACY.]
re-tort (*-tôrt'*), *v. t.* to return, as an argument, incivility: *v. i.* to make a retort: *n.* censure.
re-touch (*-tuch'*), *v. t.* to touch again; improve by going over, as a work of art, to restore faded parts, etc.
re-tract (*-trakt'*), *v. t.* to draw, or take back; recall; rescind; recant: *v. i.* to withdraw something previously said or written.
re-treat (*-trēt'*), *n.* the act of withdrawing or retiring; retirement or seclusion; place of privacy: *v. i.* to withdraw to seclusion or place of safety.

re-trench (*rē-trench'*), *v. t.* to furnish with a retrenchment: *v. i.* to cut down expenses.
re-trench-ment (*'ment*), *n.* curtailment; military work constructed inside another.
ret-ri-bu-tion (*ret-ri-bū'shun*), *n.* reward or punishment suitable to the action.
re-trib-u-tive (*rē-trib'ū-tiv*), *adj.* rewarding for good deeds and punishing for offenses. [Also *retributory.*]
re-trieve (*-trēv'*), *v. t.* to recover; restore; regain: *v. i.* to act as a retriever. [RECOVER.]
re-triev-er (*'ẽr*), *n.* a variety of dog trained to fetch game.
retro, a *prefix* meaning *back, backward,* as *retrospect,* a review of the past.
re-tro-cede (*rē'trō-sēd'*), *v. t.* to cede or grant back.
re-tro-grade (*rē'trō-grād*), *adj.* going or moving backward; going from a better to a worse moral condition.
re-tro-gres-sion (*rē-trō-gresh'un*), *n.* the act of going backward.
re-tro-spect (*rē'trō-spekt*), *n.* act of looking backward.
re-tro-spec-tion (*rē-trō-spek'shun*), *n.* the act or faculty of looking back on the past.
re-tro-spec-tive (*'tiv*), *adj.* looking back on things past; referring to past things.
re-tro-ver-sion (*-vẽr'shun*), *n.* a turning or falling backward.
Retta. A feminine name derived from *Margaretta.*
re-turn (*rē-tûrn'*), *v. i.* to come back again to the same place: *v. t.* to repay; restore: *n.* the act of going back or returning; repayment. [RESTORE.]
Reuben (*rū'ben*). From the Hebrew, *R'ubhen,* which St. Jerome translates "son of vision"; Tregelles, "see"; *i. e.,* "behold a son."
re-un-ion (*rē-ūn'yun*), *n.* a festive gathering of familiar friends or associates; act of reuniting.
re-u-nite (*-ū-nīt'*), *v. t.* to unite again; reconcile after variance: *v. i.* to become united again.
re-veal (*rē-vēl'*), *v. t.* to make known; disclose: *n.* the vertical side of a doorway, window, etc. [PUBLISH, ANNOUNCE.]
★**re-veil-le** (*rē-vāl'yā* or *rev-ȧ-lē'*), *n.* the beat of a drum, or bugle call, at daybreak to awaken soldiers.
rev-el (*rev'el*), *n.* a noisy or riotous feast: *v. i.* to feast with joyous or clamorous merriment.
rev-e-la-tion (*-ē-lā'shun*), *n.* the act of revealing or making known, especially divine truth.
rev-el-ry (*'el-ri*), *n.* boisterous festivity.
re-venge (*rē-venj'*), *v. t.* to inflict pain or punishment because of; avenge: *n.* retaliation; malice. [AVENGE.]
re-venge-ful (*'fool*), *adj.* vindictive.
rev-e-nue (*rev-ē'nū*), *n.* the general income of a state, derived from the annual taxes, excise, customs, etc.
re-ver-ber-ate (*rē-vẽr'bẽr-āt*), *v. t.* to send back, as sound; reëcho: *v. i.* to be driven back, or reflected, as sound or light.
re-ver-ber-a-to-ry (*'bẽr-ȧ-tō-ri*), *adj.* pertaining to, characterized by, or produced by, reverberation.
re-vere (*-vēr'*), *v. t.* to regard with fear mingled with respect and affection; reverence. [ADMIRE.]
rev-er-ence (*rev'ẽr-ens*), *n.* veneration; honor; respect; a title given to the clergy: *v. t.* to regard with reverence. [HONOR.]
★**rev-er-end** (*rev'ẽr-end,* not *rev'ẽr-ent*), *adj.* worthy of reverence.
rev-er-ent (*-ent*), *adj.* showing, or expressive of, reverence; humble; submissive.
rev-er-en-tial (*-en'shal*), *adj.* proceeding from reverence; respectful.
rev-er-ie (*'ẽr-i*), *n.* deep musing; wakeful dreaminess; irregular train of thoughts or fancies in meditation. [DREAM.]
re-verse (*rē-vẽrs'*), *adj.* turned backward; having an opposite direction: *v. t.* change entirely: *n.* the contrary or opposite.
re-vers-i-ble (*'i-bl*), *adj.* capable of being reversed.
re-ver-sion (*-vẽr'shun*), *n.* tendency of an animal or plant to revert to its original form.
re-vert (*-vẽrt'*), *v. t.* to turn back; change; reverse: *v. i.* to return or fall back.
re-vest (*-vest'*), *v. i.* to return to a former owner.
re-view (*-vū'*), *v. t.* to consider over again; reëxamine; look back; revise; examine critically: *n.* the act of reviewing.
re-vile (*-vīl'*), *v. t.* to address with opprobrious or contumelious language; reproach. [ABUSE.]
re-vise (*-vīz'*), *v. t.* to review and amend; examine for correction: *n.* a revision; second proof sheet.
re-vi-sion (*-vizh'un*), *n.* the act of examining for correction; that which is revised.
re-viv-al (*-vīv'al*), *n.* the act of reviving; recovery; renewal of life.
re-viv-al-ist (*-ist*), *n.* one who promotes revivals.
re-vive (*-vīv'*), *v. i.* to recover life; return to vigor or activity, especially from a state of languor, neglect, etc.: *v. t.* to restore to life again; renovate; reproduce.
re-viv-i-fy (*-viv'i-fī*), *v. t.* [*p. t.* and *p. p.* revivified, *p. pr.* revivifying], to reanimate; quicken.
★**rev-o-ca-ble** (*rev'ō-kȧ-bl,* not *rē-vō'kȧ-bl*), *adj.* that may be revoked.
rev-o-ca-tion (*-kā'shun*), *n.* the act of revoking; recall; repeal; reversal.
re-voke (*rē-vōk'*), *v. t.* to recall; repeal; annul: *v. i.* to fail to follow suit at cards. [ABOLISH.]
re-volt (*-volt'*), *n.* insurrection; change of sides; desertion: *v. i.* to turn away in disgust; to rebel. [INSURRECTION.]
rev-o-lu-tion (*rev-ō-lū'shun*), *n.* the act of revolving; rotation; change or alteration of system.
rev-o-lu-tion-ist (*'shun-ist*), *n.* one who organizes or takes part in a revolution.
rev-o-lu-tion-ize (*'shun-īz*), *v. t.* to cause revolution or entire change of government or any system.
re-volve (*rē-volv'*), *v. i.* to turn round, as on an axis; roll in a circle; rotate: *v. t.* to cause to turn or roll round.
re-volv-er (*-volv'ẽr*), *n.* a pistol with revolving barrels, fired successively without reloading.
re-vul-sion (*-vul'shun*), *n.* sudden and violent change, especially of feeling.
re-ward (*-wărd'*), *n.* something given for good or ill received; recompense: *v. t.* to give in return for good or ill received. [COMPENSATION.]
Reynold (*ren'old*). From the Teutonic, meaning "power of judgment." Danish, *Reinhold;* Dutch, *Reinold;* Fr., *Renaud;* Ger., *Reinhold;* Lat., *Reynaldus* or *Reginaldus;* Sp., *Reynaldo;* Sw., *Reinhold.*
rhap-so-dy (*rap'sō-di*), *n.* [*pl.* rhapsodies (*-diz*)], any unconnected or rambling composition, composed under the influence of excitement.
Rheims or **Reims** (*rēmz,* French *rans*). A famous French city; was named for the *Remi,* a tribe.
rhe-om-e-try (*rē-om'ē-tri*), *n.* the art of measuring the intensity and velocity of electric and other currents.
rhe-o-mo-tor (*'ō-mō-tẽr*), *n.* an apparatus by which an electrical current is generated.
rhe-o-phore (*'ō-fōr*), *n.* the connecting wire of an electric or galvanic apparatus.
rhe-o-stat (*'ō-stat*), *n.* an apparatus for regulating an electric current.
rhe-o-tome (*'ō-tōm*), *n.* an apparatus for interrupting an electric current at stated intervals.
rhet-o-ric (*ret'ō-rik*), *n.* the art of speaking with elegance and force; declamation.
rhe-tor-ic-al (*rē-tor'i-kal, adj.* pertaining to rhetoric; figurative; declamatory.
rhet-o-ri-cian (*ret-ō-rish'an*), *n.* a teacher of rhetoric, or one skilled in the art; orator.
rheum (*rōōm*), *n.* the increased action of the vessels of any organ.
★**rheu-mat-ic** (*roo-mat'ik*), *adj.* pertaining to, or affected by, rheumatism. [Also *rheumatical.*]
★**rheu-ma-tism** (*rōō'mȧ-tizm*), *n.* a painful disease of the muscles and joints accompanied by swelling and stiffness.
Rhine (*rīn*). Is the English spelling of the German name *Rhein,* which was the Latin *rhenus* and the Celtic *renos.* It means, "to flow."
rhi-noc-er-os (*rī-nos'ẽr-os*), *n.* a large pachydermatous animal allied to the elephant, with one or two horns on the snout.
Rhoda (*rō'dȧ*). A feminine name derived from the Latin *rhoda,* "a rose." Gr., *Rhode;* Lat., *Rhoda.*
Rhode (*rōd*) **Island.** One of the original thirteen states, said to have received its name from a small island in Narraganset bay named *Roode Eylandt,* "red island"; according to another authority, named for the island of Rhodes.
Rhodes (*rōdz*). Means an "island of roses," in conformity with the Greek *rhodon,* a "rose."
Rho-do-den-dron (*rō-dō-den'dron*), *n.* a genus of ornamental evergreen shrubs with large, handsome, roselike flowers.
rhom-boid (*rom'boid*), *n.* a 4-sided figure having its opposite sides equal and its angles not right angles.
rhom-bus (*'bus*), *n.* a 4-sided figure whose sides are equal and the opposite sides parallel, but which has two of its angles obtuse and two acute.
rhu-barb (*rōō'bărb*), *n.* a plant whose leaf stalks are used for culinary purposes.
rhyme (*rīm*), *n.* harmonical succession of sounds; poetry: *v. i.* to accord in sound: *v. t.* put into rhyme.
rhythm (*rith'm*) *n.* movement in equally measured time; verse.
rhyth-mic (*rith'mik*), *adj.* pertaining to rhythm; harmonical; periodical. [Also *rhythmical.*]
rib (*rib*), *n.* one of the curved bones attached to the vertebral column and supporting the lateral walls of the thorax: *v. t.* to furnish, or inclose, with ribs.
rib-ald (*'ald*), *adj.* low; obscure; filthy: *n.* a vulgar, foul-mouthed licentious fellow.
rib-ald-ry (*-ri*), *n.* obscenity.
rib-bon (*'un*), *n.* a fillet or strip of silk, etc.; narrow strip.
rice (*rīs*), *n.* a valuable food grain produced extensively in hot countries.
rice pa-per (*'pā-pẽr*), a kind of paper prepared from pith; used in China, etc., for painting upon.
rich (*rich*), *adj.* abounding in money or possessions; wealthy; opulent; sumptuous.
Richard. From the Teutonic *reich-hart,* "very powerful, strong, or rich." Dutch, *Richard;* Fr., *Richard;* Ger., *Richard* or *Reichard;* It., *Ricardo;* Lat., *Richardus;* Port., *Ricardo;* Sp., *Ricardo.*
rich-es (*rich'ez*) *n. pl.* valuable property; wealth.
Richmond, Va. From Richmond on the Thames, a suburb of London; the name suggested owing to analogy in situation.
rick (*rik*), *n.* a pile or heap, as of hay or corn, and usually thatched or sheltered.
rick-ets (*'ets*), *n.* a disease affecting children.
rick-et-y (*'et-i*), *adj.* affected with rickets; feeble in the joints; unsteady.
ric-o-chet (*rik-ō-shā'* or *-ō-shet'*), *n.* the rebounding of a shot or shell; *v. i.* to bound by touching the earth or the surface of water and glancing off, as a cannon ball: *v. t.* to cause to ricochet.
rid (*rid*), *v. t.* to set free; deliver; clear or destroy by violence: *adj.* clear; free.
rid-dance (*'ans*), *n.* the act of ridding or clearing away; deliverance.
rid-dle (*'l*), *n.* an enigma; puzzling question: *v. i.* to speak ambiguously or as in riddles.
ride (*rīd*), *v. i.* and *v. t.* [*p. t.* rode, *p. p.* ridden, *p. pr.* riding], to be borne along, as on horseback or in a vehicle: *n.* excursion on horseback or in a vehicle; drive.
rid-er (*rīd'ẽr*), *n.* one who rides on, breaks, or manages, a horse.
ridge (*rij*), *n.* anything formed like an animal's back, as a continuous range of hills: *v. t.* to form or furnish with a ridge.
★**rid-i-cule** (*rid'i-kūl*), *n.* banter; mockery; satire: *v. t.* to expose to contemptuous merriment.
ri-dic-u-lous (*ri-dik'ū-lus*), *adj.* deserving or exciting ridicule; preposterous; absurd; ludicrous. [ABSURD].
rife (*rīf*), *adj.* prevalent, common.
riff-raff (*rif'rȧf*), *n.* refuse; the rabble.
ri-fle (*rī'fl*), *n.* a musket with the barrel spirally grooved: *v. t.* to groove spirally; pillage.
ri-fle corps (*kōr*), a body armed with rifles.
rift (*rift*), *n.* an opening or split in anything; fissure: *v. t.* to cleave or split.
rig (*rig*), *n.* dress; manner of fitting the masts and rigging to the hull of a vessel: *v. t.* to furnish or fit with rigging; dress (with *out*).
rig-ging (*'ing*), *n.* the cordage or ropes by which the masts of a vessel are supported, and the sails extended or furled.
right (*rīt*), *adj.* according to truth, justice, or law; correct; fit; true; exact; most direct: *adv.* justly: *n.* uprightness; truth; justice; rectitude: *v. t.* to make right or straight; correct: *v. i.* to recover the vertical position.

Syn. RIGHT, claim, privilege. *Right,* in its full sense, is altogether an abstract thing which is independent of human laws and regulations; *claims* and *privileges* are altogether connected with the establishments of civil society. We have often a *claim* to a thing which is not in our power to substantiate; and, on the other hand, *claims* are set up in cases which are totally unfounded on any *right; privileges* are *rights* granted to individuals, depending either upon the will of the grantor, or the circumstances of the receiver, or both; *privileges* are, therefore, partial *rights* transferable at the discretion of persons individually or collectively.

Ant. WRONG, unjust, improper.

right an-gle (*'ang-gl*), an angle of 90°, formed by one straight line standing perpendicular to another.
right-eous (*rī'chus*), *adj.* just; equitable; honest; holy; deserved.
right-ful (*rīt'fool*). *adj.* having a just claim; accordant with justice.
rig-id (*rij'id*), *adj.* not pliant; stiff; inflexible; strict; stern; severely just.
ri-gid-i-ty (*ri-jid'i-ti*), *n.* want of pliability; stiffness; resistance to change of form.
rig-ma-role (*rig'mȧ-rōl*), *n.* foolish, disconnected talk; long story.
rig-or (*'ẽr*), *n.* stiffness or severity; exactitude; strictness; severity of climate.
rig-or-ous (*rig'ẽr-us*), *adj.* characterized by, or exercising, rigor; stern; inflexible; scrupulously accurate.
rill (*ril*), *n.* a small stream or rivulet: *v. i.* to run in a small stream.
rim (*rim*), *n.* a border or margin; raised border; brim: *v. t.* to furnish with a rim.
rime (*rīm*), *n.* hoarfrost; another form of rhyme *v. i.* to congeal into hoarfrost.
ri-my (*rī'mi*), *adv.* frosty.
rind (*rīnd*), *n.* the outer covering of fruit, etc.; bark: *v. t.* to strip the rind from.
rin-der-pest (*rin'dẽr-pest*), *n.* a malignant and contagious disease in cattle; cattle plague.
ring (*ring*), *n.* a circle; anything circular in form; small hoop worn on the finger: *v. i.* to sound as a bell when struck: *v. t.* to cause to sound, as metal when struck.
ring-dove (*'duv*), *n.* the wood pigeon.
ring-ing (*'ing*), *p. adj.* sounding like a bell; resonant: *n.* the act of sounding as a bell.
ring-let (*'let*), *n.* a little ring; curl.
ring-worm (*'wẽrm*), *n.* a contagious cutaneous disease, usually on the scalp.
rink (*ringk*), *n.* a ground for skating upon: *v. i.* to skate on a rink.
★**rinse** (*rins,* not *rens*), *v. t.* to cleanse lightly with clean water; cleanse repeatedly.
Rio Grande (*rī'ō grand,* Spanish *rē'ō grān'dā*). River rising in the Rocky mountains and emptying into the gulf, which gives name to a county in Colorado. A Spanish phrase meaning "great river."
ri-ot (*rī'ot*), *n.* uproar; tumult; noisy revelry; luxurious excess: *v. i.* to raise an uproar.
ri-ot-ous (*-us*), *adj.* indulging in riot or excess; licentious; noisy; turbulent; seditious.
rip (*rip*), *v. t.* to divide by tearing or cutting; cut asunder; disclose.
ri-pa-ri-an (*ri-pā'ri-an*), *adj.* pertaining to the banks of a river.

ripe (*rīp*), *adj.* brought to maturity or perfection; ready for harvest; fit for use; complete.
ri-pen (*rī'pen*), *v. t.* to make ripe; bring to perfection: *v. i.* to grow ripe.
ripe-ness (*rīp'nes*), *n.* the state or quality of being ripe; maturity.
rip-ple (*rip'l*), *n.* a small curling wave on the surface of water.
rip-pling (*'ling*), *n.* the breaking of, or sound made by, ripples.
rip-rap (*'rap*), *n.* a loose foundation of stones in deep water on a soft bottom.
rise (*rīz*), *v. i.* [*p. t.* rose, *p. p.* risen, *p. pr.* rising], to ascend; get up from the ground or recumbent position; begin to stir: *n.* ascent; elevated place; appearance above; origin.
ris-i-ble (*riz'i-bl*), *adj.* having the faculty or power of laughing; inclined to laugh; causing laughter.
ris-ing (*rīz'ing*), *n.* the act of getting up or ascending; insurrection; an ascent.
risk (*risk*), *n.* possibility of loss or injury; peril; danger: *v. t.* to hazard; venture upon. [HAZARD.]
Rita (*rē'tȧ*). A feminine name of Italian origin; abbreviated from *Margarita.*
rite (*rīt*), *n.* a solemn religious act; external religious observance. [FORM.]
rit-u-al (*rit'ū-al*), *adj.* pertaining to, consisting of, or prescribing, rites: *n.* manner of performing divine service.
rit-u-al-ism (*-izm*), *n.* a system of ritual or prescribed forms of religion.
rit-u-al-ist (*-ist*), *n.* one who advocates, or is skilled in, ritual; an Anglo-Catholic.
ri-val (*rī'val*), *n.* competitor; antagonist: *adj.* having the same claims; emulous: *v. t.* to strive to equal or excel; emulate.
ri-val-ry (*-ri*), *n.* competition; emulation.
rive (*rīv*), *v. i.* to be split or torn asunder: *n.* a rent, tear, or split.
riv-er (*riv'ẽr*), *n.* a large running stream of water flowing into the sea or another river.
riv-et (*'et*), *n.* a short metal bolt clinched by hammering: *v. t.* to secure with, or as with, a rivet.
riv-u-let (*riv'ū-let*), *n.* a little stream.
roach (*rōch*), *n.* a fresh-water fish; a cockroach.
road (*rōd*), *n.* a public way for traveling upon; path; way.
road-ster (*'stẽr*), *n.* a horse suited for traveling; a bicycle for road work.
roam (*rōm*), *v. i.* to wander about without any definite object; ramble: *v. t.* to wander over.
roan (*rōn*), *adj.* of a bay or dark color with a shade of red: *n.* a roan color; grained sheepskin leather.
Roanoke (*rō-ȧ-nōk'*). County and city in same county in Virginia, river in Virginia and North Carolina, town in Hunting county, Indiana, and village in Woodford county, Ill. From the island of same name, *Roenoke* or *Rawnoke*, equivalent to *peag*, "sea-shell," or "wampum."
roar (*rōr*), *n.* the deep, full cry of an animal; a cry as in distress; any loud noise: *v. i.* to utter a roar.
roast (*rōst*), *v. t.* to cook before a fire; parch by exposure to heat; criticise severely: *v. i.* to be roasted.
rob (*rob*), *v. t.* [*p. t.* and *p. p.* robbed, *p. pr.* robbing], to steal; plunder; strip of something by secret theft or violence; deprive.
rob-ber (*'ẽr*), *n.* a thief.
rob-ber-y (*-i*), *n.* theft; the felonious and forcible taking away the money and goods of another.
robe (*rōb*), *n.* a loose outer garment; dressed skin of a buffalo: *v. t.* to invest with a robe; dress; array.
Robert. Is "red-beard," from *ru* or *ro*, "red," and *bert* or *bart*, a "beard." Dr. R. S. Maitland gives no fewer than two hundred different methods of spelling this name. *Rupert* and *Robert* are identical, and were used occasionally for the same person. Danish, *Robert;* Dutch, *Robert;* Ger., *Robert;* It., *Roberto;* Lat., *Robertus;* Sp., *Roberto;* Sw., *Robert.*
Robertina. A feminine name derived from *Robert.*
rob-in (*rob'in*), *n.* the redbreast.
Robin. A diminutive of *Rob*, the nickname of *Robert.*
★**ro-bust** (*rō-bust'*, not *rō'bust*), *adj.* hardy; strong; vigorous; muscular.
roc (*rok*), *n.* a fabulous bird of great size and strength.
Rochester. A city in the state of New York; derives its name from Colonel Nathaniel Rochester, who projected the settlement in 1818.
roch-et (*roch'et*), *n.* a linen vestment worn by a bishop resembling a surplice open at the sides.
rock (*rok*), *n.* a large mass of stone or stony matter; any mineral deposit; movement backward and forward: *v. i.* to move backward and forward.
Rockaway, N. Y. A summer resort, named from the Indian *ackewek*, "bushy."
rock-et (*rok'et*), *n.* a firework.
rock-wood (*'wood*), *n.* ligniform asbestos.
rock-y (*'i*), *adj.* full of, or resembling, rocks; stony; hard; inflexible.
Rocky mountains. Were first called *Montagnes de Pierres Brillantes*, "mountains of brilliant stones," from the sparkling of the summits in the sunshine. Then came the more prosaic *Montagnes Rocheuses*, or "Rocky mountains;" and our present still more prosaic "The Rockies."
rod (*rod*), *n.* a long twig or shoot of any woody plant; a wand; measure of length equal to 5½ yards.
ro-dent (*rō'dent*), *adj.* gnawing: *n.* any animal of the Rodentia, an order of Mammalia.
Roderick (*rod'ẽr-ik*). From the Old German name *Roderic* or *Roderich*, from *rad-reich*, "rich or powerful in counsel." Fr., *Rodrigue;* Ger., *Roderich;* It., *Rodrigo;* Lat., *Rodericus;* Russ., *Rurik;* Sp., *Rodrigo*, *Roderigo*, or *Ruy.*
Rodrigo. See *Roderick.*
Rodriguez (Spanish, *rō-drē'geth*). The "son of Roderick."
roe (*rō*), *n.* a species of deer, the roebuck; the female of the hart; the spawn or sperm of fishes.
Roent-gen rays (*rĕnt'gen rāz*), a form of radiant energy emanating from the surface of an electrically excited vacuum tube opposite the cathode electrode having power of penetrating objects impervious to light or heat rays, affecting sensitive photographic films, and exciting fluoresence in certain salts. [Also called *X rays.*]
ro-ga-tion (*rō-gā'shun*), *n.* a litany; supplication.
Roger (*roj'ẽr*). Some translate this name "spear of fame," others "spear-red." It comes from *rat-gar*, "a war councilor," or "prompt in counsel." Dutch, *Rutger;* Fr., *Roger;* It., *Rugiero;* Lat., *Rogerus;* Sp., *Rogerio.*
rogue (*rōg*), *n.* a dishonest person; knave; a sly, mischievous person; wag; term of endearment.
ro-guer-y (*rō'gẽr-i*), *n.* knavish or dishonest practices; cheating; mischievous or waggish conduct.
ro-guish (*rō'gish*), *adj.* fraudulent; dishonest; somewhat mischievous or sly.
★**roil** (*roil*, not *rīl*), *v. t.* to render turbid; vex or irritate.
Roland or **Rowland** (*rō'land*, French *rō-läɴ'*). Derived from the old Frankish name signifying "illustrious countryman." Danish, *Roland;* Dutch, *Rœland;* Fr., *Roland;* Ger., *Roland;* It., *Orlando* or *Rolando;* Lat., *Rolandus;* Port., *Rolando;* Sp., *Rolando.*
rôle (*rōl*), *n.* a part or character in a play, etc.; function or part.
roll (*rōl*), *v. i.* to turn like a wheel or on an axis; be moved with violence; rock: *v. t.* to revolve; inwrap; move on wheels: *n.* the act of rolling.
rol-lick (*rol'ik*), *v. i.* to move or act with a careless, swaggering air.
roll-ing (*rōl'ing*), *adj.* moving on, or as on, wheels; undulating; used for rolling: *n.* a circular motion; undulation.
ro-ly-po-ly (*rō-li-pō'li*), *n.* a game in which by rolling a ball into a certain hole it wins.
Ro-man (*'man*), *adj.* pertaining to Rome, the Romans, or to the church of Rome; noting the ordinary type used in printing.
Ro-man can-dle (*kan'dl*), a kind of firework.
Ro-man Cath-o-lic (*kath'ō-lik*), *adj.* pertaining to the church of Rome, of which the pope is the head: *n.* a member of the church of Rome.
ro-mance (*-mans'*), *n.* a work of fiction or adventure; novel; fable: *v. i.* to invent and tell fictitious stories; exaggerate; lie. [FICTION.]
Ro-mance (*-mans'*), *adj.* pertaining to the dialects of Latin and the languages which grew out of classic Latin, spoken in the old Roman provinces.
Ro-man-esque (*-man-esk'*), *n.* that style of architecture and ornamentation in vogue during the period of the later Roman empire: *n.* the dialect of Languedoc.
Romanoff (*rō-mä'nof*) **cape, Alaska.** Compliment to the prominent Russian statesman, Romanoff.
ro-man-tic (*-man'tik*), *adj.* extravagant; fanciful; ideal; full of wild and fantastic scenery.
ro-man-ti-cism (*'ti-sizm*), *n.* the reactionary movement in opposition to cold classical literary forms, begun in Germany in the 18th century.
Rom-a-ny (*rom'ȧ-ni*), *n.* a gipsy; gipsy language.
Rome. The French name of the city called *Roma* in Latin and Italian. Among the various guesses as to the meaning of the name, the most probable refers it to the word *gruma* or *groma*, "crossroads," spreading themselves at their junction into a sort of forum.
romp (*romp*), *n.* an unrestrained, boisterous girl; rough play or frolic: *v. i.* to play in a boisterous, unrestrained manner.
ron-deau (*ron'dō*), *n. pl.* rondeaux (*'dōz*), a little poem of thirteen verses or lines.
ron-del (*'del*), *n.* a poem of 14 lines; small, round tower.
rood (*rōōd*), *n.* 40 square poles or perches; a cross or crucifix.
rood loft (*'lôft*), the gallery in a church over the entrance to the choir where the rood was fixed.
★**roof** (*rōōf*, *roof*), *n.* the top covering of a house or other building: *v. t.* to cover with, or as with, a roof.
roof-tree (*'trē*), *n.* a roof beam; roof; home.
rook (*rook*), *n.* a bird of the crow family; a swindler or sharper.
rook-er-y (*'ẽr-i*), *n.* colony of rooks; place of low resort; low slum.
★**room** (*rōōm*, not *room*), *n.* unoccupied place or space; apartment of a house: *v. i.* to lodge.
room-y (*'i*), *adj.* spacious.
roor-back (*rōōr'bak*), *n.* a lie; fictitious report made for the purpose of influencing an election.
roost (*rōōst*), *n.* the pole, perch, etc., upon which a bird rests at night: *v. i.* to sit or sleep upon a perch.
roost-er (*'ẽr*), *n.* the domestic cock.
★**root** (*rōōt*, not *root*), *n.* that part of a plant that descends and fixes itself in the earth by which the plant is nourished: *v. t.* to fix by the root; implant deeply; to dig or burrow with the snout; eradicate (with *out*): *v. i.* to take root.
rope (*rōp*), *n.* a thick cord; small cable; halter; series of things connected: *v. t.* to fasten or draw with a rope.
rop-y (*rōp'i*), *adj.* like a rope; viscous.
Roque-fort (*rōk'fôr*), *n.* a French mold-streaked cheese made from ewe's milk.
Rosa. See *Rose.*
ro-sa-ceous (*rō-zā'shus*), *adj.* composed of several petals arranged in a circular form; consisting of roses.
Rosalia. A feminine name formed from the name *Rose.*
Rosalin (*roz'ȧ-lin*), **Rosalind** (*roz'ȧ-lind*). A feminine diminutive formed from the name *Rose.*
Rosamond (*roz'ȧ-mund*). Probably from *rosa mundi*, "rose of the world," corrupted to "rose of peace." Dutch, *Rozamond;* Fr., *Rosemonde;* It., *Rosmonda;* Lat., *Rosamunda.*
ro-sa-ry (*rō'zȧ-ri*), *n.* [*pl.* rosaries(*-riz*)], a garland or chaplet; a string of threaded beads by which prayers are counted.
rose (*rōz*), *n.* a plant of the genus *Rose* or its well-known flower; rose-color.
Rose. A feminine name derived from the Latin *rosa*, a "rose." The Romans sometimes called their sweethearts "rosa mea." Danish, *Rosa;* Dutch, *Rosa;* Fr., *Rose;* Ger., *Rose;* It., *Rosa;* Lat., *Rosa;* Sp., *Rosa;* Sw., *Rosa* or *Rosina.*
ro-se-ate (*rō'ze-āt*), *adj.* rose-colored; rose-like; blooming.
rose-ma-ry (*rōz'mȧ-ri*), *n.* a sweet-smelling evergreen shrub from which an aromatic water is distilled.
Rosemary. A feminine name formed from the Latin *rosmarinus*, "dew of the sea."
Rosetta (*rō-set'tȧ*). A diminutive derived from the name *Rose*, or from the Italian form *Rosa.*
ro-sette (*rō-zĕt'*), *n.* a cluster of ribbons arranged like a rose.
rose-win-dow (*'win-dō*), *n.* a circular window with compartments branching from the center.
rose-wood (*'wood*), *n.* a Brazilian wood used as a veneer.
ros-in (*roz'in*), *n.* another form of *resin*; specifically, inspissated turpentine: *v. t.* to rub with rosin.
ross (*ros*), *n.* the outer rough bark of trees; tanbark: *v. t.* to remove the outer bark or rough surface of.
Ross. Either as a name of a place by itself, or as a portion of a name, always means "a headland." It is a Celtic word, and is frequent in Scotland, as in *Rosslyn*, *Culross*, *Rossberg*, *Ardrossan*, etc.
ros-ter (*'tẽr*), *n.* list or muster roll showing how the duties of military officers, regiments, etc., are regulated.
ros-tral (*'tral*), *adj.* pertaining to, or like, a beak.
ros-trate (*'trāt*), *adj.* furnished with a beak or beak-like process.
★**ros-trum** (*ros'trum*, not *rō-strum*), *n.* [*pl.* rostrums (*'trumz*), rostra (*'trȧ*)], the beak of a bird; a pulpit or platform; prow of an ancient war vessel.
ros-y (*rōz'i*), *adj.* like a rose; red; blooming; charming; very favorable.
rot (*rot*), *v. i.* to putrefy or become decomposed; decay: *v. t.* to make putrid or corrupt: *n.* putrefaction; decomposition; nonsense.
ro-ta-ry (*rō'tȧ-ri*), *adj.* turning on an axis; pertaining to rotation.
ro-tate (*'tāt*), *v. t.* to revolve on, or as on, an axis; cause to turn: *v. i.* to turn round like a wheel.
ro-ta-tion (*-tā'shun*), *n.* the act of turning round on an axis, like a wheel; regular succession.
rote (*rōt*), *n.* mechanical repetition, or learning without understanding.
ro-ti-fer (*rō'ti-fẽr*), *n.* an individual of the Rotifera, the wheel animalcules.
rot-ten (*rot'n*), *adj.* putrefied; decomposed; unsound; untrustworthy.
Rotten Row. The popular name corrupted from *Route en Roi*, "the way of the king," for a famous driveway and promenade in Hyde Park, London, much frequented by fashionables during the season.
ro-tund (*rō-tund'*), *adj.* spherical.
ro-tun-da (*-tun'dȧ*), *n.* a circular domed building. [Also *rotundo.*]
rou-ble (*rōō'bl*), *adj.* a Russian silver coin of varying value, used as a monetary unit (about 77 cents).
★**rou-é** (*rōō-ā'*), *n.* a fashionable sensualist; confirmed rake; debauchee.
rouge (*rōōzh*), *n.* a cosmetic of red color; *v. t.* to color or paint with rouge: *v. i.* to use rouge.
rough (*ruf*), *adj.* inequality of the surface; rugged; not smooth or plane; uneven: *adv.* roughly. [COARSE]
rou-lette (*rōō-let'*), *n.* a game of chance played with revolving disk and ball.
Roumania (*rōō-mā'ni-ȧ*). A modern kingdom on the lower Danube, comprising the former Turkish principalities of Wallachia and Moldavia. The kingdom was so named because the people, who speak a neo-Latin dialect derived from the colonists settled by Trajan in Dacia, designate themselves as *Rumeni* or *Romani* (Romans).
rounce (*rouns*), *n.* the handle of a printing press.
round (*round*), *adj.* circular; spherical; globular; cylindrical; plump; corpulent; whole: *adv.* on all sides; circularly: *n.* a circle, sphere, or globe; circuit or tour; routine: *prep.* about; on every side of; around: *v. t.* to make round; travel or pass round; *v. i.* to go the rounds. [CIRCUIT.]
round-a-bout (*'ȧ-bout*), *adj.* indirect; encompassing: *n.* a merry-go-round; a short coat or jacket.
roun-del (*roun'del*), *n.* a circle; roundelay.

round-e-lay (*round'ē-lā*), *n.* an ancient song or dance in which the passages are repeated.
round-hand (*round'hand*), *n.* penmanship in well-rounded letters.
Round-head (*'hed*), *n.* a contemptuous epithet applied to the Puritans by the Cavaliers, from the close-cut hair of the former.
round-house (*'hous*), *n.* a building having stalls for the housing of locomotives.
round-ly (*'li*), *adv.* in a round form; straightforwardly.
round rob-in (*'rob-in*), a petition having the signatures written in a circle so as not to show who signed it first.
rounds-man (*roundz'man*), *n.* a police inspector who visits the officers on their beats.
rouse (*rouz*), *v. t.* to awaken; stir to thought or action; drive (game) from a covert. [AWAKEN.]
Rouse's Point, N. Y. A village named from Jacques Rouse, a Canadian who settled here in 1783.
roust-a-bout (*roust'a-bout*), *n.* an idler or loafer; a laborer on a steam vessel.
rout (*rout*), *n.* total defeat and flight of an army; tumultuous crowd; uproar: *v. t.* to defeat and put to disorderly flight. [BEAT.]
★**route** (*rōōt*), *n.* way or road traveled; course; journey; march.
rou-tine (*rōō-tēn'*), *n.* course of business or official duties regularly pursued; regular habit or practice.
rove (*rōv*), *v. i.* to wander or ramble: *v. t.* to draw through an eye.
row (*rō*), *n.* line, file, or rank; excursion in a row-boat; (*rou*) noisy disturbance: *v. t.* (*rō*) to impel by means of oars: as to *row* a boat.
row-dy (*rou'di*), *n.* a rough, riotous fellow: *adj.* rough and riotous.
row-el (*'el*), *n.* the small sharp-pointed wheel of a spur; flat ring on a horse's bit.
Rowena (*rō-ē'nà*). A feminine name, which some consider to be of Saxon origin. Mr. Arthur derives it from *D. rouw*, "peace"; Anglo-Saxon *rúnnan*, "to acquire"; others derive it from the Welsh *rhonwen*, "white shirt."
row-lock (*rō'lok*), *n.* the crutch or hollow in the wale of a boat in which the oar rests in rowing.
roy-al (*roi'al*), *adj.* pertaining to a king or to the crown; befitting or like a king; majestic; kingly.
Syn. ROYAL, regal, kingly. *Royal* signifies belonging to a king, in its most general sense; *regal* signifies appertaining to a king, in its particular application; *kingly* signifies properly like a king. A *royal* carriage, a *royal* residence, *royal* authority, all designate the general and ordinary appurtenances of a king; *regal* government, *regal* state, *regal* power, denotet he peculiar properties of a king; *kingly* always implies what is becoming a *king* or after the manner of a *king*; a *kingly* crown is such as a *king* ought to wear.
roy-al-ist (*-ist*), *n.* an adherent of a king or government by a king.
roy-al-ty (*'al-ti*), *n.* [*pl.* royalties (*-tiz*)], the character, or status, of a king; a percentage for the use of a patent or copyright.
rub (*rub*), *v. t.* to apply pressure with motion to the surface of; clean or scour; wipe; polish: *v. i.* to make a friction: *n.* the act of rubbing.
rub-ber (*'ėr*), *n.* one who, or that which, rubs; india rubber.
rub-bish (*'ish*), *n.* mixed or waste fragments; anything of no value.
rub-ble (*'l*), *n.* rough undressed stone; builder's rubbish.
Ruben. See *Reuben.*
ru-bes-cent (*rōō-bes'ent*), *adj.* becoming red.
ru-bi-cund (*'bi-kund*), *adj.* inclined to red.
ru-bric (*'brik*), *n.* the directions for liturgical use in prayer books, formerly printed in red: *adj.* pertaining to, or marked in, rubrics; red.
ru-bri-cate (*'bri-kāt*), *v. t.* to mark, or distinguish, with red.
ru-by (*'bi*), *n.* [*pl.* rubies (*'biz*)], a precious stone, varying in color from carmine red to crimson; a size of type used in England.
ruche (*rōōsh*), *n.* frilled or plaited lace, silk, etc., for edging dresses, etc.: *v. t.* to make, or ornament, with a ruche.
ruck (*ruk*), *v. t.* to wrinkle or cresse: *n.* a wrinkle or crease; the crowd of horses that come in at the end of a race.
ruc-tion (*'shun*), *n.* a row; disturbance.
rud-der (*rud'ėr*), *n.* the frame of wood or metal by which a vessel is steered; anything that directs or governs.
rud-dle (*'l*), *n.* red ocher.
rud-dock (*'ok*), *n.* the robin redbreast.
rud-dy (*'i*), *adj.* approaching to redness; florid; flesh-colored: *v. t.* to make ruddy.
rude (*rōōd*), *adj.* rough; barbarous; uncultivated; harsh. [COARSE.]
rude-ness (*'nes*), *n.* the state of being rude; rude conduct; incivility; unskillfulness.
ru-di-ment (*rōō'di-ment*), *n.* first principle; anything in its first or undeveloped state: *v. t.* to instruct in first principles.
ru-di-men-ta-ry (*-men'tà-ri*), *adj.* pertaining to, or containing, first principles; in an undeveloped state. [Also *rudimental.*]
Rudolph (*rū'dolf*). From root of *Randolph* and *Rodolph.* Dutch, *Rudolf;* Fr., *Rodolphe;* Ger., *Rudolf;* It., *Rodolfo* or *Ridolfo;* Lat., *Rudolphus.*
rue (*rōō*), *v. t.* to lament or be sorry for; repent of: *n.* an herb of bitter taste and strong odor.
rue-ful (*rōō'fool*), *adj.* mournful; sad. [PITEOUS.]
ruff (*ruf*), *n.* a large frilled collar; anything plaited; a small fresh-water fish: *v. t.* to disorder or ruffle.
ruf-fian (*ruf'yan*), *n.* a brutal, boisterous fellow; any base, low character, as a robber.
ruf-fle (*'l*), *v. t.* to wrinkle, pucker, or disarrange; furnish or adorn with ruffles; annoy or vex: *v. i.* to grow rough or turbulent: *n.* agitation; disconposure.
Rufus (*rū'fus*). From the Latin, meaning "reddish," "having red hair." Lat., *Rufus.*
rug (*rug*), *n.* an adjustable floor covering, usually of a textile heavier than carpeting.
rug-ged (*rug'ed*), *adj.* having an uneven surface; rough; shaggy; brutal; uncouth; crabbed.
ru-in (*rōō'in*), *n.* overthrow; destruction; downfall; loss of happiness, etc.: *v. t.* to pull down, destroy. [DESTRUCTION, SUBVERT, ABUSE, FALL.]
ru-in-ous (*-us*), *adj.* fallen into ruin; decayed; consisting of ruins; destructive; hurtful.
rule (*rōōl*), *n.* standard or guide; maxim or precept; government; an instrument for drawing lines: *v. t.* to govern or control: *v. i.* to decide. [GOVERN.]
rul-er (*'ėr*), *n.* one who rules or governs; an instrument for ruling lines.
rul-ing (*'ing*), *p. adj.* governing or having control; marking with lines; predominant: *n.* a rule laid down by a judge or court.
rum (*rum*), *n.* spirit distilled from the fermented juice of the sugar cane: *adj.* strange; odd.
rum-ble (*'bl*), *v. i.* to make a low, heavy, continued sound: *n.* a rumbling sound.
ru-mi-nant (*rōō'mi-nant*), *adj.* chewing the cud: *n.* an animal that chews the cud.
ru-mi-nate (*'mi-nāt*), *v. i.* to chew the cud; meditate or muse; ponder: *v. t.* to chew again.
ru-mi-na-tion (*-nā'shun*), *n.* the act of chewing the cud; meditation.
rum-mage (*rum'āj*), *v. t.* to search carefully for; ransack: *v. i.* to make a careful search: *n.* a careful searching.
ru-mor (*rōō'mėr*), *n.* popular report; current story; *v. t.* to circulate by report. [FAME.]
rump (*rump*), *n.* the end of the backbone of an animal, with its adjacent parts· buttocks; fagend.
rum-ple (*rum'pl*), *n.* a fold or plait: *v. t.* to fold or plait; make uneven.
rum-pus (*'pus*), *n.* great disturbance.
run (*run*), *v. i.* to pass quickly with the legs over the ground; extend; flee for escape; contend in a race: *n.* the act of running; course run.
run-a-bout (*'a-bout*), *n.* a light, handy, open automobile adapted for ready service.
runes (*rōōnz*), *n. pl.* runic letters or poetry.
rung (*rung*), *n.* [*p. t.* of ring] step of a ladder; a floor-timber in a ship; spar.
ru-nic (*rōō'nik*), *adj.* pertaining to, or consisting of, runes: *n.* the alphabet of the earliest Teutonic nations.
run-ner (*'ėr*), *n.* one who runs; racer; messenger; keel to support a sleigh.
run-ning (*'ing*), *adj.* moving swiftly; kept for a race; being in motion: *n.* the act of moving swiftly; discharge of pus.
runt (*runt*), *n.* a dwarf animal; stump.
ru-pee (*rōō-pē'*), *n.* an East Indian coin, worth about 48 cents.
Rupert (*rū'pėrt*). Etymologically the same name as *Robert.* Ger., *Ruprecht;* Lat., *Rupertus.*
rup-ture (*rup'tūr*), *n.* breach or interruption of friendly relations; hernia: *v. t.* to burst or break violently asunder: *v. i.* to suffer a breach or disruption.
ru-ral (*rōō'ral*), *adj.* pertaining to, or characteristic of, the country or agriculture; rustic.
Syn. RURAL, rustic. *Rural* applies to all country objects except man; it is, therefore, always connected with the charms of nature; *rustic* applies only to persons, or what is personal, in the country, and is, therefore, always associated with the want of culture.
ru-ral free de-liv-ery (*frē dē-liv'er-i*). A service of house-to-house free mail delivery maintained in the country by the government.
ru-ral-ist (*rōō'ral-ist*), *n.* one who leads a rural life.
Rurik. See *Roderick.*
ruse (*rōōz*), *n.* a trick; stratagem. [PRETENSE.]
rush (*rush*), *v. i.* to move or press forward with impetuosity: *n.* a driving forward with eagerness and haste; a plant of many species growing on wet ground.
rusk (*rusk*), *n.* a kind of light biscuit.
Russ. Same as *Russian.*
rus-set (*rus'et*), *adj.* reddish-brown; homespun; coarse: *n.* russet color; homespun cloth; a variety of apple.
Russia (*rush'à, rōō'shà*). Named from the *Roosi,* or *Russ,* a tribe of Norsemen in the ninth century.
Rus-sia leath-er (*rush'à leth'ėr*), a strong, soft leather prepared from the hides of sheep and cattle steeped in birch-oil.
rust (*rust*), *n.* the reddish matter formed on iron and steel; red oxide of iron: *v. i.* to contract rust.
rus-tic (*rus'tik*), *adj.* pertaining to, or characteristic of, the country; rural; unpolished; unadorned: *n.* a countryman; peasant. [RURAL.]
rus-ti-cate (*'ti-kāt*), *v. i.* to reside in the country: *v. t.* to banish for a time from college.
rus-ti-ca-tion (*-kā'shun*), *n.* residence in the country; temporary banishment from a college.
rus-tic-i-ty (*-tis'i-ti*), *n.* rural manners or simplicity; rudeness.
rus-tle (*rus'l*), *v. i.* to make a soft whispering sound, as the rubbing together of silk or dry leaves; to bestir one's self: *n.* a rustling.
rus-tler (*'ler*), *n.* one who rustles; an enterprising, successful man.
rus-tling (*'ling*), *n.* the soft whispering sound made by rubbing silk or dry leaves together; rustle.
rust-y (*rust'i*), *adj.* covered with rust; impaired by inactivity; rust-colored.
rut (*rut*), *n.* the copulation and sexual desire of deer and certain other animals; the track of a wheel; groove or hollow: *v. t.* to be moved with sexual desire, as deer, etc.
Ruth (*rōōth*). From the Hebrew *Ruth,* from *r'uth,* "appearance", "vision," "beauty."
ruth-less (*'les*), *adj.* cruel; pitiless.
ru-ti-lant (*rōō'ti-lant*), *adj.* shining.
ru-tile (*'til*), *n.* red oxide of titanium.
rye (*ri*), *n.* a hardy esculent plant closely allied to wheat; also its grain or seed.

S

sab-a-oth (*sab-ā'oth*), *n. pl.* armies; hosts.
Sab-bath (*'ath*), *n.* the seventh day of the week, observed by the Jews as a day of rest, commencing from sunset on Friday and ending at sunset on Saturday.
Sab-bat-ic-al year (*sab-bat'i-kal yēr*), *n.* among the ancient Jews, every seventh year, in which the lands and vineyards of the Israelites were allowed to remain fallow.
sa-ber, sa-bre (*sā'bėr*), *n.* a cavalry sword: *v. t.* to cut, wound, or kill with, or as with, a saber.
Sabina (*sà-bī'nà*). A feminine name derived from Sabina, wife of Adrian, celebrated for her private as well as her public virtues; one as chaste as a Sabine. Dutch, *Sabine;* Fr., *Sabine;* It., *Sabina;* Lat., *Sabina;* Sp., *Sabina;* Sw., *Sabina.*
Sabine (*sà-bēn'*) **river, La.** Some allege that it was so named by French voyagers, who applied the name *Sabine* because of a lively skirmish with the Indians on its banks, for wives. More likely it means "cypress," from the French word.
sa-ble (*sā'bl*), *n.* a kind of weasel valued for its handsome, dark, glossy fur.
sa-bot (*sà-bō'*), *n.* a wooden shoe worn by the peasantry of France, etc.
sac (*sak*), *n.* a bag or membranous receptacle; cyst.
sac-cade (*sak-kād'*), *n.* a sudden check with the bridle; strong pressure of the bow of a violin against the strings.
sac-cha-rine (*'a-rin*), *adj.* pertaining to, or having the qualities of, sugar: *n.* the uncrystallized sugar of maltwort.
sac-cha-rize (*'a-rīz*), *v. t.* to convert into sugar.
sac-cho-lac-tic (*-ō-lak'tik*), *adj.* obtained from the sugar of milk; mucic acid.
sac-cule (*'ūl*), *n.* a little sac or cyst.
sac-er-do-tal (*sas-ėr-dō'tal*), *adj.* pertaining to priests or to the priesthood; priestly.
sac-er-do-tal-ism (*-izm*), *n.* sacerdotal spirit or system; tendency to emphasize the priestly office or its sacred character.
sac-er-do-tal-ly (*-li*), *adv.* in a sacerdotal manner.
★**sa-chem** (*sā'chem,* not *sach'em*), *n.* a North American Indian chief.
sa-chet (*sà-shā'*), *n.* a small bag or cushion filled with a perfume.
sack (*sak*), *n.* a bag or pouch: *v. t.* to plunder or pillage; ravage.
sack-cloth (*'klōth*), *n.* coarse material of which sacks are made; coarse, rough cloth worn as a token of mourning.
sack-ful (*'fool*), *n.* the quantity a sack will hold.
sack-ing (*'ing*), *n.* coarse material used for making sacks.
Saco (*saw'kō*). River, and city in York county, Maine. Derived from an Indian word *sohk* or *sauk,* "pointing out"; hence the outlet or discharge of a river or lake.
★**sac-ra-ment** (*sak'rà-ment,* not *sā'krà-ment*), *n.* a sign or pledge of grace, an outward and visible sign of an inward and spiritual grace, instituted by Jesus Christ; holy baptism, the eucharist, Lord's supper.
sac-ra-men-tal (*-men'tal*), *adj.* pertaining to, or constituting, a sacrament; solemnly pledged.
Sacramento (*sak-rà-men'tō*). River, city, and county in California, named by the Spaniards, the word meaning "the sacrament."
sa-cred (*sā'kred*), *adj.* pertaining to religion or to religious uses; consecrated; inviolable. [HOLY.]
sac-ri-fice (*sak'ri-fis*), *n.* the act of sacrificing or offering to a deity: *v. i.* to offer sacrifice.
sac-ri-fi-cial (*-ri-fish'al*), *adj.* pertaining to, consisting in, or offering, sacrifice. [Also *sacrificatory.*]
sac-ri-lege (*'ri-lej*), *n.* the crime of appropriating to one's self or to secular use what is consecrated to God or religion.
★**sac-ri-le-gious** (*sak-ri-lē'jus,* not *sak-ri-lij'us*), *adj* violating sacred things; guilty of sacrilege; profane.
sa-cring bell (*sā'kring bel*), *n.* the sanctus bell, rung when the Host is elevated at high mass.
sa-crist (*sā'krist*), *n.* a cathedral official who copies the music for the choir; minor canon; sacristan.
sac-ris-tan (*sak'ris-tan*), *n.* one who has the care of church vessels and movables.
sac-ris-ty (*'ris-ti*), *n.* an apartment in a church

where the sacred vessels, vestments, etc., are kept; vestry.
sac-ro-sanct (*sak'rō-sangkt*), *adj.* preëminently sacred or inviolable.
sa-crum (*sā'krum*), *n.* a triangular-shaped bone at the base of the vertebral column.
sad (*sad*), *adj.* [*comp.* sadder, *superl.* saddest], full of grief; mournful; sorrowful; sober or sedate; dark-colored. [DULL, GRIEF.]
sad-den (*'n*), *v. t.* to make sad or sorrowful; tone down: *v. t.* to become sad.
sad-dle (*'l*), *n.* a seat, usually of leather, for riding on horseback.
sad-dle-bow (*-bō*), *n.* the pieces which form the pommel or arched part of a saddle.
sad-dler-y (*'lēr-i*), *n.* the business of a saddler; articles made by a saddler.
Sad-du-cee (*'yū-sē*), *n.* on of the ancient Jewish sect or school that adhered to the written law and denied the resurrection of the dead.
safe (*sāf*), *adj.* free from danger, injury, or damage; secure: *n.* a fire or burglar proof iron chest.

Syn. SAFE, secure. We may be *safe* without using any particular measure; but none can reckon on any degree of *security* without great precaution; a person may be very *safe* on the top of a coach, in the daytime; but if he wish to *secure* himself, at night, from falling off, he must be fastened.

Ant. EXPOSED, lost.

safe-con-duct (*-kon'dukt*), *n.* a guard or passport which insures a safe passage.
safe-guard (*'gärd*), *n.* one who, or that which, guards or protects; defense; protective warrants granted to a foreigner: *v. t.* to protect or guard safely.
safe-ty (*'ti*), *n.* freedom from danger, injury, or damage; safe-keeping; a bicycle with medium-sized wheels of equal height.
safe-ty lamp (*lamp*), a wire-gauze covered lamp used in mines.
safe-ty valve (*valv*), an automatic valve in a boiler which opens when the steam exceeds a certain pressure.
saf-fron (*saf'run*), *n.* a bulbous plant of the genus Crocus, the dried stigmas of which yield a deep yellow dye; deep yellow: *adj.* saffron-colored.
sag (*sag*), *v. i.* to sink down or yield; incline from an upright or horizontal position.
★**sa-ga-cious** (*sȧ-gā'shus*, not *sȧ'gash-us*), *adj.* mentally quick and discerning; judicious; wise; acute.
sa-gac-i-ty (*-gas'i-ti*), *n.* a readiness of apprehension; discriminative intelligence.
sag-a-more (*sag'ȧ-mōr*), *n.* a North American Indian chief.
sa-gas (*sā'gȧz*), *n. pl.* a class of prose epics embodying the myths and heroic tales of the ancient Scandinavians.
sage (*sāj*), *adj.* wise; discerning; well-judged; discriminating: *n.* a man of experienced wisdom; an aromatic herb.
Sag Harbor. Village in Suffolk county, New York. Derived from the Indian word *saggaponack*, "place where the ground nuts grow."
Saginaw (*sag'i-naw*). River, county, bay, and city in Michigan. Said to derive its meaning from an Indian word, *sauk-sahcoon*, "pouring out at the mouth," or "an outlet."
sa-go (*sā'gō*), *n.* a kind of granulated food starch from the pith of certain palms.
Sahara (*sȧ-hä'rā*). The great African desert; the word is simply an Arabic term for "desert."
sail (*sāl*), *n.* a sheet of canvas spread to catch the wind, by means of which a vessel is driven forward in the water; an excursion in some vessel: *v. t.* and *v. i.* to pass over in a ship; navigate.
sail-er (*'ēr*), *n.* a vessel that sails, with special reference to its speed, or manner of sailing.
sail-ing (*'ing*), *n.* the art of navigation; the art of moving through water, or of setting sail.
sail-or (*'ēr*), *n.* a mariner; seaman. [SEAMAN.]
saint (*sānt*), *n.* a holy or sanctified person; one eminent for piety and virtue.
St. Anthony, Minn. Named *St. Anthony* by Hennepin in July, 1680; a reference to his being a recollet of the province of St. Anthony in Artois, France. Indian name *Owahmenah*, "falling water."
St. Augustine (*sānt aw'gus-tēn*). A town in Florida, the oldest European settlement in the United States. Don Pedro Menendez de Aviles, sent by Philip II. of Spain in 1565 to drive out the French Protestant refugees, who, three years before, had reached Albemarle sound, arrived off the coast of Florida on St. Augustine's day, August 28th, and gave the name of the saint to the city which he founded shortly afterward.
St. Bernard (*sānt bēr-närd'*), **Great.** An Alpine pass leading from Martigny, Valais, Switzerland, to Aosta, Italy, and connecting the valleys of the Rhone and the Dora Baltea. It was traversed by armies in Roman and mediæval times. The passage by the French army under Napoleon in May, 1800, is especially noteworthy.
St. Clair (*sānt klâr'*) **river, Mich.** Also the lake, was named in honor of the founder of the Franciscan nuns, from the fact that La Salle reached it on the day consecrated to her (August 12th). He therefore named it *Sainte Claire* (St. Clara.)
St. Croix (*sānt kroi'*) **river, Me.** Means "holy cross," and was named by De Monts, from a circumstance in the two rivers of its mouth forming a cross.
St. Croix river, Wis. Le Seur says it was originally named *Madelaine* after Madelaine Radisson; then changed to *St. Croix*, after Monsieur St. Croix, who was drowned at its mouth, while exploring, about 1700. Indian name *hogan-wauke-kim*, "the place where the fish lies."
Saint Elias. Mountain in Alaska, named for the saint upon whose day it was discovered.
St. George's channel. Named after the patron saint of England.
St. Helena (*sānt he-lē'nȧ*). An island in the South Atlantic belonging to Great Britain. Napoleon was exiled there, and resided at Longwood from 1815 until his death in 1821
St. James' palace. A palace in London, adopted as a royal residence by Henry VIII., enlarged by Charles I., damaged by fire in 1809, and since restored. Though no longer occupied by the sovereign, it gives its name officially to the British court.
St. John river, Me. The name given by Pierre de Monts; Indian name *looshtook*, "long river."
Saint Johnsbury. Town in Caledonia county, Vermont, named for St. John de Crèvecœur, French consul at New York, and a benefactor of Vermont.
St. John's river, Fla. Indian name, *Yeacas* or *Walaka*, "river of many lakes." French named the stream *Riviere Mai*, Ribault having entered its waters in that month. The Spaniard, Francisco Gordillo, called it *Rio San Juan*, having reached it on June 24, 1521, "the day was set apart to honor the precursor of Christ." The word was afterward Anglicized by the English to *St. John's river*.
St. Lawrence river, N. Y. Named from the gulf, which received its name, *St. Lawrent* or *St. Lawrence*, from the French navigator Jacques Cartier, who entered its water August 10, 1535 (St. Lawrence's day).
St. Louis (*sānt lōō'is* or *lōō'i*), **Mo.** Named in honor of Louis XV. of France; the name originally applied to a depot established at this point February 15, 1764, by Pierre Laclede Siguest.
Ste. Marie, Sault (*sōō sānt mā'ri*, French *sō saNt mä-rē'*), **Mich.** Schoolcraft says the French call a cascade, a *leap* or *sault*, but *sault* alone would not be distinctive; therefore, in conformity with their general usage, they added the name of a patron saint to the term by calling it *Sault de Sainte Marie*, that is, "leap of St. Marie," to distinguish it from other *leaps* or *saults*.
St. Paul. A city of Minnesota, named from the Chapel of St. Paul, a log chapel erected there by Roman Catholics. Prior to the adoption of *St. Paul*, it was known as *Pig's Eye*, from the nickname applied to a corpulent "one-eyed" Frenchman who located a "saloon-shanty" at that point. Indian name, *imnijaska*. "white rock," a reference to the sandstone bluff on which the city stands.
St. Petersburg. See *Petersburg*.
saint-ed (*sānt'ed*), *p. p.* canonized: *adj.* pious; holy; departed to heaven.
saint-ly (*'li*), *adj.* like, or befitting, a saint. [HOLY.]
sake (*sāk*), *n.* end; purpose; cause; account; regard; reason.
sa-laam (*sȧ-läm'*), *n.* an Oriental form of salutation or respect, meaning "peace."
sal-a-ble (*sāl'ȧ-bl*), *adj.* marketable.
sa-la-cious (*sȧ-lā'shus*), *adj.* lustful; impure.
sa-lac-i-ty (*-las'i-ti*), *n.* lustfulness. [Also *salaciousness*.]
sal-ad (*sal'ad*), *n.* raw herbs cut up and dressed with vinegar, oil, etc.
sal-ad days (*dāz*), years of youthful inexperience.
sal-a-man-der (*sal'ȧ-man-dēr*), *n.* an amphibious animal resembling a newt, and fabled by the ancients to live in fire.
sal-a-man-drine (*'drin*), *adj.* resembling a salamander; fire-resisting or fire-enduring.
sal-a-ried (*sal'ȧ-rid*), *p. adj.* having a salary.
sal-a-ry (*'ȧ-ri*), *n.* recompense, usually periodical, for services rendered; stipend.
sale (*sāl*), *n.* the act of selling; exchange of a commodity for an agreed price; market; auction; demand.
Salem (*sā'lem*). City in Essex county, Massachusetts, so named by its early settlers because they hoped to enjoy peaceful security there. An Indian word meaning "peace."
Sal-ic law (*sal'ik law*). The law of the Salian Franks excluding females from the succession to the French throne.
sa-li-ence (*sā'li-ens*), *n.* the state of being salient.
sa-li-ent (*'li-ent*), *adj.* leaping; prominent; noting any angle less than two right angles; in heraldry, in a leaping position.
sa-line (*sā'lin*), *adj.* consisting of, containing, or like, salt: *n.* a salt spring.
sa-li-va (*sȧ-lī'vȧ*), *n.* the watery fluid or spittle secreted in the mouth.
sal-i-vate (*sal'i-vāt*), *v. t.* to produce an abnormal secretion in the mouth of.
sal-let (*sal'et*), *n.* a light helmet.
sal-low (*'ō*), *adj.* of a pale, sickly, yellow color: *n.* a small tree of the willow kind.
sal-ly (*'i*), *n.* [*pl.* sallies (*'iz*)], a sudden rushing forth of troops to attack the besiegers; sudden outburst of wit or fancy: *v. i.* to issue or rush forth suddenly.
sal-ma-gun-di (*-mȧ-gun'di*), *n.* a compound of chopped meats with other ingredients, seasoned, etc.; medley.
★**salm-on** (*sam'un*, not *sä'mun*), *n.* a marine fish of the genus Salmo, which ascends fresh-water rivers to spawn.
salm-on trout (*trout*), a sea trout, resembling the salmon, but of smaller size.
Salome (*sȧ-lōm'*, *sȧ-lō'mē*). A feminine name, from the Hebrew *Solomon*, "peaceful."
sa-lon (*sȧ-lôN'*), *n.* a saloon; fine art gallery: *pl.* fashionable circles or assemblages. [*French*.]
sa-loon (*sȧ-lōōn'*), *n.* a hall or state apartment; large reception room; fine art exhibition; barroom or grogshop.
sal-pinx (*sal'pingks*), *n.* the Eustachian tube.
sal-si-fy (*sal'si-fi*), *n.* a plant of the aster family, which from the flavor of its edible root is called *oyster-plant* and *vegetable oyster*.
salt (*sawlt*), *n.* chloride of sodium, used for seasoning and the preservation of meat: *v. t.* to sprinkle or season with salt: *adj.* flavored, seasoned, or impregnated, with salt.
sal-tant (*sal'tant*), *adj.* leaping; dancing; in heraldry, same as salient.
sal-ta-tion (*-tā'shun*), *n.* a leaping or dancing.
sal-ta-to-ry (*'tȧ-tō-ri*), *adj.* dancing.
Salt Lake. County, and city in same county, in Utah, named for the famous lake of that state.
salt-less (*sawlt'les*), *adj.* without salt; insipid.
sa-lu-bri-ous (*sȧ-lū'bri-us*), *adj.* healthy. [HEALTHY.]
sal-u-ta-ry (*sal'ū-tā-ri*), *adj.* healthful; wholesome; beneficent. [HEALTHY.]
sal-u-ta-tion (*-ū-tā'shun*), *n.* act or manner of saluting; greeting, or act of paying respect. [SALUTE.]
sa-lute (*sȧ-lūt'*), *n.* a mark of military respect shown by raising the hand to the helmet, etc.; a kiss; greeting; salvo of artillery: *v. t.* to address with kind wishes; to make a salute.

Syn. SALUTE, salutation, greeting. A *salute* may consist either of a word or an action; *salutations* pass from one friend to another; the *salute* may be either direct or indirect; the *salutation* is always direct and personal; guns are fired by way of a *salute*; bows are given in the way of a *salutation*; *greeting* is frequently a particular mode of *salutation* adopted on extraordinary occasions, indicative of great joy or satisfaction in those who *greet*. [See *address*.]

sal-va-ble (*sal'vȧ-bl*), *adj.* capable of being saved.
sal-vage (*'vāj*), *n.* compensation given to those who assist at saving a vessel or cargo at sea; the goods or vessel saved.
sal-va-tion (*-vā'shun*), *n.* the act of saving; preservation from destruction; rescue.
Sal-va-tion Ar-my (*är'mi*). A religious organization formed on a quasi-military model.
★**salve** (*säv*), *n.* a healing ointment; a remedy or soothing application.
sal-ver (*sal'vēr*), *n.* a tray on which anything is presented.
sal-vo (*'vō*), *n.* a discharge of a number of pieces of artillery, intended as a salute; general, simultaneous cheering.
Sa-mar-i-tan (*sȧ-mar'i-tan*), *adj.* pertaining to, or characteristic of, Samaria, or the Samaritans.
same (*sām*), *adj.* identical in kind or degree; exactly alike; before-mentioned.
same-ness (*'nes*), *n.* identity; similarity.
sam-o-var (*sam'ō-vär*) *n.* a Russian tea urn.
sam-phire (*'fir* or *'fēr*), *n.* a marine plant growing usually on cliffs, and used as a pickle.
sam-ple (*'pl*), *n.* a specimen; model; pattern: *v. t.* to take a sample of.
sam-pler (*'plēr*), *n.* a pattern; a piece of ornamental needlework for practice, etc.
Samson or **Sampson** (*sam'sn* or *samp'sn*). From the Hebrew *shimshon*, "illustrious sun"; "solar, like the sun;" "one who resembles the sun." Danish, *Samson;* Dutch, *Samson;* Fr., *Samson;* Lat., *Samson;* Port., *Sansao;* Sp., *Sanson;* Sw., *Simson.*
Samuel (*sam'ū-el*). From the Hebrew *sh'mu-El*, "heard of God." Danish, *Samuel;* Dutch, *Samuel;* Fr., *Samuel;* Hungarian, *Samuel;* It., *Samuele;* Lat., *Samuel;* Sp., *Samuel.*
San Antonio (*san an-tō'ni-ō*). City in Bexar county, Texas, named for the Roman Catholic mission, *San Antonio de Velero*, otherwise the *Alamo*.
san-a-to-ri-um (*san-ȧ-tō'ri-um*), *n.* a health retreat; an institution for the treatment of particular diseases.
san-a-to-ry (*'ȧ-tō-ri*), *adj.* conducive to health.
sanc-ti-fi-ca-tion (*sangk-ti-fi-kā'shun*), *n.* the act of sanctifying; state of being sanctified; consecration.
sanc-ti-fi-er (*'ti-fī-ēr*), *n.* one who sanctifies.
sanc-ti-mo-ni-ous (*-ti-mō'ni-us*), *adj.* having the appearance of, or affecting, sanctity; hypocritical.
sanc-tion (*'shun*), *n.* the act of ratifying, or giving authority to, an act or opinion; authority; custom: *v. t.* to give sanction to; countenance. [COUNTENANCE].
sanc-ti-ty (*'ti-ti*), *n.* purity; inviolability; sacredness; solemnity; a saint. [HOLINESS.]
sanc-tu-a-ry (*'tū-ā-ri*), *n.* [*pl.* sanctuaries (*-riz*)], the most retired and sacred part of a temple, inviolable asylum; shelter; refuge.
sanc-tum (*'tum*), *n.* a sacred or private place.
sanc-tum sanc-to-rum (*sangk-tō'rum*), a most holy place; in the Jewish temple, the Holy of Holies; a place of the utmost privacy.

sanc-tus bell (*sangk'tus bel*), a bell rung at the more solemn parts of the mass.

sand (*sand*), *n.* fine particles of crushed or worn rock: *pl.* tracts of sand: *v. t.* to sprinkle with sand.

san-dal (*san'dal*), *n.* a kind of shoe fastened by straps to the foot; a loose slipper.

san-dal-wood (*-wood*), *n.* a white-colored, odoriferous wood, used in cabinetmaking.

San Diego (*săn dē-ā'gō*), **Cal.** From the bay, which was named by Sebastian Vizcaino, Spanish navigator, who entered it November 12, 1603, in honor of the day saint, *San Diego d'Alcala.* A coincidence being that Vizcaino's vessel also was named *San Diego.*

sand-pi-per (*sand'pī-pĕr*), *n.* a name for various birds of the snipe and woodcock family.

Sandusky (*san-dus'ki*). Town in Illinois, county, river, and city in Ohio, whose name by some authorities is said to be derived from the Indian word *outsandouke,* "there is pure water here"; or *saanduste,* "large bodies or pools of water." Another authority states that it was named for Jonathan Sandousky, a Polish trader of the vicinity.

sand-wich (*sand'wich*), *n.* two thin slices of bread with ham, etc., between.

Sandwich Islands. Islands in the South Pacific, named by Captain Cook in compliment to Lord Sandwich, first lord of the admiralty.

sand-y (*'i*), *adj.* composed of, abounding in, of the color of, or covered with, sand; shifting; unstable.

Sandy. A Scottish name corrupted from *Alexander.*

Sandy Hook, N. Y. Namely, "sandy point," *Hook* being applied from the Dutch *haak,* "point."

sane (*sān*), *adj.* mentally sound or healthy. [SOUN.D]

sane-ness (*'nes*), *n.* the state or quality of being sane.

San Francisco. Bay, county, and city in same county, in California, said by some to have been named for the old Spanish mission of *San Francisco de Assisi,* by others to have been named for the founder of the order to which Father Junipero, the discoverer of the bay, belonged.

san-guif-er-ous (*sang-gwif'ĕr-us*), *adj.* conveying blood.

san-gui-fy (*'gwi-fī*), *v. t.* to form or produce blood: *v. t.* to convert into blood.

san-gui-na-ry (*'gwi-nā-ri*), *adj.* attended with much bloodshed; bloodthirsty; murderous; cruel.

san-guine (*'gwin*), *adj.* warm and ardent in temper; hopeful; confident: *n.* blood color: *v. t.* to stain with blood.

san-guin-e-ous (*-gwin'ē-us*), *adj.* pertaining to, abounding with, or constituting, blood; of a blood color.

San-he-drim (*san-hē'drim*), *n.* the great judicial council of the ancient Jews, composed of 71 priests, scribes, and elders, presided over by the high priest.

san-i-ta-ri-an (*san-i-tā'ri-an*), *adj.* having regard to the public health: *n.* an advocate or promoter of sanitary measures.

san-i-ta-ri-um (*-tā'ri-um*), *n.* a sanatorium, especially one where the treatment is prophylactic instead of therapeutic.

san-i-ta-ry (*san'i-tā-ri*), *adj.* pertaining to, connected with, or tending to promote, health, especially by legislative enactment.

san-i-ta-tion (*-tā'shun*), *n.* hygiene.

san-i-ty (*'i-ti*), *n.* saneness.

San Joaquin (*săn hō-ā-kēn'*). County and river in California. A Spanish phrase meaning "whom Jehovah has appointed."

San José (*săn hō-sā'*). City in Santa Clara county, California, named for the patron saint of Mexico, St. Joseph.

San Salvador (*săn săl-vā-dōr'*). Means "Holy Savior." This was the first land sighted by Columbus (October 11, 1492); he therefore gave it this name as a token of thanksgiving.

Sanskrit, (*san'skrit*). From the Hindu *sanscritu,* "polished," the learned language of the Hindustani and of the Brahmins, which was current at the time of Solomon. It is the parent of most modern languages. It contains the roots of Greek, Latin, Celtic, Slavonic, and German, and as it contains no exotic terms must be one of the primitive tongues.

Santa Barbara. County, and city in same county, in California, named for an old Spanish mission, which, in turn, probably received its name from the Santa Barbara channel, designated by Vizcaino as *Canal de Santa Barbara,* he having sailed through its waters, December 4, 1603, the day being St. Barbara's.

Santa Claus (*san'tà klawz*) or **Santa Klaus.** A modern adaptation of the Dutch *Sant Nikolaas* (St. Nicholas). As is now very well known, St. Nicholas was the patron saint of children and dispensed gifts to them on Christmas eve.

Santa Cruz (*săn'tà krōōs'*). Counties in Arizona and California, city and island in the latter state. A Spanish word meaning "holy cross."

Santa Fé (*săn'tà fā'*). County and city in same county, in New Mexico; city in Haskell county, Kansas, and town in Monroe county, Missouri. A Spanish phrase meaning "holy faith." The name originally given by Antonio de Espejo, in 1582, was *La Ciudad de la Santa Fé de San Francisco,* "the city of the holy faith of St. Francis."

Santiago (*săn-tē-ā'gō*). The capital of Chile, was founded in 1541 by Pedro de Valdivia, and placed under the protection of the patron saint of Spain. Iago is a form of Jacobus, and Santiago of Spain was St. James the Great, the elder brother of St. John.

sap (*sap*), *n.* the watery circulating juice of a plant; vital fluid: *v. t.* to deprive of vitality; undermine.

sap-id (*'id*), *adj.* savory.

sa-pi-ence (*sā'pi-ens*), *n.* knowledge; wisdom.

sa-pi-ent (*'pi-ent*), *adj.* wise; sagacious.

sap-ling (*sap'ling*), *n.* a young tree.

sap-o-na-ceous (*-ō-nā'shus*), *adj.* resembling, or having the qualities of, soap; unctuous.

sa-pon-i-fy (*sā-pon'i-fī*), *v. t.* [*p. t.* and *p. p.* saponified, *p. pr.* saponifying], to convert into soap by combination with an alkali.

sap-o-ros-i-ty (*sap-ō-ros'i-ti*), *n.* that quality in a substance which excites the sensation of taste.

sap-o-rous (*'ō-rus*), *adj.* having, or stimulating, flavor.

sap-per (*'ĕr*), *n.* one who saps; a soldier employed in sapping or digging trenches.

sap-phire (*saf'ir*), *n.* a precious stone of a blue color, a variety of corundum.

sap-py (*'i*), *adj.* full of sap; juicy.

Sara. A feminine name derived from the Italian form of *Sarah.*

sar-a-band (*sar'à-band*), *n.* a Spanish dance; music for such a dance.

Saracen (*sar'à-sen*). Is a term loosely used by mediæval writers to denote the Moslem races, and especially the foes of the Crusaders. It is a Greek corruption of the Arabic *sharqin,* "eastern" people, as opposed to the *maghrabi* or "western" people.

Saragossa (*sà-rà-gos'sà*). An ancient city of Spain; name corrupted from Cæsarea Augusta; its Basque name was *Saluba,* "the sheep's ford."

Sarah or **Sara** (*sā'rà*). From the Hebrew *Sarah,* variously rendered "female ruler, "governor," "princess," "noble lady," "leader," "commander." Dutch, *Sara;* Fr., *Sara;* Ger., *Sara;* It., *Sara;* Lat., *Sara;* Port., *Sara;* Sp., *Sara;* Sw., *Sarah.*

Saranac (*sar'à-nak*) **Lake.** Village in Franklin county, New York. An Indian word meaning "river that flows under a rock."

Saratoga (*sar-à-tō'gà*), **N. Y.** Uncertain. Termination *oga* or *aga* said to signify "place," the first part of the word thought by some to imply "hillside"; by others, a reference to the springs, *soragh* in some Indian dialects being the name for "salt"; *sestake* is given, meaning "on the heel," but no reason further than a probable corruption in pronunciation of the word. *Assarat,* "sparkling," *oga,* "place," is mentioned by Schoolcraft.

Sarawak (*sa-rā'wāk*). Malay *Sarakaw,* "the cove," or bay. British protectorate of western Borneo.

sar-casm (*sär'kazm*), *n.* a bitter, cutting, satirical expression.

sar-cas-tic (*-kas'tik*), *adj.* bitterly satirical. [Also *sarcastical.*]

sar-co-derm (*'kō-dĕrm*), *n.* the fleshy layer between the interior and exterior covering of a seed.

sar-coph-a-gus (*-kof'à-gus*), *n.* a limestone used by the Greeks for coffins; a stone coffin.

sard (*särd*), *n.* a precious stone, a deep blood-red variety of carnelian.

sar-dine (*-dēn'*), *n.* a species of pilchard, abundant in the Mediterranean, and preserved in oil for exportation.

Sardinia (*sär-din'i-à*). Italian, *Sardegna.* Bears the name of the *Sardi,* its early inhabitants, who may possibly be identified with the *Shardina,* or *Shardana,* one of the northern races who attacked Egypt in the reign of Meneptah. Another view is that it expresses the "land of the sardonion," a Greek term for a plant indigenous to this island.

sar-don-ic (*-don'ik*), *adj.* forced, bitter, or heartless: said of a laugh or smile.

sar-do-nyx (*'dō-niks*), *n.* a variety of agate.

sar-sa-pa-ril-la (*-sà-pà-ril'à*), *n.* a twining shrub found in Mexico, etc., the root of which is used as a medicine.

sar-to-ri-al (*-tō'ri-al*), *adj.* pertaining to a tailor.

sash (*sash*), *n.* a band, ribbon, or scarf; a frame for holding panes of glass: *v. t.* to furnish with sashes.

Saskatchewan (*sas-kach'ē-won*). A river in British North America. The name is derived from the Indian, meaning "swift river."

sas-sa-fras (*'à-fras*), *n.* a tree allied to the laurel, with a fragrant root, wood, and flowers.

Sa-tan (*sā'tan*), *n.* the Devil.

sa-tan-ic (*sà-tan'ik*), *adj.* pertaining to, or resembling, Satan; diabolical; infernal; very malicious.

satch-el (*sach'el*), *n.* a small bag for carrying books, papers, etc.; any handbag.

sate (*sāt*), *v. t.* to satisfy the appetites or desires of.

sat-een (*sat-ēn'*), *n.* a woolen or cotton fabric made in imitation of satin.

sat-el-lite (*sat'el-īt*), *n.* a small planet revolving round a larger one, an obsequious attendant.

sa-ti-ate (*sā'shi-āt*), *v. t.* to fill, or gratify fully; surfeit; glut: *adj.* glutted.

sa-ti-e-ty (*sà-ti'ē-ti*), *n.* fullness of gratification beyond desire; repletion.

★sat-in (not *sat'in*, but *sat'n*), *n.* a closely woven glossy silk: *adj.* made of, or like, satin.

sat-ire (*sat'ir*), *n.* a species of poetry in which contemporary vice and folly are held up to ridicule; sarcasm; ridicule.

sa-tir-ic (*sà-tir'ik*), *adj.* pertaining to, or containing, satire; addicted to satire. [Also *satirical.*]

sat-ir-ist (*sat'ĕr-ist*), *n.* a writer of satire; one who satirizes.

sat-ir-ize (*sat'ĕr-īze*), *v. t.* to assail or ridicule with satire.

sat-is-fac-tion (*sat-is-fak'shun*), *n.* the act of satisfying; the state of being satisfied; contentment. [CONTENTMENT, COMPENSATION.]

sat-is-fac-to-ry (*'tō-ri*), *adj.* giving satisfaction or content; making redress.

sat-is-fy (*'is-fī*), *v. t.* to gratify to the fullest degree; pay in full; discharge: *v. i.* to give satisfaction.

Syn. SATISFY, please, gratify. What *satisfies* is not always calculated to *please;* nor is that which *pleases* that which will always *satisfy;* plain food *satisfies* a hungry person, but does not *please* him when he is not hungry; *to gratify* is *to please* in a high degree, to produce a vivid *pleasure;* we may be *pleased* with trifles; but we are commonly *gratified* with such things as act strongly either on the senses or the affections.

sat-u-rate (*'ù-rāt*), *v. t.* to soak or imbue.

sat-u-ra-tion (*-rā'shun*), *n.* impregnation of one substance by another until the latter can contain no more.

Saturday. The day of Saturn, one of the planets of the solar system.

sat-ur-nine (*-ur'nin*), *adj.* under the influence of the planet Saturn; dull; morose; gloomy; phlegmatic.

sa-tyr (*sā'tĕr*), *n.* a sylvan Greek deity, attendant on Bacchus, represented with long, pointed ears, short horns, a man's body, and the legs of a goat.

sauce (*saws*), *n.* a liquid condiment or seasoning for food; pertness: *v. t.* to put sauce into.

sauce-box (*'boks*), *n.* a pert, impudent person.

sau-cer (*saw'sĕr*), *n.* a shallow piece of china, etc., in which a tea or coffee cup is placed.

sau-ci-ness (*'si-nes*), *n.* impudent pertness or boldness.

sau-cy (*'si*), *adj.* [*comp.* saucier, *superl,* sauciest], pert; impudent.

sauer-kraut (*sour'krout*), *n.* a pickle of chopped cabbage packed in layers with salt between, which causes fermentation.

Saugatuck (*saw'gà-tuk*), **Conn.** Indian *sauketuck,* "at the mouth of the stream with tides."

saul (*sawl*), *n.* an Indian timber tree, used for building purposes, and yielding the resin called dammar.

Saul. From the Hebrew *Shaul,* which Simonis translates "exoratus," *i. e.,* obtained by entreaty; and others, "asked for, or desired." Fr., *Saul;* Lat., *Saulus.*

Sault Ste. Marie, Mich. See *St. Marie, Sault.*

saun-ter (*sän'tĕr* or *sawn'tĕr*), *v. i.* to wander about idly; loiter; linger: *n.* a place for sauntering; idle walk or ramble. [LINGER].

sau-sage (*saw'sāj*), *n.* the gut of an animal stuffed with seasoned minced meat.

sau-terne (*-tärn'*), *n.* a French white wine.

sav-a-ble (*sāv'à-bl*), *adj.* capable of being saved.

★sav-age (*sav'āj*), *adj.* uncivilized; wild; cruel; fierce; pitiless: *n.* barbarian. [CRUEL, FEROCIOUS.]

sav-age-ry (*'āj-ri*), *n.* the state of being wild or uncivilized; barbarism; brutal roughness.

sa-van-nah (*sà-van'à*), *n.* an extensive open plain or meadow. [Also *savanna.*]

Savannah (*sà-van'nà*). Town in Wayne county, New York, and city and river in Georgia. The name derived from the Spanish word *savanne,* meaning "grassy plain."

sa-vant (*-vänn*), *n.* a man of learning or science. [*French.*]

save (*sāv*), *v. t.* to bring out of danger or preserve from evil; rescue; lay by; take advantage of: *v. i.* to be economical: *prep.* except; not including. [DELIVER, KEEP.]

sav-in (*sav'in*), *n.* an evergreen tree or shrub with a dark foliage and bluish-green berries.

sav-ing (*sāv'ing*), *adj.* preserving; frugal; parsimonious: *n.* an exception or reservation. [FRUGALITY, PENURIOUS.]

sav-ior (*sāv'yĕr*), *n.* one who saves.

Sav-ior, Sav-iour, *n.* Jesus Christ, the Redeemer (with *the*).

sa-vor (*sā'vĕr*), *n.* flavor; taste; relish; **scent:** *v. i.* to have a particular flavor or smell.

sa-vor-y (*'vĕr-i*), *n.* an aromatic plant.

sa-voy (*sà-voi'*), *n.* a kind of winter cabbage with crisp curled leaves.

saw (*saw*), *n.* a cutting steel instrument with a toothed edge: *v. t.* to cut with, or as with, a saw: *v. i.* to be cut with a saw: *p. t.* of *see.*

saw-yer (*'yĕr*), *n.* one who saws timber into planks.

Saxon. Comes from the word *seax,* a short crooked sword; and so "the men of the sword."

Saxony (*saks'un-i*). A modern German kingdom, called *Sachsen* in German; the country of the Saxons.

sax-o-phone (*'ō-fōn*), *n.* a brass musical instrument with a single reed and clarinet mouthpiece.

say (*sā*), *v. t.* [*p. t.* and *p. p.* said (*sed*), *p. pr.* saying], to utter in words; declare; speak; decide: *v. i.* to speak; relate; answer: *imper.* tell me: *n.* speech. [SPEAK, ALLEGE, ANNOUNCE.]

scab (*skab*), *n.* an incrustation formed over a wound; a workman who takes the place abandoned by a striker.

scab-bard (*'ĕrd*). *n.* the sheath in which the blade of a sword is kept: *v. t.* to put into a scabbard.

scab-by (*skab'i*), *adj.* covered with, or full of, scabs; affected with scab.
scad (*skad*), *n.* the shad or horse mackerel.
scaf-fold (*skaf'ōld*), *n.* a temporary timber stage or structure; an elevated platform for the execution of a criminal: *v. t.* to furnish or support with a scaffold.
scaf-fold-ing (*-ing*), *n.* a scaffold; materials for erecting scaffolds; framework.
scal-a-ble (*skāl'ȧ-bl*), *adj.* capable of being scaled.
scal-a-wag (*skal'ȧ-wag*), *n.* a scamp; scapegrace.
scald (*skawld*), *v. t.* to burn with hot liquid or steam; injure by contact with any hot fluid: *n.* a burn or injury to the skin or flesh from a hot liquid or steam.
scald-ic (*'ik*), *adj.* pertaining to, or composed by, the scalds or Norse poets. [Also *skaldic.*]
scald-ing (*'ing*), *p. adj.* burning, as with a hot liquid or steam.
scale (*skāl*), *n.* a balance; the small bony or horny plates covering a fish, certain reptiles, and insects: *v. t.* to strip or clear of scales; clamber up; ascend by steps or by climbing: *v. i.* to separate and come off in thin layers.
★**sca-lene** (*skȧ-lēn'*, not *skā'lēn*), *adj.* having the sides and angles unequal: said of a triangle.
scal-lop (*skol'up*), *n.* a marine bivalve fish; a curving or recess: *v. t.* to cut the edge or border of in scallops or curves.
scal-loped oys-ters (*'upt ois'tẽrz*), *n. pl.* oysters baked with bread crumbs, etc.
scalp (*skalp*), *n.* the skin on the top of the head from which the hair grows: *v. t.* to deprive of the scalp.
scalp-el (*'el*), *n.* a small keen-edged knife.
scalp-er (*'ẽr*), *n.* one who scalps; a person who buys and sells the unused parts of railway tickets.
scal-y (*skāl'i*), *adj.* covered with, or like, scales; mean; caddish.
scamp (*skamp*), *n.* a rascal; worthless fellow; rogue.
scam-per (*skam'pẽr*), *v. i.* to run with speed; hasten away: *n.* a hasty flight.
scan (*skan*), *v. t.* to examine by counting the metrical feet or syllables; scrutinize or examine carefully.
scan-dal (*'dal*), *n.* something uttered that is false and injurious to the reputation of a person; opprobrium; defamation; disgrace. [DISCREDIT.]
scan-dal-ize (*-īz*), *v. t.* to offend by some supposed improper action or conduct.
scan-dal-ous (*-us*), *adj.* giving offense to the conscience or moral sense; exciting condemnation or opprobrium. [INFAMOUS.]
Scandinavia (*skan-di-nā'vi-ȧ*). A convenient name for the Swedish and Norwegian peninsula adopted from a passage in Pliny where the correct reading is probably *Scadinavia*, which Mr. Bradley refers to the Teutonic *shadino*, "dark." *Scadinavia*, the "land of darkness," was possibly at first a mythical name for the dark north, which was afterward applied to the Swedish peninsula.
Scan-di-na-vi-an (*-di-nā'vi-an*), *adj.* pertaining to Scandinavia, its language, literature, or people. [Also *Scandian.*]
scant (*skant*), *adj.* [*comp.* scanter, *superl.* scantest], not full or abundant; scarcely sufficient: *v. t.* to stint; treat illiberally; limit: *v. i.* to fail or become diminished.
scant-ling (*'ling*), *n.* a piece of timber cut or sawed of small size; the size to which a piece of timber is to be cut.
scant-y (*'i*), *adj.* [*comp.* scantier, *superl.* scantiest], narrow; barely sufficient; scant. [BARE.]
scape (*skāp*), *n.* the shaft of a column where it leaves the base.
scape-goat (*'gōt*), *n.* one who bears the blame for others.
scape-grace (*'grās*), *n.* a graceless, unprincipled fellow.
scap-ple (*skap'l*), *v. t.* to rough dress (stone) preparatory to hewing.
scap-u-la (*'ū-lȧ*), *n.* the shoulder blade.
scar (*skär*), *n.* a mark caused by a wound; mark or blemish: *v. t.* to mark with, or as with, a scar: *v. i.* to form a scar.
scar-ab (*skar'ab*), *n.* a lamellicorn beetle, scarabæus; a gem or seal cut in the form of a beetle, worn as a charm by the ancient Egyptians.
scarce (*skârs*), *adj.* not common; not plentiful; not equal to the demand. [RARE.]
scarce-ly (*'li*), *adv.* seldom; rarely; with difficulty. [HARDLY.]
scare (*skâr*), *v. t.* to strike with sudden terror; frighten: *n.* a sudden fright or panic.
scare-crow (*'krō*), *n.* anything fantastic set up to scare away birds; a vain cause of terror; a guy.
scarf (*skärf*), *n.* a light handkerchief or tie for the neck; sash: *v. t.* throw on loosely; dress with a scarf.
scar-i-fy (*skar'i-fī*), *v. t.* to scratch or cut; to stir up and prepare for planting: as, to *scarify* the soil.
scar-la-ti-na (*skär-lȧ-tē'nȧ*), *n.* scarlet fever of a mild form.
scar-let (*'let*), *n.* a bright red color; cloth of such a color: *adj.* of a scarlet color.
scar-let fe-ver (*fē'vẽr*), a contagious febrile disease characterized by a scarlet eruption.
scarp (*skärp*), *n.* a slope or declivity, nearly perpendicular: *v. t.* to cut perpendicularly or nearly so.
scath-ing (*skath'ing*), *adj.* injurious; hurtful; very severe or bitter.

scat-ter (*skat'ẽr*), *v. t.* to strew or throw loosely about; disperse or dissipate: *v. i.* to be dispersed.
scat-ter-brained (*-brānd*), *adj.* giddy.
scav-enge (*skav'enj*), *v. t.* to cleanse, as streets, from mud and filth.
scav-en-ger (*'en-jẽr*), *n.* a man employed to clean the streets; any animal that devours refuse or any other deleterious matter.
sce-na-ri-o (*shā-nä'rē-ō*), *n.* the sketch of a plot or chief incidents of a libretto or play.
scene (*sēn*), *n.* the time, place, or circumstance, etc., in which anything occurs: spectacle; exhibition.
scen-er-y (*'ẽr-i*), *n.* the appearance of anything presented to the vision; general aspect.
scen-ic (*sen'ik*), *adj.* pertaining to scenery or to the stage; dramatic. [Also *scenical.*]
sce-no-gra-phy (*sē-nog'rȧ-fi*), *n.* the art of drawing in perspective.
scent (*sent*), *n.* odor; sense of smell; chase followed by means of the scent: *v. t.* to perceive by the olfactory nerves; smell; perfume.
scep-ter, scep-tre (*sep'tẽr*), *n.* a staff borne by a sovereign as the emblem of authority; royal mace.
sched-ule (*sked'ūl*), *n.* a written or printed paper or parchment containing a list, or inventory: *v. t.* to place in a schedule.
scheme (*skēm*), *n.* plan; contrivance; purpose; plot: *v. t.* to design or plan; plot: *v. i.* to form a scheme or plan.
Schenectady (*sken-ek'tȧ-di*), **N. Y.** Originally spelled *Schenectada*, from the Indian *Schaunaughtada*, "river valley through or beyond the pine trees," there being a portage across the woodland neck, from the present site of Albany to the Mohawk river, at this point.
schism (*sizm*), *n.* a split or division.
schis-mat-ic (*siz-mat'ik*), *adj.* pertaining to, characteristic of, or implying, schism: *n.* one who creates or takes part in a schism.
schist (*shist*), *n.* any rock that splits into slates or slabs.
Schoharie (*skō-har'i*), **N. Y.** Corruption of the Indian *to-wos-sho'her*, "drift wood," from its collecting at this point, where the Line Kil and Little Schoharie flowed into the main stream.
schol-ar (*skol'ẽr*), *n.* a student; disciple; man of letters; an undergraduate on the foundation of a college.
schol-ar-ly (*-li*), *adj.* like a scholar: *adv.* in the manner of a scholar.
schol-ar-ship (*'ẽr-ship*), *n.* learning; erudition; maintenance for a scholar, awarded by an educational institution.
scho-las-tic (*skō-las'tik*), *adj.* pertaining to a scholar or to schools; scholar-like.
scho-las-ti-cism (*'ti-sizm*), *n.* the scholastic philosophy of the mediæval age.
Schönbrunn (*shön'broon*). Near Vienna, the suburban residence of the Austrian emperors, so called from a "beautiful spring" in the grounds of the palace, was erected in 1744 by Maria Theresa on the site of a former hunting seat.
school (*skōōl*), *n.* a place where instruction is given; scholars or pupils collectively; disciples of a particular teacher: *v. t.* to train or instruct. [TEACH.]
school-man (*'man*), *n.* [*pl.* schoolmen (*'men*)], one of the divines and philosophers in the middle ages.
schoon-er (*skōōn'ẽr*), *n.* a vessel with 2 masts, sometimes 3, rigged fore and aft; a tall beer glass.
★**schot-tische** (*shot-ēsh'*), *n.* a kind of polka.
Schroon (*skrōōn*) **lake, N. Y.** Said to be a corruption of *Scharon*, and to have been applied in honor of the duchess of Scharon, favorite of Louis XIV. Others derive it from an Adirondack Indian word signifying "a child or daughter of the mountain."
Schuylkill (*skōōl'kil*) **river, Pa.** From the Dutch *schuylen-kill*, "hidden creek." The Swedes called it *Skierkillen*. Indian name was *ganshowehanne*, "the roaring stream."
sci-ag-ra-phy (*sī-ag'rȧ-fi*), *n.* the art or science of projecting or delineating shadows as they fall in nature.
sci-at-ic (*-at'ik*), *adj.* pertaining to, or affecting, the hip.
sci-at-i-ca (*'i-kȧ*), *n.* neuralgia of the sciatic nerve.
sci-ence (*'ens*), *n.* systematized knowledge of any one department of mind or matter. [KNOWLEDGE.]
sci-en-tif-ic (*-en-tif'ik*), *adj.* pertaining to, used in, or skilled in, science; skillful.
sci-en-tist (*'en-tist*), *n.* one skilled in, or devoted to, science.
scim-i-tar (*sim'i-tẽr*), *n.* an Oriental sword with a curved blade having its edge on the convex side. [Also *scimeter.*]
scin-til-late (*sin'til-āt*), *v. i.* to emit sparks, fire, or igneous particles; twinkle.
sci-on (*sī'on*), *n.* the sprout or shoot of a plant; a descendant; heir.
sci-op-tic (*-op'tik*), *adj.* pertaining to the art of exhibiting luminous images in a darkened room or camera obscura.
Scioto (*sī-ō'tō*) **river, Ohio.** Shawnoese Indian word meaning "hairy," its waters at flood in the spring being filled with hairs, attributed to the herds of deer drinking or bathing in the water at the season of shedding their coats.

scis-sors (*siz'ẽrz*), *n. pl.* a cutting instrument resembling shears but smaller.
scle-rot-ic (*sklē-rot'ik*), *adj.* hard; noting the firm white outermost membrane of the eyeball.
scoff (*skôf*), *n.* an expression of scorn or contempt; ridicule; derision: *v. i.* to exhibit scorn or contempt: *v. t.* to treat or address with derision.
scold (*skōld*), *v. i.* to chide sharply or rudely: *v. t.* to find fault with: *n.* one who habitually scolds.
sconce (*skons*), *n.* a bulwark; small fort; protection.
scoop (*skōōp*), *n.* a large ladle; deep shovel; kind of scuttle: *v. t.* to take out, or up, with a scoop.
scoot (*skōōt*), *v. i.* to walk or run hastily.
scope (*skōp*), *n.* room or opportunity for free outlook or action; aim or intention; design: *suffix* meaning *an instrument for viewing*, as micro*scope*.
scor-bu-tic (*skôr-bū'tik*), *adj.* pertaining to, or affected by, scurvy.
scorch (*skôrch*), *v. t.* parch, shrivel, or affect painfully with heat: *v. i.* to be scorched.
score (*skōr*), *n.* a notch or incision, especially one made as a reckoning; the number 20: *v. t.* to make a score of.
sco-ri-a (*skō'ri-ȧ*), *n.* [*pl.* scoriæ (*-ē*)], volcanic cinder; slag formed after the fusion of metallic ores.
sco-ri-a-ceous (*-ā'shus*), *adj.* pertaining to, or resembling, scoria.
scorn (*skôrn*), *n.* extreme and lofty contempt; haughty disdain: *v. t.* to hold in extreme contempt or disdain. [CONTEMN.]
scorn-ful (*'fool*), *adj.* full of scorn; contemptuous; disdainful.
scor-pi-on (*skôr'pi-un*), *n.* an individual of the genus Scorpio, furnished with lobster-like claws, and armed with a poisonous sting in the tail; a painful scourge.
scotch, *n.* a wedge, etc., to prevent slipping or rolling; a slight cut or incision: *v. t.* to cut or wound superficially.
sco-ti-a (*skō'shi-ȧ*), *n.* the hollow molding in the base of an Ionic column.
Scotland. Originally *Caledonia*, meaning, literally, the hilly country of the Caels, or Gaels, signifying "a hidden rover."
Scotland Yard. A short street in London, near Trafalgar square. Here formerly were the headquarters of the metropolitan police, now removed to new Scotland Yard on the Thames embankment, near Westminster bridge.
scoun-drel (*skoun'drel*), *n.* a man without honor or virtue; low, worthless fellow.
scour (*skour*), *v. t.* to clean by friction; cleanse from grease, dirt, and make bright; search thoroughly; purge.
scourge (*skûrj*), *n.* a whip with thongs used as a punishment: *v. t.* to whip severely; afflict or harass greatly.
scout (*skout*), *n.* a person sent out to obtain and bring in information, especially of the movements, etc., of an enemy: *v. i.* to act as a scout.
scow (*skou*), *n.* a large flat-bottomed boat with square ends: *v. t.* to transport in a scow.
scowl (*skoul*), *v. i.* look sullen or angry: *n.* the wrinkling of the brows in displeasure or anger; frown.
scrab-ble (*skrab'l*), *v. i.* to scrawl or scribble; make irregular, umneaning marks: *v. t.* to mark with irregular lines or letters.
scrag (*skrag*), *n.* anything thin, lean, or rough; something merely skin and bones.
scrag-gy (*'i*), *adj.* lean, thin, and rough; rough, with irregular points.
scram-ble (*skram'bl*), *v. i.* to clamber with the hands and feet: *v. t.* to toss together at random: *n.* a rude, eager struggle.
scrap (*skrap*), *n.* a small or detached piece; fragment; a scrimmage: *v. i.* to engage in a scrimmage.
scrap-book (*'book*), *n.* a blank book for the pasting in of newspaper extracts, etc.
scrape (*skrāp*), *v. t.* to make a harsh or grating noise on; rub with something sharp; clean by rubbing: *n.* the act, noise, or effect of scraping; difficulty; perplexity.
scratch (*skrach*), *v. t.* to mark or tear the surface of with something pointed; wound slightly: *v. i.* to use the nails or claws in tearing or digging.
scrawl (*skrawl*), *v. t.* and *v. i.* to write or draw irregularly or hastily; scribble: *n.* hasty, irregular, or illegible writing; scribble.
screak (*skrēk*), *n.* a shriek; screech.
scream (*skrēm*), *n.* a sharp, shrill cry, as of fear or pain: *v. i.* to utter such a cry.
screech (*skrēch*), *n.* a harsh, shrill cry: *v. i.* to utter a harsh, shrill cry.
screed (*skrēd*), *n.* loud, shrill sound; a piece of poor prose or verse.
screen (*skrēn*), *n.* a light movable partition for protection; coarse sieve: *v. t.* to shelter or conceal; protect. [COVER.]
screw (*skrōō*), *n.* a cylinder of metal or wood grooved spirally: *v. t.* apply a screw to; twist.
screw pro-pel-ler (*-prō-pel'ẽr*), a spiral-bladed wheel at the stern of a steam vessel for propelling it; the vessel thus propelled.
scrib-ble (*skrib'l*), *v. t.* to write hastily and carelessly: *v. i.* write carelessly and without regard to correctness: *n.* hasty, careless writing.
scribe (*skrīb*), *n.* a writer; clerk; amanuensis; a teacher or copyist of the Jewish law: *v. t.* to adjust.
scrim (*skrim*), *n.* a kind of fabric of cotton or linen for making blinds, etc.
scrim-mage (*'āj*), *n.* a general quarrel or fight.

scrimp (*skrimp*), *v. t.* to make small, narrow, or short: *v. i.* to be parsimonious or miserly: *adj.* curtailed: *n.* a niggard or miser. [FRUGALITY.]
scrip (*skrip*), *n.* a satchel; schedule; certificate; writing.
script (*skript*), *n.* a piece of writing; style of writing.
scrip-tur-al (*skrip'tūr-al*), *adj.* pertaining to, contained in, or according to, the Scriptures; biblical.
Scrip-ture (*'tūr*), *n.* sacred writing; biblical text: *pl.* the books of the Old and New Testaments; the Bible.
scrive-ner (*skriv'nēr*), *n.* one who draws up contracts, prepares writings, etc.
scrof-u-la (*skrof'ū-la*), *n.* a disease caused by the formation and deposition of tubercle in the organs and tissues of the body.
scrof-u-lous (*-lus*), *adj* pertaining to, of the nature of, or affected with, scrofula.
scroll (*skrōl*), *n.* a roll of paper or parchment; a convoluted spiral ornament.
scro-tum (*skrō'tum*), *n.* the pouch which contains the testes.
scrouge (*skrouj*), *v. t.* to crowd or squeeze.
scrub (*skrub*), *v. t.* to rub hard; wash with rubbing or a wet brush: *v. i.* to clean or scour: *n.* one who labors hard and lives meanly.
scrub-by (*'i*), *adj.* mean and small; stunted in growth; covered with brushwood; unshaven.
scrump-tious (*skrump'shus*), *adj.* nice; excellent; fine.
scru-ple (*skrōō'pl*), *n.* 1-3 of a dram, or 20 grains; hesitation, especially from conscientious motives: *v. i.* to hesitate from conscientious motives.
scru-pu-lous (*'pū-lus*), *adj.* full of scruples; conscientious; exact; careful; strict.
scru-ti-nize (*'ti-nīz*), *v. t.* to inspect or examine closely.
scru-ti-ny (*'ti-ni*), *n.* close inspection or examination; minute inquiry.
scud (*skud*), *v. i.* to run quickly; run before a gale of wind with little or no sail spread: *n.* the act of scudding.
scuf-fle (*skuf'l*), *v. i.* to fight or struggle confusedly: *n.* a struggle for mastery with close grappling.
scull (*skul*), *n.* one of a pair of short oars; an oar used at the stern of a boat with a scull or sculls: *v. i.* to impel a boat with a scull or sculls.
scul-ler-y (*'ēr-i*), *n.* [*pl.* sculleries (*-iz*)], a place where culinary utensils, etc., are kept and cleansed.
scul-lion (*'yun*), *n.* a servant employed in the menial work of a scullery.
sculp-tor (*skulp'tēr*), *n.* one who practices the art of sculpture.
sculp-tur-al (*'tūr-al*), *adj.* pertaining to sculpture.
sculp-ture (*'tūr*), *n.* the art of carving, cutting, or hewing stone or other material; carved work: *v. t.* to represent in, or fashion by, sculpture.
scum (*skum*), *n.* extraneous matter or impurities which rise to the surface of liquids; anything worthless or vile.
scup-per (*skup'ēr*), *n.* a hole or tube in the side of a ship to carry off deck water.
scurf (*skērf*), *n.* minute, white, flaky scales; loosely adherent matter.
scurf-y (*'i*), *adj.* [*comp.* scurifier, *superl.* scurfiest], pertaining to, producing, covered with, or like, scurf.
scur-rile (*skur'il*), *adj.* befitting a buffoon or vulgar jester.
scur-ril-ous (*'il-us*), *adj.* using the low, indecent language of the vulgar; mean.
scur-ry (*skur'i*), *v. i.* [*p. t.* and *p. p.* scurried, *p. pr.* scurrying], to hasten or move rapidly along: *n.* hurried movement.
scur-vy (*'vi*), *adj.* affected by scurvy; vile; contemptible: *n.* a disease; a condition of anæmia.
Scutari (*skōō'tä-rē*). In Turkey, from *uskudar*, "a messenger," having been in remote periods, what it is to this day, a station for Asiatic couriers.
scutch (*skuch*), *v. t.* to dress (flax or cotton) by beating.
scutch-eon (*'un*), *n.* an escutcheon; shield for a keyhole.
scut-tle (*skut'l*), *v. i.* to hasten or hurry: *v. t.* to cut a hole or holes in (a ship) to sink it: *n.* a pan for holding coals; hatchway or small opening.
scythe (*sīth*), *n.* a curved cutting instrument used for mowing grass, etc.
sea (*sē*), *n.* an expanse of salt water; the ocean; swell of the ocean.
sea bear (*'bâr*), the polar bear.
sea calf (*'käf*), the seal.
sea cow (*'kou*), walrus.
sea cu-cum-ber (*'kū-kum-bēr*), the trepang.
sea dev-il (*'dev-il*), a fish with a large head and great mouth.
sea dog (*'dog*), an old sailor.
sea el-e-phant (*'el-ē-fant*), a variety of seal.
sea-far-ing (*'fâr-ing*), *adj.* following the occupation of a sailor.
seal (*sēl*), *n.* a carnivorous marine mammal, valuable for its skin and oil; a stamp or die engraved with some device; wax or other soft substance; that which seals or fastens: *v. t.* to fasten with a seal; ratify or confirm.
sea li-on (*sē' lī-un*), a name for several large species of seals.
seam (*sēm*), *n.* line of junction or union; thin layer: *v. t.* to form a seam upon or of; scar: *v. i.* to crack open.
sea-man (*sē'man*), *n.* one engaged in navigation.
Syn. SEAMAN, waterman, sailor, mariner. All these words denote persons occupied in navigation. The *seaman*, as the word implies, follows his business on the *sea;* the *waterman* is one who gets his livelihood on fresh *water;* the *sailor* and the *mariner* are both specific terms to designate the *seaman;* every *sailor* and *mariner* is a *seaman;* although every *seaman* is not a *sailor* or *mariner;* the former is one who is employed about the laborious part of the vessel; the latter is one who traverses the ocean to and fro, who is attached to the *water* and passes his life upon it.
sea mew (*sē' mū*), a species of gull.
seam-stress (*sēm'stres*), *n.* a needlewoman.
seam-y (*'i*), *adj.* showing, or like, seams.
seam-y side (*sīd*), the worst side.
★**sé-ance** (*sē'ans*, French *sā'äns*), *n.* a meeting of spiritualists.
sear (*sēr*), *v. t.* cauterize; brand; render callous or insensible.
search (*sērch*), *v. t.* to seek for: *v. i.* to make inquiry; seek: *n.* the act of seeking or looking for something. [SEEK.]
search war-rant (*'wor-ant*), *n.* a warrant to search a house.
seared (*sērd*), *adj.* hardened; callous; indifferent; cauterized.
sea-son (*sē'zn*), *n.* any particular time as distinguished from others: *v. t.* to mature; spice: *v. i.* to become mature, acclimated, inured. [TIME.]
sea-son-a-ble (*-a-bl*), *adj.* occurring, or done, in proper time. [TIMELY.]
sea-son-ing (*-ing*), *n.* that which is added to give relish to food.
seat (*sēt*), *n.* that on which any one sits; post or authority; site; residence: *v. t.* to place on a seat; cause to sit down; install; fix.
Seattle (*sē-at'l*). City in King county, Washington, named for the chief of the Duwamish tribe of Indians, *See-aa-thl.*
Sebago (*sē-bā'gō*) **pond, Me.** From the Indian, meaning "great water," or "place or region of river lake."
Sebastian (*sē-bas'chan*, Spanish *sä-bäs-tē-än'*). From the Greek rendering of Augustus, and signifying "to be venerated or reverenced", "venerable." Dutch, *Sebastiaan;* Fr., *Sebastien;* It., *Sebastiano;* Lat., *Sebastianus;* Port., *Sebastiao;* Russ., *Sevastian;* Sp., *Sebastian;* Sw., *Sebastian.*
Sebastopol (*sē-bas'tō-pōl*). The "august" or "imperial city," was founded and named by Potemkin soon after the conquest of the Crimea in 1783.
se-cant (*sē'kant*), *adj.* cutting into two parts.
se-cede (*sē-sēd'*), *v. i.* to withdraw from fellowship, communion, or association.
se-ces-sion (*-sesh'un*), *n.* the act of seceding.
se-clude (*-klōōd'*), *v. t.* to keep apart.
se-clu-sion (*-klōō'zhun*), *n.* separation or withdrawal from the society of others; privacy. [PRIVACY.]
se-clu-sive (*'siv*), *adj.* keeping in seclusion.
sec-ond (*sek'und*), *adj.* immediately following the first; inferior; subordinate: *n.* one, or that, next the first; one who attends on the principal at a duel; backer; the 1-60th part of a minute of time or of a degree: *v. t.* to follow; assist; support. [ABET.]
sec-ond-a-ry (*'und-ā-ri*), *adj.* succeeding next in order to the first; subordinate; inferior.
se-cre-cy (*sē'krē-si*), *n.* [*pl.* secrecies (*-siz*)], the state or quality of being hidden; concealment.
se-cret (*'kret*), *adj.* hidden or concealed; silent; private: *n.* that which is concealed.
Syn. SECRET, hidden, latent, occult, mysterious. What is *secret* is known to some one; what is *hidden* may be known to no one; it rests in the breast of an individual to keep a thing *secret;* it depends on the course of things if anything remains *hidden.* The *latent* is the *secret* or concealed, in cases where it ought to be open; a *latent* motive is that which a person intentionally, though not justifiably, keeps to himself; an *occult* science is one that is hidden from the view of persons in general, which is attainable by but few; *occult* causes or qualities are those which lie too remote to be discovered by the inquirer; the operations of Providence are said to be *mysterious,* as they are past finding out. [See *clandestine, mysterious.*]
Ant. APPARENT, obvious, open, known.
★**sec-re-ta-ry** (*sek'rē-tā-ri*, not *sek'ē-tā-ri*), *n.* [*pl.* secretaries (*-riz*)], a person employed to assist another in correspondence, etc.; an escritoire.
se-crete (*sē-krēt'*), *v. t.* to hide or conceal; separate from the blood, sap, etc. [CONCEAL.]
se-cre-tion (*-krē'shun*), *n.* the act of secreting; any substance secreted.
se-cret-ive (*-krēt'iv*), *adj.* tending to keep secret.
se-cret-ive-ness (*-krēt'iv-nes*), *n.* the quality of being secretive.
se-cre-to-ry (*-krē'tō-ri*), *adj.* performing, or connected with, the office of secretion.
sect (*sekt*), *n.* a number of persons united by some particular religious doctrines.
sec-ta-ri-an (*sek-tā'ri-an*), *adj.* pertaining to, or characteristic of, a sect: *n.* a member of a sect.
sec-ta-ri-an-ism (*-an-izm*), *n.* the spirit, tendency, or principles of a sect; adherence to some particular sect.
sec-tion (*'shun*), *n.* the act of cutting, or separation by cutting; part or division; 1-36th of a township.
sec-tion-al-ism (*'shun-al-izm*), *n.* local patriotism.
sec-tor (*sek'tēr*), *n.* that part of a circle included between two radii and the arc.
sec-u-lar (*sek'ū-lēr*), *adj.* worldly; temporal: *n.* a layman.
sec-u-lar-ism (*-izm*), *n.* the principles or tenets of the secularists.
sec-u-lar-ist (*-ist*), *n.* one who objects to religious teaching in elementary schools.
sec-u-lar-i-ty (*-lar'i-ti*), *n.* worldliness.
sec-u-lar-ize (*'ū-lēr-īz*), *v. t.* to render worldly or unspiritual.
se-cure (*sē-kūr'*), *adj.* free from danger; safe; protected; confident: *v. t.* to make safe; protect; confine; gain possession of. [CERTAIN.]
se-cur-i-ty (*'i-ti*), *n.* [*pl.* securities (*-tiz*)], the state or quality of being secure; assurance; certainty; pledge. [DEPOSIT.]
se-dan (*-dan'*), *n.* a portable covered chair or vehicle carried by two men by means of a pole on either side. [Also *sedan chair.*]
se-date (*sē-dāt'*), *adj.* calm; composed; quiet; serious; unruffled. [CALM, COMPOSED.]
sed-a-tive (*sed'a-tiv*), *adj.* allaying nervous irritation and irritability; assuaging pain: *n.* medicine having such an effect.
sed-en-ta-ry (*'en-tā-ri*), *adj.* characterized by much sitting; inactive.
sedge (*sej*), *n.* a coarse grass of the genus Carex.
sedg-y (*'i*), *adj.* overgrown with sedge.
sed-i-ment (*sed'i-ment*), *n.* dregs; lees.
★**sed-i-men-ta-ry** (*-i-men'ta-ri*), *adj.* pertaining to, or formed by, or consisting of, sediment.
se-di-tion (*sē-dish'un*), *n.* any offense against the state less grave than insurrection or treason; the stirring up of such. [INSURRECTION.]
se-di-tious (*'us*), *adj.* pertaining to, of the nature of, or characterized by, sedition. [FACTIOUS.]
se-duce (*-dūs'*), *v. t.* to entice from the paths of rectitude, duty, or virtue.
se-du-cer (*-dū'sēr*), *n.* one who seduces.
se-du-ci-ble (*'si-bl*), *adj.* capable of being seduced.
se-duc-tion (*-duk'shun*), *n.* the act or crime of seducing.
se-duc-tive (*'tiv*), *adj.* tending to seduce or lead astray; enticing.
se-duc-tive-ness (*-nes*), *n.* the state or quality of being seductive.
sed-u-lous (*sed'ū-lus*), *adj.* steadily industrious and persevering; diligent; untiring.
see (*sē*), *n.* diocese or jurisdiction of an archbishop or bishop: *v. t.* to perceive by the eye; observe; perceive mentally; pay a visit to; escort or accompany: *v. i.* to have the faculty of sight or of perceiving; take care or heed.
Syn. SEE, perceive, observe. The eye *sees* when the mind is absent; the mind and the eye or other senses *perceive* in conjunction; hence, we may say that a person *sees,* but does not *perceive;* we *observe* not merely by a simple act of the mind, but by its positive and fixed exertion.
seed (*sēd*), *n.* that part of a plant that contains the embryo of the future plant; semen; first principle or source; offspring: *v. i.* to sow, or shed the seed *v. t.* to sprinkle with seed.
seed-y (*'i*), *adj.* abounding with, or run to, seeds shabby.
see-ing (*sē'ing*), *n.* the act or power of sight: *conj.* inasmuch as; considering; since.
seek (*sēk*), *v. t.* [*p. t.* and *p. p.* sought, *p. pr.* seeking] to go in search of; look for; resort to; inquire for. *v. i.* to make search or inquiry; try or endeavor.
seem (*sēm*), *v. i.* to appear; look; pretend.
Syn. SEEM, appear. *Seem* is said of that which is dubious, contingent, or future; *appear,* of that which is actual, positive, and past. A thing *seems* strange which we are led to conclude as strange from what we see of it; a thing *appears* clear when we have a clear conception of it.
seem-ly (*'li*), *adj.* fit or becoming; decent; proper; comely.
seer (*sēr*), *n.* prophet; one who sees.
see-saw (*sē'saw*), *n.* a reciprocating motion; a game played with a balanced plank: *v. i.* to move up and down with a reciprocating motion.
seethe (*sēth*), *v. t.* to boil: *v. i.* to be hot; be in a condition of boiling.
seg-ment (*seg'ment*), *n.* a part divided or set off; section.
seg-men-ta-tion (*-men-tā'shun*), *n.* the act of dividing into segments; state of being divided into segments.
seg-re-gate (*seg'rē-gāt*), *v. t.* to separate from others.
seign-ior (*sēn'yēr*), *n.* a title of honor in use in southern Europe.
seign-ior-age (*'yēr-āj*), *n.* something claimed or taken by virtue of sovereign prerogative.
seine (*sān*), *n.* a large fishing net.
seis-mic (*sīs'mik*), *adj.* pertaining to, or produced by, an earthquake.
seis-mo-graph (*'mō-graf*), *n.* an instrument for recording seismic disturbances.
seis-mol-o-gy (*-mol'ō-ji*), *n.* the scientific study of earthquakes.
seiz-a-ble (*sēz'a-bl*), *adj.* capable of being seized.
seize (*sēz*), *v. t.* to take possession of forcibly; grasp; snatch; take hold of. [LAY, ABDUCT.]
seiz-ure (*'ūr*), *n.* the act of seizing; sudden attack, as of a disease.
Selah. A masculine name derived from the Hebrew *shelah*, signifying a "weapon," "missile."
sel-dom (*sel'dum*), *adv.* rarely.
se-lect (*sē-lekt'*), *adj.* chosen or picked out: *v. t.* choose. [CHOOSE.]

se-lec-tion (*sē-lek'shun*), *n.* the act of selecting; the thing selected.
se-lect-man (*-lekt'man*), *n.* [*pl.* selectmen (*'men*)], one of the board of town officials.
se-le-ni-um (*-lē'ni-um*), *n.* a nonmetallic elementary substance, resembling lead.
sel-e-nog-ra-phy (*sel-ē-nog'rȧ-fi*), *n.* a description of the moon; the art of delineating the moon's surface.
self (*self*), *n.* [*pl.* selves (*selvz*)], one's own person; personal interest; personality: *adj.* very; particular.
self-ish (*'ish*), *adj.* attentive only to one's own interests.
se-li-um (*sē'li-um*), *n*, a metal claimed to have been discovered by Edward Mollard, a Frenchman. It is stated to have a density of 2.6, to be one-twelfth the cost of aluminium and lighter and stronger, melting point 600° C., is stronger than iron, but weaker than steel.
sell (*sel*), *v. t.* [*p. t.* and *p. p.* sold, *p. pr.* selling], to transfer to another for an equivalent: *v. i.* to practice selling; be sold: *n.* a hoax; an imposition.
selt-zer wa-ter (*selt'sẽr waw'tẽr*), a mineral water, mildly stimulative.
sel-vage (*sel'vej*), *n.* the edge of cloth; woven border. [Also *selvedge.*]
sem-a-phore (*sem'ȧ-fōr*), *n.* a telegraphic apparatus for signaling by means of arms, lanterns, flags, etc.
sem-blance (*'blans*), *n.* likeness; resemblance; exterior. [PRETENSE.]
se-men (*sē'men*), *n.* sperm.
sem-i, *prefix* meaning *half, partially.*
sem-i-co-lon (*'i-kō-lon*), *n.* a mark in punctuation (;).
sem-i-nal (*'i-nal*), *adj.* pertaining to, containing, or consisting of, seed.
sem-i-na-ry (*sem'i-nā-ri*), *n.* [*pl.* seminaries (*-riz*)], a place of education.
Se-mit-ic (*sē-mit'ik*), *adj.* pertaining to Shem, or to his descendants; noting, or belonging to, one of the great divisions of races and languages.
sen (*sen*), *n.* a small Japanese coin.
sen-ate (*sen'āt*), *n.* the upper house of Congress or of a state legislature.
sen-ate (*sen'āt*), *n.* an assembly or body of elders.
sen-a-tor (*'ȧ-tẽr*), *n.* a member of a senate.
sen-a-to-ri-al (*-tō'ri-al*), *adj.* pertaining to, or befitting, a senator or a senate.
send (*send*), *v. t.* [*p. t.* and *p. p.* sent, *p. pr.* sending], to throw, cast, or impel; cause to go: *v. i.* to dispatch a messenger.
Seneca (*sen'ē-kȧ*) **lake, N. Y.** From a tribe of Indians, the *Senecas;* known as the "great hill people" from a tradition that they broke out of the earth from a large mountain, on Canandaigua lake, known as *ge-nun-de-wah* or "great hill."
Senegambia (*sen-ē-gam'bi-ȧ*). A region of central Africa, so named because of its situation between the Senegal and Gambia rivers.
se-nile (*sē'nīl*), *adj.* pertaining to, characteristic of, or occasioned by, old age.
sen-ior (*sēn'yẽr*), *adj.* prior in age, dignity, rank, or office: *n.* one older than another; one older in dignity, rank, or office.
sen-na (*sen'ȧ*), *n.* the dried leaves of several plants of the genus Cassia.
sen-sate (*sen'sāt*), *adj.* perceived by, or through, the senses.
sen-sa-tion (*-sā'shun*), *n.* perception by the senses; an impression; state of excited feeling.
sen-sa-tion-al (*-al*), *adj.* pertaining to, having, es causing, sensation; emotional.
sen-sa-tion-al-ism (*-izm*), *n.* sensational writing or language.
sense (*sens*), *n.* the faculty by which objects are perceived; discernment; understanding; conviction; good mental capacity; correct judgment; opinion; meaning; signification; moral perception.
sense-less (*'les*), *adj.* incapable of sensation; foolish; stupid. [ABSURD.]
sen-si-bil-i-ty (*sen-si-bil'i-ti*), *n.* [*pl.* sensibilities (*-tiz*)], the state or quality or capacity of being sensible; delicacy of feeling.
sen-si-ble (*'si-bl*), *adj.* capable of being perceived by the senses or the mind; delicate; reasonable; intelligent. [FEEL, PHYSICAL.]
sen-si-tive (*'si-tiv*), *adj.* having keen sense or feeling; easily affected or moved; pertaining to, or depending upon, sensation.
sen-si-tize (*-tīz*), *v. t.* to render sensitive, etc.
sen-su-al (*'shū-al*), *adj.* pertaining to, consisting in, or affecting, the senses; carnal; voluptuous.
sen-su-al-ism (*-izm*), *n.* sensuality.
sen-su-al-ist (*-ist*), *n.* one who is sensual.

Syn. SENSUALIST, voluptuary, epicure. The *sensualist* lives for the indulgence of his *senses;* the *voluptuary* is devoted to his pleasures, and, as far as these pleasures are the pleasures of *sense*, the *voluptuary* is a *sensualist;* the *epicure* is one who makes the pleasures of *sense* his god, and in this sense he is a *sensualist* and a *voluptuary*. In the application of these terms, however, the *sensualist* is one who is a slave to the grossest appetites; the *voluptuary* is one who studies his pleasures so as to make them the most valuable to himself; the *epicure* is a species of *voluptuary* who practices more than ordinary refinement in the choice of his pleasures.

sen-su-al-i-ty (*-al'i-ti*), *n.* the state or quality of being sensual; indulgence of carnal gratifications.
sen-su-al-ize (*'shū-al-īz*), *v. t.* to make sensual.
sen-su-ous (*'shū-us*), *adj.* pertaining to, or addressed to, the senses; connected with sensible objects; full of passion.
sen-tence (*sen'tens*), *n.* judgment, opinion, or decision; series of words so arranged as to convey a complete thought: *v. t.* to condemn by judgment of a court. [DECISION, CONDEMN.]
sen-ten-tious (*-ten'shus*), *adj.* short and energetic; terse.
sen-ti-ence (*'shi-ens*), *n.* the state or quality of being sentient. [Also *sentiency.*]
sen-ti-ent (*'shi-ent*), *adj.* having the faculty or faculties of sensation and perception.
sen-ti-ment (*'ti-ment*), *n.* a thought prompted by passion or feeling; opinion; thought; maxim; a toast.
sen-ti-men-tal (*-men'tal*), *adj.* having, expressing, or given to, sentiment; romantic.
sen-ti-men-tal-ism (*-izm*), *n.* the quality of being sentimental. [Also *sentimentality.*]
sen-ti-nel (*'ti-nel*), *n.* one who watches or guards.
sen-try (*'tri*), *n.* [*pl.* sentries (*'triz*)], a sentinel, guard or watch.
se-pal (*sē'pal* or *sep'al*), *n.* one of the leaf-like divisions of the calyx of a flower.
sep-a-ra-bil-i-ty (*sep-ȧ-rȧ-bil'i-ti*), *n.* the quality of being separable or divisible.
sep-a-ra-ble (*'ȧ-rȧ-bl*), *adj.* capable of being separated or divided.
sep-a-rate (*'ȧ-rāt*), *v. t.* to part or divide; disunite; disconnect; set apart: *v. i.* to part; withdraw: *adj.* divided from the rest; disconnected; distinct. [ABSTRACT, DIVIDE.]
se-pi-a (*sē'pi-ȧ*), *n.* [*pl.* sepias (*-ȧz*)], a dark-brown [pigment.
se-poy (*'poi*), *n.* [*pl.* sepoys (*'poiz*)], an Indian native employed as a soldier in the British service in India.
sep-sine (*sep'sin*), *n.* ptomaines of septic poisoning.
sep-sis (*sep'sis*), *n.* infection by pathogenic bacteria; a putrefactive condition.
sept (*sept*), a *prefix* meaning 7, as *sept*angular: *adj.* having 7 angles.
September. The seventh month of the old Roman calendar, counted from March, which commenced the year previous to the addition of January and February by Numa in the year 713 B. C.
sep-ten-ni-al (*sep-ten'i-al*), *adj.* occurring once in, or containing, 7 years.
sep-tet (*sep-tet'*), *n.* a musical composition for 7 voices. [Also *septette.*]
sep-tic (*'tik*), *adj.* having the power to promote putrefaction: *n.* a substance having such an effect.
sep-til-lion (*-til'yun*), *n.* in the French system of numeration, followed in the United States, a number expressed by unity with 24 ciphers annexed; in the English system a number expressed by unity with 42 ciphers annexed.
sep-tu-a-ge-na-ri-an (*-tū-ȧ-jē-nā'ri-an*), *n.* a person 70 years old.
sep-ul-cher, sep-ul-chre (*sep'ul-kẽr*), *n.* a grave or tomb; place of burial: *v. t.* to bury; entomb.
se-pul-chral (*sē-pul'kral*), *adj.* pertaining to a sepulcher; deep, grave, or hollow toned.
sep-ul-ture (*'ul-tūr*), *n.* burial. [BURIAL.]
se-quel (*sē'kwel*), *n.* succeeding part or result.

Syn. SEQUEL, close. When a work is published in distinct parts, those which follow at the end may be termed the *sequel;* if it appears all at once, the concluding pages are the *close.*

se-quence (*'kwens*), *n.* order of succession; series; result.
se-ques-ter (*-kwes'tẽr*), *v. t.* to separate from the owner for a time: *v. i.* to renounce. [Also *sequestrate.*]
seq-ues-tra-tion (*sek-wes-trā'shun*), *n.* the act of sequestering; retirement; seclusion.
Se-quoi-a (*sē-kwoi'ȧ*), *n.* a genus of gigantic trees of the cypress family, comprising the redwood and "big tree" of California.
se-ragl-io (*sē-ral'yō*), *n.* the palace of the sultan of Turkey at Constantinople; a harem.
ser-aph (*ser'af*), *n.* [*pl.* seraphs (*afs*), seraphim (*'a-fim*)], an angel of the highest order.
se-raph-ic (*sē-raf'ik*), *adj.* pertaining to, composed of, or like, seraphs; sublime; angelic.
sere (*sēr*), *adj.* dry; wiltered.
Serena. A feminine name derived, perhaps, from Serena, a daughter of Theodosius; from the Latin *serenus*, "cheerful, quiet, calm."
ser-e-nade (*ser'ē-nād*), *n.* evening music in the open air; music sung or played by a lover: *v. t.* to entertain with a serenade.
se-rene (*sē-rēn'*), *adj.* clear and calm; unclouded; [placid. [CALM.]
se-ren-i-ty (*-ren'i-ti*), *n.* the state or quality of being serene; calmness; equanimity. [Also *sereneness.*]
serf (*sẽrf*), *n.* the lowest class of servants or slaves in the middle ages; formerly in Russia, one of the peasant class.
serf-age (*'ȧj*), *n.* the state or condition of a serf. [Also *serfdom; serfism.*]
serge (*sẽrj*), *n.* a twilled woolen stuff.
ser-geant (*sär'jent*), *n.* a onncommissioned officer ranking next above a corporal.
ser-geant ma-jor (*mā'jẽr*), a warrant officer who is attached to each company or troop.
se-ri-al (*sē'ri-al*), *adj.* pertaining to, or consisting of, a series; published in successive parts or numbers: *n.* a periodical; tale issued in parts.
se-ries (*sē'rēz*), *n.* a number of things or events standing or succeeding in order; sequence.
se-ri-o-com-ic (*sē-ri-ō-kom'ik*), *adj.* having a mixture of seriousness and comicality.
se-ri-ous (*'ri-us*), *adj.* grave in manner or disposition; in earnest. [GRAVE.]
ser-mon (*sẽr'mun*), *n.* a discourse on a text of Scripture; serious exhortation.
ser-mon-ize (*-īz*), *v. i.* to compose or write a sermon; preach: *v. t.* to preach a sermon to.
se-rous (*sē'rus*), *adj.* pertaining to serum; thin, watery.
ser-pent (*sẽr'pent*), *n.* a reptile of the order Ophidia, with a very long body without feet.
ser-pen-tine (*'pen-tīn*), *adj.* pertaining to, like, or having the qualities of, a serpent; subtle: *n.* a rock composed of a hydrated silicate of magnesia.
ser-ried (*ser'id*), *adj.* crowded; pressed together.
se-rum (*sē'rum*), *n.* the thin yellowish watery fluid secreted by the serous membranes.
serv-ant (*sẽrv'ant*), *n.* one who serves, or is in the service of, another.

Syn. SERVANT, domestic, menial, drudge. In the term *servant* is included the idea of the service performed; in the term *domestic*, the idea of one belonging to the house or family; in the word *menial* is included the idea of labor; and the term *drudge*, that of *drudgery*.

serve (*sẽrv*), *v. t.* to work for; perform duties for; supply with, as food, etc.; treat or requite; present (a writ): *v. i.* to be a servant; suit or be convenient; be in subjection.
Servia (*sẽr'vi-ȧ*). A kingdom of the Balkan peninsula, known by the Romans as *Suedia*, district peopled by the Suevi, who afterward settled in the territory now called Sweden.
serv-ice (*sẽrv'is*), *n.* the condition or occupation of a servant; duty required or performed; course of dishes at table.
serv-ice-a-ble (*'is-ȧ-bl*), *adj.* useful; beneficial.
serv-ile (*'il*), *adj.* pertaining to, characteristic of, or befitting, a slave or servant; meanly submissive or obsequious.
ser-vil-i-ty (*sẽr-vil'i-ti*), *n.* mean submission; baseness. [Also *servileness.*]
serv-i-tude (*sẽrv'i-tūd*), *n.* the condition of a servant or slave.
★**ses-a-me** (*ses'ȧ-mē*), *n.* a plant yielding flat seeds from which an oil is expressed.
ses-a-moid bones (*'ȧ-moid bōnz*), small bones formed at the articulation of the great toes, fingers, etc.
ses-qui, a *prefix* meaning *a whole and a half*, as *sesqui*oxide, an oxide containing 3 atoms of oxygen, 2 atoms of a metal.
ses-sion (*sesh'un*), *n.* the actual sitting or assembling of a court, council, or legislative body.
ses-terce (*ses'tẽrs*), *n.* an ancient Roman coin, value about 4 cents.
ses-ter-ti-um (*-tẽr'shi-um*), *n.* a sum of 1,000 sesterces.
ses-tet (*'tet*), *n.* the last 6 lines or tho second division of a sonnet.
set (*set*), *v. t.* to place or put in any position; render motionless; replace; regulate or adjust: *v. i.* to sink below the horizon; strike root; congeal; start (with *out*): *adj.* fixed or established; firm; formal; obstinate: *n.* the act of setting; clique; number of things of the same kind intended for use together; a young plant for growth; descent below the horizon. [PUT, CLASS.]
Seth. From the Hebrew *Sheth*, signifying "appointed." Fuerstius writes the name *S'et*, and renders it "war bustle or noise."
set-tee (*set-tē'*), *n.* a long seat with a back, made to seat several persons at once.
set-ter (*'ẽr*), *n.* one who, or that which, sets; a species of hunting dog.
set-ting (*'ing*), *n.* the act of one who, or that which, sets; that which sets or holds; hardening.
set-tle (*set'l*), *v. t.* to place or set in a fixed state; establish; free from uncertainty; pay; make pure or clear; colonize: *v. i.* to become fixed, or permanent; grow calm or clear; sink; adjust differences or accounts. [COMPOSE.]
set-tle-ment (*-ment*), *n.* the act or state of being settled; subsidence; a colony newly settled.
set-tler (*'lẽr*), *n.* a colonist; something that finally settles or decides a contest.
set-to (*tōō'*), *n.* a contest in boxing; argument.
sev-en (*sev'n*), *n.* the sum of six and one; the symbol representing 7 units: *adj.* consisting of one more than 6.
sev-en-fold (*-fold*), *adv.* 7 times as much.
sev-en-teen (*-tēn*), *adj.* one more than sixteen.
sev-en-ti-eth (*'n-ti-eth*), *adj.* next in order after the sixty-ninth: *n.* one of 70 equal parts.
sev-en-ty (*-ti*), *n.* [*pl.* seventies (*-tiz*)], the sum of 10 times 7; the symbol representing 70 units.
sev-er (*sev'ẽr*), *v. t.* to divide or separate with violence; keep distinct or apart: *v. i.* to make a separation or distinction.
★**sev-er-al** (*sev'ẽr-al*), *adj.* distinct; separate; consisting of a number more than two, but not many;
sev-er-ance (*-ans*), *n.* the act of severing; the state of being severed; separation; partition.
se-vere (*sē-vēr'*), *adj.* strictly adhering to rule; strict; austere; rigid; harsh; grave; serious. [STRICT].
se-ver-i-ty (*-ver'i-ti*), *n.* the quality of being severe; harshness; rigor. [ACRIMONY.]
Sè-vres (*sā'vr*), *n.* china or porcelain manufactured at Sèvres, France.
Sèvres. A city of France near Paris. Named from

the two rivers which traverse it; anciently called *Villa Savara*.

sew (*sō*), *v. t.* to unite or fasten together with a needle and thread: *v. i.* to practice sewing.

sew-age (*sū'āj*), *n.* the foul matter carried off by a sewer.

sew-er (*'ĕr*), *n.* a pipe or channel to carry off the used or surface water and foul matter of a town, etc.; (*sō'ĕr*) one who sews.

sew-er-age (*-āj*), *n.* drainage by sewers.

sex, a *prefix* meaning *six*, as *sexennial*, *adj.* occurring once in, or lasting, six years.

sex (*seks*), *n.* the physical distinction between male and female.

sex-a-ge-na-ri-an (*-ȧ-jē-nā'ri-an*), *n.* one who is sixty years old.

sex-tant (*'tant*), *n.* the sixth part of a circle; an instrument for measuring angular distances between objects.

sex-til-lion (*-til'yun*), *n.* in the French system of enumeration, followed in the United States, the 7th power of a thousand, equal to 1 with 21 ciphers annexed; in the English system, a million raised to the 6th power, equal to 1 with 36 ciphers annexed.

sex-ton (*'tun*), *n.* an inferior official of a church whose duty it is to attend to burials, the church, etc.

sex-u-al (*'ū-al*), *adj.* pertaining to, characteristic of, based on, or distinguishing, sex.

sex-u-al-i-ty (*-al'i-ti*), *n.* the state or quality of being distinguished by sex.

sex-u-al-ize (*'ū-al-īz*), *v. t.* to attribute sex to.

shab-by (*shab'i*), *adj.* threadbare or worn; mean; despicable.

shack (*shak*), *n.* hut; log cabin.

shac-kle (*shak'l*), *n.* fetters; handcuffs: *v. t.* to fetter, embarrass or hinder; unite or fasten with a shackle.

shad (*shad*), *n.* an anadromous fish, valued as food.

shade (*shād*), *n.* comparative obscurity caused by the interception of the rays of light; darkness; screen or cover; the soul: *v. t.* to screen from light or heat; darken or obscure; shelter.

Syn. SHADE, shadow. Both these terms express that darkness which is occasioned by the sun's rays being intercepted by any body; but *shade* simply expresses the absence of the light, and *shadow* signifies also the figure of the body which thus intercepts the light.

shad-ow (*shad'ō*), *n.* shade within defined limits; dark part of a picture; obscurity or darkness; reflected image; faint representation; small degree: *v. t.* to shade; darken or cloud; conceal or screen; attend closely as a shadow. [SHADE.]

shad-ow-y (*'i*), *adj.* full of, or causing, shade or shadows; sheltered from light or heat; dim.

shad-y (*shād'i*), *adj.* [*comp.* shadier, *superl.* shadiest], abounding in, or causing, shade; sheltered from the glare of light or heat.

shaft (*shȧft*), *n.* an arrow; anything resembling an arrow; the long, narrow entrance to a mine; carriage pole; handle; body of a column.

shaft-ing (*'ing*), *n.* a system of shafts for transmitting power.

shag (*shag*), *n.* a kind of tobacco; rough, woolly hair.

shag-gy (*'i*), *adj.* rough with long hair or wool; rough; rugged.

sha-green (*shă-grēn'*), *n.* the skins of various animals, grained to resemble the skins of sharks; the rough skin of sharks and dogfishes: *adj.* made of shagreen.

shah (*shä*), *n.* the sovereign of Persia.

shake (*shāk*), *v. t.* [*p. t.* shook, *p. p.* shaken, *p. pr.* shaking], to cause to shiver; move with a quick, short motion; agitate: *v. i.* to tremble or quake.

shake-down (*'doun*), *n.* a temporary bed; money or other consideration given, generally under coercion, as for immunity from arrest or from legal punishment.

shak-y (*shāk'i*), *adj.* [*comp.* shakier, *superl.* shakiest], in a shaking condition; feeble.

shale (*shāl*), *n.* a laminated argillaceous rock.

shall (*shal*), *v. i.* and *auxil.* [*p. t.* should], to be under obligation, used in the future tense of the verb.

shal-low (*'ō*), *adj.* having little depth; not profound; superficial; trifling: *n.* shoal: *v. i.* to become shallow.

sham (*sham*), *n.* a trick, fraud, or make-believe: *adj.* feigned; false; unreal: *v. i.* to make false pretenses: *v. t.* to make a pretense of.

sham-ble (*sham'bl*), *v. i.* to walk awkwardly and unsteadily; shuffle: *n. pl.* a slaughterhouse; meat market.

shame (*shām*), *n.* a painful sensation caused by the sense of guilt, impropriety, or dishonor; that which causes shame; modesty or decorum: *v. t.* to make ashamed; cover with disgrace. [ABOMINATION, ABASE.]

shame-faced (*'fāst*), *adj.* bashful.

shame-ful (*'fool*), *adj.* causing shame; disgraceful; indecent.

sham-poo (*-pōō'*), *v. t.* to cleanse and rub (the head) with soap, etc.: *n.* the act of shampooing.

sham-rock (*'rok*), *n.* a trefoil clover plant; the Irish national emblem.

shank (*shangk*), *n.* the leg from the knee to the ankle.

shan-ty (*shan'ti*), *n.* a rude hut.

shape (*shāp*), *n.* the form or figure of a thing: *v. t.* to make into a particular form. [FORM.]

shape-ly (*'li*), *adj.* well-formed; symmetrical; comely.

share (*shâr*), *n.* a portion or part: *v. t.* to part among two or more; take or possess in common: *v. i.* to have a share or part. [DIVIDE.]

shark (*shärk*), *n.* a large, voracious fish with sharp teeth; a rapacious, artful fellow.

sharp (*shärp*), *adj.* having a very thin edge or fine point; peaked or ridged; keen; severe; subtle: *n.* a character in music which raises a note a semitone.

Syn. SHARP, acute, keen. The general property expressed by these epithets is that of *sharpness*, or an ability to cut. The term *sharp* is generic and indefinite; the two others are modes of *sharpness* differing in the circumstance of the degree; the *acute* is not only more than *sharp* in the common sense, but signifies also *sharp*-pointed; a knife may be *sharp;* but a needle is properly *acute.* Things are *sharp* that have either a long or a pointed edge; but the *keen* is applicable only to the long edge; and that in the highest degree of *sharpness;* a common knife may be *sharp;* but a razor or a lancet are properly said to be *keen.* [See *acrimony.*]

sharp-en (*'en*), *v. t.* to make sharp or sharper; make more acute: *v. i.* to become sharp.

shat-ter (*shat'ĕr*), *v. t.* to break into many pieces at once; overthrow; dissipate: *n. pl.* broken fragments.

shave (*shāv*), *v. t.* to cut or pare off with a razor or other sharp-edged instrument; plunder or fleece: *v. i.* to use the razor in removing hair: *n.* a thin slice; the operation of shaving.

shawl (*shawl*), *n.* a loose, square cloth covering for the shoulders, etc.

sheaf (*shēf*), *n.* [*pl.* sheaves (*shēvz*)], a bundle.

shear (*shēr*), *v. t.* to cut or clip: *v. i.* to use shears: *n. pl.* a cutting instrument like scissors.

shear steel (*'stēl*), a kind of fine steel, specially tempered, etc.

sheath (*shēth*), *n.* a scabbard; any sheath-like covering.

sheathe (*shēth*), *v. t.* to put into a sheath or scabbard; case with a protecting covering.

sheath gown (*shēth' goun*), a form of close-fitting gown for women slit up the side almost to the knee.

Sheboygan (*shē-boi'gan*) **river, Mich.** So called from the Indian *showbwawaygum*, "the stream that comes from the ground."

shed (*shed*), *v. t.* cause to flow out; emit: *v. i.* to let fall or cast off: *n.* a slight building. [POUR.]

sheen (*shēn*), *n.* brightness; splendor: *adj.* bright; glittering. [Also *sheeny.*] *v. i.* to shine or glisten.

sheep (*shēp*), *n. s.* and *pl.* any ruminant animal of the genus Ovis, valued for its wool and flesh.

sheer (*shēr*), *adj.* pure; unmixed; very thin or transparent; precipitous: *v. i.* to deviate from the proper course.

sheet (*shēt*), *n.* a large, thin slice of anything; broad piece of linen or paper; broad expanse or surface; rope attached to a sail.

sheik (*shēk* or *shāk*), *n.* the head of a Bedouin family, tribe, or clan.

shek-el (*shek'el*), *n.* an ancient Jewish coin: *pl.* money.

shelf (*shelf*), *n.* [*pl.* shelves (*shelvz*)], a flat ledge or board for holding anything.

shell (*shel*), *n.* a hard outside covering; any framework; projectile: *v. t.* to strip off or remove the shell of; take out of the shell; throw shells upon or into.

shel-lac (*-ak'*), *n.* crude resin lac melted and formed into thin plates.

shel-ter (*'tĕr*), *n.* that which protects or shields; security; defense: *v. t.* to protect or shield; conceal: *v. i.* to take or give shelter. [COVER.]

shelve (*shelv*), *v. t.* to place on a shelf; furnish with a shelf: *v. i.* slope.

shelv-ing (*'ing*), *n.* materials for shelves; shelves collectively.

Shenandoah (*shen-an-dō'ȧ*). County and river in Virginia, city in Page county, Iowa, borough in Schuylkill county, Pennsylvania, and town in Page county, Virginia. An Indian word, said by some to mean "the sprucy stream"; by others, "a river flowing alongside high hills and mountains"; and still another authority states that it means "daughter of the stars."

shep-herd (*shep'ĕrd*), *n.* one who tends sheep; a pastor.

sher-bet (*shĕr'bet*), *n.* a cooling beverage of water and fruit juices, sweetened, etc.

sher-iff (*sher'if*), *n.* the chief executive officer of a shire or county.

sher-ry (*'i*), *n.* a dry amber-colored wine, originally obtained from Xeres, Spain.

Sherwood forest. A forest in Nottinghamshire, England, fourteen miles north of Nottingham. It was formerly of large extent. It is the principal scene of the legendary exploits of Robin Hood.

Shetland isles. A group of islands north of Scotland. Norse for the "viking island," conformably with the native prenomen *hyalti*, "a viking." The term viking, meaning pirate, derived from the *vik*, or creek, in which he lay concealed.

shield (*shēld*), *n.* a piece of armor, carried on the arm; defense or protection; an escutcheon: *v. t.* to protect.

shift (*shift*), *n.* change; substitution; chemise: *v. t.* to change: *v. i.* resort to expedients; to alter or change.

shift-less (*'les*), *adj.* destitute of expedients; lazy; improvident.

shift-y (*shift'i*), *adj.* full of expedients; changeable.

shil-la-lah (*shil-ā'lȧ*), *n.* an oaken cudgel (*Irish.*) [Also *shillelah, shillelagh.*]

shil-ling (*'ing*), *n.* a silver British coin, value about 24 cents.

shil-ly-shal-ly (*'i-shal-i*), *adv.* in an irresolute, undecided manner.

shim-mer (*shim'ĕr*), *v. t.* to shine unsteadily or tremulously; flicker: *n.* a tremulous gleam; flicker.

shin (*shin*), *n.* the forepart of the leg between the ankle and knee: *v. i.* to climb a tree, etc.

shine (*shīn*), *v. i.* to emit rays of light; be bright; beautiful, eminent, or conspicuous: *v. t.* to cause to shine.

shin-gle (*shing'gl*), *n.* a thin piece of wood used for roofing: *v. t.* to cover or roof with shingles.

shin-y (*shīn'i*), *adj.* [*comp.* shinier, *superl.* shiniest], diffusing light; bright.

ship (*ship*), *n.* any large vessel for the conveyance of passengers or merchandise: *v. t.* to place on board a ship; carry by water: *v. i.* engage for service on board ship.

ship-board (*'bōrd*), *n.* the deck of a ship.

ship-shape (*'shāp*), *adj.* in good order: *adv.* neatly.

Shiraz (*shē'räz*), **Persia.** Name signifies "lion's paunch," because at one time, like the lion, it consumed much, but produced nothing.

Shirvan (*shir-vän'*). River and district of Persia, named after *Nieshirvan*, a king of Persia.

Shock (*shok*), *v. t.* to strike as with disgust or horror.

shock-er (*shok'ĕr*), *n.* one who, or that which, shocks.

shock-ing (*'ing*), *adj.* extremely offensive or disgusting. [FORMIDABLE.]

shod-dy (*shod'i*), *n.* old woolen fabrics remade with fresh wool: *adj.* not genuine; sham.

shoe (*shōō*), *n.* [*pl.* shoes (*shōōz*)], a low covering for the foot: *v. t.* [*p. t.* and *p. p.* shod, *p. pr.* shoeing], to furnish with a shoe or shoes.

shoot (*shōōt*), *v. t.* to let fly or discharge with a sudden force; hurl; emit: *v. i.* to be shot or propelled forcibly; rush along; sprout: *n.* a young branch or growth.

shop (*shop*), *n.* a building where goods are sold by retail; place where mechanics carry on their trade: *v. i.* to visit shops to purchase goods.

shop-lift-ing (*'lift-ing*), *n.* stealing goods from a shop.

shore (*shōr*), *n.* the coast or land adjacent to the sea, etc.; a prop or support: *v. t.* to support by a shore or shores.

short (*shôrt*), *adj.* not long, either in space or time; abrupt: *adv.* abruptly; quickly.

Syn. SHORT, brief, concise, succinct, summary. We may term a stick, a letter, or a discourse, *short;* but we speak of *brevity* only in regard to the mode of speech; *conciseness* and *succinctness* as to the matter of speech; *summary* as to the mode either of speaking or acting; the *brief* is opposed to the prolix; the *concise* and *succinct* to the diffuse; the *summary* to the circumstantial or ceremonious.

short-en (*'n*), *v. t.* to make short or shorter in time, extent, or measure. [ABBREVIATE.]

short-hand (*'hand*), *n.* a system of writing by abbreviated symbols.

short-ly (*'li*), *adv.* soon; quickly; curtly.

shot (*shot*), *n.* the act of shooting; discharge of a firearm, etc.; missile; a marksman; range of a missile.

shot-silk (*'silk*), *n.* a silk fabric of changeable tints.

shoul-der (*shōl'dĕr*), *n.* the articulation connecting the human arm, or the foreleg of a quadruped, to the body; that which resembles a shoulder: *v. t.* to take upon the shoulder; assume the responsibility of; jostle.

shout (*shout*), *n.* a loud and sudden cry: *v. i.* to utter a loud and sudden cry: *v. t.* to utter with a shout. [CALL.]

shove (*shuv*), *n.* a forcible push: *v. t.* to push along: *v. i.* to push forward or off.

shov-el (*'l*), *n.* an implement with a broad scoop and a handle: *v. t.* to take and throw up with a shovel.

show (*shō*), *v. t.* [*p. t.* showed, *p. p.* shown, *p. pr.* showing], to present to view; make clear: *v. i.* to appear: *n.* the act of showing; exhibition or spectacle; pretense.

Syn. SHOW, exhibition, representation, sight, spectacle. The *show* consists of that which merely pleases the eye; it is not a matter either of taste or art, but merely of curiosity; an *exhibition*, on the contrary, presents some effort of talent or some work of genius; and a representation sets forth the image or imitation of something by the power of art; hence we speak of a *show* of wild beasts, an *exhibition* of paintings, and a theatrical *representation. Sights* and *spectacles* present themselves to view. Whatever is to be seen to excite notice is a *sight;* a *spectacle* on the contrary, is that species of *sight* which has something in it to interest either the heart or the head of the observer; processions are *sights;* but battles or bull-fights are *spectacles.* [See *pretense.*]

show-er (*shou'ĕr*), *n.* a fall of rain or hail of short duration: *v. t.* to water copiously; bestow liberally: *v. i.* to rain in showers.

show-y (*shō'i*), *adj.* ostentatious; gay.

shred (*shred*), *n.* a long narrow piece torn or cut off: *v. t.* to tear into small pieces.

shrew (*shrōō*), *n.* a scolding, vexatious woman.

shrewd (*shrōōd.*) *adj.* sharp-witted or clever in practical affairs. [ACUTE.]

Shrewsbury (*shrūz'ber-i*) **river, N. J.** Named from a town of England. Anglo-Saxon *scrobbes,* "of a bush," *buhr,* "a fortress," literally, "a fortress near which were many shrubs."

★**shriek** (*shrēk,* not *srēk*), *v. i.* to utter a shriek: *n.* a sharp, shrill outcry. [CALL.]

shrill (*shril*), *adj.* sharp and piercing in tone: *v. i.* to utter an acute, piercing sound.

shrimp (*shrimp*), *n.* a small shellfish allied to the lobster.

shrine (*shrin*), *n.* a case or receptacle for sacred relics; an altar: *v. t.* to place in a shrine.

shrink (*shringk*), *v. i.* [*p. t.* shrank, *p. p.* shrunk, *p. pr.* shrinking], to contract spontaneously; recoil; *v. t.* to cause to contract: *n.* contraction; withdrawal.

shrink-age (*'āj*), *n.* the act of shrinking; decrease.

shriv-el (*shriv'l*), *v. i.* to be drawn into wrinkles; contract: *v. t.* to cause to contract into wrinkles.

shroud (*shroud*), *n.* anything that covers or conceals: *v. t.* to cover with, or as with, a shroud; conceal.

shrub (*shrub*), *n.* a woody plant of less size than a tree.

shrub-ber-y (*'ėr-i*), *n.* [*pl.* shrubberies (*-iz*)], a collection of shrubs.

shrug (*shrug*), *v. t.* [*p. t.* and *p. p.* shrugged, *p. pr.* shrugging], to contract or draw up (the shoulders): *v. i.* to raise the shoulders: *n.* a raising of the shoulders.

shuck (*shuck*), *n.* a shell or husk: *v. t.* to deprive of shells or husks.

shud-der (*shud'ėr*), *n.* a trembling with fear or horror: *v. i.* to feel a cold tremor; quake.

shuf-fle (*shuf'l*), *v. t.* to push from one to another; change the relative positions of: *v. i.* to change cards in a pack; drag the feet: *n.* the act of shuffling; irregular gait.

shun (*shun*), *v. t.* [*p. t.* and *p. p.* shunned, *p. pr.* shunning], to avoid; keep clear of.

shunt (*shunt*), *v. t.* to turn off, on, or as on, a side rail: *v. i.* to be turned aside: *n.* a turning off.

shut (*shut*), *v. t.* to close so as to prevent entrance or exit: *v. i.* to become closed: *adj.* closed. [CLOSE.]

shut-ter (*'ėr*), *n.* one who, or that which, shuts.

shut-tle (*'l*), *n.* an instrument used in weaving.

shy (*shi*), *adj.* timid; cautious; modest: *v. i.* to start aside from fear: *v. t.* to throw sidewise with a jerk; fling: *n.* the act of starting aside from fear; a side throw.

shy-ster (*'stėr*), *n.* one who carries on legal business in a mean and tricky manner.

Siam (*sī-am', sē-ăm'*). A kingdom of southeastern Asia; name corrupted from Malay *Siyam,* identical with the name *Shian* or *Shan* given by the Burmese to their eastern neighbors.

Siberia (*sī-bē'ri-ā*). A region of northern Asia belonging to Russia. In Russian, *Sibir* is so called from *Sibir* or *Seibir,* a town on the Irtish near Tobolsk, which no longer exists. *Sibir* was the capital of a Tartar khanate of the same name, which was conquered in the 16th century by Yermak, the hetman of the Don Cossacks.

sib-i-lance (*sib'i-lans*), *n.* the state or quality of being sibilant. [Also *sibilancy.*]

sib-yl (*'il*), *n.* a woman endowed with a spirit of prophecy.

Sibyl. From Lat., meaning "wise old woman." Dutch, *Sibylla;* Fr., *Sibylle;* Gr., *Sibulla;* Lat., *Sibylla.*

★**sib-yl-line** (*-in*), *adj.* pertaining to, uttered, or written by, a sibyl.

Sicily (*sis'i-li*). The English form of *Sicilia,* so called from the *Siculi,* who possessed a great part of the island when the Greek colonists arrived.

sick (*sik*), *adj.* ill in health; affected with nausea; disgusted; indisposed.

Syn. SICK, sickly, diseased, morbid. *Sick* denotes a partial state, *sickly* a permanent state, of the body, a proneness to be *sick;* he who is *sick* may be made well; but he who is *sickly* is seldom really well. *Sickly* expresses a permanent state of indisposition unless otherwise qualified; but *diseased* expresses a violent state of derangement without specifying its duration; *sickly* and *morbid* are applied to the habitual state of the feelings or character; a *sickly* sentimentality; a *morbid* sensibility. *Morbid* is used in no other, except in a technical sense.

sick-en (*'n*), *v. i.* to become sick; fall ill; *v. t.* to make sick; disgust

sick-le (*'l*), *n* a reaping hook.

sick-ly (*'li*), *adj.* ailing; weak; habitually indisposed. [SICK.]

sick-ness (*'nes*), *n.* the state of being sick or in bad health.

side (*sid*), *n.* one of the surfaces that define or limit a solid; edge; part between the shoulder and hip; aspect: *v. i.* to embrace the cause or tenets of a party.

side-board (*'bōrd*), *n.* a piece of dining-room furniture.

si-de-re-al (*sī-dē'rē-al*), *adj.* pertaining to the stars.

side-wheel (*sid'hwēl*), *n.* a paddle wheel at the side of a boat.

sid-ing (*'ing*), *n* a railroad track by the side of the main track.

si-dle (*si'dl*), *v i.* to go or move side foremost.

siege (*sēj*), *n.* the surrounding of a place to compel its surrender, continued endeavor to obtain possession, *v. t.* to besiege.

si-en-na (*si-en'ā*), *n.* red or brown clay; used as a pigment.

Sierra (*sē-er'rā*). This is a Spanish word signifying "a saw." Its application to ranges of mountains, whose peaks, rising in succession, like those of the Sierra Nevada, resemble the teeth of a saw, is peculiarly picturesque and poetical.

Sierra Nevada mountains. (*sē-er'rā nē-vā'dā.* Spanish, *sē-er'rā nā-vā'thā*) In California. Spanish words *serrado,* "separate or saw-toothed," *nevada,* "snowy," i. e., "snowy mountains," the application taken from the Sierra Nevada mountains of Granada, Spain.

sieve (*siv*), *n.* a utensil for separating the finer from the coarser parts of a substance.

sift (*sift*), *v. t.* to separate with, or as with, a sieve; scrutinize.

sigh (*sī*), *v. i.* to inhale and respire with a long, deep, and audible breathing; grieve; lament: *v. t.* to express by sighs; mourn: *n.* the act of sighing.

sight (*sīt*), *n.* the act of seeing; spectacle; view: *v. t.* to see; adjust the sight of. [SHOW.]

sight-ly (*'li*), *adj.* pleasing to the eye.

Sigismund (*sij'is-mund*). A masculine name from *sieg-mund,* "man of victory, triumphant man." Dutch, *Sigismundus;* Fr., *Sigismond;* Ger., *Sigismund* or *Sigmund;* Lat., *Sigismundus;* Sp., *Sigismundo;* Sw., *Sigismund.*

sign (*sin*), *n.* that by which anything is known or represented; indication; omen: *v. t.* to affix a signature to: *v. i.* to make a sign or signal.

Syn. SIGN, signal. The *sign* enables us to recognize an object; it is, therefore, sometimes natural; *signal* serves to give warning; it is always arbitrary.

sig-nal (*sig'nal*), *n.* something to attract the eye or ear: *adj.* memorable; remarkable; pertaining to signals: *v. t.* to convey by signals; make signals to. [SIGN.]

sig-nal-ize (*-īz*), *v. t.* to make especially conspicuous.

sig-na-ture (*'nā-tūr*), *n.* name of a person written by himself; flats or sharps [*Music.*]

sig-net (*sig'net*), *n.* a seal.

sig-nif-i-cant (*-nif'i-kant*), *adj.* designed to signify; important.

sig-ni-fi-ca-tion (*-kā'shun*), *n.* the act of signifying; that which is signified; meaning.

sig-ni-fy (*'ni-fi*), *v. t.* to show by a sign, mark, or token: *v. i.* to be of consequence. [DENOTE.]

Silas (*sī'las*). A name corrupted from *Silvanus.*

si-lence (*sī'lens*), *n.* entire absence of sound; taciturnity: *v. t.* to make silent.

si-lent (*'lent*), *adj.* noiseless; taciturn.

Silesia (*si-lē'shi-ā*). A region of central Europe. From *slezia,* "the bad land."

sil-hou-ette (*sil-ōō-et'*), *n.* the outline or profile filled in with black: *v. t.* to represent by a silhouette.

si-li-con (*'i-kon*), *n.* a nonmetallic element.

silk (*silk*), *n.* a fine, soft, tenacious thread spun by certain caterpillars; cloth made of silk: *adj.* pertaining to, or made of, silk.

silk-en (*'en*), *adj.* made of, or like, silk.

silk-y (*'i*), *adj.* pertaining to, made of, or resembling, silk; silken.

sill (*sil*), *n.* a timber at the bottom of a door or window.

sil-ly (*'i*), *adj.* weak in intellect; foolish; indiscreet.

si-lo (*sī'lō*), *n.* a store pit for green fodder, potatoes, etc.

silt (*silt*), *n.* mud or sand deposited by running or standing water.

Silvanus (*sil-vā'nus*). From the Roman name *Silvanus* or *Sylvanus;* also the appellation of a god of forests and fields; from *silva, sylva,* "a forest," "wood." Dutch, *Silvanus;* Fr., *Sylvain* or *Silvain;* It., *Silvano;* Lat., *Silvanus;* Sp., *Silvano.*

sil-ver (*sil'vėr*), *n.* a soft, white, metallic element; money; anything resembling silver: *adj.* pertaining to, or made of, silver; *v. t.* to cover or coat with silver.

Silvester, Sylvester (*sil-ves'tėr*). A masculine name derived from the Latin *silvester,* "wild," "found in a wood"; from *silva,* "a wood." Fr., *Silvestre;* It., *Silvestro;* Lat., *Silvester;* Sp., *Silvestre.*

Silvia. See *Sylvia.*

Simeon (*sim'ē-on*). From the Hebrew *shama,* meaning "obedient," or "hearing with acceptance." Fr., *Siméon;* Ger., *Simeon;* It., *Simeone;* Lat., *Simeon;* Port., *Simeao;* Sp., *Simeon.*

sim-i-an (*sim'i-an*), *adj.* pertaining to, characteristic of, or like, an ape: *n.* an ape or monkey.

sim-i-lar (*'i-lėr*), *adj.* having a general likeness or correspondence; alike.

sim-i-lar-i-ty (*-lar'i-ti*), *n.* resemblance. [LIKENESS.]

sim-i-le (*'i-lē*), *n.* [*pl.* similes (*-lēz*)], a likening by comparison to illustrate something.

sim-mer (*'ėr*), *v. i.* and *v. i.* to boil gently.

Simon (*sī'mon*). Originally the same as *Simeon.* Dutch, *Simon;* Fr., *Simon;* Ger., *Simon;* Hung., *Simon;* It., *Simone;* Lat., *Simon;* Sp., *Simon;* Sw., *Simon.*

sim-o-ny (*sim'ō-ni*), *n.* the act or crime of buying or selling ecclesiastical preferment.

si-moom (*si-mōōm'*), *n.* a hot, dry, suffocating wind which blows from the deserts of Arabia, etc., laden with minute particles of sand. [Also *simoon.*]

sim-per (*sim'pėr*), *v. i.* to smile in an affected or silly manner: *n.* affected or silly smile.

sim-ple (*sim'pl*), *adj.* [*comp.* simpler, *superl.* simplest], single, not complex; undivided; unadorned; clear; weak in intellect. [CANDID.]

Syn. SIMPLE, single, singular. We may speak of a *simple* circumstance as independent of anything; of a *single* instance; circumstance as unaccompanied by any other and a *singular* instance as one that rarely has itslike.

sim-ple-ton (*sim-pl-tun*), *n.* one who is foolish or of weak intellect. [CANDID.]

sim-plic-i-ty (*-plis'i-ti*), *n.* the state or quality of being simple.

sim-pli-fy (*'pli-fi*), *v. t.* to make simple.

sim-u-late (*'ū-lāt*), *v. t.* to pretend or counterfeit.

sim-u-la-tion (*-lā'shun*), *n.* the act of simulating or feigning.

Syn. SIMULATION, dissimulation. *Simulation* is the making one's self like what one is not; and *dissimulation* is the making one's self appear unlike what one really is. The hypocrite puts on the *semblance* of virtue to recommend himself to the virtuous; the *dissembler* conceals his vices when he wants to gain the simple or ignorant to his side. [See *pretense.*]

Ant. SINCERITY, unaffectedness.

si-mul-ta-ne-ous (*sī-mul-tā'nē-us*), *adj.* happening, done, or existing, at the same time.

sin (*sin*), *n.* neglect of morality and religion: *v. i.* to commit sin; transgress or offend. [CRIME.]

Sinai (*si'nā, si'nā-i, si'nī*). Is usually supposed to have been named from the Hebrew *seneh,* the "acacia tree," but is more probably the mountain of *Sin,* the moon-god of the Babylonians.

since (*sins*), *adv.* from that time; before this or now: *prep.* from the time of; after: *conj.* because; seeing that; considering.

sin-cere (*sin-sēr'*), *adj.* true; honest; frank; upright; pure. [HEARTY.]

sin-cer-i-ty (*-ser'i-ti*), *n.* the state or quality of being sincere. [Also *sincereness.*]

sin-ew (*sin'ū*), *n.* a tendon; anything supplying strength.

sin-ful (*'fool*), *adj.* full of sin; wicked; impious; unholy.

sing (*sing*), *v. i.* to utter melodious sounds: *v. t.* to celebrate in song.

Singapore (*sing-gā-pōr'*). An island and city in the Straits Settlements, Malay Peninsula; name means the "lion city." The form *Singapore* was adopted by Sir Stamford Raffles for the city which he founded in 1819 on an island which since the middle ages had been called *Sinhapura,* from a town of that name built in the fourteenth century by Malay or Javanese settlers.

singe (*sinj*), *v. t.* to burn slightly or on the surface: *n.* a slight burn.

sin-gle (*sing'gl*), *adj.* consisting of one only; alone; separate; unmarried: *v. t.* to select: *n.* a unit. [SIMPLE.]

Sing Sing, N. Y. Mohegan Indian word *Sin-Sing* or *Sink-Sink,* said to signify "stone upon stone."

sing-song (*sing'song*), *adj.* monotonous.

sin-gu-lar (*'gū-lėr*), *adj.* not complex or compound; noting one person or thing; uncommon; eminent; *n.* in grammar, the number denoting one person or thing. [SIMPLE, RARE.]

sin-gu-lar-i-ty (*-lar'i-ti*), *n.* [*pl.* singularities (*-tiz*)], the state or quality of being singular; peculiarity; oddity.

sin-is-ter (*sin'is-tėr*), *adj.* inauspicious; unlucky; evil; on the left hand or side.

sink (*singk*), *v. i.* to fall or go downward; decline gradually; enter deeply; subside: *v. t.* to cause to sink: *n.* a drain to carry off water. [ABATE.]

sin-ner (*sin'ėr*), *n.* one who sins.

sin-u-os-i-ty (*-ū-os'i-ti*), *n.* the character of being sinuous.

sin-u-ous (*'ū-us*), *adj.* bending in and out.

si-nus (*si'nus*), *n.* a bay or recess; cavity or depression; fistula.

Sioux (*sōō*). Many places in the United States bear the name of this tribe of Indians, among them the counties in Iowa and Nebraska. The word means a "species of snake," the appellation of the tribe being "enemies."

sip (*sip*), *v. t.* to imbibe in small quantities: *v. i.* to drink a small quantity: *n.* the act of sipping; taste.

si-phon (*si'fun*), *n.* a bent pipe or tube having one end longer than the other, used for drawing off liquids from a higher to a lower level: *v. t.* to convey or draw off by a siphon. [Also *syphon.*]

si-phon-age (*-āj*), *n.* the action of a siphon.

Sir (*sėr*), *n.* the title of a baronet or knight; a term of respect.

sire (*sīr*), *n.* a title of respect; head of a family; male of beasts: *v. t.* to procreate.

si-ren (*sī'ren*), *n.* one of certain fabulous nymphs that lured mariners to their destruction, hence a woman dangerous from her fascinating, enticing wiles; a foghorn: *adj.* pertaining to, characteristic of, or like, a siren; bewitching.

Sir-i-us (*sir'i-us*), *n.* the dogstar.

sir-loin (*sėr'loin*), *n.* the loin, or upper part of the loin, of beef.

sis-al grass (*sis'al gras*), the prepared fiber of the American aloe, used for cordage, etc.

sis-ter (*sis'tėr*), *n.* a female born of the same parents as another person; nun; one of the same kind or condition.

sis-ter-hood (*-hood*), *n.* number of females belonging to the same religious society, etc.

sis-ter-in-law (*-in-law*), *n.* [*pl.* sisters-in-law], the

sister of one's husband or wife; wife of one's brother.
Sistine (*sis'tin*), or **Sixtine** (*siks'tin*) **chapel.** The papal private chapel in the Vatican constructed by Pope Sixtus IV., whence the name.
sit (*sit*), *v. i.* to rest on the lower part of the trunk of the body; rest or lie; occupy a seat officially: *v. t.* to sit upon.
site (*sīt*), *n.* local position or situation; ground-plot.
Sitka, Alaska. Named from a tribe of Indians, the *Sitkayans.*
sit-ting (*sit'ing*), *adj.* resting on the haunches: *n.* the state, posture, or act of one who sits; a seat in a church, etc.; a session: time during which one sits; set of eggs.
sit-u-a-tion (*-ū-ā'shun*), *n.* position; locality; circumstances; office; employment.
six (*siks*), *adj.* one more than 5: *n.* the number greater by one than 5; the symbol representing 6 units.
six-pence (*'pens*), *n.* a small British silver coin, value 12 cents.
six-pen-ny (*'pen-i*), *adj.* worth sixpence.
six-teen (*'tēn*), *adj.* 15 and one more.
sixth (*siksth*), *adj.* first after the fifth.
six-ti-eth (*siks'ti-eth*), *adj.* next in order after the fifty-ninth.
six-ty (*'ti*), *n.* [*pl.* sixties (*'tiz*)], the product of 6 and 10: *adj.* 10 times 6.
siz-a-ble (*sīz'ȧ-bl*), *adj.* of considerable or suitable size.
size (*sīz*), *n.* a kind of thin, weak glue; magnitude or bulk: *v. t.* to prepare, or cover with, size.
siz-zle (*siz'l*), *v. i.* to make a hissing sound; fry: *n.* a hissing sound.
Skager Rack (*skag-ĕr-rak', skag'ĕr-räk*). The channel between Norway and Jutland, means "cape strait." The word *rack* denotes a crooked channel, and the *Skager Rack* is so called from the town of *Skagen*, situated on Cape Skagen (*skabi*, a "promontory"), the *Skaw* of English sailors, which forms the northern point of Jutland.
Skaneateles (*skan-ē-at'les*). Lake, town, and village in Onondaga county, New York. An Indian word meaning "long lake."
skate (*skāt*), *n.* a kind of flatfish of the ray family; a metallic runner to slide over ice: *v. i.* to slide on skates.
ske-dad-dle (*skē-dad'l*), *v. i.* to run away, especially in terror.
skein (*skān*), *n.* a quantity of thread, silk, etc., coiled together.
skel-e-ton (*skel'ē-tun*), *n.* framework or bones of anything; outline.
skel-e-ton key (*kē*), a thin, light key to open many locks.
skep-tic (*skep'tik*), *n.* one who doubts the truth of any doctrine or system.
skep-tic-al (*'ti-kal*), *adj.* pertaining to, or characteristic of, a skeptic; characterized by skepticism.
skep-ti-cism (*'ti-sizm*), *n.* incredulity; doubt; unbelief in any particular doctrine or system.
sketch (*skech*), *n.* an outline; first rough draft: *v. t.* to draw the outline or give principal features of; *v. i.* to make sketches.
skew (*skū*), *adj.* oblique: *adv.* obliquely.
skew-er (*'ĕr*), *n.* a pin of wood or metal for securing meat, etc.: *v. t.* to fasten with, or as with, a skewer.
ski (*skē*), *n. pl.* long narrow pieces of wood used as snowshoes.
skid (*skid*), *n.* a sliding wedge or drag to retard the motion of a vehicle. *v. t.* to cause to move on, retard by, or protect with, a skid: *v. i.* to slip along obliquely.
skiff (*skif*), *n.* a small, light boat.
skill (*skil*), *n.* expertness in any art or science; aptitude; power to discern and execute.
skil-let (*'et*), *n.* a small culinary vessel.
skill-ful (*skil'fool*), *adj.* having or displaying, skill. [CLEVER.]
skim (*skim*), *v. t.* to remove the scum from; brush the surface of lightly: *v. i.* to pass lightly over.
skim-mer (*'ĕr*), *n.* one who, or that which, skims.
skimp (*skimp*), *v. t.* to do carelessly or superficially: *v. i.* to be parsimonious: *adj.* scanty.
skin (*skin*), *n.* the external covering of an animal body; anything resembling a skin: *v. t.* to remove or strip the skin from: *v. i.* to become covered over with skin.
skin-flint (*'flint*), *n.* a niggard.
skin-ny (*'i*), *adj.* consisting only of skin; very lean.
skip (*skip*), *v. t.* to leap lightly over; omit: *v. i.* to leap or bound lightly; pass without noticing: *n.* a light leap or bound; omission.
skip-per (*'ĕr*), *n.* one who, or that which, skips; a sea captain.
skir-mish (*skĕr'mish*), *n.* a slight combat or irregular fight between two small parties: *v. i.* fight irregularly.
skirt (*skĕrt*), *n.* the lower and loose part of a coat, dress, or other garment; margin or border: *v. t.* to cover with a skirt; border; run or pass along the edge of: *v. i.* to be on the border.
skit (*skit*), *n.* brief satire; burlesque.
skit-tish (*'ish*), *adj.* shy; easily frightened; vivacious.
Skowhegan (*skou-hē'gan*), **Me.** Indian word meaning "spearing."
skulk (*skulk*), *v. i.* to withdraw into a corner for concealment; lurk: *n.* a skulker.
skull (*skul*), *n.* the bony case inclosing the brain.
skunk (*skungk*), *n.* an American carnivorous animal allied to the weasel; a vile, contemptible fellow.
sky (*skī*), *n.* [*pl.* skies (*skīz*)], the apparent vault of the heavens.
sky-lark (*'lärk*), *n.* a species of lark.
sky-lark-ing (*-ing*), *n.* frolicking.
sky-scrap-er (*'skrāp-ĕr*), *n.* a lofty building.
slab (*slab*), *n.* a flat piece of anything, especially marble or stone: *adj.* thick; glutinous.
slack (*slak*), *adj.* relaxed or loose; inattentive; not busy: *n.* that part of anything that hangs loose.
Syn. SLACK, loose. *Slack* is said only of that which is tied, or that with which anything is tied; while *loose* is said of any substances, the parts of which do not adhere closely.
Ant. TAUT, tight.
slack-en (*'n*), *v. i.* to become slack; be remiss or less diligent; become slower. [ABATE.]
slag (*slag*), *n.* the dross of a metal; vitrified cinders.
slake (*slāk*), *v. t.* to quench; extinguish; mix with water: *v. i.* to be mixed with water.
slam (*slam*), *v. t.* to shut or put down violently and with a loud noise: *v. i.* to strike violently or noisily: *n.* a violent and noisy banging.
slan-der (*slan'dĕr*), *n.* verbal defamation: *v. t.* to defame or calumniate. [ABUSE.]
slan-der-ous (*-us*), *adj.* uttering slanders.
slang (*slang*), *n.* colloquial language or expression.
slant (*slȧnt*), *n.* an inclined plane: *v. t.* to give a sloping direction to: *adj.* inclined from a straight line.
Syn. SLANT, slope. *Slant* is said of small bodies only; *slope* is said indifferently of all bodies large and small; a book may be made *to slant* by lying in part on another book on a desk or a table; but a piece of ground is said *to slope.*
slap (*slap*), *n.* a blow given with the open hand: *v. t.* to strike with the open hand or with anything broad: *adv.* with a sudden, violent blow; direct; quick.
slap-jack (*'jak*), *n.* a kind of flat batter cake.
slash (*slash*), *n.* a long or random cut: *v. t.* to cut by striking violently and at random; cut into long slits: *v. i.* to strike violently and at random.
slat (*slat*), *n.* a thin, narrow strip of wood or metal.
slate (*slāt*), *n.* any rock that splits into thin plates; list of candidates: *v. t.* to cover with slate; register for office; criticise.
slat-tern (*slat'ĕrn*), *n.* a careless, slovenly woman.
slat-y (*slāt'i*), *adj.* like slate.
slaugh-ter (*slaw'tĕr*), *n.* great destruction of life; killing of oxen, etc., for human food: *v. t.* to slay or kill. [CARNAGE.]
Slav (*slȧv*), *n.* one of the great divisions of the Aryan family or language: *adj.* Slavonic.
slave (*slāv*), *n.* a human being held in bondage: *v. i.* to work like a slave.
slav-er-y (*'ĕr-i*), *n.* [*pl.* slaveries (*-iz*)], the state of entire subjugation to the will of another; condition of a slave.
slav-ish (*'ish*), *adj.* pertaining to, befitting, or characteristic of, a slave.
slaw (*slaw*), *n.* sliced cabbage.
slay (*slā*), *v. t.* to kill or put to death suddenly or with violence.
sleave (*slēv*), *n.* the knotted or entangled part of silk or thread.
sled (*sled*), *n.* a carriage or vehicle on runners for traveling over snow or ice. [Also *sledge.*] *v. t.* to convey or transport on a sled or sledge.
sledge (*slej*), *n.* a large, heavy hammer; another form of *sled.*
★**sleek** (*slēk*, not *slik*), *adj.* smooth; glossy.
sleep (*slēp*), *n.* slumber; rest; death: *v. i.* to take rest in sleep; be motionless or inactive.
sleep-y (*'i*), *adj.* inclined to, or overcome by, sleep; sluggish.
sleet (*slēt*), *n.* rain mingled with snow or hail: *v. i.* to hail or snow with rain mingled.
sleeve (*slēv*), *n.* the part of a garment that covers the arm.
sleigh (*slā*), *n.* a variety of sled.
sleight (*slīt*), *n.* dexterity; cunning; artful trick.
slen-der (*slen'dĕr*), *adj.* small or narrow in proportion to the length or height; feeble.
slice (*slīs*), *n.* a thin, broad piece of anything: *v. t.* to cut into parts; divide.
slide (*slīd*), *v. i.* glide; slip: *v. t.* to thrust along; cause to slip: *n.* a smooth surface for sliding upon; smooth declivity; picture on glass for exhibition; fall of a mass of rock or snow. [SLIP.]
slight (*slīt*), *adj.* feeble; inconsiderable; unimportant; slender: *n.* neglect; oversight: *v. t.* to disregard; neglect. [CURSORY, DISREGARD.]
slim (*slim*), *adj.* of small diameter; weak; slender.
slime (*slīm*), *n.* glutinous mud.
slim-y (*slīm'i*), *adj.* consisting of, covered over with, or like, slime.
sling (*sling*), *n.* an instrument for throwing stones; hanging bandage: *v. t.* to hurl with, or as with, a sling; hang so as to swing.
slink (*slingk*), *v. i.* to creep away as if ashamed; sneak off.
slip (*slip*), *v. i.* miss one's foothold; escape observation; depart or escape: *v. t.* to cause to move quickly and smoothly; omit: *n.* the act of slipping; an oversight or omission; twig from a stock; petticoat.
Syn. SLIP, slide, glide. *To slip* is an involuntary, and *slide* a voluntary, motion; those who go on the ice in fear will *slip;* boys *slide* on the ice by way of amusement. *To slip* and *slide* are lateral movements of the feet; but *to glide* is the movement of the whole body, and just that easy motion which is made by *slipping, sliding,* flying, or swimming; a person *glides* along the surface of the ice when he *slides;* a vessel *glides* along through the water.
Ant. STAND, stand still.
slip-per (*slip'ĕr*), *n.* one who, or that which, slips; a kind of loose shoe.
slip-per-y (*'ĕr-i*), *adj.* nonadhesive; without firm hold or footing; unstable; smooth; cunning.
slip-shod (*'shod*), *adj.* slovenly; careless.
slit (*slit*), *v. t.* to cut lengthwise or into long strips; split: *n.* a long cut; narrow opening.
sliv-er (*sliv'ĕr* or *slīv'ĕr*), *v. t.* to cut into long thin, or very small pieces: *n.* a splinter.
slo-gan (*slō'gan*), *n.* the war-cry or gathering-cry of a highland clan.
sloop (*slo͞op*), *n.* a one-masted vessel with a fore-and-aft rig.
slop (*slop*), *n.* water carelessly spilled; puddle: *pl.* dirty water: *v. t.* to soil by letting liquid fall upon.
slope (*slōp*), *n.* surface inclining gradually downward: *v. t.* to incline or slant; direct obliquely: *v. i.* to take an oblique direction. [SLANT.]
slop-py (*slop'i*), *adj.* wet; muddy; splashed.
slot (*slot*), *n.* narrow aperture: *v. t.* to groove.
sloth (*slōth*), *n.* idleness; habitual indolence; a South American arboreal quadruped.
slouch (*slouch*), *n.* ungainly, clownish gait; awkward, dull fellow: *v. t.* to cause to hang down; depress at the side: *v. i.* to walk in a clumsy manner.
★**slough** (*slou*), *n.* a bog.
★**slough** (*sluf*), *n.* the cast-off skin of a serpent: *v. i.* to separate dead matter from the sound flesh.
slov-en (*sluv'en*), *n.* one who is habitually untidy.
slow (*slō*), *adj.* not quick or rapid in motion; behind in time; not progressive.
slug (*slug*), *n.* a shell-less mollusk; a sluggard; a kind of oval bullet.
slug-gard (*'ĕrd*), *n.* one who is habitually lazy and idle.
slug-gish (*'ish*), *adj.* habitually lazy and idle; dull.
sluice (*slo͞os*), *n.* a gate for excluding or regulating the flow of water in a canal, etc: *v. t.* to wash with water from, or as from, a sluice.
slum (*slum*), *n.* a low, dirty street or district of a city or town: *v. i.* to visit slums.
slum-ber (*'bĕr*), *v. i.* to sleep lightly; doze: be in a state of inactivity or negligence.
slump (*slump*), *n.* a sudden fall, as of shares, etc: *v. i.* to fall or sink suddenly.
slur (*slĕr*), *v. t.* to disparage; pronounce indistinctly: *n.* an insult; stigma.
slush (*slush*), *n.* half-melted snow.
sly (*slī*), *adj.* artfully cunning; underhand and crafty.
smack (*smak*), *n.* a quick, smart blow; quick, sharp noise with the lips; flavor; a one-masted coasting or fishing vessel: *v. t.* to kiss with a noise; strike with a smart blow: *v. i.* to make a noise with the lips.
small (*smawl*), *adj.* little in quantity or degree; inconsiderable; not large in dimensions; mean. [LITTLE.]
small-pox (*'poks*), *n.* a contagious, feverish disease, characterized by eruptions.
smart (*smärt*), *adj.* causing a quick, sharp pain; sharp; brilliant; witty; showy: *n.* a quick, pungent, lively pain; poignant grief: *v. i.* to feel a lively, pungent pain; endure punishment.
smash (*smash*), *v. t.* to break in pieces by violence: *n.* a breaking to pieces.
smat-ter-ing (*smat'ĕr-ing*), *n.* superficial knowledge.
smear (*smēr*), *v. t.* to overspread with anything unctuous, viscous, or adhesive; daub; pollute: *n.* a blot or stain.
smell (*smel*), *v. t.* to perceive by the nose; obtain the scent of: *v. i.* to affect the nose or olfactory nerves; exercise the sense of smell: *n.* odor.
smi-lax (*smī'laks*), *n.* a climbing plant of the lily family.
smile (*smīl*), *v. i.* to look gay, cheerful, or happy; favor: *v. t.* to express by a smile: *n.* the act of smiling; a look of pleasure, etc.
smirch (*smĕrch*), *v. t.* to smear; dirty.
smirk (*smĕrk*), *v. i.* to smile affectedly or conceitedly: *n.* an affected smile: *adj.* spruce.
smite (*smīt*), *v. t.* to strike, as with the hand or a weapon: *v. i.* to strike.
smith (*smith*), *n.* worker in metals.
smith-y (*'i*), *n.* a smith's workshop.
smock (*smok*), *n.* a chemise.
smock frock (*'frok*), a laborer's loose outer shirt.
smoke (*smōk*), *n.* the vapor or substance that escapes when a substance is burned; vapor; act of smoking pipe or cigar: *v. t.* to apply smoke to; inhale and puff out the smoke of; expel by smoke: *v. i.* to emit smoke; burn tobacco in a pipe, etc.
smok-y (*'i*), *adj.* giving out, or filled with, smoke.
smol-der (*smōl'dĕr*), *v. i.* to burn slowly or smoke without vent; exist in a stifled condition.
smooth (*smo͞oth*), *adj.* not rough; even surfaced; frictionless; bland; flattering: *v. t.* to make smooth; calm: *v. i.* to become smooth. [CALM.]
smoth-er (*smuth'ĕr*), *v. t.* to destroy the life of by suffocation; stifle; conceal: *v. i.* to be suffocated.
smoul-der. Same as *smolder.*
smudge (*smuj*), *n.* a smear or stain; suffocating smoke: *v. t.* to smear or stain; blacken or stifle with smoke.

smug (*smug*), *adj.* affectedly precise or prim; spruce; neat.
smug-gle (*'l*), *v. t.* to convey or introduce clandestinely: *v. i.* to practice smuggling.
smut (*smut*), *n.* a spot or stain made by dirty matter; obscenity: *v. t.* to soil or blacken with, or as with, smut: *v. i.* to become converted into smut; give off smut.
smut-ty (*'i*), *adj.* soiled or stained with smut; affected with smut.
snaf-fle (*snaf'l*), *n.* a bridle consisting of a joint in the middle and rings at the ends: *v. t.* to put a snaffle in the mouth of.
snag (*snag*), *n.* a short rough branch; trunk of a tree fixed in the bed of a river: *v. t.* to injure or destroy by contact with a snag.
snail (*snāl*), *n.* a slimy, slow-creeping gasteropod of the genus Helix; hence any slow-moving person.
snake (*snāke*), *n.* a serpent.
Snake river, Idaho. Name suggested by its windings and given to a tribe of Indians on its banks.
snap (*snap*), *v. i.* to break short or instantaneously; produce a sharp, sudden sound: *v. t.* to break at once; crack; bite suddenly and unexpectedly: *n.* the act of snapping; noise made by snapping; spring catch: *pl.* a kind of crisp cake.
snap-drag-on (*'drag-un*), *n.* a plant with a corolla that shuts with a snap when opened.
snare (*snār*), *n.* anything that entangles or entraps one; the gut across a drum: *v. t.* to catch or entangle with, or as with, a snare.
snarl (*snärl*), *v. i.* to growl like an angry dog; speak surlily: *v. t.* to complicate or entangle, as thread or hair: *n.* the act of snarling; angry contention or quarrel; a complicated entanglement of hair, etc.
snatch (*snach*), *v. t.* to take or seize abruptly and suddenly: *v. i.* to attempt to seize anything: *n.* a hasty catch or seizing. [LAY.]
sneak (*snēk*), *v. i.* to creep or steal away privately or meanly; slink: *n.* a mean, servile fellow.
sneer (*snēr*), *v. i.* to show contempt by some facial expression; insinuate; scoff: *n.* an indirect expression of contempt or scorn.
sneeze (*snēz*), *v. i.* to emit a sudden and violent rush of air through the mouth and nostrils, audibly and convulsively: *n.* the act of sneezing.
snick-er (*snik'ẽr*), *n.* a half-suppressed laugh; a giggle: *v. i.* to laugh slyly; giggle.
sniff (*snif*), *v. i.* to draw in the breath through the nose: *v. t.* to smell or scent: *n.* the act of sniffing.
snip (*snip*), *v. t.* to cut or clip off: *n.* a single cut with scissors; small piece.
snipe (*snīp*), *n.* a long-billed fen fowl.
sniv-el (*sniv'el*), *v. i.* to run at the nose; cry, as a child.
snob (*snob*), *n.* a vulgar person who apes gentility; vulgar upstart.
snob-bish (*'ish*), *adj.* pertaining to, characteristic of, or like, a snob.
snooze (*snōōz*), *v. i.* to nap: *n.* a nap.
snore (*snōr*), *v. i.* to breathe with roughness or hoarseness in sleep: *n.* a noisy breathing in sleep.
★**snout** (*snout*, not *snōōt*), *n.* the projecting nose of a beast.
snow (*snō*), *n.* frozen particles of vapor in the atmosphere in the form of white feathery flakes: *v. i.* to fall in snow.
snub (*snub*), *v. t.* to check, treat, or reprimand with sarcasm or asperity: *n.* an intended slight.
snuff (*snuf*), *v. t.* to draw in through the nose: *v. i.* to snort or sniff; take snuff into the nostrils: *n.* powdered tobacco inhaled through the nose.
snuf-fle (*'l*), *v. i.* to speak or breathe hard through the nose: *n.* a speaking through the nose.
snug (*snug*), *adj.* concealed; lying close and warm; compact and convenient: *v. i.* to lie close and warm (with *up* or *together*).
snug-gle (*'l*), *v. i.* to lie close for warmth and comfort.
so (*sō*), *adv.* in a like manner or degree; in high degree; as has been stated; for this reason: therefore; more or less: *conj.* on condition that; if; therefore: *interj.* stop!
soak (*sōk*), *v. t.* to cause to suck in moisture; wet thoroughly: *v. i.* to become saturated or steeped in fluid.

Syn. SOAK, drench, steep. A person's clothes are *soaked* in rain when the water has penetrated every thread; he himself is *drenched* in the rain when it has penetrated, as it were, his very body; to *steep* is a species of *soaking* employed as an artificial process; *to soak* is, however, a permanent action by which hard things are rendered soft; *to steep* is a temporary action by which soft bodies become penetrated with a liquid; thus salt meat requires to be soaked; fruits are *steeped* in brandy.

soap (*sōp*), *n.* a compound used for washing and cleansing: *v. t.* to rub over, or wash, with soap.
soap-stone (*'stōn*), *n.* a variety of steatite.
soap-y (*'i*), *adj.* covered with, or like, soap; soft and smooth.
soar (*sōr*), *v. i.* to fly aloft, as a bird; rise in imagination: *n.* a lofty flight.
sob (*sob*), *v. i.* to sigh in a convulsive manner with tears: *v. t.* to utter with a sob: *n.* a convulsive sigh.
so-ber (*sō'bẽr*), *adj.* habitually temperate; calm; sedate: *v. t.* to make sober: *v. i.* to become sober.
so-bri-e-ty (*-brī'ē-ti*), *n.* habitual temperance; seriousness.
so-bri-quet (*sō-brē-kā'*), *n.* a nickname. [*French.*]
so-cia-ble (*sō'shȧ-bl*), *adj.* social; companionable; affable: *n.* a social gathering. [SOCIAL.]
so-cial (*'shal*), *adj.* pertaining to men as living in society; convivial.

Syn. SOCIAL, sociable. *Social* people seek others; *sociable* people are sought for by others. [See *convivial.*]

so-cial-ism (*-izm*), *n.* an economic theory or system of the reconstruction of society on the basis of coöperation of labor and community of property.
so-cial-ist (*-ist*), *n.* an advocate of socialism.
so-ci-e-ty (*-sī'ē-ti*), *n.* [*pl.* societies (*-tiz*)], a number of persons united for a common interest; the more cultivated portion of any community.
Society islands. A large group of islands in the South Pacific. Received their name from Captain Cook in honor of the Royal Society.
so-ci-ol-o-gy (*-shi-ol'ō-ji*), *n.* social science.
sock (*sok*), *n.* a short stocking.
sock-et (*'et*), *n.* a hollow into which something is fitted.
sod (*sod*), *n.* turf; sward: *v. t.* to cover with sod; turf.
so-da (*sō'dȧ*), *n.* impure carbonate of soda; sodium oxide.
so-da wa-ter (*waw-tẽr*), aërated water containing bicarbonate of soda.
sod-den (*sod'n*), *adj.* boiled; saturated: *v. i.* to be soaked or seethed: *v. t.* to saturate.
so-di-um (*sō'di-um*), *n.* a metallic element.
so-fa (*sō'fȧ*), *n.* a long seat with stuffed bottom, back, and arms.
Sofia. See *Sophia*.
soft (*sôft*), *adj.* easily yielding to pressure; malleable; smooth to the touch; not glaring; effeminate; quiet; easy; mild; weak in intellect: *adv.* softly; quietly: *interj.* gently! stop!
soft-en (*sôf'n*), *v. t.* to make soft or softer; tone down; assuage; make effeminate: *v. i.* to become soft or softened.
sog-gy (*sog'i*), *adj.* soaked; wet.
soil (*soil*). *n.* land; dirt; manure; stain: *v. t.* to make dirty; stain or mar: *v. i.* to become soiled. [STAIN.]
Soissons (*swäs-sôn'*). Town in France, was so named from the *Suessiones*, a Belgic tribe.
so-journ (*sō'jûrn* or *sō-jûrn'*), *v. i.* to dwell for a time: *n.* (*sō'jûrn*) a temporary residence. [ABIDE.]
★**sol-ace** (*sol'ās*, not *sō'lās*), *n.* comfort in sorrow; consolation: *v. t.* to comfort in sorrow.
so-lar (*'lẽr*), *adj.* pertaining to the sun.
so-lar-year (*-yẽr*), *n.* the period during which the earth makes one complete revolution around the sun, 365 days 5 hours 48 minutes 52 seconds.
sold-er (*sod'ẽr* or *sol'dẽr*), *n.* a metallic alloy for uniting metals: *v. t.* to unite by solder.
sol-dier (*sōl'jẽr*), *n.* a person engaged in military service: *v. i.* to serve or act as a soldier; make a pretense of work. [MARTIAL.]
sole (*sōl*), *n.* the underside of the foot; boot or shoe, etc.; a flatfish of the genus Solea: *v. t.* to furnish with, or as with, a sole: *adj.* alone; being or acting by one's self.
★**sol-e-cism** (*sol'ē-sizm*, not *sō'lē-sizm*), *n.* a breach of the rules of syntax, or idiom of a language; impropriety; absurdity.
sol-emn (*sol'em*), *adj.* inspiring awe; serious; devout; formal. [GRAVE.]
so-lem-ni-ty (*sō-lem'ni-ti*), *n.* [*pl.* solemnities (*-tiz*)], a religious rite or cermony; ceremony adapted to inspire awe; gravity; impressiveness.
sol-em-nize (*'em-nīz*), *v. t.* to perform with ceremonies; celebrate.
so-lic-it (*sō-lis'it*), *v. t.* to ask for with earnestness; endeavor to obtain: *v. i.* to canvass. [BEG.]
so-lic-i-ta-tion (*-i-tā'shun*), *n.* importunity; alluring or enticing influence.

Syn. SOLICITATION, importunity. *Solicitation* is general; *importunity* is particular; it is *importunate* or troublesome *solicitation*. *Solicitation* is itself indeed that which gives trouble to a certain extent, but it is not always unreasonable; there may be cases in which we may yield to the *solicitations* of friends, to do that which we have no objection to be obliged to do; but *importunity* is that *solicitation* which never ceases to apply for that which it is not agreeable to give.

so-lic-it-or (*'it-ẽr*), *n.* one who solicits; an attorney; a canvasser.
so-lic-i-tous (*'i-tus*), *adj.* eager; anxious; apprehensive; concerned.
so-lic-i-tude (*'i-tūd*), *n.* the state of being solicitous; concern; anxiety; carefulness. [ANXIETY.]
sol-id (*sol'id*), *adj.* having the particles so close or firmly adhering as to resist impression; compact; not hollow; heavy: *n.* a body having its constituent particles firmly adhering together. [FIRM, HARD.]
sol-i-dar-i-ty (*-i-dar'i-ti*), *n.* community of interests and responsibilities.
so-lid-i-fy (*sō-lid'i-fī*), *v. t.* to make solid: *v. i.* to harden.
so-lid-i-ty (*'i-ti*), *n.* density; stability; truth; moral firmness.
so-lil-o-quize (*sō-lil'ō-kwīz*), *v. i.* to utter a soliloquy.
so-lil-o-quy (*'ō-kwi*), *n.* a talking or discourse to one's self.
sol-i-taire (*sol-i-târ'*), *n.* a game played by one person; precious stone in single setting.
sol-i-ta-ri-ly (*'i-tā-ri-li*), *adv.* in a solitary manner.
sol-i-ta-ry (*'i-tā-ri*), *adj.* lonely; single; done, passed, or suffered, alone; remote; unoccupied; gloomy.

Syn. SOLITARY, desert, desolate. *Solitary* simply denotes the absence of all beings of the same kind; thus a place is *solitary* to a man where there is no human being but himself; *desert* conveys the idea of a place made *solitary* by being shunned, from its unfitness as a place of residence; *desolate* conveys the idea of a place made *solitary*, or bare of inhabitants, and all traces of habitation, by violent means.

Ant. CROWDED, plural.

sol-i-tude (*sol'i-tūd*), *n.* the state of being by one's self; loneliness; seclusion; desert.
so-lo (*sō'lō*), *n.* [*pl.* solos (*'lōz*)], an air, or musical piece performed by a single instrument or performer.
so-lo-ist (*-ist*), *n.* one who performs or sings a solo.
Solomon (*sol'ō-mon*). From the Hebrew *Sh'lomoh*, signifying "peaceable." Arabic, *Soliman* or *Suleyman*; Dutch, *Salomo*; Fr., *Salomon*; Ger., *Salomon*; Gr., *Solomon*; Hungarian, *Salamon*; It., *Salomone*; Lat., *Salomon*; Polish, *Salomon*; Port., *Salomao*; Sp., *Salomon*.
sol-stice (*sol'stis*), *n.* that point in the ecliptic at which the sun is farthest from the equator.
sol-u-ble (*'ū-bl*), *adj.* capable of solution.
so-lu-tion (*sō-lū'shun*), *n.* the act of dissolving by means of a fluid; deliverance; explanation.
solv-a-ble (*solv'ȧ-bl*), *adj.* capable of being solved.
solve (*solv*), *v. t.* to explain; clear.
solv-ent (*solv'ent*), *n.* any liquid that dissolves another substance: *adj.* able to discharge debts; having the power of dissolving.
som-ber (*som'bẽr*), *adj.* dull; melancholy; dark; gloomy.
som-bre-ro (*sōm-brā'rō*), *n.* a kind of broad-brimmed hat
some (*sum*), a *suffix* meaning *like*, *same*, as win*some*, glad*some*, etc.: *adj.* more or less; expressing an indeterminate number, person, or quantity; one or the other; about.
some-bod-y (*'bod-i*), *n.* some person; a person of importance.
some-how (*'how*), *adv.* in one way or another.
som-er-sault (*'ẽr-sawlt*), *n.* a leap in which a person turns with his heels over his head.
some-thing (*'thing*), *n.* a thing unknown, or not specified; part or portion: *adv.* in some degree.
some-time (*'tīm*), *adv.* at a time indefinitely; formerly; once.
some-what (*'hwhot*), *n.* more or less: *adv.* in some degree or extent.
some-where (*'hwâr*), *adv.* in one place or another.
som-nam-bu-lism (*som-nam'bū-lizm*), *n.* the act or practice of walking in sleep.
som-nam-bu-list (*-list*), *n.* a sleep-walker.
som-no-lent (*'nō-lent*), *adj.* inclined to sleep.
son (*sun*), *n.* a male child, or descendant; native or inhabitant
★**so-na-ta** (*sō-nä'tȧ*), *n.* a musical composition for one instrument.
so-na-ti-na (*-nȧ-tē'nȧ*), *n.* a short, simple sonata.
song (*sông*), *n.* a lyrical poem or ballad; notes of birds; trifle.
son-in-law (*sun'-in-law*), *n.* [*pl.* sons-in-law (*sunz'*)], the husband of one's daughter.
son-net (*son'et*), *n.* a short lyric poem of fourteen lines.
son-net-eer (*-et-ēr'*), *n.* a composer of sonnets; minor poet: *v. i.* to compose sonnets.
so-no-rous (*sō-nō'rus*), *adj.* giving a clear sound; loud; deep-toned.
soon (*sōōn*), *adv.* in a short time; quickly; without delay.
soot (*soot*), *n.* finely divided carbon.
sooth (*sōōth*), *n.* truth.
soothe (*sōōth*), *v. t.* to please or calm; allay; pacify; assuage. [ALLAY.]
sooth-say-er (*-ẽr*), *n.* one who foretells or prognosticates.
soot-y (*soot'i*), *adj.* pertaining to, producing, or like, soot; dusky, black.
sop (*sop*), *n.* anything steeped, dipped, or softened in a liquid; something given to pacify: *v. t.* to steep or dip in a liquid.
Sophia (*sō-fī'ȧ*). A name derived from the Greek *sophos*, "knowledge," "wisdom," prudence." Danish, *Sophie;* Dutch, *Sophie;* Fr., *Sophie;* Ger., *Sophie;* Gr., *Sophia;* It., *Sofia;* Lat., *Sophia;* Russ., *Sofia;* Sp., *Sofia;* Sw., *Sofia*.
Sophie. The French form of *Sophia*.
soph-ism (*sof'izm*), *n.* a specious but fallacious argument; fallacy.
soph-ist (*'ist*), *n.* one of a body of men in ancient Greece (5th century B. C.) who taught philosophy, eloquence, and politics; a fallacious or captious reasoner.
so-phis-tic-al (*sō-fis'ti-kal*), *adj.* pertaining to, or characteristic of, a sophist; fallacious. [Also *sophistic.*]
so-phis-ti-cate (*'ti-kāt*), *v. t.* to render worthless; pervert; vitiate.
soph-o-more (*sof'ō-mōr*), *n.* a student in his second academic year.
Sophronia (*sō-frō'ni-ȧ*). A feminine of *Sophronius*. formed from *Sophron;* means "sober," "modest," "discreet."
sop-o-rif-ic (*sop-ō-rif'ik*), *adj.* causing, or tending to induce, sleep: *n.* an opiate or anodyne.
★**so-pra-no** (*sō-prä'nō*, not *sō-pran'ō*), *n.* [*pl.* sopranos (*'nōz*), soprani (*'nē*)], the highest kind of voice; a singer with such a voice.
Sorbonne (*sôr-bon'*). A famous Parisian school

named from Robert de Sorbonne, almoner of St. Louis.

sor-cer-er (*sôr'sĕr-ĕr*), *n.* a magician, wizard, or enchanter. [Fem. *sorceress.*]

sor-cer-y (*-i*), *n.* [*pl.* sorceries (*-iz*)], divination by the aid of evil spirits; witchcraft; magic.

sor-did (*'did*), *adj.* mean; vile; base; niggardly; avaricious.

sore (*sôr*), *adj.* tender or painful; sensitive; grievous; severe: *adv.* grievously; severely: *n.* a painful or diseased part; ulcer; wound; sorrow; trouble.

sor-ghum (*sôr'gum*), *n.* a canelike grass resembling broom corn; molasses prepared from sorghum.

sor-rel (*sor'el*), *n.* a dock-like plant; a reddish-brown color.

sor-row (*'ō*) *n.* mental pain or uneasiness; grief; distress: *v. i.* to grieve; lament; be sad. [AFFLICTION, GRIEF.]

sor-ry (*'i*), *adj.* feeling regret for loss; vexed; pained; worthless.

sort (*sôrt*), *n.* a kind or species; class, rank, or order: *v. t.* to separate and place in different divisions or classes; select.

sot (*sot*), *n.* an habitual drunkard.

Soudan (*sōō-dăn'*). From the Arabic *Belad-es-Suden*, the "district of the blacks."

★**sough** (*suf*), *n.* a hollow murmur or whistling: *v. i.* to murmur or whistle.

soul (*sōl*), *n.* the spiritual, rational, and immortal part in man; essence; human being.

sound (*sound*), *adj.* whole; unbroken; healthy; not decayed; founded on truth or right; firm; safe; strong; laid on with force: *n.* noise; report; a strait or narrow passage of water: *v. t.* to measure or ascertain the depth of; cause to make a noise; examine or try: *v. i.* to make a noise or sound.

Syn. SOUND, sane, healthy. *Sound* is extended in its application to all things that are in the state in which they ought to be, so as to preserve their vitality; thus, animals and vegetables are said to be *sound* when in the former there is nothing amiss in their breath, and in the latter in their root. *Healthy* expresses more than either *sound* or *sane;* we are *healthy* in every part, but we are *sound* in that which is essential for life. He who is *sound* may live, but he who is *healthy* enjoys life; *sane* is applicable to human beings, in the same sense, but with reference to the mind; a *sane* person is opposed to one that is *insane.*

soup (*sōōp*), *n.* a kind of broth.

sour (*sour*), *adj.* having an acid, sharp, or astringent taste; disagreeable; cross; morose: *v. t.* to cause to become sour: *v. i.* become sour.

source (*sôrs*), *n.* that from which anything arises or originates.

souse (*sous*), *n.* anything steeped or preserved in pickle; a plunging in water: *v. t.* to steep in pickle; plunge into water: *v. i.* to make a sudden attack.

south (*south*), *n.* that one of the four cardinal points of the compass directly opposite the north: *adv.* toward the south: *adj.* pertaining to the south.

South, *n.* the southern portion of the United States (with *the*).

South Carolina. One of the South Atlantic states of the Union. As provinces, the two divisions of Carolina were one tract originally.

south-ern (*suth'ĕrn*), *adj.* pertaining to, situated in, or proceeding from or toward, the south.

South-ern-er (*-ĕr*), *n.* a native of the South.

South Sea Bubble. A financial scheme which originated in England about 1711 and collapsed in 1720.

★**sou-ve-nir** (*sōō-ve-nēr'*), *n.* a memento or keepsake.

sov-er-eign (*suv'ĕr-in* or *sov'*), *adj.* royal; supreme in power; effectual: *n.* a king, emperor, or queen; a British gold coin equal to 20 shillings, or about $4.86.

sov-er-eign-ty (*-ti*), *n.* supreme power or dominion.

sow (*sou*), *n.* a female pig.

sow (*sō*), *v. t.* to scatter, as seed upon the earth; disseminate; scatter on or over: *v. i.* to scatter seed for growth.

space (*spās*), *n.* extension; room; interval: *v. t.* to make intervals between.

spa-cious (*spā'shus*), *adj.* extending far and wide; roomy.

spade (*spād*), *n.* an implement for digging, etc., consisting of a broad blade of iron with a handle; one of a suit of cards: *v. t.* to dig or work with a spade.

Spain. A kingdom of southwestern Europe. Name is Eng. of *Hispania,* founded upon the Punic *span,* "a rabbit," from the number of wild rabbits found there.

span (*span*), *n.* a short space of time; spread or extent of an arch, etc.; yoke of oxen or horses: *v. t.* to measure by the span of the hand; reach (from one side to the other). *v. i.* to be matched for harness.

span-gle (*spang'gl*), *n.* a small plate or boss of shining metal; any glittering ornament: *v. t.* to set or adorn with, or as with, spangles.

Span-iard (*span'yĕrd*), *n.* a native of Spain.

span-iel (*'yel*), *n.* a variety of dog.

Span-ish (*'ish*), *adj.* pertaining to Spain, its language, or its inhabitants.

Spanish main. The southern banks of the West India islands, and the water extending for some distance into the Caribbean Sea, so called from the fact that the Spaniards confined their buccaneering enterprises to this locality.

spank (*spangk*), *v. t.* to strike with the open hand; slap: *n.* a sounding slap.

spar (*spär*), *n.* a lustrous crystalline mineral; a general name for a mast, yard, boom, etc.; a contest: *v. i.* to box; contest in words.

spare (*spâr*), *v. t.* to use in a frugal manner; part with; omit; treat tenderly: *v. i.* to live frugally; forbear or forgive: *adj.* thin or lean; scanty [FRUGALITY, PENURIOUS.]

spark (*spärk*), *n.* a small particle of fire or ignited substance; small shining body; gay young fellow.

spar-kle (*'l*), *v. i.* to emit sparks; glisten; scintillate; flash.

spar-row (*spar'ō*), *n.* a well-known small bird of the passerine family.

sparse (*spärs*), *adj.* thinly scattered; not dense.

Spar-tan (*spär'tan*), *adj.* pertaining to Sparta; hardy; undaunted.

spasm (*spazm*), *n.* a sudden, violent, involuntary contraction of the muscles.

spas-mod-ic (*spaz-mod'ik*), *adj.* pertaining to, or consisting in, spasms; convulsive; violent but short-lived. [Also *spasmodical.*]

spat-ter (*spat'ĕr*), *v. t.* to sprinkle with a liquid; defame: *v. i.* to undergo or cause scattering or splashing: *n.* a small splash.

spat-u-la (*spat'ū-lā*), *n.* a broad, flat, thin, flexible knife.

spav-in (*spav'in*), *n.* a disease of horses, characterized by a swelling in the hock joint.

spawn (*spawn*), *n.* the ova of fishes, oysters, etc.; offspring or product: *v. i.* to produce and deposit spawn.

speak (*spēk*), *v. i.* to utter articulate sounds; talk; say; sound: *v. t.* to utter articulately; declare or pronounce.

Syn. SPEAK, announce, articulate, chat, chatter, converse, declaim, declare, deliver, discourse, enunciate, express, pronounce, say, talk, tell, utter. To *speak* may simply consist in uttering an articulate sound; but *to say* is to communicate some idea by means of words; a child begins to *speak* the moment it opens its lips to utter any acknowledged sound; but it will be some time before it can *say* anything; to *say* is to communicate that which passes in our own minds, to express our ideas and feelings as they rise; to *tell* is to communicate. To *utter* is to give forth as an audible sound, articulate or not; to *talk* is to *utter* a succession of connected words; to *speak* is to give articulate utterance even to a single word; to *chat* is ordinarily to *utter* in a familiar, conversational way. [See *address, utter.*]

spear (*spēr*), *n.* a long-pointed weapon used for thrusting or throwing; a shoot, as of grass: *v. t.* to pierce, or kill, with a spear.

spe-cial (*spesh'al*), *adj.* designed for a particular purpose; distinctive; uncommon; appropriate; specific.

spe-cial-ism (*-izm*), *n.* devotion to a particular and restricted branch.

spe-cial-ist (*-ist*), *n.* one who devotes himself to a particular branch.

spe-cial-i-za-tion (*-al-i-zā'shun*), *n.* application to a special function or use; act of specializing.

spe-cial-ize (*'shal-iz*), *v. t.* to particularize; assign to a specific use.

★**spe-cial-ty** (*'al-ti*), *n.* that for which a person is noted or distinguished.

spe-cie (*spē'shi*), *n.* coined money.

spe-cies (*'shēz*), *n.* a subdivision of a genus; kind; sort.

spe-cif-ic (*spē-sif'ik*), *adj.* pertaining to a species; definite or particular; precise: *n.* a remedy for a particular disease.

spec-i-fi-ca-tion (*spes-i-fi-kā'shun*), *n.* the act of specifying; detailed statement of particulars.

spec-i-fy (*'i-fi*), *v. t.* to mention or name particularly; designate verbally.

spec-i-men (*'i-men*), *n.* a sample. [COPY.]

spe-cious (*spē'shus*), *adj.* plausible; ostensible.

speck (*spek*), *n.* a spot; flaw; blemish; particle: *v. t.* to spot. [BLEMISH.]

spec-kle (*'l*), *n.* a small spot in anything different in substance or color: *v. t.* to variegate with spots.

spec-ta-cle (*'ta-kl*), *n.* something exhibited to view, especially something unusual: *pl.* an optical instrument to assist the vision. [SHOW.]

spec-tac-u-lar (*-tak'ū-lĕr*), *adj.* pertaining to shows or exhibitions; adapted to excite wonder.

spec-ta-tor (*-tā'tĕr*), *n.* a beholder.

spec-ter, spec-tre (*spek'tĕr*), *n.* a ghost or apparition.

spec-tral (*'tral*), *adj.* ghostly; pertaining to, or produced by, the spectrum.

spec-trum (*'trum*), *n.* [*pl.* spectra (*'trā*)], the colored and other rays of light separated by refraction through a prism.

spec-trum a-nal-y-sis (*a-nal'i-sis*), the determination of the composition of a body by means of the spectrum.

spec-u-late (*'ū-lāt*), *v. i.* to consider or meditate upon; purchase with a view to profit.

spec-u-la-tion (*-lā'shun*), *n.* intellectual examination; theory; purchase for future sale.

spec-u-la-tive (*'ū-lā-tiv*), *adj.* pertaining to, or given to, speculation; contemplative; risky.

spec-u-la-tor (*-tĕr*), *n.* one who engages in speculation.

speech (*spēch*), *n.* the faculty of uttering articulate sounds or words; act of speaking; formal discourse.

speed (*spēd*), *n.* velocity; swiftness; quickness; success: *v. i.* to make haste; move quickly; fare. [HASTEN.]

speed-om-e-ter (*spēd-om'ē-tĕr*), *n.* a speed indicator, as for an automobile.

speed-y (*'i*), *adj.* not dilatory or slow; prompt; quick; hasty.

spell (*spel*), *n.* a charm or incantation; time during which a person works; duration: *v. i.* to form words with the proper letters: *v. t.* to write, repeat, or point out, the proper letters of.

spelt (*spelt*), *n.* a kind of grain.

spend (*spend*), *v. t.* to lay out, as money; consume; drain of force or strength: *v. i.* to incur expense.

spend-thrift (*'thrift*), *adj.* prodigal; extravagant: *n.* one who is prodigal or lavish in expenditure.

sperm (*spĕrm*), *n.* the seminal fluid of animals; spermaceti.

sper-ma-ce-ti (*spĕr-mâ-sē'ti*), *n.* a white waxy substance obtained from the head of the sperm whale.

sper-mat-ic (*-mat'ik*), *adj.* pertaining to semen. [Also *spermatical.*]

sper-ma-to-zo-ön (*-mâ-tō-zō'on*), *n.* the male germ cell in animals and plants.

spew (*spū*), *v. i.* to vomit.

sphere (*sfēr*), *n.* a globe or globular body; circuit or range of knowledge, etc.

spher-ic-al (*sfer'i-kal*), *adj.* globular.

sphe-roid (*sfē'roid*), *n.* a body resembling a sphere.

sphinx (*sfingks*), *n.* [*pl.* sphinxes (*'sez*)], a fabled monster having the head of a woman and the body of a lioness; a person of enigmatical character or policy.

spice (*spis*), *n.* any aromatic and pungent vegetable used for seasoning; relish: *v. t.* to season or flavor with, or as with, spice.

spick and span (*spik and span*), new.

spi-cy (*spi'si*), *adj.* flavored with, containing, or having the qualities of, spice; racy.

spi-der (*'dĕr*), *n.* any individual of the genus Arachnida that spins webs to ensnare its prey.

spig-ot (*spig'ot*), *n.* a pointed piece of wood used to stop the venthole of a cask.

spike (*spik*), *n.* a large kind of nail: *v. t.* to fasten with spikes.

spike-nard (*'närd*), *n.* an aromatic plant from which an oil, the ancient *nardos,* is extracted.

spik-y (*'i*), *adj.* spike-like; set with spikes.

spill (*spil*), *n.* a thin strip of paper or wood for lighting a lamp, etc.; a tumble or overthrow: *v. t.* to suffer to run or fall out of a vessel: *v. i.* to fall out. [POUR.]

spin (*spin*), *v. t.* to draw out and twist into threads; protract; cause to whirl rapidly: *v. i.* to practice spinning; whirl; move swiftly: *n.* the act of spinning.

spin-ach (*'āj*), *n.* an esculent vegetable.

spi-nal (*spi'nal*), *adj.* pertaining to the spine.

spin-dle (*spin'dl*), *n.* the long, thin rod used on spinning wheels for twisting the thread; any axis of revolution.

spine (*spin*), *n.* in vertebrates, the backbone.

spin-et (*spin'et*), *n.* a keyed instrument, allied to the piano.

spin-ning jen-ny (*'ing jen-i*), a machine for spinning cotton.

spin-ster (*spin'stĕr*), *n.* an unmarried woman.

spi-ral (*spi'ral*), *adj.* winding around a center like the thread of a screw: *n.* a curve or curved line receding continually from the center.

spi-rant (*'rant*), *n.* a name applied to those consonants in which the breath is not entirely stopped in articulating.

spire (*spir*), *n.* a tapering body; steeple.

Spires (*spirz*) or **Speyer** (*spir*). An historic place in Bavaria, Germany, so named from the river *Speyerbach.*

spir-it (*spir'it*), *n.* the soul; life; apparition; courage; vivacity; real meaning; essence; any liquid produced by distillation: *pl.* intoxicants; liveliness: *v. t.* to take away suddenly or secretly.

spir-it-u-al (*spir'it-ū-al*), *adj.* not material; possessing the nature or qualities of a spirit; pure; holy; heavenly-minded.

spir-it-u-al-ism (*-izm*), *n.* the state of being spiritual; the philosophical doctrine that nothing is real except soul or spirit.

spir-it-u-al-ist (*-ist*), *n.* a believer in spiritualism.

spir-it-u-al-i-ty (*-al'i-ti*), *n.* the state or quality of being spiritual.

spir-it-u-al-ize (*-iz*), *v. t.* to free from sensuality; make spiritual.

spir-it-u-ous (*spir'it-ū-us*), *adj.* having the quality of spirit; pure; immaterial; alcoholic; ardent.

spit (*spit*), *n.* a long, pointed rod on which meat is roasted: *v. t.* to thrust a spit through; impale: *v. i.* to eject saliva.

spite (*spit*), *n.* ill will or hatred; petty malice: *v. t.* to try to injure; annoy.

spit-fire (*spit'fir*), *n.* a very violent or passionate person.

spit-tle (*'l*), *n.* saliva; sputum.

Spitzbergen (*spits-bĕrg'en*). A group of islands in the Arctic Ocean. Name is literal Dutch for "sharp-pointed mountains," referring to the granite peaks of the mountains which are so characteristic of this group of islands.

splash (*splash*), *v. t.* to spatter: *v. i.* to dash water about: *n.* a noise as from water thrown up, or by anything striking in, or upon, a liquid.

splat-ter (*splat'ẽr*), *v. t.* to splash.
splay (*splā*), *v. t.* to dislocate, as the shoulder bone of a horse: *adj.* turned or spreading outward.
spleen (*splēn*), *n.* a soft vascular organ near the large extremity of the stomach; fit of ill humor, melancholy, or latent spite.
splen-did (*splen'did*), *adj.* magnificent; brilliant; famous; celebrated; sumptuous.
splen-dor (*'dẽr*), *n.* the appearance of anything splendid; pomp. [MAGNIFICENCE.]
splice (*splīs*), *v. t.* to unite, as two ropes, by interweaving the strands; connect; unite: *n.* the union of ropes, etc.
splint (*splint*), *n.* a splinter; a thin piece of wood to keep a broken bone, etc., in position.
splin-ter (*splin'tẽr*), *n.* a thin piece of wood, etc.; fragment: *v. t.* to split or rend into long, thin pieces; shiver: *v. i.* to be rent into splinters.
split (*split*), *v. t.* to divide lengthwise; cleave; rupture; disunite: *v. i.* betray confidence; throb or ache violently. [BREAK.]
splotch (*sploch*), *n.* a stain; daub.
splurge (*splẽrj*), *n.* a great display.
splut-ter (*splut'ẽr*), *v. i.* to speak hastily and confusedly: *n.* a confused noise.
spoil (*spoil*), *v. t.* to plunder; vitiate; ruin; destroy: *v. i.* to become useless; decay: *n.* pillage; plunder; booty. [BOOTY.]
spoke (*spōk*), *n.* one of the bars of a wheel connecting the center with the rim: *v. t.* to furnish with spokes: *p. t.* of speak.
spo-li-a-tion (*spō-li-ā'shun*), *n.* the act of plundering or robbery.
spon-dee (*spon'dē*), *n.* a poetic foot of two long syllables.
sponge (*spunj*), *n.* the porous, elastic, fibrous framework of any species of Spongida; any substance resembling sponge; parasite: *v. i.* to suck in like a sponge; live upon others: *v. t.* cleanse or wipe with a sponge.
spon-gy (*spun'ji*), *adj.* like a sponge; having the quality of imbibing fluids.
spon-sor (*spon'sẽr*), *n.* a surety; a godfather or godmother.
spon-ta-ne-i-ty (*-tȧ-nē'i-ti*), *n.* the quality of being spontaneous.
spon-ta-ne-ous (*-tā'nē-us*), *adj.* proceeding from natural disposition or impulses; acting by internal impulse or natural law.
spook (*spo͞ok*), *n.* a ghost.
spool (*spo͞ol*), *n.* a hollow cylinder surrounded with a ridge at each end on which thread, etc., are wound.
★**spoon** (*spo͞on*, not *spoon*), *n.* a small domestic implement consisting of a hollow bowl and handle: *v. t.* to take up in, or as in, a spoon: *v. i.* to act the part of a demonstrative lover.
spoon-y (*'i*), *adj.* demonstratively fond.
spoor (*spo͞or*), *n.* the track or trail of any wild animal.
spo-rad-ic (*spō-rad'ik*), *adj.* occurring separately or apart from others of the same kind. [Also *sporadical.*]
spo-rad-ic dis-ease (*diz-ēz'*), a disease, usually epidemic, attacking only a few.
spore (*spōr*), *n.* a minute grain in cryptogamous plants which performs the function of a seed.
sport (*spōrt*), *n.* diversion; mirth; mockery; recreation: *v. i.* to play or frolic: *v. t.* to divert.
sport-ing (*'ing*), *p. adj.* pertaining to, characteristic of, or engaging in, sport or sports.
sport-ive (*'iv*), *adj.* frolicsome; merry. [PLAYFUL.]
sports-man (*spōrts'man*), *n.* [*pl.* sportsmen (*'men*)], one who pursues the sports of the field, as hunting, etc. [Fem. *sportswoman.*]
spot (*spot*), *n.* a blot or mark; blemish; disgrace or reproach; locality; place: *v. t.* to mark with spots; discolor; stain; disgrace or blemish; detect. [BLEMISH.]
spot light (*'līt*), an adjustable calcium light for throwing a shifting light on a stage.
Spottsylvania. County in Virginia, named for Alexander Spotswood, early lieutenant governor.
spot-ty (*'i*), *adj.* marked with, or full of, spots.
spouse (*spouz*), *n.* a married person.
spout (*spout*), *n.* the projecting mouth of a vessel; pipe for conducting a liquid: *v. t.* to throw out forcibly and abundantly, as from a pipe: *v. i.* to issue with violence.
sprain (*sprān*), *n.* an excessive strain of the muscles or ligaments: *v. t.* to overstrain.
sprat (*sprat*), *n.* a small fish.
sprawl (*sprawl*), *v. i.* to stretch the body carelessly; lie awkwardly.
spray (*sprā*), *n.* a small shoot or branch of a tree; small particles of water, etc.: *v. t.* to throw spray upon.
spread (*spred*), *v. t.* to extend in all directions; unfurl; open; scatter: *v. i.* to be extended or propagated: *n.* extent; feast.

Syn. SPREAD, expand, diffuse. *To spread* may be said of anything which occupies more place than it has done, whether by a direct separation of its parts, or by an accession to the substance; but *to expand* is *to spread* by means of extending or unfolding the parts; a mist *spreads* over the earth; a flower *expands* its leaves; *diffusion* is that process of *spreading* which consists literally in pouring out in different ways. [See *announce.*]

Ant. COLLECT, gather.

spread ea-gle (*spred' ē-gl*), defiantly bombastic: *n.* the figure of an eagle with its wings elevated and its legs extended.
spree (*sprē*), *n.* a carousal.
sprig (*sprig*), *n.* a small twig or shoot; scion.
spright-li-ness (*'li-nes*), *n.* vivacity.
spright-ly (*'li*), *adj.* vivacious; brisk; animated; airy; gay: *adv.* with vivacity. [ACTIVE.]
spring (*spring*), *v. i.* to arise; originate; dart; start or rise up suddenly; issue or proceed: *v. t.* to cause to spring up; leap over: *n.* a leap or bound; an elastic body used for various mechanical purposes; a flying back; source; a fountain of water; one of the four seasons of the year.
springe (*sprinj*), *n.* a gin or noose.
Springfield, Mass. Named in honor of the English residence of its founder, William Pynchon (1640). Indian name *Agawam.*
spring-ing (*spring'ing*), *n.* the act or process of leaping; growth.
spring-tide (*'tīd*), *n.* springtime.
spring-y (*'i*), *adj.* elastic; light; spongy.
sprin-kle (*spring'kl*), *v. t.* to scatter in small drops: *v. i.* to rain in small drops: *n.* a sprinkling.
sprint (*sprint*), *n.* a run for a short distance at full speed: *v. i.* to run at full speed.
sprout (*sprout*), *v. i.* to germinate: *n.* a shoot; bud.
spruce (*spro͞os*), *n.* a fir tree of the genus Picea: *adj.* smart; trim; neat: *v. t.* and *v. i.* to dress with affected neatness.
spry (*sprī*), *adj.* nimble; sharp. [ACTIVE.]
spunk-y (*'i*). *adj.* mettlesome; plucky.
spur (*spûr*), *n.* a rowel with sharp points worn on the heel for inciting a horse; any incentive to action; something projecting: *v. t.* to prick with a spur; incite to action; hasten: *v. i.* to travel with haste; push on.
spu-ri-ous (*spū'ri-us*), *adj.* not genuine; counterfeit; illegitimate.
spurn (*spûrn*), *v. t.* to drive away, as with the foot; reject with contempt: *v. i.* to manifest contempt: *n.* disdainful rejection.
spurt (*spûrt*), *v. i.* to issue forth suddenly in a stream; make a sudden brief effort: *v. t.* to throw out in a stream: *n.* a sudden or forcible ejection of a liquid; brief, sudden effort.
sput-ter (*sput'ẽr*), *v. i.* to throw out in scattered drops; speak rapidly and indistinctly: *v. t.* to emit in small particles with a spluttering noise: *n.* moist matter thrown out in small drops.
spu-tum (*spū'tum*), *n.* saliva; spittle.
Spuyten Duyvil (*spī'ten dī'vil*). Channel connecting the Hudson and Harlem rivers. So named on account of the oath sworn by a Dutch shipmaster that he would pass the mouth of the creek "in spite of the devil."
spy (*spī*), *v. t.* to gain sight of; detect; explore; examine secretly: *v. i.* to scrutinize; play the spy: *n.* one who keeps watch on others; secret agent. [EMISSARY.]
spy-glass (*'glȧs*), *n.* a small telescope.
squab (*skwob*), *n.* a person of short, fat figure; nestling of a pigeon: *adj.* short and fat; bulky: *adv.* with a heavy fall.
squab-ble (*'l*), *v. i.* to wrangle or dispute in a noisy manner: *n.* a noisy wrangle; dispute.
squad (*skwod*), *n.* a small party (of soldiers).
squad-ron (*'run*), *n.* two troops of a regiment of cavalry; detachment of war vessels.
squal-id (*skwol'id*), *adj.* extremely dirty; foul; poverty-stricken.
squall (*skwawl*), *n.* a sudden and violent gust of wind; a loud scream: *v. i.* to scream or cry violently.
★**squa-lor** (*skwā'lôr*), *n.* foulness; dirt.
squan-der (*skwon'dẽr*), *v. t.* to spend lavishly or wastefully: *v. i.* to be wasteful.
square (*skwâr*), *n.* a parallelogram having 4 equal sides and 4 right angles; anything nearly resembling a square; instrument for measuring right angles; product of a number multiplied by itself: *adj.* having 4 equal sides and 4 equal angles; forming a right angle; true; upright; honest; just; well-set: *v. t.* to form with 4 equal sides and 4 equal angles; multiply by itself; adjust; regulate; place at right angles: *v. i.* to accord or agree; assume a boxing attitude (with *off*).
square root (*'ro͞ot*), that number or quantity which, multiplied by itself, produces the given number or quanity, as 2 is the square root of 4.
squash (*skwosh*), *v. t.* to crush: *n.* something soft and easily crushed; shock of soft bodies; a gourd.
squash-y (*'i*), *adj.* easily crushed.
squat (*skwot*), *v. i.* to sit down on the hams or heels; settle on land without a title: *adj.* crouching: *n.* the posture of one who squats.
squat-ter (*'ẽr*), *n.* one who squats.
squaw (*skwaw*), *n.* a North American Indian woman or wife.
squawk (*skwawk*), *v. i.* to utter a loud, harsh noise: *n.* a harsh squeak.
squeak (*skwēk*), *v. i.* to utter a short, shrill, sharp noise; break silence; confess: *n.* a short, shrill, sharp or disagreeable noise.
squeal (*skwēl*), *v. i.* to cry with a sharp, shrill, prolonged sound: *n.* a sharp, shrill, prolonged sound.
squeam-ish (*skwēm'ish*), *adj.* sickish at stomach; easily disgusted; nice to excess; fastidious.
squeeze (*skwēz*), *v. t.* to press between two bodies; embrace forcibly; compress: *v. i.* to press; push between close bodies: *n.* the act of squeezing; compression between bodies; a forcible embrace. [PRESS.]
squelch (*skwelch*), *v. t.* to crush; silence.
squib (*skwib*), *n.* a kind of firework; petty lampoon: *v. i.* to use or write squibs or sarcastic reflections.
squill (*skwil*), *n.* a genus of plants allied to the lily.
squint (*skwint*), *adj.* looking obliquely: *v. i.* to see or look obliquely: *v. t.* to cause to squint: *n.* the act or habit of looking obliquely.
squirm (*skwẽrm*), *v. i.* to wriggle.
squir-rel (*skwẽr'el*), *n.* a small, agile rodent with a long bushy tail.
squirt (*skwẽrt*), *v. t.* to eject in a stream; spurt: *n.* a small stream or jet; an instrument for ejecting.
stab (*stab*), *v. t.* to pierce with, or as with, a pointed weapon; kill or wound: *v. i.* to pierce; indict a wound: *n.* a thrust or wound with a sharp-pointed weapon.
sta-ble (*stā'bl*), *adj.* fixed; firm; constant: *n.* a building for lodging horses, cows, etc.: *v. t.* to put or keep in a stable: *v. i.* to dwell or shelter, as in a stable. [FIRM, PERMANENT.]
stack (*stak*), *n.* a large quantity of hay, corn, wood, etc., piled up; number of chimneys standing together: *v. t.* to pile into a stack.
sta-di-um (*stā'di-um*), *n.* [*pl.* stadia (*-ȧ*)], a Greek linear measure equal to 606¾ ft.; a race course.
staff (*stȧf*), *n.* a stick carried for support in walking, or for defense; support; handle; pole; stanza or a series of verses; the five lines and four spaces on which music is written; number of persons engaged in any undertaking.

Syn. STAFF, stay, prop, support. Anything may be denominated a *staff* which holds up after the manner of a *staff*, particularly as it respects persons; bread is said to be the *staff* of life; the *stay* makes a thing *stay* for the time being; it keeps it in its place; the *prop* keeps a thing up for a permanency: every pillar on which a building rests is a *prop; support* is a general term, and in its most general sense comprehends all the others as species; whatever *supports*, that is, bears the weight of an object, is a *support*, whether in a state of motion like a *staff*, or in a state of rest like a *stay* or *prop.*

stag (*stag*), *n.* the male of the red deer.
stage (*stāj*), *n.* an elevated platform; the theatrical profession; place of rest on a journey; field of action; degree of progress; coach: *v. t.* to put on the stage, as a play.
sta-ger (*stā'jẽr*), *n.* one who has long acted on the stage of life; one who is experienced; a player.
stag-ger (*stag'ẽr*), *v. i.* to totter or reel: *v. t.* to cause to totter or reel; shock; make less confident: *n.* a sudden reeling or tottering.
stag-ing (*stāj'ing*), *n.* a temporary structure of boards and posts; style of play production.
stag-nant (*stag'nant*), *adj.* not flowing, or running in a stream; motionless; not brisk; torpid; dull.
stag-nate (*'nāt*), *v. i.* to cease to flow or run; become torpid, dull or impure.
staid (*stād*), *adj.* sober; sedate; regular; steady.
stain (*stān*), *v. t.* to blot; spot; dye; tarnish; pollute: *v. i.* to take stains; become stained: *n.* discoloration; spot or blot; taint; cause of reproach.

Syn. STAIN, soil, sully, tarnish. All these terms imply the act of diminishing the brightness of an object, but the term *stain* denotes something grosser than the other terms, and is applied to inferior objects; things which are not remarkable for purity or brightness may be *stained*, as hands when *stained* with blood; nothing is *sullied* or *tarnished* but what has some intrinsic value; a fine picture or piece of writing may be easily *soiled* by a touch of the finger; the finest glass is the soonest *tarnished;* hence, in the moral application a man's life may be *stained* by the commission of some gross immorality; his honor may be *sullied*, or his glory *tarnished.*

stair (*stâr*), *n.* one of a series of steps for ascending to a higher level; a step: *pl.* a flight of steps.
stair-case (*'kās*), *n.* a set of steps in a house with railings, etc.
stake (*stāk*), *n.* a post or strong stick sharpened at one end and fixed in the ground; that which is pledged, wagered; prize contested for: *v. t.* to fasten or support, defend with, or mark out the limits of, with stakes; wager or pledge.
stal-ac-tite (*stal-ak'tīt*), *n.* an icicle-like incrustation of carbonate of lime, etc., formed by percolation in caverns, etc.
stal-ag-mite (*-ag'mīt*), *n.* a cone of carbonate of lime, etc., formed on the floor of a cavern.
stale (*stāl*), *adj.* not fresh or new; vapid; tasteless; trite: *v. t.* to make stale; wear out.
stale-mate (*'māt*), *n.* the position of a king in chess, when he cannot move without being placed in check: *v. t.* to subject to stalemate.
stalk (*stawk*), *v. t.* to pursue stealthily and under cover: *v. i.* to walk with high and proud steps: *n.* the stem or main axis of a plant; anything like a stalk.
stall (*stawl*), *n.* that part of a stable where a horse or ox is kept and fed; small shelter where business is carried on: *v. t.* to place or keep in a stall: *v. i.* to kennel, as dogs.
stal-lion (*stal'yun*), *n.* an uncastrated male horse.
stal-wart (*stawl'wẽrt*), *adj.* sturdy; strong; tall and stout.
sta-men (*stā'men*), *n.* the male organ of a flower.
stam-i-na (*stam'i-nȧ*), *n. pl.* tone and vigor of the animal system

stam-i-nal (*stam'i-nal*), *adj.* pertaining to, or consisting in, stamens or stamina; tonic.
stam-mer (*stam'ẽr*), *v. i.* to hesitate or falter in speaking: *v. t.* to utter or pronounce with difficulty or hesitation: *n.* difficulty in speaking; stutter. [HESITATE.]
stamp (*stamp*), *v. t.* to strike with the sole of the foot by thrusting it downward; impress; fix deeply; affix a stamp to: *v. i.* to strike or beat the foot forcibly on the ground: *n.* the act of stamping; die; the impression made; small piece of paper to be affixed to a letter, document, etc.
stam-pede (*stam-pēd'*), *n.* a sudden panic; any sudden flight or rush: *v. t.* to cause to take to sudden flight: *v. i.* to start off in a panic.
stanch (*stanch*), *adj.* firm; constant; trustworthy; zealous: *v. t.* to stop the flowing of, as blood. [Also *staunch.*]
stan-chion (*stan'shun*), *n.* a support or post of iron or wood.
stand (*stand*), *v. i.* to be erect; occupy a certain position; be at rest or fixed; continue; continue in force: *v. t.* to endure; sustain; abide by; set in an erect position: *n.* a stop or halt; raised platform for spectators; small table; resistance.
stand-ard (*'ẽrd*), *n.* an ensign or flag; established rule or model; criterion. [CRITERION.]
stand-ing (*'ing*), *n.* the act of stopping or of being erect on the feet; reputation; rank or status: *adj.* remaining erect; stagnant; lasting; fixed.
Stanislaus (*stan'is-laws*). From the Slavonic *slawa*, signifying "the place of glory or fame." The Bohemian form of the name is *Stanislaw.*
stan-na-ry (*stan'a-ri*), *n.* [*pl.* stannaries (*-riz*)], a tin mine or works: *adj.* pertaining to tin mines.
stan-nous (*'us*), *adj.* of, pertaining to, or containing, tin.
stan-za (*'za*), *n.* a number of lines or verses, usually ending in a pause.
sta-ple (*stā'pl*), *n.* principal element or topic; unmanufactured or raw material; loop of metal for holding a bolt, etc.: *adj.* chief; regularly produced; established in commerce, etc.
star (*stär*), *n.* any celestial body, especially one that is self-luminous; anything resembling a star; a person of distinguished eminence, especially in the theatrical profession: *v. t.* to set or adorn with stars: *v. i.* to shine as a star; be preëminent.
star-board (*'bord*), *n.* the right-hand side of a vessel looking toward the bow: *adj.* pertaining to, or lying on, the right side of a vessel.
starch (*stärch*), *n.* a widely diffused vegetable substance: *v. t.* to stiffen with starch; make stiff.
starch-y (*stärch'i*), *adj.* consisting of starch; stiff; formal.
stare (*stär*), *n.* a fixed look with wide-open eyes: *v. i.* to look with fixed eyes wide open: *v. t.* to gaze at. [GAPE.]
stark (*stärk*), *adj.* stiff; strong: *adv.* wholly or completely.
star-ling (*stär'ling*), *n.* a passerine bird of the genus Sturnus.
star-ry (*'i*), *adj.* abounding in, consisting of, or proceeding from, stars; star-shaped.
start (*stärt*), *v. i.* to be moved or twitched suddenly; move abruptly; set out; commence: *v. t.* to originate or set going; rouse suddenly from concealment: *n.* the act of starting; outs t: a sudden motion or twitch; starting post.
star-tle (*stär'tl*), *v. i.* to feel sudden alarm: *v. t.* to frighten suddenly; shock.
star-va-tion (*stär-vā'shun*), *n.* the state of being starved.
starve (*stärv*), *v. i.* to suffer extreme hunger: *v. t.* subdue by famine; destroy by want of any kind.
starve-ling (*'ling*), *adj.* hungry; weak; lean: *n.* a thin, weak, pining animal or plant.
state (*stāt*), *n.* circumstances or condition; pomp; whole body of people united under one government; civil power: *adj.* pertaining to the body politic; ceremonial: *v. t.* to express the details of; narrate. [See *announce, allege.*]

Syn. STATE, realm, commonwealth. The ruling idea in the sense and application of the word *state* is that of government in its most abstract sense; affairs of *state* may either respect the internal regulations of a country, or they may respect the arrangements of different *states* with each other. The term *realm* is employed for the nation at large, but confined to such nations as are monarchical and aristocratical; the term *commonwealth* refers rather to the aggregate body of men and their possessions, than to the government of a country; it is the business of the minister to consult the interests of the *commonwealth.*

state-li-ness (*'li-nes*), *n.* the state or quality or being stately; majestic appearance.
state-ly (*'li*), *adj.* grand; majestic; dignified; displaying state.
state-ment (*'ment*), *n.* the act of stating; that which is stated.
Staten Island, N. Y. An island forming part of the city of New York. Named by Henry Hudson *Staaten Nylandt*, that is, "island of the state," in compliment to the states-general, under whose flag he was sailing. The Indian name was *monachnong*, "place of the bad woods."
State of Franklin. An old name of Tennessee, under which it was organized in 1785.
States-general. The name given to the legislative assemblies of France before the revolution of 1789, and to those of the Netherlands.
states-man (*stāts'man*), *n.* one who is skilled in public affairs; politician.
states-man-ship (*-ship*), *n.* the qualification or skill of a statesman.
stat-ic (*stat'ik*), *adj.* pertaining to bodies at rest or in equilibrium. [Also *statical.*] *n. pl.* that branch of mechanics which treats of bodies at rest.
sta-tion (*stā'shun*), *n.* place where a person or thing stands; position; place on a railway for passengers or goods; police office: *v. t.* to place in a certain post, rank, or situation. [CONDITION.]
sta-tion-a-ry (*-ā-ri*), *adj.* fixed; not moving; not improving.
sta-tion-er (*'shun-ẽr*), *n.* one who sells paper, pens, pencils, etc.
sta-tion-er-y (*-ẽr-i*), *n.* stationer's articles.
sta-tis-tic (*stā-tis'tik*), *adj.* pertaining to statistics.
stat-is-ti-cian (*stat-is-tish'an*), *n.* one skilled in statistics.
sta-tis-tics (*stā-tis'tiks*), *n.* the science of the classification and arrangement of facts.
stat-u-a-ry (*stat'ū-ā-ri*), *n.* the art of carving statues; statues collectively.
stat-ue (*'ū*), *n.* the representation of a living being sculptured or modeled in some solid material: *v. t.* to form a statue of; place, as a statue.
stat-u-esque (*-ū-esk'*), *adj.* having the characteristics of a statue.
stat-u-ette (*-ū-et'*), *n.* a little statue.
stat-ure (*'ūr*), *n.* the natural height.
sta-tus (*stā'tus*), *n.* condition; social standing or place; rank.
stat-ute (*stat'ūt*), *n.* written law; an act of a corporation.
stat-u-to-ry (*'ū-tō-ri*), *adj.* enacted by statute; depending on statute for its authority.
stave (*stāv*), *n.* one of the thin, narrow strips of wood forming the sides of a cask: *v. t.* to break a hole in; burst.
stay (*stā*), *n.* stop or stand; prop or support; abode or continuance in a place: *v. t.* to hold up or support; sustain; endure; restrain; delay: *v. i.* to remain or abide; stand still; continue; cease. [STAFF, OBSTRUCT, CONTINUE.]
stead (*sted*), *n.* the place or room which another had or might have.
stead-fast (*'fast*), *adj.* firmly fixed or established; steady; constant; uniform. [PERMANENT.]
★stead-y (*sted'i*, not *stid'i*), *adj.* fixed; regular; firm; resolute; unwavering; uniform: *v. t.* to make or keep steady or firm; regulate: *interj.* be fixed!
steak (*stāk*), *n.* a slice of beef.
steal (*stēl*), *v. t.* to take by theft or feloniously; withdraw or convey clandestinely: *v. i.* to commit theft; slip in and out unperceived.
stealth (*stelth*), *n.* secret means employed; underhand procedure.
stealth-y (*'i*), *adj.* done or performed by stealth; clandestine.
steam (*stēm*), *n.* vapor into which water is changed when heated to boiling point; vapor: *v. i.* to emit steam; rise or pass off in steam: *v. t.* to apply steam to.
steam-er (*'ẽr*), *n.* a vessel propelled by steam; an apparatus for steaming.
steam tur-bine (*tur'bin*), a steam engine in which the steam acts upon a rotating turbine.
steed (*stēd*), *n.* a horse, especially one which is spirited.
steel (*stēl*), *n.* iron refined and combined with carbon; anything made of steel: *adj.* made of, or resembling, steel: *v. t.* to overlay, edge, or tip with steel; make hard or invulnerable.
steel-ing (*'ing*), *n.* the process of overlaying, edging, or pointing with steel; acierage.
steel-y (*'i*), *adj.* made of, or like, steel; hard; inflexible.
steel-yard (*'yärd*), *n.* a kind of balance, consisting of a single weight moved along a graduated beam.
steep (*stēp*), *adj.* precipitous: *v. t.* to soak in a liquid; dip; imbue. [SOAK.]
steep-en (*'n*), *v. i.* to become steep or steeper.
stee-ple (*stē'pl*), *n.* a tower or turret tapering to a point; spire.
stee-ple-chase (*-chās*), *n.* a kind of cross-country horse race.
steer (*stēr*), *n.* a young male of the ox kind; bullock: *v. t.* to control; guide: *v. i.* to direct; move; be governed.
steer-age (*'āj*), *n.* the act or practice of steering; that part of a ship allotted to the poorer passengers.
Stella. A feminine name, from the Latin, signifying "a star."
stel-lar (*stel'ẽr*), *adj.* pertaining to stars; astral; starry. [Also *stellary.*]
stel-late (*'āt*), *adj.* starlike; radiated.
stel-lu-lar (*'ū-lẽr*), *adj.* radiated.
stem (*stem*), *n.* the principal axis of a tree or plant; anything resembling a stem; the unchangeable part of an inflected word: *v. t.* to resist or check; dam up: *v. i.* to move forward against an obstacle.
stench (*stench*), *n.* a strong offensive odor.
sten-cil (*sten'sil*), *n.* a thin plate of metal with a pattern, etc., cut out, used for marking, etc.; *v. t.* to mark or color with a stencil.
ste-nog-ra-pher (*stē-nog'ra-fẽr*), *n.* a shorthand writer. [Also *stenographist.*]
sten-o-graph-ic (*sten-ō-graf'ik*), *adj.* pertaining to, or written in, shorthand.
ste-nog-ra-phy (*stē-nog'ra-fi*), *n.* the art of writing in shorthand.
sten-to-ri-an (*sten-tō'ri-an*), *adj.* extremely loud.
step (*step*), *n.* pace; small distance; footstep; action; gait; stair: *pl.* stairs: *v. i.* to walk; advance or retire by pacing: *v. t.* to set, as the foot; measure by steps: *prefix* denoting *relation by marriage only.*
Stephen (*stē'vn*). From the Greek name signifying "a crown or garland." Danish, *Stephan*; Dutch, *Steven* or *Stephanus*; Fr., *Etienne*; Ger., *Stephan*; Gr., *Stephanos*; Hung., *Istvan*; Lat., *Stephanus*; Polish, *Szczepan*; Port., *Estevao*; Russ., *Stepan* or *Stefan*; Sp., *Esteban*; Sw., *Stefan.*
steppe (*step*), *n.* a name for the vast barren plains of Russia.
stereo, a *prefix* meaning *solid, firm,* as *stereogram,* a picture representing objects on a plane surface as if in relief: *n.* an *abbr.* of stereotype. [Also *stereograph.*]
ste-re-op-ti-con (*stē-rē-op'ti-kon*), *n.* a magic lantern showing photographic slides as if in relief.
ste-re-o-scope (*stē'rē-ō-skōp*), *n.* a binocular optical instrument by means of which two pictures appear as one.
ste-re-o-type (*-tīp*), *n.* a metal plate cast from a mold taken from a page of movable types: *v. t.* to cast or print in stereotype; fix permanently: *adj.* pertaining to, or done by, stereotype.
ster-ile (*ster'il*), *adj.* barren; destitute of ideas.
ste-ril-i-ty (*stē-ril'i-ti*), *n.* barrenness; infecundity.
ster-il-i-za-tion (*ster-il-i-zā'shun*), *n.* the act or process of rendering sterile.
ster-il-ize (*'il-iz*), *v. t.* to make sterile.
ster-ling (*st ẽr'ling*), *adj.* pure; unadulterated; genuine; of high merit.
stern (*stẽrn*), *adj.* austere; unrelenting; steadfast; being in the stern: *n.* the after part of a vessel.
ster-num (*stẽr'num*), *n.* the breastbone.
stern-way (*'wā*), *n.* movement of a vessel backward.
ste-thom-e-ter (*stē-thom'ē-tẽr*), *n.* an apparatus for measuring the external movements of the chest.
steth-o-scope (*steth'ō-skōp*), *n.* an instrument for examining the chest, by sound produced in the thorax.
Stettin (*stet-ēn'*). From *zytyn,* "the place of green corn." A seaport of northern Prussia.
ste-ve-dore (*stē'vē-dōr*), *n.* one who loads or unloads a vessel.
stew (*stū*), *v. t.* to boil slowly or with a simmering heat: *v. i.* to be boiled slowly or gently: *n.* a dish prepared by stewing: *pl.* a brothel.
stew-ard (*'ẽrd*), *n.* one who manages the domestic concerns of a family or institution; a fiscal agent, etc.
stew-ard-ess (*-es*), *n.* a woman who attends to female passengers on board ship.
stick (*stik*), *n.* a small branch or shoot cut off a tree; walking stick; staff; printer's composing stick: *v. t.* to pierce; fasten; fix in; make to cohere: *v. i.* to be fixed; remain; cleave; adhere; hesitate (with *at*).
stic-kle (*'l*), *v. i.* to wrangle for something of little importance.
stick-y (*'i*), *adj.* adhesive; glutinous; viscous.
stiff (*stif*), *adj.* rigid; inflexible; stubborn; not liquid or fluid; not natural or easy; affected; formal.
stif-fen (*'n*), *v. t.* to make stiff: *v. i.* to become stiff; grow more obstinate.
stiff-necked (*'nekt*), *adj.* inflexibly obstinate; stubborn.
sti-fle (*stī'fl*), *v. t.* to suffocate; extinguish; suppress or conceal: *v. i.* to be suffocated.
stig-ma (*stig'ma*), *n.* [*pl.* stigmas (*'maz*), stigmata (*'ma-ta*)], a mark; mark of infamy or disgrace: *pl.* the counterparts of the marks of the wounds in Christ's body.
stig-ma-tize (*'ma-tiz*), *v. t.* to mark with a stigma or brand.
stile (*stīl*), *n.* a set of steps to pass from one side of a fence or wall, etc., to the other.
sti-let-to (*sti-let'ō*), *n.* a small dagger with a thin blade.
still (*stil*), *adj.* at rest; without motion; silent: *adv.* nevertheless; always: *v. t.* to make still: *n.* an apparatus for distilling liquids. [CALM.]
stilt (*stilt*), *n.* a pole of wood with a rest for the foot, used in pairs in walking.
stim-u-lant (*stim'ū-lant*), *adj.* serving to stimulate; producing transient increase of vital energy: *n. pl.* medicines or alcoholic beverages having such an effect.
stim-u-late (*'ū-lāt*), *v. t.* to excite or rouse; excite greater vitality in: *v. i.* to act as a stimulus.
stim-u-la-tive (*'ū-lā-tiv*), *adj.* having the power of stimulating.
stim-u-lus (*'ū-lus*), *n.* [*pl.* stimuli (*-li*)], that which stimulates.
sting (*sting*), *n.* the sharp-pointed, poisonous weapon with which certain animals and insects are furnished; anything that gives acute mental or physical pain; the thrust of a sting: *v. t.* to pierce or wound with, or as with, a sting.
sting-ing (*'ing*), *p. adj.* piercing, as with a sting; painful; pungent.
stin-gy (*stin'ji*), *adj.* close and covetous; miserly; niggardly.
stink (*stingk*), *v. i.* to emit a strong, offensive odor: *v. t.* to cause to stink: *n.* a strong, offensive odor.
stint (*stint*), *v. t.* to restrain within certain limits: *v. i.* to stop or cease: *n.* quantity assigned.
sti-pend (*sti'pend*), *n.* salary.
sti-pen-di-a-ry (*-pen'di-a-ri*), *adj.* receiving stipend

or salary: *n.* one who performs services for a salary.
stip-ple (*stip'l*), *v. t.* to engrave or paint by means of dots.
stip-u-late (*'ū-lāt*), *v. t.* to arrange or settle definitely.
stip-u-la-tion (*-ū-lā'shun*), *n.* the act of stipulating; bargain; condition in a contract.
stir (*stĕr*), *v. t.* to put into motion; rouse; instigate: *v. i.* to be in motion: *n.* bustle; agitation; tumult.
Syn. STIR, move. We may *move* in any manner, but *to stir* is *to move* so as to disturb the rest and composure either of the body or mind. [See *awaken.*]
Stirling. From *Estrevelyn,* "the town of the Easterlings, from Flanders." A burgh and county of Scotland.
stir-rup (*stĕr'up* or *stir'up*), *n.* an iron hoop suspended by a strap in which a horseman sets his foot.
stitch (*stich*), *n.* a single pass of a needle and thread; sharp, local pain: *v. t.* to form stitches in; unite by stitches: *v. i.* to practice stitching.
stock (*stok*), *n.* the trunk or stem of a tree or plant; pillar, log, or post; race, family, or lineage; capital; cattle; stiff cravat; foundation of soups: *pl.* a wooden frame in which the legs of criminals were confined; shares of capital: *v. t.* to store up; fill; supply: *v. i.* to take in or obtain supplies: *adj.* kept in stock; permanent.
stock-ade (*-ād'*), *n.* a line of posts used as a barrier: *v. t.* to surround with, or defend by, a stockade.
Stockholm (*stok'hōlm*). The capital of Sweden is often said to have been so called because built like Venice on stocks or piles. According to the local legend, a stock or log floating up the Malar lake from Sigtuna guided the first settlers to the granite rocks on which Stockholm is built. The older form *Stakholm* explains the name as a *holm* or "island," in a *stak* or "sound."
stock-ing (*'ing*), *n.* a close-fitting covering for the foot and leg.
stock-job-ber (*'job-ĕr*), *n.* one who deals or speculates in stocks.
Stockton. City in California and Missouri and town in Chautauqua county, New York, named for Commodore R. F. Stockton, who took part in the conquest of California.
Sto-ic (*stō'ik*), *n.* a disciple of the Greek philosopher Zeno, who taught that a wise man should be governed by the reason; one who proposes such doctrines: *adj.* pertaining to the Stoics; indifferent to pleasure or pain. [Also *stoical.*]
★**sto-i-cism** (*stō'i-sizm*, not *stō'ik-izm*), *n.* the doctrines and maxims of the Stoics; real or assumed insensibility to pleasure or pain.
stoke (*stōk*), *v. t.* to maintain and tend fire: *v. i.* to act as a stoker.
stok-er (*'ĕr*), *n.* a fireman.
stole (*stōl*), *n.* a long, narrow scarf fringed at the ends: *p. t.* of steal.
stol-id (*stol'id*), *adj.* stupid; dull; impassive.
sto-lid-i-ty (*stō-lid'i-ti*), *n.* the state or quality of being stolid.
stom-ach (*stum'ak*), *n.* the principal organ of digestion in the body; inclination: *v. t.* to resent; put up with.
stom-ach-er (*'ak-ĕr*), *n.* an ornamental breast covering for women.
stone (*stōn*), *n.* a hard mass of earthy or mineral matter; gem; hard seed shell of certain fruits; a weight, 14 lbs. avoirdupois: *v. t.* to pelt or kill with stones; free from stones.
stone-blind (*'blind*), *adj.* quite blind.
stone-cut-ting (*'kut-ing*), *n.* hewing or dressing stone.
stone-ware (*'wâr*), *n.* a coarse kind of pottery baked hard and glazed.
Stonington, Conn. Named from an English town. *Ston,* "stone," *ing,* "field," *ton,* "town," "a town situated in a field of stone." It was first called *Southerton.*
ston-y (*'i*), *adj.* pertaining to, of the nature of, or like, stone; rocky; hard; pitiless.
stool (*stōōl*), *n.* a seat without a back for one person, usually supported with 3 legs.
stoop (*stōōp*), *v. i.* to bend the body downward and forward; submit; condescend: *n.* inclination downward and forward; condescension; veranda.
stop (*stop*), *v. t.* to hinder, check, or impede; render impassable; desist from: *v. i.* to cease from any motion or action: *n.* the act of stopping; cessation: *interj.* stay! cease! [HINDER, OBSTRUCT.]
stop-gap (*'gap*), *n.* a temporary expedient.
stop-page (*'āj*), *n.* the act of stopping; state of being stopped.
stop-per (*'ĕr*), *n.* one who, or that which, stops.
stop-ple (*'l*), *n.* a cork or plug: *v. t.* to close with a stopple.
stor-age (*stōr'āj*), *n.* safe keeping of goods in a warehouse, etc.; price for storage.
store (*stōr*), *n.* a large number or great quantity; abundance or plenty; shop: *pl.* naval and military arms, provisions, etc.: *v. t.* to furnish or supply with stores; accumulate; hoard.
sto-ried (*stō'rid*), *adj.* furnished with stories; told in a story.
stork (*stôrk*), *n.* a large wading bird with long legs and large pointed bill.
storm (*stôrm*), *n.* a violent atmospheric disturbance; tumult; calamity; violent assault: *v. t.* to attack with violence: *v. i.* to blow violently; be angry or rage. [BREEZE.]
storm-ing (*stôrm'ing*), *n.* the taking of a fortified place by a violent and open assault: *p. adj.* violently angry or raging.
storm-y (*'i*), *adj.* characterized by, or proceeding from, storms.
sto-ry (*stō'ri*), *n.* a fictitious narrative; stage or floor of a building.
Syn. STORY, tale. The *story* is either an actual fact or something feigned; the *tale* is always feigned; *stories* are circulated respecting the accidents and occurrences which happen to persons in the same place; *tales* of distress are told by many to excite compassion. [See *fiction.*]
stout (*stout*), *adj.* corpulent; lusty; brave; resolute: *n.* a strong kind of porter.
stove (*stōv*), *n.* an apparatus for inclosing a fire for cooking or heating: *p. t.* of stave.
stow (*stō*), *v. t.* to fill by packing closely; lay up; pack.
stow-age (*'āj*), *n.* the act of stowing; state of being stowed; accommodation for stowing things; money paid for stowage.
stow-a-way (*'a-wā*), *n.* one who conceals himself on a vessel.
strad-dle (*strad'l*), *v. t.* to stand or sit astride of: *v. i.* to stand or walk with the legs wide apart: *n.* the act of standing, sitting, or walking with the legs wide apart.
strag-gle (*strag'l*), *v. i.* to wander from the direct course or way.
straight (*strāt*), *adj.* not crooked; direct; upright: *adv.* in a straight manner; direct; at once.
straight-en (*'en*), *v. t.* to make straight.
straight-for-ward (*-fôr'wĕrd*), *adj.* not deviating; honest; open. [CANDID.]
straight-way (*'wā*), *adv.* at once.
strain (*strān*), *n.* stock; race; descent; tune or melody; a violent effort; injury: *v. t.* to put to its utmost strength; stretch; injure by overtasking; make unessy or unnatural; filter: *v. i.* to make violent efforts; be filtered.
strait (*strāt*), *adj.* narrow; distressful; difficult: *n. pl.* a narrow passage of water connecting two seas; difficulty; poverty.
strait-en (*'en*), *v. t.* to make narrow; confine; put into difficulties: *v. i.* to become narrow.
strait-jack-et (*'jak-et*), *n.* a kind of garment for confining mad or delirious persons.
strait-laced (*'lāst*), *adj.* strict in manners or morals.
Strait of Gibraltar. See *Gibraltar.*
strand (*strand*), *n.* the shore of a sea, ocean, or large lake; one of the twists of a rope: *v. t.* to run aground; bring into a state of embarrassment: *v. i.* to be driven ashore.
strange (*strānj*), *adj.* belonging to another country; unusual; unfamiliar. [RARE.]
stran-ger (*stān'jĕr*), *n.* a foreigner; one who is unknown or unacquainted.
stran-gle (*strang'gl*), *v. t.* to choke; suppress or stifle.
stran-gu-la-tion (*-gū-lā'shun*), *n.* the act of strangling; state of being strangled; suffocation.
strap (*strap*), *n.* a long, narrow piece of leather or cloth; razor strop: *v. t.* to fasten or bind with a strap; beat with a strap.
strap-hang-er (*'hang-ĕr*), *n.* one unable to obtain a seat in a crowded public conveyance, and who hangs to one of the straps provided for standing passengers.
strap-ping (*'ing*), *adj.* tall; strong; well-made; handsome.
strat-a-gem (*strat'ā-jem*), *n.* an artifice or plan for deception of any kind.
stra-te-gic (*stra-tē'jik*), *adj.* pertaining to, or effected by, strategy or artifice [Also *strategical.*] *n. pl.* the science of military warfare.
strat-e-gy (*strat'ē-ji*), *n.* strategics; use of artifice or strategem.
strat-i-fi-ca-tion (*-i-fi-kā'shun*), *n.* the process of being arranged or deposited in layers.
strat-i-fied (*'i-fid*), *adj.* arranged in strata.
strat-i-fy (*'i-fi*), *v. t.* to form, deposit, or arrange, in strata.
★**stra-tum** (*strā'tum*), *n.* [*pl.* strata (*'tà*)], a bed of earth or rock consisting of a series of layers.
straw (*straw*), *n.* the stalk of grain.
straw-ber-ry (*'ber-i*), *n.* [*pl.* strawberries (*-iz*)], a plant of the genus Fragaria and its fruit.
stray (*strā*), *v. i.* to wander from limits or direct path; deviate; err: *v. t.* to mislead: *adj.* gone astray; wandering. [DEVIATE.]
streak (*strēk*), *n.* a line of color different from the ground color; stripe: *v. t.* to form, or mark with, streaks; stripe.
stream (*strēm*), *n.* a current of water or other fluid; river: *v. i.* to issue or flow in a stream.
Syn. STREAM, current, tide. All rivers are *streams,* which are more or less gentle according to the nature of the ground through which they pass; the force of the *current* is very much increased by the confinement of any water between rocks, or by means of artificial impediments; the *tide* is high or low, strong or weak, at different hours of the day; when the *tide* is high, the *current* is strongest.
stream-er (*'er*), *n.* a long narrow flag or pennon.
stream-let (*'let*), *n.* a little stream; a rivulet; a rill.
street (*strēt*), *n.* a public road in a city or town.
street Ar-ab (*ar'ab*), a neglected child of the streets.
street car (*strēt'kār*), a car that runs on a street railway.
street rail-way (*rāl'wā*), a railway laid on the surface of the streets.
strength (*strength*), *n.* the state or quality of being strong; active or passive power.
strength-en (*'en*), *v. t.* to make strong; confirm: *v. i.* to become stronger.
Syn. STRENGTHEN, fortify, invigorate. Whatever adds to the *strength,* be it in ever so small a degree, *strengthens;* exercise *strengthens* either body or mind; whatever gives *strength* for a particular emergency, *fortifies;* religion *fortifies* the mind against adversity; whatever adds to the *strength,* so as to give a positive degree of *strength, invigorates;* morning exercise in fine weather *invigorates.*
stren-u-ous (*stren'ū-us*), *adj.* ardent; zealous; strong; bold; earnest; valiant.
stress (*stres*), *n.* urgency; strain; pressure; force; importance; weight; accent.
stretch (*strech*), *v. t.* to draw out to a greater length or width; exaggerate: *v. i.* to be extended; reach: *n.* the act of stretching; state of being stretched; strain; effort.
stretch-er (*'ĕr*), *n.* one who, or that which, stretches; a frame or litter for carrying bodies.
strew (*strōō*), *v. t.* to spread by scattering; scatter loosely.
stri-ate (*stri'āt*), *adj.* marked, or formed with, striæ.
strict (*strikt*), *adj.* exact; severe; nice to an extreme; careful; rigidly interpreted.
Syn. STRICT, severe. He who has authority over others must be *strict* in enforcing obedience, in keeping good order, and a proper attention to their duties; but it is possible to be very *severe* in punishing those who are under us, and yet very lax in all matters that our duty demands of us.
Ant. MILD, gentle, lenient.
stric-ture (*strik'tūr*), *n.* a morbid contraction of any passage of the body.
stride (*strid*), *n.* a long step; straddle: *v. i.* to walk with long steps; straddle: *v. t.* to pass by long steps.
stri-dent (*stri'dent*), *adj.* harsh; shrill; grating or creaking.
strife (*strif*), *n.* contention for superiority; discord; conflict.
Syn. STRIFE, contention. *Strife* is mostly used for verbal *strife,* where each party *strives* against the other by the use of contumelious or provoking expressions; *contention* is used for an angry *striving* with others, either in respect to matters of opinion or matters of claim, in which each party seeks the advantage. [See *discord, feud.*]
strike (*strik*), *v. t.* to hit with a blow or with force; collide; lower or take down; affect; light upon; make, as a bargain: *v. i.* to make a quick blow or thrust; hit; cease from work: *n.* cessation of work.
strik-ing (*'ing*), *adj.* affecting with strong emotions; impressive.
string (*string*), *n.* a small cord or line; series of things connected: *v. t.* to furnish with strings; file.
strin-gen-cy (*strin'jen-si*), *n.* the state or quality of being stringent.
strin-gent (*strin'jent*), *adj.* severe; rigid; strict; binding; tense.
string-i-ness (*string'i-nes*), *n.* the state or quality of being stringy.
string-y (*'i*), *adj.* consisting of, or like, string; filamentous.
strip (*strip*), *v. t.* to deprive of a covering; bereave; take away: *v. i.* to undress: *n.* a long, narrow piece.
stripe (*strip*), *v. t.* to form stripes upon; *n.* a line or long, narrow division of anything of a different color from the ground; stroke made by a whip, etc.
strip-ling (*strip'ling*), *n.* a youth.
strive (*striv*), *v. i.* to make exertions or efforts; aim; struggle; contend. [ENDEAVOR.]
stroke (*strōk*), *n.* a knock or blow; sudden effect; hostile blow or attack; touch of a pencil or pen: *v. t.* to rub gently with the hand; soothe.
stroll (*strōl*), *v. i.* to wander on foot: *n.* a leisurely ramble.
strong (*strông*), *adj.* having strength; robust; healthy; vigorous; having power of endurance; ardent; well-fortified. [COGENT.]
strong-hold (*'hōld*), *n.* a fortress.
strop (*strop*), *n.* a strip of leather for sharpening razors: *v. t.* to sharpen on a strop.
stro-phe (*strō'fe*), *n.* that part of a song or dance in the ancient Greek drama performed by the chorus.
stro-phic (*strō'fik*), *adj.* pertaining to, or consisting of, strophes.
struc-tur-al (*struk'tūr-al*), *adj.* pertaining to structure.
struc-ture (*'tūr*), *n.* an edifice or building; form; make.
strug-gle (*strug'l*), *v. i.* to use violent efforts; be in pain or agony; contend: *n.* a violent effort; pain or agony; labor; contest. [ENDEAVOR.]
strum (*strum*), *v. t.* and *v. i.* to play badly and noisily on a stringed instrument.
strut (*strut*), *v. i.* to walk with affected dignity: *n.* a proud step or walk.
strych-nic (*strik'nik*), *adj.* pertaining to, derived from, or containing, strychnine.
strych-nine (*'nin*), *n.* a highly poisonous alkaloid extracted from nux vomica.
stub (*stub*), *n.* the stump of a tree; a stub nail: *v. t.* to strike against some fixed obstacle.
stubbed (*stubd*), *adj.* short and thick. [Also *stubby.*]

stub-ble (*stub'l*), *n.* short stalks of grain left after reaping.
stub-born (*'ērn*), *adj.* obstinate; refractory. [OBSTINATE, PERVERSE.]
stuc-co (*stuk'ō*), *n.* [*pl.* stuccoes (*'oz*)], plaster used as a coating for walls or internal decorations; work executed in stucco: *v. t.* to overlay, or decorate, with stucco.
stud (*stud*), *n.* a large-headed ornamental nail; an upright beam or scantling; collection of breeding horses and mares; place where they are kept: *v. t.* to adorn with, or as with, studs.
stud-ding (*'ing*), *n.* material for studs or joists; studs or joists collectively.
stu-dent (*stū'dent*), *n.* one who is engaged in study; scholar.
stud-horse (*stud'-hôrs*), *n.* a stallion.
stu-di-o (*stū'di-ō*), *n.* an artist's workroom.
stu-di-ous (*'di-us*), *adj.* devoted to study or the acquisition of knowledge.
stud-y (*stud'i*), *n.* the application of the mind to acquisition of knowledge; any particular branch of learning: *v. i.* to apply the mind closely to a subject: *v. t.* to examine closely.
stuff (*stuf*), *n.* materials out of which anything is made; nonsense: *v. t.* to fill by crowding into: *v. i.* to eat gluttonously.
stuff-y (*'i*), *adj.* close or ill-ventilated.
stul-ti-fi-ca-tion (*stul-ti-fi-kā'shun*), *n.* the act of stultifying; the state of being stultified.
stul-ti-fy (*'ti-fī*), *v. t.* to render foolish; make nugatory.
stum-ble (*stum'bl*), *v. i.* to trip up or fall in walking; light (with *on* or *upon*); slide into error or crime: *n.* a trip in walking or running; failure or blunder.
stump (*stump*), *n.* that part of a tree which remains in the ground after the trunk is cut down: *v. t.* to lop off; reduce to a stump; defeat: *v. i.* to travel about making speeches; to walk clumsily.
stump or-a-tor (*ôr'ȧ-tẽr*), one who harangues the people.
stump speech (*'spēch*), an electioneering speech.
stump-y (*'i*), *adv.* full of stumps; short and thick.
stun (*stun*), *v. t.* to render senseless by, or as by, a blow; astonish.
stunt (*stunt*), *v. t.* to check in growth or progress: *v. i.* to become stunted: *n.* a check in growth; a performance.
stu-pe-fac-tion (*stū-pē-fak'shun*), *n.* state of being stupefied; insensibility. [STUPIDITY.]
stu-pe-fac-tive (*'tiv*), *adj.* causing stupefaction.
stu-pe-fy (*'pē-fī*), *v. t.* to deprive of sensibility; make stupid.
stu-pen-dous (*-pen'dus*), *adj.* overcoming the senses by its vastness; astonishing.
stu-pid (*'pid*), *adj.* deficient in understanding; insensible; dull. [ABSURD.]
stu-pid-i-ty (*'i-ti*), *n.* extreme dullness of perception or understanding; crass ignorance; folly.

Syn. STUPIDITY, apathy, dullness, insensibility, obtuseness, stupefaction, stupor. *Stupidity* is sometimes loosely used for temporary *dullness* or partial *stupor*, but chiefly for innate and chronic *dullness* and *sluggishess* of mental action; *obtuseness* of apprehension, etc. *Apathy* may be temporary.

stu-por (*'pẽr*), *n.* numbness; lethargy; intellectual insensibility. [STUPIDITY.]
stur-dy (*stûr'di*), *adj.* hardy; robust; stout; strong; stubborn; vigorous.
stur-geon (*'jun*), *n.* a large, cartilaginous fish of the genus Acipenser.
stut-ter (*stut'ẽr*), *v. i.* to speak with hesitation or stammering: *v. t.* to utter in a stammering manner: *n.* hesitation or stammering in speech. [HESITATE.]
sty (*stī*), *n.* a pen or inclosure for swine; a kind of boil upon the eyelid.
Styg-i-an (*stij'i-an*), *adj.* pertaining to the Styx, the river of Hades; hence infernal; hellish.
style (*stīl*), *n.* a pointed instrument used by the ancients for writing; appellation or title; distinctive manner: *v. t.* to designate or name.
styl-ish (*'ish*), *adj.* fashionable.
styl-ist (*'ist*), *n.* a master of literary style.
styp-tic (*stip'tik*), *adj.* stopping bleeding.
sua-si-ble (*swā'si-bl*), *adj.* easily persuaded.
sua-sion (*'zhun*), *n.* persuasion.
sua-sive (*'siv*), *adj.* persuasive.
suave (*swāv* or *swäv*), *adj.* pleasant in manner.
suav-i-ty (*swav'i-ti*), *n.* urbanity; gentleness.
sub. *prefix* meaning *under, beneath, below, slightly.*
sub-ac-id (*sub-as'id*), *adj.* slightly acid.
sub-al-tern (*-awl'tẽrn*), *n.* a commissioned officer under the rank of captain: *adj.* inferior.
sub-al-ter-nate (*-tẽr'nāt*), *adj.* successive.
sub-due (*-dū'*), *v. t.* to overcome or conquer; vanquish; reduce.
sub-ja-cent (*sub-jā'sent*), *adj.* lying under or below.
sub-ject (*'jekt*), *adj.* subordinate; disposed; liable: *n.* one who is under the power or control of another; theme; topic; design: *v. t.* (*sub-jekt'*) to bring under the power or control of; expose.
sub-jec-tion (*-jek'shun*), *n.* the act of subjecting; state of being subjected.
sub-jec-tive (*'tiv*), *adj.* pertaining to the subject as opposed to the object.
sub-jec-tiv-ism (*-izm*), *n.* the philosophical doctrine that knowledge is relative or purely subjective.
sub-join (*-join'*), *v. t.* to affix. [ADD.]
sub-ju-gate (*'jū-gāt*), *v. t.* to conquer by force; bring under dominion.
sub-ju-ga-tion (*sub-jū-gā'shun*), *n.* the act of subjugating; state of being subjugated.
sub-junc-tive (*-jungk'tiv*), *adj.* noting a form of the verb expressive of contingency; conditional.
sub-li-mate (*'li-māt*), *v. t.* to convert (a solid) by heat into vapor.
sub-lime (*-līm'*), *adj.* awakening feelings of awe and reverence; exalted in nature, manner or style: *n.* that which is awe inspiring: *v. t.* to dignify or exalt; render noble: *v. i.* to be capable of sublimation. [GREAT.]
Sublime porte (*sub-līm' pōrt*). The synonym by which is designated the government of the sultan of Turkey. It is the French equivalent of *Bab-i-Humayoon*, "the high gate." The term contains an allusion to the Oriental custom of transacting public business at the principal gate of the city or palace, and from this practice the sultan's government is popularly styled in Turkey "the sultan's gate."
sub-lim-i-ty (*-lim'i-ti*), *n.* loftiness of style or sentiment; elevation; moral grandeur; excellence.
sub-ma-rine (*sub-mȧ-rēn'*), *adj.* under water.
sub-merge (*-mẽrj'*), *v. t.* to place under water; overwhelm: *v. i.* to be, or lie, under water.
sub-mer-sion (*-mẽr'shun*), *n.* the act of submerging; state of being submerged. [Also *submergence.*]
sub-mis-sion (*-mish'un*), *n.* the act of submitting or yielding.
sub-mis-sive (*-mis'iv*), *adj.* obedient; humble. [HUMBLE, OBEDIENT, COMPLIANT.]
sub-mit (*-mit'*), *v. t.* to yield to the authority of another; surrender; refer to judgment; comply with: *v. i.* to be subject; yield. [COMPLY.]
sub-or-di-nate (*-ôr'di-nāt*), *adj.* inferior in rank, value, power, or importance: *n.* one who is inferior to another in rank, etc.: *v. t.* to place in a lower order.
sub-or-di-na-tion (*-nā'shun*), *n.* the act of subordinating or placing in a lower order; state of being subordinate.
sub-orn (*-ôrn'*), *v. t.* to procure or induce to commit perjury. [FORSWEAR.]
sub-or-na-tion (*-ôr-nā'shun*), *n.* the act of inducing a person to commit perjury.
sub-pœ-na (*-pē'nȧ*), *n.* a writ commanding the attendance of a person in court as a witness: *v. t.* to serve with a subpœna.
sub-scribe (*-skrīb'*), *v. t.* to write or annex (one's name) to a paper or document: *v. i.* to give consent.
sub-scrip-tion (*-skrip'shun*), *n.* the act of subscribing; signature; sum of money subscribed.
sub-se-quent (*'sē-kwent*), *adj.* following or coming after in time or order.
sub-serve (*-sẽrv'*), *v. t.* to be subservient to; promote; serve instrumentally.
sub-side (*-sīd'*), *v. i.* to sink or fall to the bottom; settle; abate; become tranquil or calm. [ABATE.]
sub-si-dence (*-sī'dens*), *n.* the act of subsiding or sinking down.
sub-sid-i-a-ry (*-sid'i-ȧ-ri*), *adj.* auxiliary; furnishing additional supplies: *n.* an auxiliary.
sub-si-dize (*'si-dīz*), *v. t.* to furnish with a subsidy.
sub-si-dy (*'si-di*), *n.* pecuniary aid granted by one government to another; public grant or subvention to aid an enterprise.
sub-sist (*-sist'*), *v. i.* to have existence; inhere; have the means of livelihood.
sub-sist-ence (*'ens*), *n.* means of support; maintenance; inherence.
sub-stance (*'stans*), *n.* matter or material; essential part of anything; purport.
sub-stan-tial (*-stan'shal*), *adj.* belonging to, or having, substance; solid; material.
sub-stan-ti-ate (*'shi-āt*), *v. t.* to establish the truth of.
sub-stan-tive (*'stan-tiv*), *adj.* expressing existence; real; essential: *n.* that part of speech which expresses the existence of anything material or immaterial; noun.
sub-sti-tute (*'sti-tūt*), *v. t.* to put in the place of another; *n.* one who, or that which, is put in the place of another. [CHANGE.]
sub-sti-tu-tion (*-tū'shun*), *n.* the act of substituting; state of being substituted.
sub-tend (*-tend'*), *v. t.* to extend under or be opposite to.
sub-ter-fuge (*'tẽr-fūj*), *n.* an evasion or artifice; trick; shift. [PRETENSE.]
sub-ter-ra-ne-an (*-rā'nē-an*), *adj.* below the surface. [Also *subterraneous.*]
★**sub-tile** (*sub'til* or *sut'l*), *adj.* thin; delicately constructed; fine; refined; acute; cunning.
★**sub-tle** (*sut'l*) *adj.* artful; insinuating; crafty.
sub-tle-ty (*-ti*), *n.* acuteness of intellect; cunning.
sub-tract (*-trakt'*), *v. t.* to withdraw or take away; deduct.
sub-trac-tion (*-trak'shun*), *n.* the act of subtracting.
sub-tra-hend (*'trȧ-hend*), *n.* the quantity or number to be subtracted from another.
sub-urb (*sub'ûrb*), *n.* an outlying district of a city or town.
sub-ur-ban (*-ûr'ban*). *adj.* pertaining to, in, or living within, the suburbs.
sub-ven-tion (*-ven'shun*), *n.* a government grant or subsidy.
sub-ver-sion (*-vẽr'shun*), *n.* the act of subverting; overthrow; ruin.
sub-vert (*sub-vert'*), *v. t.* to turn upside down; ruin; overthrow; corrupt.

Syn. SUBVERT, destroy, overthrow, overturn, ruin, supersede, supplant. To *subvert* is to *overthrow, destroy,* bring to *ruin.* To *supersede* implies the putting of something in the place of that which is removed; to *supplant,* often personal, signifies to take the place of another; one is *superseded* by authority, *supplanted* by a rival.

sub-way (*'wā*), *n.* an underground passage.
suc-ceed (*suk-sēd'*), *v. t.* to take the place of; follow: *v. i.* to follow in order; obtain one's wishes; be successful. [FOLLOW.]
suc-cess (*-ses'*), *n.* the prosperous termination of any enterprise; prosperity.
suc-cess-ful (*-fool*), *adj.* ending in success; prosperous; fortunate.
suc-ces-sion (*-sesh'un*), *n.* the act of following in order; lineage; act or right of coming in the place of another. [TIME.]
suc-ces-sive (*-ses'iv*), *adj.* following in uninterrupted order; consecutive.

Syn. SUCCESSIVE, alternate. The *successive* may be accidental or intentional; the *alternate* is always intentional; it may rain for three *successive* days, or a fair may be held for three *successive* days; trees are placed sometimes in *alternate* order.

suc-ces-sor (*'ẽr*), *n.* one who succeeds or follows in the place or character of another.
suc-cinct (*-singkt'*), *adj.* tersely expressed. [SHORT.]
suc-cor (*'ẽr*), *v. t.* to help or relieve when in difficulty or distress; aid: *n.* relief; aid. [HELP.]
suc-co-tash (*'ō-tash*), *n.* a dish of green maize and beans.
suc-cu-lent (*'ū-lent*), *adj.* juicy: said of plants replete with juices.
suc-cumb (*-kum'*), *v. i.* to yield; submit.
such (*such*), *adj.* the same that, or as referred to; denoting a particular person or thing; certain.
suck (*suk*), *v. t.* to draw in with the mouth: *v. i.* to draw milk from the breast: *n.* the act of sucking. [ABSORB].
suc-kle (*'l*), *v. t.* to nurse at the breast.
suck-ling (*'ling*), *n.* an unweaned child or animal.
suc-tion (*suk'shun*), *n.* the act or process of sucking.
sud-den (*sud'n*), *adj.* happening unexpectedly; instantaneous; without notice; quick.
suds (*sudz*), *n. pl.* soapy water.
sue (*sū*), *v. t.* to prosecute at law: *v. i.* to entreat; beg; petition; pay court.
su-et (*'et*), *n.* the hard fat around the kidneys and loins of cattle.
Suez (*sōō'ez, sōō-ez'*). Is a Portugese corruption of *Bir Suweis*, the Arabic name of a fortified well of brackish water about an hour's journey from the town, where the pilgrims waited to embark for Mecca. From this well, by a curious accident, the Gulf and Isthmus of Suez and the Suez canal take their names.
suf-fer (*suf'ẽr*), *v. t.* to feel with a sense of pain; undergo; bear: *v. i.* to feel pain or punishment; be in distress; endure loss or injury. [ADMIT.]
suf-fer-a-ble (*ȧ-bl*), *adj.* that may be allowed or tolerated.
suf-fer-ance (*'fẽr-ans*), *n.* patience under pain; toleration; permission.
suf-fice (*-īs'*), *v. i.* to be sufficient: *v. t.* to satisfy.
suf-fi-cien-cy (*-fish'en-si*), *n.* the state or quality of being sufficient; competence.
suf-fi-cient (*'ent*), *adj.* equal to any end or purpose; adequate. [ENOUGH.]
suf-fix (*'iks*), *n.* a letter or syllable added at the end of a word: *v. t.* (*suf-iks'*) to add.
suf-fo-cate (*'ō-kat*), *v. t.* to choke by stopping respiration.
suf-fo-ca-tion (*-kā'shun*), *n.* the act of suffocating; state of being suffocated.
suf-frage (*'rāj*), *n.* vote, or right to vote; franchise.
suf-fra-gette (*-rȧ-jet'*), *n.* a woman who advocates female suffrage.
suf-fuse (*-fūz'*), *v. t.* to spread over as with a fluid or a color.
suf-fu-sion (*-fū'zhun*), *n.* the act of suffusing; state of being suffused.
sug-ar (*shoog'ẽr*), *n.* a sweet crystalline substance obtained from the sugar cane, beet, etc.: *adj.* pertaining to, like, made of, or yielding, sugar; sweet: *v. t.* to sprinkle or mix with sugar.
★**sug-gest** (*sug-jest'* or *sud-jest'*), *v. t.* hint; insinuate; allude or refer to: *v. i.* to make suggestions. [ALLUDE.]
sug-ges-tion (*-jes'chun*), *n.* the act of suggesting; thing suggested. [DICTATE.]
sug-gest-ive (*'iv*). *adj.* containing, or full of, suggestion.
su-i-ci-dal (*sū'i-sī-dal*), *adj.* pertaining to, or partaking of, suicide; fatal to one's own interests.
su-i-cide (*'i-sīd*), *n.* a person who kills himself; self-murder; ruin of one's own interests.
★**suit** (*sūt*), *n.* a set of things correspondent to each other; petition or prayer; courtship; an action or process at law: *v. t.* to be fitted to; accommodate; please: *v. i.* to correspond or accord; agree.
suit-a-ble (*'a-bl*), *adj.* fitting; appropriate. [CONFORMABLE, CONVENIENT.]
suit case (*'kās*), a hand bag used as for carrying a dress suit. [Also *dress-suit case.*]
★**suite** (*swēt*, not *sūt*), *n.* a retinue or company; set, as of rooms.
suit-or (*sūt'ẽr*), *n.* a petitioner; supplicant; lover.
sulk (*sulk*), *v. i.* to be sulky.

sulk-y (*sulk'i*), *adj.* silently sullen: *n.* a kind of two-wheeled carriage.
sul-len (*sul'en*), *adj.* morosely silent; gloomily angry; dismal.
sul-ly (*'i*), *v. t.* to tarnish or soil; dirty; stain: *n.* a tarnish or stain. [STAIN.]
sul-phur (*'fûr*), *n.* a nonmetallic element, brittle, and of a yellow color.
sul-phu-rate (*-fū-rāt*), *v. t.* to combine with, or subject to the action of, sulphur: *adj.* pertaining to, or of the color of, sulphur.
sul-phu-re-ous (*-fū'rē-us*), *adj.* consisting of, impregnated with, or having the qualities of, sulphur. [Also *sulphurous.*]
sul-phu-ret-ted (*'fū-ret-ed*), *adj.* combined with sulphur.
sul-phu-ric (*-fū'rik*), *adj.* obtained from, or containing, sulphur.
sul-phur-y (*'fûr-i*), *adj.* like sulphur.
sul-tan (*'tan*), *n.* the title of a Mohammedan sovereign, especially the sovereign of Turkey.
sul-try (*'tri*), *adj.* very hot, close, and oppressive; close and heavy with a moist heat.
sum (*sum*), *n.* whole; total; substance; utmost degree; arithmetical problem: *v. t.* to add into one amount; condense into few words. [ADD.]
su-mac (*sū'mak* or *shū'mak*), *n.* a plant or shrub the dried leaves and roots of which are used in tanning, dyeing, and medicine.
Sumatra (*sōō-mä'trȧ*). An island of Malay archipelago; name a corruption of *Trimatara*, which means "the happy land."
sum-ma-rize (*sum'ȧ-rīz*), *v. t.* to state concisely.
sum-ma-ry (*'ȧ-ri*), *adj.* brief; laconic; compendious: *n.* an abridgment; compendium. [ABRIDGMENT, SHORT.]
sum-ma-tion (*-ā'shun*), *n.* the act of forming a total; aggregate.
sum-mer (*'ẽr*), *n.* that part of the year which comprises the hottest months, June, July, and August: *v. i.* to pass the summer.
sum-mit (*'it*), *n.* the top, or highest point.
sum-mon (*'un*), *v. t.* command; invite: *n. pl.* a citation to appear in court; authoritative call.
sump-tu-a-ry (*sump'tū-ā-ri*), *adj.* pertaining to, or regulating, expense.
sump-tu-a-ry laws (*lawz*), laws to limit excessive expenditure on dress or other luxuries.
sump-tu-ous (*'tū-us*), *adj.* expensive; costly; luxurious; magnificent.
sun (*sun*), *n.* the luminous body around which the earth and other planets, etc., of the solar system revolve; sunshine: *v. t.* to expose to the sun's rays.
Sunapee (*sun'ȧ-pē*). Lake in New Hampshire, for which a town in Sullivan county and mountain in the same state are named. From an Indian word, *shehunknippe*, "wild goose pond."
Sunday. The first day of the week; word signifies the day upon which the sun was worshiped.
sun-der (*'dẽr*), *v. t.* to divide or rend.
sun-dry (*'dri*), *adj.* various; several.
sunk-en (*sungk'en*), *adj.* lying on the bottom of the sea; fallen or pressed down.
sun-ny (*'i*), *adj.* pertaining to, like, proceeding from, or exposed to, the sun; bright; warm; cheerful.
sun-shine (*'shīn*), *n.* the light or rays of the sun; warmth.
sun-stroke (*'strōk*), *n.* a kind of apoplexy, caused by the intense heat of the sun's rays.
sun-up (*'up*), *n.* sunrise.
sup (*sup*), *v. t.* to take into the mouth with the lips: *v. i.* to take supper: *n.* sip.
su-per-an-nu-at-ed (*sū-pẽr-an'ū-āt-ed*), *adj.* incapacitated by old age. [ANTIQUE.]
su-perb (*sū-pẽrb'*), *adj.* grand; proud; stately; elegant.
su-per-cil-i-a-ry (*-pẽr-sil'i-ā-ri*), *adj.* pertaining to, or situated above, the eyebrow.
su-per-cil-i-ous (*'i-us*), *adj.* haughty; proud; overbearing.
su-per-er-o-ga-tion (*-er-ō-gā'shun*), *n.* the performance of more than is required by duty.
su-per-e-rog-a-to-ry (*-ē-rog'ȧ-tō-ri*), *adj.* performed beyond what is required by duty.
su-per-fi-cial (*-fish'al*), *adj.* pertaining to, or being on, the surface; slight; not deep; unlearned.
su-per-fi-ci-al-i-ty (*-i-al'i-ti*), *n.* the state or quality of being superficial.
su-per-flu-i-ty (*-flōō'i-ti*), *n.* superabundance; excess. [EXCESS.]
su-per-flu-ous (*'flōō-us*), *adj.* more than enough or necessary.
su-per-in-duce (*-in-dūs'*), *v. t.* to bring in or upon as an addition to something else.
su-per-in-tend (*-in-tend'*), *v. t.* to have, or exercise, the charge of.
su-per-in-tend-ence (*-tend'ens*), *n.* supervision; oversight; control.
su-per-in-tend-ent (*'ent*), *n.* one who superintends; overseer.
su-pe-ri-or (*sū-pē'ri-ẽr*), *adj.* higher or above in place, position, rank, dignity, office, or excellence; beyond the power or influence of: *n.* one who is superior to others.
Superior. See *Lake Superior.*
su-pe-ri-or-i-ty (*-ri-or'i-ti*), *n.* the state or quality of being superior; preëminence; advantage.
su-per-la-tive (*-pẽr'lȧ-tiv*), *adj.* superior to all others: *n.* a word expressing the highest degree of anything.
su-per-nal (*'nal*), *adj.* celestial.
su-per-nat-u-ral (*sū-pẽr-nat'ū-ral*), *adj.* beyond, or exceeding, the powers or laws of nature.
su-per-nat-u-ral-ism (*-izm*), *n.* the state or quality of being supernatural; the doctrine that revelation is the only means by which man acquires the knowledge of God.
su-per-nat-u-ral-ist (*-ist*), *n.* one who believes in the doctrine of supernaturalism.
su-per-nu-mer-a-ry (*-nū'mẽr-ā-ri*), *n.* a person or thing beyond the stated or required number: *adj.* exceeding the number stated or required.
su-per-scrip-tion (*-skrip'shun*), *n.* the act of superscribing; the address or direction. [DIRECTION.]
su-per-sede (*-sēd'*), *v. t.* to set aside by superior power; take the place of. [SUBVERT.]
su-per-sti-tion (*-stish'un*), *n.* reverence for, and belief in, the supernatural, or objects which are not worthy of worship.
su-per-sti-tious (*'us*), *adj.* pertaining to, characterized by, proceeding from, or addicted to, superstition.
su-per-struc-ture (*-struk'tūr*), *n.* anything built or founded on something else; a building.
su-per-vene (*-vēn'*), *v. i.* to come in as something extraneous.
su-per-vise (*-vīz'*), *v. t.* to oversee.
su-per-vi-sion (*-vizh'un*), *n.* the act of supervising; superintendence.
su-per-vis-or (*-vīz'ẽr*), *n.* an overseer.
su-per-vi-so-ry (*-vī'zō-ri*), *adj.* exercising supervision.
su-pine (*sū-pīn'*), *adj.* lying on the back; indolent; careless.
sup-per (*sup'ẽr*), *n.* the evening meal.
sup-plant (*-plant'*), *v. t.* to displace; supersede. [SUBVERT.]
★**sup-ple** (*sup'l*, not *sōō'pl*), *adj.* flexible; yielding: *v. t.* to make supple: *v. i.* to grow pliant. [FLEXIBLE.]
sup-ple-ment (*'lē-ment*), *v. t.* to add something to: *n.* something added to render anything more complete or supply defects or errors.
sup-pli-ant (*sup'li-ant*), *adj.* beseeching; entreating; suing: *n.* one who supplicates. [Also *supplicant*].
sup-pli-cate (*-kāt*), *v. t.* to ask or beg humbly and earnestly; address in prayer; beseech; implore. [BEG.]
sup-pli-ca-tion (*-kā'shun*), *n.* the act of supplicating; humble and earnest prayer or entreaty.
sup-ply (*-lī'*), *v. t.* to furnish with what is required; serve instead of: *n.* thing supplied; amount of money or food required for daily necessaries (usually *pl.*). [PROVIDE.]
sup-port (*-pōrt'*), *v. t.* to sustain; bear up; endure; uphold; favor: *n.* the act of supporting: that which supports. [COUNTENANCE, ABET, STAFF.]
sup-pose (*-pōz'*), *v. t.* to imagine; admit without proof. [APPREHEND, THINK.]
sup-po-si-tion (*-pō-zish'un*), *n.* the act of supposing; assumption.
sup-pos-i-ti-tious (*-poz-i-tish'us*), *adj.* supposed or imaginary; not genuine; counterfeit.
sup-press (*-pres'*), *v. t.* to subdue; crush; keep in or down; quell; conceal. [REPRESS.]
sup-pu-rate (*'ū-rāt*), *v. i.* to generate pus.
sup-pu-ra-tive (*'ū-rā-tiv*), *adj.* tending to produce, or accompanied by, suppuration: *n.* a medicine to promote suppuration.
su-prem-a-cy (*sū-prem'ȧ-si*), *n.* the state or quality of being supreme; highest authority.
su-preme (*-prēm'*), *adj.* highest in power or authority; most excellent; extreme; utmost.
sur, a *prefix* meaning *over*, *beyond*, *above*, *upon*, as *sur*charge (*sûr-chärj'*), *n.* an excessive charge, load, or burden: *v. t.* to charge more than is due; overload.
sur-cin-gle (*'sing-gl*), *n.* a girth, belt, or girdle for passing around the body of a horse.
surd (*sûrd*), *n.* a mathematical quantity that cannot be expressed by rational numbers, or has no root, as 3.
sure (*shōōr*), *adj.* fit to be depended upon; certain; reliable: *adv.* certainly; securely. [CERTAIN.]
sure-ty (*'ti*), *n.* certainty; guaranty; hostage; bail.
surf (*sûrf*), *n.* the swell of the sea.
sur-face (*sûr'fās*), *n.* the exterior part or upper face of anything.
surf-boat (*sûrf'bōt*), *n.* a strong, light boat for use in the surf.
sur-feit (*sûr'fit*), *n.* excess in eating or drinking: *v. t.* to feed to excess and sickness.
surge (*sûrj*), *n.* a large wave or billow; great roll; swell: *v. i.* to roll or rise high. [WAVE.]
sur-geon (*sûr'jun*), *n.* one who practices surgery.
sur-geon-cy (*-si*), *n.* the post of a surgeon in the army or navy.
sur-ger-y (*'jẽr-i*), *n.* the act and art of treating injuries or diseases by manual operations.
sur-li-ness (*'li-nes*), *n.* surly behavior.
sur-ly (*'li*), *adj.* gloomily morose; rough; uncivil.
sur-mise (*-mīz'*), *n.* guess or conjecture; suspicion: *v. t.* suspect; conjecture; fancy.
sur-mount (*-mount'*), *v. t.* to rise above; overcome; conquer.
sur-name (*'nām*), *n.* family name: *v. t.* to give the family name to.
sur-pass (*-pȧs'*), *v. t.* to exceed; excel.
sur-plice (*'plis*), *n.* the outer linen vestment with wide sleeves worn by officiating clergy and choristers.
sur-plus (*sûr'plus*), *n.* excess: *adj.* exceeding what is required. [EXCESS.]
★**sur-prise** (*sûr-prīz'*, not *sup-prīz'*), *n.* the act of taking unawares; astonishment: *v. t.* to take unawares; astonish.
sur-ren-der (*sur-ren'dẽr*), *v. t.* to yield to the power of another: *v. i.* to yield: *n.* the act of yielding; a yielding or giving up. [ABANDON.]
sur-rep-ti-tious (*-rep-tish'us*), *adj.* done by stealth or fraud.
sur-ro-gate (*sur'ō-gāt*), *n.* the deputy of a bishop.
sur-round (*-round'*), *v. t.* to inclose on all sides; encompass.

Syn. SURROUND, encompass, environ, encircle. We may *surround* an object by standing at certain distances all around it; in this manner a person may be *surrounded* by other persons; a garden is *surrounded* by a wall. *To encompass* is *to surround* in the latter sense, and applies to objects of a great extent; the earth is *encompassed* by the air. *To surround* is to go *round* an object of any form, whether square or circular, long or short; but *to environ* and *to encircle* carry with them the idea of forming a *circle* round an object; thus a town or a valley may be *environed* by hills, a basin of water may be *encircled* by trees, or the head may be *encircled* by a wreath of flowers.

sur-tout (*sûr-tōō'*), *n.* a wide-skirted coat reaching below the knees.
★**sur-veil-lance** (*sûr-vāl'yans* or *-vā'lans*), *n.* watch; oversight; inspection.
sur-vey (*-vā'*), *v. t.* to inspect or take a view of; measure and estimate: *n.* (*sûr'vā*), the act of surveying; particular view or examination. [VIEW.]
sur-vey-or (*'ẽr*), *n.* one who surveys.
sur-vi-val (*-vī'val*), *n.* continuance beyond the life of another; any ancient use, custom, or belief continuing to the present day.
sur-vive (*-vīv'*), *v. t.* to live longer than; outlive: *v. i.* to remain alive.
sur-viv-or (*'ẽr*), *n.* one who outlives another.
Susa (*sōō'sȧ*). A city of ancient Persia, so called from the lilies in the neighborhood; name derived from *susa*, "a lily."
Susan (*sū'zan*) or **Susanna** (*sū-zan'nȧ*). The Hebrew word, derived from the Arabic *susan*, "a lily." Danish, *Susanna;* Dutch, *Susanna;* Fr., *Susanne;* Ger., *Susanne;* It., *Susanna;* Lat., *Susanna;* Sp., *Susana;* Sw., *Susanna.*
Susannah. See *Susan.*
sus-cept-i-bil-i-ty (*sus-sept-i-bil'i-ti*), *n.* the state or quality of being susceptible; impressibility.
sus-cept-i-ble (*'i-bl*), *adj.* easily acted upon; impressible.
sus-pect (*-pekt'*), *v. t.* to have a suspicion of; conjecture: *n.* (*sus'pekt*), a person suspected.
sus-pend (*-pend'*), *v. t.* to make to hang by anything; cause to cease for a time.
sus-pend-er (*'ẽr*), *n.* one who, or that which, suspends: *pl.* braces.
sus-pense (*-pens'*), *n.* a state of uncertainty, doubt, or anxiety; act of withholding. [DOUBT.]
sus-pen-sion (*-pen'shun*), *n.* the act of suspending.
sus-pi-cion (*-pish'un*), *n.* the act of suspecting; small quantity. [DISTRUST, JEALOUSY.]
sus-pi-cious (*'us*), *adj.* full of, open to, or exciting, suspicion; doubtful. [EQUIVOCAL.]
Susquehanna. River, county, and borough in Pennsylvania. From an Indian word, *suckahanne*, "water."
sus-tain (*-tān'*), *v. t.* to hold up or support; maintain. [ABET.]
sus-tained (*-tānd'*), *adj.* maintained at a certain pitch or level.
sus-te-nance (*'tē-nans*), *n.* that which supports life.
sus-ten-ta-tion (*-ten-tā'shun*), *n.* the act of sustaining; support or maintenance.
sut-ler (*sut'lẽr*), *n.* a person who follows an army and sells provisions, liquor, etc., to the troops.
su-ture (*sū'tūr*), *n.* the drawing together of the edges of a wound by sewing; lines of junction of the bones of the skull.
Suwanee (*sū-waw'nē*). County, town, and river in Florida, creek and town in Gwinnett county, Georgia. Interpretations of this Indian word are various; some stating that it is from *Shawnee*, the tribe, while others give its derivation as from *sawani*, meaning "echo," or "echo river"; others give it as a corruption of the name *San Juanita*, applied by the Spaniards to the stream, meaning "little St. John."
su-ze-rain (*sū'ze-rān*), *n.* a feudal lord, to whom fealty is due.
su-ze-rain-ty (*-ti*), *n.* the office, or dignity, of a suzerain.
swab (*swob*), *n.* a mop for cleaning decks, floors, etc.; clumsy person or lubber: *v. t.* to rub or clean with a swab.
swad-dle (*swod'l*), *v. t.* to swathe or bind tightly, especially infants.
swag (*swag*), *n.* an unequal, hobbling motion; thieves' booty.
swag-ger (*'ẽr*), *v. i.* to bully; strut haughtily: *n.* an affected manner of walking; noisy boastfulness.
swain (*swān*), *n.* a peasant; rustic lover; sweetheart.
swal-low (*swol'ō*), *n.* a well-known migratory passerine bird; as much as can be swallowed at once: *v. t.* to take into the stomach through the esophagus; absorb: *v. i.* to perform the act of swallowing. [ABSORB.]
swal-low-tailed (*-tāld*), *adj.* like a swallow's tail.

swamp (*swomp*), *n.* wet or boggy land: *v. t.* to plunge, overwhelm, or sink in, or as in, a swamp.
swamp-y (*'i*), *adj.* consisting of, or like, a swamp.
swan (*swon*), *n.* a web-footed bird of the genus Cygnus, with a very long neck.
swap (*swop*), *v. t.* to exchange or barter: *n.* barter.
sward (*swawrd*), *n.* the grassy surface of land.
swarm (*swawrm*), *v. i.* to throng together in a crowd: *n.* crowd or multitude in motion.
swarth-y (*swawrth'i*), *adj.* of a dark or tawny hue. [Also *swart, swarth.*]
swash (*swosh*), *n.* a dashing or splashing of water: *v. i.* to dash or splash water about.
swath (*swawth*), *n.* a line or ridge of grass or grain as cut down by the mower; sweep of a scythe in mowing.
swathe (*swāth*), *v. t.* to bind with a bandage or roller; wrap: *n.* a bandage or roller.
sway (*swā*), *v. t.* to move backward and forward; influence: *v. i.* to incline on one side: *n.* anything moving with power and bulk; authority; inclination or weight on one side.
swear (*swār*), *v. i.* give evidence on oath; use profane language: *v. t.* to utter or affirm by appeal to God; cause to take, or bind by, an oath.
sweat (*swet*), *n.* the moisture which exudes from the pores of the skin: *v. i.* to exude moisture through the pores; perspire: *v. t.* to cause to sweat.
sweat-ing sys-tem (*'ing sis-tem*), the system by which middlemen employ people to work at their own homes for unfair wages.
Sweden (*swē'den*). A kingdom of northern Europe. A modern term made up of the Latin *Suedia*, signifying the land of the Suevi, a warlike tribe of the Goths, and the Anglo-Saxon *den*, testifying to its occupation by the Danes.
sweep (*swēp*), *v. t.* to brush, rub over, or clean, with a broom, etc.; drive or carry along or off: *v. i.* to pass with violence, speed, or pomp: *n.* the act of sweeping; extent.
sweep-stakes (*'stāks*), *n. pl.* the whole money or other things staked or won at gaming.
sweet (*swēt*), *adj.* pleasing to the senses, as smell, taste, etc.; tasting like sugar: *n.* a term of endearment: *n. pl.* confectionery.
sweet-bread (*'bred*), *n.* a calf's pancreas.
sweet-bri-er (*'brī-ẽr*), *n.* a thorny shrub of the rose kind.
sweet corn (*'kôrn*), a kind of maize of a sweet taste.
sweet-en (*'n*), *v. t.* to make sweet; render mild, or pleasing: *v. i.* to become sweet.
sweet flag (*'flag*), an aromatic plant; calamus.
sweet-heart (*'hārt*), *n.* a lover.
sweet-meat (*'mēt*), *n.* a confection made of sugar.
sweet po-ta-to (*pō-tā'to*), a plant and its edible root; yam.
sweet wil-liam (*wil'yam*), a beautiful flowering plant of the pink kind.
swell (*swel*), *v. i.* to expand or enlarge: *v. t.* to heighten; cause to rise or increase: *n.* extension of bulk; act or state of swelling; succession of large waves; fop: *adj.* dandified.
swel-ter (*'tẽr*), *v. t.* to perspire profusely.
swel-try (*'tri*), *adj.* sultry.
swerve (*swẽrv*), *v. i.* to turn aside; deviate; incline. [DEVIATE.]
swift (*swift*), *adj.* rapid; quick: *adv.* rapidly: *n.* a bird allied to the swallow.
swill (*swil*), *v. t.* to drink greedily or grossly: *n.* drink taken in excessive quantities; refuse or leavings of the kitchen.
swim (*swim*), *v. i.* to move progressively in the water by the hands and feet; be conveyed along by, or as by, a current: *v. t.* to cause to swim or float: *n.* the act of swimming.
swim-mer (*'ẽr*), *n.* one who swims.
swim-ming (*'ing*), *n.* the act or art of floating or moving progressively in the water by the hands and feet.
swin-dle (*swin'dl*), *v. t.* to cheat under pretense of fair dealing: *n.* a gross fraud.
swine (*swin*), *n.* any animal of the genus Sus with bristly skin and long snout; pig.
swing (*swing*), *v. i.* to wave or vibrate to and fro; be hanged: *v. t.* to move to and fro: *n.* the act or state of swinging; contrivance for swinging to and fro.
swin-ish (*swin'ish*), *adj.* pertaining to, like, or characteristic of, swine; bestial.
swipe (*swip*), *n.* a vigorous blow: *v. i.* and *v. t.* to deliver a strong blow; hit out with great force; purloin.
swirl (*swẽrl*), *v. i.* to rush along in, or form, eddies: *n.* a whirling or eddying motion.
swish (*swish*), *v. t.* to lash; flog.
Swiss (*swis*), *adj.* pertaining to Switzerland, its language, or its inhabitants.
switch (*swich*), *n.* a thin, flexible rod; a movable rail for transferring a railway carriage, etc., from one line to another; a device for connecting one electric circuit with another: *v. t.* to lash or flog; shunt.
Switz-er (*swits'ẽr*), *n.* An inhabitant of Switzerland.
Switzerland (*swit'zẽr-land*). An Angliciized form of the native Schweitz, the name of the three forest cantons whose people asserted their independence of Austria, afterward applied to the whole country.
swiv-el (*swiv'l*), *n.* something fixed in another body so as to turn round in it: *v. t.* and *v. i.* to turn on a swivel or pivot.
swoon (*swoōn*), *v. i.* to sink into a fainting fit: *n.* the act of swooning.
swoop (*swoōp*), *v. t.* to fall upon and seize at once: *n.* a sudden falling upon and seizing.
sword (*sōrd*), *n.* a keen-edged weapon for cutting and thrusting.
Sybil (*sib'il*). An old name corrupted from *Isabella.*
syc-a-more (*sik'ă-mōr*), *n.* a tree of the maple family.
syc-o-phant (*'ō-fant*), *n.* a mean or servile flatterer; parasite. [FLATTERER.]
Sydney. The capital of New South Wales, was founded on January 26, 1788, and so named by Captain Phillip, after Thomas Townshend, first Lord Sydney, who, as home secretary, drew up, in 1786, a scheme for the transportation of convicts to New South Wales.
Sydney. A personal name corrupted from St. Denis, pronounced in French *san den-ē'.*
syl-lab-ic (*sil-ab'ik*), *adj.* pertaining to, or consisting of, a syllable.
syl-lab-i-ca-tion (*-i-kā'shun*) or **syl-lab-i-fi-ca-tion** (*-fi-kā'shun*), *n.* the formation of syllables.
syl-lab-i-fy (*'i-fi*), *v. t.* to form into syllables.
syl-la-ble (*'ă-bl*), *n.* that part of a word which can be uttered distinctly by a single effort of the voice.
syl-la-bus (*'ă-bus*), *n.* a table of contents; compendium of the heads of a discourse.
syl-lo-gism (*'ō-jizm*), *n.* an argument stated in logical form, consisting of three propositions, the first two being called the premises and the last the conclusion.
syl-lo-gis-tic (*-jis'tik*), *adj.* pertaining to, or consisting of, a syllogism.
sylph (*silf*), *n.* an imaginary being inhabiting the air; fairy.
syl-van (*sil'van*), *adj.* pertaining to, inhabiting, or growing in, a wood or grove.
Sylvanus. See *Silvanus.*
Sylvester. See *Silvester.*
Sylvia or **Silvia** (*sil'vi-ă*). A Roman name, feminine of *Sylvius.* Fr., *Silvie;* It., *Silvia;* Sp., *Silvia.*
Sylvius (*sil'vi-us*). A Roman name, from *sylva*, "a wood." *Sylvius* was the name of the brother of Ascanius, so called from being born in the woods.
sym-bol (*sim'bol*), *n.* an emblem or sign representing something else.
sym-bol-ic (*'ik*), *adj.* pertaining to, serving as, or of the nature of, a symbol: *n. pl.* the study of creeds. [Also *symbolical.*]
sym-bol-ism (*'bol-izm*), *n.* the use of, or the being represented by, symbols.
sym-bol-ize (*sim'bol-iz*), *v. t.* to represent by a symbol: *v. i.* to have a typical resemblance; agree.
sym-met-ric-al (*-met'ri-kal*), *adj.* having corresponding parts or relations. [Also *symmetric.*]
sym-me-trize (*'ẽ-triz*), *v. t.* to make symmetrical.
sym-me-try (*'ẽ-tri*), *n.* the due proportion of the several parts of a body to each other.
sym-pa-thet-ic (*-pă-thet'ik*), *adj.* pertaining to, expressing, or inducing, sympathy; compassionate. [Also *sympathetical.*]
sym-pa-thize (*'pă-thīz*), *v. i.* to have a mutual feeling with another; be compassionate.
sym-pa-thy (*'pă-thi*), *n.* mutual feeling of pleasure or pain; compassion.

Syn. SYMPATHY, compassion, commiseration, condolence. *Sympathy* has the literal meaning of fellow-feeling, that is, a kindred or like feeling, or feeling in company with another; *compassion, commiseration,* and *condolence* signify a like suffering, or a suffering in company; *sympathy* preserves its original meaning in its application, for we laugh or cry by sympathy. *Compassion* is altogether a moral feeling, which makes us enter into the distresses of others; *commiseration* is awakened toward those who are in an abject state of misery; *condolence* supposes an entire equality, and is often produced by some common calamity.

sym-phon-ic (*-fon'ik*), *adj.* agreeing in sound; pertaining to a symphony. [Also *symphonious.*]
sym-pho-ny (*'fō-ni*), *n.* [*pl.* symphonies (*-niz*)], harmony of sound; a musical composition for a full band of instruments.
sym-po-si-um (*-pō'zi-um*), *n.* [*pl.* symposia (*-ă*)], a banquet; a drinking together.
symp-tom (*simp'tum*), *n.* token or sign.
symp-to-mat-ic (*-tō-mat'ik*), *adj.* pertaining to, serving as, or indicating, a symptom. [Also *symptomatical.*]
syn-a-gogue (*sin'ă-gog*), *n.* Jewish place of worship.
syn-chro-nism (*sing'krō-nizm*), *n.* concurrence in time of two or more events.
syn-chro-nize (*'krō-niz*), *v. t.* to cause to agree in time: *v. i.* to happen simultaneously.
syn-chro-nous (*'krō-nus*), *adj.* happening at the same time. [Also *synchronal.*]
syn-co-pate (*'kō-pāt*), *v. t.* to contract by omitting a letter or letters from the middle of (a word).
syn-co-pa-tion (*-pā'shun*), *n.* the act of syncopating.
syn-co-pe (*'kō-pē*), *n.* the omission of a letter or letters from the middle of a word; fainting.
syn-dic (*sin'dik*), *n.* chief magistrate; municipal or other official.
syn-di-cate (*'di-kāt*), *n.* a body of syndics; a combination of capitalists.
syn-od (*'ud*), *n.* a council or meeting of ecclesiastics.
syn-o-nym (*'ō-nim*), *n.* a word having nearly the same root signification as another.
syn-op-sis (*-op'sis*), *n.* a general or collective view of any subject.
syn-op-tic (*sin-op'tik*), *adj.* giving a general view of the whole. [Also *synoptical.*]
syn-tac-tic (*-tak'tik*), *adj.* pertaining to, or arranged according to, the rules of syntax. [Also *syntactical.*]
syn-tax (*'taks*), *n.* that part of grammar which teaches of the proper construction and arrangement of words in a sentence.
syn-the-sis (*'thē-sis*), *n.* [*pl.* syntheses (*-sēz*)], composition or putting of two or more things together: opposed to analysis.
syn-thet-ic (*-thet'ik*), *adj.* pertaining to synthesis. [Also *synthetical.*]
syph-i-lis (*sif'i-lis*), *n.* venereal disease.
syph-i-lit-ic (*-lit'ik*), *adj.* pertaining to, of the nature of, or affected with, syphilis.
sy-phon. Another form of *siphon.*
Syracuse (*sir'a-kūs*). The greatest Greek colony in Sicily, is believed to have replaced an older Phenician trading post which obtained its name from a marsh at the mouth of the Anapus called *Syraco*, "to stink."
Syracuse. City in Onondaga county, New York, named for the ancient city of Sicily, after passing through the names of Bogardus Corners, Milan, South Salina, Cossitt's Corners, and Corinth. In 1820, its present name was adopted at the suggestion of John Wilkinson, its first postmaster.
sy-ren. Another form of *siren.*
Syria (*sir'i-ă*). A country [of Asiatic Turkey; now called *Suristan* by the Turks and Persians, is the classical name which replaced the older name *Aram*, "the highlands." The name *Syria* first appears in Herodotus, and is doubtless a modification of the name *Assyria*, adopted by the Greeks at the time when Aram was included in the Assyrian empire. Assyria was thought to be the land of the deity *Assur* or *Asshur*, but it is now believed to have taken its name from the former capital *Assur*, a city on the Tigris, an Accadian name, meaning "the water bank."
Sy-rin-ga (*si-ring'gă*), *n.* a genus of plants, including the lilac.
★**syr-inge** (*sir'inj*, not *sir-inj'*), *n.* a small tube with a handle and worked like a pump: *v. t.* to inject or cleanse with a syringe.
★**syr-up** (*sir'up*), *n.* a saturated or medicated solution of sugar. [Also *sirup.*]
sys-tem (*sis'tem*), *n.* combination of parts in a whole; orderly arrangement. [BODY.]
sys-tem-at-ic (*-at'ik*), *adj.* methodical; according to system. [Also *systematical.*]
sys-tem-a-tize (*'tem-ă-tiz*), *v. t.* to reduce to a system.
sys-to-le (*'tō-lē*), *n.* the shortening of a long syllable.

T

tab (*tab*), *n.* a shoe latchet; tag; border of a woman's cap.
tab-ard (*'ẽrd*), *n.* a loose garment or mantle worn over armor.
tab-by (*'i*), *adj.* brindled; having a variegated, wavy, or watered appearance: *n.* a kind of wavy or watered silk: tabby cat; *v. t.* to water or cause to look wavy.
tab-by cat (*'ikat*), a brindled cat.
tab-e-fac-tion (*-ē-fak'shun*), *n.* the act or condition of wasting away.
tab-er-na-cle (*'ẽr-nă-kl*), *n.* the movable structure or place of worship carried by the Israelites in the wilderness; receptacle for the consecrated Host in Roman Catholic churches; place of worship: *v. i.* to sojourn; take up a temporary residence.
tab-er-na-cle work (*wẽrk*), sculptured tracery or canopy work.
ta-bes (*tā'bēz*), *n.* a gradual wasting away of the body; atrophy.
Tabitha (*tab'i-thă*). A female name, from *Tabitha*, Aramæan name of a Christian female, Hebrew *zebia*, "a gazelle." Calmet, who translates the name "wild goat or kid," says the Syriac word *tabitha* signifies "clear sighted." Lat., *Tabitha.*
tab-la-ture (*'lă-tūr*), *n.* a painting on walls or ceilings.
ta-ble (*tā'bl*), *n.* a flat, smooth board, furnished with legs; flat surface; fare; tablet; index or syllabus: *pl.* collection of many particulars brought into view: *adj.* pertaining to a table: *v. t.* to catalogue or index.
tab-leau (*tab'lō*, French *tă-blō'*), *n.* [*pl.* tableaus (*'lōz*) or tableaux (*blō*)], a striking and vivid representation.
ta-ble-land (*tā'bl-land*), *n.* a plateau.
tab-let (*tab'let*), *n.* small flat cake, as of soap, sweetmeats, medicine, etc.
ta-boo (*tă-bōō'*), *n.* a religious rite formerly prevalent among the Polynesians by which persons and things were rendered sacred and inviolable; ban; prohibition: *v. t.* to forbid approach to, or use of. [Also *tabu.*]
ta-bor (*tā'bẽr*), *n.* a small drum, beaten with one stick. [Also *tabour.*]
tab-ou-ret (*tab'ōō-ret*), *n.* an ornamental cushioned stool.
Tabriz (*tă-brēz'*). The commercial capital of Persia, was the classical and mediæval *Tauris*, "the mountain town."

tab-u-lar (*tab'ū-lẽr*), *adj.* pertaining to, or in the form of, a table.
tab-u-late (*'ū-lāt*), *v. t.* to reduce to, or arrange in, tables, or synopses.
ta-chom-e-ter (*ta-kom'ẽ-tẽr*), *n.* an instrument for measuring velocity.
tac-it (*tas'it*), *adj.* implied, but not expressed verbally.
tac-i-turn (*'i-tûrn*), *adj.* habitually silent.
tac-i-tur-ni-ty (*-tûr'ni-ti*), *n.* habitual silence.
tack (*tak*), *n.* a small broad-headed nail; direction of a vessel: *v. t.* to fasten with tacks; attach: *v. i.* to change the course of a vessel.
tac-kle (*'l*), *n.* apparatus for raising or lowering, consisting of pulleys and ropes; implements or gear: *v. t.* to seize or lay hold of; deal with, or attack, vigorously.
tac-kling (*'ling*), *n.* the furniture of the masts and yards of a vessel; instruments of action.
Tacoma (*ta-kō'ma*). City in Washington; so called from the Indian word *tahoma*, meaning "the highest," "near heaven."
tact (*takt*), *n.* nice discernment and delicate skill in saying and doing exactly what is expedient.
tac-ti-clan (*-tish'an*), *n.* one skilled in tactics.
tac-tics (*'tiks*), *n.* naval and military evolutions.
tac-tile (*'til*), *adj.* perceptible by the touch; capable of being touched.
tac-tu-al (*tak'tū-al*), *adj.* pertaining to the organs of touch.
tad-pole (*tad'pōl*), *n.* the young aquatic larva of an amphibian.
taf-fe-ta (*taf'ẽ-ta*), *n.* a fine, thin, glossy silken fabric.
taff-rail (*'rāl*), *n.* the upper flat part of the stern of a ship; rail round a ship's stern.
taf-fy (*'i*), *n.* molasses candy.
tag (*tag*), *n.* something small attached to another; a children's game: *v. t.* to fix a tag to; follow closely or persistently.
Tagus or **Tejo** (*tā'gus*) or (*tā'zhō*). Name of the longest river in the Spanish peninsula, meaning "the fish river."
Tahlequah (*tä-le-kwä'*). Former capital of Indian territory, is a Cherokee Indian word and properly spelled according to their pronunciation is *Talikwa*. The word as it stands probably means "place of two large towns."
tail (*tāl*), *n.* the end of the backbone of an animal's body, usually hanging loose; anything pendent.
tail-age (*'āj*), *n.* tax or toll. [Also *tillage.*]
tail-board (*'bōrd*), *n.* the movable board at the rear of a cart.
tai-lor (*tā'lẽr*), *n.* one whose business is to cut out and make men's clothes and women's costumes.
taint (*tānt*), *n.* corruption; infection; spot or stain; disgrace: *v. t.* to imbue or impregnate with anything noxious; *v. i.* to be corrupted. [CONTAMINATE.]
Taj Mahal (*tāzh mä-häl'*) or **Taj Mehal** (*tāzh mẽ-häl'*). The famous mausoleum erected at Agra, India, by Shah Jehan for his favorite wife. It literally means "gem of buildings."
take (*tāk*), *v. t.* to lay or seize hold of; obtain; choose; use or require; swallow; note or take down; make or perform; *v. i.* to have recourse; have the intended effect; please. [ABSORB.]
tal-bot (*tawl'bot*), *n.* a quick-scented hunting dog.
talc (*talk*), *n.* a hydrous silicate of magnesia.
tale (*tāl*), *n.* a narrative or story; fable; anecdote; reckoning. [STORY.]
tal-ent (*tal'ent*), *n.* among the ancients, a weight, coin, or sum of money of varying value; skill; cleverness; gift. [ABILITY, INTELLECT.]
tal-ent-ed (*'ent-ed*), *adj.* endowed with talents.
tal-is-man (*'is-man*), *n.* [*pl.* talismans (*-manz*)], a magical figure cut in metal or stone supposed to possess magical virtues in averting evil, etc.
talk (*tawk*), *v. i.* to utter words; converse; prattle: *v. t.* to utter; make a subject of conversation: *n.* familiar converse; colloquy. [SPEAK.]
talk-a-tive (*'a-tiv*), *adj.* addicted to much talking.
tall (*tawl*), *adj.* high in stature; lofty; extravagant. [HIGH.]
Talladega (*tal-là-dē'gä*), **Ala.** A Creek Indian word, *talua-atigi*, "the border town."
Tallahassee (*tal-là-has'sē*). City in Florida, so named because it is supposed to have been the site of Indian cornfields in remote times. An Indian word, meaning "old town."
Tallahatchie (*tal-là-hach'ē*). County in Mississippi, named from the principal branch of the Yazoo river in the same state. An Indian word, meaning "river of the rock."
Tallapoosa (*tal-là-pōō'sa*). River in Georgia and Alabama, giving name to a county in Alabama and a city in Haraldon county, Georgia. An Indian word, meaning "swift current," or, according to some authorities, "stranger," "newcomer."
tal-low (*tal'ō*), *n.* the melted fat of oxen and sheep; candle grease: *v. t.* to grease with tallow.
tal-ly (*'i*), *n.* [*pl.* tallies (*'iz*)], one thing made to match or suit another: *v. t.* to make to correspond: *v. i.* to be fitted; match.
tal-ly-ho (*-hō*), *n.* a four-in-hand coach.
Tal-mud (*'mud*), *n.* the book which contains the whole body of the Jewish civil and canonical laws and traditions.
tal-on (*'un*), *n.* the claw of a bird of prey.
ta-lus (*tā'lus*), *n.* the ankle bone; sloping part.
tam-a-ble (*tām'ā-bl*), *adj.* capable of being tamed.
ta-ma-le (*tä-mä'lä*), *n.* a kind of dumpling, made of minced chicken and corn meal, seasoned with red pepper, and wrapped in corn husks.
tam-a-rack (*tam'ā-rak*), *n.* the American black larch.
tam-a-risk (*'ā-risk*), *n.* a tree or shrub of the genus Tamarix.
tam-bour (*'bōōr*), *n.* a drum-like frame on which a kind of embroidery is worked; drum; inclosure of stockade work: *v. t.* to embroider with, or upon, a tambour.
tam-bour-ine (*-ēn'*), *n.* a small hand-drum with little cymbals inserted in the hoop.
tame (*tām*), *adj.* domesticated; spiritless; insipid: *v. t.* to subdue. [GENTLE.]
tame-less (*'les*), *adj.* wild; not capable of being tamed.
tamp (*tamp*), *v. t.* to drive in or down by repeated gentle strokes.
Tampa (*tam'pä*). Bay and city on the west coast of Florida. From the Indian word *itimpi*, "close to it," "near it." It was called by De Soto *Espiritu Santo*, "Holy Ghost."
tam-per (*'pẽr*), *v. i.* to meddle.
tam-pi-on (*'pi-un*), *n.* a stopper, especially for the mouthpiece of a cannon. [Also *tompion.*]
tan (*tan*), *n.* the bark of trees for tanning hides: *adj.* tan colored: *v. t.* to convert (a hide) into leather; make brown by exposure to the sun: *v. i.* to become sunburnt.
tan-dem (*'dem*), *adv.* with two horses or persons one before the other: *n.* a vehicle with two horses harnessed one before the other; a bicycle or tricycle for two, one riding before the other.
tang (*tang*), *n.* a strong taste or flavor: *v. i.* to make a ringing sound.
tan-gent (*tan'jent*), *adj.* touching: *n.* a straight line that meets or touches a circle or curve, but when projected, does not cut it.
tan-ger-ine (*-jẽr-ēn'*), *n.* a small orange.
tan-gi-ble (*'ji-bl*), *adj.* perceptible to the touch; capable of being possessed or realized. [PHYSICAL.]
tan-gle (*tang'gl*), *v. t.* to interweave so as to render difficult to unravel; implicate; embarrass: *v. i.* to be entangled: *n.* a knot interwoven confusedly; complication; perplexity.
tank (*tangk*), *n.* a large cistern or reservoir.
tank-ard (*'ẽrd*), *n.* a drinking vessel with a lid.
tan-ner (*tan'ẽr*), *n.* one who tans hides.
tan-ner-y (*-i*), *n.* [*pl.* tanneries (*-iz*)], a place where hides are tanned; process of tanning.
tan-nic (*'ik*), *adj.* pertaining to, or obtained from, bark.
tan-nic ac-id (*as'id*), an astringent principle in oak bark, and nutgalls. [Also *tannin.*]
tan-ning (*'ing*), *n.* the process of converting hides into leather.
tan-sy (*'zi*), *n.* a bitter aromatic plant with small yellow flowers.
tan-ta-lize (*'tà-līz*), *v. t.* to tease or torment by exciting hopes or fears which will not be realized; provoke. [AGGRAVATE, TEASE.]
tan-ta-mount (*'tà-mount*), *adj.* equivalent in value or signification.
tan-trum (*'trum*), *n.* a sudden outburst of temper or passion.
tap (*tap*), *v. t.* to strike or touch lightly; to let out (a fluid); bore into: *n.* a gentle blow, or touch; pat; pipe through which liquor is drawn.
tape (*tāp*), *n.* a narrow band of linen or cotton cloth.
ta-per (*tā'pẽr*), *n.* small wax candle: *adj.* growing smaller or regularly narrowed toward the point: *v. i.* to become gradually more slender: *v. t.* to narrow to a point.
tap-es-try (*tap'es-tri*), *n.* a textile fabric of wool or silk ornamented with a raised design, figures, etc., used for hangings: *v. t.* to hang, or adorn, with tapestry.
tap-es-try car-pet (*kär'pet*), a kind of carpet somewhat resembling Brussels.
tape-worm (*tāp'wẽrm*), *n.* a flat ribbon-like intestinal worm.
tap-i-o-ca (*tap-i-ō'kà*), *n.* a farinaceous food obtained from the root of the cassava.
tap-ping (*'ing*), *n.* a tap; act of tapping.
tap-root (*'rōōt*), *n.* the main root of a plant.
tar (*tär*), *n.* a thick, dark-brown, oily, viscous substance obtained by distillation from pine or fir trees, coal, etc.; a sailor: *v. t.* to smear with, or as with, tar.
tar-an-tel-la (*tar-an-tel'à*), *n.* a wild, rapid Neapolitan dance.
ta-ran-tu-la (*tà-ran'tū-là*), *n.* a large spider.
tar-di-ness (*tär'di-nes*), *n.* slowness of pace or motion; reluctance.
tar-dy (*'di*), *adj.* moving with a slow pace or motion: late.
tare (*tär*), *n.* darnel; weight of the cask, package, etc., which contains the commodity which is weighed with it and for which an allowance is made.
tar-get (*tär'get*), *n.* a small shield; butt or mark set up for rifle and artillery practice.
tar-iff (*tar'if*), *n.* a schedule or table of dutiable goods, specifying the customs rates, etc.; a duty levied: *v. t.* to fix a duty on.
tarn (*tärn*), *n.* a small mountain lake; marsh.
tar-nish (*tär'nish*), *v. t.* to diminish the luster of; sully: *v. i.* to lose luster; become dull. [STAIN.]
tar-pau-lin (*-paw'lin*), *n.* stout waterproof canvas.
Tarragona (*tär-rä-gō'nä*). Name of an important Spanish city, is derived from the ancient *Tarraco* "the citadel or palace."
tar-ry (*tar'i*), *v. i.* to stay behind; delay; linger. [LINGER.]
Tarrytown. Village in Westchester county, New York. Modification of its former name of *Terwen*, "wheat town," given on account of its large crops of that cereal.
tar-sal (*tär'sal*), *adj.* pertaining to the tarsus.
tar-sus (*'sus*), *n.* the instep: *pl.* [tarsi (*'si*)], the connective cartilages of the eyelids; foot of an insect or crustacean.
tart (*tärt*), *adj.* sharp to the taste; acid; severe; keen: *n.* a small open pie.
tar-tan (*tär'tan*), *n.* woolen cloth, checkered with various colors: *adj.* made from, or like, tartan.
tar-tar (*'tẽr*), *n.* the white earthy substance deposited on the teeth.
tar-tar e-met-ic (*ē-met'ik*), antimony combined with potassium and tartaric acid.
tar-tar-ic ac-id (*-tar'ik as'id*), an acid found in the juice of grapes, berries, etc.
Tartary (*tär'tà-ri*). The old name, now falling into disuse, for Turkistan, the parts of central Asia which are inhabited by the nomads of Turkish race called *Tartars* or *Tatars*. The name is said to to have arisen out of the designation *tha-ta*, "robbers," applied by the Chinese to the Mongols.
ta-sim-e-ter (*tà-sim'ẽ-tẽr*), *n.* an electrical instrument for measuring minute variations.
task (*task*), *n.* business or study imposed by another; duty; burdensome employment: *v. t.* to impose a task upon; burden. [WORK.]
Tasmania (*taz-mā'ni-à*). Island and British colony of Australasia; so named in 1853 after Abel Tasman, who discovered it in 1642; previously called Van Diemen's Land from the governor general of the Dutch East India company.
tas-sel (*tas'l*), *n.* a pendent ornament of silk, wool, etc.
taste (*tāst*), *v. t.* to perceive by the tongue and palate; participate in; experience: *v. i.* to try food or drink by the palate; have a flavor: *n.* the sensation produced on the tongue and palate by something taken into the mouth; intellectual relish or discernment; a sample.
Syn. TASTE, genius. *Taste* seems to designate the capacity to derive pleasure from an object; *genius* designates the power we have for accomplishing any object.
taste-ful (*'fool*), *adj.* savory; characterized by, or showing, good taste.
tast-y (*'i*), *adj.* showing taste; savory.
tat (*tat*), *n.* coarse cloth made from jute.
tatt (*tat*), *v. t.* to make by tatting.
tat-ter (*'ẽr*), *n.* a loose hanging rag: *pl.* rags: *v. t.* to make ragged; rend.
tat-ting (*'ing*)), *n.* a kind of narrow lace for edging; art of making such kind of lace.
tat-tle (*'l*), *v. i.* to talk idly or triflingly; prate; tell tales or secrets: *n.* trifling or idle talk.
tat-too (*-tōō'*), *n.* a beat of drum; marks made by puncturing the skin with a needle and rubbing a stain or dye into the wounds: *v. t.* to mark permanently by puncturing and staining the wounds.
taunt (*tänt or tawnt*), *adj.* lofty; *n.* bitter or sarcastic reproach: *v. t.* to reproach; revile. [TEASE.]
tau-ri-form (*taw'ri-fôrm*), *adj.* having the form of a bull.
taut (*tawt*), *adj.* tight; stretched.
tau-to-log-ic-al (*aw-tō-loj'i-kal*), *adj.* of the nature of tautology.
tau-tol-o-gy (*-tol'ō-ji*), *n.* repetition of the same thing or idea in different words; sameness of words or of meaning.
tav-ern (*tav'ẽrn*), *n.* an inn or public house; a hotel.
taw-dry (*taw'dri*), *adj.* showy or fine without elegance; gaudily dressed.
taw-ny (*'ni*) *adj.* of a yellowish-brown color.
tax (*taks*), *n.* a rate or duty on income or property; excise; impost; burdensome or oppressive duty: *v. t.* to impose a rate or duty upon; burden or oppress; accuse.
tax-a-ble (*'a-bl*), *adj.* subject or liable to taxation.
tax-a-tion (*-a'shun*) *n.* the act of taxing; rate or tax imposed.
tax-i-cab (*taz'i-kab*), *n.* a motor cab of recent invention, having a mechanical device for registering time and distance traversed.
tax-i-der-mist (*'i-dẽr-mist*), *n.* one who is skilled in taxidermy.
tax-i-der-my (*'i-dẽr-mi*), *n.* the art of stuffing and arranging specimens of natural history.
tax-in (*'in*), *n.* the resinous substance obtained from the leaves of the yew tree.
Tay (*tā*), The largest river of Scotland, flows from Loch Tay, where, probably, was the *Tamia* or *Ptolemy*, a name explained by the Gaelic *tamh*, "tranquil," or "smooth," the equivalent of the Pictish *tau* and the Cymric *taw*, of which an oblique case may be the source of the name *Tava*, given by Tacitus to the Firth of Tay.
tea (*tē*), *n.* the prepared leaves of the tea plant (*Thea sinensis*); the beverage obtained by the infusion of the dried leaves; afternoon repast at which tea is served; an infusion of other substances, as beef.
teach (*tēch*), *v. t.* to impart knowledge to; cause to learn or acquire skill in: *v. i.* to give instruction.
Syn. TEACH discipline, drill, educate, enlighten, inculcate, indoctrinate, inform, initiate, instill, instruct, nurture, school, train, tutor. To

teach is simply to communicate knowledge; to *instruct* is to impart knowledge with special method and completeness; to *educate* is to draw out or develop harmoniously the mental powers, and, in the fullest sense, the moral powers as well. To *train* is to direct to a certain result powers already existing; *discipline* is a severe word, and is often used as a euphemism for *punish; nurture* is a more tender and homelike word than *educate*. [See *instruct*.]

teal (*tēl*), *n.* a species of small, wild, fresh-water ducks.

team (*tēm*), *n.* two or more horses, etc., harnessed to the same vehicle; number of persons associated together to form a side in a game, or to perform a certain piece of work.

team-ster (*'stĕr*), *n.* the driver of a team.

tear (*tēr*), *n.* a small drop of fluid secreted by the eye; anything tearlike, or shaped like a tear: (*târ*) a rent: *v. t.* (*târ*) to rend; disrupt; lacerate: *v. i.* to be rent; rave or rant.

tear-ful (*tēr'fool*), *adj.* shedding tears.

tease (*tēz*), *v. t.* to irritate or annoy: *n.* one who teases.

Syn. TEASE, vex, taunt, tantalize, torment. *To tease* is applied to that which is most trifling; *torment* to that which is most serious. We are *teased* by a fly that buzzes in our ears; we are *vexed* by the carelessness and stupidity of our servants; we are *taunted* by the sarcasms of others; we are *tantalized* by the fair prospects which only present themselves to disappear again; we are *tormented* by the importunities of troublesome beggars.

teat (*tēt*), *n.* the nipple of the female breast; mammilla.

★**tech-nic** (*tek'nik*), *adj.* relating to art, science, or to a particular profession. [Also *technical*.] *n. pl.* those branches of learning which relate to the arts.

tech-nique (*-nēk'*), *n.* artistic execution.

tech-nol-o-gy (*-nol'ō-ji*), *n.* the science of the industrial arts.

tec-ton-ics (*tek-ton'iks*), *n.* the science or art of construction.

te-di-ous (*tē'di-us*), *adj.* wearisome by continuance; tiresome.

te-di-um (*'di-um*), *n.* wearisomeness.

tee (*tē*), *n.* the mark aimed at in quoits and curling; nodule of earth from which the ball is struck at golf.

teem (*tēm*), *v. i.* to be prolific; be full; be stocked to overflowing.

teen (*tēn*), *n.* sorrow: *pl.* years of one's age ending in *teen*.

teeth-ing (*tēth'ing*), *n.* dentition.

tee-to-tal (*tē-tō'tal*), *adj.* pertaining to teetotalers.

tee-to-tal-er (*-ĕr*), *n.* a total abstainer.

tee-to-tum (*-tō'tum*), *n.* a child's toy used in games of chance.

teg-men (*teg'men*), *n.* [*pl.* tegmina (*'mi-nà*)], a covering; inner layer of the coating of a seed: *pl.* scaly coat of the leaf-buds of trees.

teg-u-ment (*'ū-ment*), *n.* natural covering or envelope; skin.

te-hee (*tē-hē'*), *n.* a titter: *v. i.* to titter.

tel-e-gram (*'ē-gram*), *n.* a telegraphic communication.

tel-e-graph (*'ē-graf*), *n.* an instrument or apparatus for communicating intelligence rapidly between certain points, especially by means of electricity: *v. t.* to convey by telegraph; signal: *v. i.* to send a telegraphic message.

te-leg-ra-pher (*tē-leg'rà-fĕr*), *n.* one who sends telegraphic messages; telegraphist.

tel-e-graph-ic (*tel-ē-graf'ik*), *adj.* pertaining to, done by means of, or communicated by, telegraph.

★**te-leg-ra-phy** (*tē-leg'rà-fi*), *n.* the science or art of constructing and working telegraphs.

tel-e-ol-o-gy (*tel-ē-ol'ō-ji*), *n.* the doctrine of final causes.

te-lep-a-thy (*tē-lep'à-thi*), *n.* the transference of thought from one person to another by the will.

tel-e-phone (*tel'ē-fōn*), *n.* an instrument for transmitting sound to a distance by means of electricity: *v. t.* and *v. i.* to communicate by telephone.

tel-e-phon-ic (*-fon'ik*), *adj.* pertaining to, or conveyed by means of, the telephone.

te-leph-o-ny (*tē-lef'ō-ni*), *n.* the science or art of transmitting sounds at a distance.

tel-e-pho-tog-ra-fy (*tel-ē-fō-tog'rà-fi*), *n.* the reproduction of photographs at a distance by aid of the telegraph.

tel-e-post (*tel'ē-pōst*), *n.* a new system of telegraphing by aid of a punched tape.

tel-e-scope (*tel'ē-skōp*), *n.* an optical instrument for viewing objects at a distance: *v. t.* to drive into one another.

tel-e-scop-ic (*-skop'ik*), *adj.* pertaining to, visible by, or like, a telescope. [Also *telescopical*.]

tel-e-sco-py (*tel'ē-skō-pi*), *n.* the art or science of using or constructing a telescope.

tell (*tel*), *v. t.* to narrate; enumerate; explain; confess: *v. i.* to give an account; act effectively. [SPEAK, ANNOUNCE.]

tell-er (*'ĕr*), *n.* one who tells, narrates, or communicates; a bank clerk.

tell-tale (*'tāl*), *adj.* telling tales: *n.* a person who officiously or maliciously divulges the private concerns of others.

tel-lu-ri-um (*-lū'ri-um*), *n.* a rare element usually found associated with other metals.

tel-o-type (*tel'ō-tip*), *n.* an electric telegraph that prints the message.

te-mer-i-ty (*tē-mer'i-ti*), *n.* foolhardiness; rashness; precipitancy. [RASHNESS.]

tem-per (*tem'pĕr*), *v. t.* to modify or regulate; calm; bring to a due proportion; bring to a degree of hardness: *n.* due proportion of different qualities or ingredients; mental disposition; mood; passion; irritation. [HUMOR, DISPOSITION.]

★**tem-per-a-ment** (*tem'pĕr-à-ment*, not *tem'prà-ment*), *n.* natural constitution or organization; due mixture of opposite or different qualities.

★**tem-per-ance** (*'pĕr-ans*), *n.* moderation, especially in respect to the appetites or passions.

tem-per-ate (*'pĕr-āt*), *adj.* moderate; abstemious; calm.

tem-per-a-ture (*'pĕr-à-tūr*), *n.* state of a body with respect to sensible heat; degree of any quality.

tem-pered (*'pĕrd*), *adj.* constitutionally disposed; hardened.

tem-pest (*'pest*), *n.* wind rushing with great violence; tumult. [BREEZE.]

tem-pes-tu-ous (*-pes'tū-us*), *adj.* very stormy; pertaining to, or like, a tempest; violent.

Tem-plar (*'plĕr*), *n.* one of a religious and military order, especially the Templars in the 12th century.

tem-plate (*'plāt*), *n.* a mold or pattern used by masons, etc., in cutting or setting out their work. [Also *templet*.]

tem-ple (*'pl*), *n.* an edifice for the worship of a deity or deities; the flat part of either side of the head above the cheek bones.

tem-po-ral (*'pō-ral*), *adj.* pertaining to time; secular; civil or political.

tem-po-ra-ry (*-rā-ri*), *adj.* existing or continuing for a limited time.

tem-po-rize (*'pō-rīz*), *v. i.* to parley; delay.

tempt (*tempt*), *v. t.* to put to trial; test; allure; entice.

temp-ta-tion (*temp-tā'shun*), *n.* the state of being tempted; enticement.

tempt-er (*tempt'ĕr*), *n.* one who tempts; the devil (with *the*).

ten (*ten*), *adj.* denoting one more than 9 or twice 5: *n.* the sum of 5 and 5; ten units.

ten-a-bil-i-ty (*-à-bil'i-ti*), *n.* the state or quality of being tenable. [Also *tenableness*].

ten-a-ble (*'à-bl*), *adj.* capable of being held, or defended.

te-na-cious (*tē-nā'shus*), *adj.* holding fast or firmly; cohesive; tough; obstinate.

Syn. TENACIOUS, pertinacious. To be *tenacious* is to hold a thing close, to let it go with reluctance; to be *pertinacious* is to hold it out in spite of what can be advanced against it. A man of a *tenacious* temper insists on trifles that are supposed to affect his importance; a *pertinacious* temper insists on everything which is apt to affect his opinions.

te-nac-i-ty (*-nas'i-ti*), *n.* the state or quality of being tenacious; cohesiveness; adhesiveness.

ten-an-cy (*ten'an-si*), *n.* [*pl.* tenancies (*-siz*)], the holding of land or tenements; tenure.

ten-ant (*'ant*), *n.* one who holds lands or tenements; occupant: *v. t.* to hold as a tenant.

ten-ant-ry (*-ri*), *n.* tenants collectively.

tend (*tend*), *v. t.* to care for; attend; accompany: *v. i.* to move in a particular direction; contribute.

tend-en-cy (*tend'en-si*), *n.* inclination; aim; direction or course. [INCLINATION.]

ten-der (*ten'dĕr*), *adj.* sensitive; soft; easily influenced; gentle; careful: *n.* a vehicle attached to a locomotive containing coal and water; an offer: *v. t.* to offer for acceptance: *v. i.* to make an offer to do certain work or supply certain goods for a specified price.

ten-der-foot (*'dĕr-foot*), *n.* one who is new to life in a district.

ten-der-ness (*-nes*), *n.* kindness; sensibility; caution; soreness. [LOVE, MERCY.]

ten-don (*'dun*), *n.* the hard bundle of fibers which connects the muscles to the bones.

ten-dril (*'dril*), *n.* the slender, twining part of a plant.

ten-e-ment (*'ē-ment*), *n.* a house, shop, land, etc., held by a tenant.

Tenerife (*ten-ĕr-ēf'*). One of the Canaries, is a Portuguese corruption of *Chinerfe* or *Tnerfe*, the name of the last Guanche chief. From its snow-clad peak, the Romans called it *Nivaria*, the "snowy."

★**ten-et** (*ten'et*, not *tē'net*), *n.* a doctrine, dogma, opinion, or belief held as true.

Syn. TENET, position. The *tenet* is the opinion which we hold in our minds; the *position* is that which we lay down for others. Our *tenets* may be hurtful, our *positions* false. [See *doctrine*.]

ten-fold (*'fōld*), *adj.* and *adv.* ten times as much or as many.

Tennessee. Tributary of the Ohio river, which gives name to a state of the Union. Three different derivations are given the name. From *Tanase*, the name of the most important village of the Cherokee Indians; from an Indian word meaning "a curved spoon"; or from *Taensa*, an Indian tribe of the Watchesan family.

ten-nis (*'is*), *n.* a game played with rackets and balls.

Tenochtitlan (*ten-ōch-tēt-lān'*). The chief city of the Aztecs, occupying the site of the modern City of Mexico.

ten-on (*'un*), *n.* the end of a timber cut wedge-shaped for fitting into a mortise in another timber: *v. t.* to form tenons in.

ten-or (*'ĕr*), *n.* general tendency or drift; the highest kind of male voice: *adj.* pertaining to, or adapted for, tenor.

tense (*tens*), *adj.* drawn tightly; rigid; not lax: *n.* a modification in the inflection of a verb, expressing time of action.

ten-sion (*ten'shun*), *n.* the act of stretching or straining; the state of being stretched.

tent (*tent*), *n.* a temporary shelter or habitation, usually of canvas, supported by poles and ropes.

ten-ta-cle (*ten'tà-kl*), *n.* a process or organ in certain invertebrate animals used for feeling, prehension, or locomotion.

ten-tac-u-lar (*-tak'ū-lĕr*), *adj.* pertaining to tentacles.

ten-ta-tive (*'tà-tiv*), *adj.* experimental.

ten-ter (*'tĕr*), *n.* a frame for stretching cloth on by hooks; a tenter-hook: *v. t.* to hang or stretch on tenters.

ten-ter-hook (*-hook*), *n.* a sharp, hooked nail; anything that painfully strains.

tenth (*tenth*), *adj.* next in order after the ninth; the ordinal of ten.

te-nu-i-ty (*tē-nū'i-ti*), *n.* thinness; rarity.

ten-u-ous (*ten'ū-us*), *adj.* slender; not dense.

ten-ure (*'ūr*), *n.* conditions under which a tenement is held; term of holding.

tep-e-fac-tion (*tep-ē-fak'shun*), *n.* the act of warming or making tepid.

tep-e-fy (*'ē-fi*), *v. t.* to make tepid: *v. i.* to become tepid.

★**tep-id** (*tep'id*, not *tē'pid*), *adj.* moderately warm; lukewarm.

ter-cen-te-na-ry (*tĕr-sen'tē-nà-ri*), *adj.* comprising 300 years; indicating an event three centuries old.

ter-e-binth (*ter'ē-binth*), *n.* the turpentine tree.

ter-e-bin-thine (*-bin'thin*), *adj.* pertaining to, of the nature of, or like, turpentine.

Terence (*ter'ens*). From the Latin name *Terentius*. Macrobius says the name of the *Terentia gens* is derived by Varro from the Sabine word *terenus*, soft.

Teresa. See *Theresa*.

ter-gi-ver-sa-tion (*tĕr-ji-vĕr-sā'shun*), *n.* evasion; subterfuge.

term (*tĕrm*), *n.* a limit or boundary; limited time; condition or arrangement; word or expression noting something: *pl.* conditions or stipulations: *v. t.* to name, designate, or express.

ter-ma-gant (*tĕr'mà-gant*), *adj.* noisy and violent: *n.* a noisy, violent woman.

ter-mi-nal (*'mi-nal*), *adj.* pertaining to the end or extremity: *n.* a limit or boundary; end.

ter-mi-nate (*'mi-nāt*), *v. t.* to limit or bound; end: *v. i.* to be limited or ended. [END, COMPLETE.]

ter-mi-na-tion (*-nā'shun*), *n.* the act of terminating; a bound or limit; end; conclusion or result.

ter-mi-nol-o-gy (*-mi-nol'ō-ji*), *n.* the definition of technical terms.

ter-mi-nus (*'mi-nus*), *n.* [*pl.* termini (*-nī*)], a limit or boundary; station at the end of a railway.

ter-na-ry (*tĕr'nà-ri*), *adj.* proceeding by, or consisting of, threes: *n.* the number 3.

ter-race (*ter'ās*), *n.* a raised level space or platform of earth; row of houses: *v. t.* to form into a terrace.

ter-ra cot-ta (*à kot'à*), a composition of fine clay and sand used for statues, etc., and hardened by heat.

ter-ra Ja-pon-i-ca (*jà-pon'i-kà*), pale catechu or gambier.

ter-ra-pin (*'à-pin*), *n.* a species of fresh-water tortoise.

ter-ra-que-ous (*-rā'kwē-us*), *adj.* consisting of land and water.

Terre Haute (*ter'e hōt*, French *târ-hōt'*). City in Indiana, built upon a bank sixty feet above the river. French words, meaning "high land."

ter-res-tri-al (*-res'tri-al*), *adj.* pertaining to, existing on, or consisting of, earth; not celestial.

ter-ret (*'et*), *n.* one of the rings on a harness pad through which the driving reins pass.

ter-ri-ble (*ter'i-bl*), *adj.* exciting or causing fear or awe; dreadful. [FEARFUL, FORMIDABLE.]

ter-ri-er (*'i-ĕr*), *n.* a breed of small dogs.

ter-ri-fy (*'i-fī*), *v. t.* to frighten or alarm exceedingly.

ter-ri-to-ri-al (*-i-tō'ri-al*), *adj.* pertaining to a territory; limited to a particular district.

ter-ri-to-ry (*'i-tō-ri*), *n.* [*pl.* territories (*-riz*)], the extent of land within the jurisdiction of a state sovereign, city, etc.; large tract of land.

ter-ror (*'ĕr*), *n.* extreme fear; fright; one who excites extreme fear.

Terry. A masculine name derived, like the French name Thierry, from *Theodoric*.

terse (*tĕrs*), *adj.* elegantly and forcibly concise.

ter-tian (*tĕr'shan*), *adj.* occurring, or recurring, every third day.

ter-ti-a-ry (*'shi-à-ri*), *adj.* of the third order, rank, or formation.

tes-sel-late (*tes'el-āt*), *v. t.* to lay with squares or checkered work.

test (*test*), *n.* that by which the nature of a substance is tried; standard; proof: *v. t.* to put to the proof; compare with a standard; try.

tes-ta-ceous (*tes-tā'shus*), *adj.* consisting of, or having, a hard shell.

tes-ta-cy (*'tà-si*), *n.* the state or fact of leaving a valid will.

tes-ta-ment (*'tà-ment*), *n.* will.

tes-ta-men-ta-ry (*-men'tà-ri*), *adj.* pertaining to, bequeathed by, or done by, a will. [Also *testamental*.]

tes-tate (*'tāt*), *adj.* having left a will.

tes-ta-tor (*tes-tā'tĕr*), *n.* one who makes and leaves a will. [Fem. *testatrix.*]
tes-tes (*'tēz*), *n. pl.* the testicles.
tes-ti-cle (*'ti-kl*), *n.* one of the two glands which secrete the seminal fluid in males.
tes-ti-fy (*'ti-fī*), *v. i.* to bear witness: *v. t.* to bear witness to.
tes-ti-mo-ni-al (*-ti-mō'ni-al*), *n.* a writing or certificate bearing testimony to character, proficiency, etc.; a present given as a token of respect, etc.: *adj.* pertaining to, or containing, testimony.
tes-ti-mo-ny (*'ti-mō-ni*), *n.* [*pl.* testimonies (*-niz*)], evidence; proof; solemn declaration; profession.
Syn. TESTIMONY, affidavit, affirmation, deposition, evidence, proof, witness. *Testimony*, in legal as well as in common use, signifies the statements of witnesses; *deposition* and *affidavit* denote *testimony* reduced to writing; the *deposition* differs from the *affidavit;* the latter is voluntary and without cross-examination; the former is made under questionings and subject to cross-examination.
tes-ty (*tes'ti*), *adj.* peevish; morose; irritable.
tet-a-nus (*tet'a-nus*, not *tē'tā-nus*), *n.* lockjaw.
★**tête-à-tête** (*tāt-ā-tāt'*), *n.* private or confidential conversation; a kind of settee.
teth-er (*teth'ĕr*), *n.* a rope for confining within certain limits; scope of freedom allowed: *v. t.* to confine within certain limits.
tet-ra-gon (*tet'ra-gon*), *n.* a plane figure with four sides.
te-tram-e-ter (*tē-tram'ĕ-tĕr*), *n.* a verse or line consisting of four measures.
tet-ra-pod (*tet'ra-pod*), *n.* a four-footed insect.
te-trarch (*tē'trārk*), *n.* a Roman governor over the fourth part of a province.
tet-ter (*'ĕr*), *n.* a cutaneous disease; herpes.
Teu-ton (*tū'ton*), *n.* one of the German race.
Teu-ton-ic (*'ik*), *adj.* pertaining to, or characteristic of, the Teutons or the Teutonic languages.
Texas. A southwest state of the Union, named from a small tribe of Indians that inhabited a village called *Tehas*, meaning "friendly." Name also means "the place of protection," referring to the fact that a colony of French refugees were afforded protection here by General Lallemont in 1817.
text (*tekst*), *n.* that on which a comment is written; topic.
text-book (*'book*), *n.* a standard book of instruction.
tex-tile (*teks'til*), *adj.* pertaining to, or formed by, weaving; capable of being woven.
tex-tu-al (*'tū-al*), *adj.* pertaining to, contained in, or serving for, a text.
tex-ture (*'tūr*), *n.* manner of weaving; web; filaments or fibers interwoven; tissue.
Thaddeus (*thad'ē-us*), **Thadeus** (*thad-ē'us*). From the Latin *Thaddæus*, in turn from the Hebrew, "one who praises and confesses." It., *Taddeo;* Lat., *Thadduæ;* Sp., *Tadeo.*
thal-as-sog-ra-phy (*thal-as-og'ra-fi*), *n.* the science of marine organisms.
Thames. River in England and America. (American *thāmz*, English *temz.*) The *Tamesis* of Cæsar, is a Celtic name meaning the "tranquil" or "smooth" river.
than (*than*), *conj.* used after the comparative degree of adjectives and adverbs expressing diversity or comparison.
than-a-tol-o-gy (*-a-tol'ō-ji*), *n.* a treatise on, or the doctrine of, death.
thane (*thān*), *n.* a title of honor or dignity among the Anglo-Saxons, held by persons having large territorial possessions.
thank (*thangk*), *v. t.* to express gratitude or obligation to. [gratitude.
thank-ful (*'fool*), *adj.* grateful: also **thankfulness,** *n.*
Syn. THANKFULNESS, gratitude. Our *thankfulness* is measured by the number of our words; our *gratitude* is measured by the nature of our actions. A person appears very *thankful* at the tme who afterward proves very *ungrateful.*
thank-less (*'les*), *adj.* ungrateful; not obtaining, or deserving, thanks.
thanks (*thangks*), *n. pl.* an expression of gratitude or obligation.
thanks-giv-ing (*thangks-giv'ing*), *n.* the act of expressing gratitude for favors and mercies.
Thanks-giv-ing day (*dā*), *n.* a day set apart annually, usually the last Thursday in November, for thanksgiving to God.
that (*that*), *pron.* and *adj.* [*pl.* those (*thōz*)], not this but the other: *conj.* because; since.
thatch (*thach*), *n.* straw, reeds, etc., used for covering the roofs of cottages, stacks, etc.: *v. t.* to cover with, or as with, thatch.
thau-ma-tur-gic (*thaw-ma-tûr'jik*), *adj.* pertaining to, or done by, thaumaturgy.
thau-ma-tur-gy (*'ma-tûr-ji*), *n.* the act of performing miracles.
thaw (*thaw*), *v. i.* to melt or become liquid, as ice or snow: *v. t.* to dissolve: *n.* the melting of ice or snow.
★**the-a-ter, the-a-tre** (*thē'a-tĕr*, not *thē-ā'tĕr*), *n.* a public building where dramatic representations are given; scene or sphere of action.
the-at-ric-al (*-at'ri-kal*), *adj.* pertaining to, or adapted for, a theater; resembling the manner of actors: *n. pl.* dramatic performances.
the-at-ro-phone (*'rō-fōn*), *n.* an automatic telephone connected with a theater.
The-ban (*thē'ban*), *adj.* pertaining to Thebes, or to its inhabitants.
Thebes (*thēbz*). In Bœotia, the Greek *Thebae*, is now *Pheba* or *Phiba.* The site of the acropolis was a small hill, and we learn from Varro that *teba* meant a "hill." In the name of the Egyptian *Thebes* we have a Greek corruption of the popular Egyptian designation of the city, which was called *t'ape*, "the capital."
theft (*theft*), *n.* the act of stealing; robbery.
the-ism (*thē'izm*), *n.* the belief in the existence of a God.
the-ist (*'ist*), *n.* one who believes in the existence of a God.
the-is-tic (*-is'tik*), *adj.* pertaining to theism or theists. [Also *theistical.*]
theme (*thēm*), *n.* the subject or topic of a discourse or dissertation; short essay.
then (*then*), *conj.* in consequence; therefore; in that case: *adv.* next; at that or another time; immediately.
thence (*thens*), *adv.* from that place or time.
Theobald (*thē'ō-bawld, tēb'ald*). From the Old German *teut-bald*, "strong or bold leader." Danish, *Theobald;* Dutch, *Tiebout;* Fr., *Thibaut;* Ger., *Theobald;* It., *Teobaldo;* Lat., *Theobaldus;* Sp., *Teobaldo;* Sw., *Theobald.*
the-oc-ra-cy (*-ok'ra-si*), *n.* the government of a state by the immediate direction of God; the state thus governed.
the-oc-ra-sy (*'ra-si*), *n.* a mixture of the worship of different deities; the intimate union of the soul with God in contemplation.
the-o-crat (*'ō-krat*), *n.* one living under a theocracy.
the-o-crat-ic (*-krat'ik*), *adj.* pertaining to a theocracy.
the-od-i-cy (*-od'i-si*), *n.* a vindication of the dealings of divine Providence and the freedom of the human will.
Theodora (*thē-ō-dō'ra*). A feminine name derived from *Theodore.*
Theodore (*thē'ō-dōr*). From the Greek name *Theodorus*, signifying "the gift of God." Danish, *Theodor;* Dutch, *Theodorus;* Fr., *Théodore;* It., *Teodoro;* Lat., *Theodorus;* Port., *Theodoro;* Russ., *Feodor;* Sp., *Teodorio;* Sw., *Theodor.*
Theodoric (*thē-od'ō-rik*) or **Theoderick.** An Old German name from *teut-reich*, "powerful lord." Dutch, *Diederick;* Fr., *Théodoric;* Ger., *Theodorich* or *Dietrich;* It., *Teodorico;* Lat., *Theodoricus;* Sp., *Teodorico.*
Theodosia (*thē-ō-dō'shi-a*). Fem. of *Theodosius.* Gr., *Theodosie;* It., *Teodosia;* Lat., *Theodosia.*
Theodosius (*thē-ō-dō'shi-us*). From the Greek, meaning "given by God." Fr., *Théodose;* It., *Teodosio;* Lat., *Theodosius;* Sp., *Teodosio.*
the-og-o-ny (*-og'ō-ni*), *n.* that branch of mythology which treats of the origin or genealogy of ancient deities.
the-o-lo-gi-an (*-ō-lō'ji-an*), *n.* one versed in theology.
the-o-log-ic-al (*-loj'i-kal*), *adj.* pertaining to theology.
the-ol-o-gy (*-ol'ō-ji*), *n.* [*pl.* theologies (*-jiz*)], the science that treats of the existence, nature, and attributes of God.
Theophilus (*thē-of'il-us*). From the Greek name signifying "a friend of God." Danish, *Gottlieb;* Dutch, *Theophilus;* Fr., *Théophile;* It., *Teofilo;* Lat., *Theophilus;* Port., *Theophilo;* Sp., *Teofilo.*
the-o-rem (*'ō-rem*), *n.* a proposition to be proved.
the-o-ret-ic-al (*-ō-ret'i-kal*), *adj.* pertaining to, or depending on, theory; not practical; speculative. [Also *theoretic.*]
the-o-rist (*'ō-rist*), *n.* one who theorizes; speculatist.
the-o-rize (*'ō-riz*), *v. i.* to form a theory or theories; speculate.
the-o-ry (*'ō-ri*), *n.* [*pl.* theories (*-riz*)], an exposition of the abstract principles of a science or art; hypothesis.
the-o-soph-ic (*-ō-sof'ik*), *adj.* pertaining to theosophy or theosophists. [Also *theosophical.*]
the-os-o-phism (*-os'ō-fizm*), *n.* pretension to divine wisdom or illumination.
the-os-o-phist (*'ō-fist*), *n.* a believer in theosophy. [Also *theosoph.*]
the-os-o-phy (*'ō-fi*), *n.* a system of philosophy which professes to investigate the unexplained laws of nature, the powers of man over nature, and the direct knowledge of God.
ther-a-peu-tic (*ther-a-pū'tik*), *adj.* curative: *n. pl.* the art or science of curing diseases.
there (*thâr*), *adv.* in that place; at that point or stage.
there-fore (*thâr'* or *thĕr'fôr*), *adv.* and *conj.* for that or this reason; for that reason or purpose.
Theresa (*the-rē'sa*). Probably from the Greek *theriso*, "to reap or gather in the crop." Dutch, *Theresia;* Fr., *Thérèse;* Ger., *Therese;* It., *Teresa;* Lat., *Theresa;* Sp. *Teresa;* Sw., *Theresa.*
ther-mal (*thĕr'mal*), *adj.* pertaining to heat; warm.
ther-mom-e-ter (*-mom'e-tĕr*), *n.* an instrument for measuring the degree of heat of bodies.
ther-mo-met-ric (*-mō-met'rik*), *adj.* pertaining to, made or ascertained by, a thermometer. [Also *thermometrical.*]
Thermopylæ (*thĕr-mop'i-lē*). A mountain pass of central Greece; name means "the defile of the warm springs."
ther-mo-stat (*'mō-stat*), *n.* an automatic apparatus for regulating temperature.
the-sau-rus (*thē-saw'rus*), *n.* a storehouse or treasury; lexicon or dictionary.
the-sis (*thē'sis*), *n.* [*pl.* theses (*'sēz*)], an essay or dissertation.
Thes-pi-an (*thes'pi-an*), *adj.* pertaining to Thespis, the founder of Greek drama, hence dramatic.
the-ur-gic (*thē-ĕr'jik*), *adj.* pertaining to theurgy or magic.
thews (*thūz*), *n. pl.* muscles; strength.
they, *pl.* of he, she, or it.
Thian-shan (*tē-ān'shān*). Mountain system of Asia. Chinese, meaning "the celestial mountains."
Thibet or **Tibet** (*tib'et, ti-bet'*). A region of central Asia; name possibly a corruption of *Thupo*, "high country," the country of the *Thou*, a people who founded an empire there in the sixth century.
thick (*thik*), *adj.* not thin; dense; dull; very intimate; crowded: *adv.* closely; indistinctly; to a great depth; fast.
Syn. THICK, dense. We speak of *thick* in regard to hard or soft bodies, as a *thick* board or *thick* cotton; solid or liquid, as a *thick* cheese or *thick* milk; but the term *dense* mostly in regard to the air in its various forms, as a *dense* air.
Ant. THIN, sparse.
thick-en (*'n*), *v. t.* to make thick or thicker; make dark or obscure: *v. i.* to become thick or thicker.
thick-en-ing (*'en-ing*), *n.* something added to a substance to make it thicker.
thick-et (*'et*), *n.* a close wood or cluster of trees.
thick-set (*'set*), *adj.* closely planted; having a thick body: *n.* a close, thick hedge.
thief (*thēf*), *n.* [*pl.* thieves (*thēvz*)], one who takes unlawfully what is not his own.
thieve (*thēv*), *v. t.* and *v. i.* to steal.
thiev-ish (*'ish*), *adj.* addicted to theft; dishonest.
thigh (*thī*), *n.* the thick muscular part of the leg above the knee.
thill (*thil*), *n.* the shaft of a cart or other vehicle.
thim-ble (*thim'bl*), *n.* a cup-shaped metallic protective cover for the finger in sewing; anything like a thimble.
thin (*thin*), *adj.* having little thickness; slim; slender; slight; meager: *adv.* not thickly: *v. t.* to make thin: *v. i.* to grow thin.
thine (*thīn*), *poss. pron.* and *adj.* belonging to, relating to, or being the property of, thee.
thing (*thing*), *n.* whatever is distinct, or conceived to be distinct; inanimate matter; part or portion: *pl.* clothes; furniture; luggage, etc.
think (*thingk*), *v. i.* to have the mind occupied on some subject; believe; judge: *v. t.* to imagine.
Syn. THINK, suppose, imagine, believe, deem. We *think* a thing right or wrong; we *suppose* it to be true or false; we *imagine* it to be real or unreal. I *think* that a man has acted wrong; *to suppose* is to take up an idea arbitrarily or at pleasure; *to imagine* is to take up an idea by accident, or without any connection with the truth or reality; *to deem* is to form a conclusion; things are *deemed* hurtful or otherwise in consequence of observation; we *think* as the thing strikes us at the time; we *believe* from a settled deduction.
third (*thĕrd*), *adj.* the next after the second; the ordinal of three; noting one of three equal parts: *n.* a third part of anything.
thirst (*thĕrst*), *n.* the sensation of a desire to drink; great desire for drink: *v. i.* to be thirsty.
thirst-y (*'i*), *adj.* [*comp.* thirstier, *superl.* thirstiest], feeling thirst.
thir-teen (*thĕr'tēn*), *adj.* 10 and 3: *n.* the number of 10 and 3.
thir-ty (*'ti*). *adj.* three times more than 10: *n.* the sum of three tens.
Thirty, Battle of the. A fight between thirty Bretons and thirty Englishmen, pitted by Jean de Beaumanoir and Bemborough, an Englishman, against each other, to decide a contest. The fight is said to have taken place between the castles of Josselin and Ploermel in France in 1351. The English were beaten.
this (*this*), *pron.* and *adj.* [*pl.* these (*thēz*)], that which is present; that which is just now or last mentioned.
this-tle (*this'l*), *n.* a plant with a prickly stem and leaves, of the genus Carduus.
thith-er (*thith'ĕr*), *adv.* to that place or end.
thole (*thōl*), *n.* a pin set in the gunwale of a boat to serve as a fulcrum for the oar.
Thomas (*tom'as*). From an Aramaic word, meaning "a twin." Danish, *Thomas;* Dutch, *Thomas;* Gr., *Thomas;* Ger., *Thomas;* Fr., *Thomas;* Hung., *Tamas;* It., *Tommaso;* Lat., *Thomas;* Polish, *Tomasz;* Port., *Thomas* or *Thomar;* Sp., *Tomas;* Sw., *Thomas.*
thong (*thông*), *n.* a thin leather strap or string; striking part of a whip.
tho-rac-ic (*thō-ras'ik*), *adj.* pertaining to the thorax.
tho-rax (*'raks*), *n.* the chest, containing the heart, lungs, etc.
thorn (*thôrn*), *n.* a prickle or spine; prickly tree or shrub; anything that troubles or annoys, care.
thorn-y (*'i*), *adj.* full of thorns; harassing; annoying.
thor-ough (*thur'ō*), *adj.* passing through or to the end; complete.
thor-ough-bred (*-bred*), *adj.* of pure and unmixed breed; high-spirited.
thor-ough-fare (*-fâr*), *n.* a passage from one street opening to another; an unobstructed way.
thor-ough-ly (*-li*), *adv.* completely; fully.
those, *pl.* of that.
thou (*thou*), *pron.* [*pl.* you], *second per. sing. of* I.

though (*thō*), *conj.* granting, or supposing that; notwithstanding that; if: *adv.* nevertheless; however.
thought (*thawt*), *n.* the act of thinking; that which the mind thinks; meditation; study: *p. t.* and *p. p.* of think. [IDEA.]
thought-ful (*'fool*), *adj.* full of thought; contemplative; attentive; considerate for others.
thought-less (*'les*), *adj.* unthinking; heedless; inattentive. [ABSTRACTED.]
thou-sand (*thou'zand*), *adj.* consisting of 1,000: *n.* 1,000; a large number.
Thrace. A region of southeastern Europe. Named from Greek *trachus*, meaning "the rough land."
thral-dom (*thrawl'dum*), *n.* serfdom; slavery.
thrall (*thrawl*), *n.* a slave; serf.
thrash (*thrash*), *v. t.* to beat out (grain) from the husk; flog soundly: *v. i.* to perform the operation of thrashing.
thread (*thred*), *n.* a very thin line or cord twisted and drawn out; uniform tenor: *v. t.* to pass through the eye of; pierce through.
thread-bare (*'bâr*), *adj.* worn to the threads; hackneyed.
threat (*thret*), *n.* a menace: *v. t.* and *v. i.* to menace.
Syn. THREAT, menace. We may be *threatened* with either small or great evils, but we are *menaced* only with great evils.
threat-en (*'n*), *v. i.* to use threats: *v. t.* to terrify by menaces. [See *imminent*.]
three (*thrē*), *adj.* noting the sum of 2 and 1: *n.* a number the sum of 2 and 1.
three-pence (*thrip'ens*), *n.* a small British silver coin, value 6 cents.
thren-o-dy (*thren'ō-di*), *n.* a dirge.
thresh. Same as *thrash*.
thresh-old (*thresh'ōld*), *n.* the sill of a door; entrance; door.
thrice (*thrīs*), *adv.* three times; repeatedly.
thrift (*thrift*), *n.* frugality; economical management; good husbandry. [FRUGALITY.]
thrift-y (*'i*), *adj.* characterized by economy and good management; frugal. [FENURIOUS.]
thrill (*thril*), *v. t.* to cause to have a shivering, tingling, or exquisite sensation: *v. i.* to penetrate, as something sharp; feel a sharp tingling or exquisite sensation: *n.* a thrilling sensation.
thrive (*thrīv*), *v. i.* to prosper by industry, economy, and good management; increase or flourish.
throat (*thrōt*), *n.* the fore-part of the neck of an animal containing the windpipe and gullet.
throat-y (*'i*), *adj.* guttural.
throb (*throb*), *v. i.* to beat with more than usual force; palpitate: *n.* a strong pulsation.
throe (*thrō*), *n.* agony; extreme pain: *v. i.* to be in agony.
throne (*thrōn*), *n.* a chair of state: *v. t.* to place upon a throne.
throng (*thrông*), *n.* a multitude; crowd: *v. t.* to crowd or press together: *v. i.* to come in multitudes.
throt-tle (*throt'l*), *v. t.* to strangle or choke: *n.* the windpipe.
throt-tle valve (*valv*), a valve in the steam pipe of a boiler for controlling the flow of steam.
through (*throo͞*), *prep.* from end to end of; between the sides of; in the midst of; among; by the agency of: *adv.* from end to end; from the beginning to the end.
throw (*thrō*), *v. t.* to fling or hurl; cast in any manner: *n.* the act of flinging or hurling; distance a missile can be thrown.
thrum (*thrum*), *n.* coarse yarn: *v. t.* to play idly or unskillfully on (a stringed instrument): *v. i.* to strum; drum.
thrush (*thrush*), *n.* a sweet-songed bird of the genus Merula.
thrust (*thrust*), *v. t.* to push or drive with force: *v. i.* to push forward; intrude: *n.* a violent or sudden push; stab.
thud (*thud*), *n.* a dull sound produced by a body falling on a comparatively soft substance.
thug (*thug*), *n.* one of a fraternity of robbers and assassins in India; a ruffian.
thumb (*thum*), *n.* the short, thick digit of the human hand: *v. t.* to handle awkwardly; soil with the thumb.
thumb-screw (*'skroo͞*), *n.* a screw to turn with the finger and thumb; an instrument of torture.
thump (*thump*), *n.* a hard, heavy blow: *v. t.* to strike or beat with dull, heavy blows: *v. i.* to fall or strike with a dull, heavy blow.
thun-der (*thun'dẽr*), *n.* the noise accompanying a flash of lightning; loud noise: *v. i.* to produce thunder; make a loud noise: *v. t.* to utter with a loud and threatening voice.
thun-der-bolt (*-bōlt*), *n.* a shaft of lightning; a belemnite.
thun-der-ing (*-ing*), *adj.* emitting, or producing, a great noise like thunder: *n.* the report accompanying lightning.
thunder-struck (*-struk*), *p. adj.* astonished or struck dumb by sudden amazement, etc.
thu-ri-ble (*thū'ri-bl*), *n.* a censer.
thu-ri-fer (*'ri-fẽr*), *n.* one who attends the priest at mass, etc., and carries the thurible.
Thursday. The fifth day of the week. Literally the day of Thor, the son of Odin (or Wodin) and the god of thunder.
thus (*thus*), *adv.* in this or that manner; to this degree or extent; so: *n.* the resin of the spruce fir.
thwack (*thwak*), *v. t.* to strike with something flat and heavy: *n.* a heavy blow; thump.
thwart (*thwawrt*), *adj.* crosswise; oblique: *prep.* and *adv.* across: *n.* a seat in a boat extending from side to side: *v. t.* to oppose; run counter to; frustrate.
thy (*thī*), *pron. poss. case* of thou.
thyme (*tīm*), *n.* a common aromatic herb of the genus Thymus.
thy-self. Emphatic for *thy*.
★**ti-a-ra** (*tī-ā'rȧ*, not *tē-ā'rȧ*), *n.* the triple crown worn by the pope; diadem.
Tiber (*tī'bẽr*), Italian **Tevere** (*tā-vā'rā*). A river of Italy; was the Roman *Tiberis*. From the name of the river was derived the Roman name *Tiberius*.
Tiberius (*tī-bē'ri-us*). Means "of the Tiber." Fr., *Tibère*; It., *Tiberio*; Lat. *Tiberius*.
tib-i-a (*tib'i-ȧ*), *n.* the inner and larger of the two leg bones.
tib-i-al (*'i-al*), *adj.* pertaining to the tibia.
tick (*tik*), *n.* a name for various parasites which infest dogs, etc.; a case for holding feathers, etc., for bedding; small mark; small, quick, distinct sound: *v. i.* to make a small, quick, distinct sound: *v. t.* to mark off by a tick.
tick-et (*'et*), *n.* a label or card giving its possessor some specific right; label; printed list of candidates: *v. t.* to distinguish by, or as by, a ticket.
tick-ing (*'ing*), *n.* cloth used for bed-ticks.
tic-kle (*'l*), *v. t.* to touch lightly so as to produce a thrilling sensation; gratify and amuse: *v. i.* to feel titillation.
tic-kler (*'lẽr*), *n.* one who, or that which, tickles.
tic-klish (*'lish*), *adj.* sensible to slight touches; easily tickled; precarious; difficult.
Ticonderoga (*tī-kon-dẽr-ō'gȧ*), **N. Y.** Indian *Cheonderaga*, signifying "brawling water," from the noise of the rapids in the outlet of Lake George as it falls into Lake Champlain.
tid-al (*tīd'al*), *adj.* pertaining to the tides; ebbing and flowing.
tide (*tīd*), *n.* the regular rising and falling of the sea, rivers, etc.; stream; time; season; turning point; tendency: *v. t.* to drive with the stream. [STREAM.]
ti-dings (*tī'dingz*), *n. pl.* news. [NEWS.]
tid-ol-o-gy (*tīd-ol'ō-ji*), *n.* the science of tides.
ti-dy (*tī'di*), *adj.* trim; neat; orderly: *n.* an ornamental cover for the back of a chair, etc.: *v. t.* to make neat or tidy.
tie (*tī*), *n.* a knot or fastening; bond; obligation; equality in numbers: *v. t.* to fasten; bind; restrict: *v. i.* to make an equal score.
tier (*tēr*), *n.* a row or rank, especially one of two or more rows placed one above the other.
Tierra del Fuego (*tē-er'rȧ del fwā'gō*). Spanish for "land of fire."
tiff (*tif*), *n.* a fit of anger; slight quarrel: *v. i.* to be in a pet.
ti-ger (*tī'gẽr*), *n.* a large, fierce, rapacious quadruped of the genus Felis.
ti-ger flow-er (*flou-ẽr*), a flower of the Iris order, spotted yellow and orange.
ti-ger lil-y (*lil-i*), a handsome lily having flowers spotted with orange.
tight (*tīt*), *adj.* not loose; close; tenacious; taut; snug; parsimonious: *n. pl.* closely fitting underclothing.
ti-gress (*tī'gres*), *n.* the female of the tiger.
ti-grine (*'grin*), *adj.* tiger-like.
Tigris (*tī'gris*). A name rightly explained by Strabo, who says that it was so called from its "swiftness," for among the Medes *tigris* means "an arrow."
ti-grish (*'grish*), *adj.* resembling a tiger; fierce.
tile (*tīl*), *n.* a thin slab of baked clay, used for roofing, etc.; hat: *v. t.* to cover with tiles.
till (*til*), *n.* a money drawer in a desk or counter: *prep.* to the time of: *adv.* to the time when. *conj.* to the degree that; until: *v. t.* to prepare (land) for seed, etc.
till-age (*'āj*), *n.* land prepared for crops; husbandry; agriculture.
till-er (*'ẽr*), *n.* a husbandman; handle or lever for turning the rudder of a vessel.
tilt (*tilt*), *n.* a thrust; a mediæval military exercise with lances: *v. t.* to point or thrust with, or as with, a lance; raise on end; incline: *v. i.* to run or ride and thrust with a lance.
tilt-ing (*'ing*), *n.* inclination forward; act of one who, or that which, tilts.
tim-ber (*tim'bẽr*), *n.* the body or stem of a tree; wood suitable for buidings, etc.: *v. t.* to furnish or construct with timber.
tim-bre (*'bẽr*), *n.* tone or character of musical sound.
time (*tīm*), *n.* measure of duration; particular period of duration; season; era; epoch; proper time; tense: *v t.* to adapt to the time or occasion; regulate or measure: *v. i.* to keep or beat time.
Syn. TIME, age, date, duration, epoch, era, period, season, succession. *Sequence* and *succession* apply to events viewed as following one another; *time* and *duration* denote something conceived of as enduring while events take place and acts are done; *duration* and *succession* are more general words than *time;* we can speak of infinite or eternal *duration* or *succession*, but *time* is commonly contrasted with eternity.
time-li-ness (*'li-nes*), *n.* seasonableness.
time-ly (*'li*), *adj.* being or occurring in time; opportune.
Syn. TIMELY, seasonable. The former signifies within the *time*, that is, before the *time* is past; the latter according to the *season*, or what the *season* requires. A *timely* notice prevents that which would otherwise happen; a *seasonable* hint seldom fails of its effect because it is *seasonable*.
tim-id (*tim'id*), *adj.* wanting in courage; faint-hearted; fearful. [FAINT.]
ti-mid-i-ty (*ti-mid'i-ti*), *n.* want of courage.
tim-or-ous (*tim'ẽr-us*), *adj.* fearful of danger; full of scruples.
Timothy (*tim'ō-thi*). From the Greek name signifying "honoring or worshiping God." Danish, *Timotheus;* Dutch, *Timotheus;* Fr., *Timothée;* Ger., *Timotheus;* Gr., *Timotheos;* It., *Timoteo;* Lat., *Timotheus;* Port., *Timotheo;* Sp., *Tumoteo;* Sw., *Timotheus*.
tim-o-thy grass (*gràs*), a valuable grass for fodder.
tin (*tin*), *n.* a silvery-white, soft, malleable, and fusible metal; vessel of tin: *v. t.* to cover with tin; put into tins for preservation.
tinc-to-ri-al (*tingk-tō'ri-al*), *adj.* pertaining to, or imparting, a color.
tinc-ture (*'tūr*), *n.* a tinge or shade; solution in or by means of spirits of wine: *v. t.* to dye or color; tinge.
tin-der (*tin'dẽr*), *n.* any inflammable material used to kindle a fire from a spark.
tine (*tīn*), *n.* a tooth or spike.
tin-foil (*tin'foil*), *n.* tin beaten into thin leaf.
tinge (*tinj*), *v. t.* to stain or color; dye: *n.* a slight degree of some color, taste, or quality imparted to a substance.
tin-gle (*ting'gl*), *v. i.* to feel a thrilling sensation or pain: *v. t.* to ring; cause to tingle: *n.* a thrilling sensation or pain.
tink-er (*tingk'ẽr*), *n.* a mender of metal pots, kettles, etc.: *v. t.* to patch up: *v. i.* to meddle in an officious manner.
tin-kle (*ting'kl*), *n.* a small, quick, sharp, ringing sound: *v. i.* to make such a sound: *v. t.* to cause to give out a tinkle.
tin plate (*tin' plāt*), iron plate coated with tin.
tin-sel (*'sel*), *n.* thin glittering metallic plate; anything showy but of little value: *adj.* showy to excess; superficial.
tint (*tint*), *n.* a slight coloring distinct from the principal color; hue or shade: *v. t.* to give a slight coloring to.
ti-ny (*tī'ni*), *adj.* very small.
tip (*tip*), *n.* a point or top; end; ferrule or nozzle: private hint; tilt: *v. t.* to form a point to; cover the end of; give private hint to; tilt up.
Tippecanoe (*tip-pē-kȧ-noo͞'*) **river, Ind.** So called from the Indian name given to a fish living in this stream, "the long-lipped pike," or "buffalo fish."
tip-pet (*'et*), *n.* a narrow cape, or covering of cloth or fur for the neck or shoulders.
tip-ple (*'l*), *v. i.* to drink spirits or strong liquors habitually.
tip-staff (*'stȧf*), *n.* a constable.
tip-sy (*'si*), *adj.* intoxicated.
tip-toe (*'tō*), *adv.* on tiptoe; stealthily: *v. i.* to walk or stand on tiptoe; be on the alert.
tip-top (*'top*), *n.* the highest point or degree; best of anything: *adj.* most excellent.
ti-rade (*ti-rād'*), *n.* a long, violent, declamatory speech.
tire (*tīr*), *n.* a band or hoop of iron or rubber binding the felloes of wheels: *v. t.* to weary or fatigue: *v. i.* to become weary or fatigued.
tire-some (*'sum*), *adj.* wearisome; tedious; fatiguing.
tis-sue (*tish-oo͞'*), *n.* any thin or delicate texture or fabric; thin cellular organization of parts: *v. t.* to form tissue of; interweave.
tis-sue pa-per (*pā-pẽr*), very thin, gauzelike paper.
tit (*tit*), *n.* morsel or bit; titmouse; name for various species of small singing birds.
tit-bit (*'bit*), *n.* a choice morsel.
tit for tat (*fôr tat*), *n.* exact equivalent or fair retaliation.
tithe (*tīth*), *n.* the tenth part of anything; small part: *v. t.* to tax, or levy, a tithe of.
Titicaca (*tit-ē-kä'kȧ*). An island and lake near the peninsula of Copacabana, South America. It was a sacred place of the Incas, and "the birthplace of the sun," according to one of their legends.
tit-il-late (*tit'il-āt*), *v. t.* to tickle.
ti-tle (*tī'tl*), *n.* name; appellation of dignity, rank, distinction, or preëminence; claim of right.
ti-tle deed (*dēd*), the instrument or written evidence of right of ownership of property.
tit-mouse (*tit'mous*), *n.* a small, active, perching bird.
ti-tra-tion (*ti-trā'shun*), *n.* volumetric analysis.
tit-ter (*tit'ẽr*), *v. i.* to laugh with restraint: *n.* a restrained laugh.
tit-tle (*tit'l*), *n.* a small particle.
tit-tle-tat-tle (*-tat'l*), *n.* idle, trifling talk.
tit-u-lar (*'ū-lẽr*), *adj.* existing in name or title only: *n.* one who is invested with a title, but does not possess power.
Titus (*tī'tus*). From the Greek name signifying "honored." Fr., *Tite;* Ger., *Titus;* It., *Tito;* Lat., *Titus;* Sp., *Tito*.
to (*too͞*), *prep.* noting motion toward; in accordance with.
toad (*tōd*), *n.* a batrachian reptile, resembling the frog.
toad-eat-er (*'ēt-ẽr*), *n.* a sycophant.
toad-fish (*'fish*), *n.* a fish of the genus Batrachus, with a large head and wide mouth.

toad-stone (*tōd'stōn*), *n.* a local name for a kind of basaltic or igneous rock; bufonite.
toad-stool (*'stōōl*), *n.* a name of numerous species of fungi of the genus Agaricus.
toad-y (*'i*), *n.* a sycophant: *v. t.* to fawn upon as a sycophant: *v. i.* to play the sycophant.
toast (*tōst*), *n.* bread scorched or browned before the fire; one who is named when a health is drunk: *v. t.* to brown or heat at the fire; name when a health is drunk.
to-bac-co (*tō-bak'ō*), *n.* an American plant of the genus Nicotiana, the dried leaves of which are used for smoking, chewing, or as snuff.
to-bac-co-nist (*-nist*), *n.* a dealer in tobacco, cigars, etc.
Tobago (*tō-bā'gō*) **island.** An island of the British West Indies. So called by Columbus from its fancied resemblance to the *tobaco*, or inhaling tube of the aborigines, whence the word *tobacco* has been derived.
Tobias (*tō-bī'as*) or **Toby** (*to'bi*). From the Hebrew *tobh-mah*, which has been variously rendered "God's goodness" and "distinguished of the Lord." Danish, *Tobias;* Dutch, *Tobias;* Fr., *Tobie;* Ger., *Tobias;* It. *Tobia;* Lat. *Tobias;* Sp., *Tobias.*
to-bog-gan (*-bog'an*), *n.* a kind of sledge for sliding down snow-covered hills or inclines: *v. i.* to slide down hill.
toc-sin (*tok'sin*), *n.* an alarm bell.
tod-dle (*tod'l*), *v. i.* to walk with short, tottering steps like a child: *n.* a toddling walk.
toe (*tō*), *n.* one of the terminal members of the foot of a man or animal: *v. t.* to touch, reach, or strike with the toe.
to-ga (*tō'gȧ*), *n.* [*pl.* togas (*gȧz*), togæ (*'je*)], the loose outer garment worn by the Romans.
to-geth-er (*tōō-geth'ẽr*), *adv.* in company or association; mutually; in union or concert.
tog-ger-y (*tog'ẽr-i*), *n.* clothes; articles.
tog-gle (*'l*), *n.* a small wooden pin tapering toward both ends and grooved round its center.
toil (*toil*), *n.* labor oppressive to mind or body; snare; net: *v. i.* to labor or work. [WORK.]
toi-let (*toi'let*), *n.* dressing table; style or manner of dressing; attire.
toil-some (*toil'sum*), *adj.* laborious; wearisome.
to-ken (*tō'kn*), *n.* a mark or sign; a symbol of anything.
Tokio or **Tokyo** (*tō'kē-ō*). The capital of Japan; is the "eastern capital," in contradistinction to *Saikio*, the "western capital." Formerly called *Yeddo.*
Toledo (*tō-lē'dō*, Spanish *tō-lā'thō*). The capital of Gothic Spain; was the Roman *Toletum*, a name of unknown etymology, widely supposed to be of Phenician origin, meaning the "city of generations."
tol-er-a-ble (*tol'ẽr-ȧ-bl*), *adj.* endurable; supportable; fairly good.
tol-er-ance (*'ẽr-ans*), *n.* endurance; toleration.
tol-er-ant (*'ẽr-ant*), *adj.* disposed to, or favoring, toleration.
tol-er-ate (*'ẽr-āt*), *v. t.* to endure; permit; allow so as not to hinder. [ADMIT.]
tol-er-a-tion (*-ā'shun*), *n.* the act of tolerating; allowance; recognition of the right of private judgment; freedom from bigotry.
toll (*tōl*), *n.* the sound of a bell slowly repeated at short intervals; tax or duty paid for some privilege: *v. i.* to sound or ring slowly, as a bell.
to-lu (*tō'lū*), *n.* a balsam produced by a South American tree.
tom-a-hawk (*tom'ȧ-hawk*), *n.* a hatchet used by the North American Indians: *v. t.* to strike, or kill, with a tomahawk.
Tomas. See *Thomas.*
to-ma-to (*tō-mā'tō* or *tō-mä'tō*), *n.* [*pl.* tomatoes (*t'ōz*)], a plant and its well-known fleshy fruit. [Also *loveapple.*]
tomb (*tōōm*), *n.* a grave or vault; monument erected over the dead.
Tombigbee river, Fla. So called from the Choctaw Indian word *itumbibikpi;* the literal translation would be "an undertaker," it being a name given to the old men of the tribe who were employed in preparing their dead for the "bonehouses."
tom-boy (*tom 'boi*), *n.* a wild, romping girl.
tom-cat (*'kat*), *n.* a full-grown male cat.
tome (*tōm*), *n.* a large book.
tom-fool (*tom'fōōl*), *n.* a great fool; silly trifler.
tom-fool-er-y (*'ẽr-i*), *n.* nonsense; absurd trifles or ornaments.
Tommaso. See *Thomas.*
Tom, Mount, Mass. Named in honor of a neighboring resident, Rowland Thomas, probably familiarly known as "Tom."
tom-pi-on (*tom'pi-un*), *n.* the stopper or plug of a cannon. [Also *tampion.*]
tom-tom (*'tom*), *n.* a drum flat at one end and convex at the other. [Also *tam-tam.*]
ton (*tun*), *n.* 20 hundredweight; 40 cubic feet in ship measurement; (*tôɴ* prevailing fashion.
tone (*tōn*), *n.* sound, or character of sound; note; accent; harmony of the colors of a painting; interval of sound: *v. t.* to bring to a required shade of color; mitigate.
tongs (*tôngs*), *n. pl.* a metal instrument with two jointed limbs for grasping anything.
tongue (*tung*), *n.* the chief instrument of speech, and the organ of taste; dialect; idiom; discourse; clapper of a bell; anything resembling a tongue.
ton-ic (*ton'ik*), *adj.* pertaining to, or based on, the keynote; strengthening: *n.* a strengthening medicine.
ton-nage (*tun'āj*), *n.* the weight of goods carried in a boat or ship; carrying capacity of a vessel.
ton-neau (*tō-nō'*), *n.* a barrel-like body of certain motor cars.
Tonquin (*ton-kēn'*), Chinese *Tang-king*, the eastern capital.
★**ton-sil-i-tis** (*ton-sil-ī'tis*, not *ton-sil-ē'tis*), *n.* inflammation of the tonsils.
ton-sils (*ton'silz*), *n. pl.* two almond-shaped glands situated one at each side of the fauces of the throat.
ton-so-ri-al (*ton-sō'ri-al*), *adj.* pertaining to shaving or to a barber.
ton-sure (*'shūr*), *n.* the act of clipping the hair or of shaving the crown of the head; corona thus worn by clerics: *v. t.* to give the tonsure to.
too (*tōō*), *adv.* more than enough; likewise; in addition; over and above; also.
tool (*tōōl*), *n.* an instrument of manual operation; one who acts as the instrument of another: *v. t.* to shape with a tool.
toot (*tōōt*), *v. t.* to sound, as a horn or flute: *n.* a blast on a horn.
tooth (*tōōth*), *n.* [*pl.* teeth (*tēth*)], one of the hard bony processes growing in the jaws for biting and chewing; any projection resembling a tooth: *v. t.* to indent or form into teeth.
tooth-some (*'sum*), *adj.* palatable.
top (*top*), *n.* the highest part; summit; upper side or surface; a child's toy: *v. t.* to cover or place on the top; rise to the top of; excel.
to-paz (*tō'paz*), *n.* a crystallized mineral of various colors used as a gem.
top-boots (*top'-bōōtz*), *n. pl.* high boots with light colored tops.
Topeka (*tō-pē'kȧ*), **Kan.** An Indian word, *topeakae*, "a good place to dig potatoes."
to-per (*'pẽr*), *n.* a drunkard.
To-phet (*tō'fet*), *n.* a place in the valley of Hinnom, where fire was burnt in honor of Moloch; hence hell.
top-ic (*top'ik*), *n.* a subject of discourse, conversation, or argument; theme.
top-ic-al (*'i-kal*), *adj.* pertaining to, or consisting of, a topic or topics; relating to a place; local.
top-mast (*'mȧst*), *n.* the second mast from the deck of a ship.
to-pog-ra-pher (*tō-pog'rȧ-fẽr*), *n.* one who describes particular places in writing.
to-pog-ra-phy (*tō-pog'rȧ-fi*), *n.* the scientific description of a particular place, etc.; the features of a region or locality.
top-ping (*top'ing*), *adj.* rising above; surpassing: *n.* the act of cutting off the top.
top-ple (*'l*), *v. t.* to overturn: *v. i.* to fall forward; tumble down.
top-sy-tur-vy (*'si-tûr'vi*), *adv.* in an inverted position; in confusion: *adj.* disordered; chaotic.
toque (*tōk*), *n.* a kind of bonnet.
torch (*tôrch*), *n.* a large light formed of resinous wood, flax, etc., soaked in some inflammable substance.
to-re-a-dor (*tō-rā-ā-dōr'*), *n.* a bullfighter.
tor-ment (*tôr'ment*), *n.* extreme pain; torture; anguish: *v. t.* (*tôr-ment'*) to put to extreme pain, physical or mental.
Syn. TORMENT, torture. *Torture* is an excess of *torment.* We may be *tormented* by a variety of indirect means; but we are mostly said to be *tortured* by the direct means of the rack, or similar instrument. [See *tease.*]
tor-na-do (*tôr-nā'dō*), *n.* [*pl.* tornadoes (*'dōz*)], a violent tempest or whirlwind.
Toronto (*tō-rŏn'tō*). Many towns and cities in the United States bear this Indian name, meaning "oak tree rising from the lake," which has been transferred to them from the city in Canada.
Toronto, Canada. Now the capital of the Canadian province of Ontario. The name at first denoted the country of the Huron tribe, to which the Bay of Toronto gives access. Here a French trading post was built on the site of the present city, and called *Fort Toronto.* In 1793, the name was changed to *York* in honor of the duke of York, but in 1834 the old name *Toronto* was revived.
tor-pe-do (*tôr-pē'dō*), *n.* [*pl.* torpedoes (*'dōz*)], a submarine apparatus for destroying ships by explosion; kind of firework: *v. t.* to destroy by a torpedo.
tor-pid (*'pid*), *adj.* numb; inactive.
tor-pi-fy (*'pi-fī*), *v. t.* to make torpid; benumb.
tor-por (*'pẽr*), *n.* numbness; inactivity.
tor-rent (*tor'ent*), *n.* a violent and rapid stream; heavy fall, as of rain.
tor-rid (*'id*), *adj.* dried with heat; extremely hot; burning.
tor-sion (*tôr'shun*), *n.* the act of turning or twisting.
tor-so (*'sō*), *n.* [*pl.* torsos (*'sōz*), torsi (*'sē*)], the trunk of a statue.
tort (*tôrt*), *n.* in law, any wrong, injury or damage.
tor-tile (*tôr'til*), *adj.* bent; twisted; wreathed.
tor-toise (*tôr'tis*), *n.* a reptile of the family Testudinidae with a very hard shell or test; a testudo.
Tortugas (*tôr-tōō'gȧz*) **islands, Fla.** Spanish word meaning "tortoise," the name given by the Spaniards from the number of tortoise found on them.
tor-tu-ous (*'tū-us*), *adj.* crooked; twisted; wreathed; underhand.
tor-ture (*'tūr*), *n.* agony of mind or body; excruciating pain: *v. t.* to punish with, or as with, torture: vex; wrest from the true meaning. [TORMENT.]
To-ry (*tō'ri*), *n.* [*pl.* Tories (*'riz*)], in English politics, a Conservative: *adj.* pertaining to Conservatives.
toss (*tos*), *v. t.* to throw with the hand; throw upward; cause to rise and fall: *v. i.* to roll or tumble; be tossed: *n.* a throwing upward.
tot (*tot*), *n.* anything small or insignificant: *v. t.* to add; count up.
to-tal (*tō'tal*), *adj.* whole; complete; full; *n.* the whole sum or amount; completeness. [WHOLE.]
tote (*tōt*), *v. t.* to carry.
to-tem (*tō'tem*), *n.* an animal used as the symbol or name of a tribe or clan.
tot-ter (*tot'ẽr*), *v. i.* to shake as if about to fall; be unsteady.
touch (*tuch*), *v. t.* to come in contact with; perceive by feeling; reach; attain to; affect the senses or sensibility of: *v. i.* to be in contact: *n.* the act of touching; state of being touched.
touch-ing (*'ing*), *adj.* pathetic: *n.* the act of coming in contact with: *prep.* with respect to; concerning.
touch-stone (*'stōn*), *n.* Lydian stone or basanite, used for testing the purity of gold and silver; hence a criterion.
touch-wood (*'wood*), *n.* dried fungus or decayed wood, which easily ignites and burns slowly.
touch-y (*'i*), *adj.* irritable; peevish.
tough (*tuf*), *adj.* flexible without being brittle; not easily broken or fractured; strong; firm; tenacious; viscous; difficult: *n.* a rough.
tough-en (*'n*), *v. i.* to grow or become tough: *v. t.* to make tough.
Toulon (*tōō'lon*, French *tōō-lôɴ'*). French city; is from the ancient *Telonium* or *Telo Martius*, named after its founder.
tou-pee (*tōō-pē'*), *n.* a small wig.
★**tour** (*tōōr*), *n.* excursion; trip: *v. i.* to make a tour: *v. t.* to make a tour or circuit of. [EXCURSION.]
tour-ist (*'ist*), *n.* excursionist.
tour-na-ment (*'nȧ-ment*), *n.* a mock fight by knights on horseback; contest of skill. [Also *tourney.*]
tou-sle or **tou-zle** (*tou'zl*), *v. t.* to pull or tear; worry; put in disorder.
tout (*tout*), *v. i.* to look out for customers: *n.* one who secretly watches race horses in training, in order to give private information; a touter.
tout-er (*tout'ẽr*), *n.* one who hangs about to secure the custom of tourists for a particular hotel, etc.
tow (*tō*), *n.* the coarse part of flax or hemp: *v. t.* to drag, as a vessel, through the water by means of a rope.
tow-age (*'āj*), *n.* the act of towing; price paid for towing.
to-ward (*tō'ẽrd*), *prep.* in the direction of; with a tendency to; with respect to: *adv.* near; at hand. [Also *towards.*]
tow-el (*tou'el*), *n.* a cloth for wiping the hands, etc.
tow-er (*tou'ẽr*), *n.* a lofty building, square or circular, usually flat on the top: *v. i.* to rise to a great height.
town (*toun*), *n.* any collection of houses larger than a village, not being a city; township.
town-ship (*'ship*), *n.* the district or territory subordinate to the county.
tox-ic (*toks'ik*), *adj.* poisonous.
tox-i-col-o-gy (*-i-kol'ō-ji*), *n.* the science that treats of poisons.
tox-in (*toks'in*), *n.* a poison produced by the action of bacteria upon organic matter.
toy (*toi*), *n.* something of no real value; bauble; plaything: *v. i.* to dally amorously; trifle.
Toynbee (*toin'be*) **hall.** An institution in Whitechapel, London, founded in 1885, as the outcome of plans set on foot by the members of Oxford and Cambridge universities "to provide education and the means of recreation and enjoyment for the people of the poor districts of London," etc.
trace (*trās*), *n.* a mark left by anything passing; small quantity: *pl.* the straps, etc., by which a vehicle is drawn: *v. t.* to delineate by marks; follow by tracks or footsteps. [DERIVE, MARK.]
trace-a-ble (*'ȧ-bl*), *adj.* capable of being traced.
tra-che-a (*trȧ-kē'ȧ*), *n.* the windpipe.
track (*trak*), *n.* a mark or impression left by the foot; beaten path; course or way: *v. t.* to pursue by following the footprints or marks. [MARK.]
tract (*trakt*), *n.* a short treatise; region of indefinite extent.
tract-a-bil-i-ty (*-ȧ-bil'i-ti*), *n.* docility.
tract-a-ble (*'ȧ-bl*), *adj.* docile; easily instructed or managed.
tract-ate (*trakt'āt*), *n.* a small book or treatise.
trac-tion (*trak'shun*), *n.* the act of drawing; state of being drawn.
trade (*trād*), *n.* commerce; business; traffic; persons engaged in a particular business: *adj.* pertaining to, carried on by, or characteristic of, a trade: *v. i.* to sell or exchange. [BUSINESS.]
trade-mark (*'märk*), *n.* a distinguishing device affixed by a merchant to his goods.
trade-price (*'prīs*), *n.* price of an article to the retailer.
trad-er (*'ẽr*), *n.* one engaged in trade or commerce; vessel engaged in trade.
trades un-ion (*trādz' ūn-yun*), *n.* an organized combination of workmen.
trade winds (*trād' windz*), certain ocean winds in or near the torrid zone that blow steadily from the same quarter periodically. [Also *trades.*]
tra-di-tion (*trȧ-dish'un*), *n.* the oral transmission of events, opinions, doctrines, practices, etc., through successive generations: that which is so handed down.

tra-di-tion-al (*trȧ-dish'un-al*), *adj.* pertaining to, derived from, or handed down by, tradition.
tra-duce (*trȧ-dūs'*), *v. t.* to slander.
Trafalgar (*trȧ-făl'gär*) **square.** One of the principal squares in London, about one and one-half miles west by south of St. Paul's. It contains the Nelson monument, and the site of Charing Cross and the National gallery faces on it.
traf-fic (*traf'ik*), *n.* business or trade; commerce; intercourse: *v. i.* to trade; bargain: *v. t.* to barter.
trag-a-canth (*trag'ȧ-kanth*), *n.* a gum obtained from various species of Astragalus.
tra-ge-di-an (*trȧ-jē'di-an*), *n.* an actor or writer of tragedies.
trag-e-dy (*traj'ē-di*), *n.* [*pl.* tragedies (*-diz*)], a dramatic poem having usually a fatal ending; a melancholy and fatal event.
trag-ic (*'ik*), *adj.* pertaining to tragedy; terrible. [Also *tragical.*]
trail (*trāl*), *v. t.* to draw or drag along the ground; hunt or follow by tracking: *v. i.* to be drawn out in length; fall or hang down: *n.* the track followed; scent left by a track; anything drawn out in length.
train (*trān*), *n.* a series of railway carriages or trucks coupled together; something drawn or dragged behind; retinue; suite; process: *v. t.* to drill; educate; draw along; discipline or tame for use: *v. i.* to prepare for contests or horse racing. [TEACH.]
train oil (*'oil*), oil obtained by boiling whale's blubber.
trait (*trāt*), *n.* a peculiar feature or characteristic; touch.
trai-tor (*trā'tẽr*), *n.* one who is guilty of treason; one who betrays any confidence; a deceiver. [Fem. *traitress* or *traitoress.*]
trai-tor-ous (*'tẽr-us*), *adj.* guilty of treason; perfidious.
tra-jec-to-ry (*trȧ-jek'tō-ri*), *n.* the curve described by a body in space.
tram (*tram*), *n.* a tramway; tramway car.
tram-mel (*'el*), *n.* anything that impedes progress, action, or freedom: *v. t.* to impede or hinder; shackle.
tramp (*tramp*), *v. t.* to tread upon forcibly and repeatedly; travel over on foot: *v. i.* to wander: *n.* a vagrant foot traveler; journey on foot; sound of tramping.
tram-ple (*'pl*), *v. t.* to tread under the feet: *v. i.* to stamp rapidly and repeatedly with the feet.
tram-way (*'wā*), *n.* a street railway; metal track for wagons or trucks. [Also *tramroad.*]
trance (*trans*), *n.* temporary suspension of sensation and volition while the heart and lungs continue to act: *v. t.* to place in, or as in, a state of trance.
tran-quil (*trang'kwil*), *adj.* calm; quiet; undisturbed. [CALM, PEACE.]
tran-quil-ize (*'kwil-īz*), *v. t.* to make tranquil or calm.
trans-act (*trans-akt'*), *v. t.* to manage, as business; negotiate.
trans-ac-tion (*-ak'shun*), *n.* the management of any business or affair; that which is done or performed. [PROCEEDING.]
tran-scend (*tran-send'*), *v. t.* to rise above; surpass; surmount.
tran-scend-en-cy (*'en-si*), *n.* the state or quality of being transcendent; supereminence. [Also *transcendence.*]
tran-scend-ent (*'ent*), *adj.* surpassing others in excellence.
tran-scen-den-tal (*-sen-den'tal*), *adj.* noting that which lies beyond the limits of experience, or is external to the senses. [MYSTERIOUS.]
tran-scen-dent-al-ism (*'al-izm*), *n.* the Kantian philosophy which affirms that the primary principles of knowledge are ascertained by the investigation of that which is *a priori*, or independent of experience; a religious movement in the United States, 1839, associated with Emerson and Channing.
tran-scribe (*-skrīb'*), *v. t.* to copy. [COPY.]
tran-script (*'skript*), *n.* a written copy from an original.
tran-scrip-tion (*-skrip'shun*), *n.* a copy.
tran-sept (*'sept*), *n.* that part of a church at right angles on either side to the chancel.
trans-fer (*trans-fẽr'*), *v. t.* to convey from one person or place to another: *n.* (*trans'fẽr*) conveyance of a right, title, property, etc.; deed by which such a transfer is executed; removal; drawing or writing printed off from one surface to another.
trans-fer-a-ble (*'ȧ-bl*), *adj.* capable of being transferred.
trans-fig-u-ra-tion (*-fig-ū-rā'shun*), *n.* a change of form or appearance.
trans-fig-ure (*-fig'ūr*), *v. t.* to change the outward form or appearance of.

Syn. TRANSFIGURE, transform, metamorphose. *Transfigure* is to make to pass over into another figure; *transform* and *metamorphose* are to put into another *form*. *Transformation* is commonly applied to that which changes its outward form; in this manner a harlequin *transforms* himself into all kinds of shapes and likenesses. *Metamorphosis* is applied to the form internal as well as external, that is, to the whole nature.

trans-fix (*-fiks'*), *v. t.* to pierce through.
trans-fix-ion (*-fik'shun*), *n.* the act of transfixing; state of being transfixed.
trans-form (*-fôrm'*), *v. t.* to change the shape, appearance or character of; transmute. [TRANSFIGURE.]
trans-for-ma-tion (*trans-fôr-mā'shun*), *n.* the act of transforming; state of being transformed.
trans-form-er (*-fôrm'ẽr*), *n.* an induction coil for raising or lowering electrical pressure.
trans-fuse (*-fūz'*), *v. t.* to pour out of one vessel into another; instill.
trans-gress (*-gres'*), *v. i.* to offend by the violation or infraction of any law, rule, etc.; sin: *v. t.* to break or violate.
trans-gres-sion (*-gresh'un*), *n.* the act of violating any law or rule of moral duty.
tran-sient (*tran'shent*), *adj.* fleeting; brief.
tran-sit (*tran'sit*), *n.* a passage through or over.
tran-si-tion (*-sish'un*), *n.* the passage from one place or state to another.
tran-si-tive (*'si-tiv*), *adj.* noting an action passing from a subject to an object.
tran-si-to-ry (*'si-tō-ri*), *adj.* continuing but a short time.
trans-late (*trans-lāt'*), *v. t.* to render from one language into another; remove to another place or position.
trans-la-tion (*-lā'shun*), *n.* the act of translating; that which is translated. [DEFINITION.]
trans-lu-cent (*-lū'sent*), *adj.* semitransparent.
trans-mi-gra-tion (*-mi-grā'shun*), *n.* the passing of the soul after death from one body into that of another.
trans-mis-si-ble (*'i-bl*), *adj.* that may be passed from one to another, or through a body or substance.
trans-mis-sion (*-mish'un*), *n.* the act of transmitting; the things transmitted.
trans-mit (*-mit'*), *v. t.* to cause or suffer to pass over or through; send from one place or person to another.
trans-mu-ta-tion (*-mū-tā'shun*), *n.* change from one form, nature, substance, or species into another.
trans-mute (*-mūt*), *v. t.* to change from one form, nature, substance, or species into another.
tran-som (*tran'sum*), *n.* a crossbeam over a door; horizontal mullion or crossbar in a window.
trans-par-en-cy (*trans-pâr'en-si*), *n.* the state or quality of being transparent; a picture painted on a semitransparent material.
trans-par-ent (*'ent*), *adj.* having the property of transmitting rays of light; clear. [PELLUCID.]
tran-spire (*tran'spīr*), *v. i.* become known; come to pass; occur: *v. t.* to perspire; exhale.
trans-plant (*trans-plant'*), *v. t.* to remove and plant in another place; remove and establish.
trans-port (*-pōrt'*), *v. t.* to carry across or from one place to another; carry away by violence of motion: *n.* (*trans'pōrt*) conveyance for baggage or stores; a vessel employed for carrying troops, stores, etc.; rapture.
trans-pose (*-pōz'*), *v. t.* to change the place or order of, by putting each in the place of the other.
trans-po-si-tion (*-pō-zish'un*), *n.* the act of transposing; state of being transposed. [Also *transposal.*]
tran-sub-stan-ti-a-tion (*tran-sub-stan-shi-ā'shun*), *n.* the doctrine that after consecration the elements in the Eucharist are converted into the veritable body and blood of Christ.
Transvaal (*trans-văl'*). That territory in South Africa beyond the river Vaal.
trans-verse (*trans-vẽrs'*), *adj.* lying, or being, across or crosswise; broader than long.
trap (*trap*), *n.* an instrument shutting suddenly with a spring, for snaring game, vermin, and other animals; snare; ambush; stratagem; a carriage on springs; contrivance for preventing the escape of foul air from a drain: *pl.* baggage; portable articles: *v. t.* to catch in, or as in, a trap: *v. i.* to set traps for game.
tra-peze (*trȧ-pēz'*), *n.* a swinging horizontal bar.
tra-pe-zi-um (*-pē'zi-um*), *n.* a plane figure bounded by 4 straight lines, of which no two are parallel.
trap-e-zoid (*trap'e-zoid*), *n.* a plane figure with 4 sides, having 2 sides parallel to each other.
trap-per (*'ẽr*), *n.* one who traps animals.
trap-pings (*'ingz*), *n. pl.* ornamented articles.
trash (*trash*), *n.* refuse; worthless or useless matter; rubbish.
trash-y (*'i*), *adj.* worthless; useless.
trav-ail (*trav'āl* or *'il*), *n.* labor with pain; parturition: *v. i.* to suffer the pains of childbirth.
trav-el (*trav'el*), *v. i.* to journey; proceed; move: *v. t.* to journey over: *n.* the act of journeying. [JOURNEY.]
trav-el-er (*'el-ẽr*), *n.* one who travels.
trav-erse (*'ẽrs*), *adj.* lying or being across: *adv.* athwart; crosswise: *v. t.* to lay or place in a cross direction; travel or pass over: *v. i.* to turn as on a pivot; move round.
Traverse bay, Mich. Named by Marquette *Petit Traverse* and *Grand Traverse*, "little, small, and large breadth or crossings"; applied because of its being shorter to cross the bay than follow along the shores.
trav-es-ty (*'es-ti*), *n.* [*pl.* travesties (*-tiz*)], a burlesque or parody: *v. t.* to burlesque or parody.
trawl (*trawl*), *n.* a large net of peculiar construction: *v. i.* to fish with a trawl.
tray (*trā*), *n.* [*pl.* trays (*trāz*)], a broad, flat vessel for holding or carrying.
treach-er-ous (*trech'ẽr-us*), *adj.* betraying a trust; perfidious. [FAITHLESS.]
treach-er-y (*'ẽr-i*), *n.* treasonable or perfidious conduct; perfidy.
trea-cle (*trē'kl*), *n.* a sirup drained from sugar; molasses.
tread (*tred*), *v. i.* to step or walk: *v. t.* to walk on.
trea-dle (*tre'dl*), *n.* that part of a machine moved by the foot.
tread-mill (*'mil*), *n.* a large wheel driven by persons treading on the steps of the periphery.
trea-son (*trē'zn*), *n.* the offense of betraying the state.
treas-ure (*trezh'ūr*), *n.* accumulated wealth; abundance; plenty; something highly valued: *v. t.* to hoard; accumulate; value highly.
treas-ur-er (*-ẽr*), *n.* one who has the charge of a treasure.
treas-ur-y (*'ûr-i*), *n.* [*pl.* treasuries (*-iz*)], a place or building where the public revenues are deposited and the public debts discharged; collection of valuable information or facts.
treas-ur-y note (*nōt*), a demand note issued by the United States treasury.
treat (*trēt*), *v. t.* to handle or manage in a particular manner; behave toward; entertain with food or drink; discourse on: *v. i.* to discuss; negotiate; agree; give a gratuitous entertainment: *n.* an entertainment given; something which affords pleasure.
trea-tise (*trē'tis*), *n.* a written composition.
treat-ment (*trēt'ment*), *n.* act or manner of treating.
trea-ty (*trē'ti*), *n.* [*pl.* treaties (*'tiz*)], the act of treating for the adjustment of differences or for forming an agreement.
Trebizond (*treb-i-zond'*). A seaport on the Black Sea; named from the Greek *trapezus*, "table," so called from its form.
tre-ble (*treb'l*), *adj.* threefold; triple; pertaining to the highest vocal or instrumental part. [*Music.*] *n.* the highest vocal or instrumental part: *v. t.* to make threefold: *v. i.* to become threefold.
tree (*trē*), *n.* any woody plant having a single trunk and branches; anything resembling a tree: *v. t.* to drive to a tree; place in difficulty: *v. i.* to take refuge in a tree.
trel-lis (*trel'is*), *n.* a structure or frame of latticework.
trel-lis-work (*-wẽrk*), *n.* small bars nailed together crosswise.
trem-ble (*trem'bl*), *v. i.* to shake involuntarily, as with fear, cold, weakness, etc.: *n.* shiver.
trem-bling (*'bling*), *v. i.* agitated, shaking with fear.

Syn. TREMBLING, tremor, trepidation. *Trembling* expresses any degree of involuntary shaking of the frame, from the affection either of the body or the mind; cold, nervous affections, fear, and the like, are the ordinary causes of *trembling; tremor* is a slight degree of *trembling*, which arises mostly from a mental affectation; when the spirits are agitated, the mind is thrown into a *tremor* by any trifling incident; *trepidation* is more violent than either of the two.

tre-men-dous (*trē-men'dus*), *adj.* exciting fear or terror; dreadful. [FEARFUL.]
tre-mo-lo (*trā'mō-lō*), *n.* a tremulous or fluttering effect in music.
tre-mor (*trē'mor*), *n.* an involuntary trembling. [TREMBLING.]
trem-u-lous (*trem'ū-lus*), *adj.* trembling; quivering; shaking.
trench (*trench*), *n.* a long, narrow cut or ditch excavated in the earth: *v. t.* to form a ditch in.
trench-ant (*'ant*), *adj.* sharp; keen; severe.
trench-er (*'ẽr*), *n.* one who trenches; a large wooden plate.
trend (*trend*), *n.* inclination in a particular direction: *v. i.* to have a particular direction.
Trenton, N. J. First called *Trent Town*, so named from Col. William Trent of Philadelphia, a speaker of the house of assembly in 1720.
tre-pan (*trē-pan'*), *n.* a cylindrical saw of peculiar construction used in the operation of trepanning: *v. i.* to perform the operation of trepanning: *v. t.* to perforate with a trepan.
trep-i-da-tion (*trep-i-dā'shun*), *n.* an involuntary trembling. [TREMBLING.]
tres-pass (*tres'pas*), *v. i.* to commit any offense; sin; enter unlawfully upon the land of another: *n.* the act of trespassing; transgression; sin.
tress (*tres*), *n.* a lock of hair.
tres-tle (*tres'l*), *n.* a movable form for supporting anything.
tres-tle board (*bōrd*), a draftsman's designing board.
tres-tle-work (*-wẽrk*), *n.* a viaduct, pier, or scaffold supported on trestles.
tri, a *prefix* meaning *three, threefold*, as *tri*angled, *adj.* having 3 angles.
tri-ad (*trī'ad*), *n.* a union of 3.
tri-al (*trī'al*), *n.* an attempt or endeavor; test; proof; verification; judicial examination.
tri-an-gle (*'ang-gl*), *n.* a plane figure bounded by 3 lines, and having 3 angles; a musical instrument of steel in the form of a triangle.
tri-an-gu-lar (*-ang'gū-lẽr*), *adj.* having 3 angles; shaped like a triangle.
tri-an-gu-late (*'gū-lāt*), *v. t.* to divide into triangles; survey by means of triangles.
tri-an-gu-la-tion (*-lā'shun*), *n.* the act of triangulating.
Trianon, Grand (*grän trē-ȧ-nôn'*). A small palace at Versailles of only one story but considerable length, built by Louis XIV. for Mme. de Maintenon, and since used by successive French sovereigns as a private residence.
Trianon, Petit (*ptē trē-ȧ-nôn'*). A graceful, neo-

classical villa in the park at Versailles, built by Louis XV., and closely associated with the memory of Marie Antoinette, whose favorite abode it was.

tri-bal (*trī'bal*), *adj.* pertaining to, or characteristic of, a tribe.

tri-bal-ism (*-izm*), *n.* the state of existing in tribes; tribal characteristics or feeling.

ribe (*trīb*), *n.* a family, race, or class, constituting a distinct portion of a people.

tri-brach (*trī'brak*), *n.* a poetic foot of 3 short syllables.

trib-u-la-tion (*trib-ū-lā'shun*), *n.* severe affliction; deep sorrow. [GRIEF.]

tri-bu-nal (*trī-bū'nal*), *n.* the seat of a judge; court of justice.

trib-une (*trib'ūn*), *n.* an ancient Roman official, elected by the people to safeguard their liberties.

trib-u-ta-ry (*trib'ū-tā-ri*), *adj.* paying tribute; yielding supplies; contributing to make up a greater object of the same kind: *n.* a state or government which pays tribute to a superior; river flowing into a larger one.

trib-ute (*'ūt*), *n.* an annual or stipulated sum of money, etc., paid; personal contribution made.

trice (*trīs*), *n.* an instant.

tri-ceps (*trī'seps*), *n.* the great three-headed extensor muscle of the arm.

★**tri-chi-na** (*tri-kī'nȧ*), *n.* [*pl.* trichinæ (*'nē*)], a parasitic worm which infests the muscles.

trick (*trik*), *n.* a stratagem or artifice; deception; imposition: *pl.* frolic: *v. t.* to cheat. [PRETENSE, CHEAT.]

trick-er-y (*'ẽr-i*), *n.* deception; cheating; fraud; imposture.

tric-kle (*'l*), *v. i.* to flow gently down or in a small stream: *n.* a small gentle stream.

trick-ster (*'stẽr*), *n.* a cheat; deceiver.

trick-y (*'i*), *adj.* given to tricks; knavish; shifty; artful; cunning.

tri-col-or (*trī'kul-ẽr*), *n.* a national flag of 3 colors arranged in equal stripes.

★**tri-cy-cle** (*trī'si-kl*, not (*trī'sī-kl*), *n.* a three-wheeled modernized form of velocipede: *v. i.* to ride on a tricycle.

tri-dent (*'dent*), *n.* a scepter or spear with 3 prongs.

tri-en-ni-al (*trī-en'i-al*), *adj.* occurring in, or continuing for, three years.

tri-er (*'ẽr*), *n.* one who tries or makes experiments; a judge; test.

tri-fle (*'fl*), *n.* anything of little value or importance: *v. i.* to act or talk with levity: *v. t.* to waste or fritter away.

trig (*trig*), *adj.* trim; neat.

trig-ger (*'ẽr*), *n.* a catch which, when pulled, releases the hammer of a gun.

trig-o-nom-e-try (*-ō-nom'ē-tri*), *n.* the science of measuring the sides and angles of triangles.

tri-he-dron (*trī-hē'dron*), *n.* a figure having 3 sides.

tri-lat-er-al (*-lat'ẽr-al*), *adj.* three-sided.

trill (*tril*), *n.* a shake or quaver of the voice: *v. t.* to sing with a quaver: *v. i.* to quaver.

tril-lion (*tril'yun*), *n.* in the French system of numeration, followed in the United States, a unit with 12 ciphers annexed; in the English system, a unit with 18 ciphers annexed.

tril-o-gy (*tril'ō-ji*), *n.* a series of three dramas, each complete in itself.

trim (*trim*), *adj.* neat; compact; in good order or service: *v. t.* to decorate or adorn; make trim.

trim-mer (*'ẽr*), *n.* one who trims.

Trinidad (*trin-i-dad'*, Sp. *trē-nē-thāth'*). Island of British West Indies. So named by Columbus from its three peaks, emblematic of the Holy Trinity.

Trin-i-ta-ri-an-ism (*-tā'ri-an-izm*), *n.* the doctrine that there are three persons in the Trinity.

Trin-i-ty (*'i-ti*), *n.* the union of the Father, the Son, and the Holy Ghost in one Godhead.

trin-ket (*tring'ket*), *n.* small ornament or jewel.

tri-o (*trē'ō*), *n.* a set of 3; 3 united; composition for 3 voices or instruments.

trip (*trip*), *v. i.* to run or step lightly or nimbly; stumble; err: *n.* stumble; mistake; journey. [EXCURSION.]

trip-ar-tite (*trip'ȧr-tīt* or *trī-pȧr'tīt*), *adj.* divided into 3 parts.

tripe (*trīp*), *n.* the large stomach of a ruminating animal prepared for food.

triph-thong (*trif'thong* or *trip'*), *n.* a combination of 3 vowels in one sound.

tri-plane (*trī'plān*), *n.* a form of aëroplane consisting of three planes arranged one above the other; distinguished from *monoplane* and *biplane*.

tri-ple (*trip'l*), *adj.* threefold; consisting of 3 united; 3 times repeated: *v. t.* and *v. i.* to increase threefold.

trip-let (*'let*), *n.* 3 united: *pl.* 3 children at one birth.

tri-pod (*trī'pod*), *n.* a three-legged stool or table.

tri-sect (*trī-sekt'*), *v. t.* to divide into three equal parts.

Tristram (*tris'tram*). From the Latin, meaning "sorrowful." Lat., *Tristramus;* Port., *Tristao.*

tri-syl-la-ble (*tris-sil'ȧ-bl*), *n.* a word of three syllables.

trite (*trīt*), *adj.* worn out; stale.

tri-the-ism (*trī'thē-izm*), *n.* the doctrine that the three persons in the Trinity are three distinct Gods.

trit-u-rate (*trit'ū-rāt*), *v. t.* to rub, grind, or bruise, to powder.

tri-umph (*trī'umf*), *n.* a grand procession in honor of a general who has gained a decisive victory; state of joy at success; victory; conquest: *v. i.* to rejoice over success; obtain a victory.

tri-um-phal (*trī-um'fal*), *adj.* pertaining to, indicating, or in honor of, a triumph.

tri-um-phant (*'fant*), *adj.* rejoicing for victory; victorious.

tri-une (*'ūn*), *adj.* 3 in one.

triv-i-al (*triv'i-al*), *adj.* trifling; commonplace.

tro-che (*trō'kē*), *n.* a medicinal lozenge.

tro-chee (*'kē*), *n.* a metrical foot of 2 syllables, the first long, the second short.

trog-lo-dyte (*trog'lō-dīt*), *n.* a cave dweller: said of certain tribes.

troll (*trōl*), *n.* a giant or giantess of supernatural powers; reel on a fishing rod: *v. t.* to sing the parts of in succession: *v. i.* to fish.

trol-ley (*trol'i*), *n.* a kind of truck; a grooved metal wheel.

trom-bone (*trom'bōn*), *n.* a large brass instrument of the trumpet kind.

troop (*troop*), *n.* a multitude; small body of cavalry, usually 60; company of performers: *v. i.* to march in a body; collect in crowds.

troop-er (*'ẽr*), *n.* a cavalryman; troop ship.

trope (*trōp*), *n.* a word or expression used in a sense different from its usual signification; figurative word.

tro-phy (*trō'fi*), *n.* [*pl.* trophies (*'fiz*)], a memorial of a victory; memento.

trop-ic (*trop'ik*), *n.* one of the two small circles of the celestial sphere, situated at each side of the equator, at a distance of 23° 28′ and parallel to it, within the limits of which the sun moves in its yearly course; region between the tropics.

trop-ic-al (*'i-kal*), *adj.* pertaining to, or situated within, the tropics; also used figuratively.

trot (*trot*), *v. i.* to move faster than a walk: *v. t.* to cause to trot: *n.* the pace of a horse a little faster than a walk.

troth (*trōth*), *n.* betrothal; fidelity.

trou-ba-dour (*trōō'ba-dōōr*), *n.* one of a class of lyric poets who flourished in the 11th to 13th centuries.

trou-ble (*trub'l*), *n.* mental agitation, distress, or worry: *v. t.* to distress, or worry. [ANXIETY.]

Syn. TROUBLE, disturb, molest. *Trouble* is the most general in its application; we may be *troubled* by the want of a thing, or *troubled* by that which is unsuitable; we are *disturbed* and *molested* only by that which actively *troubles.* Pecuniary wants are the greatest *troubles* in life. *Trouble* may be permanent; *disturbance* and *molestation* are temporary, and both refer to the peace which is destroyed; a *disturbance* ruffles or throws out of a tranquil state; a *molestation* affects either the body or the mind. [GRIEF.]

troub-le-some (*-sum*), *adj.* causing trouble.

trough (*trôf*), *n.* anything hollowed out.

trounce (*trouns*), *v. t.* to beat soundly.

troupe (*trōōp*), *n.* a company of performers.

trou-sers (*trou'zẽrz*), *n. pl.* a garment worn by men and boys, covering each leg separately.

★**trous-seau** (*trōō-sō'*), *n.* a bride's outfit.

trout (*trout*), *n.* a fresh-water fish allied to the salmon.

trow (*trō*), *v. i.* to believe; trust.

trow-el (*trou'el*), *n.* a flat, triangular tool.

Troy, N. Y. Prior to present name known as *Vanderheyden's;* the name *Troy* adopted at a town meeting, January 5, 1789, on the suggestion of Christopher Hutton.

troy weight (*troi' wāt*), a weight of 12 ounces to the pound.

tru-ant (*trōō'ant*), *n.* one who idly stays away from duty or business: *adj.* pertaining to, or characteristic of, a truant.

truce (*troos*), *n.* a temporary peace or cessation.

truck (*truk*), *n.* a wheeled vehicle for carrying goods; vegetables: *v. t.* to send by truck; peddle; hawk: *v. i.* to barter; negotiate.

truc-kle (*'l*), *n.* a small wheel or caster: *v. t.* to trundle; move on rollers: *v. i.* to yield obsequiously.

tru-cu-lent (*trū'kū-lent*), *adj.* ferocious; of fierce aspect.

trudge (*truj*), *v. i.* to travel on foot.

true (*trōō*), *adj.* conformable to fact; faithful or loyal; genuine.

true-blue (*'blū*), *adj.* of inflexible honesty and fidelity.

truf-fle (*truf'l*), *n.* a fleshy underground fungus.

tru-ism (*trōō'izm*), *n.* a self-evident truth.

tru-ly (*'li*), *adv.* in agreement with truth or fact; precisely; sincerely; honestly.

trump (*trump*), *n.* a trumpet; a winning card; good fellow: *v. t.* to take with a trump card: *v. i.* to play a trump card.

trump-er-y (*'ẽr-i*), *n.* worthless finery; rubbish: *adj.* worthless.

trump-et (*'et*), *n.* a metal wind instrument formed of a single curved tube: *v. t.* to publish by, or as by, the sound of trumpet.

trump-et-er (*'ẽr*), *n.* one who sounds a trumpet.

trun-cheon (*trun'shun*), *n.* a short staff or cudgel: *v. t.* to beat with a truncheon.

trun-dle (*'dl*), *v. t.* to roll along; roll, as on small wheels: *n.* a little wheel; truck.

trun-dle-bed (*'bed*), *n.* a low bed that runs on casters.

trunk (*trungk*), *n.* main body of anything; elephant's proboscis; large traveling box or chest. [BODY.]

trunk hose (*'hōz*), large breeches reaching to the knees.

project from the opposite sides of a cannon.

truss (*trus*), *n.* a surgical apparatus; timbers fastened together for the support of a roof: *v. t.* to bind or pack close; skewer; make fast.

trust (*trust*), *n.* confidence; faith; credit; combination of capitalists; an estate held for the benefit of another: *v. t.* to place confidence in; rely upon; credit; sell upon credit to: *v. i.* to have trust in: *adj.* held in trust. [CONFIDE, COMMIT.]

trus-tee (*trus-tē'*), *n.* a person to whom management of property is committed for the benefit of others.

trust-y (*'i*), *adj.* justly deserving confidence; faithful. [FAITHFUL.]

truth (*trōōth*), *n.* agreement with reality; eternal principle of right, or law of order.

Syn. TRUTH, veracity. *Truth* belongs to the thing, *veracity* to the person; the *truth* of the story is admitted upon the *veracity* of the narrator.

truth-ful (*-'ful*)*a.* true, veracious. [CANDID.]

try (*trī*), *v. t.* to prove by experiment; test; examine; purify or refine: *n.* an attempt or experiment.

tryst (*trist*), *n.* a rendezvous; appointment to meet.

Tsarskoe Selo (*tsär'skō-yē sye-lō'*). A town in the government of St. Petersburg, Russia, about fifteen miles south of St. Petersburg. It contains a famous imperial palace, a favorite summer residence of the court.

tub (*tub*), *n.* a small cask; sponge bath: *v. t.* to place in a tub: *v. i.* to take a sponge bath.

tube (*tūb*), *n.* pipe: *v. t.* to furnish with a tube.

tu-ber (*tū'bẽr*), *n.* a thickened, roundish, underground stem.

tu-ber-cu-lar (*'kū-lẽr*), *adj.* full of small knobs or tubercles.

tu-ber-cu-lo-sis (*-lō'sis*), *n.* a disease accompanied by the formation of small tubercles.

tube-rose (*tūb'rōz* or *tū'bẽr-ōs*), *n.* an odoriferous plant with a tuberous root.

tub-ing (*'ing*), *n.* material for tubes.

tuck (*tuk*), *n.* a fold in a dress: *v. t.* to thrust or press in; gather, or turn up.

tuck-er (*'ẽr*), *n.* ornamental frilling or article of dress for covering the bosom of a woman.

Tucson (*tū-son'* or *tuk'sun*), **Ariz.** So called from a word in the Pima dialect, meaning "black spring."

Tuesday. The third day of the week; literally the day devoted to Tiw, the god of war.

tu-fa (*tōō'fȧ*), *n.* friable volcanic rock or scoriæ.

tuft (*tuft*), *n.* a collection of small things forming a knot or bunch: *v. t.* to separate into, or adorn with, tufts.

tug (*tug*), *n.* a pull with great effort; steam towing vessel: *v. t.* to pull or draw with continued effort; tow: *v. i.* to strain in labor. [DRAW.]

tu-i-tion (*tū-ish'un*), *n.* act or business of teaching; instruction; fee for instruction.

Tulare (*tōō-lȧr'*, Spanish *Loo-lä'rā*) **lake, Cal.** Called by the Spaniards *tagana Grande de los Tulares*, from a dense growth of "tule" found in its waters and on the shores.

tu-lip (*tū'lip*), *n.* a liliaceous plant.

tum-ble (*tum'bl*), *v. i.* to fall suddenly and violently; roll about: *v. t.* to throw down; turn over: *n.* a fall; a rolling over.

tum-brel (*'brel*), *n.* a cart that may be tilted up. [Also *tumbril.*]

tu-mid (*tū'mid*), *adj.* swollen; distended; bombastic; pompous.

tu-mor (*'mẽr*), *n.* a morbid swelling of any part of the body.

tu-mult (*tū'mult*), *n.* the commotion of a number of people. [BUSTLE.]

tu-mul-tu-ous (*-mul'tū-us*), *adj.* characterized by, or full of, tumult; disorderly; agitated.

tu-mu-lus (*'mū-lus*), *n.* [*pl.* tumuli (*-lī*)], an artificial hillock.

tun (*tun*), *n.* a large cask; measure of wine equal to 252 gallons.

tun-a-ble (*tūn'ȧ-bl*), *adj.* capable of being tuned; harmonious.

tune (*tūn*), *n.* melody; short musical composition; just intonation; fit disposition or right mood: *v. t.* to cause to produce the proper sounds; harmonize.

tune-ful (*'fool*), *adj.* musical; harmonious.

tu-nic (*tū'nik*), *n.* loose kind of frock worn by women and boys; military coat.

Tunis (*tū'nis*). A city and district of northern Africa. Anciently known as *Tunentum*, "the land of the Tunes."

tun-nel (*tun'el*), *n.* a vaulted underground passage cut through a hill or under a river: *v. t.* to form a tunnel through or under.

Tu-ra-ni-an (*tū-rā'ni-an*), *adj.* noting generally those languages and peoples not included in the Aryan and Semitic families.

Turanian. A legendary ancestor of the Turks. The word is loosely and indefinitely used to designate a family of languages and also an ethnological group.

tur-ban (*tûr'ban*), *n.* the headdress worn by Orientals.

tur-bine (*'bin*), *n.* a wheel turning on a vertical axis and driven by steam or water.

tur-bu-lence (*'bū-lens*), *n.* disorder; agitation.

tur-bu-lent (*'bū-lent*), *adj.* tumultuous; agitated; riotous.

tu-reen (*tū-rēn'*), *n.* a deep table vessel for holding soup.

turf (*tûrf*), *n.* the grassy surface of untilled land: *v. t.* to cover with turf.

turf-y (*'i*), *adj.* abounding in, or like, turf.

tur-ges-cent (*tûr-jes'ent*), *adj.* growing inflated.
tur-gid (*'jid*), *adj.* distended beyond the natural size bombastic.
tur-gid-i-ty (*-jid'i-ti*), *n.* the state of being turgid. [Also *turgidness.*]
Turin (*tū'rin*), It. **Torino.** A city of northern Italy. Anciently *Augusta-Taurinorum*, named from the *Taurini, i. e.*, "dwellers among hills."
Turk (*tûrk*), *n.* a native of Turkey; Mohammedan.
Turkestan (*tōōr-kes-tān'*). The country of the Turks. [See *Turkey.*]
tur-key (*tûr'ki*), *n.* a large gallinaceous bird.
Turkey. The English name of the Ottoman empire, appears to have been derived from *Turcia*, the Latinized form of the Arabic name *Al-Turkiyah*, the "land of the Turks." *Turkestan* in central Asia is a Persian form of the same name, denoting the land occupied by the Usbeks, the Kirghis, the Turcomans, and other Turkic races. The name *Turk* has been supposed to be a corruption of the name *Tu-kiu* of the Chinese historians, or from the Arabic *turkur*, "robbers." It is probably a Tartar word meaning "brave."
tur-moil (*'moil*), *n.* harassing labor; worrying confusion; noise.
turn (*tûrn*), *v. t.* to cause or make to go round; change the direction of; convert: *v. i.* be changed; move as on a pivot: *n.* the act of turning; bend or curve; change of direction; opportunity; short spell; form or cast; fright or shock.
Syn. TURN, bend, twist, distort, wring, wrest, wrench. We *turn* a thing by moving it from one point to another; thus we *turn* the earth over; *to bend* is simply to change its direction; thus a stick is *bent*, or a body may *bend* its direction to a certain point; *to twist* is *to bend* many times, to make many *turns; to distort* is *to turn* or *bend* out of the right course; thus the face is *distorted* in convulsions. *To wring* is *to twist* with violence; thus linen which has been wet is *wrung; to wrest* or *wrench* is to separate from a body by means of *twisting;* thus a stick may be *wrested* out of the hand, or a hinge *wrenched* off the door.
★**tur-nip** (*tûr'nip*, not *tûrn'up*), *n.* a well-known plant with a solid bulbous root.
turn-key (*tûrn'kē*), *n.* a prison warder.
turn-pike (*'pīk*), *n.* a gate or bar to stop vehicles until toll is paid.
tur-pen-tine (*tûr'pen-tīn*), *n.* the resinous juice of pine trees.
tur-pi-tude (*'pi-tūd*), *n.* moral depravity.
tur-quoise (*tûr'koiz*), *n.* a precious stone.
tur-ret (*tur'et*), *n.* a small tower.
tur-tle (*tûr'tl*), *n.* a large edible sea tortoise; the turtledove.
tur-tle-dove (*-duv*), *n.* a species of dove.
Tuscaloosa (*tus-kà-lōō'sà*). County and city in Alabama named for an Indian chief, the name meaning "black warrior."
Tuscany (*tus'kà-ni*), It. **Tuscana.** A district of central Italy. It bears the name of its ancient inhabitants, the *Tusci* or *Etrusci*. The Etruscans were called *Tyrrheni* by the Greeks, whence the name Tyrrhenian Sea, given to that part of the Mediterranean which lies between the mainland and the islands of Corsica and Sardinia.
tush (*tush*), *interj.* an expression of contempt, rebuke, or silence.
tusk (*tusk*), *n.* the long, pointed tooth on each side of the upper jaw of certain mammals.
Tuskegee (*tus-kē'gē*). Town in Macon county, Alabama. Probably derived from the Indian word *taskialgi*, "warriors."
tus-sle (*'l*), *n.* a scuffle: *v. i.* to scuffle or struggle.
tut (*tut*), *interj.* hush! be quiet!
tu-te-lage (*tū'tē-lāj*), *n.* guardianship.
tu-tor (*'tēr*), *n.* a teacher; guardian: *v. t.* to instruct; discipline. [TEACH.]
Tuxedo (*tuks-ē'dō*). A few places in the United States bear this Indian name, which undoubtedly is derived from *P'tauk-seet-tough*, meaning "the place of bears."
twad-dle (*twod'l*), *n.* silly talk: *v. t.* to talk in a silly manner.
twain (*twān*), *n.* and *adj.* two.
twang (*twang*), *n.* a sharp, quick, vibrating sound; affected nasal tone of voice: *v. t.* and *v. i.* to sound with a vibrating noise.
tweak (*twēk*), *v. t.* to pinch or pull with a sudden jerk and twist: *n.* a sudden sharp pull or pinch.
twee-zers (*twē'zērz*), *n. pl.* small pinchers for pulling out hairs.
twelfth (*twelfth*), *adj.* next in order after the eleventh: *n.* one of 12 equal parts.
twen-ti-eth (*twen'ti-eth*), *adj.* the ordinal of 20: *n.* one of 20 equal parts.
twice (*twīs*), *adv.* two times; doubly.
twid-dle (*twid'l*), *v. t.* to twirl in a light manner; touch lightly: *v. t.* to move with a quivering motion: *n.* a twist of the fingers.
twig (*twig*), *n.* a small shoot or branch: *v. t.* to notice; understand: *v. i.* to comprehend.
twi-light (*twī'līt*), *n.* the faint light before sunrise and after sunset: *adj.* obscure; shaded.
twill (*twil*), *n.* an appearance of diagonal lines in textile fabrics; fabric woven with a twill.
twin (*twin*), *adj.* double; closely resembling: *n.* one of two born at a birth; any person or thing very like another.
twine (*twīn*), *v. t.* to twist; wind round; unite closely: *v. i.* to be closely united by twisting: *n.* a twist; strong thread.
twinge (*twinj*), *v. t.* to affect with a sudden sharp pain; twitch: *v. i.* to suffer a twinge: *n.* a sudden sharp pain.
twin-kle (*twing'kl*), *n.* a quick motion of the eye; short, tremulous light; an instant; *v. i.* to blink; shine with a tremulous, sparkling light; quiver.
twirl (*twērl*), *v. t.* to move or turn round rapidly; whirl: *v. i.* to rotate rapidly: *n.* a quick, circular motion; convolution.
twist (*twist*), *v. t.* to unite or form by winding together; writhe or contort: *v. i.* to be contorted; move in a curve: *n.* the act of twisting; manner of twisting; cord or thread. [TURN.]
twit (*twit*), *v. t.* to annoy by reminding of a fault, etc.
twitch (*twich*), *v. t.* to pull with a sudden jerk: *v. i.* to contract or move quickly or spasmodically: *n.* a sudden jerk or pull.
twit-ter (*twit'ēr*), *v. i.* to make a succession of small, tremulous sounds: *n.* a small, tremulous noise.
two (*tōō*), *adj.* one and one: *n.* the number of one and one.
two-pen-ny (*tup'en-i*), *adj.* of the value of twopence; trumpery.
two-ply (*tōō'plī*), *adj.* of two thicknesses.
tym-pa-num (*tim'pà-num*). *n.* the membranous wall which separates the internal from the external ear; the drum of the ear.
type (*tīp*), *v. t.* to typify; reproduce by a typewriter: *n.* an emblem, sign, or symbol; general form or structure; original design; a letter in metal or wood for printing from. Different sizes of printing types are indicated by distinguishing names and by means of a unit of type measurement, which in the United States is one-twelfth of a pica.
type met-al (*'met-al*), an alloy of lead, antimony, and tin.
type-writer (*'rī-tēr*), *n.* a mechanical contrivance for producing letters by means of an inked ribbon and types; an operator of a typewriting machine.
ty-phoid (*tī'foid*), *adj.* pertaining to, or like, typhus: *n.* an enteric fever.
ty-phoon (*-foon'*), *n.* a violent tornado at sea.
ty-phus (*'fus*), *n.* a contagious fever.
typ-ic-al (*tip'i-kal*), *adj.* figurative.
typ-i-fy (*'i-fī*), *v. t.* to represent by an image or emblem.
typ-ist (*tīp'ist*), *n.* one who operates a typewriting machine.
ty-pog-ra-pher (*tī-pog'rà-fēr*), *n.* a printer.
ty-pog-ra-phy (*-pog'rà-fi*), *n.* the art of printing.
ty-ran-nic-al (*-ran'i-kal*), *adj.* pertaining to, or characteristic of, a tyrant; despotic; cruel. [ABSOLUTE.]
tyr-an-nize (*tir'an-īz*), *v. i.* to act like a tyrant.
tyr-an-ny (*'àn-i*), *n.* the government or conduct of a tyrant; severity; absolute monarchy.
ty-rant (*tī'rànt*), *n.* an oppressor; despot.
ty-ro (*tī'rō*), *n.* a beginner; novice.

U

u-biq-ui-ty (*ū-bik'wi-ti*), *n.* omnipresence.
ud-der (*ud'dēr*), *n.* the glandular organ of a mammal which secretes the milk.
ug-ly (*ug'li*), *adj.* that which is offensive to the eye; deformed.
u-kase (*ū-kās'*), *n.* a Russian imperial decree.
ul-cer (*ul'sēr*), *n.* a sore.
ul-cer-ate (*-āt*), *v. t.* to affect with an ulcer: *v. i.* to be formed into an ulcer.
ul-na (*'nà*), *n.* the larger of the two bones that form the forearm.
ul-ster (*ul'stēr*), *n.* a long, loose overcoat of coarse cloth.
ul-te-ri-or (*-tē'ri-ēr*), *adj.* lying beyond or on the further side; more distant.
ul-ti-mate (*'ti-māt*), *adj.* being the last; utmost; furthest; extreme; final.
★**ul-ti-ma-tum** (*ul-ti-mā'tum*, not *ul-ti-mä'tum*), *n.* [*pl.* ultimatums (*'tumz*), ultimata (*'tà*)], final conditions offered as the basis of an agreement.
ul-ti-mo (*'ti-mō*), *adv.* in the month preceding the present.
ul-tra (*'trà*), *adj.* extreme.
ul-tra-ma-rine (*-trà-mà-rēn'*), *n.* a permanent, blue pigment.
ul-u-la-tion (*ul-ū-lā'shun*), *n.* a howling like a dog.
Ulysses (*ū-lis'ēz*). A masculine baptismal name, the Latin form of the Greek *Odysseus*, "to cause pain." Fr., *Ulysse;* Gr., *Odysseus;* It., *Ulisse;* Lat., *Ulysses or Ulyxes.*
Umatilla (*ū-mà-til'là*). River and county in Oregon, said by some to be named for a tribe of Indians. Others state that it is derived from *U-a-tal-la*, meaning "the sand blew bare in heaps," this part of the country having ridges of sand alternating with bare ground.
Umbagog (*um-bā'gog*). Lake lying partly in New Hampshire and partly in Maine. An Indian word, said to mean "doubled up." Other authorities favor "clear lake, shallow," or "great waters near another."
um-ber (*'bēr*), *n.* a brown pigment: *adj.* of an olive-brown color.
um-bil-ic-al (*-bil'i-kal*), *adj.* pertaining to, or formed like, the navel.
um-brage (*'brāj*), *n.* screen of trees or foliage; offense.
um-bra-geous (*-brā'jus*), *adj.* shady.
★**um-brel-la** (*um-brel'à*, not *um-bēr-el'à*), *n.* a covered sliding frame carried in the hand as a screen against the rain.
um-pire (*um'pīr*), *n.* a third party to whom a dispute is referred for settlement: *v. i.* to act as umpire.
Una (*ū'nà*). A Gaelic feminine name, corrupted from Winifred.
u-nan-i-mous (*-nan'i-mus*), *adj.* agreeing in opinion.
un-bend (*-bend'*), *v. i.* to free from flexure; relax: *v. i.* to become relaxed; act with freedom or condescension.
un-be-lief (*-bē-lēf'*), *n.* lack of belief; incredulity.
Syn. UNBELIEF, infidelity, incredulity. The Jews are *unbelievers* in the mission of our Savior; the Turks are *infidels*, inasmuch as they do not believe in the bible; deists and atheists are likewise *infidels*, inasmuch as they set themselves up against divine revelation; well-informed people are always *incredulous* of stories respecting ghosts and apparitions. [See *disbelief.*]
un-can-ny (*-kan'i*), *adj.* weird; mysterious; dangerous.
un-cer-tain (*-sēr'tin*), *adj.* not certain. [EQUIVOCAL.]
un-cle (*ung'kl*), *n.* the brother of one's parent; husband of one's aunt.
un-con-cern (*un-kon-sērn'*) *n.* want of concern. [INDIFFERENT.]
un-con-di-tion-al (*-dish'un-al*), *adj.* not conditional.
un-con-scion-a-ble (*un-kon'shun-à-bl*), *adj.* out of all reason or expectation.
un-cov-ered (*kuv'ērd*), *adj.* not covered.
unc-tion (*ungk'shun*), *n.* the act of anointing; ointment; anything soothing; suavity.
★**unc-tu-ous** (*ungk'tū-us*), *adj.* oily; soothing.
un-daunt-ed (*dänt'ed*), *adj.* not daunted. [BOLD.]
un-der (*'dēr*), *prep.* beneath; subordinate to; in subjection to; less than; during the time of.
un-der-go (*-gō'*), *v. t.* to pass through or experience; suffer.
un-der-grad-u-ate (*-grad'ū-āt*), *n.* a member of a university who has not taken his first degree.
un-der-hand (*-hand'*), *adj.* done by meanness or fraud; clandestine.
un-der-stand (*-dēr-stand'*), *v. t.* to perceive by the mind: *v. i.* to have understanding; be informed. [CONCEIVE.]
un-der-stand-ing (*'ing*), *n.* the rational faculties; intellect; skill.
Syn. UNDERSTANDING, intellect, intelligence. *Understanding* is employed to describe a familiar and easy power or operation of the mind in forming distinct ideas of things. *Intellect* is employed to mark the same operation in regard to higher and more abstruse objects. The *understanding* applies to the first exercise of the rational powers; *intellect*, being a matured state of the *understanding*, is most properly applied to the efforts of those who have their powers in full vigor; we speak of *understanding* as the characteristic distinction between man and brute; *intellect* is applied merely to human power, and *intelligence* to the spiritual power of higher beings; when applied to human beings, it is taken in the most abstract sense for the *intellectual* power; hence we speak of *intelligence* as displayed in the countenance of a child whose looks evince that he has exerted his *intellect*, and thereby proved that it exists.
un-der-take (*-tāk'*), *v. t.* to take under one's management; assume; attempt; answer for: *v. i.* to take upon one's self.
un-der-tak-er (*'dēr-tāk-ēr*), *n.* one who undertakes; one who manages funerals.
un-der-write (*-rīt*), *v. t.* to subscribe one's name to: *v. i.* to follow the calling of an underwriter.
un-der-wri-ter (*-ēr*) *n.* one who sells insurance.
un-due (*un-dū'*), *adj.* improper.
un-du-late (*'dū-lāt*), *v. t.* and *v. i.* to wave, or move like waves.
un-du-la-tion (*-lā'shun*), *n.* a waving motion or vibration.
un-du-ly (*'li*), *adv.* excessively; improperly.
un-earned in-cre-ment (*-ērnd' in'krē-ment*), the increase of the value of land or property without labor or expenditure on the part of the proprietor.
un-e-qual (*-ē'kwal*), *adj.* not equal; not regular or uniform; ill-matched; disproportionate.
un-e-quiv-o-cal (*-kwiv'ō-kal*), *adj.* not equivocal.
un-e-ven (*-ē'vn*), *adj.* not even.
un-feel-ing-ness (*-fēl'ing-ness*), *n.* the state of being without feeling or sympathy.
un-guent (*ung'gwent*), *n.* an ointment.
un-hap-py (*-hap'i*), *adj.* not happy.
uni, a *prefix*, meaning *one*, or *producing one*, as unicellular: *adj.* formed of one cell.
u-ni-corn (*ū'ni-kôrn*), *n.* a fabled animal resembling a horse, but with a straight horn projecting from the forehead.
u-ni-form (*'ni-fôrm*), *adj.* having only one form; same in form, manner, or character; equable: *n.* an official or regulation dress. [EQUAL.]
u-ni-fy (*'ni-fī*), *v. t.* to form into one; make a unit of
un-ion (*ūn'yun*), *n.* the act of uniting or making one; concord; conjunction; harmony in color.
un-ion-ize (*-īze*), *v. t.* [*p. t.* and *p. p.* unionised (*-īzd*), *p. pr.* unionizing (*-īz-ing*)], to cause to join a trades union, as the members of a handicraft.

un-ion jack (*ūn'yun jak*), the national flag of Great Britain.
u-ni-ped (*ū'ni-ped*), *adj.* one-footed
u-nique (*-nēk'*), *adj.* without another of the same kind. [RARE.]
u-ni-son (*'ni-sun*), *n.* accordance of sound; concord; harmony. [ard.
u-nit (*'nit*), *n.* one; a single person or thing; stand-
U-ni-ta-ri-an (*-ni-tā'ri-an*), *n.* one who denies the doctrine of the Holy Trinity, regarding the Godhead as unipersonal: *adj.* pertaining to Unitarians.
u-nite (*-nīt'*), *v. t.* to incorporate into one; join by a legal or moral bond: *v. i.* to become one; combine. [CONNECT.]
u-ni-ty (*'ni-ti*), *n.* the state of being one; concord; uniformity.
u-ni-ver-sal (*-ni-vēr'sal*), *adj.* all-pervading; embracing or comprehending the whole; general. [GENERAL.]
U-ni-ver-sal-ism (*-izm*), *n.* the doctrine that all mankind will ultimately be saved.
u-ni-verse (*'ni-vērs*), *n.* the whole system of created things; world.
u-ni-ver-si-ty (*-vēr'si-ti*), *n. pl.* universities (*-tiz*)], an assemblage of colleges.
un-kempt (*un-kempt'*), *adj.* uncombed; rough.
un-kind-ness (*-kind'nes*), *n.* the quality or act of being unkind. [ACRIMONY.]
un-learned (*-lĕrnd'*), *adj.* not educated. [IGNORANT.]
un-less (*-les'*), *conj.* except; if not.
Syn. UNLESS, except. *Unless*, which is equivalent to if less, if not, or if one fail, is employed only for the particular case; but *except* has always a reference to some general rule, of which an *exception* is hereby signified; I shall not do it *unless* he asks me; no one can enter *except* those who are provided with tickets.
un-let-tered (*-let'ĕrd*), *adj.* untaught. [IGNORANT.]
un-like (*-lik'*), *adj.* dissimilar. [DIFFERENT.]
un-lim-it-ed (*-lim'it-ed*), *adj.* not limited. [BOUNDLESS.]
un-mer-ci-ful (*-mĕr'si-fool*), *adj.* not merciful.
un-prin-ci-pled (*-prin'si-pld*), *adj.* being without principles. [ABANDONED.]
un-qual-i-fied (*-kwol'i-fid*), *adj.* not qualified.
un-ques-tion-a-ble (*-kwes'chun-ā-bl*), *adj.* not questionable. [INDUBITABLE.]
un-rea-son-a-ble (*-rē'zn-ā-bl*), *adj.* not reasonable. [ABSURD.]
un-re-lent-ing (*-rē-lent'ing*), *adj.* not relenting.
un-ru-ly (*-rū'li*), *adj.* disregarding restraint or authority; turbulent.
un-sex (*-seks'*), *v. t.* to deprive of the characteristic qualities of sex.
un-speak-a-ble (*-spēk-ā-n.*) *adj.* unutterable; that which cannot be expressed.
Syn. UNSPEAKABLE, ineffable, unutterable, inexpressible. The *unspeakable* is said of objects in general, particularly of that which is above human conception, and surpasses the power of language to describe, as the *unspeakable* goodness of God; *ineffable* is said of such objects as cannot be painted in words with adequate force; as the *ineffable* sweetness of a person's look; *unutterable* and *inexpressible* are extended in their signification to that which is incommunicable by signs from one being to another; thus grief is unutterable which it is not in the power of the sufferer by any sounds to bring home to the feelings of another; grief is *inexpressible* which is not to be *expressed* by looks, or words, or any sign.
Unter den Linden (*oon'tĕr den lin'den*). A famous street in Berlin which extends from the Brandenburg gate eastward about three-fifths of a mile. Bordering it are the imperial and princely palaces, the university, the academy, the statue of Frederick the Great, etc. Literally "under the lindens."
un-to (*'tōō*), *prep.* to.
un-truth (*-trōōth'*), *n.* the quality of being untrue.
un-ut-ter-a-ble, *adj.* inexpressible. [UNSPEAKABLE.]
un-wor-thy (*-wĕr'thi*), *adj.* not worthy.
Syn. UNWORTHY, worthless. *Unworthy* is a term of less reproach than *worthless;* for the former signifies not to be *worthy* of praise or honor; the latter signifies to be without all *worth*, and consequently in the fullest sense bad. There are many *unworthy* members in every religious community; but every society that is conducted upon proper principles will take care to exclude *worthless* members.
Ant. WORTHY, valuable.
up (*up*), *adv.* on high; above the horizon; from a lower to a higher position.
up-braid (*up-brād'*), *v. t.* to reproach. [BLAME.]
up-cast (*'kast*), *adj.* directed upward.
up-heave (*-hēv'*) *v. t.* to lift up from beneath.
up-hold (*-hōld'*), *v. t.* to hold up.
up-hol-ster-er (*-hōl'stĕr-ĕr*), *n.* one who provides and places curtains, carpets, etc.
up-hol-ster-y (*'stĕr-i*), *n.* the business of an upholsterer; articles of house furnishing.
up-on (*-on'*), *prep.* on; resting on the top or surface; relating to; noting assumption, security, or time.
up-per (*'ĕr*), *adj.* higher in place, rank, or dignity.
up-pish (*'ish*), *adj.* arrogant; assuming.
up-right (*'rit*), *adj.* erect; just; honest; timber supporting a rafter.
up-roar (*'rōr*), *n.* noisy disturbance; bustle and clamor. [BUSTLE.]
up-set (*up-set'*), *v. t.* to overthrow; put out of normal condition: *n.* (*up'set*) the act of upsetting; state of being upset: *adj.* fixed.
up-shot (*'shot*), *n.* final result.
up-start (*'stärt*), *n.* one who suddenly rises from a humble position to wealth or influence: *adj.* suddenly raised to a position of wealth and influence.
up-turn (*-tûrn'*), *v. t.* and *v. i.* to turn up.
up-ward (*'wĕrd*), *adv.* toward a higher place or source. [Also *upwards.*]
Ural (*ū'ral*). The mountan chain dividing Europe from Asia, means the "girdle" or "belt," *ural-tau* being a Turkic word meaning a "mountain chain," while *urr* means a "chain" in Ostiah. The Russians call the *Ural* mountains by the translated name *Poyas*, the "girdle." The mountains have given their name to the river *Ural*, which flows from them into the Caspian.
u-ra-ni-um (*-rā'ni-um*), *n.* a metallic element from which radium is extracted.
u-ra-nog-ra-phy (*-rā-nog'rā-fi*), *n.* a description of the heavens; the construction of celestial maps, globes, etc.
ur-ban (*ûr'ban*), *adj.* pertaining to a city or town.
Urban. From the Latin *urbanus*, signifying "civil," courteous," "polito," "refined"; literally, "of, or belonging to, a city" (*urbs*). Dan., *Urban;* Dutch, *Urbanus* or *Urbaan;* Fr., *Urbain;* Ger., *Urban;* It., *Urbano;* Lat., *Urbanus;* Sp., *Urbano;* Sw., *Urban.*
ur-bane (*-bān'*), *adj.* polite; refined.
ur-chin (*'chin*), *n.* a pert or rough little fellow: *adj.* mischievous.
urge (*ûrj*), *v. t.* to incite; impel; provoke: *v. i.* to act with earnestness; insist upon; allege proofs. [PERSUADE.]
ur-gent (*ûr'jent*), *adj.* pressing; calling for immediate attention.
Uriah (*ū-rī'ä*). From the Hebrew, meaning "light of Jehovah," or "fire of the Lord." Fr., *Urie;* Ger., *Urias;* It., *Uria;* Lat., *Urias.*
u-ri-nal (*'ri-nal*), *n.* a place of convenience.
u-ri-na-ry (*'ri-nā-ri*), *adj.* pertaining to, or like, urine.
u-rine (*'rin*), *n.* the excretion from the kidneys.
urn (*ûrn*), *n.* a roundish vessel of various materials, bulging in the middle, usually with a foot or pedestal.
ur-sine (*ûr'sin*), *adj.* pertaining to, or resembling, a bear.
Ursula (*ûr'sū-lä*). A feminine name derived from the Latin *ursula*, "a young, or small, she-bear." Dutch, *Ursula;* Fr., *Ursule;* Ger., *Ursula;* It., *Ursula;* Lat., *Ursula;* Sp., *Ursula;* Sw., *Ursulo.*
Uruguay (*ū'roo-gwā, Spanish ōō-roo-gwī'*). Name of a river in South America, meaning "the golden water."
us-a-ble (*ūz'ā-bl*), *adj.* that can be used.
us-age (*'āj*), *n.* mode of using; treatment; habitual or long continued use or custom.
Syn. USAGE, custom, prescription. The *usage* is what one has been long used to do; *custom* is what one generally does; *prescription* is what is *prescribed* by usage to be done. The *usage* acquires force and sanction by dint of time; the *custom* acquires sanction by the frequency of its being done or the numbers doing it; the *prescription* acquires force by the authority which *prescribes.*
use (*ūs*), *n.* the act of using; application of anything to a particular purpose; custom or practice: *v. t.* (*ūz*) to make use of; employ; habituate: *v. i.* to be accustomed. [EMPLOY.]
use-ful (*ūs'fool*), *adj.* full of use, profit, or advantage; beneficial.
use-less (*'les*), *adj.* having, or being of, no use.
ush-er (*ush'ĕr*), *n.* a doorkeeper; an officer who introduces strangers: *v. t.* to introduce or escort.
u-su-al (*ū'zhū-al*), *adj.* habitual; customary; usually. [COMMONLY.]
u-su-fruct (*'zū-frukt*), *n.* the temporary use and enjoyment of lands and tenements belonging to another.
u-sur-er (*zhûr-ĕr*), *n.* one who lends money at an exorbitant rate of interest.
★u-surp (*ū-zĕrp', not ū-s ĕrp'*), *v. t.* to take possession of by force, or without right.
u-surp-er (*-z ĕrp'ĕr*), *n.* one who usurps.
u-su-ry (*'zhū-ri*), *n.* interest on money beyond the current rate of interest; practice of lending money at exorbitant interest.
Utah (*ū'tä, ū'taw*). State in the Union, county and lake in same state, named for the Ute Indians, the word meaning "home, or location, on the mountain top."
u-ten-sil (*-ten'sil*), *n.* an implement.
u-ter-ine (*'tĕr-in*), *adj.* pertaining to the womb.
u-ter-us (*'tĕr-us*), *n.* the womb.
Utica (*ū'ti-kä*). City in New York, named for the ancient city in Africa; town in Livingston county, Missouri, and Hinds county, Mississippi, and village in Macomb county, Michigan, named for the above.
u-til-i-ta-ri-an-ism (*ū-til-i-tā'ri-an-izm*), *n.* the doctrine that virtue is defined and enforced by its tendency to promote the highest happiness of mankind.
u-til-i-ty (*-til'i-ti*), *n.* usefulness; intrinsic value.
u-til-ize (*'til-iz*), *v. t.* to make useful or profitable.
ut-most (*ut'mōst*), *adj.* in the greatest degree; most distant; furthest; extreme: *n.* the extreme limit or extent.
U-to-pi-an (*ū-tō'pi-an*), *n.* pertaining to the imaginary island, described by Sir Thomas More in his *Utopia*, where the most perfect system of laws and institutions existed; hence ideal, visionary.
ut-ter (*ut'ĕr*), *adj.* entire; absolute; unqualified; total: *v. t.* to speak.
Syn. UTTER, speak, articulate, pronounce. *Utter* signifies to put out; that is, to send forth a sound. We may *utter* a groan; we *speak* words only, or that which is intended to serve as words. *To speak*, therefore, is only a species of utterance; a dumb man has *utterance*, but not *speech. Articulate* and *pronounce* are modes of *speaking; to articulate*, is *to pronounce* distinctly the letters or syllables of words; which is the first effort of a child beginning to speak. *To pronounce* is a formal mode of speaking. [See *speak.*]
Ant. BE SILENT.
ut-ter-ance (*-ans*), *n.* vocal expression; speech.
ut-ter-most (*'ĕr-mōst*), *adj.* extreme; in the furthest, greatest, or highest degree: *n.* the furthest extent or degree.
u-vu-la (*ū'vū-lä*), *n.* the fleshy, conical body attached to the soft palate.
ux-o-ri-ous (*uks-ō'ri-us*), *adj.* foolishly or excessively fond of a wife.
Uzziah (*uz-zī'ä*). From the Hebrew, signifying, the strength of the Lord." Lat., *Uzzias.*

V

va-can-cy (*vā'kan-si*), *n.* state of being vacant or empty; listlessness; open or unoccupied space.
va-cant (*'kant*), *adj.* empty; free from thought or reflection; not occupied.
va-cate (*'kāt*), *v. t.* to make vacant; annul; give up the possession of. [ABOLISH.]
va-ca-tion (*-kā'shun*), *n.* the act of vacating; intermission of a stated employment, or judicial proceedings.
vac-ci-nate (*vak'si-nāt*), *v. t.* to inoculate with vaccine matter.
vac-cine (*'sin*), *n.* a liquid taken from a cow affected with cowpox.
vac-il-late (*vas'il-āl*), *v. i.* to be unsteady; waver.
va-cu-i-ty (*vā-kū'i-ti*), *n.* emptiness.
vac-u-ous (*vak'ū-us*), *adj.* empty; vacant.
vac-u-um (*-um*), *n.* a space devoid of all matter; void.
vag-a-bond (*vag'ä-bond*), *adj.* without fixed habitation; roaming; idle: *n.* a vagrant; scamp.
★va-ga-ry (*vā-gā'ri*, not *vā'gā-ri*), *n.* a wild freak; whim.
va-gi-na (*-jī'nä*), *n.* the canal which leads from the external orifice to the uterus; sheath.
va-gran-cy (*vā'gran-si*), *n.* a state of wandering without a settled home; habits and life of a vagrant.
★va-grant (*vā'grant*, not *vag'rant*), *adj.* wandering from place to place: *n.* a tramp.
vague (*vāg*), *adj.* indefinite; unsettled.
vain (*vān*), *adj.* empty; unreal; deceitful; producing no results; conceited.
vain-glo-ri-ous (*-glō'ri-us*), *adj.* elated by one's achievements. [PRIDE.]
vale (*vāl*), *n.* a valley.
val-e-dic-to-ry (*val-ē-dik'tō-ri*), *adj.* bidding farewell. [FAREWELL.]
va-lence (*vā'lens*), *n.* the degree of combining power of an atom.
Valencia (*vä-len'shi-a*, Spanish *vä-lān'thē-ä*). City in Spain, was the ancient *Valentia*, "the powerful."
Valenciennes (*vä-len-si-enz'*, French *vä-lān-syen'*), also **Valenza** and **Valence.** A city of France. Said to have been named after the western Roman emperor, Valentinian.
Valentina (*val-en-tī'nä*). Feminine name derived from *Valentine.*
val-en-tine (*val'en-tīn*), *n.* a sweetheart chosen on St. Valentine's day; love missive sent on February 14th.
Valentine. A name derived from St. Valentine, from the Latin *Valentinus*, of, or belonging to, *Valentia*, one of the ancient names of Rome; also of towns in Spain, Italy, and Sardinia, and the appellation of a goddess worshipped at Oriculum in Italy; originally from *valens*, "puissant," "mighty," "strong." Danish, *Valentin;* Dutch, *Valentijn;* Fr., *Valentin;* Ger., *Valentin;* It., *Valentino;* Lat., *Valentinus;* Port., *Valentin;* Sp., *Valentin;* Sw., *Valentin.*
Valeria (*vä-lē'ri-ä*). The feminine of *Valerius.* Fr., *Valerie;* It., *Valerie;* Lat., *Valeriæ.*
Valerian (*vä-lē'ri-an*). From the Latin *valere*, "to be strong, healthy." Dutch, *Valerianus;* Fr., *Valerien;* It., *Valeriano;* Lat., *Valerianus.*
Valerie. See *Valeria.*
val-et (*val'ä*), *n.* a servant who attends on a gentleman's person: *v. t.* to act as valet to.
val-e-tu-di-na-ri-an (*-ē-tū-di-nā'ri-an*), *adj.* sickly; seeking to recover health: *n.* an invalid.
val-iant (*'yant*), *adj.* brave; heroic.
val-id (*'id*), *adj.* having legal force; not weak or defective.
va-lise (*vä-lēs'*), *n.* a small portmanteau.
val-ley (*val'i*), *n.* [*pl.* valleys (*'iz*)], a tract of land situated between mountains.
Valley Forge. Village in Chester county, Pennsylvania, so named because situated at the mouth of Valley creek, where a forge was erected in the days antedating the Revolution, by Isaac Potts.
val-or (*val'ĕr*), *n.* bravery. [BRAVERY.]

val-or-ous (*val'ẽr-us*), *adj.* brave.
val-u-a-ble (*'ŭ-a-bl*), *adj.* possessing useful qualities; having value or worth: *n.* a thing of value.
val-ue (*'ŭ*), *n.* that which renders anything useful or estimable; price: *v. t.* to estimate the worth of; esteem.
Syn. VALUE, prize, esteem. *To value* is to set any *value*, real or suppositious, relative or absolute, on a thing; in this sense men *value* gold above silver, or an appraiser *values* goods. *Prize* and *esteem* are taken only as mental actions; the former in reference to sensible or moral objects, the latter only to moral objects; we may *value* books according to their market price, or we may *value* them according to their contents; we *prize* books only for their contents, in which sense *prize* is a much stronger term than *value*.
Ant. THINK LIGHTLY OF.
valve (*valv*), *n.* a lid or cover opening in one direction and shutting in another.
va-nose (*va-mōs'*), *v. i.* to decamp.
vamp (*vamp*), *n.* the upper leather of a boot or shoe: *v. t.* to furnish with an upper leather.
vam-pire (*vam'pīr*), *n.* a fabled demon or ghost that sucks the blood of persons asleep.
van (*van*), *n.* the front of an army or fleet; a large covered wagon for moving.
Vancouver (*van-kōō'vẽr*). A rising city which forms the western terminus of the Canadian Pacific railway, bears the name of Captain George Vancouver, R. N., who, as a midshipman in Cook's last voyage, visited the coast in 1776, and surveyed it in 1792.
Vancouver island. Named in memory of Captain Vancouver, a midshipman under Captain Cook, who discovered it in 1792, while cruising about in search of a river on the west coast of North America.
van-dal (*van'dal*), *n.* one who ruthlessly destroys.
vane (*vān*), *n.* a weathercock.
van-guard (*van'gärd*), *n.* the advance guard of an army.
va-nil-la (*va-nil'ä*), *n.* the dried fruit of an orchid, used for flavoring.
van-ish (*van'ish*), *v. i.* to disappear. [DISAPPEAR.]
van-i-ty (*'i-ti*), *n.* [*pl.* vanities (*-tiz*)], love of indiscriminate admiration; empty pride or conceit; idle show; emptiness. [PRIDE.]
★**van-quish** (*vang'kwish*, not *van'kwish*), *v. t.* to conquer; subdue.
van-tage (*'taj*), *n.* advantage; in lawn tennis, the first point after deuce.
va-por (*vā'pẽr*), *n.* steam; mist: *v. i.* to pass off in vapor; bully.
va-por-ize (*vā'pẽr-īz*), *v. t.* to convert into vapor.
va-por-ous (*'pẽr-us*), *adj.* full of, or like, vapor; unreal.
va-ri-a-ble (*'ri-ä-bl*), *adj.* changeable; inconstant; fickle.
va-ri-ance (*'ri-ans*), *n.* difference; quarrel.
va-ri-ant (*'ri-ant*), *adj.* variable; different: *n.* a different form of substantially the same thing.
va-ri-a-tion (*-ri-ā'shun*), *n.* a partial change; difference. [DIFFERENCE.]
var-i-co-cele (*var'i-kō-sēl*), *n.* a swelling of the veins.
var-i-cose (*'i-kōs*), *adj.* abnormally swollen or enlarged.
va-ried (*vā'rid*), *adj.* altered; partially changed; various.
va-ri-e-gate (*vā'ri-ē-gāt*), *v. t.* to mark with different colors.
va-ri-e-ty (*vä-ri'e-ti*), *n.* [*pl.* varieties (*-tiz*)], intermixture or succession of different things; diversity. [DIFFERENCE.]
va-ri-o-rum (*vā-ri-ō'rum*), *adj.* noting an edition of a book with the notes of various commentators.
va-ri-ous (*'ri-us*), *adj.* different; several.
var-let (*vär'let*), *n.* formerly a servant, footman, or page; a scoundrel.
var-nish (*'nish*), *n.* a viscid, resinous liquid used for giving a gloss to wood or metal work: *v. t.* to cover with varnish; give a gloss to or over; palliate.
va-ry (*vā'ri*), *v. t.* to change; make of different kinds; alter: *v. i.* to undergo a change; disagree.
vas-cu-lar (*vas'kū-lẽr*), *adj.* consisting of, or containing, vessels.
★**vase** (*vās* or *vāz*), *n.* a vessel for various purposes.
vas-e-line (*vas'ē-lin*), *n.* petroleum jelly.
Vashti (*vash'-ti*). Feminine name, so called from *Vashti*, wife of Ahasuerus, signifying "beauty," "goodness."
Vasili or **Vasill.** See *Basil.*
vas-sal (*vas'al*), *n.* a feudal tenant; bondman: *adj.* servile.
vas-sal-age (*-āj*), *n.* the state of being a vassal; territory held in vassalage.
vast (*vast*), *adj.* of great extent; great in number or degree; very spacious; immense: *n.* boundless space.
vat (*vat*), *n.* a large tub or vessel.
Vat-i-can (*vat'i-kan*), *n.* the palace of the pope at Rome; the papal authority.
Vatican. A hill of Rome, on the right bank of the Tiber, opposite the Pincian. On it stands St. Peter's and the Vatican palace.
★**vaude-ville** (*vōd'vil*, French *vōd-vēl'*), *n.* a light, gay, or topical song; a short drama with comic songs; a varied dramatic entertainment.
vault (*vawlt*), *n.* an arched roof; cellar; prison; cavern; sky; leap: *v. t.* to shape as a vault; arch: *v. i.* to leap, spring, or bound.
vaunt (*vänt* or *vawnt*), *v. i.* to boast: *v. t.* to brag of; display boastfully: *n.* a boast. [GLORY.]
veal (*vēl*), *n.* calf's flesh.
vec-tor (*vek'tẽr*), *n.* a directive quantity, as a straight line, force, or velocity.
Ve-da (*vā'dä*), *n.* [*pl.* Vedas (*'däz*)], one of the four oldest sacred books or collection of hymns of the Hindus.
veer (*vēr*), *v. i.* to change direction, as the wind; wear: *v. t.* to turn; direct to a different course.
veg-e-ta-ble (*vej' ẽ-tä-bl*), *adj.* pertaining to, having the nature of, produced by, or consisting of, plants: *n.* a plant or root cultivated for the table, etc.
veg-e-ta-ri-an (*-tā'ri-an*), *n.* one who abstains from a meat diet: *adj.* pertaining to vegetarians or vegetarianism.
veg-e-tate (*'ẽ-tāt*), *v. i.* to grow, as a plant.
veg-e-ta-tion (*-tā'shun*), *n.* plants or vegetables collectively.
veg-e-ta-tive (*'ẽ-tā-tiv*), *adj.* growing, as plants.
★**ve-he-ment** (*vē'hẽ-ment*), *adj.* very violent or forcible; passionate. [VIOLENT, EAGER.]
ve-hi-cle (*vē'hi-kl*), *n.* any kind of carriage or conveyance.
ve-hic-u-lar (*-hik'ū-lẽr*), *adj.* pertaining to, or serving as, a vehicle.
veil (*vāl*), *n.* curtain or covering for concealment: *v. t.* to cover with, or as with, a veil; hide, conceal.
vein (*vān*), *n.* one of the vessels which convey blood from the arteries to the heart; branching rib of a leaf; seam of rock filled with metallic or mineral matter; particular disposition, genius, or style: *v. t.* to fill or cover with, or as with, veins.
vein-ous (*vān'us*, not *vē'nus*), *adj.* full of, or provided with, veins.
vel-lum (*vel'um*), *n.* fine parchment.
ve-loc-i-pede (*vē-los'i-pēd*), *n.* a light carriage propelled by the feet.
ve-loc-i-ty (*'i-ti*), *n.* [*pl.* velocities (*-tiz*)], speed; rate of movement.
vel-vet (*vel'vet*), *n.* a silk fabric with short, close, soft nap.
vel-vet-een (*-ēn'*), *n.* imitation velvet.
ve-nal (*vē'nal*), *adj.* mercenary; of, or pertaining to, the veins.
vend (*vend*), *v. t.* to sell.
ven-det-ta (*ven-det'ä*), *n.* a kind of blood-feud. [*Italian.*]
ven-dor (*'dẽr*), *n.* the seller. [Also *vender.*]
ve-neer (*vē-nēr'*), *v. t.* to overlay with a thin slice of ornamental or more valuable wood.
ven-er-a-ble (*ven'ẽr-ä-bl*), *adj.* worthy of being venerated or reverenced.
ven-er-ate (*'ẽr-āt*), *v. t.* to regard with the highest respect. [ADMIRE.]
ve-ne-re-al (*vē-nē'rē-al*), *adj.* pertaining to, or arising from, sexual intercourse.
Venezuela (*ven-ez-wē'lä*, Spanish *vā-neth-wā'lä*). A republic of northern South America. Name is the Spanish for "Little Venice," which designation was given to this country owing to the discovery of some Indian villages built upon piles after the manner of the "Silent City" on the Adriatic Sea.
venge-ance (*venj'ans*), *n.* the infliction of pain on another for an injury received.
venge-ful (*'fool*), *adj.* vindictive; retributive.
ve-ni-al (*vē'ni-al*), *adj.* pardonable.
Syn. VENIAL, pardonable. *Venial* is applied to what may be tolerated without express disparagement to the individual, or direct censure; but the *pardonable* is that which may only escape severe censure, but cannot be allowed; garrulity is a *venial* offense in old age; levity in youth is *pardonable* in single instances.
Venice (*ven'is*). It., *Venezia;* Ger., *Venedig.* Is the French name for the city founded on the east coast of Italy by fugitives from the Roman province of Venetia. The word means "blessed."
ven-i-son (*ven'i-zn*), *n.* deer's flesh.
ven-om (*'um*), *n.* poison introduced into the system by a bite or sting; spite. [POISON.]
ven-om-ous (*-us*), *adj.* poisonous; malignant.
★**ve-nous** (*vē'nus*, not *vā'nus*), *adj.* pertaining to veins.
vent (*vent*), *n.* a small opening for the escape of air, etc.; utterance: *v. t.* to give an opening to.
ven-ti-late (*ven'ti-lāt*), *v. t.* to open to the free passage of air.
ven-tri-cle (*'tri-kl*), *n.* a small cavity in an animal body.
ven-tril-o-quism (*-tril'ō-kwism*), *n.* the act or art of speaking as from another source than the voice.
ven-tril-o-quist (*-kwist*), *n.* one who practices ventriloquism.
ven-ture (*'tūr*), *n.* an undertaking of chance or danger: *v. t.* send on a venture: *v. i.* to dare. [HAZARD.]
ven-ue (*ven'ū*), *n.* the place where an action in law is laid.
ve-ra-cious (*vē-rā'shus*), *adj.* truthful.
ve-rac-i-ty (*-ras'i-ti*), *n.* truthfulness; truth. [TRUTH.]
ve-ran-da (*-ran'dä*), *n.* a kind of covered balcony or open portico supported by light pillars.
verb (*vẽrb*), *n.* that part of speech which signifies to be, to do, or to suffer.
ver-bal (*vẽr'bal*), *adj.* expressed in words: *n.* a noun derived from a verb.
★**ver-ba-tim** (*vẽr-bā'tim*, not *vẽr-bat'im*), *adv.* word for word.
ver-bi-age (*'bi-āj*) *n.* superabundance of words.
ver-bose (*-bōs'*), *adj.* wordy.
ver-dant (*uẽr'dant*), *adj.* green; inexperienced.
ver-dict (*'dikt*), *n.* the finding of a jury on a trial.
ver-di-gris (*'di-grēs*), *n.* the blue-green substance which forms on copper or brass: used as a pigment.
ver-dure (*'dūr*), *n.* freshness of vegetation.
verge (*n. vẽrj*), *n.* a rod, mace, etc.; shaft of a column; spindle of a watch-balance; border or limit: *v. i.* to approach or come near something.
ver-i-fi-ca-tion (*ver-i-fi-kā'shun*), *n.* the act of proving to be true; confirmation.
ver-i-fy (*'i-fi*), *v. t.* to prove to be true.
ver-i-ly (*'i-li*), *adv.* in truth.
ver-i-si-mil-i-tude (*-i-si-mil'i-tūd*), *n.* the appearance of truth; probability.
ver-i-ta-ble (*'i-tä-bl*), *adj.* true; genuine.
ver-i-ty (*'i-ti*), *n.* [*pl.* verities (*-tiz*)], agreement with fact.
ver-mi-cel-li (*-mi-sel'i*), *n.* a stiff paste or dough of fine flour made into tubes.
ver-mil-ion (*-mil'yun*), *n.* a brilliant red pigment: *v. t.* to color or dye with vermilion.
ver-min (*'min*), *n.* noxious small animals or insects, as rats, fleas.
Vermont. When the French were in possession of the St. Lawrence valley they called the mountains of the southern section *Vertmont, vert,* "green," *mont,* "mountain," and the inhabitants of that section in their Declaration of Independence, January 16, 1777, adopted the name for the state. One of the New England states.
ver-nac-u-lar (*-nak'u-lẽr*), *adj.* pertaining to, or characteristic of, one's native country or language: *n.* native idiom.
ver-nal (*'nal*), *adj.* pertaining to the spring.
Veronica (*vē-ron'i-kä*). From the Greek word meaning, "true picture." Fr., *Veronique;* It., *Veronica.*
Versailles (*vẽr-sālz'*, French *ver-sä'yi*), **Palace of.** A famous royal palace in the French city of the same name, a great part of which is now occupied by the Museum of French History, consisting chiefly of paintings; but some of the apartments are still preserved with the fittings of a royal residence.
ver-sa-tile (*'sa-til*), *adj.* turning with ease from one thing, subject, or opinion to another.
verse (*vẽrs*), *n.* a measured line of poetry.
versed (*vẽrst*), *adj.* skilled; conversant.
ver-si-fi-ca-tion (*vẽr-si-fi-kā'shun*), *n.* the art or practice of composing metrical verses.
★**ver-sion** (*vẽr'shun*, not *vẽr'zhun*), *n.* a translation from one language into another; particular account or description.
ver-te-bra (*'te-brä*), *n.* [*pl.* vertebræ (*-brē*)], a single bone of the spinal column.
ver-te-bral (*'tẽ-bral*), *adj.* pertaining to, or forming part of, the vertebræ.
Ver-te-bra-ta (*-brā'tä*), *n. pl.* one of the great divisions of the animal kingdom.
ver-tex (*'teks*), *n.* [*pl.* vertices (*'ti-sēz*)], the top, summit, or crown.
ver-ti-cal (*'ti-kal*), *adj.* perpendicular to the plane of the horizon.
ver-ti-go (*'ti-gō*), *n.* giddiness.
verve (*vẽrv*), *n.* the enthusiasm which animates a poet or artist; spirit; energy.
ver-y (*ver'i*), *adj.* real; actual; true: *adv.* extremely.
ves-i-ca-tion (*ves-i-kā'shun*), *n.* the process of raising blisters on the skin.
ves-i-cle (*'i-kl*), *n.* a bladder-like vessel or cavity.
ves-pers (*ves'pẽrz*), *n. pl.* evening songs.
★**ves-sel** (*ves'el*, not *ves'l*), *n.* a utensil for holding something, especially liquids; hollow structure made to float on water; ship; tube or canal in which the fluids of a body are contained.
vest (*vest*), *n.* body garment, usually with short sleeves: *v. t.* to clothe with, or as with, a garment; give fixed right of possession.
ves-tal (*ves'tal*), *adj.* chaste; pure: *n.* a virgin; nun.
vest-ed (*vest'ed*), *adj.* clothed; fixed.
ves-ti-bule (*ves'ti-būl*), *n.* porch or entrance into a house.
ves-tige (*'tij*), *n.* a mark left in passing. [MARK.]
vest-ment (*vest'ment*), *n.* a garment.
ves-try (*ves'tri*), *n.* [*pl.* vestries (*'triz*)], a room in a church where ecclesiastical vestments, etc., are kept.
ves-ture (*'tūr*), *n.* clothing; covering.
Vesuvius (*vē-sū'vi-us*), **Mt.** The only active volcano on the continent of Europe, and the most noted one in the world, situated on the Bay of Naples, Italy. The Italian form is *Vesuvio,* and the French form, *Vesuve;* the word originally meant "emitter of smoke."
vet-er-an (*vet'ẽr-an*), *adj.* long exercised or experienced, especially in military life: *n.* one thus experienced.
★**vet-er-i-na-ry** (*vet'ẽr-i-nā-ri*, not *vet'rin-ā-ri*), *adj.* pertaining to the art of healing the diseases of domestic animals.
ve-to (*vē'tō*), *n.* the right of stopping or preventing the enactment of a law: *v. t.* to reject by veto.
vex (*veks*), *v. t.* to irritate by small annoyances or provocations. [TEASE.]
vex-a-tion (*-ā'shun*), *n.* the act of vexing.
vex-a-tious (*'shus*), *adj.* causing vexation.
vexed (*vekst*), *adj.* much debated or contested, but not settled.
vi-a-duct (*vī'ä-dukt*), *n.* an arched structure for conveying a railway, road, etc., over low ground.
vi-al (*'al*), *n.* a small glass bottle or vessel: *v. t.* to put in a vial.

vi-ands (*vi'andz*), *n. pl.* dressed meat; food.
vi-brate (*'brāt*), *v. i.* to move backward and forward; oscillate: *v. t.* to cause to quiver.
vi-bra-tion (*-brā'shun*), *n.* the act of vibrating; oscillation.
vic-ar (*vik'ẽr*), *n.* a deputy.
vi-ca-ri-ous (*vi-kā'ri-us*), *adj.* substituted, or performed, in the place of another.
vice (*vis*), *n.* immoral practice or habit. [CRIME.]
vice, *prefix* meaning *in place of, second in rank.*
vice-ge-rent (*-jē'rent*), *n.* one deputed by superior authority to exercise the functions of another.
vice-roy (*'roi*), *n.* a governor of a country ruling in the name, and by the authority, of the sovereign.
Vi-chy wa-ter (*vē'shi waw'tẽr*), a mineral effervescent water.
vi-cin-i-ty (*vi-sin'i-ti*), *n.* nearness in place; proximity. [NEIGHBORHOOD.]
vi-cious (*vish'us*), *adj.* characterized by vice or blemish. [ABANDONED.]
vi-cis-si-tude (*vi-sis'i-tūd*), *n.* change.
Vicksburg. City in Mississippi, named for Neivitt Vick, its founder.
★**vic-tim** (*vik'tim*, not *vik'tum*), *n.* a living being sacrificed to a deity; some person or thing destroyed or injured in the pursuit of some object, or by some accident.
vic-tim-ize (*-iz*), *v. t.* to make a victim of. [ABUSE.]
vic-tor (*'tẽr*), *n.* conqueror; one who wins or gains an advantage. [CONQUERER.]
Victoria (*vik-tō'ri-à*). From the Latin, meaning "victory." Fr., *Victoire;* It., *Vittoria;* Lat., *Victoria;* Sp., *Vitoria.*
vic-to-ri-ous (*-tō'ri-us*), *adj.* having conquered in battle or contest.
vic-to-ry (*'tō-ri*), *n.* [*pl.* victories (*-riz*)], the defeat of an enemy in battle, or an antagonist in a contest.
vict-ual (*vit'l*), *v. t.* to supply or store with provisions for food: *n. pl.* food; meat.
★**vi-cu-ña** (*vē-kōōn'yä*), *n.* an animal of Mexico and Chili, allied to the llama, furnishing a fine long, reddish wool.
vie (*vī*), *v. i.* to strive for superiority; rival.
Vienna (*vi-en'à*). Ger., *Wien;* Fr., *Vienne.* Capital of Austro-Hungary. Originally, *Vindobona,* a name probably of Celtic origin, meaning either "white castle," or "town of the Wends."
view (*vū*), *v. t.* to look upon; see; survey mentally: *n.* the act of seeing; prospect; purpose; sketch or picture; judgment; opinion.
Syn. VIEW, survey, prospect. We take a *view* or *survey;* the *prospect* presents itself; the *view* is of an indefinite extent; *the survey* is always comprehensive in its nature. Ignorant people take but narrow *views* of things; the capacious mind of a genius takes a *survey* of all nature; our *prospects* are very delusive. Sometimes our *prospects* depend upon our *views;* erroneous *views* of a future state has but a wretched *prospect.*
vig-il (*vij'il*), *n.* a watching; eve preceding a feast of the church.
vig-i-lant (*'i-lant*), *adj.* attentive to discover and avoid danger; alert; cautious. [WAKEFUL.]
vi-gnette (*vin-yet'*), *n.* a portrait of the head and bust only.
vig-or (*vig'ẽr*), *n.* physical or mental strength and energy; force. [ENERGY.]
vig-or-ous (*'ẽr-us*), *adj.* full of physical or mental strength and energy; robust; forcible. [ACTIVE.]
vi-king (*vī'king*), *n.* one of the old Scandinavian pirates.
vile (*vīl*), *adj.* worthless; despicable. [ABANDONED.]
vil-i-fy (*'i-fī*), *v. t.* to defame; debase by slander. [ABUSE.]
vil-la (*'à*), *n.* a country seat; suburban residence.
vil-lage (*'āj*), *n.* a small assemblage of houses, less than a town but larger than a hamlet.
vil-lain (*'in* or *'ān*), *n.* scoundrel.
vil-lan-age (*'an-āj*), *n.* the state or condition of a serf.
vil-lous (*'us*), *adj.* covered with long, thin, soft hairs.
Vincennes (*vin-senz',* French *vaN-sen'*). City in Indiana, named from the fort built by Sieur de Vincennes.
Vincent (*vin'sent*). From the Latin name, *Vincentius,* from *vincere,* "to conquer." Dutch, *Vincentius;* Fr., *Vincent;* It., *Vincente;* Lat., *Vincentius;* Port., *Vicente;* Sp., *Vicente* or *Vincente.*
vin-di-cate (*vin'di-kāt*), *v. t.* to defend successfully; assert a right to; justify. [DEFEND, ASSERT.]
vin-di-ca-tion (*-kā'shun*), *n.* justification against denial, censure, or oppression.
vin-dic-tive (*-dik'tiv*), *adj.* given to, or prompted by, revenge.
vine (*vīn*), *n.* any woody, climbing plant of the genus Vitis.
vin-e-gar (*vin'ē-gẽr*), *n.* an acid obtained by fermentation from wine, beer, etc.; hence anything sour.
vi-ner-y (*vī'nẽr-i*), *n.* a place where grapes are cultivated artificially.
vine-yard (*vin'yẽrd*), *n.* a plantation of vines producing grapes.
vi-nous (*vī'nus*), *adj.* pertaining to wine.
vin-tage (*vin'tāj*), *n.* the yearly crop or produce of the grape.
vi-ol (*vī'ol*), *n.* a four-stringed musical instrument played with a bow.
vi-o-la (*vī'ō-là* or *vē-ō'là*), *n.* the tenor violin.
Viola (*vī'ō-là,* Italian *vē-ō'lä*). A feminine name derived from the Latin *viola,* "a violet."
Violante. A feminine name derived from the name *Violet.*
vi-o-late (*'ō-lāt*), *v. t.* to transgress; ravish; treat with irreverence. [ABUSE.]
vi-o-la-tion (*-lā'shun*), *n.* the act of violating, infringing, or injuring.
vi-o-lence (*'ō-lens*), *n.* physical or moral force; unjust strength or power applied to any purpose. [FORCE.]
vi-o-lent (*'ō-lent*), *adj.* urged or driven by force.
Syn. VIOLENT, furious, boisterous, vehement, impetuous. A man is *violent* in his opinions, *violent* in his measures, *violent* in his resentments; he is *furious* in his anger, or has a *furious* temper; he is *vehement* in his affections or passions, *vehement* in love, *vehement* in zeal, *vehement* in pursuing an object; *violence* transfers itself to some external object on which it acts with force; but *vehemence* respects that species of *violence* which is confined to the person himself; *impetuosity* is rather the extreme of *violence* or *vehemence;* an *impetuous* character is an excessively *vehement* character. *Boisterous* is said of the manner and the behavior rather than the mind.
Ant. GENTLE, mild, calm, controlled.
vi-o-let (*'ō-let*), *n.* a plant of the genus Viola; a color like that of the violet.
Violet. A feminine name derived from French *violette,* from the Latin *viola.*
Violetta. A diminutive of the name *Violet,* or direct from Italian *Violetta.*
vi-o-lin (*-ō-lin'*), *n.* a four-stringed musical instrument, played with a bow.
vi-o-lon-cel-lo (*vē-ō-lon-chel'ō* or *sel'ō*), *n.* a large four-stringed instrument of the viol class.
vi-per (*vī'pẽr*), *n.* a venomous serpent of various species.
vi-ra-go (*vi-rā'gō*), *n.* a bold, turbulent woman.
Vergil or **Virgil** (*vẽr'jil*). Derived, like the surname *Vergil,* from the bard of Mantua. Angelus Politianus writes the poet's name *Vergilius;* Pierius, *Virgilius.* The name has been variously derived from *Vergiliæ,* the stars called the Pleiades, and from *virga,* "a garland or laurel."
vir-gin (*vẽr'jin*), *n.* a woman who has preserved her chastity; maiden: *adj.* pertaining to, or becoming, a virgin.
Virginia (*vẽr-jin'i-à*). A Roman name, feminine of *Virginius,* from root of *virgo,* "a virgin." Dutch, *Virginie;* Fr., *Virginie;* Ger., *Virginia;* It., *Virginia;* Lat., *Virginia.*
vir-gin-al (*'jin-al*), *adj.* maidenly; chaste: *n.* a 16th century musical instrument.
vir-ile (*vir'il*), *adj.* pertaining to mature manhood.
vir-tu-al (*vẽr'tū-al*), *adj.* in essence or effect, though not in fact.
vir-tue (*'tū*), *n.* rectitude, strength; efficacy; valor; chastity; legal force.
vir-tu-o-so (*-tū-ō'sō*), *n.* [*pl.* virtuosi (*'sē*)], one skilled in the fine arts, or in antiquities.
vir-tu-ous (*'tū-us*), *adj.* possessing, or exhibiting, virtue.
vir-u-lence (*vir'ū-lens*), *n.* the state or quality of being virulent. [ACRIMONY.]
vir-u-lent (*'ū-lent*), *adj.* very poisonous or venomous; actively injurious to life or health.
vis-age (*viz'āj*), *n.* the countenance.
vis-ce-ra (*vis'ē-rà*), *n. pl.* the intestines.
vis-cid (*'id*), *adj.* sticky.
vis-count (*vī'kount*), *n.* a nobleman next in rank below an earl.
vis-cous (*vis'kus*), *adj.* adhesive.
vise (*vīs*), *n.* a two-jawed instrument for holding work.
vis-i-ble (*viz'i-bl*), *adj.* perceptible by the eye; in view. [APPARENT, PHYSICAL.]
vi-sion (*vizh'un*), *n.* the act or sense of seeing; object of sight.
vi-sion-a-ry (*-ā-ri*), *adj.* existing only in the imagination: *n.* an unpractical schemer.
vis-it (*viz'it*), *n.* the act of calling to see another: *v. t.* to call upon: *v. i.* to be in the habit of making calls.
vis-i-tor (*viz'i-tẽr*), *n.* one who visits. [GUEST.]
vis-or. See *vizor.*
vis-ta (*vis'tà*), *n.* [*pl.* vistas (*'tàz*)], a view.
vis-u-al (*vizh'ū-al*), *adj.* pertaining to sight.
vi-tal (*vī'tal*), *adj.* pertaining to life; essential.
vi-tal-i-ty (*-tal'i-ti*), *n.* vital force.
vi-tal-ize (*'tal-īz*), *v. t.* to endow with life.
vi-tals (*'talz*), *n. pl.* the organs of the body essential to life, as the heart, lungs, etc.
vi-ti-ate (*vish'i-āt*), *v. t.* to render faulty or defective.
vit-i-cul-ture (*vit'i-kul-tūr*), *n.* vine culture.
vitreo, a *prefix* meaning *pertaining to,* or *like, glass,* as *vitreo*-electric, exhibiting positive or vitreous electricity.
vit-re-ous (*vit'rē-us*), *adj.* consisting of, like, or obtained from, glass.
vi-tres-cent (*vi-tres'ent*), *adj.* capable of being turned into, or becoming like, glass.
vit-ri-fy (*vit'ri-fī*), *v. t.* to convert by heat and fusion into glass: *v. i.* to be converted into glass.
★**vit-ri-ol** (*vit'ri-ul,* not *vit'rul*), *n.* the popular name for sulphuric acid.
vi-tu-per-ate (*vi-tū'pẽr-āt*), *v. t.* to censure abusively. [ABUSE.]
vi-va-cious (*vi-vā'shus*), *adj.* lively; gay.
vi-vac-i-ty (*-vas'i-ti*), *n.* liveliness; animation.
vi-va vo-ce (*vī'và vō'sē*), orally.
Vivian, Vyvian (*viv'i-an*). A Cornish name derived from locality, from *vy-vian,* "the small water." Fr., *Vivien;* Lat., *Vivianus.*
viv-id (*viv'id*), *adj.* lifelike; realistic; forming brilliant images. [CLEAR.]
viv-i-fy (*viv'i-fī*), *v. t.* to endue with life; quicken.
viv-i-sect (*-i-sekt'*), *v. t.* to dissect the living body of.
vix-en (*viks'n*), *n.* a female fox; quarrelsome, ill-tempered woman.
viz. (*viz*), *adv.* namely.
viz-or (*viz'ẽr*), *n.* the upper movable part of a helmet; the forepiece of a cap.
vo-ca-ble (*vō'kà-bl*), *n.* a word; term.
vo-cab-u-la-ry (*-kab'ū-lā-ri*), *n.* [*pl.* vocabularies (*-riz*)], a collection of words of a language, science, etc., arranged alphabetically and explained; words used. [DICTIONARY.]
vo-cal (*vō'kal*), *adj.* pertaining to, full of, or endowed with, voice or speech; oral.
vo-ca-tion (*-kā'shun*), *n.* calling; occupation.
voc-a-tive (*vok'à-tiv*), *adj.* noting the case of a noun, adjective, or pronoun in which a person or thing is addressed: *n.* the vocative case.
vo-cif-er-ate (*vō-sif'ẽr-āt*), *v. i.* to clamor; bawl: *v. t.* to utter loudly. [CALL.]
vogue (*vōg*), *n.* fashion.
voice (*vois*), *n.* utterance or mode of utterance; faculty of speech; language; expressed opinions: *v. t.* to give utterance or expression to.
void (*void*), *adj.* empty; wanting: *v. t.* to nullify; to emit or send out: *n.* a vacuum.
★**vol-a-tile** (*vol'à-til,* not *vol'à-tēl* or *vol'à-tīl*), *adj.* easily passing into the aëriform state.
vol-can-ic (*-kan'ik*), *adj.* pertaining to, proceeding from, or produced by, a volcano.
vol-ca-no (*-kā'nō*), *n.* [*pl.* volcanoes (*'nōz*)], a conical hill or mountain from which the products of volcanic action are ejected with great heat in the form of lava, etc.
Volga (*vol'gà*). The greatest European river; bears a name which is from the Old Slavonic *wolkoi* or *wolkoia,* "great."
vo-li-tion (*vō-lish'un*), *n.* the act or power of willing or exerting choice.
vol-plane (*vŏl-plāne*), *v. i.,* the act of alighting, like a bird, by gently floating down from a height; said of an aeroplane.
volt (*vōlt*), *n.* standard unit of electro-motive force.
vol-ta-ic (*vol-tā'ik*), *adj.* pertaining to electricity generated by chemical action or galvanism.
vol-u-ble (*'ū-bl*), *adj.* fluent in speech.
★**vol-ume** (*'ūm*), *n.* a single book; space occupied, measured in cubic units; mass or bulk: *pl.* a great deal.
vo-lu-mi-nous (*vō-lū'mi-nus*), *adj.* extensive; copious.
★**vol-un-ta-ri-ly** (*vol'un-tā-ri-li,* not *vol-un-tā'ri-li*), *adv.* spontaneously.
vol-un-ta-ry (*'un-tā-ri*), *adj.* acting from choice or free will: *n.* an organ solo. [GRATUITOUS.]
vol-un-teer (*-un-tēr'*), *n.* one who enters into any service of his own free will: *v. i.* to offer one's services voluntarily: *v. t.* to offer or bestow.
vo-lup-tu-a-ry (*vō-lup'tū-ā-ri*), *n.* one given to sensual enjoyments or luxury: *adj.* devoted to luxury. [SENSUALIST.]
vo-lup-tu-ous (*'tū-us*), *adj.* given to the enjoyment of sensual pleasures or luxury; sensual.
vo-lute (*vō-lūt'*), *n.* a spiral scroll.
vom-it (*vom'it*), *v. i.* to eject the contents of the stomach by the mouth: *v. t.* to throw up from the stomach; discharge with violence.
voo-doo (*vōō-dōō'*), *n.* a system of magic and superstitious rites, said to be accompanied with cannibalism and human sacrifices, prevalent among certain negro races.
vo-ra-cious (*vō-rā'shus*), *adj.* greedy in eating; ravenous. [RAPACIOUS.]
vor-tex (*vôr'teks*), *n.* [*pl.* vortices (*'ti-sēz*)], the hollow and circular form assumed by a liquid when set in rotation; whirlpool.
vo-ta-ry (*vō'tà-ri*), *n.* one addicted to some particular pursuit or condition of life.
vote (*vōt*), *n.* an expression of choice or preference by ballot or other method of suffrage; decision by the majority: *v. t.* to choose by suffrage: *v. i.* to give a vote.
vo-tive (*vō'tiv*). *adj.* given, consecrated, or promised by vow.
vouch (*vouch*), *v. t.* to attest.
vouch-safe (*-sāf'*), *v. t.* to condescend to grant; concede.
vow (*vou*), *n.* a solemn promise or pledge; pledge of fidelity or affection: *v. t.* to promise solemnly: *v. i.* to make a solemn promise.
vow-el (*'el*), *n.* a simple vocal sound; a letter representing such a sound: *adj.* vocal.
voy-age (*voi'āj*), *n.* a journey by water from one country or place to another: *v. i.* to make a voyage: *v. t.* to travel or pass over. [JOURNEY.]
vul-can-ize (*vul'kan-īz*), *v. t.* to change the properties of (india rubber) by combination with sulphur, white lead, and other substances, rendering it hard and nonelastic.
vul-gar (*'gẽr*), *adj.* common; general; unrefined; coarse; mean: *n.* the uneducated or unrefined class.
vul-gar-ism (*-izm*), *n.* a vulgar phrase or expression.
vul-gar-i-ty (*-gar'i-ti*), *n.* coarseness of manners or language.
Vul-gate (*'gāt*), *n.* an ancient Latin version of the Scriptures in use in the Roman Catholic church,

made originally by St. Jerome: *adj.* pertaining to, or contained in, the Vulgate.

vul-ner-a-ble (*vul'nĕr-ȧ-bl*), *adj.* capable of being wounded; susceptible of wounds or injury.

vul-ture (*'tŭr*), *n.* a large, carnivorous, voracious bird of prey.

W

Wabash (*waw'bȧsh*). County in Indiana and Illinois, river flowing through both states, and city in Indiana. From the Indian word *Ouabache*, "cloud borne by an equinoctial wind," or, according to another authority, "white water."

wab-ble. Same as *wobble.*

wad (*wod*), *n.* small mass of tow, etc., used for keeping the powder, etc., in place in a gun; a kind of plumbago: *v. t.* to form into, or stuff with, a wad.

wad-ding (*'ing*), *n.* a soft stuff of loose texture used for stuffing garments, etc.

wad-dle (*'l*), *v. i.* to move from side to side in walking: *n.* a clumsy, rocking gait.

wade (*wād*), *v. i.* to walk through any substance that yields to the feet, as water, snow, etc.: *v. t.* to ford.

wa-fer (*wā'fĕr*), *n.* small disk of unleavened bread used in the Eucharist in the Roman Catholic church.

waf-fle (*wof'l*), *n.* a soft indented cake, baked in an iron utensil over a flame or coals.

waft (*wȧft*), *v. t.* to bear along on a buoyant medium: *v. i.* to float.

wag (*wag*), *v. i.* to move backward and forward: *v. t.* to cause to oscillate: *n.* the act of wagging; a humorous, witty person.

wage (*wāj*), *v. t.* to engage in, or carry on, especially war; venture: *n.* payment for service rendered.

wa-ger (*wā'jĕr*), *n.* a subject on which bets are laid: *v. t.* to hazard; to stake: *v. i.* to bet.

wag-ger-y (*wag'ĕr-i*), *n.* mischievous merriment; tricks of a wag; good-humored sarcasm.

wag-gish (*'ish*), *adj.* humorous, sportive.

wag-gle (*'l*), *v. i.* and *v. t.* to move from side to side: *n.* a movement from side to side.

wag-on (*'un*), *n.* a four-wheeled heavy vehicle for carrying goods, agricultural produce, etc.

waif (*wāf*), *n.* anything found without an owner; a homeless wanderer.

wail (*wāl*), *v. t.* to lament: *v. i.* to express sorrow audibly: *n.* loud lamentation. [Also *wailing.*]

wain (*wān*), *n.* a wagon.

wain-scot (*'skot*), *n.* paneled wooden lining on walls: *v. t.* to line with paneled boarding.

waist (*wāst*), *n.* the narrowest part of the body just below the ribs; middle part.

waist-coat (*wāst'kōt*, colloq. *wes'kut*), *n.* a short, sleeveless men's garment covering the chest and waist.

wait (*wāt*), *v. i.* to stay in expectation; lie in ambush; watch; remain quiet: *v. t.* to await; postpone.

wait-er (*'ĕr*), *n.* a servant in attendance at table; salver or tray. [Fem. *waitress.*]

waits (*wāts*), *n. pl.* nocturnal musicians who perform in the streets of English towns at Christmastide.

waive (*wāv*), *v. t.* to give up a claim to; forego.

wake (*wāk*), *v. i.* to be roused from sleep; cease to sleep; be active: *v. t.* to rouse from sleep; revive; watch: *n.* a vigil.

wake-ful (*'fool*), *adj.* remaining awake.

Syn. WAKEFUL, watchful, vigilant. *Wakefulness* is an affair of the body, and depends upon the temperament; *watchfulness* is an affair of the will, and depends upon the determination; some persons are more *wakeful* than they wish to be; few are as *watchful* as they ought to be. *Vigilance* expresses a high degree of *watchfulness;* a sentinel is *watchful* who on ordinary occasions keeps good *watch;* but it is necessary for him, on extraordinary occasions, to be *vigilant.*

wale (*wāl*), *n.* a mark left by the stroke of a whip, etc.: *v. t.* to mark with a wale.

Wales. A principality of Great Britain in the southwest corner of England. Name derived from *Wealas,* "foreigners," or "Welsh," a name given by the Anglo-Saxon invaders to the natives of Britain. Wales is a plural form denoting the people, which afterward acquired a territorial significance.

walk (*wawk*), *v. i.* to advance by alternate steps; go at a moderate pace: *v. t.* to traverse; cause to walk: *n.* act or manner of walking; place for pedestrian exercise. [CARRIAGE.]

wall (*wawl*), *n.* a structure of stone, brick, etc.; side of a building; rampart; means of protection: *v. t.* to inclose with, or as with, a wall.

Walla Walla (*wol'lȧ wol'lȧ*), **Wash.** The Indian *walawala* means "waving," "throwing up waves," "rippies."

wal-let (*wol'ĕt*), *n.* a bag or knapsack; a pocketbook.

wall-eye (*wawl'-i*), *n.* an eye, the iris of which is white (said of horses).

wall-flow-er (*'flou-ĕr*), *n.* a plant of the genus Cheiranthus with sweet-scented flowers; one who, at a ball or party, takes no part.

Wall of Antoninus. A rampart erected in the southern part of Scotland, in the reign of Antoninus Pius, to check the barbarians in the north of Britain. It extended from the Firth of Forth to the Firth of Clyde.

Walloons (*wol-lōōnz'*). A people found chiefly in southern and southeastern Belgium, also in the neighboring parts of France, and in a few places in Rhenish Prussia near Malmedy. They are descended from the ancient Belgæ, mixed with Germanic and Roman elements.

wal-lop (*wol'up*), *v. i.* to boil with a continued bubbling: *v. t.* to beat soundly: *n.* a blow.

wal-low (*'ō*), *v. i.* to tumble or roll in anything soft; live in vice or filth: *n.* a place to which an animal resorts to wallow.

wal-nut (*wawl'nut*), *n.* a tree of the genus Juglans, yielding an edible fruit and valuable wood.

wal-rus (*wol'rus*), *n.* a large, carnivorous marine mammal with powerful tusks.

Wall street. A street in the lower part of New York city which extends from Broadway, opposite Trinity church, to the East river, famous as a financial and speculative center. A figurative term for the money power of the country.

Walter. From the Ger. *walt-her,* "powerful lord"; literally, a "wood-master." Dutch, *Wouter;* Fr., *Gautier;* Ger., *Walter;* It., *Gualterio;* Lat., *Gualterus;* Port., *Gualter;* Sp., *Gualterio;* Sw., *Walter.*

waltz (*wawltz*), *n.* a kind of dance; music for such a dance: *v. i.* to dance a waltz.

wam-pum (*wom'pum*), *n.* beads made of shells, used by the North American Indians as money and for ornamental belts.

wan (*won*), *adj.* pale; sickly.

wand (*wond*), *n.* a long, slender rod; staff of authority.

wan-der (*won'dĕr*), *v. i.* to ramble about aimlessly; stroll; depart from; be delirious. [DEVIATE.]

wane (*wān*), *v. i.* to grow less; fail: *n.* the decrease of the illuminated part of the moon. [ABATE.]

want (*wawnt*), *n.* deficiency; necessity; penury: *v. t.* to have need of; desire: *v. i.* to be deficient; come short.

Syn. WANT, need, lack. *To want* is to be without that which contributes to our comfort, or is an object of our desire; *to need* is to be without that which is essential for our existence or our purposes; *to lack* expresses little more than the general idea of being without, unaccompanied by any collateral idea; it is usual to consider what we *want* as artificial, and what we *need* as natural and indispensable.

Ant. HAVE, hold, possess.

wan-ton (*won'tun*), *adj.* licentious; lustful; unrestrained; roving; sportive; luxurious; trifling: *n.* a lascivious man or woman.

war (*wawr*), *n.* a contest between states carried on by force; armed conflict: *v. i.* to fight; strive violently. [MARTIAL.]

war-ble (*wawr'bl*), *v. t.* and *v. i.* to sing in a trilling or quavering manner: *n.* a soft, sweet flow of melodious sounds; carol.

ward (*wawrd*), *v. t.* to guard; defend from danger: *v. i.* to be vigilant; act on the defensive: *n.* defense; particular division of a city or town.

ward-en (*'en*), *n.* a guardian; keeper; head official; churchwarden.

ward-robe (*'rōb*), *n.* portable closet for clothes; wearing apparel.

ware-house (*wār'hous*), *n.* a building for storing goods: *v. t.* to deposit in a warehouse.

wares (*wārz*), *n.* merchandise; goods.

war-fare (*wawr'fār*), *n.* hostilities; war; contest; military life or service.

warm (*wawrm*), *adj.* having heat in a moderate degree; subject to heat; zealous; excited: *v. t.* to make warm. [HEARTY.]

warmth (*wawrmth*), *n.* moderate heat; earnestness or irritability.

warn (*wawrn*), *v. t.* to give notice of possible danger; caution; expostulate; summon by authority.

warp (*wawrp*), *n.* the threads which extend lengthwise in the loom, and are crossed by the woof; towing rope: *v. t.* to turn or twist out of shape: *v. i.* to swerve or deviate.

war-rant (*wor'ant*), *v. t.* to guarantee; give assurance to; authorize; maintain; mark as safe: *n.* writ for arresting a person.

war-rior (*wawr'y ĕr, wor'i-ĕr*), *n.* a soldier; fighter.

Warsaw. Formerly *Varsovia* (Polish *Warszawa*), takes its Slavonic name from a "castle," or "fortified place," built in the ninth century by Conrad, duke of the surrounding palatinate of Mazovia. Here originated the mazurek, a dance of the Polish peasantry, which we call the mazurka.

wart (*wawrt*), *n.* a dry excrescence on the human skin and certain animals.

wa-ry (*wā'ri*), *adj.* [*comp.* warier, *superl.* wariest], cautious; circumspect. [CAUTIOUS.]

wash (*wosh*), *v. t.* to cleanse with water; cover with water: *v. i.* to cleanse by washing: *n.* the act of washing; cosmetic lotion.

wash-er (*'ĕr*), *n.* one who, or that which, washes; ring of metal, leather, etc., used to secure the tightness of a joint, screw, etc.

Washington. The name of two places in England, one in Durham, the other in Sussex (Anglo-Saxon *Hwessingatun* and *Wassingatun*), which signifies the *tun,* or "town," of the Hwessings or Wassings. From the Durham village the ancestors of George Washington, the first president of the United States (1789-1797), are believed to have derived their territorial surname. In his honor the city of Georgetown, in Maryland, selected in 1790 for the Federal capital, was renamed *Washington.*

wasp (*wosp*), *n.* a winged insect with a sharp sting; peevish, irritable person.

waste (*wāst*), *v. t.* to destroy wantonly; diminish; squander; impair: *v. i.* to be diminished: *adj.* lying unused; unproductive: *n.* useless expenditure; refuse. [DESTROY, EXCESS.]

waste-ful (*'fool*), *adj.* causing waste; spending property extravagantly or uselessly. [EXCESS.]

watch (*woch*), *n.* close observation; guard; vigilance; sentry; pocket timepiece: *v. i.* to keep guard: *v. t.* to tend; keep in view. [GUARD, OBSERVE.]

watch-ful, *adj.* vigilant. [WAKEFUL.]

watch-word (*'wĕrd*), *n.* a password.

★**wa-ter** (*waw'tĕr,* not *wot'ĕr*), *n.* a colorless, inodorous, transparent fluid; rain; sea; any collection of water: *v. t.* to supply with water; irrigate.

wa-ter-man, *n.* boatman. [SEAMAN.]

Watervliet (*waw-tĕr-vlēt'*). City on the Hudson, in Albany county, New York. From the Dutch, meaning "flowing stream."

wa-ter-y (*'tĕr-i*), *adj.* pertaining to, or like, water; transparent or thin; tasteless; tearful.

watt (*wot*), *n.* an electrical unit of power.

wat-tle (*'l*), *n.* a twig or flexible rod; fleshy lobe under the throat of a fowl, turkey: *v. t.* to twist or interweave (twigs or rods) one with another.

waul (*wawl*), *n.* the cry of a cat.

wave (*wāv*), *n.* the alternate rising and falling of water above its natural level; state of vibration propagated through a system of particles or elastic medium: *v. i.* to move like a wave: *v. t.* to brandish; beckon.

Syn. WAVE, billow, surge, breaker. Those *waves* which swell more than ordinarily are termed *billows;* those *waves* which rise higher than usual are termed *surges;* those *waves* which dash against the shore, or against vessels, with more than ordinary force, are termed *breakers.*

wav-er (*'ĕr*), *v. i.* to move to and fro; vacillate; hesitate or be undetermined. [FLUCTUATE.]

wav-y (*'i*), *adj.* rising and swelling in waves; full of waves; undulating.

wax (*waks*), *n.* beeswax; any tenacious substance like beeswax: *v. t.* to smear, rub, or join, with wax.

wax-en (*'en*), *adj.* made of, like, or consisting of, wax.

wax-y (*'i*), *adj.* consisting of, or like, wax; adhesive.

way (*wā*), *n.* a road; route; progression; motion; course; manner.

way-lay (*'lā*), *v. t.* to beset by the road or in ambush.

way-ward (*'wĕrd*), *adj.* perverse; froward. [PERVERSE.]

we (*wē*), *pron. pl.* of I.

weak (*wēk*), *adj.* wanting strength, vigor, spirit, discernment, or wisdom.

Syn. WEAK, feeble, infirm. We may be *weak* in body or mind; but we are commonly *feeble* and *infirm* only in the body; we may be *weak* from disease, or *weak* by nature, it equally conveys the gross idea of a defect; but the terms *feeble* and *infirm* are qualified expressions for weakness; an old man is *feeble* from age; the latter may likewise be *infirm* in consequence of sickness. [See *faint.*]

weal (*wēl*), *n.* welfare; prosperity.

wealth (*welth*), *n.* riches; affluence.

wealth-y (*'i*), *adj.* [*comp.* wealthier, *superl.* wealthiest], rich; affluent.

wean (*wēn*), *v. t.* to accustom and reconcile to a want or deprivation of the breast; alienate, as the affections from any object or habit.

weap-on (*wep'n*), *n.* any instrument of offense or defense.

wear (*wār*), *v. t.* [*p. t.* wore, *p. p.* worn, *p. pr.* wearing], to impair or waste by time, usage, friction, etc.: carry as covering on the body: *v. i.* to last under use: *n.* the act of wearing.

wea-ri-some (*wē'ri-sum*), *adj.* fatiguing; tedious.

wea-ry (*'ri*), *adj.* [*comp.* wearier, *superl.* weariest], worn out physically or mentally; irksome: *v. t.* to harass by something irksome: *v. i.* to become weary, tired, or fatigued. [FAINT, FATIGUE.]

wea-sel (*'zel*), *n.* a small carnivorous animal with short legs and a long body.

weath-er (*weth'ĕr*), *n.* the state of the atmosphere with respect to cold, heat, wet, dryness, etc: *v. t.* to expose to, or season by exposure to, the air.

weath-er-cock (*-kok*), *n.* a vane.

weave (*wēv*), *v. t.* to twist or interlace, as threads, together; compose or fabricate: *v. i.* to practice weaving; work with a loom.

wea-zen (*wē'zn*), *adj.* sharp and thin; withered.

web (*web*), *n.* texture of threads, or threadlike materials; tissue or texture: *v. t.* to unite or surround with, or as with, a web; entangle.

wed (*wed*), *v. t.* [*p. t.* and *p. p.* wedded or wed, *p. pr.* wedding], to marry; unite together: *v. i.* to contract marriage. [ADDICTED.]

wed-ding (*'ing*), *n.* marriage; nuptial ceremonies or festivities.

wedge (*wej*), *n.* a piece of wood or metal, thick at one end and thin at the other, used for rending or compressing, etc.: *v. t.* to cleave, force, drive, or fasten, with a wedge.

wed-lock (*wed'lok*), *n.* matrimony.

Wednesday. The fourth day of the week. Formerly the day set apart for the worship of Odin, or Wodin, the norse All-Father, father of gods and men.

wee (*wē*), *adj.* very small.

weed (*wēd*), *n.* any plant growing uncultivated or noxious to cultivated crops: *v. t.* to free from weeds.

weed-y (*wēd'i*), *adj.* pertaining to, or consisting of, weeds; long-legged, thin, and lank.
Weehawken (*wē-haw'ken*), **N. J.** Named from the Delaware Indian name *weachin*, "maize lands."
week (*wēk*), *n.* a period of seven days.
week-day (*-dā*), *n.* any day of the week except Sunday.
week-ly (*'li*), *adj.* continuing for, produced within, or happening in, a week: *adv.* once a week: *n.* [*pl.* weeklies (*'liz*)], a periodical issued once a week.
ween (*wēn*), *v. i.* to think, fancy.
weep (*wēp*), *v. i.* to express grief by shedding tears: *v. t.* to lament; pour forth. [CRY.]
weft (*weft*), *n.* the woof or piling of cloth crossing the warp.
weigh (*wā*), *v. t.* to ascertain the weight of; reflect on carefully: *v. i.* to have weight; bear heavily: *n.* a certain quantity by weight.
weight (*wāt*), *n.* gravity; quantity of matter as ascertained by the balance; pressure; power importance.

Syn. WEIGHT, burden, load. A person may sink under the *weight* that rests upon him; a platform may break down from the *weight* upon it; a person sinks under his *burden* or *load;* a cart breaks down from the *load.*

Ant. LIGHTNESS.

weight-y (*'i*), *adj.* [*comp.* weightier, *superl.* weightiest], heavy; ponderous; momentous; important.
weir (*wēr*), *n.* a dam across a stream to raise the level of the water; inclosure of twigs, etc., for catching fish.
weird (*wērd*), *adj.* pertaining to, or connected with, fate or destiny; supernatural.
wel-come (*wel'kum*), *adj.* received with gladness or hospitality: *n.* kind reception to a guest or newcomer: *v. t.* to salute with kindness. [ACCEPTABLE.]
weld (*weld*), *v. t.* to unite together by hammering or fusion, as two pieces of heated iron.
wel-fare (*wel'fâr*), *n.* prosperity; happiness.
wel-kin (*'kin*), *n.* the sky.
well (*wel*), *n.* a spring or fountain; shaft sunk to reach a supply of water or other liquid: *v. i.* to flow or issue forth: *adv.* right; justly; favorably: *adj.* fortunate; sound in body; healthy; safe.
well-be-ing (*-bē'ing*), *n.* well-conditioned existence; moral or physical welfare.
well-bred (*'bred*), *adj.* refined in manners; cultivated.
Wellsburg, W. Va. Named in honor of Alexander Wells, an early settler.
Welsh (*welsh*), *adj.* pertaining to Wales, its inhabitants, or language: *n.* the people of Wales collectively; the language of Wales.
Welsh rab-bit (*rab'it*), melted cheese mixed with ale and condiments spread upon toast.
welt (*welt*), *n.* a narrow strip of leather around a shoe between the upper leather and sole: *v. t.* to furnish with a welt.
wel-ter (*wel'tẽr*), *v. t.* to roll in mud or foul matter; wallow: *v. t.* to cause to rise and fall, as waves: *n.* that in which any person or animal welters: *adj.* pertaining to, or noting, the most heavily weighted race of a meeting.
wen (*wen*), *n.* a fleshy and movable tumor.
wench (*wench*), *n.* a young girl or maiden: usually in an invidious or bad sense.
wend (*wend*), *v. i.* to go; pass: *v. t.* to direct (one's way or course).
Wes-ley-an-ism (*wes'li-an-izm*), *n.* the doctrines and church polity of the sect of Arminian Methodists, founded by John Wesley, 1739; Methodism.
west (*west*), *n.* one of the 4 cardinal points, exactly opposite the east; point where the sun appears to set: *adv.* toward the west.
west-ern (*west'ẽrn*), *adj.* tending to, or passing toward, the west.
Western Reserve, The. When, by the treaty of 1783, Great Britain relinquished the territory south of the Great Lakes and east of the Mississippi river, disputes arose among the states of Virginia, New York, Massachusetts, and Connecticut as to the right of occupancy in that locality. The difficulty was finally settled by the cession of the whole to the federal government, but Connecticut reserved a tract of nearly 4,000,000 acres on Lake Erie. That state finally disposed of this in small lots to colonists, and so accumulated a magnificent school fund.
Westminster hall. A structure adjoining the British houses of Parliament on the west, forming part of the ancient palace of Westminster.
Westminster palace, London. The houses of Parliament. A palace is supposed to have existed at Westminster in the reign of Canute (1017-35). Its importance, however, begins with Edward the Confessor (1042-66), and the name has been conferred upon the great legislative edifice of the British empire.
West Virginia. See *Virginia* for the word *Virginia*: the western division of Virginia separated from the eastern, owing to civil war issues, as provided in amnesty proclamation of President Lincoln, December 8, 1863, affecting section of states in rebellion. It was proposed at one time to call the state *Kanawha*, from its principal river.
west-ward (*'wẽrd*), *adv.* toward the west. [Also *westwards.*]
wet (*wet*), *v. t.* to make wet, with water or some other liquid: *n.* water; moisture: *adj.* containing, consisting of, or soaked with, water or some other liquid; very damp; rainy or misty.
wet nurse (*wet''nûrs*), a nurse who suckles the child of another.
Wetterhorn (*vet'tẽr-hôrn*). A mountain of the Bernese Alps, canton of Bern, Switzerland, situated near Grindelwald, fourteen miles east-southeast of Interlaken. Means, literally, "storm peak."
Wettin (*vet-tēn'*). A town in the province of Saxony, Prussia, situated on the Saale, thirty-two miles northwest of Leipzig. It contains the ancestral castle of the Saxon line of *Wettin*, from which King Edward VII. of England is descended.
whack (*hwak*), *n.* a smart resounding blow; large piece: *v. t.* to strike with a smart resounding blow.
whale (*hwāl*), *n.* a large mammal of the Cetacea, many species of which yield oil and whalebone; a fish of great size.
wharf (*hwawrf*), *n.* [*pl.* wharfs (*hwawrfs*), or wharves (*hwawrvz*)], a quay or erection on the shore of a harbor, river, etc., for discharging or taking in cargoes, passengers, etc.
what (*hwot*), *pron.* that which; the thing that; how great; something: *adj.* of what sort, character, etc.
what-not (*'not*), *n.* an article of furniture with shelves for books, ornaments, etc.
wheat (*hwēt*), *n.* an annual cereal grain from which flour is manufactured.
wheat-en (*'n*), *adj.* made of wheat.
whee-dle (*hwē'dl*), *v. t.* to entice with flattering words; cajole; coax.
wheel (*whēl*), *n.* a circular frame or solid piece of wood or metal turning on its own axis: *v. t.* to cause to rotate: *v. i.* to turn on, or as on, an axis.
Wheeling. City in West Virginia, so named because the Indians placed the head of a white victim on a pole and gave the place the name of *weal-ink*, "a place of a human head." The present name of the place is a corruption of the Indian name.
wheel-wright (*'rīt*), *n.* a maker of wheels and wheeled carriages.
wheeze (*hwēz*), *v. i.* to breathe hard and audibly: *n.* a puffing or blowing, as in labored breathing.
whelm (*hwelm*), *v. t.* to overwhelm.
whelp (*hwelp*), *n.* the young of a dog, lion, fox, etc.; cub: *v. i.* to bring forth young.
when (*hwen*), *adv.* at, or after, the time that; at what time; although.
whence (*hwens*), *adv.* from what place, source, or origin; how.
where (*hwâr*), *adv.* at which place or places; whither.
where-as (*-az'*), *adv.* when in fact or truth; since.
where-fore (*'fōr*), *adv.* for which or what reason; why.
whet (*hwet*), *v. t.* [*p. t.* and *p. p.* whetted, *p. pr.* whetting], to sharpen, especially by rubbing or friction; stimulate.
wheth-er (*hweth'ẽr*), *pron.* which of two: *conj.* which of two alternatives (followed by *or*).
whet-stone (*hwet'stōn*), *n.* a stone for sharpening edged tools, etc.
whey (*hwā*), *n.* the thin, sweet, watery part of milk, after separation from the curd.
★**which** (*hwich*, not *wich*), *pron.* a word of interrogation in all genders; the relative serving as the neuter of *who.*
whiff (*hwif*), *n.* a sudden breath of air, smoke, etc., as from the mouth; light puff: *v. t.* to puff or emit in whiffs.
whif-fle-tree. Same as *swingletree.*
Whig (*hwig*), *n.* one of a political party in the United States that favored a protective tariff, and was succeeded by the present Republican party: *adj.* pertaining to Whigs.
while (*hwīl*), *n.* space of time; duration: *conj.* during the time that: *v. t.* to cause to pass; spend: usually followed by *away.*
whim (*hwim*), *n.* a capricious fancy; freak; notion.
whim-per (*'pẽr*), *v. t.* to utter in a low, whining, or crying tone: *v. i.* to cry with a low, whining, broken voice.
whim-si-cal (*'zi-kal*), *adj.* full of whims, fantastical; odd in appearance. [FANCIFUL.]
whine (*hwīn*), *v. i.* to express sorrow by a plaintive cry; murmur in an unmanly manner: *n.* a plaintive tone.
whin-ny (*hwin'i*), *v. i.* to utter a sound like the cry of a horse: *n.* the act of whinnying: *adj.* abounding in whin, or furze.
whip (*hwip*), *v. t.* to strike or punish with a lash; flog; lash with sarcasm: *v. i.* to move nimbly: *n.* an instrument for driving horses or for correction.
whip-poor-will (*hwip'-poor-wil*), *n.* a small American bird, named from its cry.
whir (*hwẽr*), *v. i.* to revolve quickly with a whizzing noise: *n.* a whizzing noise.
whirl (*hwẽrl*), *v. t.* to turn round rapidly: *v. i.* to turn or move round with velocity: *n.* rapid rotation.
whirl-i-gig (*'i-gig*), *n.* a child's toy which is whirled or spun round.
whirl-pool (*'pōōl*), *n.* a body of water moving with a circular motion, forming a vortex or gulf.
whirl-wind (*'wind*), *n.* a violent wind moving spirally; sudden violent rush.
★**whisk** (*hwisk*, not *wisk*), *v. t.* to sweep or stir rapidly; move, or carry off, nimbly: *v. i.* to move rapidly and nimbly: *n.* the act of whisking.
whisk-ers (*'ẽrz*), *n. pl.* the hair on a man's cheeks; the bristly hairs on the upper lip of a cat, etc.
whis-ky (*hwis'ki*), *n.* an intoxicant distilled from barley, rye, etc. [Also *whiskey.*]
whis-per (*hwis'pẽr*), *v. i.* to speak in a low voice: *v. t.* to say under the breath: *n.* a low, soft tone of voice, audible only to the listener.
whist (*hwist*), *n.* a card game: *interj.* hush!
whis-tle (*hwis'l*), *v. i.* to make a shrill sound by forcing the breath through the contracted lips: *v. t.* to call or signal by a whistle: *n.* small wind instrument.
whit (*hwit*), *n.* the smallest particle.
white (*hwīt*), *adj.* being without color, hence pure; innocent: *n.* a white man; albumen of an egg.
white-cap (*'kap*), *n.* a redstart; one of a self-constituted tribunal of persons who visit the houses of offenders against morality and punish them by whipping.
Whitechapel. A quarter in the eastern part of London, named from a certain chapel from which distances out of London used to be measured.
Whitehall. In modern London, the main thoroughfare between Trafalgar square and the houses of Parliament.
Whitehall palace. A palace in London, England, originally built by Hubert de Burgh in the reign of Henry III.
White House, The. The official residence of the president of the United States in Washington. It is a handsome mansion in the English Renaissance. Its classical details are sober and well designed, both outside and inside.
white lie (*'lī*), pious fraud.
white-liv-ered (*'liv-ẽrd*), *adj.* cowardly.
White mountains, N. H. Named from the color of the tops; being covered with snow (white), this has always been the groundword of various appellations. The first English explorers (1632) called them the *Crystal hills.* The Indian name was *Waumbekket.*
whit-en (*'en*), *v. t.* to make white; blanch.
White Sea. An arm of the Atlantic Ocean: so called from its proximity to the sterile regions of snow and ice.
white-wash (*whīt'wosh*), *n.* a composition for whitening ceilings, etc.: *v. t.* to whiten with whitewash.
whith-er (*hwith'ẽr*), *adv.* to what place; to what; how far.
Whitney. Loftiest peak of the Sierra Nevadas, named for Prof. J. D. Whitney, state geologist of California.
Whit-sun (*'sun*), *adj.* pertaining to, or observed at, Whitsuntide, or the season of Pentecost.
Whit-sun-day (*'sun-dā*), *n.* the seventh Sunday after Easter, commemorating the day of Pentecost.
whit-tle (*hwit'l*), *v. t.* to cut, dress, or sharpen with a knife.
whiz (*hwiz*), *v. i.* to make a humming or hissing noise: *n.* a humming or hissing noise.
who (*hōō*), *pron.* referring to one or more persons: used relatively and interrogatively.
who-ev-er (*-ev'ẽr*), *pron.* every one who; whatever person.
★**whole** (*hōl*, not *hōl*), *adj.* containing all; complete; not defective; hale and sound; unbroken.

Syn. WHOLE, entire, complete, total, integral. *Whole* excludes subtraction; *entire* excludes division; *complete* excludes deficiency; a *whole* orange has had nothing taken from it; an *entire* orange is not yet cut; and a *complete* orange is grown to its full size; *total* is the opposite of partial; *integral* is applied now to parts or numbers not broken.

Ant. PART, division, share, portion.

whole-sale (*'sāl*), *n.* sale of goods by the piece or in large quantity: *adj.* buying or selling in large quantities.
whole-some (*'sum*), *adj.* sound; salubrious; salutary. [HEALTHY.]
whom (*hōōm*), *pron. objective* of who.
whoop (*hōōp*), *v. i.* to utter a loud, shrill, and prolonged cry; shout: *n.* a loud shout of, or as of, pursuit or attack.
★**whoop-ing-cough** (*hōōp'ing-kôf*, not *hoop'ing-*) *n.* a violent, convulsive cough, characterized by its whooping sound.
whop-per (*hwop'ẽr*), *n.* something unusually large; a monstrous lie.
whorl (*hwẽrl* or *hwôrl*), *n.* any set of organs or appendages arranged in a circle round an axis, as flowers or leaves.
whor-tle-ber-ry (*hwẽr'tl-ber-i*), *n.* a small shrub and its edible blue fruit.
whose (*hōōz*), *pron. poss.* of who or which.
why (*hwī*), *adv.* for what cause, reason, or purpose: *interj.* used emphatically: *n.* the reason or cause.
wick (*wik*), *n.* the cotton or substance of a candle or lamp which supplies the flame.
wick-ed (*'ed*), *adj.* evil in principle or practice; sinful; immoral; roguish.

Syn. WICKED, iniquitous, nefarious. It is *wicked* to deprive another of his property unlawfully, under any circumstances; but it is *iniquitous* if it be done by fraud and circumvention; and *nefarious* it if involves any breach of trust.

Ant. RIGHTEOUS, upright, moral, noble.

wick-er (*'ẽr*), *n.* a pliant osier: *adj.* made of plaited osiers.
wick-et (*'et*), *n.* a small gate; the three upright stumps in cricket at which the ball is bowled.
wide (*wīd*), *adj.* extended far each way; broad; vast: *adv.* to a great distance; far apart: *n.* a ball bowled outside the bowling crease. [LARGE.]

wid-en (*wid'en*), *v. t.* to make wide; throw open: *v. i.* to enlarge.
★**wid-ow** (*wid'ō*, not *wid'u*), *n.* a woman bereaved of her husband and remaining unmarried.
wid-ow-er (*-ẽr*), *n.* a man bereaved of his wife and remaining unmarried.
width (*width*), *n.* extent of a thing from side to side.
wield (*wēld*), *v. t.* to use or employ with the hand; control or sway; handle.
wife (*wīf*), *n.* [*pl.* wives (*wīvz*)], a woman united in lawful wedlock to a man.
wig (*wig*), *n.* false hair worn on the head.
wig-gle. Same as *wriggle.*
wight (*wīt*), *n.* a human being.
wig-wag (*wig'wag*), *n.* a signaling flag: *v. t.* and *v. i.* to wave to and fro.
wig-wam (*wig'wawm*), *n.* an Indian hut.
wild (*wīld*), *adj.* living in a state of nature; untamed; passionate; unreasonable; reckless: *n.* a desert. [ABSURD.]
wild-cat (*wīld'kat*), *adj.* unsafe; speculative; running without control.
wil-der-ness (*wil'dẽr-nes*), *n.* a region or tract of land uncultivated and uninhabited; desert.
wile (*wīl*), *n.* a sly artifice; trick: *v. t.* to cause to pass pleasantly; cajole. [PRETENSE.]
Wilford. A name corrupted from *Wilfred.*
Wilfred, Wilfrid. This name has been translated "much peace," or "resolute peace," but the name is rather from *viel-frid*, "powerful protector."
Wilhelm. See *William.*
Wilhelmina (*vil-hel-mē'nȧ*). A feminine name derived from the German name *Wilhelmine,* from *Wilhelm.*
Wilhelmine (*wil'hel-mēn'*, German *vil-hel-mē'-nē*). A feminine name derived from *Wilhelm.* It., *Guglielma.*
Wilkesbarre (*wilks'bar-i*). City in Luzerne county, Pennsylvania, named for two members of the British Parliament, American sympathizers, John Wilkes and Colonel Barre.
will (*wil*), *n.* the faculty of the mind by which one chooses or determines; legal disposition of one's property at death: *v. i.* to decree: *v. t.* to determine in the mind.

Syn. WILL, wish. We can *will* nothing but what we can effect; we may *wish* for many things which lie above our reach.

Ant. DEPRECATE.

William. A name corrupted from the Old German name *Wilhelm*, derived from *weil-helm*, "protector of rest," "defender of tranquillity," or *vilhelm*, "strong protector." Danish, *Wilhelm;* Dutch, *Willem;* Fr., *Guillaume;* Ger., *Wilhelm;* It., *Guglielmo;* Lat., *Gulielmus*, *Wilhelmus*, or *Willielmus;* Sp., *Guillermo*; Sw., *Wilhelm.*
Willamette (*wil-ȧ'met*). River in Oregon. Indian word said to have originally been *Wallamet*, derived from the same root as *Walla Walla* and *Wallula;* when applied to water, meaning "running." Another authority gives its definition as "the long and beautiful river."
Willimantic (*wil-li-man'tik*). River, and a city in Windham county, Connecticut. Indian word, meaning a "good lookout," or, according to another authority, "good cedar swamps."
will-ing (*'ing*), *adj.* inclined to do or grant; complying; spontaneous; voluntary.
will-ing-ly (*-li*), *adv.* in a willing manner; voluntarily; cheerfully.
Wilmington. City in Delaware, the present name a corruption of the name *Willington*, given it in honor of Thomas Willing.
Wilmington, N. C. Named in honor of the earl of Wilmington, England; orginally called *Newton.*
Wil-ton car-pet (*wil'tun kär'pet*), a kind of carpet manufactured in England.
wi-ly (*wī'li*), *adj.* cunning; crafty.
wim-ple (*wim'pl*), *n.* a kind of silk or linen head-covering formerly worn by women.
win (*win*), *v. t.* [*p. t.* and *p. p.* won, *p. pr.* winning], to gain by superiority in a contest or competition: *v. i.* to be successful; triumph. [PERSUADE.]
wince (*wins*), *v. i.* to twist or turn as in pain or uneasiness; shrink; kick: *n.* the act of wincing.
winch (*winch*), *n.* the crank of a wheel or axle.
wind (*wind*), *n.* air in perceptible motion; breath; idle words: *v. t.* render scant of breath: *v. i.* (*wīnd*) to turn round something; twist; meander: *v. t.* to coil or encircle.
wind-fall (*'fawl*), *n.* fruit blown down by the wind; unexpected good fortune.
wind-ing sheet (*wīnd'ing shēt*), a cerecloth.
wind-lass (*wind'las*), *n.* a horizontal cylinder or roller by means of which heavy weights, etc., are raised.
★**win-dow** (*win'dō*, not *win'du*), *n.* an aperture, usually glazed, in a building to admit light; frame in such an opening; anything resembling a window.
wind-pipe (*wind'pīp*), *n.* the trachea.
Windsor (*win'zôr*). A contraction of the Anglo-Saxon name *Windlesofra*, *Windelsora*, *Wendelsore*, or *Windelesore*, is usually explained as the place by the "winding shore."
Windsor castle. A famous royal residence, founded by William the Conqueror, extended by his successors, especially by Edward III., and restored by Queen Victoria as a memorial of her husband. The interior is decorated in so lavish a manner that it forms one of the most remarkable existing examples of such work.
wind-ward (*wind'wẽrd*), *n.* the direction from which the wind blows: *adv.* toward the wind: *adj.* on the side toward the point from which the wind blows.
wind-y (*wind'i*) ,*adj.* [*comp.* windier, *superl.* windiest], pertaining to, like, or consisting of, wind; boisterous; windward; flatulent.
wine (*wīn*), *n.* liquor made from the juice of certain fruits.
wing (*wing*), *n.* one of the two anterior limbs of a bird, or insect, by which it flies: *v. t.* to furnish with, or as with, wings: *v. i.* to fly.
Winifred (*win'i-fred*). A feminine name, which some consider a Saxon compound signifying "winning peace"; it comes rather from the Old German *win-frid*, "beloved protector." Dutch, *Winfried;* Fr., *Winifred;* Lat., *Winfreda;* Sw., *Winfrid.*
wink (*wingk*), *v. i.* to close and open the eyelids with a quick motion: *n.* act of winking; hint given.
Winnepesaukee (*win-ē-pē-saw'kē*). Lake in New Hampshire. Indian word *winnepesaukee*, meaning "good water discharge," or "the beautiful lake of the highland."
Winnipeg (*win'i-peg*) **city.** The capital of the Canadian province of Manitoba; is built on a spit at the junction of the Red river and the Assiniboine, whose united waters after a course of forty-five miles reach Lake Winnipeg, which bears an Algonquin name meaning "the muddy water," the water being discolored by the Saskatchewan, which brings down much clay in solution.
win-now (*win'ō*), *v. t.* to separate and drive the chaff from (grain) by the wind; fan; sift or examine: *v. i.* to separate chaff from grain.
Winona (*wi-nō'nȧ*), **Minn.** A Dakota name applied to the first born, if a daughter, hence, "first born." If a boy, he is spoken of as *Chaske.*
Winooski (*wi-nōōs'ki*) **river, Vt.** Composed of two Algonquin words meaning "land of onions." The stream is often called the *Onion river*, also *French river*, the latter term from the circumstance of this valley being the line of travel of the French and Indians (1755).
win-some (*win'sum*), *adj.* attractive; pretty.
win-ter (*'tẽr*), *n.* the cold season of the year: *v. i.* to pass the winter; hibernate: *v. t.* to feed or maintain during the winter.
Winter palace. An imperial palace at St. Petersburg, Russia. The interior is remarkable for its series of Russian historical paintings and portraits, and for the splendid state apartments. The crown jewels are kept in this palace.
win-ter sol-stice (*'tẽr sol-stis*), the solstice when the sun enters Capricorn, about December 21.
wipe (*wīp*), *v. t.* to rub or dust the surface of with something soft; dry by rubbing: *n.* act of cleansing by rubbing.
wire (*wīr*), *n.* a metallic thread of uniform diameter: *v. i.* and *v. t.* to send a telegram.
wire-less (*'les*), *adj.*, without wires; not using wires, as *wireless telegraphy.*
wire-less te-leg-ra-phy (*wīr'les tē-leg'rȧ-fi*), any form of telegraphic communication effected by means of electricity without the use of wire circuits.
wire-less te-leph-o-ny (*tē-lef'ō-ni*), telephonic communication without the use of wire circuits.
wire-pull-ing (*'pool-ing*), *n.* secret influence or intrigue, especially for political purposes.
wir-y (*'i*), *adj.* made of, or like, wire; strong and flexible; lean and sinewy.
Wisby or **Visby** (*vēs'bü*). A famous old town on the west coast of the island of Gotland, Sweden. It contains a cathedral and ruined churches, towers, and walls.
Wisconsin (*wis-kon'sin*). From its principal river named by Marquette as *Masconsin*, "wild rushing channel," changed to *Ouisconsin*, then to *Wisconsin.* Present spelling from a misprint; all the early French documents have *Ouisconsing* or *Misconsing.*
wis-dom (*wiz'dum*), *n.* knowledge practically applied to the best ends; natural sagacity; prudence.

Syn. WISDOM, prudence. *Wisdom* directs all matters present or to come; *prudence*, which acts by foresight, directs what is to come. Rules of conduct are framed by *wisdom*, and it is the part of *prudence* to apply these rules to the business of life.

Ant. FOLLY, recklessness, rashness.

wis-dom tooth (*tōōth*), the name popularly given to the third molar in each jaw, appearing between the ages of 17 and 25.
wise (*wīz*), *adj.* possessing wisdom; skillful; learned; discreet.
wise-a-cre (*'ā-kẽr*), *n.* a would-be wise person; pretender to learning.
wish (*wish*), *v. i.* to have a strong desire: *v. t.* to desire or long for: *n.* strong or eager desire. [WILL, DESIRE.]
wish-ing bone (*'ing bōn*), the merrythought. [Also *wishbone.*]
wisp (*wisp*) *n.* a handful or small bundle, as of straw or hay.
Wissahickon (*wis-sȧ-hik'on*) **creek, Pa.** From the Delaware Indian word *misamekhan*, "catfish stream."
wist-ful (*wist'fool*), *adj.* sadly longing; pensive.
wit (*wit*), *v. i.* to know: *n.* knowledge; sagacity; talent; ingenuity; humorist. [INGENUITY.]
witch (*wich*), *n.* a woman supposed to have formed a compact with evil spirits, by whose means she possessed supernatural powers; sorceress; fascinating young woman: *v. t.* to bewitch; enchant.
witch-er-y (*'ẽr-i*), *n.* witchcraft; fascination.
witch-ha-zel (*wich'hā-zl*) *n.* a shrub or small tree of the genus Hamamelis.
Witenagemote (*wit'ē-nȧ-gē-mōt*). In Anglo-Saxon history, the great Saxon council or parliament, consisting of the king with his dependents and friends and sometimes the members of his family, the earldormen, and the bishops and other ecclesiastics.
with (*with*), *prep.* denoting nearness or connection: *prefix* meaning *opposition*, *departure*, *privation*, as *with*stand, *with*hold, etc.
with-draw (*draw'*), *v. i.* to depart; retreat.
withe (*with*), *n.* a tough flexible twig, especially of willow; band of twigs twisted together.
with-er (*with'ẽr*), *v. t.* to cause to fade and become dry; decay: *v. i.* to become sapless.
with-ers (*with'ẽrz*), *n. pl.* the highest part of a horse's back, between the shoulder blades.
with-in (*-in'*), *prep.* inside; in reach of: *adv.* inwardly.
wit-ness (*wit'nes*), *n.* attestation of a fact or event; testimony; evidence: *n.* one who attests: *v. t.* to have direct knowledge of; see: *v. i.* to give evidence. [DEPONENT, TESTIMONY.]
wit-ti-cism (*'i-sizm*), *n.* a witty remark.
wit-ting-ly (*'ing-li*), *adv.* with knowledge.
wit-ty (*'i*), *adj.* [*comp.* wittier, *superl.* wittiest], smartly or cleverly facetious; characterized by, or possessed of, wit; satirical.
wiz-ard (*wiz'ẽrd*), *n.* one supposed to possess supernatural powers; enchanter; sorcerer.
wiz-en (*'en*), *adj.* dried up; shriveled: *v. i.* and *v. t.* to dry up or shrivel.
woe (*wō*), *n.* sorrow; grief; misery. [GRIEF, PITEOUS.]
wolf (*woolf*), *n.* [*pl.* wolves (*woolvz*)], a fierce carnivorous animal of the dog kind, hence a person noted for rapacity or cruelty.
wol-ver-ene (*wool-vẽr-ēn'*), *n.* a carnivorous quadruped; the glutton. [Also *wolverine.*]
★**wom-an** (*woom'an*), *n.* [*pl.* women (*wim'en*)], an adult person of the female sex; female attendant; wife.
womb (*wōōm*), *n.* the uterus of a female; place where anything is produced; large or deep cavity: *v. t.* to breed in secret.
won-der (*wun'dẽr*), *n.* astonishment; cause of wonder; marvel; miracle; prodigy: *v. i.* to feel wonder; be astonished at.

Syn. WONDER, miracle, marvel, prodigy, monster. *Wonders* are natural; *miracles* are supernatural. The whole creation is full of *wonders;* the bible contains an account of the *miracles* which happened in those days. *Wonders* are real; *marvels* are often fictitious; *prodigies* are extravagant and imaginary; *monsters* are violations of the laws of nature. [See *admire.*]

Ant. APATHY, calmness, indifference.

won-der-ful (*-fool*), *adj.* exciting wonder; strange. [Also *wondrous.*]
wont (*wunt*), *adj.* used or accustomed: *n.* habit or custom.
wont-ed (*'ed*), *adj.* habitual; usual.
woo (*wōō*), *v. t.* to solicit in love; invite with importunity: *v. i.* to court. [ADDRESS.]
wood (*wood*), *n.* a large and thick collection of growing trees; solid part of trees.
wood-cock (*'kok*), *n.* a wild fowl allied to the snipe.
wood-en (*'n*), *adj.* made, or consisting of, wood; produced as from wood; stiff; awkward.
wood-man (*'man*), *n.* a forest officer; forester; one who fells timber; a hunter.
wood-peck-er (*'pek-ẽr*), *n.* a bird that taps the trunks of trees to discover insects.
wood-y (*'i*), *adj.* abounding in woods; consisting of, or composed of, or like, wood.
woof (*wōōf*), *n.* the weft or cross-threads in weaving; texture.
wool (*wool*), *n.* the soft, fine hair which covers sheep, goats, etc.; fine fiber resembling wool; soft, thick hair.
wool-en (*'en*), *adj.* made of wool: *n.* cloth made of wool: *pl.* woolen goods.
wool-ly (*'i*), *adj.* consisting of, like, or clothed with, wool.
Worcester (*woos'tẽr*, *wōōs'tẽr*), **England.** Named from the ancient *Huic-wara-ceaster*, "the camp of the *Huieci*, or *Hwiccos*," a Celtic tribe.
Worcester (*wōōs'tẽr*, *woos'tẽr*), **Mass.** County and city in Massachusetts, named for the county in England.
word (*wẽrd*), *n.* an articulate sound, or combination of sounds, expressing an idea; tidings; promise: *pl.* language; speech: *v. t.* to express in words; phrase. [PROMISE.]
word paint-ing (*'pānt-ing*), the description of an event, etc., in vivid, realistic language.
word-y (*'i*), *adj.* pertaining to, consisting of, or containing many, words; verbose.
work (*wẽrk*), *n.* physical or intellectual effort directed to some end; labor; employment; duty: *pl.* moving parts of a mechanism; industrial manufacturing establishment: *v. i.* to perform; act; ferment.

Syn. WORK, labor, toil, drudgery, task. Every member of society must *work* for his support if he is not in independent circumstances; the poor are obliged to *labor* for their daily subsistence; some are compelled to *toil* incessantly for the pittance which they earn; *drudgery* falls to the lot of those who are the lowest in society. A man wishes to complete his *work;* he is desirous of resting from his *labor;* he seeks for a respite from his *toil;* he submits to *drudgery.* *Task* is a *work*

imposed by others, and is, consequently, more or less burdensome. [See *performance.*]
Ant. PLAY, pleasure.

work-house (*wĕrk'hous*), *n.* a poorhouse; a house where convicts are confined to labor.

world (*wĕrld*), *n.* the earth and its inhabitants; whole system of created things; universe.

world-ling (*'ling*), *n.* one who is devoted to the pleasures and advantages of the present.

world-ly (*'li*), *adj.* pertaining to, or devoted to, this life and its enjoyments and advantages.

worm (*wĕrm*), *n.* any small creeping animal entirely destitute of feet: *v. i.* to work slowly, secretly, and gradually: *v. t.* to undermine by slow and secret means.

worm-wood (*'wood*), *n.* the bitter plant Absinthium, used as a powerful tonic; source of bitterness.

wor-ri-ment (*wur'i-ment*), *n.* anxiety; trouble.

wor-ri-some (*'i-sum*), *adj.* causing worry.

wor-ry (*'i*), *v. t.* to harass with anxiety or care; vex or annoy; tease: *v. i.* to be fretful: *n.* anxiety; perplexity. [ANXIETY.]

worse (*wĕrs*), *adj.* [*comp.* of bad], less good: *n.*.loss; defeat; inferior state or condition: *adv.* bad in a greater degree.

wor-ship (*wĕr'ship*), *n.* act of paying divine honor to God: *v. t.* to reverence with great respect: *v. i.* to perform acts of homage or adoration.

worst (*wĕrst*), *adj.* [*superl.* of bad], bad or evil in the highest degree: *n.* the most evil or calamitous state.

worst-ed (*woost'ed*), *n.* twisted thread spun out of woolen yarn: *adj.* made of worsted.

worth (*wĕrth*), *n.* value; price; moral excellence: *adj.* equal in value to; having estate or wealth to the value of; deserving of. [DESERT.]

worth-less (*wĕrth'les*), *adj.* having no value, virtue, or excellence; morally bad; contemptible. [UNWORTHY.]

wor-thy (*wĕr'thi*), *adj.* [*comp.* worthier, *superl.* worthiest], having worth or excellence; estimable.

would-be (*wood'-bē*), *adj.* pretending, or desirous of being thought, to be: *n.* a vain pretender.

wound (*woond* or *wound*), *n.* hurt; injury: *v. t.* to make a wound in; lacerate; injure; hurt the feelings of.

Wouter. See *Walter.*

wrack (*rak*), *n.* seaweed cast ashore; ruin; destruction.

wraith (*rāth*), *n.* the supposed ghost of a person in his exact likeness seen immediately before, or at the time of, his death.

wran-gle (*rang'gl*), *v. i.* to dispute angrily or noisily: *n.* an angry or noisy dispute.

wran-gler (*'glĕr*), *n.* one who wrangles; an angry or noisy disputant.

wrap (*rap*), *v. t.* to roll or wind together; involve; conceal by enveloping: *n.* a wrapper; shawl.

wrap-per (*'ĕr*), *n.* one who, or that which, wraps; loose over or upper garment.

★wrath (*rath*, not *rath*), *n.* violent anger; indignation. [ANGER.]

wrath-ful (*'fool*), *adj.* violently angry.

wreak (*rēk*), *v. t.* to execute in vengeance or passion; inflict.

wreath (*rēth*), *n.* anything curled or twisted; garland or chaplet.

wreathe (*rēth*), *v. t.* to twist into a wreath; interwine: *v. i.* to be interwoven.

wreck (*rek*), *n.* the destruction of a ship by being driven ashore or on a rock; remains of anything ruined; destruction: *v. t.* to ruin or destroy.

wreck-age (*'āj*), *n.* remains of a wrecked vessel; act of wrecking; state of being wrecked.

wreck-er (*'ĕr*), *n.* one who plunders, or causes, wrecks; one who removes the cargo from a wrecked vessel.

wrench (*rench*), *v. t.* to wring or pull with a twist; strain: *n.* a violent twist; sprain; instrument for exerting a twisting strain. [TURN.]

wrest (*rest*), *v. t.* to twist, wrench, or force from by violence; distort: *n.* violent pulling or twisting. [TURN.]

★wres-tle (*res'l*, not *rest'l*), *v. i.* to contend, by grappling with, or striving to trip or throw down, another; strive earnestly: *v. t.* to contend against in wrestling.

wretch (*rech*), *n.* a despicable or worthless person; one sunk in the deepest woe.

wretch-ed (*'ed*), *adj.* miserable; unhappy; worthless; of miserable quality or character.

wrig-gle (*rig'l*), *v. i.* to twist to and fro: *v. t.* to move by, or as by, wriggling: *n.* a wriggling motion.

wring (*ring*), *v. t.* to twist; turn and strain; force or compress; extort: *n.* a forcible twist. [TURN.]

wrin-kle (*ring'kl*), *n.* a small ridge or furrow on a smooth surface; crease: *v. t.* to form or cause wrinkles; crease: *v. i.* to become wrinkled.

wrist (*rist*), *n.* the joint uniting the hand to the arm.

writ (*rit*), *n.* anything written; a written document to enforce obedience to an order of a court of justice.

write (*rit*), *v. t.* [*p. t.* wrote, *p. p.* written, *p. pr.* writing], to form with a pen or similar instrument on paper, etc.; express in writing: *v. i.* to form letters with the pen.

writ-er (*'ĕr*), *n.* one who, or that which, writes; clerk or amanuensis; author; journalist.

Syn. WRITER, author. *Writer* refers us to the act of *writing; author* to the act of inventing. There are, therefore, many *writers* who are not *authors;* but there is no *author* of books who may not be termed a *writer;* compilers and contributors to periodical works are properly *writers,* though not always entitled to the name of *authors.* Poets and historians are properly termed *authors* rather than *writers.*

writhe (*rith*), *v. t.* to twist with violence; pervert: *v. i.* to contort the body.

wrong (*rông*), *adj.* not morally right; false; unjust; mistaken: *adv.* unjustly; erroneously. [INJUSTICE, ABUSE.]

wrong-ful (*'fool*), *adj.* contrary to moral law or justice; injurious.

wroth (*rawth*), *adj.* much exasperated.

wry (*ri*), *adj.* distorted; twisted; perverted; false.

Wyoming (*wi-ō'ming*). A western state of the Union. Name carried to the west by emigrants from the Wyoming valley of eastern Pennsylvania. In its native location, the word derived from the Delaware expression, *maugh-wauwame,* meaning "the large plains."

X

xan-the-in (*zan'thē-in*), *n.* the yellow coloring matter of certain plants and flowers.

xantho, a *prefix,* meaning *yellow,* as *xantho*carpous: *adj.* having yellow fruit.

xan-thous (*'thus*), *adj.* yellow; noting races having brown, flaxen, or red hair and blue eyes.

xe-bec (*zē'bek*), *n.* a small three-masted vessel with lateen and square sails.

xeno, a *prefix,* meaning a *stranger,* as *xeno*genesis, heterogenesis.

xe-non (*zē'non*), *n.* a newly discovered gas, associated with argon.

xe-ro-der-ma (*zē-rō-dĕr'mȧ*), *n.* a disease of the skin characterized by dryness.

xe-roph-thal-mi-a (*-rof-thal'mi-ȧ*), *n.* abnormal dryness of the eyeball, accompanied by redness and irritation.

x rays (*eks' rāz*), the Roentgen rays.

xylo, a *prefix,* meaning *wood.*

xy-lo-graph (*zi'lō-grȧf*), *n.* an engraving on wood; an impression from such an engraving.

xy-log-ra-phy (*-log'rȧ-fi*), *n.* the art or process of making prints from the natural grain of wood; a kind of decorative painting on wood.

xy-lon-ite (*'lŏn-īt*), *n.* a kind of compressed gun cotton, resembling ivory.

xy-lo-phone (*'lō-fōn*), *n.* a musical instrument.

xys-ter (*zis'tĕr*), *n.* a surgical instrument for scraping bones.

xys-tos (*'tos*), *n.* a long covered portico for athletic exercises. [Also *xystus.*]

Y

★yacht (*yot*), *n.* a light and quick-sailing vessel used for pleasure or racing: *v. i.* to sail or cruise about in a yacht.

Yadkin (*yad'kin*). County in North Carolina, said to be named for a tribe of Indians, though some authorities favor the idea that it was named for an early settler.

ya-hoo (*yȧ-hōō'*), *n.* a savage, from the race of brutes in Gulliver's Travels.

yam (*yam*), *n.* a large edible tuber of various climbing plants of the genus Dioscorea.

Yang-tse-Kiang (*yang-tsē-ki-ȧng'*) **river.** "The son of the great water." The largest river of China.

yank (*yangk*), *v. t.* to jerk or twist: *v. i.* to work cleverly and pushingly: *n.* a jerk or twist.

Yan-kee (*yang'kē*), *n.* the popular name of New England Americans: *adj.* pertaining to, or characteristic of, citizens of the United States.

Yankee. This word is believed to have been derived from the manner in which the Indians endeavored to pronounce the word English, which they rendered *Yenghees,* whence the word *Yankee.*

Yan-kee-ism (*-izm*), *n.* a Yankee idiom, practice, or custom.

Yankton (*yangk'tun*), **S. D.** Named from the Dakotah Indian word, *eyank-ton-wah,* "people of the sacred or spirit lake."

yap (*yap*), *v. i.* [*p. t.* and *p. p.* yapped, *p. pr.* yapping], to yelp or bark, as a dog: *n.* a yelp or bark.

yard (*yȧrd*), *n.* a standard measure of length equal to 3 feet; an inclosure adjoining, or attached to, a house.

yarn (*yȧrn*), *n.* spun thread; a sailor's story, especially one of doubtful veracity: *v. i.* to tell a story.

yaw (*yaw*), *v. i.* to steer wildly; deviate from the right course: said of a ship; rise in blisters or white froth.

yawl (*yawl*), *n.* a light, decked, two-masted boat; jolly-boat: *v. i.* to howl.

yawn (*yawn*), *n.* an involuntary opening of the jaws through drowsiness, etc.: *v. i.* to gape involuntarily.

yawp (*yawp*). Same as *yelp.*

Yazoo (*yaz'ōō*). County and river in Mississippi, named for a tribe of Indians, the name said to mean "to blow on an instrument"; another definition is given as "the ruins."

y-cleped (*i-klept'*), *adj.* called. [Also *yclept.*]

ye (*yē*), *pron.*; *nom. pl.* of thou.

yea (*yā*), *adv.* yes; truly.

year (*yĕr*), *n.* the period during which the earth makes one complete revolution around the sun (365¼ days): *pl.* age; old age.

yearn (*yĕrn*), *v. i.* to feel an earnest desire; be filled with eager longing or desire. [EAGER.]

yeast (*yēst*), *n.* the barm or ferment of beer; any preparation for raising dough.

yell (*yel*), *n.* a sharp, discordant cry, as of agony: *v. t.* to scream: *v. i.* to utter a sharp, discordant cry. [CALL.]

★yel-low (*yĕl'lō*, not *yel'lu*), *adj.* of a bright, pure color resembling gold; jaundiced.

Yellow Sea. Arm of Pacific ocean lying between China and Korea. Named from the color of the water caused by the nature of its muddy soil.

Yellowstone. River in Montana and Wyoming. Name derived from its original French name, *roche. jaune,* "yellow rock or stone," though by some said to be from the Indian *mi-tsi-a-da-zi,* "rock yellow river."

yelp (*yelp*), *v. i.* to utter a sharp bark: *n.* a sharp bark.

Yemassee (*yem-ȧ-sē'*) **river, Ga.** From a tribe of Indians, *Yamassi,* signifying "peaceable."

Yenisei (*yen-ē-sā'ē*). The great river of Siberia, also written *Jenissy, Genisei,* or *Gelissy,* has been explained as "the water which flows down," or the river which "brings down ice."

yeo-man (*yō'mȧn*), *n.* [*pl.* yeomen (*'men*)], in England, a man possessed of a small landed estate; farmer.

yes (*yes*), *adv.* yea: opposed to no.

yes-ter-day (*'tĕr-dā*), *n.* the day last past; recent time: *adv.* on the day last past.

yet (*yet*), *adv.* in addition; still; moreover: *conj.* nevertheless; however.

★yew (*yū*), *n.* a large evergreen tree of the genus Taxus: *adj.* pertaining to yew trees.

Yid-dish (*yid'dish*), *n.* a kind of composite language spoken by foreign Jews in England.

yield (*yēld*), *v. t.* to submit; produce; concede: *v. i.* to assent; *n.* product; return. [BEAR, COMPLY.]

yield-ing (*'ing*), *adj.* inclined to give way or comply; accommodating: *n.* the act of producing; submission; compliance. [COMPLIANT.]

yo-del. Same as *jodel.*

yoke (*yōk*), *n.* a piece of hollowed timber for connecting two draft oxen together; service; mark of slavery: *v. t.* to join together; couple; enslave.

yo-kel (*yō'kl*), *n.* a rustic.

Yokohama (*yō-kō-hä'mȧ*). Now the chief port in Japan, was before 1854 a small fishing village. The name is believed to mean the "cross shore."

★yolk (*yōk*, not *yōlk*), *n.* yellow part of an egg; vitellus, the oily secretion from the skin of a sheep which renders the wool soft and pliable.

yon-der (*yon'dĕr*), *adj.* being at a distance within view: *adv.* at that place; there. [Also *yon.*]

Yonkers (*yong'kĕrz*). City in New York, named for a manor house built by the Dutch, the word meaning "young lord," and first applied in this country to Adrien Van der Douck, a patentee.

yore (*yōr*), *adv.* in old time; long ago.

York river, Va. After the duke of York; prior to this it was noted on the maps as *Salt river.* The Indian name was *Pamaunkee* or *Pamaunk.*

Yosemite (*yō-sem'it-ē*). An Anglicized or corrupted form of the Indian *a-hom-e-ta,* meaning "grizzly bear;" supposed to have been the title of a chief, and generally applied to a tribe that inhabited the region.

you (*ū*), *pron. nom.* and *obj. pl.* of thou: now used for thou and thee.

Youghiogheny (*yok-ō-gā'ni*) **river, Pa.** From the Indian *yukwiakhanna,* "a stream taking a roundabout course."

young (*yung*), *adj.* being in the early part of life or growth; inexperienced; not matured; raw: *n.* offspring collectively.

young-ster (*'stĕr*), *n.* a young person; lad.

Youngstown. City in Ohio, named for John Young, an early resident.

youn-ker (*'kĕr*), *n.* a young fellow; stripling.

your (*yūr*), *pron. poss. pl.* of thou or you. [Also *yours.*]

your-self (*-self'*), *pron.* [*pl.* yourselves (*-selvz'*)], you in your own person.

youth (*yūth*), *n.* [*pl.* youths (*yūthz*)], early life; a young person; condition of being young.

youth-ful (*'fool*), *adj.* pertaining to youth or the early part of life; fresh; vigorous.

Syn. YOUTHFUL, juvenile, puerile. *Youthful* signifies full of *youth,* or in the complete state of *youth; juvenile* signifies the same; but *puerile* signifies literally boyish. Hence the first two terms are taken in an indifferent sense; but the latter in a bad sense, or at least always in the sense of what is suitable to a boy only. We expect nothing from a youth but what is *juvenile;* we are surprised and dissatisfied to see what is *puerile* in a man.

Ant. AGED, old, hoary, venerable, senile.

yowl (*youl*), *n.* a howl: *v. i.* to howl or yell.

Ypsilanti (*ip-sil-an'ti*). City in Michigan, named for a Greek prince.

Yucatan (*yōō-kȧ-tȧn'*). A compound Indian word meaning "what do you say?" which was the only answer the Spaniards could obtain from the natives to their inquiries concerning a description of the country.

Yukon (*yōō'kon*) **river, Alaska.** Named from the *Yakuts,* a Tartar tribe.

Yule (*yūl*) *n.* Christmas.

yule log (*yūl' log*), a large block of wood formerly put upon the hearth on Christmas eve to form the basis of the Christmas fire.
yule-tide (*'tīd*), *n.* Christmastide.
Yuste (*yōōs'tā*). A convent in Spain, east of Plasencia. It is noted as the place of retirement of the Emperor Charles V. after his abdication.

Z

Zaccheus (*zak-ē'us*). From the Hebrew *Zakkay*, "pure," "innocent." Others render it "pure of the Lord," making the last letter stand for *Yah*. Fr., *Zacchée;* It., *Zacheo;* Lat., *Zaccheus*.
Zacharian (*zak-à-rī'à*). From the Hebrew *Zakhar-Yah*, meaning "remembering the Lord." Danish, *Zacharias;* Dutch, *Zacharias;* Fr., *Zacharie;* Ger., *Zacharias;* It., *Zaccaria;* Lat., *Zacharias;* Sp., *Zacarias;* Sw., *Zacharias*.
Zachary (*zak'à-rī*). Same derivation as *Zachariah*.
Zadok (*zā'dok*). Means "righteous." Fr., *Zadoc;* Lat., *Zadocus*.
Zambezi (*zăm-bā'zē*, pop., *zam-bē'zī*). Is the "great river" of eastern Africa, whose upper waters and chief affluents are called *Jambaji* and *Luambezi*, dialectic forms of the same name.
Zanesville (*zānz'vil*). City in Ohio, named for Ebenezer Zane, who, with John McIntire, founded the city.
za-ny (*zā'ni*), *n.* a buffoon; merry-andrew.
Zanzibar (*zăn-zi-bär'*). The name of an East African island, was used before the fifteenth century in a more general sense to denote the East African coast south of the river Jubb. *Zanzibar* is a Port. form of the Arab. *Zanjebar*, which is itself a corruption of the Persian *Zangibar*, or *Zenquebar*, which means "the coast or region of the blacks," the name being formed like *Hindubar*, "the land of the Hindus," or *Malebar*, "the land of the mountains."
zeal (*zēl*), *n.* ardor for a cause; fervor.
Syn. ZEAL, ardor, fervor. *Zeal*, in reference to these other synonyms, is specific, while they are characteristic or habitual; *zeal* is passionate *ardor* in favor of a person or a cause; *ardor* is simply warmth or heat of passion in love, pursuit, or exertion; *fervor* denotes the constitutional state or temperament of individuals. We speak of the *fervor* of passion, declamation, supplication, desire, as demonstrative of warmth. *Ardor* is more deeply seated; as *ardent* friendship, love, *zeal*, devotedness.
Zealand (*zē'land*). A province in the Netherlands, "land surrounded by the sea."
zeal-ot (*zel'ot*), *n.* an enthusiast; fanatic.
Zeal-ot, *n.* one of a fanatical sect of Jews which carried on a desperate struggle with the Romans until the fall of Jerusalem (70 A. D.).
zeal-ous (*'us*), *adj.* ardent in the pursuit of an object; enthusiastic. [EAGER.]
ze-bra (*zē'brà*), *n.* a wild animal of Africa of the genus Equus, with black and white stripes.
Zebulon (*zeb'ū-lon*). From the Hebrew, meaning "dwelling." Fr., *Zabulon;* Lat., *Zabulon*.
ze-na-na (*zē-nä'nà*), *n.* in India, that part of a house reserved exclusively for women.
ze-nith (*zē'nith*), *n.* the point in the heavens directly over the head of the spectator; greatest height.
Zepp-e-lin (*tsĕp'e-lĕn'*), a large airship invented by Count von Zeppelin, cylindrical in shape, and containing a number of separate compartments filled with gas. It has a large carrying capacity and, therefore, most formidable for war purposes.
zeph-yr (*zef'ĕr*), *n.* the west wind; soft, gentle breeze.
ze-ro (*zē'rō*), *n.* a cipher; nothing; neutral point (0) between any ascending or descending scale or series.
zest (*zest*), *n.* relish; keen enjoyment.
zig-zag (*zig'zag*), *adj.* having short, sharp turns: *n.* something with short, sharp turns.
zinc (*zingk*), *n.* a bluish-white metal.
zin-cog-ra-phy (*zing-kog'rà-fi*), *n.* the art of drawing upon, or printing from, zinc plates.
Zion (*zī'on*) or **Sion** (*sī'on*), **Mount.** A hill on which was situated the old city of Jerusalem; the "city of David." Now used symbolically of the Christian church and of heaven.
Zi-on-ism (*-izm*), *n.* a project for the reëstablishment of the Jews as a nation in Palestine.
zith-er (*zith'ĕr*), *n.* a stringed musical instrument, consisting of a sounding box and 28 to 31 strings.
zo-di-ac (*zō'di-ak*), *n.* an imaginary broad belt in the heavens, containing the 12 constellations or signs of the zodiac, which the sun traverses annually.
★zo-di-a-cal (*zō-dī'à-kal*, not *zō'di-ak-al*), *adj.* pertaining to, or situated within, the zodiac.
Zoe (*zō'ē* or *zō*). From the Greek name, signifying "life."
Zo-la-ism (*'lä-izm*), *n.* excessive realism in the literary treatment of the worse side of human life or nature, from Emile Zola, the French realistic novelist.
zone (*zōn*), *n.* one of the 5 great belts into which the surface of the earth is divided with respect to latitude and temperature; a girdle or belt: *v. t.* to encircle with, or as with, a zone.
zoö, a *prefix* meaning *animal*, as *zoöchemistry*, animal chemistry.
zoo (*zōō*), *n.* a park or other large inclosure in which live animals are kept for public exhibition.
zo-ö-ge-og-ra-phy (*zō-ō-jē-og'rà-fi*), *n.* the study of the geographical distribution of animals.
zo-ög-ra-phy (*-og'rà-fi*), *n.* the description of animals, their forms and habits.
zo-öl-o-gy (*-ol'ō-ji*), *n.* that part of biology that treats of animals, their structure, classification, habits, and distribution.
zo-ö-mor-phism (*-ō-môr'fizm*), *n.* the representation of a deity in the form, or with the attributes, of an animal.
zo-öph-i-list (*-of'i-list*), *n.* a lover of animals.
zo-ö-phyte (*'ō-fit*), *n.* an animal of low organization, bearing some external resemblance to a plant.
zo-öt-o-my (*-ot'ō-mi*), *n.* the dissection or anatomy of animals.
zou-ave (*zōō-äv'*), *n.* a soldier of a light infantry corps of the French army, wearing an Arab dress.
Zu-lu (*zōō'lōō*), *n.* one of a warlike tribe of Kaffirs, north of Natal.
Zululand (*zōō'lōō-land*). The country of Zulus.
Zurich (*zōō'rik*). A canton and city of Switzerland. Named from the ancient *Thiouricum*, "the town of the Thuricii," who built it after it had been destroyed by Attila.
Zuyder Zee (*zī'dĕr zē*, Dutch *zoi'der-zā*). The Dutch for the "South Sea," in relation to the North Sea or German Ocean, of which it is an arm.
Zwinger (*tsving'ĕr*). A famous museum in Dresden. Its picture gallery contains about 2,500 paintings, also collections of drawings, casts, etc.
zyme (*zīm*), *n.* the germ supposed to be the poisonous cause of zymotic diseases.
zym-ic (*zim'ik*), *adj.* produced by fermentation.
zy-mol-o-gy (*zī-mol'ō-ji*), *n.* the doctrine of fermentation.
zy-mo-sis (*zī-mō'sis*), *n.* a fermentation.
zy-mot-ic (*-mot'ik*), *adj.* producing fermentation, or a disease in which a virus works through the body like a ferment, as cholera.
zy-mur-gy (*zī'mûr-ji*), *n.* that branch of industrial chemistry which deals with the processes of fermentation in brewing, wine-making, etc.

CURRENT GLOSSARY

The list of words to be found in the Current Glossary is made up of proper names; of new words added to the language by the World War; of new words from other sources, including moving pictures, radio and aeronautics; of old words with new meanings; and of terms in common use in America that are not in the body of the Multiplex Dictionary.

Frequent use has been made of Webster's "New International Dictionary" and Funk and Wagnall's booklet "War Words,"

NOTE—The words in this list marked with a double cross (♯) are to be found also in the body of the dictionary, but are used here with a special meaning.

A battery. In radio, an electric battery for heating the filament in an electron tube.

A B C. The first letters of the names of Argentine, Brazil and Chile which have acted together in international affairs and are hence referred to as the A B C powers.

absolute scale. A scale of temperature with absolute zero as -273.1° Centigrade.

♯absorption. A radio term denoting reduction of power, associated with radio waves, and due to a variety of causes.

A.C. or **a.c.,** abbr. Alternating current.

ac-cel'er-ant (*ăk-sĕl'ĕr-ănt*), n. A substance which effects a chemical reaction without itself being changed.

♯accept'ance, n. Commercially, an accepted bill or the amount contained therein.

♯ace, n. An aviator who has brought down five or more enemy planes, applied first in the French forces during the World War and now generally to any nation's airmen. Also applied to one who surpasses in any line, as a football ace.

ac'i-do'sis (*ăs'ĭ-dō'sĭs*), n. An acid condition in the body.

acid test. A difficult or deciding test of merit, probably originated from the custom of testing gold with an acid.

ac'ro-bat'ics (*-băt'ĭks*), n. Performances such as tumbling, looping, spinning, etc.

Ad'am-son Act. An act of Congress, effective since 1917, providing among other things for an eight-hour day for interstate commerce carrier employees.

ad'dict (*ăd'ĭkt*), *n.* One having a habit, especially the drug habit.

♯addi'tion (*ă-dĭsh'ŭn*), *n.* A new allotment of land to be added to a city, as Smith's addition in Detroit.

ad-dres'so-graph (*ă-drĕs'ō-grăf*), *n.* A machine that prints from type, used in addressing letters etc.

A.E.F. abbr. American Expeditionary Force (or Forces).

♯a-e'ri-al (*ā-ē'rĭ-ăl*), *n.* In radio, an elevated system of wires or other equipment, insulated, generally connected to the earth, and used to radiate energy in the form of ether waves and to receive energy in the form of oscillations.

ae'rial sickness (*ā-ē'rĭ-ăl*), *n.* A sickness felt by aeronauts, much like seasickness.

a'er-o-boat (*-bōt*), *n.* A seaplane.

a'er-o-bus (*-bŭs*), *n.* An airplane built to hold more than one occupant.

a'er-o-do-net'ics (*ā'ĕr-dō-nĕt'ĭks*), *n.* Science dealing with problems of stability of bodies in flight or soaring.

a'er-o-gun' (*-gŭn*), *n.* A kind of cannon used against aircraft.

a'er-o-stat (*-stăt'*), *n.* A balloon.

A.F. or **a.f.,** abbr. Audio-frequency.

A. F. of L., abbr. American Federation of Labor.

al'le-ron (*ăl'lĕ-rŏn*), *n.* A small hinged plane employed by the pilot of an aeroplane as a stabilizer.

♯air, *n.* In radio, the sending medium of radio waves.

—on the air refers to broadcasting.

air base. A center where aircraft are kept and from which they operate.

air'craft' (*ār'kraft'*), *n.* Any mechanism used for flying in the air.

air'drome' (*ār'drōm'*), *n.* A field equipped for the landing, taking off and care of aircraft.

air fleet. A group of aircraft especially when organized for a military purpose.

air hole, *n.* A local condition of the atmosphere that does not afford suitable support for aircraft.

air lane, *n.* A path of invariable winds, which makes flying easy.

air'mail. Sending mail by aircraft; also, the equipment used and the mail thus carried.

air'man (*ār'măn*), *n.* A man who flies in an aircraft.

air'plane' (*ār-plān'*), *n.* A heavier than air aircraft. The form airplane is official with the United States Army and Navy, Bureau of Standards, etc. Aeroplane is used in many countries, especially in England.

air pocket. An air hole.

air raid. A raid by aircraft, especially with the accompaniment of dropping bombs.

air'way (*ār'wā'*), *n.* A marked route for aircraft.

air'worthy (*-wûr'thy*), *a.* In suitable condition for travel in the air, as an airplane.

alarm'ist (*ă-lārm'ĭst*), *n.* One who is easily excited over public questions and who seeks to excite others.

al'tigraph (*ăl'tĭ-grăf*), *n.* An altitude-recording instrument, resembling the aneroid barometer.

al-timet'er, *n.* An altitude-indicating barometer.

American Federation of Labor. An American organization of trade and industrial unions with headquarters at Washington, D. C.

American Legion. An American organization of men and women who served in the World War; incorporated in 1919 by an Act of Congress

am'pli-fier, *n.* In radio, a contrivance to magnify electric impulses.

animal husbandry. That part of agriculture which deals with farm animals.

♯antenna. In radio, a receiving aerial.

an'ti-air'craft' (*ăn'tĭ-ār'kraft'*), *a.* Used for protection from enemy aircraft, as a gun, etc.

Anti-Saloon League of America. An American organization aimed at the suppression of traffic in liquor.

An'zac (*ăn'zăk*), *n.* A word made from the initial letters of Australian and New Zealand Army Corps and referring to fighters from Australia and New Zealand, especially in the World War.

ar'bo-rize (*ār'bō-rīz*), *v.* Also **arborise.** To make look like a tree.

arc transmitter. In radio, a sending set using an arc generator.

Ar'gentine ant (*ār'jĕn-tēn; tīn*). A little brown ant imported into the southern United States from Argentina; it has become a pest in households and in orchards.

ar'gy-rol (*ār'jĭ-rōl; rŏl*), *n.* A silver salt used in a water solution as an antiseptic, especially for eyes and throat.

Armistice Day. Nov. 11th, the day in the World War when hostilities ceased by declaration of a general armistice.

army of'ficers. The leaders of European armies are called field marshals, but this title is not used in the United States. Next under field marshals are generals; this title has been given to only four or five commanders in the United States. The other titles follow in order; lieutenant-general, major-general, brigadier-general, colonel, lieutenant-colonel, major, captain, lieutenant, second liquetenant.

In the United States, the president is commander in chief of army and navy; the highest officer leading the forces in the field being either a general or one of the three ranks immediately below a general.

as'pi-rin (*ăs'pĭ-rĭn*), *n.* A white compound used as a drug.

♯as-sem'bly, *n.* A number of parts which, when assembled, make one unit of a machine, as an engine assembly.

atomic number. A number said to be the same as the number of positive electric charges carried by an atom. Atomic numbers form a series much used by chemists.

auc'tion bridge. A kind of bridge introduced in 1907. The game differs from ordinary bridge in that the declaration of trump lies with each player in turn, the dealer bidding first. The player who makes the trump suffers a severe penalty if he does not make his bid.

♯au'di-ence, *n.* A group of onlookers as at a theater.

au'di-o-fre'quen-cy, *a.* In radio, relating to the frequency of electric waves that are heard normally by the human ear.

Australian crawl. In swimming a kind of crawling stroke in which arm and leg motions alternate causing the body of the swimmer to roll from side to side.

au'to-bus' (*ô'tō-bŭs'*), *n.* A motor car used as an omnibus.

au'to-mo'tive (*ô'tō-mō'tĭv*), *a.* Self-propelling, as a motor car.

au'to-sta-bil'i-ty (*ô'tō-stă-bĭl'ĭ-tĭ*), *n.* The ability of an aircraft to keep its equilibrium, either by a self adjusting mechanism or by its proportions alone.

au'to-sug-ges'tion (*ô'tō-sŭg-jĕs'chŭn*), *n.* A suggestion from within as opposed to one from another person.

a'vi-a'tress (*-ā'trĕs*), **a'vi-a'trice** (*-trĭs*), **a'vi-a'trix** (*-ā-trĭks*), *n.* A female aviator.

a'vi-ette' (*ā'vĭ-ĕt'*), *n.* A flying machine heavier than air and propelled by the motive power of the aviator.

A. W. L. or **a. w. l.,** abbr. Absent without leave.

A. W. O. L. or **a. w. o. l.,** abbr. Absent without official leave.

A-zo'to-bac'ter (*ăzō'tō-băk'tĕr*), *n.* Certain bacteria which fix atmospheric nitrogen, thus being helpful to the farmer in keeping the soil fertile.

Bab'bitt (*băb'ĭt*). From a character in Sinclair Lewis's novel "Babbitt," a well-to-do real estate dealer; hence, one who lives by the standards of Babbitt and his social group.

baby beef. A well-fattened beef slaughtered at from one to two years of age.

baby bond. A bond with a face value of only $50 or $100.

bac'te-rin (*băk't-rĕĭn*), *n.* A preventive inoculation, against bacteria.

Ba-hai' (*bä-hä'ĕ*), *n.* A member of a religious sect called Babis.

ba'ke-lite (*bā'kē-līt*), *n.* A product made from phenols and formaldehyde and named after its discoverer, Leo H. Baekeland. Its use is similar to that of hard rubber or celluloid. Bakelite is commonly black or brown.

♯bal'ance, *n.* What is left of anything.

bal'ance of pow'er. A condition existing among nations that does not permit one nation of a group of nations to imperil the liberty of any other.

balloon cloth. A fabric, usually cotton, from which balloon cloth is made.

balloon tire. Also **balloon,** *n.* A large, thin-walled rubber tire which is inflated to a low pressure. It is efficient in absorbing shocks.

Barac'a (*bā-răk'ā*), *n.* A worldwide organization of Bible classes of young men.

bar'o-graph (*băr'ō-grăf*), *n.* In aeronautics, an instrument to record variations in barometric pressure.

barrage (*bär'äj*). A barrier; hence a barrier of artillery fire protecting advancing troops from enemy attack, or cutting off front line positions of the enemy from reserves, or in general stopping the advance of troops.

♯bas'ket, *n.* The car hung below a balloon.

ba'tik (*bä'tek*), *n.* Also **bat'ik.** A system of color design on fabrics, originating with the natives of the Dutch East Indies. Parts of the fabric that are not to be dyed are coated with wax which is later removed by boiling.

battery eliminator. In radio, a contrivance to supply voltage direct from the regular electric power supply.

battle cruiser. A warship of the highest speed and battery class, but not as heavily armored as a battleship. It is made for speed and for long-range fighting.

B battery. In radio, the battery between the plate and the filament of an electron tube to effect the flow of electron current in the tube.

♯bee, *n.* Any kind of social gathering of neighbors.

berlin' (*bĕr'lĭn'*). A limousine having the driver's seat entirely enclosed.

bible paper. A strong, thin paper, originally used for Bibles, and reducing bulk in volumes.

bill fold. A pocketbook with one or more compartments for bills, or banknotes. The bills are inserted flat and the container then folded.

Binet' (*bē-nĕ'*) or **Bi'net'-Si'mon'** (*bē-nĕ'-sē-mōn'*) **test.** An educational test consisting of graded questions and tasks intended to test the intellectual ability of children. It was originally designed for children up to the age of twelve, but has been extended to older children and to adults.

bird'man (*bûrd'măn*), *n.* A man, who flies; aviator. *Colloq.*

birth control. Control of number of children born, as by use of contraceptives.

♯bit, *n.* Twelve and one-half cents.

black canker. A fungous disease of the European chestnut.

black'heart, *n.* A physiological disease of potatoes in which interior parts of the tubers are blackened.

black'leg, *n.* A disease of cabbage; also a disease of potato plants.

black shirt. A member of the Italian Fascisti, an organizstion whose members wear black shirts as a distinctive part of their uniform.

black stem rust. A kind of wheat rust wherein black lines occur on the plant stem.

bleachers (*blēch'ĕrs*), *n.* The seats in an athletic field, exposed to the weather.

blimp (*blĭmp*), *n.* A small airship driven by an engine. *Slang.*

blind pig, *n.* An unlicensed liquor-selling establishment.

block (*blŏk*), *n.* A space in a city, enclosed by streets.

blood pressure. The pressure of the blood in the blood vessels, which varies with conditions and especially with age.

blos'som-end rot. A disease caused in various ways and causing fruit to rot at the blossom end.

blow'-out. The bursting of a pneumatic tire or the hole thus made in the tire.

Blue Cross. A society originally for the relief of dogs and horses. The American Blue Cross aids in securing humane treatment for various animals

blue'sky' law. A law, protecting the public from investment companies making false promises as pleasing as the blue sky.

bo-liv'ia (*bō-lĭv'ĭ-ä*), *n.* A woolen cloth with a silky finish used for women's and children's coats.

Bol'she-vik' or **bol'she-vik'** (*bŏl shĕ-vek'*), *n.* A member of the radical socialist group in Russia. Since 1918 the Bolsheviki have called their party the **Communist party.**

bomb, *v.* To drop bombs.

bomb'er (*bŏm'ĕr*), *n.* A bomb thrower; an aircraft used to drop bombs.

bo'na fi'de (*bō'nä fī'dē*). In good faith: actually.

bon'naz' (*bŏ'nàz'*), *n.* A kind of machine-made embroidery, taking its name from the inventor of the machine.

boot'legger, *n.* One who carries or sells intoxicating liquor in forbidden territory. Also one who deals in any forbidden product, as uninspected nursery stock, etc.

bot'u-lism, *n.* A kind of food poisoning, due to a bacillus.

bou'le-vard, *n.* A street for pleasure vehicles only.

box ball. A bowling game in which the five pins are reset by a lever and the balls are returned from a box to the player by means of gravity.

box tail. A box-like form used as the rudder of an aircraft.

boy scout. A boy who belongs to the movement inaugurated in England in 1908 by Lieutenant-General Sir Robert S. S. Baden-Powell. Boys are trained in wholesome and useful living, especially in the outdoors, by informal methods appealing to the spirit of play.

B. P. O. E., *abbr.* Benevolent and Protective Order of Elks.

bras'siere' (*brà syâr'*), *n.* [F.] A reinforced underwaist worn by women.

bread line. A line of persons to whom is given food as charity.

broad'cast, *v.* In radio, to send to any listeners messages or programs from a radio sending station

brough'am (*br ōō'ŭm*), *n.* A limousine with no roof over the driver's seat.

brown ring. A bacterial disease of the potato.

buck'a-roo' (*bŭk'à-rōō'*), *n.* An expression used in the West to denote a cowboy.

bud'dy (*bŭd'ĭ*), *n.* Brother; companion; intimate associate; used by soldiers in referring to their comrades in the army.

Bull Moose. A member of the progressive party founded by Colonel Roosevelt in 1912; the Bull Moose party.

Bur'ley or **bur'ley** (*bŭr'lĭ*), *n.* A kind of tobacco grown in Kentucky and elsewhere and used especially for chewing.

cab'a-ret' (*kà'bà-rā'*), *n.* An American restaurant in which dancers and singers perform between the tables.

cab'ri-o-let' (*kăb'rĭ-ō-lā'*), *n.* A coupe-like automobile with folding top and doors with glass windows.

caf-e-te'ri-a (*kăf'ĕ-tē'rĭ-à*), *n.* A self-serve restaurant.

cam'er-a-man' (*kăm'ĕr-à-măn'*), *n.* The photographer who takes motion pictures, usually as an expert operator.

ca'mion' (*kà myôn'*), *n.* [F.] A motor truck, especially as in the World War.

cam'i-sole, *n.* A very short shirtlike garment worn by women.

ca'-mou'-flage' (*kà'-mōō'-flăzh'*), *n.* Deception through coloring; much used in World War for concealment. Flippantly used in the sense of flimflam.

camp'craft' (*kămp'kraft'*), *n.* Expertness in the work and duties of camping.

camp'-fire'girl. One who is a member of the Camp Fire Girls of America. The age limits are twelve and twenty years. The objectives are outdoor life, character development, helpfulness, assistance in home duties, etc.

ca-na'di-um (*kà-nā'dĭ-ŭm*), *n.* A recently discovered element, native as a soft, white metal in British Columbia.

can'ton-ment (*kăn'tŏn-mĕnt*). A place where troops are quartered. The American cantonment is more or less permanently built.

ƒcape, *n.* An abbreviation used for **capeskin,** a leather made from the pelts of sheep and goats.

capital levy. A tax on capital in addition to other taxes and planned to reduce war debts.

captive balloon. A military balloon anchored to the earth and used for the purpose of observation.

car-a-cul' (*kà'rà-k ōōl'*), *n.* A fine quality of astrakhan. Karakul.

ƒcar'rier, *n.* In medicine, a person who spreads the germs of a disease to which he himself is immune; also an animal doing the same thing.

ƒcarry, *n.* A place where one must carry overland between navigable waters.

car'ry-o'ver (*kăr'ĭ-ō'vĕr*), *n.* A part of a crop, as wheat, not used but retained for marketing or consumption the next season.

Ca-sa'ba or **Ca-sa'ba mel'on** (*kà-sà'bà*), *n.* A yellow-skinned kind of muskmelon with a sweetish flavor to the flesh.

cas'ca-ron' (*kàs'kà-rōn'*). *n.* An egg shell; thus an egg shell container used in the West for throwing confetti.

cas'ing (*kās'ĭng*), *n.* The outer covering, or case, of a pneumatic tire.

cas'se-role, *n.* A porcelain, glass or earthenware vessel for baking and in which the food is served also.

ƒcat'er-pil'lar, *n.* or **caterpillar tractor.** A tractor which travels on endless belt platforms, one on each side, which enable the machine to traverse very rough ground.

cat'ta-lo (*kăt'à-lō*), *n.* A cross between an American bison and a cow. Same as Catalo.

cat'walk' (*kăt'wôk'*), *n.* The narrow footpath along the keel of a dirigible.

C battery. In radio, a battery between the grid and the filament of an electron tube, to govern the amount of average plate current.

ƒceiling, *n.* In aeronautics, the highest altitude an aircraft can reach under specified conditions.

chain store. One of a group of retail stores under one ownership and selling the same kind of goods.

chair car. A railroad car having seats wherein the passenger may recline as in an adjustable-backed chair.

cham'oi-sette' (*shăm'wà-zĕt'*), *n.* A trade-mark name for a cotton fabric used especially for gloves.

ƒchar'ger, *n.* or **battery charger.** A contrivance used in charging a storage battery.

char'meuse' (*shär'mūz'*), n. [F.] A satin fabric, light in weight and with a shining surface on one side only.

ƒChau-tau'qua or **chautauqua** (*shà-tô'kwà*), *n.* An educational lecture or entertainment or a group of such meetings, often held in a tent.

check'-off' (*chĕk'ôf*), *n.* A plan whereby a union receives the dues, fees, etc., of its members direct from the employer, who takes the money out of the employees wages.

chestnut blight. A serious fungous disease of the American chestnut tree; called also **chestnut bark disease.**

chev'on (*shĕv'ŭn*), *n.* Goat flesh, used as meat.

chief of staff. The officer of highest rank on a general's staff.

choke off, *v.* To make silent, as if by choking.

citrus canker. A destructive bacterial disease of citrus fruits, as of the orange, lemon, etc.

citrus scab. A prevalent fungous disease of citrus fruits affecting tree, leaf and fruit.

city-manager plan. A nonpolitical plan of city government. The central executive is called the **city manager.**

Clayton Act. An anti-trust act passed by Congress in 1914 to supplement the Sherman Act of 1890.

clean'-cut, *adj.* In definite outline.

cloche (*klōsh*), *n.* A mechanism for the steering of an airplane.

close'-up' (*klōs'ŭp'*), *n.* In moving pictures, a scene taken closer to the camera than is customary, to show detail. Any picture taken close to the camera.

club car. A railroad parlor car with movable chairs and other equipment suggestive of a room in a club.

C. M. T. C., *abbr.* Citizens' Military Training Camp.

ƒcoach, *n.* An automobile built like a sedan but usually less expensive and with two doors instead of four.

cold-pack method. A method of canning food wherein the processes are (1) scalding, (2) dipping in cold water, (3) packing in clean, hot containers, (4) sterilizing and (5) sealing while hot.

Colum'bus Day (*kō-lŭm'bŭs*). October 12th, the day of the month on which Columbus discovered America; also called Discovery Day.

col'um-nist, *n.* A newspaper writer who prepares a regular department, usually a column in width, and with a regular title.

ƒcom'bi-na'tion, *n.* An undergarment in one piece, combining corset cover, drawers and petticoat, or undervest and drawers.

com'ic strip. A strip of drawings of a humorous nature, depicting consecutive happenings to characters created by the artist, usually occurring in newspapers and continued daily.

com'merce destroy'er. A ship that preys upon the merchant vessels of an enemy; usually a light cruiser or a merchantman made over to the uses of war.

ƒcommis'sion (*kŏ-mĭsh'ŭn*), *n.* In military, a paper by which the government confers rank.

com-mis'sioned officer. An officer that is given his position by government commission. See **commission.**

communique' (*ko'mū-nĭ-kē'*), *n.* A French term signifying an official bulleita.

community chest. A general fund collected from individuals to pay for all demands for charity that may be made in the community.

ƒcom'pact (*kŏm'păkt*), *n.* A small container for face powder, usually including also a powder puff and mirror.

con'ning-to'wer, *n.* A heavily armored protection for the commanding officer and helmsman on a warship, a pilot house.

conscientious objector. One who objects to military service because of his conscience.

con-sor'ti-um, *n.* An arrangement made by banking interests of two or more nations for aiding financially another nation.

continuity writer. One who arranges and adapts a story for moving pictures.

ƒcon'tra-band (*kŏn'trà-bănd*), *n.* Unlawful traffic. **Absolute contraband** refers to actual military equipment such as arms and ammunition. **Occasional contraband** refers to non-military supplies, such as grain and vehicles which may be put to the uses of war.

con'trast-y (*kŏn'trăs-tĭ*), *a.* Photographs with heavy shadows and marked white high lights, caused by too short exposure or by too long development of the negative.

ƒcontrol' (*kŏn-trōl'*), *n.* The mechanism used to guide a machine.

Cool'idge tube. A recently invented tube for the generation of X-rays, named after Dr. William Coolidge, the invéntor.

coon-can' (*kōōn-kăn'*), *n.* A card game, usually two-handed, played with one or two decks of cards.

co-ŏp'er-a-tive (*kō-ŏp'ĕr-à-tĭv*), *n.* A jointly operated establishment or enterprise.

co'pen-ha'gen, *n.* A light tint of blue.

cor'dite (*kôr'dīt*), *n.* A powerful explosive in which nitro-glycerine is used.

cor'do-ba (*kôr'dō-bà*), *n.* The Nicaraguan monetary unit equal to the gold dollar in the United States.

Cos'sack (*kŏs'ăk*), *n.* One of a large class in Russia agreeing to give military service, usually in irregular cavalry, for certain privileges from the government.

cost plus. Relating to a method of figuring the payment for contract work, as the construction of a building, the entire price of which is arrived at by adding to the actual cost a certain percent of the cost as profit.

cou'pe' (*k ōō'pā'*), *n.* An enclosed vehicle, seating two or three.

cou'pler, *n.* In radio, a contrivance connecting two electric circuits.

cou'tu'rier' (*k ōō'tü'ryā'*) or **cou'tu'riere'** (*-ryâr'*), *n.* [F.] A dressmaker.

ƒcov'er, *v.* To report, as for a newspaper, the happenings of a meeting or an event.

cov'er-age (*kŭv'ĕr-ăj*), *n.* The risks covered by an insurance policy.

C. Q. In radio, a general call directing attention to signals from a radiotelegraph station.

crank case, or **crank'case',** *n.* The cover containing the crank shaft of an engine, as in an automobile.

ƒcrash, *v.* In aeronautics the falling or bringing down of an airplane violently and in a manner to damage the machine.

croix de guerre' (*krwà'dĕ gâr'*), [F.] A badge of rare distinction awarded by the French government for bravery in war.

cross'-word' puz'zle. A word-guessing puzzle wherein words, when correctly completed, cross each other vertically and horizontally with most of the letters entering into two words.

cub'ism (*kūb'ĭz'm*), *n.* The theory and practice of giving artistic expression by means of geometrical figures of forms.

cuirassier' (*kwē'rà-sēr'*), *n.* A cavalryman protected by a leather or metal jacket.

cy'cle-car' (*sī'k'l-kär'*), *n.* A light vehicle of narrow gauge propelled by a motor.

cy'per (*sī'per*), *n.* The fur of the common cat when streaked with black and another color.

C. Z., *abbr.* Canal Zone.

Dail Eireann (*dàl ār'ĭn*). [Ir.] The lower house of the Legislature of the Irish Free State.

dash'een' (*dăsh'ēn'*), *n.* A plant of the tropics with an edible root. It has been introduced into the United States.

Dawes plan. A financial plan for payment of reparations by Germany to the Allies, begun in 1924;—named after Gen. Chas. G. Dawes, chairman of the reparation committee which drew up the plan.

daylight saving. Using daylight by advancing clocks, usually an hour, during certain months, commonly from April to September.

D. C. M., *abbr.* Distinguished Conduct Medal.

dead spot. In radio, an area of unusually poor reception as contrasted with that of nearby areas.

de-cath'lon (*dē-kath'lŏn*), *n.* An athletic contest made up of ten distinct events.

de-cel'er-ate (*dē-sĕl'ĕr-āt*), *v.* To slow up; to move with decreasing speed.

de-cod'e (*dē kōd'*), *v.* To translate a message in symbols into commonly understood language.

de-mount'a-ble (*dē-moun'tà-b'l*), *a.* A term describing a kind of rim for the wheel of an automobile that may be removed with the tire.

ƒde-pres'sion, *n.* An area of low pressure (barometric) surrounded by regions of higher pressures.

ƒdestroy'er, *n.* A warship designed to destroy the torpedo boat.

de-tec'tor, *n.* In radio, a device for changing the oscillations received by the aerial into signs which may be seen or heard. The **three-electrode electron tube** and the **crystal detectors** are well known examples of detectors.

dic'ta-phone (*-fōn*), *n.* A kind of phonograph used for recording letters, etc., from dictation and later reproducing them.

dic'to-graph (*dĭk'tà-grăf*), *n.* An instrument like a telephone with a mechanism for increasing the sound so that the usual mouthpiece is not needed.

Die'sel engine (*dē'zĕl*). A kind of internal combustion engine in which heat generated by air under high pressure is used to ignite the fuel.

ƒdip, *n.* In aeronautics, a quick downward movement of a machine with an immediate turn to a higher elevation.

direct nomina'tion. The method of nominating officers by popular vote, without the employment of a convention or a group of delegates selected to make the nomination for the people.

direct' pri'mary. A primary for making direct nominations.

dirt farmer. A farmer who actually tills the soil himself.

disappear'ing car'riage. A mechanism for raising a coast gun to fire it and for lowering it to reload.

Discovery Day. Columbus Day.

ƒdis-solve' (*dĭ-zŏlv'*), *n.* The gradual fading of one picture into another, in moving pictures; this result is accomplished by double exposure of the film.

Distinguished Service Cross. A United States decoration for great bravery in military action against an armed foe. A British decoration for "distinguished service before the enemy."

Distinguished Service Medal. U. S. medal for distinguished service in a responsible duty in war time. A British medal for distinguished war service.

♯dive, *v.* In aviation, to drop sharply at an angle greater than the gliding angle.

♯divi'sion, *n.* An army unit made up of several brigades under a single officer.

dol'lar diplo'macy. Diplomacy that depends on the wealth of a nation to further the purposes of that nation abroad.

dou'ble-sur'faced (*-sur'fāst*), *a.* Referring to the covering on the two sides of the frame of an airplane wing.

down'-lead' (*down'lēd'*), *n.* In radio, the part of the antenna connecting the elevated part with the transmitting or receiving instruments.

draw a bead on. To aim a rifle accurately. *Colloq.*

♯drift, *n.* In aeronautics, the lateral speed of an aircraft.

♯drive, *n.* A military offensive. A vigorous campaign for any cause, as for charitable purposes. In an automobile, the apparatus for driving, as a left-hand drive.

dry farming. Methods whereby farming without irrigation is carried on in regions of slight rainfall.

D. S. C., *abbr.* Distinguished Service Cross.

D. S. M., *abbr.* Distinguished Service Medal.

duck'-pin (*dŭk'pĭn*), *n.* A short, thick pin used in bowling.

dum'dum or **dumdum bullet** (*dŭm'dŭm*). A bullet with a soft center that expands easily when it strikes, thus causing lacerated wounds.

dump'ing, *n.* Selling goods, very cheap to kill competition or dispose of a surplus.

du'o-graph (*dū'o-graf*), *n.* A picture resulting from the use of two halftone plates with the screen set at unlike angles.

du'o-tone (*-tōn*), *n.* A picture printed in two tones of one color.

du'o-type (*dū'o-tīp*), *n.* A picture resulting from two halftone plates of the same negative, differently etched.

duplex house. A two-family dwelling with each family occupying separate floors.

du-ral'u-min (*dū răl'ū mĭn; dū rà-lū'mĭn*), *n.* An aluminum alloy containing aluminum, copper, manganese and magnesium.

du've-tyn' (*dōō vē-tēn'*), *n.* A soft fabric, as of wool or silk with long velvety nap.

Einstein theory. The theory of relativity worked out by Albert Einstein of Germany.

electric steel. Steel from the electric furnace. Also called **electro-steel.**

♯elk, *n.* A special chrome-tanned calfskin, used especially in shoes for sportsmen.

Elk, *n.* A member of the Benevolent and Protective Order of Elks, a fraternal organization.

em'pen-nage (*ĕm-'pĕ-nāj*), *n.* [F.] In aeronautics the tail of a flying machine used to aid in preserving an equilibrium.

enfilade' (*ĕn'fĭ-lād'*), *n.* A fire that passes lengthwise of trenches or lines of soldiers.

♯en'gineer', *n.* One of those in an army who constructs bridges, makes roads, etc.

♯engineer', *v.* To carry an idea through; to act upon a plan.

en'tente', *n.* [F.] An understanding, usually between nations. The Entente, or the Triple Entente, refers to the understanding between England, France and Russia that led to their union in the war.

Es'pe-ranti'do (*ĕs pĕ-rān-tē'dō*), *n.* A simplified form of the international language, Esperanto.

eth'yl gas. Gasoline containing a small quantity of lead tetraethyl.

eu-then'ics (*ū-thĕn'tĭks*), *n.* The science that seeks the improvement of the race through improvement of the conditions under which it lives.

ex'tra ter'ri-to-ri-al'i-ty (*dl'ĭ-tĭ*), *n.* Unusual freedom of an individual from the restraints of a government not his own, but under which he is living; the freedom of a foreign representative in contrast to the restraint of a native.

♯ex-trude' (*ĕks-trōōd'*), *v.* To shape metal softened by heat, by forcing it through dies with water power.

fab'ri-koid (*fāb'-rĭ-koid*), *n.* A waterproof fabric resembling leather, used in binding for books, luggage, upholstery, etc.

fad'ing, *n.* In radio, a variation in intensity of received wave while adjustments of sending and receiving devices remain unchanged.

Far'mer-La'bor par'ty. A political party formed in 1920 and later (1924) broken up into factions. It asked for government control of railroads, mines and banks; for Federal loans to farmers at low interest rates, and for election of the Federal judges.

Fa-sci'sti (*fā-shē'stē*), *n.* pl. [It.] A patriotic, anti-radical organization in Italy, founded in 1919 and which, under the leadership of Mussolini, rapidly became dominant.

fa'vorite son. The man chosen by a state as its nominee for political office, usually the presidency.

fa'vor, *v.* To look like some one.

Federal Land Bank. One of the regional banks, twelve in number, formed under the Federal Farm Loan or Rural Credits, in 1913, to arrange for long-time loans to farmers.

Federal Reserve System. A Federal banking system organized in 1913. Twelve district banks were established. The system aids in centering the banking resources of the country and helps to provide an elastic currency.

Federal Trade Commission. A commission of five members provided for in an Act of 1914. The duties of the commission include the investigation of unfair business methods.

feed'stuff' (*fēd'stŭf'*), *n.* Farm-grown products used as feed for live stock.

fiber silk. Artificial silk. Rayon.

fil'a-ment, *n.* In electricity, the heated electrode in an electron tube. It is generally a wire.

filament battery. See A BATTERY.

♯film, *n.* In moving pictures, a thin flexible strip of celluloid used as a photographic plate; also, a moving picture.

film play. A moving picture production.

♯fin, *n.* In aeronautics, a stable vertical surface that keeps the machine from rolling.

fi'nal-ist (*fi'năl-ĭst*), *n.* One who plays in the last game of an elimination series, as in the finals of a tennis tournament.

fin'ger-print (*fĭn'gĕr-prĭnt'*), *n.* The impression of a finger or thumb made to show the characteristic markings, which differ with every person, and which make such an imprint valuable as a means of identification.

fire'-control', *n.* In the navy, a means of regulating the fire of all guns on a ship from some one position.

fireless cooker. A cooking apparatus made of insulated compartments. No fire is applied, but, previous to use, heated plates or hot foods are put into the cooker.

fire test. A test to discover the burning temperature of a lubricating oil.

Flag Day. In the United States, the anniversary of the date, June 14, 1777, on which the national flag was adopted.

♯flash, *n.* In moving pictures, a quickly-passing view, incidental or explanatory to the main picture and story.

float'ing dock, *n.* A partially submerged structure with water compartments, which raises vessels placed upon it when the water is forced from the compartments.

floa'ter (*flō'tĕr*), *n.* A voter who changes from one party to another.

♯flo-ta'tion (*flō-tā'shŭn*), *n.* A method of separating finely crushed minerals by taking advantage of their relative difference in capacity to float on a liquid.

♯flush, *v.* To mine where water is not plentiful by periodic flooding with water that has been gathered behind a dam.

♯fly, *v.* In aeronautics, to handle in flight, as to fly a seaplane. To fly in an aircraft.

flying boat. In aeronautics a seaplane capable of floating on water.

Fok'ker (*fŏk'ĕr*), *n.* [After the Dutch inventor of the same name.] A monoplane of German make of great speed and quick response to control.

folks (*fōks*), *n.* One's immediate family, or one's relatives. *Colloq.*

folk dance. A dance of the common people of a nation.

fool-proof, *a.* Said of anything, usually a mechanism, that is sure to go as it should no matter how ignorant the operator may be.

Ford'ney-McCum'ber Tar'iff Act. A regulatory tariff act passed by Congress in 1922, revising many rates upward.

form letter. A general letter suitable to send unchanged to different persons.

♯fo'rum. Public meetings where topics of interest are discussed by leaders and audience.

Four'-Pow'er Treaty. A treaty of 1921 signed by England, France, Japan and the United States pledging the observance of certain rights in regard to island possessions in the Pacific.

frame-up', *n.* A preconceived plan to bear false witness. *Slang.*

franc-ti'reur (*frän'tē'rûr'*), *n.* One of a company of French irregular troops.

free lance (*lans*), *n.* A rover in literature, a writer not in the employ of one firm.

free verse. Verse without regular measure; also called *verse libre.*

♯frisk, *v.* To make a rapid search, as by running the hand over a person's clothing, to detect concealed weapons, etc. To take from a person's clothing in this way. *Slang.*

full'-fash'ioned, *a.* Knitted to conform to the bodily shape; used of hosiery, underwear, etc.

fundamentalism (*fŭn'dă mĕn' tăl ĭz'm*), *n.* [often cap.] A religious movement emphasizing various historical beliefs as fundamental.

fu'se-lage (*fū'ze-laj'*), *n.* The long body of an aircraft.

fu'tur-ism (*fū'tur-ĭz'm*), *n.* A recent development in modern art, which attempts to present at one time a number of movements and impressions in abtract expression.

gab'ar-dine' (*găb ar-dēn'; gāb'ar-dēn*), *n.* A sergelike cloth of wool; also one of cotton.

gang'ster (*găng'stĕr*), *n.* One of a group or band of roughs, thieves or hired criminals. *Colloq.*

Gary school system. An educational system originating at Gary, Indiana, wherein ordinary study, vocational work and play are coordinated and with special teachers. In this system one classroom is used by two classes at different periods.

♯gas, *n.* Gasoline. *Colloq.*

gat (*găt*), *n.* [abbreviation of **Gatling gun**]. A revolver. *Slang.*

general strike. A strike by workmen of many or all trades, over a considerable area; or of all workmen in an industry.

ge-o-chem'is-try (*je'o-kĕm'ĭs-trĭ*), *n.* The science of the chemistry of the earth's crust.

Geor-gette'crepe, or **geor-gette'** (*jôr-jĕt'*), *n.* [named after a French modiste.] A thin and more or less transparent silk crepe.

get'-a-way', *n.* Action of getting away; hence, [*Slang*] a break or escape.

G. H. Q. *abbr.* General Headquarters.

girl scout. A member of the American organization of Girl Scouts, formed in 1912 as "Girl Guides" and changed the following year to Girl Scouts.

♯glide, *n.* The downward motion of an aircraft when not under its own power.

go'-gett'er (*gō gĕt'ĕr*), *n.* One who goes after and gets what he desires. *Slang.*

gon'dola (*gŏn'dō lă*), *n.* The car attached to a dirigible balloon.

grand, *n.* A thousand [dollars]. *Slang.*

gray'fish', *n.* The name given to the ordinary dogfish since it has been found valuable as food.

Great White Way. That part of Broadway, New York City, made most brilliant when lighted at night.

grid, *n.* In radio, a device, usually of wire gauge, between and insulated from the plate and filament of a vacuum tube.

Gound, *n.* In radio, the place on the ground, or metal leading to the ground, to which the ground wire is attached.

gruesd'ism (*gĕd'ĭzm*), *n.* The socialism of Guesde which seeks reform through revolution.

♯gun, *n.* Commonly any firearm from a small revolver to the largest cannon. In military use *gun* refers to a piece of artillery mounted on a carriage.

gun'man, *n.* One who uses a "gun" with criminal intent.

gy'ro-com'pass (*jī rō-kŭm pàs*), *n.* A type of continuously-driven gyroscope, the axis of which always lies in a north-and-south direction.

ha'ba-ne'ra (*hă'bā-nā'rā*; Sp. *ä'bā-*), *n.* A Cuban dance; also the music for this dance.

hal'i-to'sis (*hăl'ĭ-tō'sĭs*), *n.* Disagreeable breath.

Hall of Fame. At the New York University in New York City a permanent memorial for great Americans. There are places for 150 bronze tablets. Five new names are added each five years.

H. C. L. or **H. C. of L.** abbr. High cost of living. *Colloq.*

head'phone' (*hĕd'fōn'*), *n.* A receiver, with telephone or radio, kept over the ear by a band worn over the head.

hec'tic, *a.* Affected as by fever; restless. *Slang.*

Hepburn Act. An act of Congress in 1906 to regulate rates for railroads and interstate carriers.

hes'-i-ta'tion, *n.* A waltz including gliding or "hesitating" steps.

high'brow' (*hī'brou'*), *n.* A person with a high brow; hence, a learned person or one who pretends to be learned. *Slang.*

High'lander. A member of a kilted regiment of Scotchmen, or a Scotchman from the highlands.

♯high'way', *n.* An improved road which forms part of a route for long-distance motor travel, as the **Lincoln Highway.**

ho'kum (*hō'kŭm*), *n.* Absurd talk or action by an actor designed to get a laugh from the audience.

honeydew melon. A variety of melon with yellow rind and sweetish, pale-green flesh.

hooch (*hōōch*), *n.* In the United States, intoxicating liquor secretly made or secured. *Slang.*

hook'-up' (*hōōk'ŭp'*), *n.* In radio, the arrangement for the putting together of parts used in sending or receiving.

♯hop, *v.* In aeronautics, to start an airplane in flight.—**to hop off,** or begin an air flight.

hor'mone (*hôr'mōn*), *n.* A chemical substance that when carried by blood from the organ in which it originates to another, stimulates the second organ.

house organ. A business publication issued by a concern for its employees, and sometimes also for its customers.

hun'ger strike. An attempt on the part of a prisoner to obtain freedom by refusing to eat enough to keep him alive.

hy'dro-air-plane, *n.* An aquatic type of airplane, which can travel on the surface of water or rise from it.

hy'phenate (*hī'fĕn-āte*), *n.* A citizen of the United States who feels obligations to another country so keenly that his loyalty to the United States may be weakened. *Colloq.*

I. C. C. *abbr.* Interstate Commerce Commission.

I'do (*ē'dō*), *n.* An artificial language intended for world-wide use. Published in France in 1907 and carefully revised since that time.

Illinium, (*ĭ-lĭn'ĭ-ŭm*), *n.* A recently discovered element, named after the University of Illinois, where it was discovered.

Im'mel-mann turn. In aviation, a reverse turn with an airplane.

improved' prop'erty. Usually property on a paved street with sidewalks and modern conveniences, such as city water mains, gas mains, etc.

Industrial Workers of the World. An organization of skilled and unskilled workers of any trades, which asks for the doing away of the wage system and favors socialism.

inferiority complex. In psychology, a term denoting a feeling of inferiority, which manifests itself in various ways.
in-i'ti-a-tive (*in-ish'i-a-tiv*), *n.* A right of the people under certain governments to pass laws directly without the aid of the legislature.
in'su-lin (*in'sū lin*), *n.* The active principle of the islands of Langerhans in the pancreas, which aids the use of sugar in the body. A solution of the above, used in treating diabetes. Insulin was discovered by Dr. Banting and Dr. MacLeod in Toronto in 1923.
in'swept (*in'swĕpt'*), *a.* Referring to an automobile body the front end of which is narrower than the rear.
intelligence quotient. A number said to indicate a person's intelligence.
intelligence test. A set of questions and problems designed to give the mental age or intellectual capacity of a person.
in'terfer'ence, *n.* In radio, a confusion of received signals, or that which causes such confusion.
in-tern' (*-tûrn*), *v.* To force to stay in one place; men or ships of a belligerent discovered in neutral territory are interned by the neutral, the men immediately, the ships after a certain time limit.
I. Q. or **IQ.** *abbr.* Intelligence quotient.
Iron Cross. German reward given for distinguished military service.
I'to (*ē'tō*), *n.* A word made up of the initial letters in the term Jewish Territorial Organization, no distinction being made between I and J.
I. W. W. *abbr.* Industrial Workers of the World.
jay'walker' (*jā'wôk'ĕr*), *n.* One who crosses streets carelessly or at the wrong places, endangering himself thereby.
jazz (*jăz*), *n.* A type of American music based on ragtime and marked by eccentric sounds and melodies, especially used as dance music.
ji-had' (*jē-hăd'*), *n.* A Mohammedan holy war against unbelievers.
ǂjin'go (*jĭn'gō*), *n.* An excitable person always foreseeing war in the near future, and always sure he can meet it successfully.
jinx (*jĭnks*), *n.* Anything believed to be the cause of ill luck. *Slang.*
jit'ney (*jĭt'nē*), *n.* Originally five cents; now usually an automobile traveling over a regular route, and on which the fare was originally five cents.
joy ride. A ride, as in an automobile, for pleasure and often secretly arranged.
junior college. A college giving only two years of regular college work.
junior high school. A school consisting of the seventh and eighth grades and the first year of high school.
juvenile court. In law, a court for children up to about eighteen years of age. Private hearings and personal guidance by the judges mark such a court.
K. C. or **K. of C.,** *abbr.* Knights of Columbus.
Ke-mal'ist (*kē-mäl'ĭst*), *n.* A follower of Mustafa Kemal Pasha, Turkish leader and first president of the Republic of Turkey.
key'noter (*kē-nōt'ĕr*), *n.* In politics, the one who presents the main campaign issues in a speech.
ǂkid'ney (*kĭd'nē*), *n.* Sort or kind.
ki-ne'to-phone (*ki-nē'tō-fōn*), *n.* A combination talking machine and moving picture machine.
klieg light (*klēg*). A brilliant arc light used in motion picture photography.
Knights of Columbus. A fraternal order composed of Roman Catholic men, founded in 1882.
kraft (*krăft*) or **kraft paper,** *n.* A strong paper made from sulphate pulp and used for wrapping.
Ku Klux Klan. A fraternal organization, secret as to membership, said to renew the older Ku-Klux. Membership is said to include only American-born Protestant whites.
Kultur', *n.* A German term for culture and civilization.
ky'ack (*ki'ăk*), *n.* A kind of pack sack common in western United States.
lan'dau-let' (*lăn'dô-lĕt'*), *n.* A closed automobile with folding top.
lav'a-liere' or **lav'a-lier'** (*lăv'ä lēr'*), *n.* A chain with one pendant, used for a neck adornment.
l. c. l., *abbr.* A railroad term, meaning "less than a carload lot."
lead'-in. In radio—**down-lead.**
leaf roll. A disease of the potato wherein the leaves curl up, resulting in smaller and fewer tubers.
League of Nations. An organization of nations, under the Covenant of the Peace Conference at the end of the World War, to reduce the probability of war by arbitration, limitation of armaments and united action against aggressors.
Le'gion of Honor (*lē'jŭn*), *n.* A French order formed in 1802, membership to which is a reward given for services to France.
let'ter-gram (*lĕt'ĕr-grăm*), *n.* A long telegram that is sent at a lower rate than the ordinary message because it is held until the lines are unoccupied with regular telegrams.
Liberty Bond. Any bond of five "Liberty Loan" issues put out by the United States between 1917 and 1919.
lightning arrester. In radio, a device to protect receiving sets by carrying lightning discharges to the ground.
ǂlil'y (*lĭl'ĭ*), *n.* A term used in auction bridge to refer to a royal spade.
limousine, *n.* A closed automobile with driver's seat outside but covered with a roof.
li-nene' (*lĭ-nēn'*), *n.* A coarse cloth resembling linen crash, usually of cotton.
ǂlion, *n.* [cap.] A member of a club belonging to the group known as the International Association of Lions Clubs, founded in 1918. Objectives are good government, better citizenship, community welfare and good fellowship.
lip stick, *n.* Rouge for the lips put up in stick form.
lob'bying, *n.* The practice on the part of interested organizations or individuals of urging members of a legislative body to vote for a bill by appearing in the lobby of the legislative chamber and exerting direct personal influence on the members.
Locarno Pact or **Treaty.** Treaties and agreements, five in number, between Germany and Belgium, France, England, Italy, Poland and Czechoslovakia, made at Locarno, Switzerland, in October, 1925. Important parts of the pact include agreements on the boundaries between Germany and Belgium and France, also stipulations regarding demilitarized zones on the Rhine.
L. O. M., *abbr.* Loyal Order of Moose.
loud-speaker, *n.* In radio, a telephone receiver making sounds loud enough to be heard by anyone without holding the receiver to the ear. The horn and the cone types are most common.
low'brow' (*lō'brou'*), *n.* A person with a low brow; hence one who is not intellectual. *Slang.*
lydd'ite (*lĭd'-ĭt*), *n.* An explosive deriving its name from its use on the artillery ranges near the town of Lydd, England.
mack'inaw (*măk'i-nô*). A kind of heavy coat for winter wear.
mac'ro-graph (*măk'rō-grăf*), *n.* A picture that presents an object as seen by the naked eye.
mah'jong' (*mä jŏng'*), or **mah'jongg',** *n.* A Chinese game played with "tiles" resembling dominoes.
mandate, *n.* An order by the League of Nations to a member nation for the setting up of a responsible government over German or other conquered territory inhabited by backward peoples, and for the development thereof.
man-za-nil'la (*măn za nĭl'ä*), *n.* A kind of small olive usually stuffed with pimentos when pickled.
mar'cel' (*mär'sĕl'*), *n.* A form of hairdressing.
ma-rim'ba, *n.* A musical instrument resembling the xylophone.
mar'qui-sette' (*mär'kĕ-zĕt'*). A sheer cloth of cotton or of silk.
Max'imalist. Russian extreme radical of the former Social Revolutionary party.
Mediterra'nean fruit fly. A fly, found in Mediterranean countries, the larvae of which destroys many fruits before they are ripe.
mel'i-nite (*mĕl'i-nīt*), *n.* An explosive used by the French.
mend'ing fen'ces. A politician working with his constituency to increase his standing and popularity.
Menshevik (*mĕn-shĕ-vĕk'*). A moderate Russian socialist, opposed to the radical methods of the Bolsheviki.
mi'cro-phone, *n.* In radio, a device used in broadcasting stations to receive and transmit sounds.
middy blouse, or **middy,** *n.* A blouse with a sailor collar.
Min'i-mal-ist (*mĭn'i-măl-ĭst*), *n.* In Russia, a member of the less radical part of the former Social Revolutionary party; opposed to Maximalist.
min-yan' (*mĕn-yän'*), *n.* The number necessary for conducting public worship in the Jewish religion.
mi-tra lieuse' (*mē'trä-yûz'*), *n.* A machine gun made of several barrels that may be fired at once or one after another.
mod'ern-ism, *n.* (often cap.) A religious movement stressing ethical and spiritual values rather than creeds and dogmas.
Mon'tes-so'ri method (*mŏn'tĕs-sō'rē*). A method of teaching young children, originated by Dr. Maria Montessori. The children are given physical freedom, much individual attention, and a careful training of the senses.
moonlight school. An evening school for illiterate adults, so called because in Kentucky the mountain schools were first opened on moonlit nights.
ǂMoose (*mōōs*), *n.* A progressive; member of the Bull Moose party.
ǂmo rale', (*mô-räl'*) (*Military*). The mental condition of troops, confidence, spirit, etc.
mo'-ron (*mō'-rŏn*), *n.* A feeble-minded person, usually one whose normal development stops at the age of eight and who never comes to know more than a normal child of twelve.
ǂmor'tar (*môr'tĕr*) (*Military*), *n.* A short-barreled artillery piece of large bore to be fired at such great elevation that the shells drop from above upon the target.
Mother's Day. A day set aside by legislative enactment in 1913 to honor motherhood by wearing a white carnation, sending gifts, etc. The second Sunday in May for churches and the Friday and Saturday preceding for schools and business places are the periods for celebration.
mo'tor bus or **mo'tor-bus',** *n.* An automobile constructed to serve the purpose of a bus.
mo'tor truck or **mo'tor-truck',** *n.* An automobile built to serve the purpose of a truck.
mov'ie (*mōōv'ĭ*), *n.* A moving picture entertainment, used in the plural as "the movies." *Colloq.*
mov'ing picture. Many pictures taken in such a series that actions are photographed as though static. When these pictures are reproduced in a rapidly moving series upon a suitable screen, objects photographed appear as in nature and characters seem to move as in natural life.
mud gun. A device in metal industries for forcing stiff mud into an opening, as in closing the tap hole of a blast furnace in making iron.
mul'ti-graph (*mŭl'tĭ-grăf*), *n.* A machine that both sets type and prints.
mul'ti-plane (*-plān*), *n.* An aircraft with more than two main planes superimposed.
naval officers. The officers of the U. S. Navy, in the order of their rank are admiral of the fleet, corresponding to the general in the army; vice-admiral, to lieutenant-general; rear-admiral, to major-general; commodore, to brigadier-general; captain, to colonel; commander, to lieutenant-colonel; lieutenant-commander, to major; lieutenant (senior grade), to captain; lieutenant (junior grade), to first lieutenant; ensign, to second lieutenant.
national forest. Forest area reserved by the United States government.
national monument. A natural feature set aside by the United States government as public property, as the Grand Canyon.
national park. An area set aside by the Congress of the United States as public property, as Glacier National Park.
N. E. A., *abbr.* National Education Association.
near beer. Any malt liquor that may be drunk in quantity without intoxication.
New Economic Policy. In Russia, an industrial program adopted in May, 1921, whereby smaller industries reverted to private ownership while control of large plants and mines remained with the Soviet government; also called **Nep.**
news'print' (*nūz'prĭnt'*), *n.* Also **news print.** A wood pulp paper used for newspapers.
New Thought. A belief based on the theory that an optimistic mental attitude towards life results in better physical health and greater capacity for usefulness.
Nip'pon-ese' (*nĭp'ŏ-nēz'*), *n.* [From **Nippon,** Japanese name for Japan.] A Japanese; the Japanese.
non-com'ba-tant (*nŏn-kŏm'băt-ănt*), *n.* [*Military*] One who does not belong to a fighting unit or one that does so belong but does not take an active part in fighting, as a member of an ambulance corps.
non-commis'sioned of'ficer. An officer of low rank who does not receive his position by government commission; one who is appointed by another officer.
Nonpartisan League. An organization founded in 1915 in North Dakota to aid in marketing farm products and directed toward government ownership of public necessities.
nonunion shop. A shop where no union workers are employed.
norther (*nôr'thĕr*), *n.* A strong north wind.
nose dive. In aviation, a sharp downward plunge.
ob'serv'er (*-zûr'vĕr*), *n.* [*Aeronautics*]. One who accompanies the pilot of an aircraft for the purpose of taking pictures of enemy positions, making notes, etc.
o'keh' (*ō'kā'*), *adv.* and *interj.* All right; "O.K." *Cant.*
O-lym'pi-ad (*ō-lĭm'pi-ăd*), *n.* A meeting once every four years for the Olympic games.
one'-step', *n.* A modern dance consisting of walking steps with possible variations such as the whirl, dip, etc.
one'-way', *a.* For one direction only, as **one-way** traffic.
over-head', *n.* [*Accounting*]. Expenses that cannot be charged to any one part of a business, as rent, taxes, insurance, heating, lighting, etc.
own up, *v.* To confess.
pac'ifist (*păs'i-fist*), *n.* In general, one who opposes war.
Pan-American Union. An organization, with headquarters in Washington, D.C., composed of the twenty-one American republics.
ǂpan'el (*păn'ĕl*), *n.* A section or segment of the wing of an airplane.
par'cel post. A service established in 1912 in connection with the mail service of the United States for the distribution of packages.
ǂpark, *v.* To stop a vehicle outdoors and leave it. To stop while in a vehicle.
ǂpas'sive (*păs'ĭv*), *a.* [*Aeronautics*]. The condition of an aircraft when not under its own power or when without power of its own.
pas-to'ri-um (*păs-tō'rĭ-ŭm*), *n.* A term used in the South in Baptist churches in referring to the parsonage.
pen-tath'lon (*pĕn-tăth'lŏn*), *n.* An athletic contest in the modern Olympiad made up of a 1500 meter run, 200 meter run, a running broad jump, throwing the javelin, and throwing the discus.
pe-rip'-ter-y (*pĕ-rĭp'tĕr-ĭ*), *n.* In aeronautics, the region about an aircraft in which there are circular or whirling movements of the air.
Phi-la'the-a (*fĭ-lä'thē-ä*), *n.* A world wide organization of Bible classes composed of young women from all denominations.
pho'to-play (*fō'tō-plā'*), *n.* A play written for reproduction by a moving picture machine, or the reproduction itself.
ǂpi-lot (*pi'lŭt*). In aeronautics, one who flies or is qualified to fly an aircraft.

pi'lot balloon'. An unmanned balloon used to determine the direction of air currents.
pi-mien'to (*pē-myĕn'tō*), *n.* The sweet pepper from Spain used in stuffing olives; also the sweet pepper plant.
pinch hitter. In baseball, a player who goes in to bat in the place of another in an emergency.
plou'-plou', *n.* A common name for a French foot soldier. *Slang*
plain'-clothes'man. A detective or policeman who does not wear a uniform when on duty.
plane (*plān*), *n.* An airplane. *Colloq.*
plas'mon (*plăz'mŏn*), *n.* A food made from skim milk.
platoon school. A school divided into two general divisions, so that one half may use rooms for study and ordinary class work while the other half are engaged in vocational, laboratory, gymnasium work, etc. The two divisions then reverse the use of facilities, thus using the equipment fully.
plum'cot (*plŭm'kŏt*), *n.* A fruit resulting from crossing the plum and the apricot.
plus fours. A kind of loose baggy knickerbockers, worn especially in sports.
poilu, *n.* A name for the French fighting man. Poilus was at one time the name of a body of French soldiers reputed for great bravery and distinguished from others by hair hats. Today poilu is a commendatory term for the French soldier who has spent enough time in the trenches to grow a full beard and to gain a thorough knowledge of trench warfare.
police dog. A dog trained to help the police, developed in Europe by crossing the domesticated dog with the wolf.
preferen'tial vot'ing. A method of balloting by which the voter is permitted to indicate more than one choice for an office. In case no candidate secures a majority of votes, as a first choice, the one having the largest number of first and second choices wins the election.
prick'ly heat (*prĭk'lĭ-*). A rash caused by extreme heat.
prof'it-eer' (*prŏf'ĭ-tēr'*), *n.* A person who makes an excessive profit, especially as in time of war.
Progres'sive par'ty. A political party under the leadership of Theodore Roosevelt, formally organized and named August 7, 1912.
proj'ect, *n.* In educational work, a constructive task to be worked out by the student.
pro-jec'tor (*prō-jĕk'tĕr*), *n.* An appliance made to throw a picture on a screen by reflecting light.
protract'ed meet'ing. A religious meeting sometimes extending over several weeks.
pul'mo'tor (*pŭl'mō'tĕr*), *n.* A machine for producing artificial respiration in cases of asphyxiation, etc.
Pure Food and Drug Act. An Act of Congress, effective Jan. 1, 1907, forbidding the making of wrongly labeled impure food or drugs, also sale of same in territories or in interstate or foreign commerce.
quan'tum (*kwŏn'tŭm*), *n.* [*Physics*]. The smallest amount of energy radiated or absorbed by matter. It varies as the frequency of the vibration associated with the ether wave.
quan'tum theory. The theory that energy exists in space in variable particles known as quanta.
queen olive. A large olive of excellent quality grown near Seville, Spain, and pickled when green. Generally any green pickled olive.
ques'tion'naire' (*kwĕs'chŭn'ār'*), *n.* A group of questions to be submitted to a person or persons with the purpose of gathering from the answers statistical evidence in relation to the matter under consideration.
ques'tion-a-ry (*kwĕs'chŭn-ā-rĭ*), *n.* See QUESTIONNAIRE.
race su'icide. Intentional restriction of child bearing; in general, any weakening of the vitality of a race.
ra'dial engine (*rā'dĭ-ăl*), *n.* [*Mach.*] An engine in which the cylinders are arranged like spokes in a wheel.
ra'di-o (*rā'dĭ-ō*), *a.* Usually referring to the radiant energy of electric waves, as used in radiotelegraphy or radiotelephony. *n.* radiotelegraphy or radiotelephony, radio message.
ra'don (*rā'dŏn*), *n.* A gaseous element resembling argon.
rag, *v.* [*Music*]. To play in syncopated time.
rail'road (*rāl'rōd'*), *v.* To hasten; used in relation to bills in congress. *Colloq.*
range'find'er. In gunnery, an instrument for establishing the relative location and the distance from the gunner of anything to be shot at.
ray'on, *n.* An artificial silk made from cellulose by forcing it through small holes and drying the threads thus formed; also the cloth made from the fibers.
re-call', *n.* The right of the people of a state upon petition of a sufficient number, to vote to remove a government official from office before he has completed his full term of service.
receiving set. In radio, the apparatus for receiving radio signals, messages and programs.
red'-light' district. A part of a city in which there are many places of ill repute, some of which have red lights before them. *Colloq.*
rig'ger (*rĭg'ẽr*), *n.* A thin pointed brush made from the hair of sable, used by marine painters.
right of way. The customary or lawful right of traffic to take precedence over other traffic.
rip panel. In aeronautics, a strip of the bag of a balloon, torn off to permit the rapid escapeof the gas.
road'ster (*rōd'stẽr*), *n.* An open automobile seating two or three. It may have additional seats on running boards or in rear deck.
Ro-tar'i-an (*rō-tā'rĭ-ăn*), *n.* A member of a Rotary Club, one of an International Association of Rotary Clubs, whose motto is "Service."
R. O. T. C., *abbr.* Reserve Officers Training Camp, or Corps.
ro'to-gra-vure' (*-grā-vūr'*; *grā'vûr*), *n.* A kind of photogravure where etched cylindrical plates on a rotary press print pictures and text; also an illustration thus printed.
sat'urate, *v.* To completely or nearly completely charge with magnetism a mass of iron or steel, such as the field or armature core of a dynamo.
Schick test (*shĭk*). In medicine, a diptheria test named after the Vienna physician who discovered it.
scoff'law' (*skŏf'lô'*), *n.* One who flouts the law, especially a prohibition-enforcement law.
screen (*skrēn'*), *v.* To throw upon a screen, as to screen a photoplay.
sea'plane, *n.* A hydro-airplane, made for use on the sea.
search'light', *n.* A strong light with reflector so adjusted as to throw its intense beams in any direction.
se-dan' (*sĕ-dăn'*), *n.* A closed car seating four or more, all in one compartment.
self-starter', *n.* An appliance using electricity, gas, etc., to start an engine, as an automobile engine, without cranking by hand.
set, *n.* In moving pictures, the artificial setting for a scene of a photoplay.
sharp'shooter (*shärp'shōōt'ẽr*), *n.* A skilled marksman. In the United States Army, one making 60 per cent with slow fire at 800 and 1000 yards and with rapid fire at 500 yards.
shed, *n.* See HANGAR.
shel'ter trench. A trench on the battle line roofed as a protection against the weather and bombardment.
shock absorb'er. A device designed to reduce the severity of the road shocks communicated from the running gear to the body of a vehicle, by regulating the action of the springs, especially by checking the violence of their recoil.
short story, or **short'-story.** A short prose story.
shot sam'ples. Small drops made by pouring molten metal into water, used in analyzing the metal.
shrap'nel (*shrăp'nĕl*), *n.* A shell filled with small bullets and an explosive with fuse to discharge the shell in its flight.
side car. A small car attached to the side of a motorcycle.
sin'gle-sur'faced (*sĭn'gl-sûr'fāst*), *a.* In aeronautics, referring to any part of the frame of an airplane covered on one side only.
sip'pi-o (*sĭp'ĭ-ō*), *n.* A game like bagatelle played with balls and cue.
si'ren, *n.* A kind of automobile horn, producing sounds varying in pitch.
skid, *n.* One of the two sledlike runners on some kinds of aircraft to simplify landing.
sky-scrap'er (*skī-scrāp'ẽr*), *n.* A very high building, hence any tall object. *Colloq.*
sky'man (*skī'măn*), *n.* An aviator. *Slang.*
sky pil'ot, *n.* See PILOT.
slacker, *n.* One who shirks responsibility, especially as in wartime by evading military service.
slea'zy (*slā'zĭ*), *a.* Said of cloth or other fabric that is very thin or loosely woven.
slick-er (*slĭk'ẽr*), *n.* A long waterproof coat.
slum'gum (*slŭm'gŭm'*), *n.* The mass of impurities remaining after the wax has been taken from the honeycomb.
smock, *n.* A loose overgarment worn by artists, and recently especially by women in various occupations.
snide (*snīd*), *a.* Low, tricky. *Slang.*
snipe (*snīp*), *v.* To take a long range shot at an enemy from concealment.
snow ban'ner, *n.* A stream of snow, sometimes miles in length, blown in the sky from a mountain peak.
soar, *v.* In aeronautics, to move under impetus of the wind.
sock-dol'ager (*sŏk-dŏl'ā-jẽr*), *n.* Anything which firmly settles a matter. *Slang.*
son'der-class' (*sŏn'dẽr-klăs'*), *n.* A class of small yachts.
soon'er (*sōōn'ẽr*), *n.* One who occupies government land before it has been opened for homesteading by the government, thus gaining an unfair advantage over others; in general anyone who is unfair in such a way. *Slang.*
S. O. S. The international wireless signal of distress.
south'paw' (*south'pô'*), *n.* A left-handed pitcher.
so'viet' (*sō'vyĕt'*), *n.* [*Russ.*] A council and [*cap.*] in Russia the primary organs of government.
speed trap. A place along a motor road where motorists are trapped for speeding.
spit ball, *n.* A ball pitched when the pitcher's fingers on one side of the ball are covered with saliva thus lessening the friction on that side and causing the ball to curve.
squeeze play, *n.* A play in baseball in which when there is not more than one out and a man is on third base, that man knows by signal that the batter is going to bunt a certain ball, and beginning to run when the pitcher lifts his arm to throw gains an advantage frequently enabling him to score.
stat'ic (*stăt'ĭk*), *n.* In radio, an atmospheric disturbance.
sub-merg'i-ble (*-mûr'jĭ-b'l*), *n.* A submarine boat that may be entirely submerged.
sub-mers'i-ble (*-mûr'sĭ-b'l*), *n.* See SUBMERGIBLE.
sul'phite (*sŭl'fīt*), *n.* A spontaneous thinker. *Slang.*
sun'cup (*sŭn'kŭp'*), *n.* A variety of evening primrose bearing yellow flowers found in California.
su'per-man' (*sū'pẽr-măn'*), *n.* One so much stronger than others both physically and mentally that he is capable of dominating them; one sure to survive in the struggle for existence.
sur'tax', *n.* In the United States, a tax in addition to the normal income tax.
swale (*swāl*), *n.* Low, swampy land. *Dial.*
syn'di-cal-ism (*sĭn'dĭ-kăl-ĭz'm*), *n.* The idea of destroying political and social systems by a strike extending throughout all the land.
tag day. Any day on which those interested in a cause seek contributions to it, by petitioning people on the street, and give all those who contribute a tag to wear.
tail'-light', or **tail'-lamp',** *n.* A red light on the rear end of a vehicle.
tan'go (*tăn'gō*), *n.* A popular dance originating in Spain.
Tau'be (*tou'be*), *n.* A kind of monoplane designed by an Austrian.
taxim'eter (*tăk-sĭm'ē-tẽr*), *n.* A mechanism used on public automobiles to keep passengers informed from moment to moment of the cost of the trip.
Ter'ri-to'ri-al-ism (*tĕr'ĭ-tō'rĭ-ăl-ĭz'm*), *n.* The movement among Jews towards a permanent home for the race, established in a territory where they may rule themselves.
Tex'as lea'guer, *n.* In baseball, a fly that falls between the areas usually covered by infielders and outfielders.
Tom'my At'kins. A white British soldier.
T. N. T. or **TNT.,** *abbr.* Trinitrotoluene, or trinitrotoluol.
tong (*tŏng*), *n.* In the United States, a Chinese secret society.
torpe'do, *n.* A torpedo-shaped automobile.
tour'ing car (*tōōr'ĭng*), *n.* An open car seating four or more with direct entrance to tonneau.
trac'tor (*trăk'tŏr*), *n.* An automobile made to draw vehicles or machines, as a farm wagon or a plow.
tune, *v.*, **to tune in,** a radio expression for adjustment of receiving instruments for reception. —**to tune out,** to keep out undesired signals, messages, etc.
tur'key-trot (*tûr'kĭ-trŏt'*), *n.* A dance with feet wide apart and eccentric rise and drop of the feet.
twi'light sleep, *n.* A method of painless child birth by the use of two drugs, scopolamin and morphine. The success of the method is in dispute by members of the medical profession.
uh'lan (*ōō'lăn*), *n.* A lancer used in reconnoitering and skirmishing. There are none in the army of the United States.
u'ku-le'le (*ū'kōō-lā'lē*). A small four-stringed guitar, originally from Hawaii.
un'der-slung (*ŭn'dẽr-slŭng'*), *a.* Said of an automobile so constructed that the frame of the chassis is below the axles. Underhung.
U. S. S. R., *abbr.* Union of Socialistic Soviet Republics.
vacuum bottle. A bottle made on the Dewar principle, for keeping the contents either cold or hot.
Victo'ria Cross. A maltese cross given for bravery first by Queen Victoria in 1857.
vi'ta-min, also **-mine,** *n.* A constituent found in many foods, the absence of which in food causes a weakening of bodily tissues, resulting in disease such as beri-beri, pellagra, scurvy, etc. Usually food containing vitamins will cure the disease previously caused by their absence.
vod'ka (*vŏd'kä*), *n.* A Russian intoxicating liquor made usually from rye as a government monopoly, prohibited at the beginning of the World War.
vol'plane (*vŏl'plān*), *v.* To glide in an aircraft.
Volstead Act. An act of Congress providing for enforcement of the 18th or Prohibition Amendment to the Constitution.
Washington Conference. An armaments limitation conference held at Washington, D. C., from Nov. 12, 1921 to Feb. 6, 1922, in which the United States and eight other nations participated.
Wasserman test. A test for syphilis.
wave, *n.* A nation-wide movement of whatever kind, as the farm relief wave.
weed'less, *a.* A term applied to a kind of propeller for a motor boat, so constructed that it does not gather weeds.
white plague. Tuberculosis, usually of the lungs.
white slave. A woman detained against her wishes and forced into unwilling prostitution.
wipe out, *v.* To destroy completely. *Colloq.*
wire, *n.* A telegram. *Colloq.*
World Court. The Permanent Court of International Justice; also a proposed court similar to this one, but separate from the League of Nations.
World War. The war between the nations that began July 28, 1914 and ended with the armistice of Nov. 11, 1918. The peace treaty [Treaty of Versailles] was signed June 28, 1919.
W. O. W., *abbr.* Woodmen of the World.
zone, *n.* Any one of the circular areas about a shipping point designated by the parcel post act of 1912.

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VIEWS OF WASHINGTON, D. C.

1—U. S. Treasury Building. 2—New National Museum. 3—Lee Mansion at Arlington. 4—Washington Monument. 5—Interior Department. 6—Bureau of Engraving and Printing. 7—Soldiers' Home. 8—U. S. Patent Office. 9—State Army and Navy Building. 10—Aerial View Senate Office Building. 11—House of Representatives in Session. 12—Lafayette Monument. 13—Bureau of Standards Building.

BOOK X

MATHEMATICS

H. C. BARBER, M.A. M. P. E. GROSZMANN, Ph.D.
GEORGE MORRELL YORK, B.A. GEORGE MacFEEDY CONWELL, M.A., Ph.D.
CHESTER J. TERRILL, LOUIS A. FISCHER

The Magic of Number.—Number has always been a mysterious thing, endowed with magic powers. From ancient times till now, philosophers no less than the masses of men have attributed to them faculties to affect the life and fate of human beings favorably or disastrously. Superstitions attach to certain numbers even in our present enlightened times. The number Three has always been considered as particularly sacred. This may be due to the fact that, in primitive number conception, it was an enormous step for humans to distinguish "three" from "many".

To our modern conception this may seem preposterous. But it is not. To us, the concept "three" is so elementary, so obvious, that we can hardly believe there was a time when it was as hazy to all as to us is a million. But do we not even now speak of a man who appears stupid as one "who cannot count three?" The origin of languages shows how these concepts developed. We have the "singular" number of nouns, meaning one object; this is a clear concept. What was beyond "one" was hazy, undefined, "many", expressed by the "plural". In some languages, the step from "one" to "two" is preserved; the classic example is the ancient Greek language which has a "dual" form of nouns, denoting "two" objects of the same kind. What was beyond "two", was "many", an indefinite number. Numerals, to denote definite larger numbers, developed slowly. Definiteness in number conception has been a painfully laborious acquisition of the human race. The science of number was the first exact science which had to be evolved before any other of the exact sciences, like physics, chemistry, astronomy, etc., could be created—but it was only in the time of classic Greece that this fundamental step was accomplished.

Number and the Child.—Shall we wonder, then, that our children are slow in developing a real understanding of number relations, of quantity, of precise statements? Children, in their mental growth from infancy to maturity, follow in a measure the steps the race has taken in its evolution from primitive culture to modern civilization, and we can understand a child's difficulties better if we take this fact into careful consideration.

The child is subject to the same process of evolving "precise cognition" from the initial hazy concepts which has been followed by the race. To proceed from a clear concept of unity, of "one" object, to that of more than one, is the first step. To realize duality, that is to say, "two" objects, either like, or different objects, is a very fundamental step; and to proceed from that to the identification of the trinity, or three-ness, is the beginning of real number conception.

Methods of Developing Number Concepts.—Just as the race has used primitive methods of achieving results in this process, the child needs primitive devices to conquer the world of number. It is a very slow process, let us remember. And we must lay the earliest foundations most carefully, never be impatient, or try to follow a short cut, or omit an essential step. We must rather follow the lead of the child, not force him along the way which seems to be easy for us. It may surprise us at times to discover that it is not the child's method (neither has it been the method of the race) to follow the logical path, to do the simple and obvious thing. He treads devious paths, backward and forward, sideways and curving around, trying now this and now that strange device, until finally he finds the solution of his problem—not at all where we ourselves would have been looking for it.

We may therefore give him an opportunity, or rather plenty of opportunities, to occupy himself in a primitive manner, using his fingers, natural objects, like pebbles, leaves, acorns, etc., or beads, and strings and knots, and what not, to gradually evolve in his mind ideas which will give definite arithmetical and geometrical outlines to the world of knowledge—remembering that this world of his is very small at first.

Home Training in Number.—The suggestions given here are not intended for the teacher, although perhaps many a teacher may learn some facts and tricks of procedure from what is presented here. But we have primarily the parent in mind, and wish to give him, or her (for it may be mostly the mother whose share this training will be) advice in the matter of practical methods for developing the child's conception of number relations.

The suggestions refer *first*, to the preschool period of the child—in fact, to the entire period of the child from birth to the kindergarten age. *Secondly*, to the kindergarten period itself. Whether the mother has the opportunity of sending her child to a good kindergarten or not, it will be advantageous for her to understand the needs of this period, and the "gifts", "occupations", and games which are employed in the kindergarten to awaken an appreciation of number and form, at least in a measure. *Thirdly*, the suggestions include the period of primary school work. Here a special caution is needed.

School methods, and school grading, are not ideal; they are adapted to the needs of great numbers of children of an average mental type; they are dependent upon the understanding and skill of teachers who are often young and inexperienced, and have no intimate knowledge of child needs. Again, their opportunities are limited to school hours and school organization. The parent at home has almost unlimited opportunities, in play and work, on walks and in heart-to-heart talks, and in a thousand other ways such as the routine of the home affords, to approach the child's number problems. In the home, perhaps, more can be accomplished in giving the child a thorough grounding in the true principles of number conception than in the school itself.

But we must understand that the process cannot be so logically graded as the school endeavors to do. To illustrate this, the author will tell how one little boy made his start in number.

This little boy, now between seven and eight, has not gone to school yet, for certain reasons. He is in many ways an exceptional boy, and brought up somewhat differently from the ordinary type of boys who attend school in the regular way.

Although even now he has only begun to write his figures, he has learned a great deal of arithmetic by absorption and observation. He began, as all children do, as we shall see later, by counting. At first, the sequence of number names was not clear in his memory, and he told them in confused order. When he had learned to say the big number names, like one hundred or so, even when he was quite young, he took great delight in mixing them into his speech. He had a hundred marbles, or five hundred and six blocks. A few hundred more or less made no difference. These words were substitutes for "many". He acted in this respect as some ancient peoples did, like the Hindoos, who talked in their religious stories and mythologies of hundreds of thousands and even millions of years as if they were bean bags.

Finally the little boy settled down to hard facts. In a general way, he proceeded from simple numbers, the larger ones remaining hazy quantities to him for a while. He began by distinguishing "few" and "many". Then he knew clearly about two and three things. After this, his progress was accelerated. Indeed, he was not always quite sure about the difference between four and five things or so, but he worked hard. He usually dealt with concrete things, the number of his playthings, or of people, but did not altogether tie himself down that way. He arrived at larger numbers by addition, adding one or two or three at a time. But he defied the schoolmaster's theory that he should not proceed to four until he had exhausted the possibilities of three; or to six, until he had studied five thoroughly. He jumped. He was an arithmetical acrobat. He turned around and went backwards; he twisted and wound and unwound things so that you could not follow him. No set rule of method would have reached him. He was a law unto himself.

This is one of the reasons why in the following pages we will not offer a strictly systematized course of procedure. We shall make constant connections and associations, and will suggest to the parent using these suggestions that they will be guided rather by their children's interest and individual method than by anything we or anybody else can offer in the matter of "proper sequence".

The little boy we are speaking of taught himself multiplication and division by such questions as: "Isn't two threes six?" "Isn't twelve two times six?" And so on. Subtraction is even now a poser to him, and it is a strange fact that it is for most children a curious stumbling-block. But he has mastered, all by himself, without any planned out teaching, such quantities

as the dozen, the dollar, and their divisions, and has a very fair conception of mathematical relations, usually expected only of much older children. But he will disappoint you at times, seeming to have lost all he had known, and beginning all over again. Soon after, he will make another big jump and astound you by a bit of calculation; going to the stores, making the right change in buying different things, selecting bargains, and telling the storekeeper very plainly what is in his mind if there seems to be anything wrong. Recently, on a visit to the seashore, he went alone to take his breakfast at a restaurant, paid for it, and left a tip for the waitress. What school method would keep up with such a child's development?

Earliest Number Training.—Strange as it may seem, but training in number conception begins in the cradle, or on the mother's lap.

The fundamental operations upon which all other, more and more complex ideas of arithmetical relations are based, are:

(1) *Counting* and *tallying*.
(2) Concepts of *space*.

Counting begins with the earliest *finger and toe games* which the mother plays with her child. "This little pig went to market," etc., introduces a primitive counting, tallying the equal number of toes on each foot. "This is the thumb," etc., brings the fingers into play, with the same tallying process.

The development of the consciousness of fingers and toes is of very great importance. That there are five toes to be counted on each foot, and five fingers (thumb included) on each hand, is the basis of our decimal system of computation. One hand, or one foot, equals five, in ancient or primitive methods of counting. Two hands, or both feet, represent the ten; "the whole body" (both hands and both feet) is twenty. Even the divisions of the fingers play their part in early measurement: one link, or joint, representing an ancient inch. The term "digits", still used in denoting the numbers from one to ten, means the ten fingers. It is therefore of significance not to speak of the thumb as not being a "finger" as is customary in some places. The thumb has its place in this system of computation.

Finger reckoning is as ancient as the race, one might say. We may well use it today in the development of the number concept with young children. It is replaced by more or less symbolic forms through the introduction of *beads, knotted cords*, etc., of which we shall speak presently; the *abacus*, or *number frame*, is one of the more systematic forms of mechanical contrivances to represent finger reckoning. The Chinese and Japanese employ it to this day in their daily tasks.

Mothers will do well to become acquainted with Miss Emilie Poulsson's admirable *Finger Plays*, intended for the use in the kindergarten and the home. Much of the material suggested by Miss Poulsson can be used by the mother with her baby on her lap.

Before the concept of number in its precise value is formed by the child, it has the realization of "larger" and "smaller", which later assumes the distinction between "more" or "less". If you place before the child two different heaps of beads, or sticks, and ask for the larger heap, the child will soon select the one containing more objects, without at once understanding that the larger heap also contains "more" beans or sticks than the smaller. The child may develop a rather high degree of discrimination between "larger" and "smaller", or "equal" heaps, and be able to detect small differences, without knowing that it has begun to have a dawning conception of real "quantity". We may not be justified in ascribing to a cat, or a dog, the faculty of counting their litter, but the cat mother and the dog mother know whether all their young ones are there or not. This knowledge is based, apparently upon that same faculty of making nice discriminations of mass relations, taking their litter as a "heap", and discovering a diminishing of that heap, which the child develops before he learns really to count.

Even at this period of hazy number conception, when there is mainly a concept of larger or smaller space, or body, it is essential to hold the child to *tallying*. Tallying means comparison. Comparison establishes the relation of one quantity to another. On this idea of relationship, of comparison, of tallying, all number work is based. Even when we measure the stars, or the relativity of the universe, with Professor Einstein, we are dealing with comparative values; otherwise these figures would have no meaning to us.

Thus, let the child compare the "larger" and the "smaller" things or masses, the "more" or "less" of objects, constantly. This is no strain to the child at all; quite the contrary. It is an innate desire of the normal child to keep on counting and tallying.

Real counting will begin also quite early; only one must not be discouraged if the child makes slow progress at first in remembering the *number names* and placing them in the right sequence. Confusion in names does not necessarily signify confusion in actual perception or count; just as little as confusion in color names means confusion in color perception.

As said before, the mastering of the first three precise counts, one, two, three, requires the longest time; it is fundamental. Twos, that is, pairs, can be readily found in the child's closest perceptions: he has two hands, two feet, two ears, two eyes, two lips, two rows of teeth. He perceives the same fact in others. Pairs are also observable in objects which, like garments, are balanced in arrangement; again, there are always two ends to a stick; two sides, as to a plate. And so on. All these things can be utilized to impress the idea of two, and of pairing. The idea of pairing introduces also the first glimmer of arrangement, or harmony, of balance and symmetry, and later on of the fundamental operations.

The transition to three and then to four is much more difficult. Three is the first odd number after one, and has no seeming relationship to the outside world or to other quantities until later developments are reached. That is why its conception is so difficult, why it has been held in awe by millions of generations of human beings. It is best understood as a combination of the first two concepts, the one and the two. It may be introduced by contrast: the child has two eyes, and two ears, and two hands, but only one mouth, one nose. Then we have the story of Little One-Eye, Little Two-Eyes, and Little Three-Eyes, which will help.

Further development can be well connected with many interesting occupations and games.

But even before they are introduced, counting, plain and simple, should be fostered. That is to say, the child should learn the number NAMES in sequence. This is not irrational, for the reason that the child delights in this very process, and that this early age is the period in which the memory is strong for words. It is a learning of names.

So let the child count, and count again, even if he does not connect a definite number concept with the names. But do not forget to have him count *things* right along with the drill in memorizing the names.

Let him count anything and everything: his playthings, the steps he takes up and down stairs, pebbles, rings, cutlery and dishes on the table, the persons in the room, and what not. The whole world should be embraced in this counting process, as far as his little mind can fathom it.

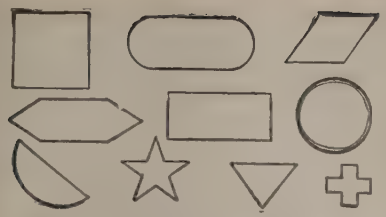
Special Exercises and Occupations.—How little reliance can be placed upon a young child's capacity for remembering and understanding number, may be illustrated by one of the early attempts to measure intelligence. In the original "Binet" Scale, a child of three is expected to be able to repeat but two number names after hearing them once, like 6–4; a child of four is put down as being able to repeat five numerals. A child of five is expected to count only 4 pennies; one of seven, to tell how many fingers he has on one hand, on both hands; or to count 13 pennies. These are very low estimates, indeed, and it will be found that normal children can do vastly more if properly trained.

We shall suggest a number of exercises, widely used in kindergartens and schools, which can be fitly employed by parents long before the child enters kindergarten, or certainly during the early kindergarten age.

The use of *Building Blocks* can be introduced early. The child likes building. Use large size blocks instead of the ordinary type; but even an ordinary box will supply occupation. First let the child play at will, in his own imaginative and constructive way. Then let him count the blocks, arrange them in twos, threes, etc. If you use colored blocks, a great variety of exercises can be obtained.

A large *Peg-Board* with white and colored pegs will offer much delight and exercise in arrangement and counting. The child can make borders, single and double, counting the pegs; diagonals, rows of two or three each, etc. With the colored pegs, you can arrange designs and borders, as well as rows, using twos, threes, fours, etc., of blue, red, yellow, and the other colors alternating.

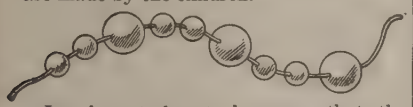
The peg-board has this advantage over sticklaying that it gives the child a definite place for each peg. The muscular coordination required for fitting a peg in its hole is less minute than that which is needed in laying light sticks in rows with any degree of accuracy. Yet, even the use of the peg-board may require, with some children, a preparation. This is afforded by the so-called *Form-Boards*. Some of these are intended merely to test children as to their conception of form, that is to say, of geometrical figures. Here is the picture of one which was first introduced for testing imbeciles, or suspected imbeciles, but which has its special value outside of this; it will teach a young child some of the fundamental forms. The board in which the figures are to be fitted is carved out in corresponding grooves.



There are other form-boards, used for a variety of teaching and testing purposes; but we are here dealing with number teaching only we need not specify them. Some of the Montessori Educational Apparatus, especially the graduated cylinders, are of value as they teach relative size.

Another early exercise for impressing number concepts, requiring but a modicum of muscular co-ordination is *Bead Stringing*.

First use shoestrings and the large wooden "beads" in the form of balls, cubes, cylinders, etc., as purchasable in any toy or kindergarten store. Later, beads of smaller size, different material, and varied colors can be introduced. Of course, the very first exercises will not emphasize number or counting; they will merely teach the trick of the stringing. But as soon as that is mastered, there will be first of all a counting of the beads irrespective of their form size, or color. Then, we may have the child string small and large beads, or cubes, balls, cylinders, etc., in alternate numbers of two, three, or what not. Different colors will be introduced in the same way, until quite elaborate patterns are made by the children.



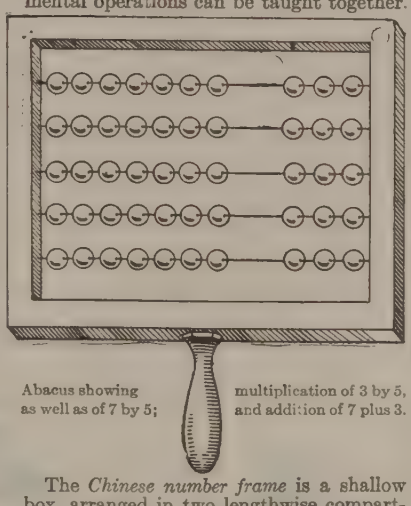
Let is not forget, however, that the child will at first not always be sure of the exact number he uses, or of the number name fitting the number itself. We must be patient. The child will often string his beads correctly without being perfectly conscious of the number he uses; his will be a space concept, or a geometrical concept, rather than a numerical concept. But he will subconsciously store up the experience, and will soon surprise us by a correct understanding of the numerical value.

Let us further understand that this counting process, although it would seem mere addition, introduces from the start the other operations. The one will appear as two less one; the three, as four less one, etc. Again, the grouping of twos or any other sequence of equal numbers will suggest multiplication as well as division. The groups may be distinguished by using different forms, or sizes, or colors.

The beads strung on taunt wire and fastened to a frame, as in the *NUMBER Frame* or *Abacus*, would seem to be simpler to handle than when loose, and to be strung by the child. But first of all the abacus requires balancing by the child with his left hand to give him the chance of moving the beads with his right; this is not so easy to many young children as stringing large beads on a shoestring. The fastening of an abascus arrangement to children's desks will, of course, obviate this objection. But the use of the abacus is more formal than the stringing of beads which offers more variety and a play interest; besides, it has an ormental character as the child can construct necklaces, bracelets, and all kinds of festoon arrangements. A further development of the beadstringing exercise is found in the use of leaves, acorns, nuts, flowers, etc., in place of the beads, thus leading to nature study as well as to aesthetic training, while the numerical element remains.

But the abacus affords new possibilities. The beads are arranged in rows of ten, each row showing a different color. There are usually ten beads in a row; and five, or ten, rows. Some larger forms show an arrangement by twelves. This is not so good for primary beginnings, but can be used to teach the multiplication table up to twelve.

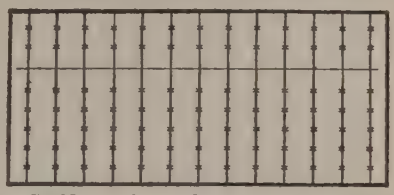
Mere counting will initiate this exercise, as in all other exercises. The child will learn that the beads are arranged in rows of ten, and that there are fifty, or whatever the total may be, all together. Now the child again may arrange the beads in groups of twos, threes, and so forth. He will move over 1 red bead, 2 orange beads, 3 yellow beads, 4 green beads, 5 blue beads, etc. He will construct different numbers by combining several rows; f. i.: 13—10 in one row plus 3 in another. He will discover that the ten in one row can be arranged in five groups of two each, learning the division of ten, and the multiplication of two, and by dividing the ten into two groups of five each, the multiplication of five by two. There is an endless variety of these exercises, and we may well be reminded at each step that all four fundamental operations can be taught together.



Abacus showing multiplication of 3 by 5, as well as of 7 by 5; and addition of 7 plus 3.

The *Chinese number frame* is a shallow box, arranged in two lengthwise compartments, one only one-half as wide as the other. Thirteen thin reeds or rods, on which beads are strung, are so placed across the box that in the wider section of the box, there are five beads on each; on the narrower, only two. Beginning at the left end, the five beads in the lower, wider section represent five units, from one to five. After counting the five you move one of the two beads in the narrower section up; this represents the total of five. Counting the beads in the wider section over again, you have another five; then you move the second bead in the narrower section and now have two beads there, each representing five, or a total of ten. The tens are in the second reed next to this to the right; each bead of the five in the lower section represents ten, or a value equal to the sum of the two beads on the first reed. In this wise you go on. It sounds very complicated, but is not when you once manipulate one of these frames which are today used in every Chinese laundry in this country to compute the amount of your bill. The introduction of this Chinese counting board will give you and your children a very great selection of number constructions, in all the four operations, up to very large numbers indeed.

The apparatus looks something like this:



Sticklaying is another very valuable device in teaching the fundamentals of number. Sticks, natural wood and dyed, can be bought in toy and kindergarten stores, by the box, and in different lengths. They offer opportunities not only for sticklaying but for comparing lengths. For the mere laying of sticks, to teach counting and computation in the four fundamental operations, toothpicks can be used, which may be dyed with Easter egg dyes. But the objection to them is that they are too small for the tiny fingers to handle; the bought sticks are more substantial. The Montessori Apparatus offers graduated rods from 1 meter length down to 1 decimeter; these are very helpful on account of their size, but rather expensive.

Sticks may be laid in rows, first, one in the first, two in the second, etc., like this:

I
II
III
IIII
IIIII, etc.

In rows of twos, threes, etc.

II II II II
III III III III

It will be observed that such an arrangement combines the space relation with the numerical relation, which is very helpful.

Then in rows of equal numbers:

IIII
IIII
IIII
IIII, etc.

All the combinations of each number, as this, of 5;

I I I I I
II I
III II
IIII I
IIIII

The multiplication tables can be easily demonstrated in this fashion. Here is the table of two:

II
II II
II II II
II II II II
II II II II II, etc.

Again, here is division:

IIII = II II.

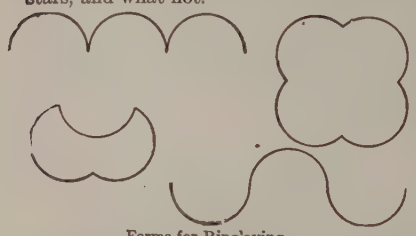
This can be extended as far as the child can follow. In place of the sticks, beans, seeds, beads, almost any other object can be used. Introducing the colors, variations may be effected.

With sticks of different lengths, the first exercise would be assorting them, the one-inch sticks in one pile or box; the two-inch sticks, in another, and so on. Then they may be laid out and arranged according to their relative lengths; first, merely in the form of ascending steps, then by matching lengths. There may be combinations of matching a five-inch stick with one two-

inch stick, and one three-inch stick; or one four-inch stick and a one-inch stick. Or you will have the child discover that two two-inch sticks match the length of a four-inch stick, and so forth.

This may be, in many cases, a convenient time to introduce the *backward* counting, as now the children will have achieved considerable facility. Have them count backward by ones, first from three to one, then from four to one, and so on. Then, by twos, by threes, etc. All this gives drill in the process of subtraction and even in the foundations of division. Let us remember that multiplication is merely the repeated addition of the same number; and we may consider division, in one sense, as a continued subtraction of the same number, from the principal.

Further opportunity for number exercise is given in *ringlaying, tabletlaying*, the *weaving of mats*, and similar kindergarten occupations which afford the child a great deal of pleasure. These occupations introduce a larger element of beauty and form arrangement; designs, borders and the like can be utilized in the development of an understanding of number relations, of harmony, of balance, of symmetry. In place of the tablets of wood in different natural colors, the child may use gummed paper pasters, in many colors and different geometrical forms: circles, squares, oblongs, stars, and what not.



Forms for Ringlaying.

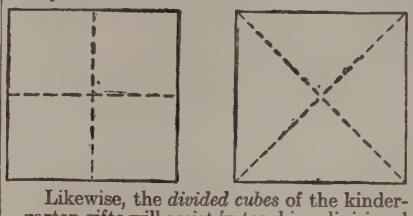
A very acceptable pastime for even young children is *printing*. The Prang Company has produced a very helpful set of print sticks with which a great variety of exercises can be suggested. These sticks reproduce the geometrical forms already learned by the child, and allow of the making of all kinds of designs. Above are squares and circles of different sizes: triangles, oblongs, and even wavy lines.

These forms make it possible to teach the division of figures with ease; halves, thirds, fourths, etc., can be easily demonstrated. Of course, the child should be encouraged also to divide real things, like apples, the kernel of walnuts, and other things; and parents should not be too much disappointed if the division is not very accurate. Accuracy is acquired slowly.

Some firms offer cardboard disks to teach the division of the circle; different colors are employed to distinguish the halves, thirds, quarters, etc., which have to be matched with the circle itself.

One caution is needed: the children must learn to understand that division means dividing the whole into *equal parts*. As soon as actual wholes are divided, like a circle, or a square, or an apple, this must be emphasized. Unequal parts must be shown and used for the demonstration that they are not equal, although they may represent a division of the whole.

Paper Folding is another help in teaching divisions. Use square or round pieces of paper; fold diagonals, or at right angles. Divide the folds again and again. The folded parts may be cut out and matched. By using colored paper, a multiplicity of designs may be produced, pasting the pieces upon tinted backgrounds in various ways.



Likewise, the *divided cubes* of the kindergarten gifts will assist in teaching divisional parts, as well as form, in the matter of geometrical solids.

In order to develop the idea of relative quantity, *measuring* is a very important exercise. In fact, it should accompany all other work. The child should be encouraged to measure lengths, bulk, liquids, etc., all the time. Not that the idea of inches and feet, of pints and quarts, or other standards, should be at once introduced. No. Just as the child will first acquaint himself with the *general differences* in the length of sticks, cords, etc., and will only in time recognize standards of measurement and denote these differences with something like precision, so we want to first give him the notion of larger and smaller, of more and less.

He may use strings and rulers to measure the length and width of table tops, windows, the length of walls, etc., etc. He may then learn to determine the exact length in inches and feet, or yard. Begin with the larger measure, and work down to the smaller. It makes little difference whether the child at once remembers the term "yard", "foot", or not, as long as he recognizes variations in length. Let him cut strings which represent the length, of, say, a window sill; or apply his knowledge in making a cover for his bureau. Let him make knots in his strings to denote different measures he has discovered. Counting knots in strings was one of the primitive methods of computation. The child should have small and large bottles, dry measures (first merely cups and pots), and constantly learn to compare. Gradually he will employ the standard measures and commit the "tables" to memory.

On his walks, let him measure the number of steps he takes; the relation of the length of his step to the foot, or the yard, the rod, the mile. He will soon learn to estimate distances much more accurately than you may expect. Let him measure or estimate the height of bushes, of trees, of poles; the width of a road or a brook. Nature offers such an abundance of material that it is unnecessary to say more. Always be satisfied at first with rough statements; accuracy will be achieved in time.

Of course, all these exercises imply the four operations.

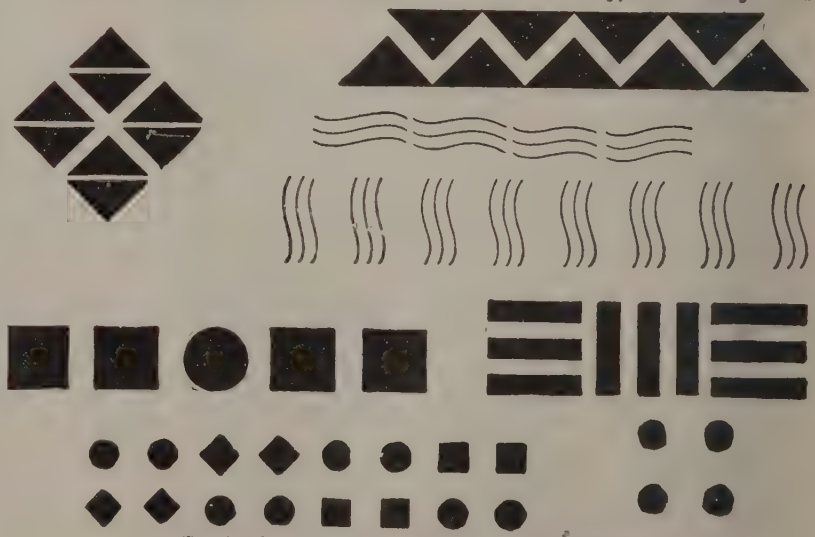
* * *

So far, we have been dealing with concrete things only, in other words, with *denominate number*. That is to say, not entirely. The child, in his early efforts to count, and to use number names, is already abstracting his ideas from the concrete to the un-named, the indenominate, the mere number concept. In fact, as soon as he masters number names, he will do a great deal of computing, in adding, subtracting, multiplying, and dividing, abstractly. When the little boy whose learning process was described on p. 305 asked himself and others the questions: "Isn't two fours eight?" and so on, he was not thinking of four or eight marbles, but of abstract numbers.

With the introduction of the *symbols*, that is to say the *figures*, from 1 to 9 and 0, another element enters.

Perhaps, a child has at first difficulty in understanding the *Arabic figures* which are so familiar to us. A transition method would be to use the sticks as symbols, or rather the marking of sticks on paper, such as we often do in tallying at card games, or in scoring votes. Every group of five is denoted thus: 𝍸, or 𝍸. Thirteen would appear thus: 𝍸 𝍸 III. Some have suggested that it may be advantageous to use the *Roman numerals* before we use the Arabic numerals as they also operate with simple additions and subtractions. When once it is known that V means five, and X means ten, it is easy to construct III=3, IV=4, or five minus one; XI=11, or ten plus one; XX=20, or two tens, and so on. Of course, computation is less comfortable with the use of these symbols than with the Arabic notation.

Even before the use of numerals, however, the *multiplication table* may be learned by heart; one table after the other. There is no need of hurry, or of anxiety. True,



(Samples of the work that can be done with the printing sticks.)

the tables will mean nothing to the young child at this time, except as far as he can verify the tables by actual experience in his number work with objects. Many years ago, a clever English educator expressed himself in this manner: "A boy may say 7 times 5 equals 35, when he does not know much about 5 or 7, except that he has had 7 marbles or 5 balls; and he has no conception whatever of what 35 represents; he has only learned to make certain noises in a certain sequence." This is correct. But this is also the period in a child's life when he has a retentive memory of a more or less "mechanical" kind, as it is called. By committing the tables to his memory he stores up a set of tools which will come in useful later, for rapid calculation. Many early activities of a child have no purpose in themselves but are a preparation for future purposeful performances.

As soon as the child masters the numerals, the multiplication table can be practised with the use of a table like this:

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6										
4	8										
5	10										
6	12				36						
7	14										
8	16										
9	18										
10	20										
11	22										
12	24										

The table is either drawn on a large manila board, or on the blackboard. It contains 144 squares, arranged in 12 rows of 12 squares each. In the upper horizontal row write the figures from 1 to 12; likewise in the first vertical row on the left side. The exercise may be played as a game, either by several children, or by parent and child. The idea is to multiply the figures of the top row with those of the left row, or vice versa, and to write the results in the corresponding squares.

The second row would then contain the figures, as indicated, 2 times 2 = 4, 2 times 3 = 6, 2 times 4 = 8, etc. In the sixth row, we would find, as also indicated, that 6 times 6 = 36. The product can always be found in the square where the two rows meet.

Further, compare the rows, f. i., the second with the fourth, and you will also find that 2 is ½ of 4, 4 is ½ of 8, 5 is ½ of 10, etc., so that we have also a demonstration of quotients.

It may have been noticed that we have used the term "times" written out, and not the sign x. We have done this for a good purpose. It will make it far easier for the children if they learn to use the arithmetical signs in the proper manner from the start; there is as a rule too much confusion in their reading. The sign "x" does *not* mean "times", but "multiplied by." *The number to be operated upon always stands first.* When we say, 3+4=7, we mean that 4 has been added to *3*; 3—1=2, means that one has been taken away from the *3*; in the same way 3x4=12 indicates that the *3* has been taken 4 times, or has been "multiplied by" 4, and not that the four has been taken three times. Likewise, when we say 12÷4=3, we mean to say that the *12* has been divided by 4.

In introducing division in the form of examples, we must also remember that division really implies *two different processes.* The one is to find the number of times a smaller number is contained in a larger one, with or without a remainder; the second, to divide a number into so and so many equal parts. Thus: 12÷4 may mean that we wish to discover that the 4 is contained three times in 12; or again, that when we divide 12 into four equal parts, each part contains three. If we, f. i., ask how many times are four inches contained in one foot or 12 inches, we shall find that we have three times four inches. But if we ask what is one fourth part of one foot, we shall put it down as containing three inches. To write the two examples correctly would therefore make them look like this:

12 in. ÷ 4 = 3 in., and
12 in. ÷ 4 in. = 3.

These are two different things, and unless they are clear in the child's mind from the start, he will have difficulties in analyzing his examples later.

Another difficulty which ordinary methods introduce is the distinction between "long" and "short" division. There is no difference at all between the two processes. "Short" division examples are short because smaller numbers are used, and there is usually no remainder; "long" division examples are long because larger numbers are used. It is best not to make this distinction, and also to adhere from the first to the form of an equation, like this:

12 ÷ 4 = 3, or 4)12 = 3.

It is evident that these two forms exemplify the two types of division explained; the first really means, 12 divided by 4 gives 3; the second, 4 is contained in 12, 3 times. The second form may be chosen in preference to the first for all examples because it introduces the longer division examples with greater ease.

To lead over to the so-called long division we may have the child write the tables this way:

3 = 1 three
4 = 1 three plus 1
5 = 1 three plus 2
6 = 2 threes
7 = 2 threes plus 1
20 = 6 threes plus 2
21 = 7 threes
22 = 7 threes plus 1
23 = 7 threes plus 2
24 = 8 threes, etc.
6 x 1 plus 3 = 9
6 x 2 plus 3 = 15
6 x 3 plus 3 = 21, etc.

This will be an easy process after the children have performed all the try-out exercises described before, with objects of all kinds, and if they are encouraged to "prove" their computations by constant recourse to actual values. At this stage there will be ample opportunity for such proving in connection with the *manual training* exercises a child will indulge in now, in measuring and computing lengths, widths, etc.

To lead over to the more complex problems in division it will be helpful to suggest to the child to write out even his simplest forms completely, without omission of the intervening steps. Thus:

3)12 = 4.	3)128 = 40	plus 2 plus
12	120	⅔ = 42⅔
00	8	
	6	
	2	

The complete statement would refer to the fact that we first want to find, in the second example, one third of 12 tens, which is 4 tens, or 40; then one third of 8 units, which is 2 with 2 left over which adds ⅔ to the entire quotient so as to make it 4 tens, 2 units and ⅔ of a unit, or 42⅔.

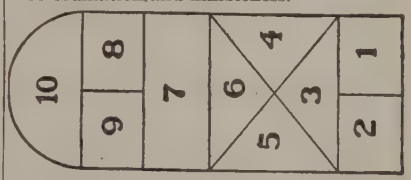
The same process can be followed out with the longer examples. Perhaps at first this will require time and patience, and may seem to some unnecessary. But it is these initial steps which must be fully mastered. Afterwards short cuts may be introduced, for the child will always understand the underlying principle.

Number Games and Songs.—There are numerous games and songs which will help in impressing the concepts of quantity, order, and number relation. The song of the "Five Little Chickadees" is well known to kindergarteners, and can be played as a game.

There is the old game of "Hop-Scotch" which all children like to play. The figure as here given in the diagram should be described on the ground, about twelve feet in length. From a line, or spot, a short distance from No. 1, a stone is tossed into No. 1. William Wells Newell, in his book, *Games and Songs of American Children* (Harper Bros.), describes the game as follows:

The boy or girl hops on one foot into No. 1 and kicks out the stone which is then thrown into No. 2. The player now hops into No. 1, and jumps into No. 2, in such a way that one foot is in the division 2, and one foot in 1. The stone is kicked into 1, and then out, and so on. In passing through divisions 1 and 2, 4 and 5, 8 and 9, a straddle must be made, one foot being placed in each; in the others a hop only must be taken. A failure to throw the stone into the right place, or to kick into the right division, or leaving it on any line, or touching the raised foot, or stepping on a line, puts out, and the next takes his or her turn. In other localities, no straddling step is taken, but the player, in certain divisions, is allowed to place the stone on his foot, and so expel it from the figure at a single kick; the compartments also vary in number and arrangement.

This game does not only impress the first ten numbers upon the child's mind but implies a splendid exercise in muscle-co-ordination and nimbleness.



"Odd and Even" is a guessing game. It is played by two players one of which may be the parent, with a small number of beans or other counters held in the hand of each. Then one asks the other, "Odd or Even?" If the guess be even, and the true number be odd, it is said, "Give me one to make it odd," and vice versa. The game is continued until all the counters belong to one or the other of the two players.

A similar game is "How Many Fingers?" A child hides his head in another's lap and guesses the number of fingers raised. Sometimes this rhyme accompanies the question:

Mingledy, mingledy, clap, clap, clap,
How many fingers do I hold up?
"Three."
Three you said and two it was, etc.

This game, known as "Morra", has been played from the time of the ancient Egyp-

tians; in the more complex forms the sum of the fingers raised and guessed right by each of the two players is counted up and scored.

Many other games can be invented by the children themselves and developed by the parent.

Ball games are naturally in this group. Matching one another in the number of catches; measuring and comparing the distances from which the ball is thrown and caught, and numerous other variations of the same counting and tallying game will arouse and hold the interest of children for a long time.

Dominoes afford much sport and training. You can use them in the ordinary games, matching the numbers, and counting up the losses; or you can vary the game by requiring the players to complete a certain number, as 10, or 12, by placing the needed numbers together: 4 and 6, 5 and 5, to make 10; or 6 and 6, 5 and 6 and 1, etc., to make 12, etc. The doublets, like 2 twos, 2 threes, etc., also introduce some opportunities for multiplication and division, and with the use of more than one domino block at the same time, the number games can be varied and extended.

Some manufacturers of toys and of school material have produced new varieties of domino games by offering cards with the domino arrangement of dots, using higher numbers, up to 10 and more, instead of merely those from 1 to 6, as in the domino game proper. With the use of them, all the four operations can be successfully played.

Other cards add to the number forms composed of dots, the corresponding figures, or number symbols, on the reverse side, for study and comparison. Still others introduce pictures of flowers and animals, for *quick perception and computation.*

To develop quick perception and computation, the cards are held up to the child's inspection for only a very short time, and he is expected to perceive quickly what number is represented, or what sum is required by adding up the two divisions of the card. Naturally, it is well to begin with a longer exposure, of, say, five or six seconds, gradually diminishing the time of exposure until only a moment is allowed, so that the child's perception is quickened. Caution is in order against the child falling into the habit of merely guessing.

This very valuable exercise in rapid and accurate number perception and computation can also be played with *dice*, first with one, then with two, where addition comes in, and even more. By removing one or or two dice after the first simultaneous exposure the exercise may introduce subtraction.

Another helpful adjunct to number training is afforded by our ordinary *playing cards*. Here, in addition to the number, or pip, cards proper, we have the court, or figure, cards, to which, as to the ace, different values may be given, as 11 to the knave, 12 to the queen, and 13 to the king, and, in some cases, 14 to the ace.

The first exercise for a young child is merely to assemble the shuffled cards in suits; then to arrange each suit in the order of counts. He may then play by putting the four aces together, adding them up as ones; in the same way, the twos, threes, and so forth. It is evident, that games of subtraction, multiplication and division are offered by the use of cards from the very start.

But then we have our regular games, such as introduce scoring and tallying, and will train the child's power of memory retention. One of the simplest games of this kind is Fan Tan; then we have Casino, Hearts, Sixty-Six, all of which can be played in various ways. Some of the more popular family games like Old Maid, have their value. They will afford endless amusement no less than training to the children.

One of the supplementary advantages of using cards and simil..r games with children as tests of their skill in mastering number relations and in thinking out possibilities, is that children will enjoy the sport without attaching the gambling idea. For it must be strictly avoided to have them play for prizes of any kind, and if it were even only a collection of pins or marbles. The fun to them must be in playing the game as such.

Even young children may be taught some of the simpler *Solitaire* games. "Canfield" is one of them. It can also be played by two players, and is then known by some as "Idiots' Delight". A helpful solitaire game for children is "Basset". It is played as follows:

Lay out four cards: ace, two, three, four. On these build as follows: On the ace will go the two, three, four, five, etc. On the two will go the four, six, eight, ten, etc. On the three will go the six, nine, etc. On the four, the eight, twelve. The court cards are used as numbers, 11, 12, and 13 (knave, queen, king). When the cards are played successfully, all will be distributed on the four piles, with the kings on top.

"Tit-Tat-To" is a solitaire game which introduces a new feature which will be used again in another set of number games. It is played with nine cards in sequence from ace to nine. They are to be placed in three rows of three cards each. Then, by changing their position they must be so disposed that the number of pips in each row, counting the cards horizontally, perpendicularly, and diagonally, will make the sum of fifteen each time.

As soon as the child masters the *figure symbols*, there is a variety of games and pastimes. We have the old game of *Lotto* which can be introduced quite early and will assist in the fixing of number symbols. Again, we have the *Fishpond*, *Parcheesi*, and a multitude of other games as offered by the toy stores.

Now, the Tit-Tat-To principle can be employed in the development of the *Magic Squares* and *Magic Triangles*. To work them out, the child should use counters, with the figures written or printed on; the number counters of a Lotto game will do very well. To illustrate:

A
B C
D E F

The figures from 1 to 6 should be so arranged that A plus B plus D = 9; A plus C plus F = 9; and likewise the third side, D plus E plus F = 9. This is one solution:

2
6 4
1 5 3

The same counters can be so arranged that the sum each time is 10, or 11, or 12. Again, a larger number of counters can be introduced, with larger sums. In the same way, "magic" squares are used; here is one example:

A B C
D E F
G H I

This is a so-called solid square, with a counter in the center; hollow squares omit this center counter. In the sample given, the numbers from 1 to 9 can be so arranged that they give 15 whichever way you add three numbers, vertically down any of the three columns, or horizontally, or diagonally. This is a solution:

4 9 2
3 5 7
8 1 6

These arrangements are a source of never-ending delight with children and develop in them facility of number combination which will stand them in good stead in many "practical" examples.

An example of a subtraction puzzle with counter is this:

Arrange nine counters as follows:

1 5 9
3 4 8
2 6 7

Now tell the child to move ONE counter from its present position to another pile, in order to make the sum of the counters in all the three piles the same. Of course, this is accomplished by moving the 9 from the third pile to the first.

The more of the *puzzle interest* of the child we can employ in teaching him number the more sustained will be his application, the more eager will he be to find the right solution. In fact, all problems or examples can arouse this puzzle interest when rightly presented. Every solution means a mastery over an obstacle, the conquest of a difficulty, the solution of a riddle.

Some of the special devices that may be used in this connection are the "Prestocard Multiplication Table" (Glen Ridge, N. J.), and the "Quiz Educational Toy" (Zestoy Mfg. Co., New York).

The following *drill charts* used by the author in many ways will assist greatly in fixing the decimal system of number relations in the mind of the child. Charts I and II are dealing with tens; the third chart, with hundreds, up to 10,000.

The arrangement of the charts is such that the relationship of numbers within the tens is readily grasped. The child should read each row separately at first, like this:
1 2 3 4 5 6 7 8 9 10;
then, the second row, the third, and so on. The next step would be to read the tens from the top line down to the bottom line:
10 20 30 40 50 60 70 80 90 100.
It will be well to call these first "tens", naming them "one ten", "two tens", etc., to "ten tens", so as to impress the decimal relationship; substituting the terms "twenty", "thirty", etc., only after this relationship is fully grasped.

The child will soon become interested in discovering further relations of tens, counting downward in the first compartment: 1, 11, 21, 31, etc. Also: 2, 12, 22, 32, etc., and so through the compartments. Further, he will discover that, going diagonally from the upper left corner to the lower right corner, he adds up by elevens (11 being the number given under 1): 1, 12, 23, 34, etc. Choosing the second number given below 1, viz. 21, he will find the corresponding sums by first taking the next number to the right of 21, viz. 22, and then following the same rule: going down two and one to the right, in the further operation: after 22, 43, then 64, 85; here we stop as this Chart I does not go beyond 100. But tacking on the corresponding columns of Chart II, we find 106, 127, 148, 169 and 190.

Parents and children will vie with each other in discovering more and more of

these games of addition. Chart III allows of the same illustration with hundreds, emphasizing the fundamental principles of the decimal system still further.

The Groszmann Drill Chart of Tens, I.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The Groszmann Drill Chart of Tens, II.

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

The Groszmann Drill Chart of Hundreds

100	200	300	400	500	600	700	800	900	1000
1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
2100	2200	2300	2400	2500	2600	2700	2800	2900	3000
3100	3200	3300	3400	3500	3600	3700	3800	3900	4000
4100	4200	4300	4400	4500	4600	4700	4800	4900	5000
5100	5200	5300	5400	5500	5600	5700	5800	5900	6000
6100	6200	6300	6400	6500	6600	6700	6800	6900	7000
7100	7200	7300	7400	7500	7600	7700	7800	7900	8000
8100	8200	8300	8400	8500	8600	8700	8800	8900	9000
9100	9200	9300	9400	9500	9600	9700	9800	9900	10000

Subtraction in this case is merely the reverse process, "counting backwards".

After exercising with the charts in full view of the child, the charts should be withdrawn, so that the child may test his ability to retain a mental picture of them. Rather than allow erroneous impressions to creep in, it will be well to show the charts again and again, until their image is firmly fixed upon the child's mind. Remember: this is not a *test*, but an *exercise*. It is of the utmost importance that the child should form and retain clear and correct mental images of these number relations.

The arrangement of the charts also allows their use in multiplication and division drills. For instance: 2x2=4; 2x3=6, etc. Also, 2x11=22; 2x21=42, etc. It will be seen that there is a geometrical relation of the figures representing these values. Children will delight in drawing pencil lines to mark these steps. For such exercises it is suggested that the charts be manifolded (hectographed or mimeographed) for individual use.

The difference between *prime numbers* and *composite numbers* can be studied at home by way of a game, using the so-called "sieve" of the famous Greek mathematician Eratosthenes, who lived several hundred years before Christ. Divisors and multiples can be discovered by using the same device. This is the sieve:

1	11	21	31	41	51	61	71	81	91
2	12	22	32	42	52	62	72	82	92
3	13	23	33	43	53	63	73	83	93
4	14	24	34	44	54	64	74	84	94
5	15	25	35	45	55	65	75	85	95
8	16	26	36	46	56	66	76	86	96
7	17	27	37	47	57	67	77	87	97
8	18	28	38	48	58	68	78	88	98
9	19	29	39	49	59	69	79	89	99
10	20	30	40	50	60	70	80	90	100

"This sieve," says Dr. Winifred Sackville Stoner who had used it in the training of her own daughter, "seems to amuse all children who like to mark out the composite numbers with red ink, and it impresses on their mind all prime numbers so that they recognize a Mr. Prime whenever they see him." It will be noticed that this "sieve" is similar to the Ten-Table of the author which can be used in various ways.

Mrs. Stoner, in her book, *Natural Education* (Bobbs Merrill), also describes the manner in which she taught her daughter *cancellation* as a short route and interesting game. With her permission we quote:

"In a box we place all sorts of numbers not exceeding two figures. These are to be our soldiers. Then we choose a name for ourselves, Wellington being a favorite with Winifred and Napoleon with me. We draw a line of battle and we are ready to begin. Winifred draws a number from the box. Suppose it is ten and that she has chosen the upper position above the line for her men. Then she puts 10 (in writing) above the line. I draw and get only two men, but I place them below the line ready for battle and feeling hopeful that my next draw will make my army larger than Winifred's. She draws and gets only two men, whom she places ready for action while I make my second draw and win five. Again Winifred draws and gains four. Now her line of battle is ten times two times four. I draw another two and my men stand two times five times two. At a glance you see that she has beaten me in number but we fight the battle to see how many of her men I can kill. My first battalion of two advances against her ten and is wiped out of existence though reducing the ten to five. Then she uses this five to kill my five but they die in battle. My two march against her two and both fall, but she has still four men remaining and so Wellington has won another Waterloo. This is how the battlefield is arranged:

5

10x2x1 Wellington's men =4

2x5x2 Napoleon's men =1

This is really a very interesting game for all children to play.

The only difficulty may be that the children will argue that Napoleon had not one, but no man left. That "cancellation" reduces the cancelled numbers to the value of one is one of those mathematical axioms which it is almost impossible to explain to children. Of course, 4 divided by 1 is still 4, and the children will have to be satisfied with this, just as we older ones will have to take Einstein's theory of relativity on faith. If the position of the forces had been reversed, so that ¼ had been the result, the explanation would perhaps be easier.

Fractions. When once the idea of fractions is understood, their manipulation is relatively easy. In common fractions, the only puzzling thing seems to be their multiplication and division. But it can be made plain in something like this manner:

Suppose the problem is to find ½ of ¾. Let the child understand ¾ means 3 *fourths*, that is to say three definite things. "*Fourths*" is really a denomination. As we would say, ½ of 3 apples is one and one-half apples, as ½ of three is one and one-half, so we have here ½ of 3 fourths = one and one-half fourths. Now we know that one-half of one-fourth is one-eighth; so we have as an answer, one-fourth and one-eighth. To express this in one quantity we remember that one-fourth = two-eighths; thus, by adding, we have ⅜ plus ⅛, or ⅜. Consequently ½ of ¾ is ⅜. Let the child fully understand each step. He will then joyfully appreciate the discovery that there is a short cut to the finding of the answer, namely, that we merely multiply. Thus:

$$\tfrac{1}{2} \text{ of } \tfrac{3}{4} = \frac{1\text{x}3}{2\text{x}4} = \frac{3}{8}$$

This is *multiplication of fractions*; the problem can also be written in this manner: ½x¾=⅜, or better: ¾x½=⅜, just as we would write ½ of ½ apple=¼ apple, or ½ apple x ½=¼ apple.

In *division of fractions*, we may argue in this form.

⅚÷⅙ means: how many times is ⅙ contained in ⅚; obviously 6 times.

This is the same as, with inverted divisor:

$$\frac{6\text{x}6}{6\text{x}1} = \frac{36}{6} = 6.$$

How many times is ⅔ contained in ¾?

The same as: ¾÷⅔. ¾=9/12; ⅔=8/12. 9/12 is contained in 8/12 one and one-eighth times, or 1⅛.

Short cut process:

$$\frac{3\text{x}3}{4\text{x}2} = \frac{9}{8} = 1\tfrac{1}{8},$$

by inverting the numerator and denominator of the divisor and multiplying.

Decimal Fractions. These can be most easily introduced through a previous manipulation of U. S. money. The division of the dollar into 100 cents forms the basis. There is not a child that will not at an early age become interested in money. The toy stores sell toy money in boxes, representing on card disks of corresponding sizes and with the denominations printed thereon, the various divisions of the dollar. For later exercises in buying and selling, in connection with store-keeping, such as has been elaborated by the "Model Store" movement (Educational Foundations, Brooklyn), it can be used to advantage. But young children are not interested in it; they want the real coins, and want to buy real things. They soon learn to manipulate pennies, nickels and dimes. Then they will understand the quarter, and that four quarters make one dollar. Out of practical experience in making change they will learn to master the rudiments of the decimal fraction idea, and will be more ready to transfer their knowl-

edge to decimal fractions in the abstract, or in application to other values. The same is true of *percentage*. Just as 25 cents are $^{25}/_{100}$ of a dollar, or a fourth (a quarter) of a dollar, the sum represents 25 per cent of the same amount. 10 cents is ten per cent, or 10%. And so on. The child will easily learn to add, subtract, multiply and divide decimal fractions. Indeed, he will find it much easier to manipulate them than the so-called common fractions, and will hope for the time when all our measures of length, distance, liquids and dry stuffs will be of the centigrade order.

The teaching of *time* is a slower process than one would imagine. But when the child has learned the divisions of circular objects, there will be an early opportunity to teach him at least the hours, and their main divisions. The recognition of minutes comes much later.

Area and *bulk* are best introduced through the kindergarten blocks and tablets. By arranging squares, especially if they have a definite size corresponding to the measuring standards in use (inches, feet), the first problems in area can be understood by the child. He will learn without diffculty that a one-inch square covers one square inch of surface; but if there is an area twice the length and twice the width, he needs four squares, in other words, that with a two-inch width and a two-inch length, he needs four one-inch squares to cover four square inches. And so on. He will also learn to appreciate *scale*, substituting feet of a real room for the inches of his drawing on the paper, and learning gradually the significance of map-drawing to a scale.

ARITHMETIC.—First Steps in Number Training.—Arithmetic in the first three grades is called "number work". It expresses in the simplest way the numbering sense or the counting instinct by which the child first gets hold of quantitive values in his environment. First year number work to the child is largely incidental, though the teacher must have definite aims and purposes. The simplest way to get number ideas is to count small groups of similar objects and find "how many" in a group. The mere rhythm of counting is pleasing to children, counting by 1's to 100; by 10's and 5's to 100; by 2's to 12 or 20; by 3's to 12 or 15; count backward by 1's and 10's. Children will have practical use for this knowledge in connection with games, songs, stories, manual work, and in the daily business of the schoolroom and the home. Through rhymes and jingles as in this *Ten Little Indians* song they have the concrete lesson, the physical exercise and the merry game all in a delightful combination.

One little, two little, three little Indians.
Four little, five little, six little Indians.
Seven little, eight little, nine little Indians.
Ten little Indian boys.

Ten little, nine little, eight little Indians.
Seven little, six little, five little Indians.
Four little, three little, two little Indians.
One little Indian boy.

Games in great varieties may be arranged that will bring into exercise this number sense and the delight of dramatization.

Reading and writing numbers may be taught the first year to one hundred and the second year to one thousand. Make practical use of numbers taught, as finding pages of books, numbers of houses, etc. The teacher must always study her class and suit her pace to theirs.

Teach various forms expressing number relations, as: Three and three are six. Six divided into twos are three twos. Three twos are six. Six less three are Three. Two threes are six. One-third of six is two. Six divided into threes are two threes. Two-thirds of six are four.

With the operation teach also the appropriate sign as +, —, =, ×, ÷.

Appropriate combinations for drill should be presented after the child has formed a concrete image of the number relation. He should see one-half and be able to think one-half before he is asked to repeat the statement that one-half of six is three.

Developing the Idea of Fractions.—Children easily grasp the idea of fractional parts, but the teacher should keep in mind the completeness of the fractional idea, as Professor David Eugene Smith in his monograph on the teaching of arithmetic has pointed out in the following illustration: "We should remember that a fraction, say ½, is commonly used in three distinct ways, and that it is our duty to see that little by little all these become familiar to the child. These ways are as follows: 1. ½ of a single object, the most natural idea of all, the breaking of an object into 2 equal parts. 2. ½ as large, as where a six-inch stick is ½ as long as a foot rule, not half of it, but half as long as it is. This is essentially the ratio notion, and it is necessary to the child's stock of knowledge, but it is not necessary to make it hard by talking about ratios at this time. 3. ½ of a group of objects, as in case of ½ of 10 children."

New Facts and Processes.—Whenever new facts and processes have to be learned they should be learned in comparison with known facts. The child should handle and measure and be the aid of drawing get graphic representation of mathematical relationships. Use different magnitudes. Do not neglect to follow up with abstract drill work. Drill, fix, learn. Abstract drill work may be made as interesting as concrete, for all the joy of the game element in education may be made to enter into it.

Seat Occupation for Number Work in Primary Grades.—Devices for making number work practical have been worked out in great abundance. Every resourceful teacher has devices of her own. A few have been gathered here as suggestions.

Make pasteboard rulers 4 inches long, a foot long. Mark off into inches. Later mark off into fractions of an inch. Use these rules in measuring many things. Compare lines, surfaces and solids, with similar lines, surfaces and solids, as: This line is three times as long as that line. This line is one-fourth as long as that line. This rectangle is one half that rectangle. Find lines and surfaces in the room, and compare. Teach the child to see many things through the one. Unless that which he sees aids him in interpreting something else his observation is of no use to him. Cut, fold, paste paper furniture according to directions. Paint flags or cut badges of paper for holidays.

Rule lines, squares, oblongs to dictation and scale, sheets for weather record, record sheets, score cards for games. In all construction children should make the necessary computation to get total lengths and beaths and effect of any allowances, *e. g.*, laps in making boxes, for cover of a box compared with the box itself.

Have children measure each other, measure the growth of twigs, make comparisons in weights and measures. Arithmetic of a very practical kind is found in nature study, manual training, and in sewing and cooking. Boys and girls in industrial courses must measure and weigh with accuracy and skill.

Construction work when properly taught affords the finest mental discipline. Let children work out their own knowledge and make them personally responsible for their own results. Encourage them to tell what they know in free conversation. Such free work is far more valuable than formal recitation.

Test-Book.—A text-book is usually placed in the hands of pupils as early as the second half of the third year. From this time on the teacher follows the outlined course of study. Each year she must see to it the class thoroughly reviews the essential features of the preceding year's work and that such forward steps as are marked out for her grade be intelligently taken. Each year the work involves more difficult combinations and more complicated processes. The exact groundwork to be covered grade by grade differs in different schools according to the course of study outlined by different boards of education, but everywhere the essentials of class work are the same.

Class Work.—Cultivate the habit of first grasping the conditions of a problem, what is given, what is required, the relations between the two, the solution. Dictate original problems. Call for restatements of facts and conditions. Let pupil state process without solving. Dictate work slowly and distinctly without repeating. Demand close and lively attention. Call for original problems to illustrate principles. Secure familiarity with arithmetical facts and accuracy and ease of language. Typical problems, from Professor Smith's *Monograph*, to which this article is already under great obligations, have been borrowed here to show the nature of original work that may be done in different grades.

Two Groups of Problems Give to a Third Year Class.—

Oral Exercise (without pencil and paper).

1. The coffee for our breakfast cost 6c the potatoes 4c, the meat 32c, and th bread 4c. How much did the bread an meat cost? How much did the food cost

2. The oatmeal for a breakfast cost 8 the milk 4c, the fruit 10c, the rolls and bu ter 5c, and the eggs 8c. How much d this food cost?

3. For a dinner the meat cost 30c, t vegetables 20c, the dessert 20c, the coff 15c, and the other food 15c. Find the to cost.

4. The meals for a small family c $1.70 on one day and $2.20 on another d How much did they cost for these two da

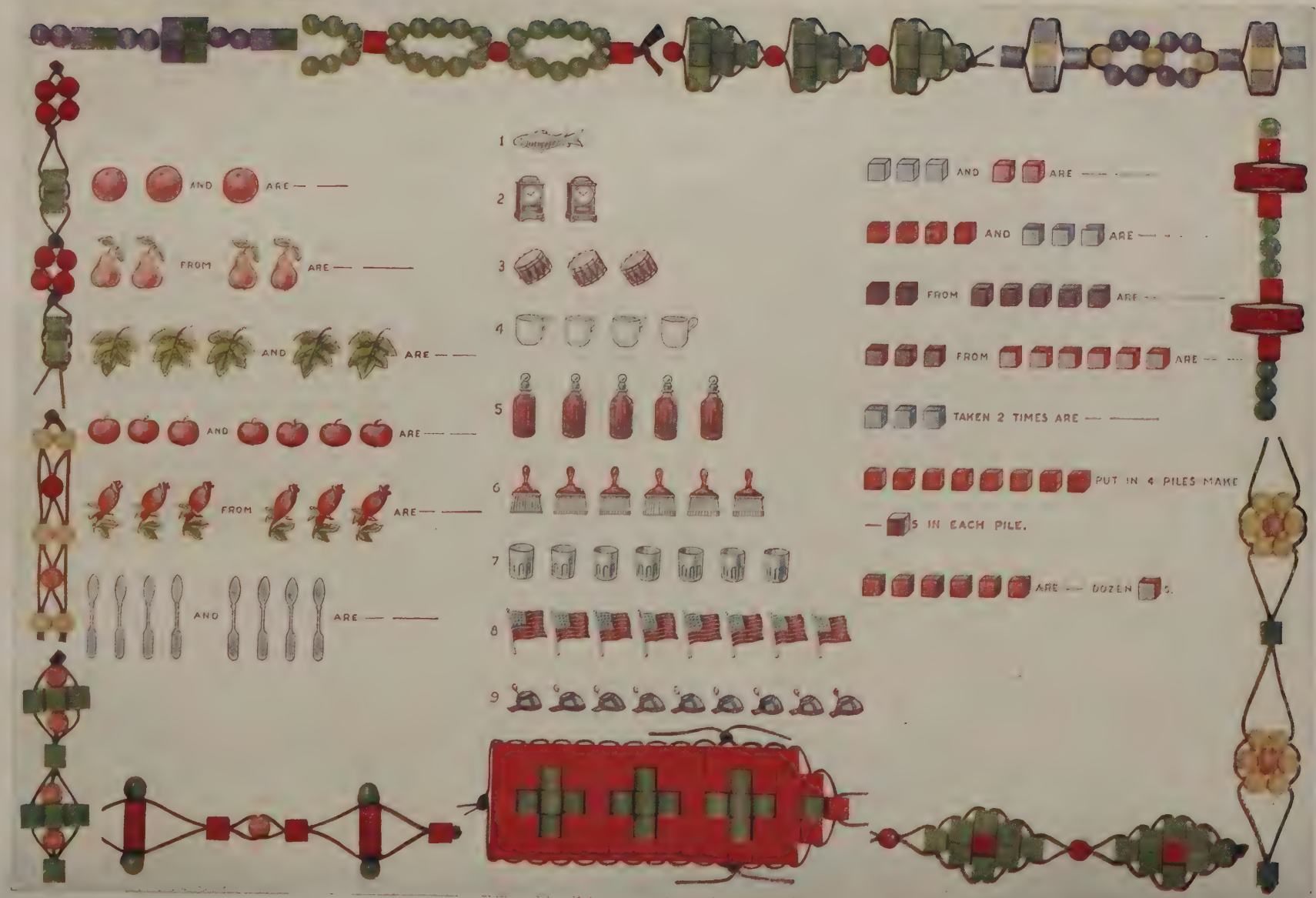
Written Exercise.—The toad is one of ma best friends. One toad will keep a gar of 800 sq. ft. free from harm insects.

1. At this rate, how many toads wo protect from insects a garden 80 ft. w and 100 ft. long?

2. The eggs of four toads were cour and found to be 7,547, 11,540, 7,927, 9,536. How many were there in all?

3. If one out of 50 hatched, how m hatched? (Divide all by 50.) If of these were destroyed by other anim how many survived?

4. If each of these survivors destroy sects that would cause $10 worth damage, how much are they all worth village?



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OBJECTS AND DESIGNS FOR PRIMARY NUMBER AND BEAD WORK

Typical Problems for the Fourth or Fifth Grades.—1. Sarah's mother bought 4⅕ yds. of cloth for a coat, at $1.25 a yd. What did she pay for it?

2. She also bought 3½ yds. of lining at 50c a yd. and 4¼ yds. of braid at 20c a yd. How much did these cost?

3. She also bought 6 pearl buttons at $1.50 a dozen, and 2 spools of silk at 8c a spool. How much did these cost?

4. A dressmaker charged $5 for making the coat. What did the materials and making cost?

Typical Problems for the Sixth or Seventh Grades.—1. The following is, by weight, a good mixture of seed for a pasture: Kentucky blue grass 25%, white clover 12½%, perennial rye 28⅛%, red fescue ⅜%, redtop 25%. At 32 lbs. to the acre, how many pounds of each are used?

2. A farmer puts 5 acres into celery, setting out 20,000 to the acre. The yield being 1,500 doz. heads to the acre, what is the ratio of the plants matured to the others?

3. He pays $95 an acre for seed, fertilizer, labor, and other expenses, and sells the crop at 15c a dozen heads. What is his profit on the 5 acres?

An outline of the course in arithmetic in the eighth school year in Munich will show how the German schools are working out some practical ideas for girls who are soon to be the home makers. It is more complete than anything we have yet worked out in America.

The work for the year is as follows: 1. Simple domestic bookkeeping. 2. Calculation of the prices of foods, bought in large or in small quantities, together with the question of discounts. 3. Cost of meals for the home. 4. Daily, monthly, and yearly supplies for the kitchen.

Too much importance cannot be placed upon the nature of the original problems. They enliven class interest and give ample opportunity for correlation with other school subjects and with the livelier interests of the social environment. They should strain the powers of the child to think and compute, but they should not be too hard for him to master them independently. In every way problems should help the teacher to make school work practical.

Summary of Suggestions for the Teacher of Arithmetic.—1. There are a few things primarily essential in arithmetic that should be learned by every child. He should think in numbers as readily as he thinks in other subjects. He should be ready to execute his thought with quickness and precision.

2. Drill and repetition for accuracy and speed should be given day after day that the child may early master the mechanical difficulties of the subject, but drill should not become a lifeless mechanical repetition; it should be so varied as to produce thought and animation.

3. Such processes as addition, subtraction, multiplication, and division should be mastered early. Often much time is wasted in the upper grades learning facts and processes that should have been mastered in the lower grades when the child is passing through the stage in which this work can be done most easily.

4. The introduction of too many topics at a time should be avoided. The pupil should be required to meet but one difficulty at a time.

5. Begin with the concrete, then drill on number facts and processes. In the primary grades teach number facts for the most part in connection with the study of other subjects. Use material drawn from the number side of school experience and the simpler and more evident relation of home life. The continued use of any particular set of objects is tiresome and narrowing.

6. It is important to use objects freely whenever they assist in understanding number relations, but care should be taken not to fetter the mind with objects when it is ready for the abstract. Pass from observation to reasoning, from concrete to abstract, from facts to principles, from particular to general, and, very slowly, from the simple to the complex. The child passes through the stage of objects to that of representation of objects, to that of symbols. Noticeable progress begins when he can think of things not present to his senses.

7. In the intermediate grades emphasis should be laid upon the scientific aspects of the work, that is, rules and principles, in order to secure mastery of fundamental operations of numbers.

8. In the grammar grades considerable attention should be paid to the use of numbers in connection with the commercial and industrial activities of the community. Practical problems for all grades should be taken from industrial life.

9. In the working out of problems the child should be taught from the beginning to determine for himself the approximateness of results, appeal being made to the common sense check "Is this result reasonable?" "Does it agree with the conditions?"

10. Problems of graded difficulty should be given in all classes in order that even the weakest pupil may find enough that he can do to keep him trying. The exercise should bring in all the primary combinations of numbers and all the fundamental processes. The tendency to overuse a few combinations at the expense of others must be guarded against.

11. The teacher must exercise judgment as to the amount of written work. Oral expression should always precede written. In primary grades number work is largely given orally—good, clear, well worded expression. A little work well done is much better than a large amount of work over-hurried.

12. Insist upon neatness and a proper statement of steps taken.

13. Accuracy, facility, orderly arrangement, self-reliance, are cardinal virtues in number work.

14. In the assignment of work, assign some purely for drill and some purely to train the reasoning powers. If reasoning is difficult, mechanical processes should be simple.

15. Aim to obtain efficiency through the discipline of numbers. "The prime desideratum," it has been said, "is the ability to work accurately, with reasonable rapidity and with interest, and to know how to apply numbers to the ordinary affairs of life." There is moral value in the integrity of numbers that "cannot lie."

PRACTICAL HELPS IN ARITHMETIC

ADDITION AND SUBTRACTION

The following plan is suggested in teaching the combinations in addition and subtraction:—

1. Add **1** to every number up to **10**; later to **20**.
2. Subtract **1** from every number up to **10**; later to **20**.
3. Add

2	3	4	5	6	7	8	9	10
+2	+3	+4	+5	+6	+7	+8	+9	+10

Here the addends are equal and easily added. The figures should be placed as above and not 2+2, 3+3, etc., because the vertical form is the natural one which the child will use all through life. It does not look so formal and represents better what he really does with the objects.

4. Add

1	2	3	4	5	6	7	8	9
+2	+3	+4	+5	+6	+7	+8	+9	+10

Here one addend exceeds the other by **1**.

5. Subtract

2	3	4	5	6	7	8	9	10
−1	−2	−3	−4	−5	−6	−7	−8	−9

Here the minuend is **1** greater in each case.

6. Teach the parts of **10**.

5	2	3	4	9
+5	+8	+7	+6	+1

7. In adding **9** to numbers have the child think of **9** as **10**

thus $9 + 6 = 10 + 5$ and $9 + 8 = 10 + 7$

8. Teach the corresponding subtractions.
9. Add **8** to each number up to **10**.
10. Teach the corresponding subtractions.
11. Add **7**, **6**, and **5** to each number up to **10**.
12. Teach the corresponding subtractions.
13. Review and give combinations not taught above.

Note.—Objects should be grouped by tens and units, in showing numbers above **10**. The numbers written should represent objects counted.

The Forty-Five Facts of Addition

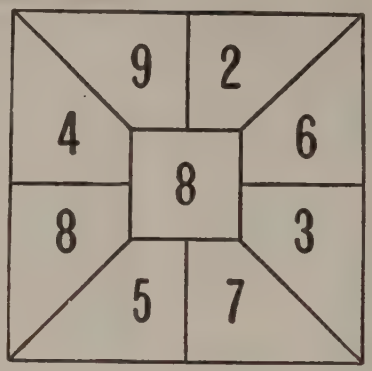
1	2	2	3	3	4	3	4	5
1	1	2	1	2	1	3	3	1
2	3	4	4	5	5	6	6	6
4	5	6	4	5	6	7	5	6
3	2	1	4	3	2	1	4	3
7	7	7	8	8	8	8	9	9
7	8	5	6	7	8	9	6	7
2	1	5	4	3	2	1	5	4
9	9	10	10	10	10	10	11	11
8	9	6	7	8	9	7	8	9
3	2	6	5	4	3	6	5	4
11	11	12	12	12	12	13	13	13
7	8	9	8	9	8	9	9	9
7	6	5	7	6	8	7	8	9
14	14	14	15	15	16	16	17	18

Note.—Be sure that the nine facts underscored are thoroughly learned. They give most trouble.

Drills in Addition

Draw on a sheet of paper a large square and a circle. Divide them like these. Put, say the figure 8, in the center with the other numbers around it.

Write any figure in the center where the 8 is. Then drill, by pointing to the figures around it, while the child names at once the sum of the center figure and the one pointed at.



Use exercises like this frequently, and give many problems, using the combinations with which you find the child has difficulty.

Exercises in which the child counts by 2's, by 3's, etc., to 100 are valuable.

Proving Addition

You may early teach how to prove an addition. There are a number of ways of doing this. Use the way the child's teacher uses. It is a good way.

One Way

Add the columns down. If the result is the same as when the columns were added up, the result is correct.

Second Way

Write the numbers in two groups. Find the sum of each group. Add the sums of the two groups. If the result is the same as when the numbers were added in one group, the result is correct.

Illustration of second way:—

273 }	——	273	
456 }		456	
		729	729
629 }	——	629	
384 }		384	
1742		1013	1013
			1742

The Accountant's Proof

This is a modification of the plan called *casting out the nines.*

Illustration

7926—24—6	
4356—18—9	
1824—15—6 +	} 31—4
9263—20—2	
7856—26—8	
31225—13—4	

Explanation

First add the columns in the regular way. Add each column horizontally, left to right. The results are 24, 18, 15, etc. Add these horizontally and you have 6, 9, 6, etc.

You have now reduced all to one column. Take the sum of this column. It is 31. This added horizontally is 4.

Add the sum 31225 horizontally until you have but one figure in it and you also have 4. This proves your answer correct.

Another Illustration

This illustrates where it is necessary to carry the horizontal additions a step further:—

986745—39—12—3	
726324—24— 6—6	
916348—31— 4—4 +	} 16—7
992973—39—12—3	
3622390—25— 7—7	

Note.—With some practice it will be necessary to write the last line of figures only.

Rapid Adding Exercises

When pupils have learned to add they quickly acquire skill by an occasional rapid adding exercise. A few minutes serves the purpose.

It may be made competitive by each pupil writing the numbers and at a given signal beginning the addition.

Slow and correct work is preferable to rapid work that is incorrect. Incorrect work is of no value here.

Civil Service Method of Adding

Employees under the civil service bureau, bank clerks, and others who perform additions while surrounded by people engaged in conversation, use the following method in their additions.

This method is safe because one can detect and change an error very quickly.

$5280	16
9760.50	21
349	19
4006.75	23
6522.89	18
132.12	24
	$26,051.26

The Banker's Method of Adding

This method is the same as that used by the civil service employees, with one change. In adding the columns the number carried is "added in" to each partial sum.

$5280	16
9760.50	22
349	21
4006.75	25
6522.89	20
132.12	26
	$26,051.26

The banker's method is an improvement on the civil service method as it does not require a second addition. The number to be carried is always in sight in the banker's method, being the tens figure of the last partial sum written. The sum can be written at once.

SUBTRACTION

The differences of all these combinations should be learned so thoroughly that the pupil will be able to name difference of any combination *on sight.* This will take time, but it is time well spent.

Use devices similar to those used in the drills on the addition table.

Give many problems for oral work. Let the pupil make many problems and give the difference in each case.

Combinations in Subtraction

1	2	3	4	5	6	7	8	9	10
−1	−1	−1	−1	−1	−1	−1	−1	−1	− 1
—	—	—	—	—	—	—	—	—	—
2	3	4	5	6	7	8	9	10	11
−2	−2	−2	−2	−2	−2	−2	−2	− 2	− 2
—	—	—	—	—	—	—	—	—	—
3	4	5	6	7	8	9	10	11	12
−3	−3	−3	−3	−3	−3	−3	− 3	− 3	− 3
—	—	—	—	—	—	—	—	—	—
4	5	6	7	8	9	10	11	12	13
−4	−4	−4	−4	−4	−4	− 4	− 4	− 4	− 4
—	—	—	—	—	—	—	—	—	—
5	6	7	8	9	10	11	12	13	14
−5	−5	−5	−5	−5	− 5	− 5	− 5	− 5	− 5
—	—	—	—	—	—	—	—	—	—
6	7	8	9	10	11	12	13	14	15
−6	−6	−6	−6	− 6	− 6	− 6	− 6	− 6	− 6
—	—	—	—	—	—	—	—	—	—
7	8	9	10	11	12	13	14	15	16
−7	−7	−7	− 7	− 7	− 7	− 7	− 7	− 7	− 7
—	—	—	—	—	—	—	—	—	—
8	9	10	11	12	13	14	15	16	17
−8	−8	− 8	− 8	− 8	− 8	− 8	− 8	− 8	− 8
—	—	—	—	—	—	—	—	—	—
9	10	11	12	13	14	15	16	17	18
−9	− 9	− 9	− 9	− 9	− 9	− 9	− 9	− 9	− 9
—	—	—	—	—	—	—	—	—	—
10	11	12	13	14	15	16	17	18	19	20
−10	−10	−10	−10	−10	−10	−10	−10	−10	−10	−10
—	—	—	—	—	—	—	—	—	—	—

The Computer's Method

In making change, the method below is nearly always used. Computers find it the more practical way. It gives greater rapidity and accuracy than the other method.

Many of the best teachers use it alone in teaching subtraction.

This plan is called the Austrian method by some.

Example

Find the difference between 725 and 432.

Work:

725	*Explanation*
432	Let the pupil imagine he is adding with the sum written above.
293	He inserts the missing figures to form the sum as he works, 3, 9, 2.
	He thinks of 2 and 3 as 5; 3 and 9 as 12; 5 and 2 as 7. He may talk it this way: 3 and 2, 5; 9 and 3, 12; 3 and 4, 7.

Use that method with these examples:—

	42,936	2034	7825	6243
	−17,245	−1456	−1504	−1428
	25,691	578	6321	4815

Note.—With practice the pupil will come to prefer this method and should be helped in its use. It is practical since conducive to both *rapidity* and *accuracy.*

Proofs of Subtraction

To prove a subtraction *add* the *subtrahend* to the *remainder*. The result will be the *minuend* if the work is correct.

Example	*Proof*
425 *minuend*	173
—173 *subtrahend*	252
252 *remainder*	425

425 is the same as the minuend, hence the work is correct.

Another Proof

Take the *remainder* from the *minuend*. If the work is correct the subtrahend will be left.

If in the last example given we write

425
—252

we get 173, which is the subtrahend used above, hence the work is correct.

Note.—Either proof may be used. Show the child why these two proofs are true. Use small numbers to do this like 7—2. Later use larger ones.

NUMBER STORIES IN MULTIPLICATION

Example

3 × 4 = —

Facts Given by Child

3 × 4 means 3 4's.
I count my blocks by fours—I take 1 four, another, another.
I find that 3 4's are 12.
3 × 4 = 12.

To the Teacher

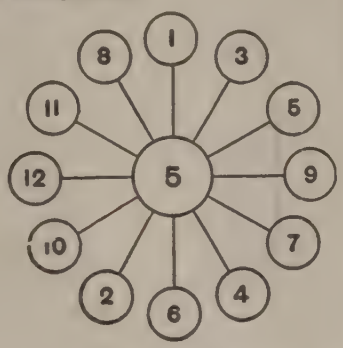
Now the child is ready to give a number story about 3 × 4.

Note.—If the pupil is in doubt about any part of the work in number stories, he should use objects, and then practice much without them.

Drills in Multiplication

The drill opposite is very good and effective, if a rapid answering exercise is made of it. Products should be given at once.

To vary it use squares.



Draw a diagram like this one and let the pupil fill in the squares with the proper products. Fix a time limit. Have results put in quickly.

1	2	3	4	5	6	7	8	9
2								
3								
4						28		
5								
6								
7					42			
8								
9								
10								

4 X 1 = 4
4 X 2 = 8
4 X 3 = 12

7 X 1 = 7
7 X 2 = 14
7 X 3 = 21

Make diagrams like these, and let the pupils fill them in.

In this work it is not intended that the pupil should at first learn "his tables" in order, the 2's first, then the 3's, then the 4's, etc. He remembers many of the facts of multiplication from his primary work in numbers. These drills are to complete and fix firmly in the pupil's mind the completed multiplication tables.

Proofs in Multiplication

The Multiplication	*The Proof*
42	25
×25	×42
210	50
84	100
1050	1050
123	475
×475	×123
615	1425
861	950
492	475
58,425	58,425

The proof consists merely in reversing the positions of the multiplicand and multiplier, and performing the multiplication in the usual way. If the product is the same in both cases the work is correct.

PRIMARY IDEAS OF DIVISION

In teaching the two ideas of division—division by measurement (division proper) and the fractional idea of division (partition)—proceed very slowly and see that each step is thoroughly understood.

The following suggestions may be useful:—

Division by Measurement

Use colored blocks or any other counters in illustrating the process.

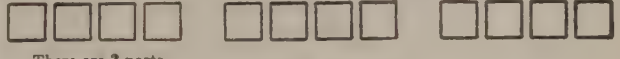
Example

4)12

The teacher should ask the child, "How would you count this story?"

Facts Given by Child

12 = whole number of blocks.
4 = number in each part.
We want to know the number of parts.
We place the blocks so, 4 in each part:—



There are 3 parts.

Division by Partition

Make use of colored blocks or substitutes to show the process here.

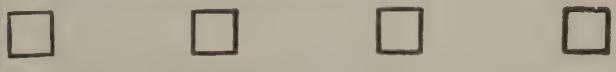
Example

¼ of 12 = 3

The teacher should ask the child, "How would you count this story?"

Facts Given by Child

12 = whole number of blocks.
4 = number of parts.
We want to know the number in each part.
We place the blocks so, as we know there are 4 parts:—



We have put one in each part.
Now we will put one in each part until the 12 blocks are gone:—

There are 3 in each part.

The Three Uses of Division

First Use Explained (Partition)

What is ¼ of 24 cents?

Here 24 cents is the sum of money to be divided. It is to be divided by 4. The result shows the size of each part.

Number of equal parts 4) 24c money to be divided.

6c size of each part.

Second Use Explained (Division by Measurement)

How many times is 8 cents contained in 32 cents?

Here 32 cents is the sum of money to be divided. The size of each part is 8 cents, and the result gives the number of equal parts.

Size of each part 8c) 32c money to be divided.

4 number of equal parts.

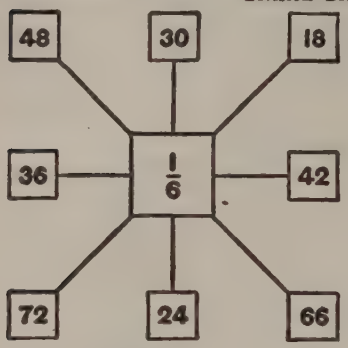
Third Use Explained (Ratio Idea)

There are 36 acres in one lot and 9 acres in another. The first lot is how many times as large as the second?

From division we know that 36 acres contains 9 acres 4 times. Then 36 acres is 4 times as large as 9 acres; or, 36 acres is to 9 acres as 4 acres is to 1 acre.

Note.—This on the ratio idea leaves the impression that the other work does not embrace the ratio principle. Any comparison of numbers embraces the ratio idea.

Division Drills



It is well to use drills of different kinds to help fix the facts of the division table in mind. At no time, at this stage, are you sure that the pupil remembers from one day to the next.

Diagram drills are given here as suggestive of what may be made use of. Use other numbers in order to get drill on the whole division table.

Be sure to make the drill work brisk and of short duration.

The Drill

The teacher points to any of the numbers in the small squares and the child answers simply the quotient number. Skip about rapidly. Draw the same diagram on the blackboard and frequently change the fraction in the center square.

The Drill

Allow no "thinking out" of results. The child should have the table at his tongue's end.

Change center fraction repeatedly.

The supreme test of his mental activity is to think quickly and tell correctly.

Proofs in Division

The best way to prove work in division is to multiply the quotient by the divisor and add the remainder, if there is one.

The result will equal the dividend if the work is correct.

Example

Divide 600,181 by 937.

Work

$640\frac{501}{937}$

937)600181
5622
3798
3748
501

Proof

640
937
4480
1920
5760
599680
501
600181

READING NUMBERS

When we spell a word, that is, when we read the letters in the word, we read from *left to right.*

To read a number we do the same thing for we read the figures from left to right.

325 is read "three hundred twenty-five."

The number is read differently if we wish to tell the *place* and *value* of a certain figure, for then we read the figures themselves from *right to left.* thus—

325 means 5 units, 2 tens, 3 hundreds.

Never use "AND" in reading whole numbers.

325 should never be read "three hundred and twenty-five," but "three hundred twenty-five."

Numbers between 100 and 1000 are read by naming the hundreds, tens, and units in succession. Thus—

192—one hundred ninety-two.
652—six hundred fifty-two.
207—two hundred seven.

Above 1000

Read 1,892,632.

Here the 2 represents 1's, or units of the *first order.*
the 3 represents 10's, or units of the *second order.*
the 6 represents 100's, or units of the *third order.*
the 2 represents 1000's, or units of the *fourth order.*
the 8 represents 100000's, or units of the *sixth order*, etc., etc.

The order of any figure is the number of its place, starting from the right.

In reading large numbers we arrange the orders into groups of three figures each.

We call each group a *period.* Commas are used to keep the periods separate.

Names of the Periods

units,	billions,	quintillions,	octillions,
thousands,	trillions,	sextillions,	nonillions,
millions,	quadrillions,	septillions,	decillions.

trillions	billions	millions	thousands	units
225,	902,	302,	472,	399.

FACTS ABOUT ROMAN NUMERALS

The following facts about the origin and development of Roman notation can be made very interesting, and will tend to fix the characters in one's mind—

At first one	was written	I,
two	was written	II,
three	was written	III,
four	was written	IIII,
five	was written	IIIII,
six	was written	IIIIII,
seven	was written	IIIIIII,
eight	was written	IIIIIIII,
nine	was written	IIIIIIIII.

It took too long to make ten marks, and too long to count them after they were made, so one mark with another across it was used to denote 10, thus **X.** The upper or first half of the **X**, or **V**, was used to show 5.

At first twenty	was written	XX,
thirty	was written	XXX,
forty	was written	XXXX,
ninety	was written	XXXXXXXXX.

It took too long to make the crosses and too long to count them in reading, so **C** was used to show 100. Half of the **C** or **L** was used to show 50. The **C** gradually became **C** in trying to make the **E** rapidly.

Write these where the child can see them plainly

I = 1	XX = 20	XXXIX = 39
II = 2	XXI = 21	XL = 40
III = 3	XXII = 22	XLI = 41
IV = 4	XXIII = 23	XLII = 42
V = 5	XXIV = 24	XLIII = 43
VI = 6	XXV = 25	XLIV = 44
VII = 7	XXVI = 26	XLV = 45
VIII = 8	XXVII = 27	XLVI = 46
IX = 9	XXVIII = 28	XLVII = 47
X = 10	XXIX = 29	XLVIII = 48
XI = 11	XXX = 30	XLIX = 49
XII = 12	XXXI = 31	L = 50
XIII = 13	XXXII = 32	LX = 60
XIV = 14	XXXIII = 33	LXX = 70
XV = 15	XXXIV = 34	LXXX = 80
XVI = 16	XXXV = 35	XC = 90
XVII = 17	XXXVI = 36	C = 100
XVIII = 18	XXXVII = 37	D = 500
XIX = 19	XXXVIII = 38	M = 1000

PRIME NUMBERS

Some numbers, like 3, 5, 11, etc., can only be divided by themselves and unity. As they cannot otherwise be factored, we call them *prime numbers.*

Prime Numbers from 1 to 1000

(*Use This Table for Reference*)

1	59	139	233	337	439	557	653	769	883
2	61	149	239	347	443	563	659	773	887
3	67	151	241	349	449	569	661	787	907
5	71	157	251	353	457	571	673	797	911
7	73	163	257	359	461	577	677	809	919
11	79	167	263	367	463	587	683	811	929
13	83	173	269	373	467	593	691	821	937
17	89	179	271	379	479	599	701	823	941
19	97	181	277	383	487	601	709	827	947
23	101	191	281	389	491	607	719	829	953
29	103	193	283	397	499	613	727	839	967
31	107	197	293	401	503	617	733	853	971
37	109	199	307	409	509	619	739	857	977
41	113	211	311	419	521	631	743	859	983
43	127	223	313	421	523	641	751	863	991
47	131	227	317	431	541	643	757	877	997
53	137	229	331	433	547	647	761	881	

SIMPLE MEASURES—For the Child to Learn Objectively

2 pints make 1 quart.
8 quarts make 1 peck.
4 pecks make 1 bushel.
7 days make 1 week.*
16 ounces make 1 pound.
12 inches make 1 foot.
3 feet make 1 yard.
12 things make 1 dozen.
5 cents make 1 nickel.
10 cents make 1 dime.

LONG MEASURE

Teach the child to estimate distances and then to verify every estimate by actual measurement.

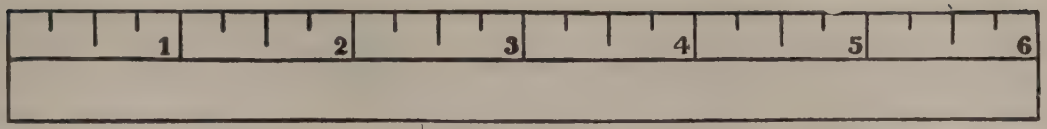
Teach half inches as well as inches.

For the Child to Do

1. Cut a strip of paper 12 inches long and 1 inch wide.
2. Mark the inches on it.
3. How many inches long is it?
4. What do you call a measure 12 inches long?
5. Draw a line 2 inches long, as near as you can, without using a ruler
6. Measure it with a ruler. Did you guess nearly right? Try again.
7. Measure this page. How long is it? How wide?
8. Draw a line on the ground 1 yard long.
9. ½ of a foot is how many inches?
10. 1 yard is how many inches? What is measured by the yard?

*Objectively so far as pointing it out on a calendar.

11. Ask your mother how many yards of cloth she needs for a dress.
12. What is measured by the foot?
13. How tall are you?



PRIMARY IDEAS OF TIME

Turn to the paragraph on Roman numerals and note the facts about them.
60 minutes make 1 hour.
12 hours make 1 half day.
24 hours make 1 day.

A new day begins at midnight and lasts until next midnight.

One hour after midnight is 1 o'clock, 2 hours after midnight is 2 o'clock, and so on, until 12 o'clock at noon.

At noon one-half the day has gone and we begin the afternoon, which is the last half of the day.
One hour after noon is 1 o'clock, 2 hours after is 2 o'clock, etc.

If a person says he was at a certain place at 2 o'clock, he must say forenoon or afternoon, so we will know which half of the day he means. If it was 2 o'clock in the morning he would write 2 a. m., and if 2 o'clock in the afternoon, 2 p. m.

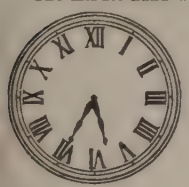
How to Teach a Child to Tell Time

First—Teach him to tell the hour hand from the minute hand.
Next—Teach him when he first looks at the dial, to find the hour hand and then notice which Roman numeral it is nearest. *This will tell about what time it is.*

Then—Find the minute hand. *The minute hand will tell exactly what time it is.*

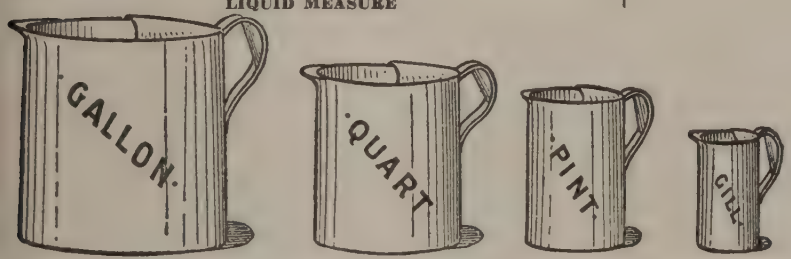
To Illustrate

Take this clock. The hour hand is near the Roman numeral II, which stands for 2. Tell the child it is somewhere near two o'clock.
The minute hand will tell *how near.*



It must always point to the XII before it is exactly the hour. If it is one numeral away from the XII, toward the left, it is 5 minutes of two. If it is two numerals away to the left, it is 10 minutes of two, etc. If it is one numeral away to the right, it is 5 minutes after two, etc. Proceed in this way and keep at it.

LIQUID MEASURE



If you have quart and pint measures allow the child to empty water from one to the other.

On teaching the table of liquid measure proceed in this manner—

Here is a gill cup. I am going to fill it to see how many gills make a pint. Now I have poured one gill; now two; now three; now four. Is the pint cup full? How many gills in a pint?

Let us prove what you say by pouring the water back. One gill; two gills; three; four. Were we right then?

Let us write what we have just said and proved—

4 gills = 1 pint.

Proceed in this way with the other measures, only let the child do more of the work for himself.

MONEY

Use actual coins in teaching money. Lessons on money should be given frequently after the first year of school life.

Begin by teaching the value of the cent and the nickel, then the dime, then the quarter, then the half-dollar, and then the dollar.

Make problems involving change. Develop the ability to make change rapidly. The child may have some money of his own and he should be taught the comparative values of the coins. The correct method of making change follows.

10 cents make 1 dime.
2 five-cent pieces make 1 dime.
100 cents make 1 dollar.
A quarter of a dollar = 25 cents.
A half-dollar = 50 cents.

$ means dollars and *c* means cents.
A 5-cent piece is called a nickel because it is made of nickel.
A cent piece is made of copper.
The other coins named are made of silver.

HOW TO MAKE CHANGE

First—Name the cost of goods.
Then—Add enough money to make even money.
Last—Add the large coin.

To Illustrate

I bought some cloth for 35c and gave the clerk 50c. Count my change.
How to count it—
35c for cloth
And 5c makes 40c (to make even money)
And 10c makes 50c.

To Illustrate

I buy suspenders for 32c and give the clerk $1. Count my change.
How to count it—
32c for suspenders
And 3c makes 35c
And 5c makes 40c
And 10c makes 50c
And 50c makes $1
} (to make even money)

Note.—Think of it in this way—32c, 35c, 40c, 50c, $1.

THE CALENDAR

Procure a calendar for the child to own.

A good way to make him familiar with the use of the days of the week and month, as found on a calendar, is to ask him to look up and tell on what day of the week the next Fourth of July will fall; Christmas; New Year; his birthday.

Have him distinguish between the day of the week and the day of the month.

1928 August 1928						
Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
First Quar. 1st 30th	Full Moon 9th	Last Quar. 17th	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	New Moon 23d

7 days make 1 week.
30 days make 1 month.

Days of the Week	*Months of the Year*
Sunday	January
Monday	February
Tuesday	March
Wednesday	April
Thursday	May
Friday	June
Saturday	July
	August
	September
	October
	November
	December

SQUARE MEASURE

How long is each side of the figure opposite?

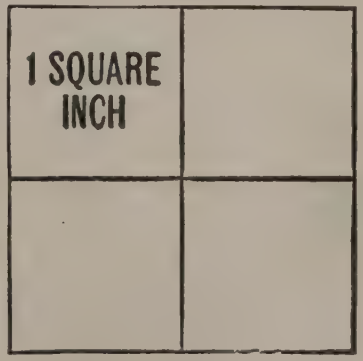
How many squares in the figure?

Because each square is one inch on each side, we call it a square inch.

How many square inches in the whole figure?

The number of squares is called the *area.*

4 square inches is the *area* of this figure.



Show by a drawing how many square inches in a figure 3 in. wide and 9 in long.

Its area is 27 square inches.

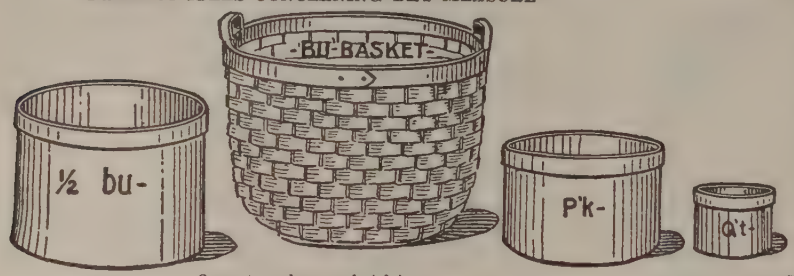
We need not always draw a figure to get the area.

You will notice that the *length times the width will give the number of squares in the figure.*

Find the area of a figure 9 in. long and 5 in. wide, without a drawing. What did you do? *Make a rule.*

Cut out a piece of paper 1 in. wide and 4 in. long. Cut it into square inches. Place the cut squares so as to form a large square. How long is it now? How wide? (*See section on weights and measures for advanced tables.*)

PRIMARY IDEAS CONCERNING DRY MEASURE



8 quarts make a peck (pk.).

4 pecks make a bushel (bu.).

Dry measure is sometimes used to measure dry articles. Formerly grains, vegetables, and fruits of all kinds were bought and sold by dry measure.

Don't teach the child, as most arithmetics say, that grains, fruits, and vegetables are bought and sold by the measured bushel. They are not.

The weight bushel, the case, and the box have come into common use for these articles.

Teach the names of the measures before you attempt to teach the number of one measure in another, etc.

SIMPLE FRACTIONS

A very good method of teaching the combinations in small fractions is by the use of paper or cardboard disks. (Children may call them circles.)

Cut out a large number of them, and, in order to avoid trouble later on, it might be better to have the disks all of one size—about 4 inches in diameter.

Teaching the Fraction $\frac{1}{2}$ with Disks

Say to the child:

I am going to cut this circle into two equal parts. What is this part called? What is this other part called? How many halves in the whole circle? One-half and one-half are what? One-half taken away from one leaves what? If I take a half *two times*, what do I get? How many halves in a whole?

Now I will write these—

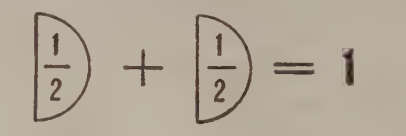
$\frac{1}{2} + \frac{1}{2} =$ 1 divided by $\frac{1}{2} =$

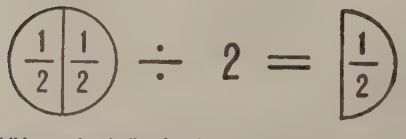
1 less $\frac{1}{2} =$ $1 + 2 =$

$2 \times \frac{1}{2} =$ $1 - \frac{1}{2} =$

Give me the answers and I will write them.

Drawings showing the "placing" of disks for number stories can be made by the child; as,





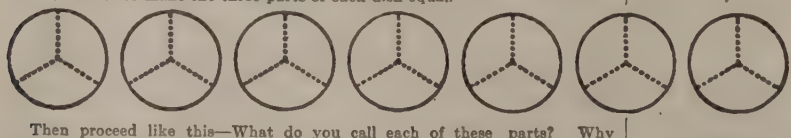
Ask the child to make similar drawings to tell about halves.

Proceed like this— How many halves in a pie? If a pie cost 10 cents, what will half a pie cost? Who can tell other stories about halves? etc.

Teach fourths along with halves.

Teaching the Fraction $\frac{1}{3}$ with Disks

Cut several disks into thirds. Have the child practice on cutting, so that he will be able to make the three parts of each disk equal.



Then proceed like this—What do you call each of these parts? Why are they called *thirds*? How many thirds in a circle? I am going to take a circle and cut it any way, so as to make three parts; do I call these unequal parts thirds? Why not? Let me write one-third on a piece of paper for you. (Write, ⅓.) Draw a circle for me. Instead of cutting it, draw lines where you would cut it to make thirds. Write one-third (⅓) on each third of a circle. I write this (⅓ + ⅓). Who can tell me what the answer is? Are two-thirds and two-thirds more than one? How much more? I have two-thirds of an apple and give Mary one-third, how much have I left? Who can give other story problems about thirds? Everybody try, etc.

Teach sixths along with thirds. Use disks, dots, marks, sticks, and inches to illustrate.

Remember that no advance should be made until each little part is understood.

Teaching the Fraction $\frac{1}{5}$ with Disks

Have fifths compared with fourths, thirds, and halves.

Be sure that the child sees that the number below the line shows the size of each part and the number above how many parts are taken.

Have the child illustrate every step with drawings. If at any time he cannot answer results at sight, let him show the work with disks.

Say to the child·

I am going to cut this circle into five equal parts. What is each part called? How many fifths in the whole circle? How many fifths here? (Show two-fifths.) One-fifth and one-fifth are how many fifths? One less two-fifths is what? If I take three-fifths, how many times one-fifth do I take? How many times one-fifth are left? Are two-fifths greater than one-third?

Give and ask for story problems and number stories telling about fifths.

Teach tenths along with fifths.

When twelfths are taught, show the relations between twelfths and sixths, fourths, thirds, and halves.

Equal Fractions in Different Forms

Have the child see how fractions may differ in form but still remain the same in value.

Begin with his knowledge of smaller fractions, as

$\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, and $\frac{5}{10}$ of an apple

Let him show by the use of drawings that fractions may have large or small terms but be equal in value.

Things for the Child to Do

Fill out the numerators in the following fractions and prove each by a drawing:—

1. $\frac{1}{4} = \frac{2}{8} = \frac{4}{16} = \frac{8}{32} = \frac{16}{64}$
2. $\frac{1}{5} = \frac{?}{10} = \frac{?}{15} = \frac{?}{20} = \frac{?}{30}$
3. $\frac{1}{8} = \frac{?}{16} = \frac{?}{24} = \frac{?}{32} = \frac{?}{40}$
4. $\frac{3}{4} = \frac{?}{8} = \frac{?}{12} = \frac{?}{16} = \frac{?}{24}$
5. $\frac{2}{5} = \frac{?}{10} = \frac{?}{15} = \frac{?}{20} = \frac{?}{40}$

PRINCIPLES OF FRACTIONS

1. A fraction's value is the quotient obtained by dividing the numerator by the denominator.

$\frac{6}{2} = 3$ 3 is the value of $\frac{6}{2}$

$\frac{2}{3} = \frac{2}{3}$ $\frac{2}{3}$ is the value of $\frac{2}{3}$

2. Multiplying the denominator of a fraction divides the fraction by that number.

$\frac{1}{2 \times 4} = \frac{1}{8}$ $\frac{3}{7 \times 3} = \frac{3}{21}$ $\frac{2}{3 \times 9} = \frac{2}{27}$

3. Dividing the denominator of a fraction multiplies the fraction by that number.

$\frac{3}{8 \div 4} = \frac{3}{2}$ $\frac{10}{9 \div 3} = \frac{10}{3}$ $\frac{3}{10 \div 5} = \frac{3}{2}$

4. Multiplying the numerator of a fraction multiplies the fraction by that number.

$\frac{2 \times 2}{3} = \frac{4}{3}$ $\frac{1 \times 8}{9} = \frac{8}{9}$ $\frac{5 \times 3}{8} = \frac{15}{8}$

5. Dividing the numerator of a fraction divides the fraction by that number.

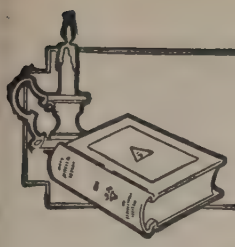
$\frac{4 \div 2}{7} = \frac{2}{7}$ $\frac{12 \div 12}{16} = \frac{1}{16}$ $\frac{3 \div 3}{7} = \frac{1}{7}$

6. Multiplying both numerator and denominator of a fraction by the same number does not change the value of the fraction.

$\frac{1 \times 3}{3 \times 3} = \frac{3}{9} = \frac{1}{3}$ $\frac{6 \times 2}{7 \times 2} = \frac{12}{14} = \frac{6}{7}$

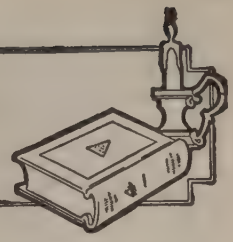
7. Dividing both numerator and denominator of a fraction by the same number does not change the value of the fraction.

$\frac{12 \div 3}{15 \div 3} = \frac{4}{5} = \frac{12}{15}$ $\frac{18 \div 9}{27 \div 9} = \frac{2}{3} = \frac{18}{27}$



Grammar School Arithmetic

George Morrell York, B.A.—Chester J. Terrill



APPLIED ARITHMETIC

In this section, arithmetic is presented in brief form for the aid of the busy student. Special emphasis is placed upon short methods and devices for checking results. Solutions of typical problems and tables are presented for review and aid in solving similar problems in business and school.

ADDITION

Addition is the process of combining numbers into a single equivalent number, called the sum, the amount or the total.

More than nine-tenths of the arithmetical work of a bookkeeper and business man consists in combining or adding numbers. To become successful as an accountant, cashier or clerk it is most essential that the ability to add be developed in a high degree. By constant drill one may become expert in adding units in rotation as follows:

(*A*)	(*B*)
4	42
8	24
2	36
6	72
7	81
27	255

In the above examples the worker simply runs up the columns taking one figure at a time as follows: 4 plus 8 equals 12, plus 2 equals 14, plus 6 equals 20, plus 7 equals 27, or the sum. The same operation would be carried out in the case of problem (*B*) with the exception of *after* obtaining the sum of the first column to the right to be 15, the worker puts the figure 5 under the column and adds the 1 to the next column to the left, making the sum of that column 25 and the total sum 255.

However, this method is slow and cumbersome and no one can hope to acquire great speed in addition who has to depend upon it.

Group Method.—In adding columns of figures it is advisable to group the numbers into totals as one proceeds up and down the columns. In the above problem (*A*): In adding 4, 8, 2, 6, and 7, think of each subtotal as follows: 12 (4 plus 8), 20 (2 plus 6 added to previous sub-total) and 27. The method rests on the ability to group two or more numbers together at a glance:

6 5 4 3 } equals 12
6 7 8 9 }
2 3 4 5 } equals 11
9 8 7 6 }

Thus in adding the following:

(*A*)	(*B*)	
8	3	(*A*) Read instantly the numbers in brackets as: 8, 9, 7, 8, and 7. When combining, read as follows: 8, 17, 24, 32, and 39.
5	5	
9	10 — 2	
2		
7	5	
7	4	
3	10 — 1	(*B*) Process is same as in (*A*) except that three are joined instead of two. Should be read as follows: 10, 20, 27.
8	2	
6		
2	7 — 2	
7	3	
39	27	

This may be carried to almost any extent; *e. g.*,

53 The worker should think in groups
27 of 10, as follows:
— 53, 63, 83, 80.
80

Some bookkeepers regularly add double columns after the above plan, or some variation of it. Thus in adding 56 and 67, he would think 50 plus 60 plus 6 plus 7.

All addition should be checked or tested by one of the following methods:

(*a*) Reverse addition; that is, adding down after adding up.

(*b*) After adding by consecutive numbers or group, check by adding in group by tens.

(*c*) Add the unit column and write the total to one side as in the following example:

3967	
8234	27
7987	32
4372	31
5976	26
30536	30536

The above is obtained by first adding the units' column and writing the sum, 26, to the right. Next add the tens' column and write the sum as shown above. The sums of the hundreds' and thousands' columns, 32 and 27, are written as shown. Beginning with the units' column and adding, the result agrees with that of the problem.

(*d*) Casting or counting out nines. This means add the digits in the number and whenever the sum equals or exceeds 9, discard 9, adding the remainder to succeeding digits.

426—3
824—5
936—0
1542—3
3728—2 check remainder.

Explanation: Take the first number, 426, the excess of the sum of the digits over nine is 3. Doing the same with the remaining digits and dividing by nine, we find the excess or final remainder. The sum of the digits in the sum, 3728, is then divided by nine and we find a remainder of 2. Adding the remainders to the right, the sum is 11. Dividing 11 by 9, we find a remainder of 2. If the final remainder equals the remainder of the sum, the sum may be presumed to be correct.

(*e*) Casting out elevens:

426—6 plus 4 minus 2 = 8
824—4 plus 8 minus 2 = 10
936—6 plus 9 minus 3 = 12
1542—2 plus 5—4— 1 = 2 32
3728—8 plus 7—3— 2 = 10

The sum of 8 plus 10 plus 12 plus 2 is 32, and 32 is two 11s' and 10 over.

Explanation: Find the sum of the digits in the odd places, beginning at units, and from it deduct the sum of the digits in the even places. In case the sum of the digits in the even places exceeds the sum of the digits in the odd places, add 11 to the sum of the digits in the odd places.

SUBTRACTION

Definition.—Subtraction is the process of finding the difference between two numbers.

Minuend, Subtrahend, Remainder, Sign of Subtraction.—In the example, 9 minus 7 equals 2, 9 is the minuend; 7 is the subtrahend, and 2 is the remainder. The sign of subtraction is —.

Use.—"Making change" is the simplest and most frequent use of subtraction in business. It is also used in finding the balance of accounts, finding the bank balance, and in finding profits or losses.

Subtraction is but a phrase of addition. The so-called Austrian or "Making change" method is the one most commonly used in the elementary schools today. It is the process of finding the number to be added to the lesser number in order that the sum may equal the greater.

Illustration:

Find the difference between 742 and 1937.

1937 Add to the subtrahend, digit by
742 digit until the minuend is obtained,
— thus: 2 (subtrahend) plus 5 = 7
1195 (minuend). Write the 5 as a unit difference. 4 (subtrahend) plus 9 = 13 (minuend). Write the 9 in tens' place and add the 1 to the 7 (subtrahend). 7 plus 1 = 8 (subtrahend) plus 1 = 9 (minuend). Write the 1 in hundreds' place of difference. 0 (subtrahend) plus 1 = 1 (minuend).

It is often more practical to place the lesser number above the greater, thus bringing out the process more concretely. The above example might be written:

742
1937
—
1195

MULTIPLICATION

Uses.—Multiplication is continually used in business. Probably it stands next to addition in the frequency of use. For this reason it should be thoroughly mastered by everyone who wishes to become a successful clerk, accountant or business man in any capacity. Very frequently situations arise when it is necessary for the business man to perform mental multiplications quick and accurately.

Definitions.—MULTIPLICATION, MULTIPLIER, MULTIPLICAND. Multiplication is the process of taking one number, called the multiplicand, as many times as the number one is contained in another number, called the multiplier.

—PRODUCT. The result obtained by multiplication is called the product.

—FACTORS. The multiplier and the multiplicand are called the factors of the product.

Example: 2×4=8. In this example, 2 is the multiplier; 4 is the multiplicand; 8 is the product, and 2 and 4 are the factors of 8.

MULTIPLICATION TABLES—All multiplication is based upon the multiplication of the numbers from one to ten, inclusive. In a large majority of the cases of multiplication in business, the factors are small numbers and the multiplication

should be performed mentally. This is especially true in billing. For this reason both the basic and supplementary tables given below should be perfectly memorized.

BASIC TABLE

	2	3	4	5	6	7	8	9	10
1	2	3	4	5	6	7	8	9	10
2	4	6	8	10	12	14	16	18	20
3	6	9	12	15	18	21	24	27	30
4	8	12	16	20	24	28	32	36	40
5	10	15	20	25	30	35	40	45	50
6	12	18	24	30	36	42	48	54	60
7	14	21	28	35	42	49	56	63	70
8	16	24	32	40	48	56	64	72	80
9	18	27	36	45	54	63	72	81	90
10	20	30	40	50	60	70	80	90	100

SUPPLEMENTARY TABLE

11	22	33	44	55	66	77	88	99	110
12	24	36	48	60	72	84	96	108	120
13	26	39	52	65	78	91	104	117	130
14	28	42	56	70	84	98	112	126	140
15	30	45	60	75	90	105	120	135	150
16	32	48	64	80	96	112	128	144	160
17	34	51	68	85	102	119	136	153	170
18	36	54	72	90	108	126	144	162	180
19	38	57	76	95	114	133	152	171	190
20	40	60	80	100	120	140	160	180	200

The process of multiplication is indicated by placing the sign × between the two numbers, thus: 5×7=35. This is read: Five times seven equals 35.

Multiplying by 10 or a Multiple of 10.—It is inherent in the decimal system of notation that the placing of a zero to the right of a number multiplies that number by ten; for example, 20 is ten times as great as 2; 200 is ten times as great as 20, etc. Therefore in multiplying by 10 or a multiple of ten it is only necessary to multiply by the integer or integers of value and add as many zeros as there are in the multiplier; e. g., 2000×68=136,000. (2×68=136; adding the three zeros of the 2000 gives the answer).

Multiplication Illustrated.—Multiply 4362 by 243. The process of performing this operation is as follows: (1) Multiply by the 3; (2) multiply by the forty represented by the 4 in the tens' place; (3) multiply by the 200 represented by the 2 in hundreds' place; (4) add the products; thus:

(*A*)		(*B*)		(*C*)	
4362		4362		4362	
243		243		243	
13086	(1)	13086	(1)	8724	(3)
174480	(2)	17448	(2)	17448	(2)
872400	(3)	8724	(3)	13086	(1)
1059966	(4)	1059966	(4)	1059966	(4)

In practice the zeros at the end of (2) and (3) are omitted and the work appears as in (*B*).

It is not absolutely necessary to begin with the units digit of the multiplier. By beginning with the highest order the work will appear as in (*C*). This method is sometimes advantageous.

When two numbers are to be multiplied, either may be taken as the multiplier. It is usually better to use the smaller as the multiplier. When one of the numbers contains 1's or 2's or two or more digits alike, it is easier to multiply by that number. In finding the cost of 748 machines at $112 each, use 112 as the multiplier.

When one of two numbers to be multiplied contains one or more zeros, that number should be taken as the multiplier. The product of zero and any number is zero. In example (*D*), since the products of the tens' and hundreds' places are zero, the results need not be written.

(*D*)

6348
1005
31740
6348
6379740

Checking Multiplication.—There are a number of methods by which multiplication may be checked. The most practical and commonly used ones follow:

1. By interchanging the factors; i. e., by taking the multiplicand as the multiplier in repeating the multiplication. (*A*)

2. By division. Dividing the product by either factor will give the other factor. (*B*)

3. By casting out 9's—sometimes called excess of 9's. (*C*)

4. By casting out 11's—sometimes called excess of 11's. (*D*)

(*A*)			(*B*)		45)1620(36
45	36		45	135	
36	45		36		
270	180		270	270	
135	144		135	270	
1620	1620		1620		

(*C*) 2345—5; 317—2; 16415 10—1; 2345; 7035; 743365—1

The excess of 9's in the multiplicand is 5. The excess of 9's in the multiplier is 2. The product of the excesses is 10 and the excess of 9's in this product is 1. The excess of 9's in the product in the example is 1. THE EXCESS OF 9's IN THE PRODUCT IS EQUAL TO THE EXCESS OF 9's IN THE PRODUCT OF THE EXCESSES. (Explanation of finding excess of nines is given under Checking Addition).

(*D*) 2345—2; 317—9; 16415 18—7; 2345; 7035; 743365—7

The excess of 11's in the multiplicand is 2 (5 minus 4 plus 3 minus 2 equals 2). The excess of 11's in the multiplier is 9. (7 minus 1 plus 3 equals 9). The product of these excesses is 18 and the excess of 11's in 18 is 7. The excesss of 11's in the product is 7. (5 plus 11 minus 6 plus 3 minus 3 plus 4 minus 7 equals 7). (The finding of the excess of 11's is explained under the checking of addition).

The first two of these checking methods are practical only when the factors are small. When the factors of the multiplication are large numbers the last two methods should be used. The casting out of either nines or elevens alone is not an absolute check but when the two are used together the possibility of error is so small as to be practically negligible.

Short Methods of Multiplication.—To multiply by 10, 100, 1000, etc. When the multiplicand is an integer, annex as many zeros as there are in the multiplier; e. g., 10×75=750; 100×75=7500. When the multiplicand is a decimal, move the decimal point as many places to the right as there are zeros in the multiplier; e. g., 100×.75=75.

To multiply numbers ending in zeros: When both the multiplicand and multiplier are integers, multiply by the significant figures and annex as many zeros as there are in the endings of both multiplier and multiplicand; e. g., 220×400 equals 4 times 22 with three zeros added to the right. When one of the numbers is a decimal fraction, multiply the significant numbers and move the decimal point as many places to the right as there are zeros in the ending of the integer. Thus: .256×200. .256×2=.512; moving the decimal point two places to right makes the answer 51.2.

To multiply by 21, 31, 41, etc. This can best be explained by taking an example, as 234×21=4914. The process is as follows: The first figure on the right is evidently 4; 2×4 plus 3 (1×3) equals 11 Write 1 and carry 1. 2×3 plus 1 (carried) plus 2 (1×2) equals 9, the third figure. 2×2 equals 4, the fourth figure in the product.

This same method of solution can be used in multiplying by 101, 201, 301, etc. In the example, 432×201=86832, it is evident the first two figures of the product are 32. Multiplying and adding, 2×2=4 plus 4 (1×4) equals 8, the third figure. Completing the multiplication by 2, the fourth figure is 6 and the fifth, 8.

To multiply by 9, 99, 999, etc. To multiply by 9, annex one zero to the multiplicand, thus multiplying it by 10. From this result subtract the number to be multiplied. Multiply 348 by 9.

Solution: 3480
348
3132

To multiply by 99, annex two zeros to the multiplicand, thus multiplying it by 100, and subtract the multiplicand. 348×99=34800−348=34452.

This same method of solution may be applied to multiplications by 19, 29, 39, etc., by multiplying by the significant figure, adding a zero and subtracting the number to be multiplied.

This short method may also be extended to multiplication by any number slightly less than 100, 1000, 10,000, etc. The method of multiplying by 101, 201, etc. may be extended to multiplication by any number slightly more than 100, 1000, 10,000, etc.

Multiply 321 by 997=321,000−963=320,037.

Multiply 321 by 102=32742.

To multiply by 11 or multiples of 11. The first figure of the product is the first figure of the multiplicand; the second figure of the product is the sum of the first and second figures of the multiplicand; the third figure of the product is the sum of the second and third figures of the multiplicand, etc. In case the sum of two figures is ten or more, the 1 must be carried. Multiply 247 by 11: The first figure is 7; the second figure is the sum of seven and 4, 11; the third figure is the sum of the 1 (carried) 4 and 2, 7; and the fourth figure is 2. The product is 2717. In the case of multiples of 11, multiply by 11 first mentally and then multiply that product by the factor necessary to produce the multiplier. Multiply 247 by 33: 11×247=2717. 3×2717=8151.

To multiply by 111: Multiply 132,476 by 111: By inspecting the solution by the ordinary method, it will be seen that the first figure in the product is the first figure in the multiplicand. The second figure in the product is the sum of the units' and tens' figures in the multiplicand; the third figure in the product is the sum of the units', tens' and hundreds' figures in the multiplicand; the fourth figure in the product is the sum of the tens', hundreds' and thousands' figure in the multiplicand, etc. When the sum is ten or more the tens' digit in the sum must be carried to the next sum.

132476
132476
132476
14704836

To multiply two numbers ending in 5: First case: When the sum of the digits to the left of the 5's is an even number. Rule: Set down 25 as the first part of the product. To the product of the digits to the left of the 5's add ½ their sum. Write this amount before the 25. Example: Multiply 65×45. Since the sum of 6 and

4 is even, 25 is the first part of the product. 6×4 plus ½ (6 plus 4) = 29. Setting the 29 before the 25, the product is 2925.

Second case: Rule: Set down 75 as the first part of the product. To the product of the digits to the left of the 5's add ½ their sum, disregarding the fraction. Example: 85×135. Since the sum of 8 and 13 is odd, 75 is the first part of the product. 8×13 plus ½ (8×13) = 114½. Drop the ½ and write 114 before the 75. The product is 11475.

To square any number of two figures. Multiply 32 by 32. The solution of this problem is based upon the algebraic solution of the problem $(a+b)^2=a^2+2ab+b^2$. The number 32, is composed of the two parts, 30 or 3 tens plus 2 units. Taking the formula from right to left the steps are as follows: (1) Square the units' digit and write this as the first figure in the product; in this case 4. (2) Multiply the product of the units' and tens' digit by 2 and write this as the second figure in the product. (3×2 equals 6; 2×6 equals 12. Write the 2 as the second figure and carry the 1). (3) Square the tens' digit and add any figure "carried". (3×3=9; 9 plus 1 equals 10. Write the 10 as the last part of the product. 1024 is the product).

To multiply by 25, 50, 75, 125, 250, etc. 25 is ¼ of 100. Multiplying by 100 gives a product four times as great as multiplying by 25. Therefore, to multiply by 25, annex two zeros to the multiplicand (thus multiplying by 100) and divide the result by 4. To multiply by 50, annex two zeros to the multiplicand and divide the product by 2. To multiply by 75, annex two zeros to the multiplicand and divide by 4, and multiply the result by 3.

125 is ⅛ of 1000. Hence, to multiply by 125, annex three zeros to the multiplicand and divide by 8. 250 is ¼ of 1000. Hence, to multiply by 250, annex three zeros and divide the result by 4.

(For further application of aliquot parts of 10, 100 and 1000 to multiplication, see Aliquot Parts.)

To multiply when one figure of the multiplier is a factor of the other figure or figures of the multiplier. Multiply 426 by 279. It will be noticed that 9 is a factor of 27. Therefore, multiply by 9 and then multiply this result by 3.

426	
279	
3834	9×426
11502	3×3834
118854	

Cross multiplication. This method is practical only for multiplication by a multiplier of two figures. With practice a high degree of speed and accuracy can be acquired. Multiply 43 by 27. 43×27=1161. (1) 3×7=21; write 1 and carry 2. (2) 7×4 plus 2 (carried) = 30; 2×3=6. Add 30 and 6, giving 36. Write 6 and carry 3. (3) 2×4=8; add the 3 (carried), equaling 11. Write the 11. NOTE: Always add the "carried" figure to the first product so that it may not be forgotten.

Supplement and complement methods of multiplication.

The supplement of a number is the difference between that number and the next lower MULTIPLE of 10. 2 is the supplement of 12; 8 is the supplement of 108; 25 is the supplement of 1025.

The complement of a number is the difference between that number and the next higher multiple of 10. 4 is the complement of 6; 7 is the complement of 93; 3 is the complement of 997.

To multiply two numbers slightly larger than 100 or 1000 or 10,000: Add the supplement of either number to the other and annex the same number of zeros as occur in the power of ten used. To this add the product of the supplements. 102×104. The supplement of 102 is 2. Add 2 to 104 and annex two zeros and the result is 10600. 2×4=8; add 8 to 10600 and the result, 10608, is the product of 102×104.

To multiply two numbers slightly less than 100, 1000 or 10,000: Subtract the complement of either number from the other number and annex as many zeros as occur in the power of 10 used. To this add the product of the complements. Multiply 93 by 97. The complement of 93 is 7; the complement of 97 is 3. 97−7=90; annexing two zeros, the result is 9000. 3×7=21. Add 21 to 9000 and the result, 9021, is the product of 97 and 93.

DIVISION

Uses.—Division does not occur so frequently in business as either multiplication or addition, but problems involving division are frequently met and the business man and his employees should be able to divide with accuracy and reasonable speed. Furthermore, it is a rather awkward operation on an adding machine and few operators know how to use the machine for division. There are various types of machines upon which a skillful operator can divide with speed and accuracy.

Definitions.—DIVISION, DIVISOR, DIVIDEND, QUOTIENT, REMAINDER. Division is the process of finding how many times one number, called the *divisor*, is contained in another number, called the *dividend*.

The number to be found is called the *quotient*.

When the divisor is not a factor of the quotient; i. e., will not exactly divide the dividend, the part of the dividend remaining is called the *remainder*. Divide 20 by 6. 20 divided by 6 equals 3 with a remainder of 2. In this example, 20 is the dividend, 6 is the divisor, 3 is the quotient, and 2 is the remainder.

The SIGN OF DIVISION is ÷. 24÷6 is read "24 divided by 6". It indicates that the number preceding it is to be divided by the number following it. Division may also be indicated by fraction; e. g., 9/3 means 9 divided by 3.

Short Division.—The following illustrates short division:

6)2384616
397436

Short division should be used in all cases where the divisor is 20 or under.

Long Division.—The following illustrates long division:

	146	
	672)98746	*In practice the zeros marked by * are omitted.
100×672=	67200**	
	31546	
40×672=	26880*	
	4666	
6×672=	4032	
	634	

Division by Continued Subtraction.—Divide 754 by 142. Division by this method is sometimes required. It has been required on civil service examinations. It is the basis upon which division upon adding machines and the various calculating machines is performed.

	754
1—	142
	612
2—	142
	470
3—	142
	328
4—	142
	186
5—	142
Remainder	44

Checking Division.—The following are practical checking methods for division:

(1) Where the divisor and quotient are small numbers, the most practical method is to reverse the operation; i. e., multiply the quotient by the divisor and add the remainder to the product of these two. If the result of these operations is the dividend, the work is probably correct.

(2) Casting out nines. Find the excess of nines in the divisor, dividend, quotient, and remainder. Multiply the excess in the quotient by the excess in the divisor and add the excess in the remainder. The excess of nines in this result should equal the excess of nines in the dividend. See example *A*.

(3) Casting out elevens. Find the excess of elevens in the different parts of the division and proceed as in the proof by casting out nines. See example *B*.

	146	The excess of nines in the
A.	672)98746	divisor is 6.
	672	The excess of nines in the
	——	quotient is 2.
	3154	The excess of nines in the
	2688	dividend is 7.
	——	The excess of nines in the
	4666	remainder is 4.
	4032	6×2 plus 4=16.
	——	The excess of nines in 16
	634	is 7. Since this is the same as the excess of nines in the dividend, the work is probably correct.

B Using the same example as in *A*.

The excess of elevens in the divisor is 1 (11 plus 2 minus 7 plus 6=12). Casting out the elevens in 12 gives an excess of 1.

The excess of elevens in the dividend is 10 (6 minus 4 plus 7 minus 8 plus 9=10).

The excess of elevens in the quotient is 3 (6 minus 4 plus 1=3).

The excess of elevens in the remainder is 7 (4 minus 3 plus 6=7). 3×1 plus 7=10. Since this result is the same as the excess in the dividend, the work is probably correct.

Casting out nines and elevens is a satisfactory method of checking the work when the numbers involved are large. Both the nine and eleven check should be used because one will catch the errors not checked by the other.

Short Methods.—To divide by 10, 100, 1000, etc. point off as many places as there are zeros in the divisor. Divide 47246 by 10. 47246÷10=4724.6. Divide 47246 by 100. 47246÷100=472.46.

To divide by 20, 300, 500, etc. point off as many places as there are zeros in the divisor and then divide by the significant figure.

Divide 3600 by 20. 3600÷20=360.0÷2=180.

Divide 3600 by 600. 3600÷600=36.00÷6=6.

To divide by 25, 50, 125, etc. Since 100 is 4 times 25, it follows that if we divide a number by 100 it will be ¼ of what it would be if divided by 25. Therefore, to divide by 25, first divide by 100 as indicated above and multiply the quotient by 4. For example, divide 32800 by 25. $32800 \div 25 = 328 \times 4 = 1312$.

Since 50 is ½ of 100, to divide by 50, divide by 100 and multiply the quotient by 2. $32800 \div 50 = 328 \times 2 = 656$.

125 is ⅛ of 1000. Therefore, to divide by 125, divide by 1000 and multiply the quotient by 8. $32800 \div 125 = 32.8 \times 8 = 262.4$.

(For further application of aliquot parts to division, see Aliquot Parts.)

AVERAGE

A merchant makes the following daily sales during a week: Monday, $1267.25; Tuesday, $1327.80; Wednesday, $1416.10; Thursday, $1409.65; Friday, $1386.30; Saturday, $1572.50. What are his average daily sales?

Monday	$1267.25
Tuesday	1327.80
Wednesday	1416.10
Thursday	1409.65
Friday	1386.30
Saturday	1572.50
6)8379.60	Total
$1396.60	Average

Rule: To find the average of several amounts, find their sum and divide by the number of amounts.

FACTORS, DIVISORS AND MULTIPLES

Definitions.—An INTEGER is a number of whole units.

The FACTORS of a number are the integers which multiplied together produce the given number. The factors of 12 are 3 and 2 and 2, or 3 and 4, or 2 and 6.

A PRIME NUMBER is a number that is not exactly divisible by any other number.

FACTORING is the process of finding the factors of a number.

Tests of Divisibility of Numbers.—

(1) Even numbers are divisible by 2.

(2) A number is divisible by 3 if the sum of the digits is divisible by 3. 4638 is divisible by 3.

(3) The number is divisible by 4 if the two right hand digits are zeros or express a number which is divisible by 4. 4600 and 4628 are divisible by 4.

(4) If the number ends in 5 or a zero, it is divisible by 5.

(5) Even numbers which are divisible by 3 are divisible by 6. Since 4638 is even and divisible by 3, it is divisible by 6.

(6) There is no practical test for divisibility by 7.

(7) If the number expressed by the last three digits of a number is divisible by 8 or if the last three digits are zeros, the number is divisible by 8. 164000 and 164128 are both divisible by 8.

(8) 7, 11, and 13 will divide 1001 and any of its multiples.

(9) If the sum of the digits of any number is divisible by 9, the number is divisible by 9; e. g., 1386 or 3168.

(10) If the right hand digit of any number is zero, the number is divisible by 10.

(11) If the two right hand digits are zeros or express a number which is divisible by 25, the number is divisible by 25. 14875 is divisible by 25.

(12) If the difference between the sums of the digits of the even and odd orders is divisible by 11, the number is divisible by 11. In the number 6324846, the sum of the digits of the even order is 22; the sum of the digits of the odd order is 11; and the difference, 11, is divisible by 11. Therefore, the number is divisible by 11.

(13) If the three right hand digits are zeros or represent a number divisible by 125, the number is divisible by 125. 78457250 is divisible by 125.

DIVISORS

Definitions.—A COMMON DIVISOR or FACTOR of two or more numbers is a factor of each of the numbers.

THE GREATEST COMMON DIVISOR is the greatest factor that is common to two or more numbers.

Finding the Greatest Common Divisor (G. C. D.)—To find the Greatest Common Divisor of two or more numbers, separate the numbers into their prime factors and find the product of the prime factors common to the numbers.

First Method:

Find the G. C. D. of 27−36−63

3)27−36−63

3)9−12−21

3− 4− 7 G. C. D. $= 3 \times 3 = 9$

Second Method: The G. C. D. of two numbers is their difference or a factor of their difference. Find the G. C. D. of 84 and 124. The difference between these numbers is 40 but this is not a factor of either of them. The factors of 40 are $2 \times 2 \times 2 \times 5$. Inspection shows that the numbers are not divisible, 5 nor 10 nor 8, but are divisible by 4. 4 is therefore the G. C. D.

The G. C. D. of three or more numbers is the smallest difference or a factor of this difference. Find the G. C. D. of 60, 96 and 120. The smallest difference is 24. The factors of 24 are $2 \times 2 \times 2 \times 3$. Inspection shows that they are not divisible by 24, but are divisible by 2, 4, 8 and 12. Therefore, 12 is the G. C. D.

The practical application of G. C. D. is in the reduction of common fractions to lower terms.

LEAST COMMON MULTIPLE

Definitions.—A MULTIPLE of a given number is a number that will exactly contain the given number.

A number that will exactly contain each of two or more numbers is called a COMMON MULTIPLE.

The smallest number that will exactly contain each of two or more numbers is called the LEAST COMMON MULTIPLE (L. C. M.)

The practical application of L. C. M. is found in addition and subtraction of common fractions.

To find the Least Common Multiple of two or more numbers:

First Method: Separate each number into its prime factors. Find the product of these factors using each factor the greatest number of times it occurs in any one of the given numbers.

Example: Find the L. C. M. of 24−36−21.

$24 = 2 \times 2 \times 2 \times 3$.

$36 = 2 \times 2 \times 3 \times 3$.

$21 = 3 \times 7$.

$2 \times 2 \times 2 \times 3 \times 3 \times 7 = 504$.

Second Method: Set the numbers down in a line and divide by any factor common to any two or more of the numbers. Bring down the quotients and the indivisible numbers on the next line. Repeat the operation until the quotients are prime to each other. The product of the divisors and last quotients is the L. C. M.

Example: Find the L. C. M. of 24−36−21.

A

3)24−36−21

2) 8−12− 7

2) 4− 6− 7

2− 3− 7

or

B

3)24−36−21

4) 8−12− 7

2− 3− 7

C

12)24−36−21

or 3) 2− 3−21

2− 1− 7

A. $3 \times 2 \times 2 \times 2 \times 3 \times 7 = 504$.

B. $3 \times 4 \times 2 \times 3 \times 7 = 504$.

C. $12 \times 3 \times 2 \times 7 = 504$.

Third Method: Set the numbers down in a line. Use any one of them as a divisor and bring down the quotients, or the result of extracting common factors, or, in case a number is indivisible either by the divisor or a common factor, bring down that number.

Example: Find the L. C. M. of 24, 36 and 21.

24)24−36−21

1− 3− 7 $7 \times 24 \times 3 = 504$.

CANCELLATION

It sometimes happens that the product of several numbers is to be divided by the product of several other numbers. A problem of this kind can be quickly and simply solved by cancellation method.

Divide the product of $8 \times 6 \times 10 \times 15$ by the product of $3 \times 4 \times 9 \times 2$.

$$\frac{\cancel{8}^{2} \times \cancel{6}^{2} \times \cancel{10}^{5} \times \cancel{15}^{5}}{\cancel{3} \times \cancel{4}^{2} \times \cancel{9}^{3} \times \cancel{2}} = \frac{100}{3} = 33\ 1/3$$

Place the elements of the dividend above the line; the divisor below the line.

Process: Divide 3 and 6 by the common factor 3 and place the 2 above the 6. It is not necessary to write the 1 below the 3. Cancel the 3 and 6.

Divide 8 and 4 by the common factor, 4, and place the 2 above the 8. Cancel the 8 and 4.

Divide the 10 and 2 by the common factor, 2, and place the 5 above the 10. Cancel 10 and 2.

Divide 9 and 15 by the common factor, 3, and place the 5 above the 15 and the 3 below the 9. Cancel the 9 and 15.

As there is no factor common to numbers on opposite sides of the line, perform the indicated multiplication and division.

COMMON FRACTIONS

Use.—Quantities, prices, dimensions, relations, etc., in business are frequently stated in fractions. For this reason, anyone who wishes to be in a position to handle the arithmetic of business must understand fractions.

Definitions.—A FRACTION is one or more equal parts of a unit. If a pie be divided into five equal parts, each of these parts is called a fifth. If a person takes two of these equal parts, he will have two-fifths of the pie. The whole pie, or unit, contains five fifths.

A FRACTION is also defined as an indicated division.

A COMMON FRACTION is one usually expressed in the following form: ½.

The DENOMINATOR of a fraction is the number below the line and is the number which indicates into how many equal parts the unit is divided. In the fraction 2/5, the 5 shows that the unit has been divided into five equal parts.

The NUMERATOR of a fraction is the number written above the line and is the number which shows how many of these parts of the unit have been taken. In the fraction 2/5, the 2 is the numerator and it shows that two of the five equal parts have been taken.

The numerator and denominator of the fraction are called the TERMS of the fraction.

A PROPER FRACTION is one in which the numerator is smaller than the denominator; e. g., 2/3.

An IMPROPER FRACTION is one in which the numerator is as large as or larger than the denominator; e. g., 5/5; 5/2.

A MIXED NUMBER is a number which consists of a whole number and a fraction; e. g., $1\frac{1}{2}$.

A COMPLEX FRACTION is one in which the numerator or denominator, or both, is a mixed number.

A fraction in which the numerator and denominator contain common factors may be reduced to its LOWEST TERMS by dividing both numerator and denominator by the common factor. $8)\frac{8}{16}=\frac{1}{2}$

A fraction may be raised to HIGHER TERMS by multiplying both numerator and denominator by the same number:

$$\frac{4\times 2=}{4\times 3}\quad\frac{8}{12}$$

Reducing to lowest terms or raising to higher terms does not change the value of the fraction.

An improper fraction may be changed to a mixed number by performing the indicated division:

$$\frac{12}{3}=3)12\qquad\frac{7}{2}=2)7\qquad 3\tfrac{1}{2}$$

A mixed number may be changed to an improper fraction by multiplying the whole number by the denominator of the fraction and adding the numerator to the product. The result is the numerator of the improper fraction. The denominator is the denominator of the fractional part of the mixed number. Change $2\frac{1}{2}$ to an improper fraction. 2×2 plus 1=5. 5/2 is the improper fraction.

Fractions may be reduced to a common denominator by finding the common multiple of the denominators. When the common denominator is found, multiply both terms of the fraction by the number necessary to raise the denominator to the common denominator. Reduce 3/4 and 2/5 to a common denominator. The L. C. M. of 4 and 5 is 20. Multiply both terms of 3/4 by 5 and both terms of 2/5 by 4. The result is 3/4 equals 15/20 and 2/5 equals 8/20.

Addition of Fractions.—To add fractions:

(1) Reduce the fractions to the least common denominator.

(2) Add the numerators to form the numerator of the sum.

(3) Write the common denominator as the denominator of the sum.

(4) Reduce the result to its simplest form.

(5) If the fractions are mixed numbers, add the fractions and reduce to simplest form, and then add the sum of the whole numbers and the sum of the fractions.

(6) *Example*: Add 2/3, 4/5 and 3/4.

2/3—40
4/5—48
3/4—45

$$\frac{133}{60}=2\frac{13}{60}$$

Add 5 1/2 and 6 2/3

5 1/2—3
6 2/3—4

11 7/6=1 1/6
1 1/6

12 1/6

(7) To add two fractions having the same numerator: Find the product of the denominators for the denominator of the sum; multiply the sum of the denominators by the common numerator and this is the numerator of the sum. *Example*: Add 3/5 and 3/7. The numerator of the sum is 3×(5+7)=36. The denominator of the sum is 5×7=35. The sum is 36/35=1 1/35.

Subtraction of Fractions.—To subtract fractions:

(1) Reduce the fractions to the least common denominator.

(2) If the minuend is larger than the subtrahend, subtract the numerators and write the result as the numerator of the remainder and the common denominator as the denominator.

(3) If the minuend is a mixed number and the fractional part is smaller than that of the subtrahend, borrow one unit from the whole number of the minuend and add to the fractional part, making it an improper fraction. Subtract as in (2); subtract the whole numbers, remembering to take account of the unit borrowed, and add the two remainders.

(4) *Example*: Subtract 3/4 from 5/6.

5/6—10
3/4— 9

1

12

Subtract 1 5/6 from 3 3/4. 3 3/4—1 5/6=1 11/12.

3 3/4—21
1 5/6—10

1 11/12

Multiplication of Fractions.—To multiply fractions:

(1) Multiplication may be indicated by "×" or "of".

(2) Multiply the numerators to find the numerator of the product.

(3) Multiply the denominators to find the denominator of the product.

(4) Reduce to simplest form.

(5) Mixed numbers may be reduced to improper fractions and multiplied as above but see (8) and (9).

(6) The work of multiplication of fractions may be simplified by cancellation.

$$\frac{1}{7}\times\frac{\cancel{2}^{\,2}}{5}=\frac{2}{5}$$

(7) Where the multiplier is a whole number, multiply the numerator of the fraction by the whole number.

3×1/2=3/2=1 1/2

(8) Particularly where the whole numbers are large, the multiplication of a whole number by a mixed number may be simplified as follows:

(*a*) Multiply the whole number by the numerator of the fraction.

(*b*) Divide the above result by the denominator of the fraction.

(*c*) Proceed with the multiplication by the whole number of the mixed number and add the results.

Multiply 24 2/5×14.

24 2/5
14

$5)\overline{28}\quad=2\times 14$

53/5=2/5×14

96
24

341 3/5

(9) Particularly when the integral parts of mixed numbers are large, the work may be simplified as follows:

(*a*) Multiply the fractional parts of the mixed numbers.

(*b*) Multiply the integral part of the multiplicand by the fractional part of the multiplier.

(*c*) Multiply the integral part of the multiplier by the fractional part of the multiplicand.

(*d*) Multiply the integral parts of the two numbers.

(*e*) Add the results.

(*d*) *Example*: 248 1/2×15 1/4:

1/2×1/4= 1/8
1/4×248= 62
1/2×15 = 7 1/2
15×248=3720

3789 5/8

(10) To square a mixed number ending in $\frac{1}{2}$. Square the fraction. Add 1 to the whole number of the multiplicand and multiply by the whole number of the multiplier. $7\frac{1}{2}\times 7\frac{1}{2}=56\frac{1}{4}$. (7 plus 1)×7=56; $\frac{1}{2}\times\frac{1}{2}=\frac{1}{4}$.

(11) To multiply two mixed numbers ending in $\frac{1}{2}$.

(*a*) If the sum of the integers is even, square the fraction, and to the product of the integers add one-half their sum.

(*b*) If the sum of the integers is odd, write $\frac{3}{4}$ as the fractional part of the product. To this annex the product of the integers plus the one-half of their sum, dropping the fractional part of the sum.

Division of Fractions.—

(1) To divide a number by a fraction, invert the terms of the divisor and multiply. $3/4\div 2=3/4\times 1/2=3/8$.

(2) If the divisor is a mixed number or fraction and the dividend is a mixed number or fraction, the mixed numbers should be reduced to improper fractions.

(3) The work may be simplified in (2) by multiplying both numbers by the common denominator of the fractional parts.

Example: 48 3/4÷7 1/3. Reduce the mixed numbers to improper fractions having a common denominator. 48 3/4=585/12; 7 1/3=88/12. Since 585/12÷88/12=585/12×12/88=585/22, the common denominator may be disregarded and the numerator of the dividend divided by the numerator of the divisor. 88)585

6 57/88

(4) If the divisor is a whole number and the dividend is a mixed number, divide each part by the divisor and add the quotients.

24 1/2÷3=8 1/6
24÷3=8; 1/2÷3=1/6

(5) The work on (4) may also be performed as described in (3):

24 1/2÷3=8 1/6
24 1/2=49/2; 3=6/2; 49÷6=8 1/6

DECIMAL FRACTIONS

Use. In Business.—Fractions probably occur in the decimal form in business computations more frequently than in the

common form. As any common fraction can be changed to decimal form and is more easily handled in that form, every business man should acquire facility in handling them. When calculations involving fractions are performed on the various types of calculating machines, the fraction is nearly always reduced to the decimal form.

Definition.—A decimal fraction is one whose denominator is some power of ten. The denominator is indicated by the number of the places to the right of a period, called the decimal point, occupied by right-hand figure of significance. Thus, the indicated denominator of .2 is 10; the indicated denominator of .125 is 1000. The reading of the integral and decimal orders is indicated in the following table:

Integers	Order	Decimals
Units	1	Tenths
Tens	2	Hundredths
Hundreds	3	Thousandths
Thousands	4	Ten-thousandths
Ten-thousands	5	Hundred-thousandths
Hundred-thousands	6	Millionths
Millions	7	Ten-millionths
Hundred-millions	8	Hundred-millionths
	etc.	

To Add Decimals.—Arrange the amounts to be added in such a way that the decimal points fall in a vertical line. Proceed as in ordinary addition. Place the decimal point in the sum directly below in a line with the decimal points in the numbers added. Add 28.5, 125.03, 1.5, 78.105.

```
  28.5
 125.03
   1.5
 78.105
-------
233.135
```

To Subtract Decimals.—Arrange the amounts in such a way that the decimal points fall in a vertical line. Proceed as in ordinary subtraction of whole numbers. Place the decimal in the remainder directly below and in a line with the decimal points in the subtrahend and minuend.

Subtract .1463 from 2.46.

Solution:

```
  2.46
 .1463
------
2.3137
```

Multiplication of Decimals.—Multiply as with whole numbers. The number of decimal places in the product is the sum of the number of decimal places in both the multiplier and multiplicand. $416\times.25=104.00$. $.4016\times.025=.01004$.

Division of Decimals.—Divide as with whole numbers.

Rules for pointing off in the quotient:

Rule 1. The number of decimal places in the quotient is equal to the number of places in the dividend minus the number of places in the divisor. If there are more places in the divisor than in the quotient, add enough zeros to make the number of places equal to the number of places in the divisor. Example *A* and *A*2.

Rule 2. (*a*) If the divisor is a whole number, insert the decimal point in the quotient when it is reached in the dividend. Example *B*.

(*b*) If the divisor is not an integer, multiply both divisor and dividend by the least power of ten that will make the divisor a whole number and proceed as in (*a*). Example *B*2.

If there is a remainder in the division of decimals, zeros may be added and the division carried to as many places in the quotient as is desired.

When the quotient is required to be to the *nearest* tenth, hundredth, etc., carry the division one place further than the order required and then adjust the quotient.

Example A: Divide 3.9905 by 3.47. $39905\div347=115$.

4 places in the dividend minus 2 places in the divisor equals 2 places in the quotient. Therefore $3.9905\div3.47=1.15$.

*Example A*2: Divide 3990.5 by 3.47. Since there are two places in the divisor and but one in the dividend, add a zero to the dividend. $399050\div347=1150$. 2 places − 2 places = 0 places. Therefore $3990.50\div3.47=1150$.

Example B: Divide 399.05 by 347:

```
   1.15
347)399.05
  347
  ---
  520
  347
  ---
 1735
 1735
```

*Example B*2: Divide 399.05 by 34.7. Multiplying both dividend and divisor by 10 eliminates the decimal in the divisor. $\cdot\ 3990.5\div347=11.5$

```
   11.5
347)3990.5
```

Division by 10, 100, 1000, etc. To divide by 10 or a power of ten, move the decimal point in the dividend to the left as many places as there are zeros in the divisor. It may be necessary to place zeros between the decimal point and the first left figure of significance in the quotient; thus, $24\div1000=.024$. This same principle may be extended to 20, 200, 3000, 5000, etc., by moving the decimal point and dividing by 2, 3, or 5 as the case may be.

Division by 25, 50, 125, etc. To divide by 25, divide by 100 and multiply the result by 4.

To divide by 50, divide by 100 and multiply the result by 2.

To divide by 125, divide by 1000 and multiply by 8.

For other applications of aliquot parts to division, see Aliquot Parts.

Changing Decimal Fractions to Equivalent Common Fractions.—To change a decimal fraction to its equivalent common fraction, omit the decimal point and write the indicated denominator. Reduce to lowest terms. *Example*:

$$.125=\frac{125}{1000}=\frac{1}{8}\qquad .16=\frac{16}{100}=\frac{4}{25}\qquad .2=\frac{2}{10}=\frac{1}{5}$$

Changing Common Fractions to Equivalent Decimal Fractions.—To change a common fraction to a decimal fraction, divide the numerator by the denominator, carrying the division to as many decimal places as desired. It is usually not necessary to carry the division further than four or five places.

Example:

```
        .4375                    .875
7/16=16)7.0000   7/8=8)7.000
        64               64
        ---              ---
         60               60
         48               48
         --               --
        120               120
        112               112
        ---               ---
         80                80
         80                80
         --                --
```

Reciprocals.—The reciprocal of any number is unity divided by that number. ¼ is the reciprocal of 4. Where several numbers are to be divided by another number, as in pro-rating, it is frequently much easier to find the reciprocal decimal and multiply each number by it.

ALIQUOT PARTS

Definition.—An aliquot part of a number is that part which is contained an integral number of times in the given number. *Examples*: 2½ is an aliquot part of 10, 100, and 1000 because it is contained in each of these an even number of times. 25 is an aliquot part of 100 and 1000. 125 is an aliquot part of 1000.

Use.—The use of aliquot parts has been mentioned in the methods of multiplication and division. Through the use of the methods, which will now be further explained, the work of multiplication and division by certain numbers is made much easier and the results can be obtained very much more quickly. Since prices are very frequently fixed at aliquot parts of one dollar, the multiplication in billing and similar work can be very much simplified and speed can be developed by gaining facility in handling these short cuts.

Table.—The following is a general table of the more common aliquot parts. It will be noticed that only the simplest forms of fractions are given. The equivalents which are very seldom used have been omitted. Aliquot parts less frequently used have been marked with an asterisk (*).

Numbers	1/2	1/3	2/3	1/4	3/4	1/5	2/5
10	5	3 1/3	6 2/3	2 1/2	7 1/2	2	4
100	50	33 1/3	66 2/3	25	75	20	40
1000	500	333 1/3	666 2/3	250	750	200	400

Numbers	3/5	4/5	1/6	5/6	1/7*	1/8	3/8
10	6	8	1 2/3	8 1/3		1 1/4	3 3/4
100	60	80	16 2/3	83 1/3	14 2/7*	12 1/2	37 1/2
1000	600	800	166 2/3	833 1/3		125	375

Numbers	5/8	7/8	1/9*	1/11*	1/12	5/12	7/12
10	6 1/4	8 3/4					
100	62 1/2	87 1/2	11 1/9*	9 1/11	8 1/3	41 2/3	58 1/3
1000	625	875			83 1/3		

Numbers	11/12	1/15	1/16	1/10	1/20	1/30	1/40	1/50
100	91 2/3	6 2/3	6 1/4	10	5	3 1/3	2 1/2	2
1000			62 1/2	100	50	33 1/3	25	20

Multiplying by aliquot parts of 10:

$416\times2\ 1/2$. Since 2 1/2 is 1/4 of 10, $(416\times10)\div4=1040$.

$920\times7\ 1/2$. Since 7 1/2 is 3/4 of 10, $(920\times10\times3)\div4=6900$.

OR $(920\div4)\times10\times3=6900$.

Multiplying by aliquot parts of 100:

$32\times6\ 1/4$. Since 6 1/4 is 1/16 of 100, $(32\times100)\div16=200$.

25×288. Since 25 is 1/4 of 100, $(288\times100)\div4=7200$.

$640\times87\ 1/2$. Since 87 1/2 is 7/8 of 100, $(640\times100\times7)\div8=56000$.

OR $(640\div8)\times100\times7=56000$.

Multipling by aliquot parts of 1000:
1280×125. Since 125 is 1/8 of 1000 $(1280\times1000)\div8=160000$.
OR $(1280\div8)\times1000=160000$.
1680×625. Since 625 is 5/8 of 1000, $(1680\times1000\times5)\div8=1050000$.
OR $(1680\div8)\times1000\times5=1050000$.
Dividing by aliquot parts of 10:
Divide 16 by 1 1/4. Since 1 1/4 is 1/8 of 10, the quotient of $16\div10$ will be 1/8 of the quotient of $16\div1$ 1/4. Therefore, $16\div1\ 1/4=(16\div10)\times8=12.8$.
Dividing by aliquot parts of 100:
$1720\div33\ 1/3=(1720\div100)\times3=51.6$.
$1284\div37\ 1/2=[(1284\div100)\div3]\times8=34.24$.

Interchanging multiplier and multiplicand sometimes makes possible the application of the short methods of aliquot parts: $.32\times7500=.75\times3200=2400$.

DENOMINATE NUMBERS

Uses.—Civilized man makes constant use of measures and measurement. He buys and sells by units of measure; he indicates size and magnitude of quantity by measure; he compares quantities by measure. For example, he buys butter by the pound; he orders a bin to contain fifty bushels of wheat; and he finds that Henry's farm contains sixty-five acres, while Brown's farm contains sixty-two acres.

A Denominate Number is a concrete number whose unit of measure is established by law or custom.

A Simple Denominate Number is one that is expressed by the units of one denomination; e. g., five pounds, or three gallons.

A Compound Denominate Number is one that is expressed by the units of two or more denominations that are related to one another; e. g., five pounds six ounces, or three gallons one pint.

Tables.—The following tables show the most commonly used measures:

United States Money is the legal currency of the United States. It consists of gold, silver, nickel, and copper coins; treasury, and Federal Reserve Bank notes.

Table of United States Money

10 mills	= 1 cent	*c. ct. ¢*
10 cents	= 1 dime	*d.*
10 dimes	= 1 dollar	*$.*
10 dollars	= 1 eagle	*E.*

The mill is not coined; it is used only as the decimal part of a cent.

The following denominations are now coined
Gold.....$20, $10, $5.
Silver.....$1, 50c, 25c and 10c pieces.
Nickel.....5c piece.
Bronze.....1c piece.

WEIGHTS AND MEASURES.—Practically all the commerce of the world is conducted through the medium of two systems of weights and measures, namely, the English system and the metric system. Practically all the engineering work done in the world with the exception of that done in Japan is based upon one or the other of these systems. In the United States and in Great Britain and its possessions both systems are legal and in use, the English being used in all ordinary commercial transactions and the metric in all scientific work and to a lesser extent in technical work.

The English System.—The customary system of weights and measures in use in the United States is the same as the system in everyday use in Great Britain, with some important differences in some of the units which must be noted. For all practical purposes the units of length and mass are identical in value, although the fundamental standards of the two countries are quite different. In Great Britain the standard yard is a bronze bar in the custody of the board of trade and preserved in the standards office, Westminster. Its legal value in terms of the international meter is, one yard equals $\frac{36}{39.370113}$ meters.

In the United States the meter is the fundamental standard and the yard is defined as $\frac{3600}{3937}$ meters. The difference in the value of the two yards in terms of the meter only amounts to a little more than one part in 400,000, which is about the difference found in comparing the imperial yard with its authentic copies at different periods. It is therefore doubtful whether there is a real difference between the length of the English bronze yard and United States yard derived from the meter.

A similar condition exists with respect to the avoirdupois pounds; in England a certain platinum cylinder deposited in the standards office is regarded as the standard pound, while in the United States the pound is defined as 453.5924277 grams, of which the international kilogram contains 1,000. This is the same as the legal value in Great Britain, so that the only difference in the two pounds is one of standards.

On the other hand the capacity measures of the two countries are quite different. The United States gallon of 231 cubic inches and the Winchester bushel of 2150.42 cubic inches have not been legal measures in Great Britain since 1825, having been superseded by the present imperial gallon, which is defined as the volume of 10 pounds of pure water at 62 degrees Fahrenheit, weighed against brass weights in air at the same temperature as the water, and with the barometer at 30 inches. The imperial bushel is defined as the volume of 80 pounds of water weighed under the same conditions as the gallon. The bushel of Great Britain is, therefore, exactly equal to 8 gallons.

The volume of the imperial gallon, according to the most reliable data available at this time, is 277.420 cubic inches and the bushel 2219.36 cubic inches, the first being larger than the United States gallon by approximately 20 per cent, and the latter larger than the United States bushel by 3.2 per cent.

The methods of subdividing and multiplying the yard, pound, gallon, and bushel in the two countries are substantially the same.

Standard Weights and Measures of United States

AVOIRDUPOIS WEIGHT

Dram	dr.	=27 1/2 grains (27.34375).
Ounce	oz.	=16 drams, 437.5 grains.
Pound	lb.	=16oz.,256dr.,7,000grains.
Legal stone	st.	=14 lbs.
Quarter (Eng.)	qr.	=28 lbs.
Quarter (Can.)	qr.	=25 lbs.
Cental or quintal	cent.	=100 lbs.
Hundredwgt.(Eng.),cwt.		=4 qrs., 112 lbs.
Hundredwgt.(Can.),cwt.		=4 qrs., 100 lbs.
Ton (Eng.)	T.	=20 cwt., 2,240 lbs.
Ton (Can.)	T.	=20 cwt., 2,000 lbs.

Ton of Coal.—The United States ton is legally defined in some states as 2,000 pounds and in other states as 2,240 pounds. In Arizona, Colorado, Connecticut, Idaho, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Montana, Nebraska, New Jersey (net ton), New York, Ohio, Rhode Island (net ton), Vermont, Washington, and Wisconsin, it is fixed at 2,000 pounds, and in the District of Columbia, Pennsylvania, New Jersey (gross ton), Rhode Island (gross ton), it is fixed at 2,240 pounds. For tariff purposes Congress has fixed the ton of coal at 2,240 pounds.

TROY WEIGHT

Carat		=3.17 grains.
Pennyweight	dwt.	=24 grains.
Ounce	oz.	=20 dwts., 480 grains.
Pound	lb.	=12 oz.,240dwts.,5,760grs.
Hundredweight	cwt.	=100 lbs.

Troy is the weight used by goldsmiths and jewelers. The grains troy, apothecaries', and avoirdupois are equal, and the same in England, France, the United States, Holland, and in most other countries.

The oz. troy and apothecaries' =1.09714 oz. avoirdupois; but the lb. troy and lb. apothecaries' =only 0.82286 lb. avoirdupois, while 175 lbs. troy and apothecaries' =144 lbs. avoirdupois.

APOTHECARIES' WEIGHT

Scruple	℈	=20 grains = 20 grains.
Dram	ʒ	= 3 scruples = 60 grains.
Ounce	℥	= 8 drams = 480 grains.
Pound	lb	=12 ounces =5,760 grains.

APOTHECARIES' FLUID MEASURE

		Marked
60 minims	♏ (drops)	=1 fluid dram f ʒ
8 drams		=1 ounce f ℥
16 ounces		=1 pint O
8 pints		=1 gallon C., or Cong.

1 dram	=1 teaspoonful.
2 drams	=1 dessertspoonful.
4 drams	=1 tablespoonful.
2 ounces	=1 wineglassful.
3 ounces	=1 teacupful.

LIQUID MEASURE

		Cubic Inches
4 gills	1 pint (O)	= 28.875
2 pints	1 quart (qt.)	= 57.75
4 quarts	1 gallon (gal.)	=231.0
63 gallons	1 hogshead (hhd.).	
2 hogsheads	1 pipe or butt.	
2 pipes	1 tun.	

DRY MEASURE

		Cubic Inches
2 pints	1 quart (qt.)	= 67.20
4 quarts	1 gallon (gal.)	= 268.80
2 gallons, or 8 quarts	1 peck	= 537.60
4 pecks	1 struck bushel	=2150.42

HOUSEHOLD MEASURES

120 drops water	=1 teaspoon.
60 drops thick fluid	=1 teaspoon.
2 teaspoons	=1 dessertspoon.
3 teaspoons	=1 tablespoon.
16 tablespoons	=1 cup.
1 cup	= 1/2 pt.
1 cup water	= 1/2 lb.
4 tablespoons flour	=1 oz.
2 tablespoons butter	=1 oz.
3 teaspoons soda	= 1/2 oz.
4 teaspoons baking powder	= 1/2 oz.
2 cups granulated sugar	=1 lb.
2 1/2 cups confectioners' sugar	=1 lb.
2 1/2 cups wheat flour	=1 lb.
3 1/2 cups whole wheat flour	=1 lb.
2 1/2 cups buckwheat flour	=1 lb.
5 1/2 cups coffee	=1 lb.
6 1/2 cups tea	=1 lb.
2 cups rice	=1 lb.
2 cups lard	=1 lb.
2 cups butter	=1 lb.
2 cups graham flour	=1 lb.
2 cups rye flour	=1 lb.
2 cups corn meal	=1 lb.
2 cups rolled oats	=1 lb.
2 cups powdered sugar	=1 lb.
2 cups brown sugar	=1 lb.
2 cups raisins	=1 lb.
2 cups currants	=1 lb.
2 cups bread crumbs	=1 lb.
9 eggs	=1 lb.

CUBIC OR SOLID MEASURE

Cubic foot	=1,728 cubic inches.
Cubic yard	=27 cubic feet, 21,033 bushels.
Cord of wood	=128 cubic feet.
Shipping ton	=40 cubic feet merchandise.
Shipping ton	=42 cubic feet of timber.
Ton of displacement of a ship	=35 cubic feet.

LINEAR MEASURE

3 barleycorns, or 12 lines, or 72 points, or 1,000 mils (mi.)	1 inch (in.).
3 inches	1 palm.
4 inches	1 hand.
9 inches	1 span.
12 inches	1 foot (ft.).
18 inches	1 cubic.
3 feet	1 yard (yd.).
2 1/2 feet	1 military pace.
5 feet	1 geometrical pace.
2 yards	1 fathom.
5 1/2 yards	1 rod, pole, or perch.
66 feet, or 4 rods	1 Gunter's chain.
40 poles, or 220 yards, or 8 furlongs, or	1 furlong (fur.).
1,760 yards, or 5,280 feet	1 mile.
3 miles	1 league.

The hand is used to measure horses' height. The military pace is the length of the ordinary step of a man. One thousand geometrical paces were reckoned to a mile.

LAND MEASURE (LINEAR)

7.92	inches	1 link.
100	links, or	1 chain (ch.).
66	feet, or	
22	yards, or	
4	poles	
10	chains	1 furlong (fur.).
80	chains, or	1 mile.
8	furlongs	

LAND MEASURE (SQUARE)

144 square inches	1 square foot (sq. ft.).
9 square feet	1 square yard (sq.yd.).
30¼ square yards	1 sq.pole, rod,or perch.
16 square poles	1 square chain (sq.ch.).
40 square poles, or	1 square rood.
1,210 square yards	
4 square roods, or	
10 square chains, or	
160 square poles, or	1 acre.
4,840 square yards, or	
43,560 square feet	
640 acres, or	1 square mile.
3,097,600 square yards	
30 acres	1 yard of land.
100 acres	1 hide of land.
40 hides	1 barony.

GEOGRAPHICAL AND NAUTICAL MEASURE

6086.44	feet, or	=1 nautical mile.
1000	fathoms, or	
10	cables, or	
1.1528	statute miles	
1	nautical mile per hr.	=1 knot.
60	nautical miles, or	=1 degree.
67.168	statute miles	
360	degrees	=1 circumference of the earth at the equator.
1	league	=3 nautical miles.
1	cable's length	=120 fathoms.

TIME

The unit of time measurement is the same among all nations. Practically it is $\frac{1}{86400}$ of the mean solar day, but really it is a perfectly arbitrary unit, as the length of the mean solar day is not constant for any two periods of time. There is no constant natural unit of time.

1 minute	=60 seconds.
1 hour	=60 minutes, 3,600 seconds.
1 day	=24 hours, 1,440 minutes, 86,400 seconds.
1 sidereal day	=86,164.1 seconds.
1 sidereal month	=27.321661 mean solar days (average).
1 lunar month	=29.530589 mean solar days (average).
1 anomalistic month	=27.544600 mean solar days (average).
1 tropical month	=27.321582 mean solar days (average).
1 nodical month	=27.212222 mean solar days (average).
Mean solar year	=365 d. 5 h. 48 m. 46.045 s. with annual variation of 0.00539.

The change in the length of the mean sidereal day, *i. e.*, of the time of the earth's rotation upon its axis, amounts to 0.01252 s. in 2,400 mean solar years.

ANGULAR MEASURE

There is perfect unanimity as to the standard angle (i. e., the right angle) and practical unanimity as to its subdivision, for the subdivision into grades, etc., once favored by the French, is now abandoned.

1 minute of angle or arc = 60 seconds.
1 degree of angle or arc = 60 minutes.
90 degrees of angle or arc = 1 right angle or ¼ of circumference.

Radian of angle or arc	=arc same length as radius.
Radian of angle or arc	=57.295779513082°.
Length of arc of 1°	= 0.017453292520.
Length of arc of 1′	= 0.015707963268.
Length of arc of 1″	= 0.000290888209.

Time on Shipboard.—The twenty-four hours are divided on board ship into seven parts, and the crew is divided into two parts or watches, designated *port* and *starboard watches*. Each watch is on duty four hours, except from 4 to 8 p.m., which time is divided into two watches of two hours each, called *dog watches*, by means of which the watches are changed every day, and each watch gets a term of eight hours' rest at night. *First watch*, 8 p.m. to midnight; *middle watch*, midnight to 4 a.m.; *morning watch*, 4 to 8 a.m.; *forenoon watch*, 8 a.m. to noon; *afternoon watch*, noon to 4 p.m.; *first dog watch*, 4 to 6 p.m.; *second dog watch*, 6 to 8 p.m. The bell is struck every half-hour to indicate the time, as follows:

1 bell	12.30 a.m.	1 bell	12.30 p.m.
2 bells	1.00 a.m.	2 bells	1.00 p.m.
3 bells	1.30 a.m.	3 bells	1.30 p.m.
4 bells	2.00 a.m.	4 bells	2.00 p.m.
5 bells	2.30 a.m.	5 bells	2.30 p.m.
6 bells	3.00 a.m.	6 bells	3.00 p.m.
7 bells	3.30 a.m.	7 bells	3.30 p.m.
8 bells	4.00 a.m.	8 bells	4.00 p.m.
1 bell	4.30 a.m.	1 bell	4.30 p.m.
2 bells	5.00 a.m.	2 bells	5.00 p.m.
3 bells	5.30 a.m.	3 bells	5.30 p.m.
4 bells	6.00 a.m.	4 bells	6.00 p.m.
5 bells	6.30 a.m.	1 bell	6.30 p.m.
6 bells	7.00 a.m.	2 bells	7.00 p.m.
7 bells	7.30 a.m.	3 bells	7.30 p.m.
8 bells	8.00 a.m.	4 bells	8.00 p.m.
1 bell	8.30 a.m.	1 bell	8.30 p.m.
2 bells	9.00 a.m.	2 bells	9.00 p.m.
3 bells	9.30 a.m.	3 bells	9.30 p.m.
4 bells	10.00 a.m.	4 bells	10.00 p.m.
5 bells	10.30 a.m.	5 bells	10.30 p.m.
6 bells	11.00 a.m.	6 bells	11.00 p.m.
7 bells	11.30 a.m.	7 bells	11.30 p.m.
8 bells	12.00 n'n.	8 bells	12.00 ngt.

Board and Timber Measure.—A board one foot square and one inch thick is the unit of board measure, the number of feet in a board being determined by the number of times its volume equals that of the unit: Thus a board 2 inches thick, 1½ feet wide and 10 feet long contains 30 feet. A board of the same length and width ½ inch thick would contain 7½ board feet.

The Doyle Rule.—Known in some sections as the Connecticut River Rule, the St. Croix Rule, the Thurber Rule, the Moore & Beeman Rule, and the Scribner Rule—is used throughout the entire country and is more generally employed than any other. It is constructed by the following formula: Deduct 4 inches from the diameter of the log as an allowance for slab; square one-quarter of the remainder and multiply the result by the length of the log in feet. It is the usual custom to measure the diameter inside the bark at the small end. One cord of wood is 128 cubic feet.

In metric countries all wood is measured in cubic meters.

Water Measure.—*The Miner's Inch* is usually defined as the quantity of water that will pass through an orifice 1 square inch in cross section under a given head. The head has been fixed in various localities at from 4 to 6½ inches to the center of the orifice. In states where the miner's inch is defined by statute it varies from $\frac{1}{40}$ to $\frac{1}{50}$ of a cubic foot per second. The miner's inch is rapidly becoming obsolete, its place being taken by the cubic foot per second or the gallon per second. The United States reclamation service uses the cubic foot per second.

Visibility Distance at Sea.—Table of elevations of objects above sea level, with their corresponding distances of visibility.

Height in Feet	Distance in Nautical Miles	Height in Feet	Distance in Nautical Miles
5	2.555	110	11.986
10	3.614	120	12.519
15	4.426	130	13.030
20	5.111	140	13.522
25	5.714	150	13.997
30	6.260	200	16.162
35	6.761	250	18.070
40	7.228	300	19.795
45	7.666	350	21.381
50	8.081	400	22.857
55	8.476	450	24.244
60	8.852	500	25.555
65	9.214	550	26.802
70	9.562	600	27.994
75	9.897	650	29.137
80	10.222	700	30.237
85	10.536	800	32.325
90	10.842	900	34.286
95	11.139	1000	36.140
100	11.428		

Metric System.—The unit of length in the metric system is the *meter*, a length originally planned to be equal to the one ten-millionth of the distance between the equator and the pole, measured along a terrestrial meridian. A platinum bar of this supposed length was constructed and deposited in the archives of the French republic in 1799. At the same time a platinum weight was constructed which was made equal to the mass of a cube of pure water at 4 degrees centigrade, the sides of the cube being one-tenth the length of the meter. This weight, which is equal to one thousand units of mass in the metric system, is called the *kilogram*.

Subsequent geodetic measures showed that the lengths of arcs differ on different parts of the earth and also that the value of the arc from which the meter was derived was in error by about one part in a thousand, causing a similar error in the length of the meter. Nevertheless the length of the original meter bar, known as the meter of the archives, has been retained, although its reference to the quadrant has been abandoned.

In 1875 an international bureau of weights and measures was established near Paris, France, by the concurrent action of the principal nations of the world for the purpose of constructing exact copies of the meter and kilogram deposited in the archives. Thirty-one standard meters of iridioplatinum and forty kilograms of the same alloy were constructed and carefully compared with the standards of the archives and with one another.

International Prototypes.—This great work was completed in 1889 and the meter and the kilogram which agreed most nearly with the original standards of the archives were called international prototypes and were deposited at the international bureau, where they are maintained to-day subject to the authority of the international committee on weights and measures.

The remaining meters and kilograms were distributed by lot to the different nations which contributed to the support of the bureau. The United States secured two copies of the meter and two copies of the kilogram, which are in the custody of the bureau of standards at Washington. One of the meters known as No. 27 and one kilogram, No. 40, were selected as the United States standards, while the other meter and kilogram are used as working standards.

Determinations of the Units.—The length of the international meter has been determined in terms of the wave lengths of the red, green and blue radiations of cadmium, so that if every meter in the world were destroyed the length could be reproduced within less than one part in ten million. The number of wave lengths of the different radiations at 15 degrees centigrade and 760 millimeters pressure are as follows:

Red	1 m.	=	1,553,163.5
Green	1 m.	=	1,966,249.7
Blue	1 m.	=	2,083,372.1

The unit of capacity in the metric system is the *liter*, which was intended to be both equal to the volume of a cubic decimeter and to the volume of pure water under normal atmospheric pressure and at the temperature of maximum density (4°C.) that would exactly balance one kilogram in vacuo.

Extent of Use.—The use of the metric system is obligatory in France, Germany, Austria, Hungary, Belgium, Brazil, Bulgaria, Chili, Colombia, Denmark, Spain, Holland, Italy, Mexico, Montenegro, Peru, Portugal, Argentina, Roumania, Servia, Sweden, Norway, Switzerland, and Uruguay. Also in Cuba, the Philippine Islands, Porto Rico, and Guam. Its use is legal in the United States, Great Britain and possessions, in Russia, Japan, Egypt,

Bolivia, Greece, Guatemala, Nicaragua, Paraguay, Venezuela, Turkey, and Siam. The units of length, mass and capacity described are subdivided decimally and the Latin prefixes *milli*, *centi*, and *deci*, are used to indicate the order of the division, and multiplied by powers of ten, the order being indicated by the prefixes *deka*, *hecto*, *kilo* and *myria*.

THE METRIC SYSTEM AND ITS EQUIVALENTS.

METRIC SYSTEM	EQUIVALENTS IN ENGLISH WEIGHTS AND MEASURES				
Measures of Length (Unit, meter)	Inches	Feet	Yards	Fathoms	Miles
1000 micrones... =1 millimeter	0.03937	0.003	0.001	0.000	0.000
10 millimeters =1 centimeter	0.39371	0.032	0.010	0.005	0.000
10 centimeters =1 decimeter	3.93708	0.328	0.109	0.054	0.000
10 decimeters . =1 meter	39.37079	3.280	1.093	0.546	0.000
10 meters... =1 dekameter	393.70790	32.808	10.936	5.468	0.006
10 dekameters. =1 hectometer	3937.07900	328.089	109.363	54.681	0.062
10 hectometers =1 kilometer	39370.79000	3280.899	1093.633	546.816	0.621
10 kilometers.. =1 myriameter	393707.90000	32808.991	10936.330	5468.165	6.213
Cubic or Capacity Measure (Unit, liter)	Cubic. In.	Cubic Ft.	Pints	Gallons	Bushels
1 milliliter... =	0.06103	0.000	0.001	0.000	0.000
10 milliliters.. =1 centiliter, 1 decimeter	0.61027	0.000	0.017	0.002	0.000
10 centiliters.. =1 deciliter, 1 meter	6.10271	0.003	0.176	0.022	0.002
10 deciliters... =1 liter, or cu. decimeter	61.02705	0.035	1.760	0.220	0.027
10 liters....... =1 decaliter, or centistere	610.27052	0.353	17.607	2.200	0.275
10 dekaliters.. =1 hectoliter, or decistere	6102.70515	3.531	176.077	22.009	2.751
10 hectoliters.. =1 kiloliter, or stere	61027.05152	35.316	1760.773	220.096	27.512
10 kiloliters... =1 myrialiter, or dekastere	610270.51519	353.165	17607.734	2200.966	275.120
Measures of Weight (Unit, gram)	Grains	Troy Oz.	Avoir. Oz.	Cwt. = 112 lb.	Ton = 20 Cwt.
1 milligram.. =	0.01543	0.000	0.000	0.000	0.000
10 milligrams. =1 centigram	0.15432	0.000	0.000	0.000	0.000
10 centigrams. =1 decigram	1.54323	0.003	0.000	0.000	0.000
10 decigrams.. =1 gram	15.43235	0.032	0.002	0.000	0.000
10 grams...... =1 dekagram	154.32349	0.321	0.022	0.000	0.000
10 dekagrams . =1 hectogram	1543.23488	3.215	0.220	0.001	0.000
10 hectograms =1 kilogram	15432.34880	32.150	2.204	0.019	0.000
10 kilograms.. =1 myriagram	154323.48800	321.507	22.046	0.196	0.009
Square, or Measures of Surface (Unit, are)	Square Feet	Yards	Perch	Roods	Acres
10000 square centimeters = 1 centiare, or square meter	10.764299	1.196	0.039	0.000	0.000
100 centaires =1 are, or 100 square meters	1076.429934	119.603	3.953	0.098	0.024
100 ares =1 hectare, or 10,000 sq. meters	107642.993419	11960.333	395.382	9.884	2.471

METRI† EQUIVALENTS FOR ENGLISH SYSTEM	Approximate		Exact
1 acre	= 0.4	hectare	0.4047
1 bushel	=35.0	liters	35.24
1 cubic foot	= 0.028	cubic meter	0.0283
1 cubic inch	=16.0	cubic cent.†	16.39
1 cubic yard	= 0.76	cubic meter	0.7645
1 foot	=30.0	centimeters	30.48
1 gallon	= 3.8	liters	3.785
1 grain	= 0.065	gram	0.0648
1 gram	=15.0	grains	15.43
1 inch	=25.0	millimeters	25.40
1 mile	= 1.6	kilometers	1.609
1 ounce(avoir)	=28.0	grams	28.35
1 ounce(troy)	=31.0	grams	31.10
1 peck	= 8.8	liters	8.809
1 pint	= 0.47	liter	0.4732
1 pound	= 0.45	kilogram	2.2046
1 quart(dry)	= 1.1	liters	1.101
1 quart(liquid)	= 0.95	liter	0.9464
1 sq. foot	= C.093	square meter	0.0929
1 sq. inch	= 6.5	square cent.†	6.452
1 sq. yard	= 0.84	square meter	0.8361
1 ton (2,000 lbs.)	= 0.91	metric ton	0.9072
1 ton (2,240 lbs.)	= 1.0	metric ton	1.017
1 ton (metric)	= 1.1	ton (2,000 lbs.)	1.102
1 ton (metric)	= 0.98	ton (2,240 lbs.)	0.9842
1 yard	= 0.91	meters	0 9144

†Centimeters.

UNITED STATES LEGAL WEIGHTS (in pounds) PER BUSHEL.
Prepared by the United States Bureau of Standards.

State or Territory / COMMODITIES	Federal Statutes	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts
Alfalfa Seed													60	60	60	60	60			60	60	
Apples*	50			b50			48			b48			b48	b47	48	48	48			44	b50	
Apples Dried		24		24			25			24	24		24	24	25	24	24	24		25	28	
Apple Seeds																						
Barley	48	47		48	50	48	48			48	47	48	48	48	48	48	48	47	32	48	48	
Beans*		60		a60		60	60			c60	a60		60	a60	60	60	60	a60		60	60	
Beans Castor										c48			46	46		c50	46	45			50	
Beans Green Unshelled																56	38					
Beans Green or String														24						24		
Beans Lima																56				56		
Beans Misc. Varieties										78				24						47		
Beans Scarlet or White Runner Pole																				50		
Beans Shell																				28		
Beans Soy															60					58		
Beet Greens																				12		
Beets							60						56	60	60	56				60		
Blackberries																				40		
Blue Grass Seed				14		14					14		14	14	14	14	14	14			14	
Bran				20			20			20	20		20	20	20	20		20		20	20	
Bromus Inermus																14						
Broom-Cornseed				48										48		50	30					
Buckwheat				52	40	52	48				52		50	52	50	48	48	56		48	48	
Cabbage																						
Canary Seed																						
Carrots							50						50	50	50	50	50			50	50	
Cement																						
Charcoal							20	20						20	20	20						
Cherries																40	f56					
Chestnuts																						
Clover Seed				60		60	60				60		60	b60	60	60	60	60		60	60	
Coal*														80		30					80	
Coal Anthracite							80											76				
Coal Bituminous																		76				
Coal Mineral						80									80							
Coal Stone											80							76				
Coke														40	40	40						
Corn, including Indian & Maize: Cracked	56																			50		
In Ear		70		j70		70					70		70	70	k68	70	j70	l70			70	
Ear Unhusked		75		74						70						75						
Popcorn, In Ear														70		70	70					
Popcorn, Shelled														56	56	56						
Rice Corn													56									
Shelled	56	56		56	52	56	56	56		56	56	56	56	56	56	56	56	56	56	56	56	
Sweet																50						
Corn Meal, including Indian: Corn Meal*				48		50	50			48			48	48	50	48		50		50	48	
Bolted		46						44			48											
Unbolted		48						48			48			48								
Cotton Seed*		32		33⅓						32	30			32								
Cotton Seed Sea Island							44			44										44		
Cotton Seed Upland							30													30		
Cranberries														33	33					32		
Cucumbers														48	48	48	48					
Currants																				40		
Dandelions																				12		
Emmer														40		40	40					
Flaxseed (Linseed)	56			56			55				56		56	56	56	56	56	56		56	56	
Gooseberries														40	40							

State or Territory / COMMODITIES	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming
Alfalfa Seed		60				60	60		60	60		60	60		60		60			60		60		60	60		60	60	
Apples*	48	b50		48	45	b48	b48	48	48	45			50	48	48		48	48	b50	48	b50	b50		48	45		b48	44	b48
Apples Dried	22	28	26	24		24	24	25	25	24	25	24	28	24	24		25	25	24	24	24	28		25	28		24	25	
Apple Seeds												40						40	40		40						40		
Barley	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48		48	48	48	48	48	48		48	48		48	48	48
Beans*	60	60	a60	60	60	60	a60	60	60	60	60	60	60	60	60		60	60	60	60	60	a60		60	60		60	60	60
Beans Castor	46		46	46		c50	46		46	46		46			46		c46	46	46	c50	46	46			46		46	46	46
Beans Green Unshelled				56		56													30	50	30			28			38		
Beans Green or String								24	24													24		24			24		
Beans Lima		56				56			56				55							56							56	56	
Beans Misc. Varieties			47						24				47									24							
Beans Scarlet or White Runner Pole		50											50														50		
Beans Shell									28																				
Beans Soy								58				60												58	60		58		
Beet Greens								12	12															12					
Beets		56			56	56	56	60	60	56		50	60	56	60		56	50	50	56	50	60		60			56	50	56
Blackberries												e48							e48		e48						48		
Blue Grass Seed	14	14	14	14	14	18	14		14	14		14	14		14		14		14	14	14	14			14		14	14	
Bran			20	20	20	20	20	20	20	20	20	20	20		20		20	20	20		28	20			20		20	20	
Bromus Inermus						14							14							14									
Broom-Cornseed		57				50						[illegible]	30	45	48		50		42	50	42	48					57		
Buckwheat	48	50	48	52	52	50	50	48	48	52	48	50	42	50	52		48	48	50	48	50	52		48	48		48	50	
Cabbage									50			50					50		50		50						50		
Canary Seed												60							60		60						60		
Carrots		45		50	50	50	50	50	50	50	50	50	45	50	50		50	50	50	50	50	50		50	50		50	50	50
Cement										80		80					100		80		80						100		
Charcoal						20			20	20		22					20	20	22		22	22		20			20		
Cherries						40						f56					f56		f56		f56						f56		
Chestnuts		50							50			50	50				50		50		50			50	57		50		
Clover Seed	60	60	60	60	60	60	60	60	60	60	60	g60	60	60	60		60	60	60	60	60	60		60	60		g60	g60	
Coal*						80								i70				80									80		
Coal Anthracite									75								75					80			80				
Coal Bituminous									76					80			76												
Coal Mineral	80			80	76					80					80														
Coal Stone			80									80	80				80		80		80	80							
Coke						40			40	40		40		40			40	40	40		40	40					40		
Corn, including Indian & Maize: Cracked								50	50																		50		
In Ear	70	70	72	70	70	70	70		70	70		j70	70	68	70		j70	70	j70	70	70	k68		j70	70		68		70
Ear Unhusked						75				72		74			72				74		74			72					
Popcorn, In Ear						70				70		70		42						70	79	70							
Popcorn, Shelled						56				56									56	56		56		56					
Rice Corn							56																				56		56
Shelled	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56		56	56	56	56	56	56		56	56		56	56	56
Sweet		48				50							48	45						50							50		
Corn Meal, including Indian: Corn Meal*	50		48	50	50	48	48	50	50	50	50			48	50		50	50		50		50		50	48		48	50	
Bolted			44																48		50						46		
Unbolted			48																48		48	48							
Cotton Seed*			32	33						32		30			32				30		28	32			30		32		
Cotton Seed Sea Island									44		44	44						44									44	44	
Cotton Seed Upland									30		30							30										30	
Cranberries	40	36						32	32				36				32		32			33		32			36	35	
Cucumbers		48		48		48			48	48		48	48		48		48		48	48	48	48		48			50	50	
Currants									40								40		40								40		
Dandelions								12	12															12					
Emmer						48																		40					40
Flaxseed (Linseed)	56	56	56	56	56	56	56	56	56	56	55	56	56	56	56		56	56	56	54	56	56		55	56		56	54	56
Gooseberries									40			48					40		48		48	40					40		

UNITED STATES LEGAL WEIGHTS (in pounds) PER BUSHEL.—Continued

States and Territories	Federal standard	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

NOTES FOR ENTIRE LEGAL WEIGHT TABLE

[illegible]

Seventy pounds for a bushel of coarse salt lime.

[illegible]

COMMODITIES FOR WHICH BUSHEL WEIGHTS HAVE BEEN ESTABLISHED IN NOT MORE THAN THREE STATES.

Commodity	Weight	States	Commodity	Weight	States
	Pounds			Pounds	
[illegible]	[illegible]	[illegible]	[illegible]	54?	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	46	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	106?	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	63?	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	60	[illegible]
[illegible]	[illegible]	Louisiana, Maryland and Virginia.	[illegible]	30	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	30	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	54	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	56	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	50	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	60	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	50	Iowa and South Dakota.
[illegible]	[illegible]	[illegible]	[illegible]	50	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	4	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	10	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	24	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	56	[illegible]

Foreign Weights and Measures. — **Japan.** — [illegible]

[illegible] meter, [illegible] The [illegible] 36 [illegible] 0.00033 are, or 0.0986 square foot.

10 [illegible] quart. [illegible] 10 [illegible] The metric weights and measures are

recognized as legal in accordance with the table of equivalents.

Russia.—The basis of Russian weights is the funt, equal to 0.40951241 kilogram, or 0.9028 pound avoirdupois. The funt is divided into 96 zolotniks or 32 loths, and the zolotnik is divided into 96 dolias; 40 funts equal 1 pood.

The basis of the length measure is the archine, equal to 28 inches or 0.71120 meter. The archine contains 16 verskops; 3 archines equal 1 sagene and 500 sagenes equal 1 verst.

The dessiatine, equal to 2,400 square soganes, or 2.6997 acres, is the unit for land measure.

The chetvert, equal to 2.09908 hectoliters, or 5.7748 United States bushels, is the unit for dry measure. The chetvert is divided into 8 chetveriks, and the chetverik into 8 garnetz. Twelve chetverts equal 1 lost.

The vedro, equal to 12.2993285 liters, or 3.249 United States gallons, is used for measuring liquids.

Chinese Measures.—The following gives the new system of weights and measures adopted by China in pursuance of the imperial rescript of August 28, 1908:

MEASURES OF LENGTH

Chinese.		Metric.
1 hao	=	0.0032 centimeter.
1 li	=	0.032 centimeter.
1 fen	=	0.32 centimeter.
1 tsun	=	3.2 centimeters.
1 chih	=	0.32 meter.
1 pu	=	1.6 meters.
1 chang	=	3.2 meters.
1 li	=	576.° meters.

MEASURES OF SURFACE

Chinese.		Metric.
1 hao	=	0.006144 are.
1 li	=	0.06144 are.
1 fen	=	0.6144 are.
1 fang pu	=	0.0256 are.
1 mu	=	6.144 ares.
1 ching	=	614.4 ares.

MEASURES OF CAPACITY

Chinese.		Metric.
1 shao	=	0.0104 liter.
1 ko	=	0.1035 liter.
1 sheng	=	1.0355 liters.
1 tou	=	10.355 liters.
1 hu	=	51.7734 liters.
1 tan or picul	=	103.5469 liters.

MEASURES OF WEIGHT

Chinese.		Metric.
1 hao	=	0.0037301 gram.
1 li	=	0.037301 gram.
1 fen	=	0.37301 gram.
1 chien	=	3.7301 grams.
1 liang	=	37.301 grams.
1 chin or catty	=	596.816 grams.

TABLE OF FOREIGN WEIGHTS AND MEASURES

Denominations	Where Used	American Customary Equivalents
Almude	Portugal	4.422 gallons
Ardeb	Egypt	7.6907 bushels
Are	Metric	0.02471 acre
Arobe	Paraguay	25 pounds
Arratel or libra	Portugal	1.011 pounds
Arroba (dry)	Argentine Republic	25.3175 pounds
	Brazil	32.38 pounds
	Cuba	25.3664 pounds
	Portugal	32.38 pounds
	Spain	25.36 pounds
	Venezuela	25.4024 pounds
Arroba (liquid)	Cuba, Spain and Venezuela	4.263 gallons
Arshine	Russia	28 inches
Arshine (square)	Russia	5.44 square feet
Artel	Morocco	1.12 pounds
Baril	Argentine Republic and Mexico	20.0787 gallons
Barrel	Malta (customs)	11.4 gallons
	Spain (raisins)	100 pounds
Batman or tabriz	Persia	6.49 pounds
Berkovets	Russia	361.12 pounds
Bongkal	India	832 grains
Bouw	Sumatra	7,096.5 square meters
Bu	Japan	0.119 inch
Butt (wine)	Spain	140 gallons
Caffiso	Malta	5.4 gallons
Candy	India (Bombay)	529 pounds
	India (Madras)	500 pounds
	Morocco	113 pounds
	Syria (Damascus)	575 pounds
	Turkey	124.7036 pounds
Cantaro (cantar)	Malta	175 pounds
Carga	Mexico and Salvador	300 pounds
Catty	China	1.316 pounds (avoir.)
	Japan	1.31 pounds
	Java, Siam and Malacca	1.35 pounds
	Sumatra	2.12 pounds
Centaro	Central America	4.2631 gallons
Centner	Bremen and Brunswick	117.5 pounds
	Darmstadt	110.24 pounds
	Denmark and Norway	110.11 pounds
	Nuremberg	112.43 pounds
	Prussia	113.44 pounds
	Sweden	93.7 pounds
	Vienna	123.5 pounds
	Zollverein	110.24 pounds
	Double or metric	220.46 pounds
Chetvert	Russia	5.7748 bushels
Chih	China	12.6 inches
Coyan	Sarawak	3,098 pounds
	Siam (Koyan)	2,667 pounds
Cuadra	Argentine Republic	4.2 acres
	Paraguay	78.9 yards
	Paraguay (square)	8.077 square feet
	Uruguay	Nearly 2 acres
Cubic meter	Metric	35.3 cubic feet
Cwt. (hundredweight)	British	112 pounds
Dessiatine	Russia	2.6997 acres
	Spain	1.599 bushels
Drachme	Greece	Half ounce
Egyptian weights and measures	(See Consular Reports No. 144)	
Fanega (dry)	Central America	1.5745 bushels
	Chili	2.575 bushels
	Cuba	1.599 bushels
	Mexico	1.54728 bushels
	Morocco	Strike fanega, 70 lbs.; full fanega, 118 lbs.
	Uruguay (double)	7.776 bushels
	Uruguay (single)	3.888 bushels
	Venezuela	1.599 bushels
Fanega (liquid)	Spain	16 gallons
Feddan	Egypt	1.03 acres
Frail (raisins)	Spain	50 pounds
Frasco	Argentine Republic	2.5096 quarts
	Mexico	2.5 quarts
Frasila	Zanzibar	35 pounds
Fuder	Luxemburg	264.17 gallons
Funt	Russia	0.9028 pound
Garnice	Russian Poland	0.88 gallon

Denominations	Where Used	American Customary Equivalents
Gram	Metric	15.432 grains
Hectare	Metric	2.471 acres
Hectoliter: Dry	Metric	2.838 bushels
Liquid	Metric	26.417 gallons
Joch	Austria-Hungary	1.422 acres
Ken	Japan	5.965 feet
Kilogram (kilo.)	Metric	2.2046 pounds
Kilometer	Metric	0.621376 mile
Koku	Japan	4.9629 bushels
Korree	Russia	3.5 bushels
Kwan	Japan	8.28 pounds
Last	Belgium and Holland	85.134 bushels
	England (dry malt)	82.52 bushels
	Germany	2 metric tons (4,480 pounds)
	Prussia	112.29 bushels
	Russian Poland	11⅔ bushels
	Spain (salt)	4,760 pounds
League (land)	Paraguay	4,033 acres
Li	China	0.0126 inches
Libra (pound)	Argentine Republic	1.0127 pounds
	Central America	1.043 pounds
	Chili	1.014 pounds
	Cuba	1.0161 pounds
	Mexico	1.01465 pounds
	Peru	1.0143 pounds
	Portugal	1.011 pounds
	Spain	1.0144 pounds
	Uruguay	1.0143 pounds
	Venezuela	1.0161 pounds
Liter	Metric	1.0567 quarts
Livre (pound)	Greece	1.1 pounds
	Guiana	1.0791 pounds
Load	England (timber)	Square, 50 cubic feet; unhewn, 40 cubic feet; inch planks, 600 superficial feet
Manzana	Costa Rica	1 5-6 acres
	Nicaragua and Salvador	1.727 acres
Mare	Bolivia	0.507 pounds
Maund	India	82 2-7 pounds
Meter	Metric	39.37 inches
Mil	Denmark	4.68 miles
	Denmark (geographical)	4.61 miles
Milla	Nicaragua and Honduras	1.1493 miles
Morgen	Prussia	0.63 acre
Oke	Egypt	2.7225 pounds
	Greece	2.84 pounds
	Hungary	3.0817 pounds
	Turkey	2.82838 pounds
	Hungary and Wallachia	2.5 pints
Pic	Egypt	21½ inches
Picul	Borneo and Celebes	135.64 pounds
	China, Japan and Sumatra	133⅓ pounds
	Java	135.1 pounds
	Philippine Islands	137.9 pounds
Pie	Argentine Republic	0.9478 foot
	Spain	0.91407 foot
Pik	Turkey	27.9 inches
Pood	Russia	36.112 pounds
Pund (pound)	Denmark and Sweden	1.102 pounds
Quarter	Great Britain	8.252 bushels
	London (coal)	36 bushels
Quintal	Argentine Republic	101.42 pounds
	Brazil	130.06 pounds
	Castile,* Chili, Mexico and Peru	101.41 pounds
	Greece	123.2 pounds
	Newfoundland (fish)	112 pounds
	Paraguay	100 pounds
	Syria	125 pounds
	Metric	220.46 pounds
Rottle	Palestine	6 pounds
	Syria	5¾ pounds
Sagene	Russia	7 feet
Salm	Malta	490 pounds
Se	Japan	0.02451 acre
Seer	India	1 pound 13 ounces
Shaku	Japan	11.9303 inches; 0.01806 liquid quart

TABLE OF FOREIGN WEIGHTS AND MEASURES—Continued

Denominations	Where Used	American Customary Equivalents
Sho	Japan	1.6 liquid quarts
Standard (St. Petersburg)	Lumber measure	165 cubic feet
Stone	British	14 pounds
Suerte	Uruguay	2,700 cuadras (see cuadra)
Sun	Japan	1.193 inches
Tael	Cochin China	590.75 grains (troy)
Tan	Japan	0.25 acre 9,884 sq. ft.
To	Japan	2 pecks
Ton	Space measure	40 cubic feet
Tonde (cereals)	Denmark	3.94783 bushels
Tondeland	Denmark	1.36 acres
Tsubo	Japan	98.84 square feet
Tsun	China	1.26 inches
Tunna	Sweden	4.5 bushels
Tunnland	Sweden	1.22 acres
Vara	Argentine Republic	34.1208 inches
	Central America	32.87 inches
	Chili and Peru	33.367 inches
	Cuba	33.384 inches
	Curacao	33.375 inches
	Mexico	33 inches
	Paraguay	34 inches
	Spain	0.911417 yard
	Venezuela	33.384 inches
Vedro	Russia	3.249 gallons
Vergees	Isle of Jersey	71.1 square rods
Verst	Russia	0.6629 mile
Vlocka	Russian Poland	41.98 acres

*Although the metric weights are used officially in Spain, the Castile quintal is employed in commerce in the peninsula and colonies, save in Catalonia; the Catalan quintal equals 91.71 pounds.

WEIGHTS AND MEASURES OF THE BIBLE

WEIGHTS

	Avoirdupois Lbs.	Oz.	Drs.	Troy. Lbs.	Oz.	Dwt.	Gr.
A gerah	0	0	0.439 =	0	0	0	12
10 gerahs = 1 bekah	0	0	4.39 =	0	0	5	0
2 bekahs = 1 shekel	0	0	8.78. =	0	0	10	0
60 shekels = 1 maneh	2	0	14.628 =	2	6	0	0
50 manehs = 1 talent	102	13	11.428 =	125	0	0	0

MEASURES

Long Measure	Feet	Inches
A digit, or finger (Jer. lii. 21)	0	0.912
4 digits = 1 palm (Exod. xxv, 25)	0	3.648
3 palms = 1 span (Exod. xxviii, 16)	0	10.944
2 spans = 1 cubit (Gen. vi, 15)	1	9.888
4 cubits = 1 fathom (Acts xxvii, 28)	7	3.552
1.5 fathoms = 1 reed (Ezek. xl, 3, 5)	10	11.328
13.3 reeds = 1 line (Ezek. xl, 3)	145	11.04

Land Measure	Eng. Miles	Paces	Feet
A cubit	0	0	1.824
400 cubits = 1 furlong (Luke xxiv, 13)	0	145	4.6
5 furlongs = 1 sabbath day's journey (John xi, 18; Acts i, 12)	0	727	3.0
10 furlongs = 1 mile (Matt. v, 41)	1	399	1.0
24 miles = 1 day's journey	33	76	4.0

Liquid Measure	Gallons	Pints
A caph	0	0.625
1.3 caphs = 1 log (Lev. xiv, 10)	0	0.833
4 logs = 1 cab	0	3.333
3 cabs = 1 hin (Exod. xxx, 24)	1	2
2 hins = 1 seah	2	4
3 seahs = 1 bath, or ephah (1 Kings vii, 26; John ii, 6)	7	4.5
10 ephahs = 1 kor, or homer (Isa. v, 10; Ezek. xiv, 14)	75	5.25

WEIGHTS AND MEASURES OF THE BIBLE—Continued

Dry Measure	Pecks	Gallons	Pints
A gachal	0	0	0.1416
20 gachals = 1 cab (2 Kings vi, 25; Rev. vi, 6)	0	0	2.8333
1.8 cabs = 1 omer (Exod. xvi, 36)	0	0	5.1
3.3 omers = 1 seah (Matt. xiii, 33)	1	0	1
3 seahs = 1 ephah (Ezek. xlv, 11)	3	0	3
5 ephahs = 1 letech (Hosea iii, 2)	16	0	0
2 letechs = 1 kor, or homer (Num. xi, 32; Hos. iii, 2)	32	0	0

N. B.—The foregoing table will explain many texts in the Bible. Take, for instance, Isa. v, 10. "Yea, ten acres of vineyard shall yield one bath, and the seed of an homer shall yield an ephah." This curse upon the covetous man was that 10 acres of vines should produce only 7 gallons of wine, *i. e.*, one acre should yield less than 3 quarts; and that 32 pecks of seed should only bring a crop of 3 pecks, or, in other words, that the harvest reaped should produce but one-tenth of the seed sown.

TIME

The natural day was from sunrise to sunset.

The natural night was from sunset to sunrise.

The civil day was from sunset one evening to sunset the next; for, "th. Evening and the Morning were the first day."

Night (Ancient)	Day (Ancient)
First watch (Lam. ii, 19), till midnight.	Morning till about 10 a. m.
Middle watch (Judg. vii, 19), till 3 a. m.	Heat of day till about 2 p. m.
Morning watch (Exod. xiv, 24), till 6 a. m.	Cool of day till about 6 p. m.
Night (New Testament)	**Day (New Testament)**
First watch, evening = 6 to 9 p. m.	Third hour = 6 to 9 a. m.
Second watch, midnight = 9 to 12 p. m.	Sixth hour = 9 to 12 midday.
Third watch, cock-crow = 12 to 3 a. m.	Ninth hour = 12 to 3 p. m.
Fourth watch, morning = 3 to 6 a. m.	Twelfth hour = 3 to 6 p. m.

JEWISH MONEY

With its value in English and American money; the American dollar being taken as equal to 4s. 2d.

	English pound	s.	d.	American Dols.	Cents
A gerah (Exod. xxx, 13) =	0	0	1.36 =	0	2.73
10 gerahs = 1 bekah (Exod. xxxviii, 26) =	0	1	1.68 =	0	27.37
2 bekahs = 1 shekel (Exod. xxx, 13; Isa. vii, 23) =	0	2	3.37	0	54.74
50 shekels = 1 maneh =	5	14	0.75 =	27	37.50
60 manehs = 1 kikkar (talent) =	342	3	9 =	1,642	50
A gold shekel =	1	16	6 =	8	76
A kikkar of gold =	5,475	0	0 =	26,280	0

N. B.—A shekel would probably purchase nearly ten times as much as the same nominal amount will now. Remember that one Roman penny (8½d.) was a good day's wages for a laborer.

The Hebrew maneh, according to 1 Kings x, 17, compared with 2 Chron. ix, 16, contained 100 shekels; though according to one interpretation of Ezek. xiv, 12, it contained 60, but more probably 50. The passage reads thus: "Twenty shekels, five and twenty shekels, fifteen shekels shall be your maneh." This is variously interpreted: (1) 20+25+15=60. (2) 20, 25, 15 are different coins in gold, silver, and copper, bearing the same name. It is well to remark the meaning of these names: Shekel = simply, weight: Bekah = split, *i. e.*, the shekel divided into two: Gerah = a grain, as in our weights, a grain and a barleycorn, the original standard weight: Maneh = appointed, equivalent to sterling, a specific sum: Kikkar = a round mass of metal, *i. e.*, a weight or coin. Hebrew names of weights and coins are not found in the New Testament: *mna* in Luke xix. 13, is Greek, though possibly identical with the Hebrew *maneh*.

ROMAN MONEY

	English Pence		American Cents
A "farthing," quadrans (Matt. v, 26) = nearly	0.125	=	0.25
A "farthing," as in 4 quadrantes (Matt. x, 29) = nearly.	0.5	=	1
A "penny," denarius = 16 asses (Matt. xxii, 19) nearly	8.50	=	17

The Roman sestertius = 2½ asses, is not named in the Bible.

N. B.—Here we learn that:—

Naaman's offering to Elisha of 6,000 pieces (shekels) of gold amounted to more than £10,000 = 48,000 dollars.

The Debtor (Matt. xviii, 24), who had been forgiven 10,000 talents, i. e., £3,000,000 = 14,400,000 dollars, refused to forgive his fellow-servant 100 pence *i. e.*, £3 10s. 10d = 17 dollars.

Judas sold our Lord for 30 pieces of silver, *i. e.*, £3 10s.8d. = 16 dollars 96 cents, the legal value of a slave, if he were killed by a beast.

Joseph was sold by his brethren for 20 pieces, *i. e.*, £2 7s. = 11 dollars 28 cents.

Time.—Three kinds of time are recognized by astronomers, *viz.*, sidereal, apparent solar and mean solar time.

Sidereal Time.—The sidereal day is the interval between two consecutive transits of some fixed celestial object across any given meridian, or it is the interval required by the earth to make one complete revolution on its axis. This interval is constant but it is inconvenient as a time unit because the noon of the sidereal day occurs at all hours of the day and night.

Apparent Solar Time.—The apparent solar day is the interval between two consecutive transits of the *sun* across any given meridian. On account of the variable distance between the sun and earth, the variable speed of the earth in its orbit, the effect of the moon, etc., this interval is not constant and consequently cannot be kept by any simple mechanism, such as a clock or watch.

Mean Solar Time.—To overcome the objection noted above, the mean solar day was devised. The mean solar day is the length of the average apparent solar day. Like the sidereal day it is constant, and like the apparent solar day its noon always occurs at approximately the same time of day.

The sidereal or astronomical day begins at mean noon and the hours run from one to twenty-four, while the civil day (mean solar) begins twelve hours earlier, at midnight, and the hours run from one to twelve, and then repeat from noon to midnight. The hours are in both cases divided into sixty minutes, and the minutes into sixty seconds.

The Year.—In dealing with longer periods, such as the life of a man, the day is too small a period, and for all chronological purposes the year has always been employed.

There are three different kinds of year used—the sidereal, the tropical, and the anomalistic.

The Sidereal Year is the time taken by the earth to complete one revolution around the sun from a given star to the same star again. Its length is 365 days 6 hours 9 minutes 9 seconds.

The Tropical Year is the time included between two successive passages of the vernal equinox by the sun, and since the equinox moves westward 50.2 seconds of arc a year the tropical year is shorter by 20 minutes 23.5 seconds in time than the sidereal year. As the seasons depend upon the earth's position with respect to the equinox, the tropical year is the year of civil reckoning.

Anomalistic Year. — The third kind of year is the anomalistic year—the interval between two successive passages of the perihelion, namely, the time of the earth's nearest approach to the sun. The anomalistic year is only used in special calculations in astronomy.

The Calendar.—Various attempts were made by the ancients to reconcile the month, which originally depended upon the changes of the moon, with the tropical year, but a satisfactory solution is not possible, and the calendars of civilized nations now disregard the moon entirely. The Mohammedan nations, however, still use a lunar calendar with a year of twelve lunar months, which alternately contain 355 and 356 days. According to their method of reckoning the same month falls

in different seasons, and their calendars gain one year on ours every thirty-three years.

The Julian Calendar, which was established 45 B. C., by Julius Cæsar, discarded all consideration of the moon and adopted 365¼ days as the true length of the year. He ordained that every fourth year should contain 366 days, and transferred the beginning of the year from March to January 1. The Julian calendar is still used in Russia and generally by the Greek church.

The Gregorian Calendar.—The true length of the tropical year is not 365¼ days, but 365 days 5 hours 48 minutes 45.5 seconds, a difference of 11 minutes 14.5 seconds by which the Julian year is too long. This amounts to a little more than three days in four hundred years, and consequently the date of the vernal equinox had in Pope Gregory's time fallen back to March 11th instead of occurring on March 21st as it did at the Council of Nice, A. D. 325. The pope therefore decreed that the calendar should be corrected by dropping ten days, so the day following October 4, 1582, should be called October 15th instead of October 5th, and also in the future only such century years shall be leap years as are divisible by 400. Thus 1700, 1800, 1900, etc., are not leap years, while 1600, 2000, 2400, etc., are. The change was immediately made by all Catholic countries, but it was not until 1752 that the Gregorian calendar was adopted by England.

Standard Time.—Prior to 1883 each city had its own time, which was determined by the time of passage of the sun across the local meridian. Consequently the traveler going from one city to another had to continually change his watch to the local time. Largely through the efforts of the railroads a system of standard time was introduced. According to this system the United States, which extends from 65 degrees to 125 degrees west longitude, was divided into four sections, each of 15 degrees longitude.

The *first* (or eastern) section includes all territory between the Atlantic coast and an irregular line drawn from Detroit, Mich., through Pittsburg to Charleston, S. C., its most southern point. The time of this section is that of the 75th meridian, which is five hours slower than Greenwich time.

The *second* (central) section includes all territory between the line mentioned and an irregular line drawn from Bismarck, N. D., to the mouth of the Rio Grande.

The *third* (mountain) section includes all territory between the last-named line and a line which passes through the western part of Idaho, Utah and Arizona.

The *fourth* (Pacific) section covers the rest of the country to the Pacific Ocean. Standard time is uniform in each of these sections, but the time in one section differs by exactly one hour from the section next to it. Thus the time of the first section is five hours slower than Greenwich time, the time of the central section six hours slower, the time of the mountain seven hours, and the time of the Pacific section is eight hours slower than Greenwich mean time.

In cities situated on the border line of two sections, as, for instance, Pittsburg and Atlanta, the standard times of both sections are used; for example, if at Pittsburg it is 7 a.m. eastern time, it is 6 a.m. central time, and in such cities when the time is given, it should be specified as eastern, central, etc.

The system of standard time has been practically adopted in almost all civilized countries. All continental Europe, except Russia, uses a time one hour faster than that of Greenwich; in Japan and Australia the time is nine hours faster, etc.

Temperature Scales.—Temperature is the term used to designate the state of a body as regards hotness or coldness. Two bodies are said to have the same temperature if, when they are put in contact, there is no tendency for one to get hotter while the other gets colder; if there is such a tendency, the one which tends to cool off is said to have the higher temperature.

A Scale of Temperature is a system of numbering temperatures, the numbers being larger as the temperatures are higher. Such scales are based upon two fixed temperatures, *viz.*, the "ice-point" or temperature at which pure ice melts, and the "steam point" or temperature at which pure water boils, both under the standard barometric pressure of 760 millimeters or 29.92 inches of mercury. Three such systems or scales are in use—the centigrade or Celsius, the Fahrenheit, and the Reaumur.

Centigrade.—On the centigrade scale, which is used almost universally in countries which have adopted the metric system of weights and measures, as well as in scientific work everywhere, the ice-point is numbered zero degrees (0° C.) and the steam-point one hundred degrees (100° C.), the unit of measurement, or the centigrade degree (1° C.) being the one-hundredth part of this interval.

Fahrenheit.—On the Fahrenheit scale, which is generally used in English-speaking countries, except among scientific men, the ice-point is numbered 32° F. and the steam-point 212° F., the difference being 180°, and the Fahrenheit degree (1° F.) being the one-hundred-eightieth part of this interval. The Fahrenheit degree is thus $\frac{100}{180}$ or $\frac{5}{9}$ as large as the centigrade degree. The Fahrenheit zero, at 32° below the ice-point, corresponding to $-\frac{5}{9} \times 32 = -17.8$°C., is approximately the lowest temperature that can be obtained with ordinary freezing mixtures of ice and common salt.

Reaumur.—The Reaumur scale is used in a few European countries, but is fast being superseded by the centigrade. It has 0° at the ice-point and 80° at the steam point, so that the Reaumur degree (1° R.) is $\frac{5}{4}$ of the centigrade degree or $\frac{9}{4}$ of the Fahrenheit degree.

Conversion.—*To convert from one scale to another* we have, in accordance with the above definitions, the following practical rules:

Centigrade to Fahrenheit; multiply by $\frac{9}{5}$ and add 32°.

Centigrade to Reaumur; multiply by $\frac{4}{5}$.

Fahrenheit to centigrade; subtract 32° and multiply by $\frac{5}{9}$.

Fahrenheit to Reaumur; subtract 32° and multiply by $\frac{4}{9}$.

Reaumur to centigrade; multiply by $\frac{5}{4}$.

Reaumur to Fahrenheit; multiply by $\frac{9}{4}$ and add 32°.

Care should be taken to make the addition or subtraction algebraically, *i. e.*, taking account of the negative sign when the temperature in question is below zero.

Absolute Temperature.—*By the absolute temperature* of a body is meant its temperature, measured in either of the three kinds of degrees, not from the ice-point or from the Fahrenheit zero, but from a point known as the absolute zero, which is at about —273.1°C. or—459.6°F. or—218.5°R. This mode of numbering temperatures is frequently convenient in scientific and engineering work. To convert centigrade temperatures into centigrade-absolute temperatures add 273.1°.

To convert from Fahrenheit to Fahrenheit-absolute add 459.6°. To convert from Reaumur to Reaumur-absolute add 218.5°. To convert in the other direction, subtract the same amounts. The Reaumur-absolute scale is seldom or never used, and the Fahrenheit-absolute scale only by engineers in English-speaking countries. When the term "absolute temperature" is used without further qualification, it usually means the centigrade temperature plus 273°, though this value, which may also be looked upon as the centigrade-absolute temperature of the ice-point, is sometimes taken as high as 274°.

Barometric Measurements.—By barometer reading is meant the height in inches or millimeters of the column of mercury, under standard conditions, that exactly balances the pressure exerted by the atmosphere at the instant the reading is made. The pressure exerted by a given column of mercury depends upon the altitude of the barometer, and upon the latitude, and it is customary, in order to get accurate comparisons, to refer the readings to latitude 45°, and to sea level. Also since the density of the mercury is affected by the temperature it is usually referred to 0° centigrade.

Since all air movements are the result of difference in pressure, important conclusions regarding the weather to be expected may be deducted from barometric readings, hence their use by mariners and weather experts.

Their value in determining altitudes depends upon the fact that the pressure of the atmosphere decreases with the altitude according to a fairly well established law, which is illustrated by the following table:

PRESSURE OF THE ATMOSPHERE AT DIFFERENT ELEVATIONS

Elev. Feet	Barom. Inches	Elev. Feet	Barom. Inches	Elev. Feet	Barom. Inches
0	29.9	600	29.25	4000	25.81
50	29.845	700	29.14	5000	24.88
100	29.79	800	29.03	6000	23.98
200	29.68	900	28.92	7000	23.11
300	29.57	1000	28.82	8000	22.28
400	29.46	2000	27.78	9000	21.48
500	29.35	3000	26.78	10000	20.70

Beaufort's Wind Scale.—The Beaufort Scale is used by seamen for recording the force of wind. For the guidance of those unaccustomed to its use, the corresponding velocity per hour in statute miles and in nautical miles is added. The force of wind varies from 0, a calm, to 12, a hurricane.

Intensity of Force of Wind — Beaufort's Scale	Velocity Statute miles per hour	Velocity Nautical miles per hour
0. **Calm.** Full rigged ship, all sail set, no headway	0 to 3	0 to 2.6
1. **Light Air.** Just sufficient to give steerageway	8	6.9
2. **Light Breeze.** Speed of 1 or 2 knots, "full and by."	13	11.3
3. **Gentle Breeze.** Speed of 3 or 4 knots, "full and by."	18	15.6
4. **Moderate Breeze.** Speed of 5 or 6 knots, "full and by."	23	20.0
5. **Fresh Breeze.** All plain sail, "full and by."	28	24.3
6. **Strong Breeze.** Topgallant sails over single-reefed topsails	34	29.5
7. **Moderate Gale.** Double-reefed topsails	40	34.7
8. **Fresh Gale.** Treble-reefed topsails (or reefed upper topsails and courses)	48	41.6
9. **Strong Gale.** Close-reefed topsails and courses (or lower topsails and courses)	56	48.6

Intensity or Force of Wind — Beaufort's Scale	Velocity Statute miles per hour	Velocity Nautical miles per hour
10. **Whole Gale.** Close-reefed main topsail and reefed foresail (or lower main top-sail and reefed foresail)	65	56.4
11. **Storm.** Storm staysails	75	65.1
12. **Hurricane.** Under bare poles	90 and over	78.1 and over

The word "force" used in connection with this scale has no relation to pressure, but refers to speed or velocity.

Speed of Winds in the United States.—United States weather bureau records of the average speed of wind in miles per hour at selected stations, and the highest speeds ever reported for a period of five minutes.

Station	Average	Highest
Abilene, Texas	11	66
Albany, New York	6	70
Alpena, Michigan	9	72
Atlanta, Georgia	9	66
Bismarck, North Dakota	8	74
Boise, Idaho	4	55
Boston, Massachusetts	11	72
Buffalo, New York	11	90
Charlotte, North Carolina	5	55
Chattanooga, Tennessee	6	66
Chicago, Illinois	9	84
Cincinnati, Ohio	7	59
Cleveland, Ohio	9	73
Denver, Colorado	7	75
Detroit, Michigan	9	76
Dodge City, Kansas	11	75
Dubuque, Iowa	5	60
Duluth, Minnesota	7	78
Eastport, Maine	9	78
El Paso, Texas	5	78
Fort Smith, Arkansas	5	74
Galveston, Texas	10	*84
Havre, Montana	11	74
Helena, Montana	6	60
Huron, South Dakota	10	72
Jacksonville, Florida	6	75
Kansas City, Missouri	9	74
Keokuk, Iowa	8	60
Knoxville, Tennessee	5	84
Louisville, Kentucky	7	60
Lynchburg, Virginia	4	50
Memphis, Tennessee	6	75
Miles City, Montana	6	62
Montgomery, Alabama	5	54
Nashville, Tennessee	6	75
New Orleans, Louisiana	7	66
New York, New York	9	83
North Platte, Nebraska	9	96
Omaha, Nebraska	8	66
Palestine, Texas	8	60
Philadelphia, Pennsylvania	10	75
Pittsburgh, Pennsylvania	6	69
Portland, Maine	5	61
Red Bluff, California	7	60
Rochester, New York	11	78
St. Louis, Missouri	11	80
St. Paul, Minnesota	7	102
Salt Lake City, Utah	5	66
San Diego, California	6	40
San Francisco, California	9	64
Sante Fe, New Mexico	6	53
Savannah, Georgia	7	80
Spokane, Washington	4	52
Toledo, Ohio	9	72
Vicksburg, Mississippi	6	62
Washington, D. C.	5	66
Wilmington, North Carolina	7	72

*Anemometer blew away at a velocity of 84 miles per hour, September, 1900.

Values of Foreign Coins.—The following values of foreign coins in terms of the United States gold dollar were established by the treasury department in October, 1910, for estimating the value of all foreign merchandise exported to the United States:

VALUE OF FOREIGN COINS

Country	Standard	Monetary Unit		Value in Terms of U. S. Gold Dollar	Coins
Argentine Republic	Gold	Peso		$0.965	Gold: argentine ($4.824) and ½ argentine. Silver: peso and divisions.
Austria-Hungary	Gold	Crown		.203	Gold: 10 and 20 crowns. Silver: 1 and 5 crowns.
Belgium	Gold	Franc		.193	Gold: 10 and 20 francs. Silver: 5 francs.
Bolivia	Gold	Boliviano		.389	Gold: *Silver boliviano and divisions.
Brazil	Gold	Milreis		.546	Gold: 5, 10, and 20 milreis. Silver: ½, 1, and 2 milreis.
British Possessions, N. A. (except Newfoundland).	Gold	Dollar		1.000	
Central American States—					
Costa Rica	Gold	Colon		.465	Gold: 2, 5, 10, and 20 colons ($9.307). Silver: 5, 10, 25, and 50 centimos.
British Honduras, Guatemala, Honduras, Nicaragua, Salvador	Silver	Peso		.383	Silver: peso and divisions.
Chile	Gold	Peso		.365	Gold: escudo ($1.825), doubloon ($3.650) and condor ($7.300) Silver: peso and divisions.
China	Silver	Tael	Amoy	.629	
			Canton	.627	
			Cheefoo	.601	
			Chin Kiang	.614	
			Fuchau	.581	
			Haikwan (customs)	.640	
			Hankow	.588	
			Kiaochow	.609	
			Nankin	.622	
			Niuchwang	.589	
			Ningpo	.604	
			Peking	.613	
			Shanghai	.574	
			Swatow	.581	
			Takau	.633	
			Tientsin	.609	
		Dollar	Hongkong	.413	
			British	.413	
			Mexican	.416	
Colombia	Gold	Dollar		1.000	Gold: condor ($9.647) and double condor. Silver: peso.
Denmark	Gold	Crown		.268	Gold: 10 and 20 crowns.
Ecuador	Gold	Sucre		.487	Gold: 10 sucres ($4.8665). Silver: sucre and divisions.
Egypt	Gold	Pounds (100 piasters)		4.943	Gold: pound (100 piasters), 5, 10, 20, and 50 piasters. Silver: 1, 2, 5, 10, and 20 piasters.
Finland	Gold	Mark		.193	Gold: 20 marks ($3.859), 10 marks ($1.93).
France	Gold	Franc		.193	Gold: 5, 10, 20, 50, and 100 francs. Silver: 5 francs.
German Empire	Gold	Mark		.238	Gold: 5, 10, and 20 marks.
Great Britain	Gold	Pound sterling		4.866½	Gold: sovereign (pound sterling) and ½ sovereign.
Greece	Gold	Drachma		.193	Gold: 5, 10, 20, 50, and 100 drachmas. Silver: 5 drachmas.
Hayti	Gold	Gourde		.965	Gold: 1, 2, 5, and 10 gourdes. Silver: gourde and divisions.
India (British)	Gold	Pound sterling†		4.866½	Gold: sovereign (pound sterling). Silver: rupee and divisions.
Italy	Gold	Lira		.193	Gold: 5, 10, 20, 50, and 100 lire. Silver: 5 lire.
Japan	Gold	Yen		.498	Gold: 5, 10, and 20 yen. Silver: 10, 20, and 50 sen.
Liberia	Gold	Dollar		1.000	
Mexico	Gold	Peso‡		.498	Gold: 5 and 10 pesos. Silver: dollar § (or peso) and divisions.
Netherlands	Gold	Florin		.402	Gold: 10 florins. Silver: 2½, 1 florin and divisions.
Newfoundland	Gold	Dollar		1.014	Gold: 2 dollars ($2.028).
Norway	Gold	Crown		.268	Gold: 10 and 20 crowns.
Panama	Gold	Balboa		1.000	Gold: 1, 2½, 5, 10, and 20 balboas. Silver: peso and divisions.
Persia	Silver	Kran		.072	Gold: ½, 1, and 2 tomans ($3.409). Silver: ¼, ½, 1 2 and 5 krans
Peru	Gold	Libra		4.866½	Gold: ½ and 1 libra. Silver: sol and divisions.
Philippine Islands	Gold	Peso		.500	Silver peso: 10, 20, and 50 centavos.
Portugal	Gold	Escudo		1.080	Gold: 1, 2, 5, and 10 milreis.
Russia	Gold	Ruble		.515	Gold: 5, 7½, 10, and 15 rubles. Silver: 5, 10, 15, 20, 25, 50 and 100 copecks.
Spain	Gold	Peseta		.193	Gold: 25 pesetas. Silver: 5 pesetas.
Straits Settlements	Gold	Pound sterling¶		4.866½	Gold: sovereign (pound sterling). Silver: dollar and divisions.
Sweden	Gold	Crown		.268	Gold: 10 and 20 crowns.
Switzerland	Gold	Franc		.193	Gold: 5, 10, 20, 50, and 100 francs. Silver: 5 francs.
Turkey	Gold	Piaster		.044	Gold: 25, 50, 100, 250, and 500 piasters.
Uruguay	Gold	Peso		1.034	Gold: peso. Silver: peso and divisions.
Venezuela	Gold	Bolivar		.193	Gold: 5, 10, 20, 50, and 100 bolivars. Silver: 5 bolivars.

Note.—The coins of silver-standard countries are valued by their pure silver contents, at the average market price of silver for the three months preceding the date of this circular.

*Gold standard adopted December 31, 1908, 12½ bolivianos equal the pound sterling or Peruvian pound ($4.866½).

†The sovereign is the standard coin of India, but the rupee ($0.3244⅓) is the current coin, valued at 15 to the sovereign.

‡Seventy-five centigrams fine gold. §Value in Mexico, $0.498.

¶The current coin of the Straits Settlements is the silver dollar issued on government account and which has been given a tentative value of $0.567758⅓.

English Money.—The unit is the pound sterling or sovereign, which is equal to $4.8665 at a normal rate of exchange.

4 farthings (far.) = 1 penny (d.) equals $.0202 plus.

12 pence = 1 shilling (s.) equals $.2433 plus.

20 shillings = 1 pound (£) equals $4.8665.

Canadian Money.—The coinage system of Canada is very similar to that of the United States. Canadian currency is on a decimal scale. The unit of coinage is the dollar and decimal parts of the dollar are expressed in cents as in the United States. There are no Canadian gold coins, but those of Great Britain and the United States are in circulation.

French Money.—The money of France is on a decimal scale. The unit of value is the franc, valued at $.193 in United States money, at normal rate of exchange.

Table.—

10 millimes (ms.)	= 1 centime.....ct.
10 centimes	= 1 decime.....de.
10 decimes	= 1 franc.....fr.

German Money.—The principal units of German money are the mark and pfennig. 100 pfennig (pf.) = 1 mark (M.). The mark contains 5.5513 grains of pure gold, and is therefore equal to $.238 at normal rate of exchange.

Explanation of Leap Year.—The earth requires 365 days, 5 hours, 48 minutes, and 49.7 seconds to complete its revolution around the sun. This is a little less than 365¼ days, so by considering 3 successive years as common years of 365 days each and the fourth as a leap year of 366 days there is a gain of time. To correct this, the extra day is added to only every fourth centennial year. From the foregoing we derive the following statements for the deciding of leap years.

1. All years divisible by 4, except centennial years, are leap years.

2. All centennial years divisible by 400 are leap years.

Table of Months in the Year.—

No.	Month	Abbr.	Days.
1	January	Jan.	31
2	February	Feb.	28 or 29
3	March	Mar.	31
4	April	Apr.	30
5	May	.....	31
6	June	.....	30
7	July	.....	31
8	August	Aug.	31
9	September	Sept.	30
10	October	Oct.	31
11	November	Nov.	30
12	December	Dec.	31

Note.—The month should be known by its number.

Circular Measure.—

60 seconds of arc (″)	= 1 minute of arc (′).
60 minutes	= 1 degree.....(°).
30 degrees	= 1 sign.....S.
12 signs	= 1 circle.....Cir.
60 degrees	= 1 sextant.
90 degrees	= 1 quadrant or right angle.

Notes.—1. Minutes of the earth's circumference are nautical miles.

2. Every circle, great or small, is divisible into the same number of parts, but a division of one circle is not necessarily equal to a division of another, although it has the same name. Thus, every circle has 360 degrees, but a degree of one circle is not equal to a degree of every other circle.

MISCELLANEOUS MEASURES

Books.—The size of the page depends upon the number of times the sheet is folded. A sheet folded into—

2	leaves	making	4	pages,	is called a Folio
4	"	"	8	"	" a Quarto, or 4to.
8	"	"	16	"	" an Octavo, or 8vo.
12	"	"	24	"	" a 12mo.
16	"	"	32	"	" a 16mo.
18	"	"	36	"	" an 18mo.
24	"	"	48	"	" a 24mo.
32	"	"	64	"	" a 32mo.

1 size=⅓ inch. Used by shoemakers.

Paper Measure. Table.—

24 sheets	=1 quire....qr.
20 quires	=1 ream....rm.
2 reams	=1 bundle...bdl.
5 bundles	=1 bale.....bl.

Counting. Table.—

20 units	=1 score.
12 units	=1 dozen.....doz.
12 dozen	=1 gross.....gro.
12 gross	=1 great gr...gr. gro.

Metric System.—The Metric System is a decimal system of weights and measures, the principal unit of which is the meter.

1. The Metric System, which was first introduced in France, is required by law in South America, in parts of Asia, in nearly all European countries, and is legalized by Great Britain, Russia, and the United States.

2. The meter is a trifle less than one ten-millionth part of the distance measured on a meridian of the earth from the equator to the pole, and is equal to 39.37079, or 39.37 inches.

3. The standard meter (of which nearly every civilized nation has procured a copy) is a bar of platinum carefully preserved at Paris.

The Metric System has a number of advantages over our present system, some of which are:

1. It has only five primary units, viz: meter, square meter, cubic meter, liter, and gram.

2. Each primary unit suggests its measure.

3. It does away with the system of compound numbers.

4. As all divisions and multiplications are by 10, or based on the decimal system, it makes all computations relating to measure simpler.

5. It facilitates commerce and exchange by giving all nations a uniform system of weights and measures.

6. It is simpler, more concise, and yet, complete.

The Lower Denominations or Divisions of the primary unit are denoted by the Latin prefixes milli (1/1000), centi (1/100), and deci (1/10), while the Higher Denominations or Multiples are denoted by the Greek prefixes deka (10), hekto (100), kilo (1000), and myria (10000).

By knowing the unit of weight or measurement, it is very simple to prepare the tables, as we use the same prefixes in each case.

In the tables, the abbreviations for divisions often begin with small letters, while those for multiples begin with capital letters.

Wood Measure.—The unit is the *stere*, which is equivalent to the cu. meter.

10 Decisteres (ds.) = 1 Stere (1 cu. meter).
10 Steres (s.) = 1 Dekastere (10 cu. meters).

Reduction of Denominate Numbers.—Reduction of denominate numbers is the process of changing from one denomination to another without changing the value.

Reduction descending is the process of changing from a higher to a lower denomination. Reducing 8 bushels to quarts is an example of reduction descending.

Reduction ascending is the process of changing from a lower to a higher denomination. Reducing 93678 pounds to tons, etc., is an example of reduction ascending.

Reduction Descending.—

Example 1. Reduce 2 miles 164 rods 2 yards to feet.

Solution:

mi.	rd.	yd.
2	164	2
320		
640		
164		
804 rd.		

Solution Continued

804 rd.
5½
402
4020
2
4424 yd.
3
13272 ft.

Explanation.—Since 1 mile = 320 rods, multiply 2 by 320 and to the product add the given number of rods. Thus, 2×320 +164 = 804.

Since 1 rod = 5½ yards, multiply 804 by 5½ and then add the given number of yards. Thus, 804×5½+2 = 4424.

Since 1 yard = 3 feet, multiply 4424 by 3 to find the number of feet.

Reduction Ascending.—

Example 1. Reduce 6212 pence to higher denominations.

Solution.

12)6212d
20)517s+8d.
£25+17s.
£25 17s. 8d.

Explanation.—Since it takes 12 pence to make 1 shilling, there are as many shillings as 12 is contained times in 6212, or 517, and there is a remainder of 8. The result is 517s. 8d. The remainder has the same name as the dividend.

Since it takes 20 shillings to make 1 pound, there are as many pounds as 20 is contained times in 517, or 25, and there is a remainder of 17. The result of this division is £25 17s.

The equivalent higher denominations are £25 17s. 8d.

Addition of Compound Numbers.—

Example 1. Find the sum of 35 bu. 2 pk. 5 qt.; 29 bu. 3 pk. 7 qt.; 18 bu. 4 qt.; 19 bu. 3 pk.; and 37 bu. 1 pk. 7 qt.

Solution:

bu.	pk.	qt.
35	2	5
29	3	7
18	0	4
19	3	0
37	1	7
140	3	7

4)11 8)23
2+3 2+7

Explanation.—Write the numbers to be added, placing like denominations in the same column. Beginning at the right, add the first column. If the sum equals one or more of the next higher denomination, it must be reduced. Thus, 23 qt. equal 2 pk. and 7 qt. Write the remainder, 7 qt., under the first and carry 2 pk. to the next column. Treat each column in the same manner.

Subtraction of Compound Numbers.—Subtraction involves reduction descending.

Illustrations.

	(1)			(2)	
	5 bu.	3 pk.	6 qt.	5 T.	7 cwt. 16 lb.
	2	1	3	2	5 46
Differences	3 bu.	2 pk.	3 qt.	3 T.	1 cwt. 70 lb.

Reduce 1 cwt. of the minuend to pounds. 116 lb.−46 lb. = 70 lb.; 6 cwt.−5 cwt. = 1c wt., etc.

Multiplication of Compound Numbers. *Example*: Multiply 14 days 2 hours 21 minutes 29 seconds by 9.

Solution.

da.	hr.	min.	sec.
14	2	21	29
			9
126	21	13	21
	189	60)261	
	4		4+21
	60)193		
	3+13		

Explanation.—Write the number as indicated and multiply, beginning with the lowest denomination. If the product equals 1 or more of the next higher denomination, divide it by the number necessary to make one of that denomination. Write the remainder, if there is one, under the first column and add the quotient to the product of the second column. Treat each column in like manner.

Division of Compound Numbers.—In division of denominate numbers the divisor may be either abstract or denominate.

Illustrations. (1) Compute the cost, per yd., of 80 yd. cloth invoiced at £180.

Solution (a).

80)£180

£ 2.25 = £2 5s. (cost).

Solution and Analysis (b). The cost per yd. is evidently 1/80 of £180. 1/80 of £180 = £2 and a remainder of £20. £20 = 400s. 1/80 of 400s. = 5s. 1/80 of £180 = £2 5s.

AREAS AND VOLUMES OF VARIOUS FIGURES

Parallelograms.—The area of any parallelogram is equal to the product of its base by its altitude.

Triangles.—The area of any triangle is equal to one-half the product of its base multiplied by its altitude.

The square of the hypotenuse of a right-angle triangle is equal to the sum of the squares of the other two sides. Therefore, to find the hypotenuse when the other two sides are given, find the sum of the squares of the two sides and extract the square root. To find the side when one side and the hypotenuse are given, subtract the square of the given side from the square of the hypotenuse and extract the square root of the remainder.

Circles.—The circumference of a circle is the diameter multiplied by 3.1416. For approximate results, 3 1/7 may be used instead of 3.1416.

The circumference divided by 3.1416 equals the diameter.

The area of a circle may be found in one of three ways:

1. The circumference multiplied by one-half the radius.

2. The square of the radius multiplied by 3.1416.

3. The square of the diameter multiplied by ¼ of 3.1416 (.7854).

To find the diameter of a circle whose area is given, divide the area by ¼ of 3.1416 (.7854) and extract the square root of the quotient. To find the circumference, multiply the diameter by 3.1416.

Prism or Cylinder.—To find the volume of a prism or cylinder, multiply the area of the base by the altitude. The result will be expressed in cube units.

To find the lateral surface of a prism or cylinder, multiply the perimeter of the base by the altitude.

To find the entire surface, add the area of the lateral surfaces to the area of the two bases.

Pyramid or Cone.—To find the volume of a pyramid or of a cone, multiply the area of the base by one-third the altitude. The result will be in cube units.

To find the lateral surface of a pyramid or cone, multiply the perimeter of the base by one-half the *slant* height.

To find the entire surface, add the lateral surface to the area of the base.

TYPICAL PROBLEMS AND SOLUTIONS IN PRACTICAL MEASUREMENTS

Measures of Time.—*Example*: Find the time by compound subtraction from Oct. 17, 1919, to May 15, 1922.

Solution.

1922— 5—15	
1919—10—17	15+30−17 = 28 da.
2— 6—28	4+12−10 = 6 mo.

Explanation.—Write the later date as the minuend, the earlier as the subtrahend, and subtract as in compound numbers.

The months are represented by their numbers. Thus, May being the fifth month is represented by 5 and likewise October by 10. The years and days are written as given.

Counting back or forward from a given date.

Example 1: Count forward 183 days from Nov. 30, 1922.

Example 2: Count back 145 days from Oct. 1, 1923.

Solutions.

1.	183 da.	93 da.
	0 Nov.	31 Mar.
	183	62
	31 Dec.	30 Apr.
	152	32
	31 Jan.	31 May
	121	1 June
	28 Feb.	June 1, 1923.
	93	
2.	145 da.	Proof
	1 Oct.	
	144	31
	30 Sept.	9
	114	22 M.
	31 Aug	30 J.
	83	
	31 July	31 J.
	52	31 A.
	30 June	30 S.
	22	1 O.
		145 da.

May 31 − 22 = May 9, 1923.

Notes.— 1. In counting back, as shown above, we start with the later date and count it.

2. When the time is expressed in months, calendar months are meant. In counting back or forward a number of months from a given date the corresponding day of another month is found. Thus, 5 mo. forward from May 15 gives Oct. 15 (5th mo. + 5 = 10th mo.). Four months back from Aug. 27 is Apr. 27 (8th mo. − 4 = 4th mo.).

3. When counting calendar months forward, if there is not a corresponding day in the month to which we reckon, the last day of that month is taken. Thus, July 31 + 2 mo. = Sept. 30; Jan. 31 + 1 mo. = Feb. 28.

4. The time to be counted is often 30, 60, or 90 days. The correct dates in such cases can be found mentally by adding by 30's as follows:

(a.) The addition of 30 days to any date in a 30-day month produces the same date in the next succeeding month.

(b.) The addition of 30 days to any date (except the first) in a 31-day month produces 1 day less in the next succeeding month. By adding 30 days to the first of a 31-day month the last of that month is found. By adding 30 days to the 30th or 31st of January of a common year the 1st or 2nd of March is found, but in a leap year the same addition would bring Feb.29 or Mar. 1.

(c.) The addition of 30 days to any date in February of a common year gives a date two days later in March but only 1 day later in a leap year.

(d.) The same rules can be applied in counting back, but the date is decided by the number of days in the preceding month.

Carpeting.—Carpet is made in various widths, the more common being 27 in. and 36 in. It is sold by the yard in length regardless of its width.

In estimating the number of yards of carpet required for a room, the "strip method" is generally used. The strips are laid either lengthwise or crosswise, and as there is usually some waste in matching the pattern, it is necessary to buy more carpet than would otherwise be required to cover the floor.

Example:—How many yards of carpet 27 in. wide will be required for a room 18′ 9″ long and 16′ 4″ wide, if the strips run lengthwise and 9 inches per strip are allowed for matching?

Solution.

16′ 4″ = 196 in.

196 ÷ 27 = 7 7/27 or 8 strips.

18′ 9″ + 9″ = 19½′, length of 1 strip.

19½′ × 8 = 156′, total length.

156 ft. ÷ 3 = 52 yd. carpet.

Explanation.—Since the strips run lengthwise, each strip covers 27 inches of the width of the floor. The number of strips is found by dividing the width of the room by the width of one strip. In this case 7 strips leave uncovered a strip 7 in. wide extending the entire length of the room, to cover which an additional strip must be purchased. Every strip must be as long as the room is *long*, and since 9 in. is wasted in matching, each strip must be purchased 9 in. longer than the room, or 18′ 9″ + 9″ = 19½ ft. The entire length of carpet is found by multiplying the length of each strip by the number of strips required. The length is then reduced to yards.

Papering.—Wall paper is put up in single rolls 8 yards long and in double rolls 16 yards long. For a room of ordinary height, 5 strips can be cut from a double roll but only 2 from a single roll. Therefore, double rolls are more economical than single rolls.

American wall paper is generally 18 inches wide, and unless otherwise stated that width is used in this work. Imported papers are of various widths.

If there was no waste in papering, the number of rolls could be found by dividing the area to be papered by the area of one roll. This method is not practical, however, and paper-hangers use the method explained in the following example.

Example: How many double rolls of paper will be required for the walls of a room 24 ft. long, 19 ft. wide, and 9 ft high, if 36 ft. are deducted for the width of doors, windows, mantels, etc.?

Perimeter of room = 24 × 2 = 48 ft. + 19 × 2 = 38 ft. = 86 ft.

86′ − 36′ = 50 feet of wall to be papered

1 strip of paper is 18 in. or 1½ ft. wide.
50÷1 1/2=50×2/3=100/3=33 1/3 or 34 strips required.
Each roll=16 yd.=48 ft. long.
Each strip must be 9 ft., the height of the room.
48÷9=5 1/3 or 5 strips from 1 roll.
34÷5=6 4/5 or 7 rolls required.

Finding the Number of Board Feet.—When lumber is 1 inch or less in thickness, to find the number of board feet, *multiply the length in feet by the width in inches and divide the product by 12.*

Note—When the width is given in feet it is not necessary to divide by 12.

When more than 1 inch thick, *multiply the length in feet by the width and thickness in inches and divide by 12.*

In measuring inch material, every inch of the width of a board 12 ft. long is a board foot. This is often taken as a basis of measurement in selling lumber at the yard. When the length is uniform but the boards are of various widths, the entire width of the boards is measured and from this the correct number of board feet can readily be found. Thus, if the boards are 15 ft. long, every inch of the width is 1 1/4 bd. ft.; if 16 ft. long and 2 in. thick, every inch of the width is 1 1/3×2 or 2 2/3 board feet.

A pile of lumber can be measured by finding the number of cubic feet and then, by multiplying by 12, the number of board feet can be found.

Hewn or round timber is sometimes measured by cubic measure.

Example 1. How many board feet are there in a board 15 ft. long, 8 in. wide, and 1 in. thick?

Solution:
15×8=120
120÷12=10=10 bd. ft.

Or, by cancellation,

$$\frac{\cancel{15}^{5}\times\cancel{8}^{2}}{\cancel{12}_{1}}=10 \text{ bd. ft.}$$

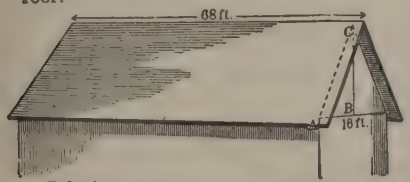
Example 2. How many feet, board measure, are there in a plank 15 ft. long, 10 in. wide, and 2 in. thick?

Solution:
15×10×2=300
300÷12=25=25 bd. ft.

Or, by cancellation,

$$\frac{\cancel{15}^{5}\times\cancel{10}^{5}\times\cancel{2}}{\cancel{12}_{1}\ \cancel{2}_{1}}=25 \text{ bd. ft.}$$

The accompanying diagram represents the roof of a shed 16 ft. wide. If the ridgepole is 68 ft., the pitch of the roof one half, and the projection of the rafters 18 in., how many shingles 16 in. long, laid 4½ in. to the weather, will be required to cover the roof?



Solution:
½ of 16 ft.=8 ft.=the base of the triangle *ABC*.

The pitch of the roof is ½; ½ of 16 ft.=8 ft.=the altitude of the triangle *ABC*. $8^2+8^2=128$; $128^{\frac{1}{2}}=11.31$, number of feet in the hypotenuse of *ABC*.

18 in.=1.5 ft.; 11.31 ft.+1.5 ft.=12.81 ft.=the length of the rafters or the width of each side of the roof.

2×68×12.81 ft.=1742.16 sq. ft.=the entire surface of the roof.

1742.16 sq. ft.=17.4216 squares; 17.4216×800 shingles=13937 shingles.

As bundles of shingles are not broken it will be necessary to buy 14000 shingles.

Excavation.—*Example:* Find the cost of digging a cellar 30 ft. long, 24 ft. wide, and 7½ ft. deep, at 21c per cubic yard.

Solution:
30×24×7½=5400 cu. ft.
5400÷27 = 200 cu. yd.
200 cu. yd. @ 21c.=$42.00

Or, by cancellation,

$$\frac{\cancel{10}\ \ \cancel{30}^{10}\times\cancel{24}^{4}\times\cancel{15}^{5}\times 21}{\cancel{27}_{1}\ \cancel{2}_{1}}=4200=\$42.00$$

Explanation.—The product of length, breadth, and thickness is the number of cubic feet of earth to be thrown out in digging the cellar. Reduce the cubic feet to cubic yards by dividing by 27 and then multiply by the price per cubic yard.

In the solution by cancellation, all multipliers are written above the line and all divisors below the line.

Cylindrical.—How many gallons will fill a cylindrical tank 4 ft. in diameter and 12 ft. deep?

Solution:

4	192
4	5 7/8
16	168
12	960
192	1128=1128 gal.

Explanation.—Every unit of the capacity of a cylinder found by squaring the diameter and multiplying by the height is .7854 of a cubic foot. Since a cubic foot holds 7.48 gal., a unit of the cylinder holds .7854 of 7.48 gal.=5.87479 or 5 7/8 gal.

PERCENTAGE

Use.—Nearly all of the fractional relations in business are expressed in per cent. Percentage has a very wide and varied application in the different business activities. The business man is more likely to talk of per cents than of fractional parts.

Definition.—Per cent are two words derived from the Latin per centum, meaning by the hundred or hundredths. Percentage is, therefore a name applied to calculations in which fractional parts of a hundred are used as the basis. It is clear, therefore, that percentage is simply a special application of decimal fractions in which the indicated denominator is always 100.

Terms Used in Percentage:—

BASE. The number of which a number of hundredths or per cents are taken is called the base.

Example: 8% of 300=24. 300 is the base.

RATE is the number of per cents or hundredths taken. In the above example, 8 is the rate.

PERCENTAGE is the product of the rate times the base. In the above example, 24 is the percentage.

The AMOUNT is the sum of the base and the percentage.

The DIFFERENCE is the base minus the percentage.

Aliquot Parts and Percentage.—Since the indicated denominator is always 100 in percentage, it is frequently possible and advantageous to make use of the aliquot parts of 100 when working percentage. Care must be exercised in placing the decimal point in the result.

PROBLEMS IN PERCENTAGE are solved in accordance with the fundamental processes in handling decimal fractions. These problems may be grouped under these three headings:

1. Rate×base=percentage,
   Then, transposing,
2. Percentage÷base=rate
   And
3. Percentage÷rate=base.

To find the percentage:

When the base and rate are given and the percentage is to be found, express the rate as a decimal and multiply the base by it.

Example: Find 6% of $400.00.
6%=.06. Therefore, 6% of $400.00=.06×$400.00=$24.

To find the rate:

When the base and percentage are given and the rate is to be found, divide the percentage by the base.

Example: $24 is what per cent of $400?
$24÷$400=.06 or 6%

To find the base:

When the percentage and the rate are given and the base is to be found, express the rate as a decimal and divide the percentage by it, or divide the percentage by the rate to find 1% and multiply the quotient by 100 to find 100%.

Example: If a sum of money invested at 6% produces $24, what is the sum invested?
6%=.06 $24÷.06=$400.
OR
$24÷6=$4=1%
100%, the amount, =100×$4=$400.

Per cents of increase:

When the amount and the rate of increase are given and the base is to be found, divide the amount by the sum of the rate and 100% expressed as decimals.

Example: A merchant sold a hat for $8 and thereby gained 33 1/3%. What was the cost of the hat?
33 1/3%=.33 1/3
1.00 plus .33 1/3=1.33 1/3
$8.00÷1.33 1/3=$6.00, the cost.

When the rate is an aliquot part of $1.00, the solution is frequently easier by fractions.
33 1/3%=1/3 1 plus 1/3=4/3
4/3=$8, then 1/3=$2 and 3/3=$6.

Per cents of decrease:

When the difference and the rate are given and it is required to find the base, subtract the rate from 100% and divide the given difference by the difference in per cent expressed as a decimal OR divide the given difference by the difference in per cent to find 1% and then multiply the quotient by 100 to find 100%.

Example: A man sold his automobile for $600 and thereby lost 20%. What was the cost of the automobile?
100%−20%=80%=.80
$600.00÷.80=$750
OR
$600÷80%=$7.50=1%
100%=100×$7.50=$750.

In this case, as in the case of per cents of increase, the work may be simplified by the use of common fractions.

DISCOUNTS

A discount is an amount deducted from a sum owing. Discounts may be trade discounts (sometimes called commercial discounts) or cash discounts (sometimes called time discounts). The amount of a discount is usually indicated by a rate per cent.

A trade or commercial discount is an amount deducted from the list price of an article. Manufacturers and wholesalers publish price lists and catalogs at great expense. To avoid issuing a new catalog with every fluctuation of the market, they

issue discount sheets which show the discounts to which the prices in the catalog are subject. Trade discounts may also vary upon the size of the order, the desirability of the customer, etc. These variations are frequently expressed by two or more discounts called a DISCOUNT SERIES. When two or more discounts are quoted, one denotes a discount off of the list price; another, a discount off of the remainder; another, a discount off of that remainder, etc. It is immaterial in what order the discounts are deducted, as will be found by deducting a series in different order.

A cash or time discount is an allowance made for the payment of the bill in less time than allowed by the terms of the sale. These discounts are expressed upon the invoice in the following form: 5/10, 2/30, n/60 and are read, "five per cent off in ten days, two per cent off in thirty days, net in sixty days".

It will be evident that the amount of the commercial discount is determined by the quotation, while the amount of the cash discount is determined by the time of payment.

The amount of the invoice before any deductions are made is termed the GROSS AMOUNT. The amount of the invoice after deducting the discounts is termed the NET AMOUNT.

To find the net amount when the price is subject to trade discount:

(a) When there is only one discount:

Find the percentage and subtract from the price.

\$48 less 12 1/2% = \$48 × .12 1/2 = \$48 × 1/8 = \$6.

\$48 − \$6 = \$42 the net price.

(b) When the discount is expressed in a series:

\$50 less 25% and 20%

\$50 less 20% = \$40 and \$40 less 25% = \$30, the net amount.

OR

\$50 less 25% = \$37.50 and \$37.50 less 20% = \$30, the net amount. (It is evident that the work is rendered easier by selecting the order in which the discounts are deducted.)

(c) Finding a single rate of discount equivalent to a series of two discounts:

(1) Add the discounts;

(2) Multiply the discounts;

(3) Subtract the product (2) from their sum (1), and the result will be a single discount equivalent to the two. When there are three or more discounts, the first two may be combined as above and then this result and the third combined, etc.

Example: A certain article is sold subject to 25%, 20% and 20% off. The work may be simplified by finding a single discount equivalent to the series: Mentally find an equivalent discount for the first two (25% plus 20% minus 5%, the product, equals 40%). Now mentally combine this equivalent and the last rate of the series (40% plus 20% minus 8% equals 52%, the single equivalent of the series).

Finding the cash discount:

The cash discount is deducted from the invoice after the trade discounts have been deducted. Determine from the date of payment what discount is applicable and find this amount of the invoice.

Example: An invoice dated March 10 for \$2500 is subject to the following terms: 5/10, 2½/30, n/60. Find the net amount to be paid on March 18. Since it is to be paid within ten days, deduct 5%. 5% of \$2500 = \$125. \$2500 − \$125 = \$2375, the net amount.

PROFIT AND LOSS

Profit and Loss is one of the business applications of percentage. In these problems, the base is either the cost or the selling price. The percentage is the profit or loss. The rate is the rate of profit or loss. When the cost is taken as the base:

To find the selling price, add the profit to the cost, or subtract the loss from the cost.

To find the rate of profit or loss, find the profit or loss and then find how many per cent of the cost this is.

To find the cost when the selling price and the rate of profit are given, add the rate of profit to 100% and divide the selling price by this sum expressed as a decimal.

To find the cost when the selling price and the rate of loss are given, subtract the rate of loss from 100% and divide the selling price by the remainder expressed as a decimal.

Buying by the dozen and selling by the unit.

This kind of problem is of frequent occurrence in business.

The following table gives a short method to find the selling price per unit when the purchasing price is by the dozen and the profit is at a certain rate. Other rates of profit may be solved in the same way but the fractions are complicated.

Rate of Profit	Number of places to left decimal point is moved in cost per dozen	Fractional part of the result to be added
20%	1 place	0
25%	1 "	1/24
30%	1 "	1/12
33 1/3%	1 "	1/9
35%	1 "	1/8
40%	1 "	1/6
50%	1 "	1/4
60%	1 "	1/3
80%	1 "	1/2

Example: Hammers are bought for \$18 a dozen. What must be the selling price per hammer to gain 40%? From the table, \$2.10.

Proof: The cost of each hammer is $\frac{\$18}{12}$

The selling price is $1.4 \times \frac{18}{12} = \frac{1.4}{12} \times 18 = \frac{14}{12} \times 1.8 = (1 \text{ plus } 1/6) \times 1.8$.

MARKING GOODS

In large mercantile establishments, it is necessary to have both the price and cost marked upon each article. In order that this information may not come into the hands of those who should not have it, these prices are written in letters or characters. The following are examples of such schemes:

Cost Key

S I L K T H R E A D 3 2 5

1 2 3 4 5 6 7 8 9 0 L I T

Repeaters X and Y

Selling Price Key

P U R C H A S E N O W

1 2 3 4 5 6 7 8 9 0 Repeater 5.00 H O W

COMMISSION AND BROKERAGE

Use.—A large part of business is carried on through agents, brokers and factors. This is particularly true in the case of insurance, real estate, stocks and bonds, and certain classes of merchandise.

Definitions.—An AGENT, FACTOR, BROKER, or COMMISSION MERCHANT is one who transacts business for the account of another. The person or company for whom the business is transacted is called the PRINCIPAL.

The compensation paid to the agent or broker is called the COMMISSION or BROKERAGE. The commission is usually a certain per cent of the amount involved in the transaction, or a certain amount per unit handled. Commission merchants frequently make an additional charge for assuming some special risk in connection with the transaction; such as the quality of the goods, collection of the accounts, etc.

The goods sent to an agent is called a CONSIGNMENT. Sometimes the sender of the goods calls it a SHIPMENT and the agent calls it a CONSIGNMENT.

The person sending the goods is called the CONSIGNOR or SHIPPER; the one to whom they are sent is called the CONSIGNEE.

The statement rendered to the principal by the agent is called an ACCOUNT SALES in the case of a sale of goods and an ACCOUNT PURCHASE in the case of a purchase. The statements contain an account of the gross amount involved and the expenses and commission.

In the sale of goods, the GROSS PROCEEDS is the total amount received by the agent and the NET PROCEEDS is the amount received less the expenses and commissions. In the purchase of goods, the NET PRICE is the amount the agent actually pays for the goods and the GROSS PRICE is the amount after all expenses and commissions have been added.

Problems in commission and brokerage are merely special applications of percentage as the following comparison of terms will show.

The *sales price*, or the *purchase price*, is the *base* in percentage.

The *rate of commission* is the *rate* in percentage.

The *commission* is the *percentage*.

ACCOUNT SALES

Chicago, Ill., March 18, 1922

Sold for the account of Greenwood & Co.

By C. H. BAIR AND COMPANY

March	8	300 bbl. Flour	\$8.00			\$2400	00
	15	200 bbl. Pastry Flour	9.00			1800	00
		CHARGES					
March	7	Freight and Drayage		\$ 50	25		
	15	Commission 5%		210	00		
	16	Proceeds remitted		3939	75		
				\$4200	00	\$4200	00

ACCOUNT PURCHASE

Baltimore, Md., March 18, 1922

Purchased by **FRANCE AND BARRETT**
Commission Merchants

For the account and risk of Archer and Roe,
York, Pa.

100 boxes Oranges	$6.50	$650 00	
100 boxes Lemons	6.00	600 00	$1250 00
CHARGES			
Freight		$25 50	
Drayage		10 00	
Commission 2%		25 00	60 50
Amount charged to your account			$1310 50

The *gross cost* in the account purchase is the *amount* in *percentage*.

The *net proceeds* in the account sales is the *difference* in percentage.

TO FIND THE COMMISSION when the rate and price are given. This is the same as the problem of finding the percentage when the base and rate are given. Thus, if the selling or buying price is $2000 and the rate of commission is 5% the commission is 5% of $2000 or $100.

TO FIND THE NET PROCEEDS when the selling price and the rate of commission are given. This is the same as the problem of finding the difference when the base and rate are given. Thus, if the selling price is $2000 and the rate of commission is 5%, the net proceeds is $2000 − $100 = $1900.

TO FIND THE GROSS PRICE (the total sales or purchases) when the rate and commission are given. This is the same as the problem of finding the base when the rate and the percentage are given. Thus, if the commission is $100 and the rate is 5%, 1% equals $20 and 100% equals $2000.

TO FIND THE NET PRICE IN BUYING when the gross price and the rate of commission are given. This is the same as the problem of finding the base when the rate and amount are given. $2100 ÷ 105% = $20 or 1%; 100% = $2000.

It will be noticed that the commission is always computed upon the total amount of the sales or purchases.

SIMPLE INTEREST

Use.—Interest is the most common of all the applications of percentage. At one time or another, practically every one needs to figure interest. In business the problem of interest is of frequent occurrence and in the banking business it is in constant use.

Definitions.—INTEREST is the amount paid as compensation for the use of money. A man borrows $100 for a year and at the end of the year he must pay back $106. The extra $6 is paid for the use of the $100 for one year and is called interest.

The PRINCIPAL is the amount on which the interest is paid.

The AMOUNT is the principal plus the interest.

The RATE OF INTEREST is the percentage of the principal which is paid for the use of the principal for one year.

Since the rate of interest is nearly always expressed in terms of one year, the time is an important element in computing interest.

When the time is one year, problems in interest are problems of ordinary percentage, and

(*a*) The principal is the base;

(*b*) The rate of interest is the rate of percentage;

(*c*) The interest is the percentage;

(*d*) The amount is the same in both cases.

When the time is more than one year the interest is the interest for one year multiplied by the number of years. Thus, the interest on $100 for two years is 2×$6 or $12.

When the time is less than one year the interest is the interest for one year multiplied by the fractional part of a year. Thus, the interest on $100 for six months is ½ of $6, or $3.

The legal and maximum rates of interest in the different states are determined by the laws of the different states. The legal rate of interest is the rate charged when no rate is agreed upon between the parties. The maximum rate is the highest rate allowed by law. A binding contract to pay more than the maximum rate of interest cannot be made. Charging more than the maximum rate of interest is called usury and is penalized in most of the states. The following table shows the legal and maximum rates of interest in the different states:

	Legal rate	Maximum rate
Alabama	8	8
Alaska	8	12
Arizona	6	10
Arkansas	6	10
California	7	any
Colorado	8	any
Connecticut	6	6
Delaware	6	6
District of Columbia	6	10
Florida	8	10
Georgia	7	8
Idaho	7	12
Illinois	5	7
Indiana	6	8
Iowa	6	8
Kansas	6	10
Kentucky	6	6
Louisiana	5	8
Maine	6	any
Maryland	6	6
Massachusetts	6	any
Michigan	5	7
Minnesota	7	10
Mississippi	6	8
Missouri	6	8
Montana	8	12
Nebraska	7	10
Nevada	7	12
New Hampshire	6	6
New Jersey	6	6
New Mexico	6	12
*New York	6	6
North Carolina	6	6
North Dakota	6	10
Ohio	6	8
Oklahoma	6	10
Oregon	6	10
Pennsylvania	6	6
Rhode Island	6	any
South Carolina	7	8
South Dakota	7	12
Tennessee	6	6
Texas	6	10
Utah	8	12
Vermont	6	any
Virginia	6	6
Washington	6	12
West Virginia	6	6
Wisconsin	6	10
Wyoming	8	12

*Corporations may contract to pay any rate of interest and any rate may be charged on call loans of $5000 and upwards.

Kinds of Interest.—The following kinds of interest will be discussed: Ordinary or commercial year interest, accurate interest, and compound interest.

Ordinary or commercial year interest is computed on a 360-day year basis.

Methods of Computing Ordinary Interest.—The most widely used method of computing interest for commercial purposes is what is known as the Bankers' Sixty-Day Method. It is based upon the 360-day year, 12 months of 30 days each, at 6%. Since the rate of interest for one year is 6%, the rate for 60 days or two months is 1% and the interest for six days is .1%. The work can therefore be simplified by working upon the basis of sixty days and aliquot parts of sixty days. Moving the decimal point two places to the left in the principal (which is the same as multiplying the principal by 1%) will give the interest for two months or sixty days; moving the decimal point three places to the left will give the interest for six days, and moving the decimal point one place to the left will give the interest for six hundred days at 6%.

Example 1. Find the interest on $1950 for three months at 6%.

$19 50	interest for two months
9 75	interest for one month (½ of two months)
$29 25	interest for three months (sum of two months and one month)

Example 2. Find the interest on $1250 for five months twenty days at 6%.

$12 50	interest for two months
25 00	interest for four months
6 25	interest for one month
4 166	interest for 20 days
$35 42	interest for five months and twenty days.

Example 3. Find the interest on $1396 for 46 days at 6%.

$ 1 396	interest for 6 days
9 772	interest for 42 days (7×6 days)
931	interest for 4 days (2/3 of 6 days)
$10 703	interest for 46 days at 6%.

OR (Working with a different combination of days also constitutes a check on the work).

$13 96	interest for 60 days
6 98	interest for 30 days (½ of 60)
3 49	interest for 15 days (½ of 30)
2326	interest for 1 day (1/30 of 30 days)
$10 7026	interest for 46 days.

Example 4. Find the interest on $4240 for 93 days at 6%.

$42|40 interest for 60 days
21|20 interest for 30 days
2|12 interest for 3 days
$65|72 interest for 93 days

Example 5. Find the interest on $2440 for 1 yr. 7 mo. 6 days at 6%.

$244|00 interest for 20 mo. or 600 days
12|20 interest for 1 month
231|80 interest for 19 months, 1 yr. 7 mo.
2|44 interest for 6 days
$234|24 interest for 1 year 7 months 6 days at 6%.

Interchanging Time and Principal.—It is sometimes possible to shorten the work a great deal by interchanging the time and the principal. This is particularly true where the interest is to be computed upon even hundreds of dollars at an odd number of days; e. g., $2400 for 117 days at 6%. The interest on $2400 for 117 days at 6% is the same as the interest of $117 for 2400 days at 6%.

$24|00 interest on $2400 for 60 days at 6%
48|00 interest on $2400 for 120 days at 6%
1|20 interest on $2400 for 3 days at 6%
$46|80 interest on $2400 for 117 days at 6%

Interchanging principal and time:
($117 for 2400 days at 6%)
$11|70 interest for 600 days
$46|80 interest for 2400 days (4×600 days)

To Find the Interest at Any Rate per Cent.—First find the interest for the given time at 6%. Divide this interest by 6 to find the interest at 1% and then multiply the interest at 1% by the given rate

Example: The interest on $60 for 36 days at 6% is 36c; the interest for the same time at 1% is 6c. The interest at 5% is 5×6c; at 7% it is 7×6c; etc.

The work may be somewhat simplified in the common rates of interest as follows:

Interest at 6% decreased by:
1/8 of itself equals 5¼% interest
1/12 of itself equals 5½% interest
1/6 of itself equals 5% interest
1/4 of itself equals 4½% interest
1/3 of itself equals 4% interest

Interest at 6% divided by:
2 equals the interest at 3%
3 equals the interest at 2%
6 equals the interest at 1%

Interest at 6% increased by:
1/12 of itself equals 6½% interest
1/8 of itself equals 6¾% interest
1/6 of itself equals 7% interest
1/4 of itself equals 7½% interest
1/3 of itself equals 8% interest
1/2 of itself equals 9% interest

Interest at 6% multiplied by 2 equals the interest at 12%.

The work can frequently be simplified and shortened by applying the above increases and decreases to the principal or time, since if either the principal or the time be increased or decreased by any fraction of itself, the interest is increased or decreased by the same fraction. *Example:* Find the interest on $480 for 77 days at 4½%. Since 4½% is ¼ less than 6%, decrease the principal by ¼ of itself and the result is $360. Interchanging principal and time, the problem is the interest on $77 for 360 days at 6%. The interest for 60 days is 77c and for 360 days, 6×77c, or $4.62.

Pointing Off for Rates Other Than 6%.—Pointing off two places in the principal will give the interest at the rates and for the time as follows:

At 1% for one year
2% for six months or 180 days
3% for four months or 120 days
4% for three months or 90 days
4½% for 80 days
5% for 72 days
7½% for 48 days
8% for 45 days
9% for 40 days
10% for 36 days
12% for 30 days

It is not necessary to remember these figures as they can easily be found as follows: 4% is 2/3 of 6%. To earn 1c it will take as many days as 60÷2/3=3/2×60=90.

The Six per Cent Method.—This method is very satisfactory when the tme is one year, or more than one year.

Method:
Multiply the number of years by $0.06
Multiply the number of months by $0.005
Multiply the number of days by $0.000 1/6
Find the sum of these products and multiply the principal by the sum.

Example: Find the interest on $250 for 1 year 8 months 15 days at 6%.

$0.06 interest on $1 for 1 year.
.04 interest on $1 for 8 months.
.0025 interest on $1 for 15 days.
$0.1025 interest on $1 for entire time.
250×$0.1025=$25.63 the required interest.

For rates other than 6% proceed as in the Banker's 60-Day Method.

Calculating Interest by Use of Interest Tables.—In banks and banking houses where a large portion of the work consists of interest computations, tables are employed to lessen the labor, speed up the work, and reduce the probability of error. The following is a sample page of such a table.

INTEREST TABLE AT 6%.

TIME	$1	$2	$3	$4	$5	$6	$7	$8	$9	$10	TIME
1 da.	.00017	.00033	.0005	.00067	.00083	.001	.00117	.00133	.0015	.00167	1 da.
2 da.	.00033	.00067	.001	.00133	.00167	.002	.00233	.00267	.003	.00333	2 da.
3 da.	.0005	.001	.0015	.002	.0025	.003	.0035	.004	.0045	.005	3 da.
4 da.	.00067	.00133	.002	.00267	.00333	.004	.00467	.00533	.006	.00667	4 da.
5 da.	.00083	.00167	.0025	.00333	.00417	.005	.00583	.00667	.0075	.00833	5 da.
6 da.	.001	.002	.003	.004	.005	.006	.007	.008	.009	.001	6 da.
7 da.	.00117	.00233	.0035	.00467	.00583	.007	.00817	.00933	.0105	.01167	7 da.
8 da.	.00133	.00267	.004	.00533	.00667	.008	.00933	.01067	.012	.0133	8 da.
9 da.	.0015	.003	.0045	.00667	.0075	.009	.0105	.012	.0135	.015	9 da.
10 da.	.00167	.00333	.005	.00667	.00833	.01	.01167	.01333	.015	.01667	10 da.
20 da.	.00333	.00667	.01	.01333	.01667	.02	.02333	.02667	.03	.03333	20 da.
1 mo.	.005	.01	.015	.02	.025	.03	.035	.04	.045	.05	1 mo.
2 mo.	.01	.02	.03	.04	.05	.06	.07	.08	.09	.10	2 mo.
3 mo.	.015	.03	.045	.06	.075	.09	.105	.12	.135	.15	3 mo.
4 mo.	.02	.04	.06	.08	.10	.12	.14	.16	.18	.20	4 mo.
5 mo.	.025	.05	.075	.10	.125	.15	.175	.20	.225	.25	5 mo.
6 mo.	.03	.06	.09	.12	.15	.18	.21	.24	.27	.30	6 mo.
7 mo.	.035	.07	.105	.14	.175	.21	.245	.28	.315	.35	7 mo.
8 mo.	.04	.08	.12	.16	.20	.24	.28	.32	.36	.40	8 mo.
9 mo.	.045	.09	.135	.18	.225	.27	.315	.36	.405	.45	9 mo
10 mo.	.05	.10	.15	.20	.25	.30	.35	40	.45	.50	10 mo.
11 mo.	.055	.11	.165	.22	.275	.33	.385	44	.495	.55	11 mo.
1 yr.	.06	.12	.18	.24	.30	.36	.42	48	.54	.60	1 yr.
2 yr.	.12	.24	.36	.48	.60	.72	.84	.96	1.08	1.20	2 yr.

Example: Find the interest on $7560 for 9 days at 6%.

From the table:
$10.50=interest of $7000 for 9 days
.75=interest on $500 for 9 days
.09=interest on $60 for 9 days
$11.34=interest on $7560 for 9 days.

Accurate or Exact Interest.—Exact interest is based upon a year of 365 days and when the exact number of days between dates is taken. Exact interest is used by the United States Government and sometimes by bankers and city and state governments when the sum involved is very large.

Problems in exact interest can be solved best by the cancellation method using this formula: $\frac{\text{rate}\times\text{days}\times\text{principal}}{365}$ = exact interest. Exact interest may also be found by computing the interest in the usual way for the 360-day year and from the interest so obtained taking 1/73 of itself. Accurate or exact interest may be changed to ordinary interest by adding 1/72 of itself.

The Cancellation Method of Figuring Interest.—Since the interest equals the principal×rate×time, the problem may be solved by expressing the time as a fractional part of a year and using cancellation. This method is sometimes very advantageous. It is applicable to any rate and to either ordinary or accurate interest.

Example: Find the accurate interest on $1850 at 5% for 50 days.

$$\frac{\$1850\times\frac{1}{20}\times\frac{50}{365}}{100\times\frac{365}{73}}=\frac{925}{73}=\$12.67$$

COMPOUND INTEREST.

Compound interest is the interest computed at regular intervals on the sum of the principal and the unpaid interest. Interest may be compounded annually, semi-annually, or quarterly. Interest may be compounded monthly, but this is unusual. Compound interest cannot be collected at law but when it is accepted it does not constitute usury. Compound interest is allowed by savings banks and used by insurance companies in computing premiums. It is also used in computing sinking funds, etc.

Example: Find the compound interest on $100 at 5% for three years compounded annually.

$5.00=interest for the first year
105.00=amount at end of first year—new principal
5.25=interest for the second year
110.25=amount at the end of second year—new principal
5.51=interest for the third year
115.76=amount at the end of the third year
$115.76−$100=$15.76 the compound interest

Business institutions having compound interest to compute use a table of which the following is a sample page:

COMPOUND INTEREST TABLE.

Showing the amount of $1.00 for any number of periods up to 25, at the given rates.

No. Period	Rate Per Period									
	1%	1½%	2%	2½%	3%	3½%	4%	4½%	5%	6%
1	1.010000	1.005000	1.020000	1.025000	1.030000	1.035000	1.040000	1.045000	1.050000	1.060000
2	1.020100	1.030225	1.040400	1.050625	1.060900	1.071225	1.081600	1.092025	1.102500	1.123600
3	1.030301	1.045678	1.061208	1.076891	1.092727	1.108718	1.124864	1.141166	1.157625	1.191016
4	1.040604	1.061364	1.082432	1.103813	1.125509	1.147523	1.169859	1.192519	1.215506	1.262477
5	1.051010	1.077284	1.104081	1.131408	1.159274	1.187686	1.216653	1.246182	1.276282	1.338226
6	1.061520	1.093443	1.126162	1.159693	1.194052	1.229255	1.265319	1.302260	1.340096	1.418519
7	1.072135	1.109845	1.148686	1.188686	1.229874	1.272279	1.315932	1.360862	1.407100	1.503630
8	1.082857	1.126493	1.171659	1.218403	1.266770	1.316809	1.368569	1.422101	1.477455	1.593848
9	1.093685	1.143390	1.195093	1.248863	1.304773	1.362897	1.423312	1.486095	1.551328	1.689479
10	1.104622	1.160541	1.218994	1.280085	1.343916	1.410599	1.480244	1.552969	1.628895	1.790848
11	1.115668	1.177949	1.243374	1.312087	1.384234	1.459970	1.539454	1.622853	1.710339	1.898299
12	1.126825	1.195618	1.268242	1.344889	1.425761	1.511069	1.601032	1.695881	1.795856	2.012197
13	1.138093	1.213552	1.293607	1.378511	1.468534	1.563956	1.665074	1.772196	1.885649	2.132928
14	1.149474	1.231756	1.319479	1.412974	1.512590	1.618695	1.731676	1.851945	1.979932	2.260904
15	1.160969	1.250232	1.345868	1.448298	1.557967	1.675349	1.800944	1.935282	2.078928	2.396558
16	1.172579	1.268986	1.372786	1.484506	1.604706	1.733986	1.872981	2.022370	2.182875	2.540352
17	1.184304	1.288020	1.400241	1.521618	1.652848	1.794676	1.947901	2.113377	2.292018	2.692773
18	1.196148	1.307341	1.428246	1.559659	1.702433	1.857489	2.025817	2.208479	2.406619	2.854339
19	1.208109	1.326951	1.456811	1.598650	1.753506	1.922501	2.106849	2.307860	2.526950	3.025600
20	1.220190	1.346855	1.485947	1.638616	1.806111	1.989789	2.191123	2.411714	2.653298	3.207136
21	1.232392	1.367058	1.515666	1.679582	1.860295	2.059431	2.278768	2.520241	2.785963	3.399564
22	1.244716	1.387564	1.545980	1.721571	1.916103	2.131512	2.369919	2.633652	2.925261	3.603537
23	1.257163	1.408377	1.576899	1.764611	1.973587	2.206114	2.464716	2.752166	3.071524	3.819750
24	1.269735	1.429503	1.608437	1.808726	2.032794	2.283328	2.563304	2.876014	3.225100	4.048935
25	1.282432	1.450945	1.640606	1.853944	2.093778	2.363245	2.665836	3.005434	3.386355	4.291871

Solving the preceding example by the table, we find that $1 will amount to $1.157625 in three years. $100 will therefore amount to $115.76 and the compound interest is $15.76.

Sinking Funds.—A sinking fund is a fund set aside out of assets at regular intervals and accumulating interest for the purpose of paying off bonds or other obligations, replacing machinery, buildings or other assets. A state or city has an issue of bonds which mature in a certain time. It wishes to accumulate a fund by setting aside a certain amount periodically in order that it may have the money to pay off the bonds when they mature. A business wishes to accumulate a fund for the purpose of replacing dynamos or other machinery. Such funds are called sinking funds.

In the following table is shown the sum to which $1, paid at the beginning of each year, will increase at certain rates of compound interest in any number of years not exceeding twenty.

Yr.	2%	4%	4½%
1	1.020000	1.040000	1.045000
2	2.060400	2.121600	2.137025
3	3.121608	3.246464	3.278191
4	4.204040	4.416322	4.470709
5	5.308120	5.632975	5.716891
6	6.434283	6.898294	7.019151
7	7.582969	8.214226	8.380013
8	8.754628	9.582795	9.802114
9	9.949721	11.006107	11.288209
10	11.168715	12.486351	12.841178
11	12.412089	14.025805	14.464031
12	13.680331	15.626837	16.159913
13	14.973938	17.291911	17.932109
14	16.293416	19.023587	19.784054
15	17.639285	20.824531	21.719336
16	19.012070	22.697512	23.741706
17	20.412312	24.645412	25.855083
18	21.840558	26.671229	28.063562
19	23.297369	28.778078	30.371432
20	24.783317	30.969201	32.783136

To Find the Rate of Interest.—It frequently happens that a man investing money in a venture and making a certain profit, wishes to know what rate of interest he has realized on the transaction. *Example:* A man invested $1800 and in six months he had closed out the transaction and taken a profit of $108. What rate of interest did he make on the investment? Since six months are one-half of a year, the profit for a year at the same rate would have been $216 and this is 12% on $1800. For methods of finding this rate refer to method of finding rate of percentage.

To Find the Time When the Principal, Rate and Interest Are Given.—Divide the interest by the interest for one year. This problem does not occur frequently in business.

To Find the Principal When the Rate, Time and Amount Are Given.—Find the amount of $1 for the given time and rate and divide the given amount by it.

Example: Find the principal when the amount in three months at 6% is $2436.00. The interest on $1 for three months at 6% is $0.015 and the amount is $1.015. $2436.00 ÷ $1.015 = $2400.00, the principal.

A certificate of deposit is a negotiable instrument in which a bank certifies that the person named in the instrument has deposited the sum of money named. This money is payable to the person named or his order on the surrender of the certificate of deposit properly indorsed. The money so deposited is not subject to checks.

When a person has a negotiable instrument in his possession he is called the HOLDER. He may transfer it to another by delivery if it is made payable to bearer. If it is drawn to the order of the payee, he may transfer it by INDORSEMENT. An indorsement is any writing on the back of the instrument. Indorsements for the purpose of transferring the instrument are BLANK INDORSEMENTS, FULL OR SPECIAL INDORSEMENTS, or QUALIFIED INDORSEMENTS.

A Blank Indorsement is simply the signature of the holder.

A Full Indorsement is one which names the person to whom it is to be paid; e. g., "Pay to the order of J. G. Smith".

A Qualified Indorsement is one which limits the liability of the indorser by inserting the words, "Without Recourse".

In case of partial payments on a note, a record of the payment is indorsed on the note; e. g., Received on within note:

Jan. 6, 1922..... $500.00
May 15, 1922..... 300.00
June 7, 1922..... 200.00

A negotiable instrument which is not paid or accepted (as the case may be) when presented, is said to be DISHONORED.

Protest is a formal declaration made by a notary public certifying to the presentment, demand and dishonor of a negotiable instrument. It is used for the purpose of proving the proper handling of the instrument to protect the interests of the indorsers. It is required by law upon drafts drawn in one state and payable in another.

Days of Grace are three extra days beyond the due date allowed for the payment of negotiable instruments. Days of Grace have been abolished in all except a few of the states.

Bank Discount is a deduction made from the amount due at maturity on notes and drafts because they are cashed before maturity. It is the interest on the amount due at maturity and collected in advance for the time from the date of discount to the date of maturity.

The Term of Discount is the time from the date of discount to the maturity of the instrument. Banks always count the exact number of days.

The proceeds is the difference between the amount due at maturity and the discount on the instrument.

MATURITY TABLE

1	Jan.	−1	13
2	Feb.	+2	14
3	Mar.	−1	15
4	April		16
5	May	−1	17
6	June		18
7	July	−1	19
8	Aug.	−1	20
9	Sept.		21
10	Oct.	−1	22
11	Nov.		23
12	Dec.	−1	24

Bankers, and others having the counting of terms of discount to do, make use of a table like this.

To Find the Date of Maturity and Term of Discount.

Example: Find the maturity of a note dated June 10 and payable (a) three months after date, (b) ten months after date, (c) ninety days after date.

(a) Referring to the table, notice that June is the sixth month. Add 3 to the 6 months and the result is 9. The 9th month is Sept. (from table) and the note is due Sept. 10.

(b) Add 6 and 10 and the result is 16. The note is due in the 16th month, which, (from the table) is April. The note is therefore due on April 10.

TABLE OF TIME

FROM ANY DAY OF	TO THE SAME DAY OF THE NEXT											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
JANUARY	365	31	59	90	120	151	181	212	243	273	304	334
FEBRUARY	334	365	28	59	89	120	150	181	212	242	273	303
MARCH	306	337	365	31	61	92	122	153	184	214	245	275
APRIL	275	306	334	365	30	61	91	122	153	183	214	244
MAY	245	276	304	335	365	31	61	92	123	153	184	214
JUNE	214	245	273	304	334	365	30	61	92	122	153	183
JULY	184	215	243	274	304	335	365	31	62	92	123	153
AUGUST	153	184	212	243	273	304	334	365	31	61	92	122
SEPTEMBER	122	153	181	212	242	273	303	334	365	30	61	91
OCTOBER	92	123	151	182	212	243	273	304	335	365	31	61
NOVEMBER	61	92	120	151	181	212	242	273	304	334	365	30
DECEMBER	31	62	90	121	151	182	212	243	274	304	335	365

(c) Three months added to the 6th month (June) equals 9. The note is due in the 9th month, which is September. Since the note is payable in ninety days, exact time must be found. Notice in the table that one day must be subtracted for each of July and August. 10−2=8. The note is therefore due on September 8.

With a little practice it will be unnecessary to use such a table. Counting ahead the number of months or days will establish the due date.

The Term of Discount is found by counting the exact time in days from the date of discount to the date of maturity. *Example:* In a note due on July 14 and discounted on May 3, the term of discount is 72 days. This may be found as follows:

28 days remaining in May
30 days in June
14 days in July
72 days is the term of discount.

Bankers frequently use a table like the foregoing for the purpose of finding the exact number of days between the two dates:

The above example would be solved with the table by looking in the column marked "July" on a line with May. The number of days given there is 61, which indicates that there are 61 days from any date in May to the *same* date in July. From May 3 to July 3 there are 61 days; from July 3 to July 14, there are 11 days; the total is 72 days, and this is the term of discount.

To Find the Bank Discount of a Note or Draft, find the interest on the face of the note for the term of discount. This is a problem in simple interest and is explained under that subject.

To Find the Proceeds of a Discounted Note or Draft, subtract the bank discount from the face of the note.

To Find the Proceeds of an Interest-Bearing Note or Draft, find the interest for the time of the note at the rate of interest stated in the note and add this to the face of the note to find the amount due at maturity. Find the interest for the term of discount on the value of the note at maturity and subtract this interest from the value at maturity.

Example: A 90-day note for $2000 bearing interest at 5% was discounted at 6% 45 days before maturity. Find the proceeds.

Solution:

$2000.00	Face of note.
25.00	Interest on note
$2025.00	Amount due at maturity
15.19	Discount—Interest for 45 days at 6% on $2025
$2009.81	Proceeds of note.

Collection and Exchange Charges:—Banks sometimes make a small charge for collection and exchange on notes and drafts payable out of town. The rate of exchange and the charges for collection are usually expressed in a fraction of a per cent. These charges are computed upon the value of the instrument at maturity; i. e., on the face of a non-interest-bearing note and on the amount of an interest-bearing note.

When an interest-bearing note is discounted on the day it is made and the rates of discount are the same, the bank will usually give credit for the face of the note. When an interest-bearing note is discounted after the date of issue and the rate of interest is the same as the rate of discount, it is customary among some bankers to give the customer credit for the face of the note plus the interest to the date of discount.

BANK DISCOUNT

Negotiable Instruments.—A negotiable instrument is a written evidence of debt which may be transferred from one person to another by indorsement and delivery or by delivery alone. The most common negotiable instruments are checks, drafts, notes, and bonds.

A check is a bill of exchange drawn on a bank and payable on demand.

A Check

No. 126 ATLANTA, GEORGIA, March 25, 1923

THE MERCHANTS BANK.

Pay to the order of John P. Harrison $45.25

Forty-five and 25/100 DOLLARS

In College Currency

J. E. Hall

A draft (or bill of exchange) is an order drawn by one person (called the drawer) directing another (called the drawee) to pay a third (called the payee) or to bearer a certain sum of money at a certain time. Drafts may be made payable at sight, at a certain time after sight, or at a certain time after date.

A Sight Draft

SPECIMEN

$150.00 St. Louis, Mo., March 1, 1926

AT SIGHT Pay to

the order of OURSELVES

ONE HUNDRED FIFTY AND no/100 Dollars

Value received and charge the same to account of

To J. B. Stone
No 9 Memphis, Tenn.

R. L. Downey and Co.
By R L Downey Pres.

Draft Payable Stated Time After Date

$350.00 St. Paul, Minn., October 5, 1928

SIXTY DAYS AFTER DATE Pay to

the order of HENRY J. WILBUR

THREE HUNDRED FIFTY and no/100 Dollars

Value received and charge the same to account of

To Charles J. Fulton
No Springfield, Mass.

Standard Milling Co.
By A. B Miller Treas.

Draft Payable Stated Time After Sight

$567.80 Baltimore, Md., July 15, 1922

AT TEN DAYS SIGHT Pay to the

Order of THE FIRST NATIONAL BANK OF BALTIMORE

FIVE HUNDRED SIXTY-SEVEN and 80/100 Dollars

College Currency

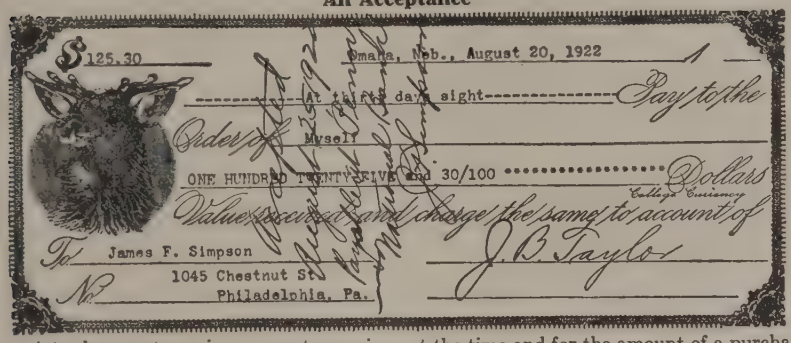
Value received and charge the same to account of

H D Sanderson

To Wildman & Colvin
No 2 146 Main Street Richmond, Va.

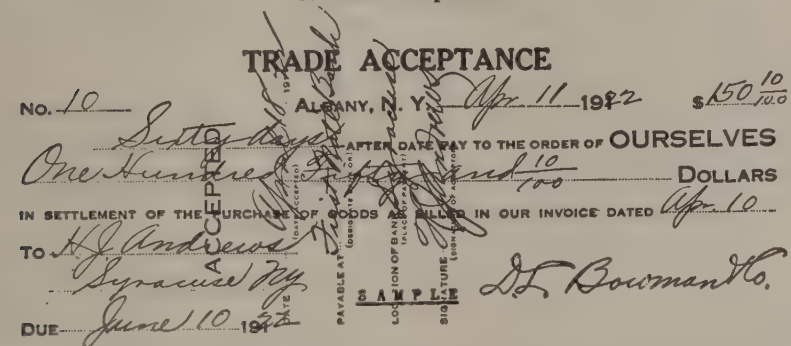
Before a draft can be enforced against the drawee, he must accept it. He does this by writing across the face (usually in different colored ink) "Accepted", the date and his signature. The instrument is then called an acceptance.

An Acceptance



A trade acceptance is an acceptance given at the time and for the amount of a purchase of merchandise.

A Trade Acceptance



A bank draft (sometimes called a New York draft or a Chicago draft from the name of the city upon which it is drawn) is a draft drawn by one bank upon another bank.

The Form of a Bank Draft

$1000.00 Buffalo, N. Y., Jan. 10, 1922

THE BANKERS TRUST COMPANY

Pay to the order of OSCAR D. WHITE

One Thousand and no/100 ********** DOLLARS

SAMPLE

To Equitable Trust Co.
New York City

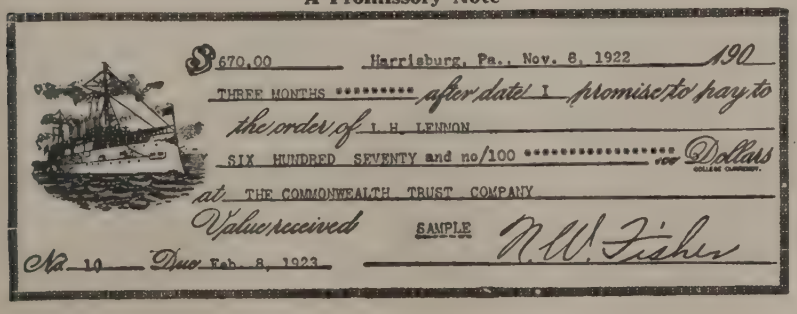
E. M. Blue, *Cashier*

A Promissory Note is an unconditional written promise to pay a sum certain in money to designated person or his order or to bearer on demand or at a fixed or determinable future time.

The one who signs a promissory note is called the maker. The one in whose favor it is made is called the payee.

A promissory note may be several or joint or joint and several. An ordinary note signed by one or two persons is a several note. A note reading "we jointly promise" is a joint note and one reading "we jointly and severally" is a joint and several note.

A Promissory Note



Find the Face of a Discounted Note.—It sometimes happens that it is desired to discount a note so that the proceeds will be a certain amount. *Example:* I wish to borrow $1990 for 30 days. What must be the face of my note discounted at bank at 6% to obtain the amount?

The bank discount on $1.00 for the time is $0.005.

The proceeds of $1.00 are $0.995.

$1990 (the proceeds required) ÷ $0.995 = $2000, the face of the note.

Proof: The discount on $2000 for 30 days is $10.00. $2000.00 − $10.00 = $1990.

Note.—It would be better to give the bank an interest-bearing note for the amount required and pay the interest when the note becomes due. This can also be done by giving a demand note and paying it in thirty days.

Present Worth and True Discount.—Similiar to the problem of finding the face of a note to produce a given proceeds is the problem of present worth. The PRESENT WORTH of a debt is a sum which, if put at interest, will amount to the value of the debt at maturity.

Example: A man owes a note for $2525 due in two months with interest. What is the present worth and the true discount on this note?

Solution: The interest on $1.00 for two months is $0.01

$1.00 will, in two months, amount to $1.01.

$2525 ÷ $1.01 = $2500, the present worth of the note.

The True Discount is the difference between the present worth and the amount of the note at maturity. In the above example it is $2525 − $2500 = $25.

Partial Payments.—When payments are made from time to time on a note or debt, these payments are called PARTIAL PAYMENTS.

Method of computing partial payments according to the United States Rule (so called because it has been adopted by the U. S. Supreme Court).

1. Find the amount of the note up to the date of the first payment. If this payment is sufficient to cover the interest up to that date, deduct it from the amount. The result is the new principal.

2. Using this new principal, find the amount of the note up to the date of the second payment and deduct payment as before.

3. Proceed in this manner until the final date is reached.

4. If a payment is not sufficient to cover the interest for the period next preceding, no deduction is made, but the payment is added to the next payment.

Example: On a note for $1200 dated Jan. 1 and bearing interest at 6%, payments were made as follows: Mar. 1, $212; July 1, $15; Sept. 1, $515. What was the amount due on Dec. 1?

Solution:

Face of note		$1200.00
Interest from Jan. 1 to Mar. 1 (2 mo.)		12.00
Amount due Mar. 1		$1212.00
Payment on Mar. 1		212.00
Balance due, new principal Mar. 1		$1000.00
Interest from Mar. 1 to July 1 (4 mo.) $20.00 (Interest greater than payment)		
Interest from July 1 to Sept. 1 (2 mo.)	$10.00	$30.00
Amount due Sept. 1		$1030.00
Payments July 1 and Sept. 1		530.00
Balance due, new principal Sept. 1		$500.00
Interest, Sept. 1 to Dec. 1 (3mo.)		7.50
Amount due Dec. 1		$507.50

Merchants' Rule.—This rule is frequently used by business men and sometimes by banks to settle short time notes or indebtedness.

(1) Find the amount of the principal to the date of final settlement.

(2) Find the amount of each payment to the date of final settlement.

(3) From the sum in (1) subtract the sum of (2). The remainder is the amount due.

Example: A note for $3000 bearing interest at 6% and dated March 1 was paid as follows: May 1, $1000.00; July 1, $500.00; Sept. 1, the balance was paid. What amount was required to settle on Sept. 1?

Solution:

Original principal		$3000.00
Interest March 1 to Sept. 1 (6 mos.)		90.00
Amount of note on Sept. 1		$3090.00
Payment May 1	$1000.00	
Interest May 1 to Sept. 1	20.00	
Amount of May 1 payment	$1020.00	
Payment July 1	$500.00	
Interest July 1 to Sept. 1	5.00	
Amount of July 1 payment	$505.00	
Total amount of payments		$1525.00
Balance due Sept. 1		$1565.00

TAXATION

A tax is a sum levied for the support of government or for other public purposes.

A DIRECT TAX is one levied on a person, his property or his business. Direct taxes are poll taxes, property taxes, licenses, and income taxes.

A POLL TAX is a tax on a person.

A TAX ON PROPERTY is called a PROPERTY TAX.

A tax on a business is called a LICENSE FEE.

AN INCOME TAX is a tax on a person's income.

INDIRECT TAXES are levied on imports, tobacco and other articles consumed in the country.

Determining the Rate of Taxation.—When it is determined what sum must be raised by property tax for the expenses of government, this amount is divided by the assessed valuation of all the taxable property in the governmental division. Assessors appraise the property in the city or county and in this way find the assessed valuation of the property of each person and the total assessed valuation for the city or county. The division of the sum to be raised by the total assessed valuation gives the tax rate and it is usually expressed in a certain number of mills per dollar, a certain number of cents per hundred dollars, or a certain per cent.

Example: The total assessed valuation is $2,500,000 and the total amount to be raised is $12,500. Dividing $12,500 by $2,500,000, the tax rate is found to be .5%.

To Find the Tax multiply the assessed valuation by that tax rate.

Example: Johnson's property is assessed at $2000. The tax rate is 1.4%. His tax amounts to 1.4%×$2000 or $28.

At the office where the taxes for each person are computed, a tax table shows the amount of tax at the required rate on every dollar from $10 to $100.

Income Tax.—The United States Government and some of the state governments now impose a tax on certain incomes. For the state taxes consult the laws of the states. The Federal Revenue Act of 1921 requires every single person making an income of over $1000 and every married person receiving an income of over $2000 to make an Income Tax Report.

In the case of a single person, a personal exemption of $1,000 is allowed; or in the case of the head of a family or a married person living with husband or wife, a personal exemption of $2,500, unless the net income is in excess of $5,000, in which case the personal exemption shall be $2,000. A husband and wife living together shall receive but one personal exemption. The amount of such personal exemption shall be $2,500, unless the aggregate net income of such husband and wife is in excess of $5,000, in which case the amount of such personal exemption shall be $2,000. If such husband and wife make separate returns, the personal exemption may be taken by either or divided between them. In no case shall the reduction of the personal exemption from $2,500 to $2,000 operate to increase the tax, which would be payable if the exemption were $2,500, by more than the amount of the net income in excess of $5,000.

An exemption of $400 is allowed for each person (other than husband or wife) dependent upon and receiving his chief support from the taxpayer if such dependent person is under eighteen years of age or is incapable of self-support because mentally or physically defective.

The normal income tax on individual citizens or residents of the United States is at the rate of 4% upon the first $4000 of net income subject to the normal tax and 8 per cent upon the excess over that amount.

In addition to the normal tax a surtax is imposed. The following table shows the amounts of these surtaxes for 1922 and subsequent years. In each case the first

The following is a COLLATERAL NOTE

$1,500.00 SAMPLE Albany, N. Y., Feb. 5, 1922.

**** ON DEMAND **** for value received, the undersigned jointly and severally promise to pay to the order of **THE NEW YORK STATE NATIONAL BANK OF ALBANY,** (hereinafter called the Bank), at its Banking Office in Albany, N. Y., the sum of **** Fifteen Hundred and no-100 **** Dollars in United States gold coin or its equivalent, with interest from date hereof, at the rate of .....per cent. per annum, having deposited with the Bank, as collateral security for the payment of this note, or any note given in extension or renewal thereof, as well as for the payment of any other obligation or liability, direct or contingent, of the undersigned, or any of them, to the Bank, due or to become due, whether now existing or hereafter arising, the following property, viz:

25 shares New York Central Stock

of a market value estimated by the undersigned at $2,000.00; and the undersigned agree to deliver to the Bank additional securities, or to make payments on account to its satisfaction, should the market value of the said securities, as a whole, suffer any decline. The undersigned hereby give to the Bank a lien for the amount of all such obligations and liabilities upon all the property or securities now or at any time hereafter given unto or left in the possession of the Bank by the undersigned, whether for the express purpose of being used by the Bank as collateral security, or for any other or different purpose, and also upon any balance of the deposit account of the undersigned, or any of them, with the Bank. The undersigned hereby jointly and severally agree that all assignments or other dispositions of any of said collateral securities by the undersigned, or any of them, are and shall be subject and subordinate to the Bank's lien thereon for the payment of this or of any other note or claim hereby secured or of any renewal or extension of any

On the non-performance of this promise, or upon the non-payment of any of the liabilities above mentioned or in case of the failure of the undersigned to meet at maturity any liability of the undersigned, either to said Bank or to any other party, or upon the failure of the undersigned forthwith, with or without notice, to furnish satisfactory securities in case of any decline in market value as aforesaid, or upon the declared insolvency or failure in business of, or appointment of a receiver for, or commission of any act of bankruptcy or commencement of any bankruptcy proceeding by or against the undersigned, or the entry of any judgment against the undersigned, or in case of any such default, insolvency, appointment of a receiver, bankruptcy proceedings or judgment by or against any endorser or guarantor of this note, all liabilities of the undersigned to said Bank including this note, shall, at the option of said Bank, immediately mature and become forthwith due and payable without demand or notice, and full power and authority are hereby given the said Bank to sell, assign, transfer and deliver the whole of said securities, or any part thereof or any substitutes therefor or any additions thereto or any other securities or property now or hereafter given unto or left in the possession of the said Bank by the undersigned, for safe keeping or otherwise at public or private sale or at the New York Stock Exchange, or at any other Exchange or Broker's Board, at such prices as it may deem best, and either for cash or on credit or for future delivery, at the option of said Bank, or of its President, or Cashier, without either demand, advertisement or notice of any kind, which are hereby expressly waived and if such collateral is disposed of at private sale, the said Bank shall be relieved from all liability or claim for inadequacy of price. At such sale, the said Bank may itself purchase the whole or any part of the property sold, free from any right of redemption on the part of the undersigned, which is hereby waived and released. In case of sale for any cause, after deducting all costs or expenses of any kind for collection, sale or delivery, including all charges for legal services arising from or incidental to the sale, realization or collection of any of such collateral, security, substitutions or additions, or of any of said demands, including this note, the said Bank may apply the residue of the proceeds of the sale or sales so made, to pay one or more or any or all of the said liabilities to the said Bank, as it or its President or Cashier shall deem proper whether then due or not due, making proper rebate for interest on liabilities not then due, returning the overplus, if any, to the undersigned, who agree to be and remain liable to, and to pay the said Bank for any deficiency arising upon such sale or sales, and if any compromise or settlement is made between the said Bank and the undersigned, or between the said Bank and the guarantors or endorsers hereof, or if payment is made to the said Bank by the undersigned, or by the guarantors or endorsers hereof, of any claim of the said Bank for which the undersigned shall be liable, without the sale of any such securities as aforesaid, then the undersigned agree to pay to the said Bank, all costs or expenses including charges for legal services as aforesaid, incurred by said Bank up to the time of such compromise, settlement or payment. The undersigned do hereby authorize and empower the said Bank at its option, at any time to appropriate and apply to the payment and extinguishment of this or any of the above named obligations or liabilities, including interest, costs and expenses, whether now existing or hereafter contracted, any or all moneys and securities now or hereafter in the hands of the said Bank, on deposit or otherwise, to the credit of or belonging to the undersigned, whether the said obligations or liabilities are then due or not due. It is also agreed that the provisions, agreements, terms and conditions hereof shall apply to, and govern any and all notes given in extension or renewal of this note.

The above described property may from time to time, by mutual consent, be exchanged for other property, which shall be held by said Bank subject to all the terms of this note. Upon the transfer of this note the collateral held therefor at the time of transfer or any part thereof, may be delivered to the transferee, who shall thereupon become vested with all the rights and powers above given to said Bank in respect thereto, and the said Bank shall thereafter be forever relieved and fully discharged from any liability or responsibility in the matter.

It is also further agreed that any moneys or other property at any time in possession of said Bank, belonging to the maker, any guarantor or endorser of this note, and any deposits, balance of deposits, or any sums at any time credited by or due from said Bank to any such parties, may at all times, at the option of the said Bank, be held and treated as collateral security for the payment of this note or any other liability of such maker, guarantor or endorser to the said Bank, whether due or not due, and said Bank may at any time, at its option, set off the amount due or to become due hereon, against any claim of any of said parties against said Bank No delay on the part of the holder hereof in exercising any rights hereunder shall operate as a waiver of such rights.

SAMPLE

L. T. RICHARDS

figure of net income in the net income column is to be excluded and the second figure included.

Net Income	Per cent	Surtax	Total Surtax
$6,000 to $10,000	1	$40	$40
$10,000 to $12,000	2	40	80
$12,000 to $14,000	3	60	140
$14,000 to $16,000	4	80	220
$16,000 to $18,000	5	100	320
$18,000 to $20,000	6	120	440
$20,000 to $22,000	8	160	600
$22,000 to $24,000	9	180	780
$24,000 to $26,000	10	200	980
$26,000 to $28,000	11	220	1,200
$28,000 to $30,000	12	240	1,440
$30,000 to $32,000	13	260	1,700
$32,000 to $36,000	15	600	2,300
$36,000 to $38,000	16	320	2,620
$38,000 to $40,000	17	340	2,960
$40,000 to $42,000	18	360	3,320
$42,000 to $44,000	19	380	3,700
$44,000 to $46,000	20	400	4,100
$46,000 to $48,000	21	420	4,520
$48,000 to $50,000	22	440	4,960
$50,000 to $52,000	23	460	5,420
$52,000 to $54,000	24	480	5,900
$54,000 to $56,000	25	500	6,400
$56,000 to $58,000	26	520	6,920
$58,000 to $60,000	27	540	7,460
$60,000 to $62,000	28	560	8,020
$62,000 to $64,000	29	580	8,600
$64,000 to $66,000	30	600	9,200
$66,000 to $68,000	31	620	9,820
$68,000 to $70,000	32	640	10,460
$70,000 to $72,000	33	660	11,120
$72,000 to $74,000	34	680	11,800
$74,000 to $76,000	35	700	12,500
$76,000 to $78,000	36	720	13,220
$78,000 to $80,000	37	740	13,960
$80,000 to $82,000	38	760	14,720
$82,000 to $84,000	39	780	15,500
$84,000 to $86,000	40	800	16,300
$86,000 to $88,000	41	820	17,120
$88,000 to $90,000	42	840	17,960
$90,000 to $92,000	43	860	18,820
$92,000 to $94,000	44	880	19,700
$94,000 to $96,000	45	900	20,600
$96,000 to $98,000	46	920	21,520
$98,000 to $100,000	47	940	22,460
$100,000 to $150,000	48	24,000	46,460
$150,000 to $200,000	49	24,500	70,960
$200,000 up	50	.....	.....

INSURANCE

Insurance is an agreement by one party (called the insurer) for a consideration (called the premium) to indemnify another party (called the insured) against losses arising from certain causes (called the risk).

The INSURANCE POLICY is the written or printed contract containing the agreement between the parties.

Property Insurance.—A VALUED or CLOSED policy agrees to pay a specified amount in case a certain loss is sustained.

An OPEN POLICY provides for an undetermined amount, depending upon the quantity of goods insured at the time of the damage. This policy is used where goods are being deposited and withdrawn from the store or warehouse.

Rate of premium. The premium in property insurance is usually stated at a certain per cent of the amount insured. Rates are usually quoted for a year. Lower rates are charged for long periods and higher rates (known as short term rates) are charged for short terms.

The ORDINARY POLICY is one in which the amount to be paid in case of loss is specified; i. e. the amount of the loss will be paid if it does not exceed the sum stated in the policy.

The AVERAGE CLAUSE provides that where one policy covers several different pieces of property and one of the properties is damaged, the company will pay only that proportion of insurance which the insurance on that property bears to the whole insurance.

The 80% or CO-INSURANCE CLAUSE. Under this clause the insured agrees that he will keep his property insured for a given percentage of its value (80% in New York is the usual percentage) and if he fails to do this, the company will pay only that percentage of the loss which the insured bears to the agreed percentage of the value of the property.

Example: The value of a property is $10,000 and it is insured under the 80% clause but the insured takes out only $4,000 on the property. The property is damaged to the extent of $2000. The company will pay only $\frac{4000}{8000}$ or ½ of the loss.

The PRO RATA CLAUSE is used where there is more than one policy upon the same property. Each company is required to pay the proportion of the loss which its policy bears to the total amount of insurance carried on the property.

Example: A man has his building insured for $5000 in X company, for $10,000 in Y company, and for $15,000 in Z company. The property is damaged by fire to the extent of $6000.

Solution: The total amount of insurance is $30,000.

X Company must pay $\frac{5000}{30000}$ or 1/6 of the loss =	$1000
Y Company must pay $\frac{10000}{30000}$ or 1/3 of the loss =	2000
Z Company must pay $\frac{15000}{30000}$ or 1/2 of the loss =	3000
Total	$6000

The ARITHMETIC PROBLEMS in insurance are simply an application of percentage.

The amount of the insurance is the base in percentage.

The rate of insurance is the rate in percentage.

The premium in insurance is the percentage.

Example: Goods valued at $3000 are insured at the rate of 50c per hundred. The premium for one year is $15.

Life Insurance is a contract in which the insurer, for a consideration called the premium, agrees to pay a specified sum of money upon proof of the death of the insured or at some fixed time.

A STRAIGHT LIFE POLICY is one in which the premiums are paid during the life of the insured and the insurance is paid upon the death of the insured.

A TERM POLICY is one in which the insurance is paid if the insured dies within a fixed period.

An ENDOWMENT POLICY is one in which the insurance is paid at a fixed date, or, if the insured dies before that date, at the death of the insured.

Some policies provide for the payment of the premium for a given number of years and a continuation of the policy after these payments have been made. These policies are named by the number of annual payments as, Twenty Payment Life Policy.

The beneficiary is the person indicated in the policy to receive the payment upon the death of the insured.

EXCHANGE

The system of settling debts between parties residing in different places without sending the actual cash is called EXCHANGE.

DOMESTIC EXCHANGE is the system of settling debts between persons in the same country.

FOREIGN EXCHANGE is the exchange between persons of different countries.

The instruments of exchange are personal checks, bank drafts, commercial drafts, postal money orders, express money orders and telegraphic money orders. The forms of checks, bank drafts and commercial drafts are given under Bank Discount. The form and rates of money orders can be had at post offices, express offices and telegraph offices.

Domestic Exchange. To Find the Cost of a Draft.—

Example: Find the cost of a draft on St. Louis for $400 when exchange is at 1/8% premium.

Solution:

Face of Draft	$400.00
Exchange 1/8% of face	.50
Cost of draft	$400.50

If exchange is at a discount, subtract the exchange from the face of the draft.

To Find the Proceeds of a Draft.—

Solution: Find the proceeds of a draft of $2400, exchange being 1/4%.

Solution: 1/4% of $2400 is $6.00. $2400 −$6.00 = $2394.00.

Foreign Exchange.—Bills of exchange on foreign countries are usually drawn in sets of two or three, called "First and Second of Exchange." These are duplicates and are sent by different mails, but the payment of one cancels the other.

The rates of exchange depend upon the variation of the balances due to or from the different countries. The World War caused great disturbances in exchange rates. The exchange rates used in examples here are the rates that obtain when exchange is in a normal condition. The most important exchange rates are quoted as follows:

Sterling	£1	= $4.8665
French	$1	= F. 5.18
German	M.4	= $.95

A Letter of Credit is a request issued by a bank and addressed to their correspondents in all parts of the world asking them to pay the owner of the letter sums of money up to the amount named in the letter.

To Find the Cost of a Bill of Exchange.—

Example 1. Find the cost of a bill of exchange on Liverpool for £275 15s. 3d. sterling, exchange being quoted at $4.86¼.

£275 15s. 3d. = £275.7625

$4.86¼ × 275.7625 = $1340.90

Explanation: £275 15s. 3d. is equivalent to £275.7625. As £1 sterling is quoted at $4.86¼, £275.7625 will be worth 275.7625 times $4.86¼ = $1340.90.

Example 2. What is the cost of a bill of exchange on Paris for 1449 francs, when exchange is quoted at 5.17½?

1449 ÷ 5.17½ = $280.00.

Explanation: As 5.17½ francs are worth $1, 1449, francs are worth as many dollars as 5.17½ is contained in 1449. or $280.

To Find the Proceeds of a Bill of Exchange.—

Example: Find the proceeds of a bill of exchange for F.4200 at 5.17½—1/32.*

Solution:

F.4200 ÷ F.517½ = 811.59
$811.59 = proceeds at 5.17½
1/32% of $811.59 = 25c
$811.59 − $.25 = $811.34, the proceeds.

*A certain small amount of change in the rate is called a point. When a large amount is to be transferred, the rate is sometimes given in this form.

STOCKS AND BONDS

A corporation is an artificial person created by law and endowed by it with many of the powers of an individual.

The capital of a corporation is divided into a number of shares called the capital stock. This stock may be either preferred or common stock. Preferred stock receives its share of profits first and may have other preferences over the common stock.

Dividends are declared out of the profits of the corporation. The dividend is usually a certain number of dollars per share or a certain per cent of the par value of the stock.

The par value of stock is the value stated in the stock certificate, which the shareholder holds.

The market value of the stock is determined by the price at which the stock can be sold. This price may be above or below par.

Shares of stock are bought and sold through stock brokers who charge a certain percentage, usually 1/8 % of the par value.

To Find the Income From Shares When the Rate Is Known.—

Example: What will be the yearly income from 300 shares of stock which pays 6%.

Solution: 6% means $6 per share of a par value of $100. Hence the income will be $1800.

To Find the Cost of Stock.—

Example: Find the cost of 200 shares at 98½.

Solution: If one share costs $98½, 200 will cost 200 × $98½ = $19,700.

Brokerage.—If stock is bought through a broker (as it usually is), his fee, which is usually 1/8%, must be added to the cost. If brokerage were charged on the above, the cost per share would be $98 5/8. If stock is sold through a broker, the brokerage must be subtracted from the price received per share.

To Find the Proceeds From Sale of Stock.

Example: Find the proceeds of 72 shares sold at 91 1/8 less brokerage 1/8%.

Solution: $91 1/8 less $1/8 = $91 per share, 72 shares will yield 72 × $91 = $6552.

To Find the Rate of Profit on an Investment in Stocks.—

Example: What is the rate of income on an investment in 6% shares costing 120.

Solution: The yield is $6 on an investment of 120. $6.00 ÷ 120 = 5 = the per cent of profit.

To Find the Price per Share Which Will Yield a Given Rate on the Investment.

Example: What must be paid for a 6% stock to yield 5% on the investment?

Solution: $6.00 is 5% of what number. $6 ÷ .05 = $120.

Bonds are long time notes of the national and state governments, cities, counties, and private corporations. A bond bears interest at a specified rate of interest.

A registered bond is one in which the name of the owner is recorded on the books of the issuing corporation.

Coupon bonds have coupons attached which may be clipped off and collected as the interest becomes due. There is one coupon for each interest period.

Bonds are designated by the name of the issues, date of maturity, and the rate of interest. U. S. 4's 1925 means United States bonds maturing in 1925 and bearing 4% interest.

The ordinary ARITHMETICAL PROBLEMS of bonds are the same as those discussed under stocks.

PARTNERSHIP

A Partnership is a contract relation existing between two or more competent parties, uniting their capital, labor, or skill, in some lawful enterprise, agreeing to share the gains, or bear the losses, in certain proportions.

The persons forming a partnership are called Partners or Copartners. Collectively, they are called a Company, House, or Firm.

Partners may be classified, as follows: Real or General, Nominal, Dormant, and Special or Limited.

A Real or General Partner is one who is known to the public as a partner, takes an active part in the management of the business, and is personally liable for all the firm's debts.

A Nominal Partner is one who allows his name to be associated with the partnership, but invests nothing. He is liable to innocent third parties only.

A Dormant Partner is one who makes an investment, but who conceals his identity as a partner from the public. He becomes liable for firm debts when his identity is discovered.

A Special or Limited Partner is one who makes a cash investment, but takes no active part in the management. He is not personally liable for an amount greater than that mentioned in the partnership agreement.

A Partnership Agreement is a contract in writing made between partners specifying the amount of each partner's investment in money, labor, or skill, the time the partnership is to continue, the division of losses and gains, and all other conditions forming the mutual understanding upon which the partnership is based.

Stock companies are often formed for the management of large business enterprises in order to avoid the personal liability involved in ordinary copartnerships and also to more easily perpetuate the business. Each state has special statutes regulating the formation of stock companies.

Sample Solution:

1. A, B, and C are partners to share gain or loss in proportion to investment. A invests $3000, B $4000, and C $5000. They gain $3600. Find each man's share of the gain.

$3000
4000
5000
$12000 whole capital

$\frac{3000}{12000}$ = 1/4 A's part of capital.
$\frac{4000}{12000}$ = 1/3 B's " " "
$\frac{5000}{12000}$ = 5/12 C's " " "

1/4 of $3600 = $900, A's gain.
1/3 of $3600 = $1200, B's gain.
5/12 of $3600 = $1500, C's gain.

Explanation.—The whole capital, $12000, is found by adding the investments of the individual partners. Since A invested $3000, his part of the whole capital is represented by the fraction $\frac{3000}{12000}$, or ¼. Likewise B's part of the whole capital is $\frac{4000}{12000}$, or 1/3, and C's $\frac{5000}{12000}$, or 5/12. A's capital being ¼ of the whole capital, his gain will be ¼ of the whole gain; hence A's gain is ¼ of $3600 = $900. For the same reason, B's gain is 1/3 of $3600 = $1200, and C's gain is 5/12 of $3600 = $1500.

Sample Solution:

2. C and D are partners in business, sharing the loss or gain in proportion to their average investments. C invests Jan. 1, $3000, June 1, $2000. D invests Jan. 1, $5000, and withdraws Aug. 1, $1500. Their net gain for the year is $2050. Find share of each.

$3000 × 5 = $15000 for 1 month.
5000 × 7 = 35000 " " "
C's investment = $50000 " " "
$5000 × 7 = $35000 " " "
3500 × 5 = 17500 " " "
D's investment = $52500 " " "

$50000
52500
$102500 = whole capital for 1 month.

$\frac{50000}{102500} = \frac{20}{41}$ C's share of the total investment.
$\frac{52500}{102500} = \frac{21}{41}$ D's share of the total investment.

$\frac{20}{41}$ of $2050 = $1000, C's gain.
$\frac{21}{41}$ of $2050 = $1050, D's gain.

Explanation.— C's first investment, $3000, was in the business unchanged until June 1, or 5 months. The use of $3000 for 5 months is equivalent to 5 times $3000, or $15000 for 1 month. June 1, C invested $2000 more, which made his total investment $5000. This $5000 was in the business the remainder of the year, or 7 months, which is equal to 7 times 5000, or $35000 for 1 month. By adding the $15000 and the $35000, C's total investment is found to be equivalent to an investment of $50000 for 1 month.

D's investment, $5000, was in the business unchanged until Aug. 1, or 7 months, which is equivalent to the use of $35000 for 1 month. On Aug. 1, D withdrew $1500, leaving him only $3500 in the business for the remainder of the year, or 5 months, which is the same as $17500 for 1 month. By adding $35000 and $17500, D's total investment is found to be equivalent to an investment of $52500 for 1 month. $50000 added to $52500 shows that the net investment of the firm is equivalent to an investment of $102500 for 1 month. Since C's investment is equal to $50000 for 1 month, his share of the whole investment is $\frac{50000}{102500}$ or $\frac{20}{41}$; hence, he is entitled to $\frac{20}{41}$ of the gain, or $1000. In the same manner, D's share of the whole investment is $\frac{52500}{102500}$ or $\frac{21}{41}$, and he is entitled to $\frac{21}{41}$ of the $2050, or $1050.

SQUARE ROOT

Rule.—

1. Point off the number into periods of two figures each, commencing at the right, or at the decimal point. Find the greatest square in the left-hand period, and write its square root as the first figure in the root. Subtract the square of this first root figure from the left-hand period and bring down the next period for a new dividend.

2. For a trial divisor, multiply the root already found by 2, and annex one cipher. Divide the new dividend by the result thus obtained, and write the quotient as the next figure in the root. Add the last-found figure of the root to the trial divisor, and multiply the sum by this same last-found figure of the root. Subtract the product from the new dividend and bring down the next period for a second new dividend.

3. Continue this process until all the remaining periods have been brought down and the root obtained.

Notes.—1. There must be a figure in the root for every period in the power.

2. In pointing off a number involving a decimal, as 31462.874, start at the decimal point and divide into periods going to the left on the whole number and to the right on the decimal. In case there is but one figure in the right-hand period of the decimal, annex a cipher to complete the period. Thus the above number pointed off into periods would appear, 3'14'61.87'40.

Example: Find the square root of 576 sq. ft.

Solution:

```
5'76|24
 4
44|176
  |176
```

CUBE ROOT

Rule.—

1. Separate the number into periods of three figures each, beginning at the right, or at the decimal point.

2. Find the greatest cube in the left-hand period, and place its cube root as the first figure of the required root. Subtract the cube of this root from the left-hand period, and bring down the next period to make a new dividend.

3. Multiply the square of the root already found by 3 and annex two ciphers, for a trial divisor. Divide the new dividend by this trial divisor and write the quotient as the next figure in the root.

4. Multiply 3 times the first part of the root by the last-found root figure, annex one cipher and add the square of the last root figure; then add this sum to the trial divisor for a complete divisor.

5. Multiply the complete divisor by the last figure of the root; subtract the product from the new dividend, and bring down the next period for a second new dividend.

6. Continue this process until the root has been found.

Example: Find the cube root of 91125 cu. in.

Solution:

```
91'125|45
  64
4800|27125
 600|
  25|
5425|27125
```

SIMPLIFIED ARITHMETIC

By

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EVERYDAY ARITHMETIC

Practical Arithmetic. Our treatment of the subject will be from the practical standpoint of the world of business; arithmetic as it is actually needed outside the school-room rather than the highly artificial work which is still, unfortunately, found in many text-books that are widely used.

In every day life we work commonly with integers, or integers and decimals, of not more than 4 places; we use $2.75 or 37 cents or $1.15 or 18 much more frequently than we use $27,500 or 3,287,246. Real and vital instruction will deal with the numbers such as we use constantly. In fractions we rarely use any other denominators than 2, 3, 4, 5, 6, 8, 10, 12 and 16; our practice work in fractions should deal largely with these denominators, until we can handle them easily and accurately. Problems to be solved without pencil and paper meet us every day and so do problems in which we need only a rough, an approximate answer; practise must be given in this kind of work. If taxes, stocks and bonds and life and fire insurance are to be presented to the children of our eighth grades then these topics should be treated as they are in real life. Arithmetic in every school should be adapted to the business life of the community in which the school is located.

RULES FOR SPEED

Mental Arithmetic—Speed Rules.

1. *Learn the 45 fundamental combinations of addition and multiplication.*
2. *Work from left to right, mentally, and not from right to left.*
3. *Use constantly, wherever possible, the fact that we have a decimal system of numbers, a system based on ten and powers of ten.*
4. *Learn to think numbers.*

ONLY FORTY-FIVE COMBINATIONS TO LEARN

The 45 addition and multiplication combinations must be made by drill absolutely automatic. The combination $\begin{matrix}7\\8\\-\end{matrix}$ when you look at it and *think* addition must spell 15 in just the same way that *c a t* spells *cat.*

In drill work do not place —, +, or × signs before the lower digit: this retards the child's progress later. Drill on the combinations mentioned just as they are to be used; drill by having the combinations written at random, selecting from all those which are given in our tables but not keeping them in order.

RAPID ADDITION

How to Add Rapidly.

After learning the 45 combinations in addition the next step for rapidity is to learn to add mentally any two two-place numbers. With the 6 combination $\begin{matrix}8\\-\end{matrix}$ associate such combinations as 16 6 6 46, and further those like 26 18 68 8 28 68 8 38 76 26 88. Read these sums from left to right; thus in reading 68 you think first 80, $\begin{matrix}46\\26\end{matrix}$ then 94, a glance to the right showing that one is to be carried making the 80 into 90.

$\begin{matrix}4\\7\\8\\6\end{matrix}$ In reading the sums in column addition you begin by reading the sum of the first two digits; read only the sums. Thus you here read 8, 17, 21, 27, 35, 42, 46 or 8, 17, 27 (since as you come to the 4 and 6 you notice that this adds ten to the preceding 17), 35, 42, 46.

$\begin{matrix}4\\9\\3\\5\\-\end{matrix}$ In adding numbers which are near to even hundreds notice that you can frequently save time by adding the full number of hundreds and subtracting the small difference.

396	388	693
425	475	281
821	863	974

Think 400+425 less 4, gives 821; in the second problem think 400+475—12 =863; in the third, 700+281—7 =974.

SPEEDY MULTIPLICATION

How to Multiply Rapidly. No tables of elevens and twelves should be separately learned; particularly with a child who has difficulty with arithmetic these tables increase the troubles and give no return value. No one multiplies by 12 as a single multiplier and even in business there is no more need for the tables of elevens and twelves than for fourteens or eighteens. Learn the combinations automatically up to $\begin{matrix}9\\9\\-\\81\end{matrix}$

Learn to multiply mentally any two place number by a single digit; multiply from left to right, and add mentally. So in getting the product $\begin{matrix}8\\\times17\\-\end{matrix}$ or 17. $\begin{matrix}8\\-\end{matrix}$ think 8×10 is 80, 8×7 is 56, added gives 136. With a little practise you can do this mentally more quickly than you can say the partial products. In 8×27, *think* 160, 56, 216.

MULTIPLICATION TABLE UP TO 20 x 20 MADE EASY

An Easy Rule for the Product of Any Two Teens. To multiply any two numbers between 10 and 20 do as follows; to the whole of one-teen, add the units of the other, and annex a zero; to this number add the product of the units. Example, 18×17, the units are 8 and 7 respectively. To the whole of one, 18, add the units, 7, of the other, making 25; to this annex a zero (multiplies 25 by 10), and add to the result, 250, the product 56 of the units, 7 and 8, giving 306. Mentally to multiply 19 by 14, the following numbers pass rapidly before your mind's eye, 19, +4, 23, 230, 36, *266* which is the product.

Combining this rule with the preceding rule for the product of any two place number by a single digit gives the complete multiplication table up to 20x20. Thus in the product 8x19, the following numbers pass rapidly before the mind's eye, 80, 72, *152*, which is the product.

PRODUCTS OF EVEN TENS

When the Tens are the Same. If you have two numbers beginning with the same tens' digit, you add the whole of one number to the units of the other and multiply by the tens' digit; annex a zero, and to this number add the product of the units. 24×27 is 20×(20+4+7)+4×7; in doing this mentally, 27, you think $\begin{matrix}24\\-\end{matrix}$ 27, +4, 31, ×2, 62, 620, +28, 648. If the units sum to ten as in 87, 26, 92, or $\begin{matrix}83\\35\end{matrix}$ $\begin{matrix}24\\98\\-\end{matrix}$ the product has in the last two places the product of the units and in the first one or two places the product of the ten's digit by a number one greater. Thus 87 $\begin{matrix}83\\24\\-\end{matrix}$ begins with 8×9 and ends with 3×7, 7221; 26 has 6 in the first place (2, the tens' digit ×3, one more than the tens' digit) and 4×6 in the last two places, 624; 92×98 is 9×10 placed before 8×2, or 9016; 35×35 is 3×4 placed before 5×5, or 1225.

LEARNING BY DOING

General Rules. Let the child begin real multiplication examples long before he has all the tables fully memorized; the work will help to make the tables automatic. With a backward child, allow him to write out the tables in vertical form, $\begin{matrix}2&3&4&5&6&7&8&9\\8&8&8&8&8&8&8&8,\\-&-&-&-&-&-&-&-\\16&24&32&40&48&56&64&72\end{matrix}$ and use these tables in working actual problems; he will soon learn the tables by using them.

EASY MULTIPLIERS

Quick Multipliers. To multiply by 10, 100 or 1000, annex one, two, or three zeros, respectively, to the multiplicand. To multiply by 5, 50, or 500 multiply by 10, 100, or 1000, as above, and divide by 2 since $5=\frac{10}{2}$, $50=\frac{100}{2}$ and $500=\frac{1000}{2}$. To multiply by 2.5, 25 or 250, multiply by 10, 100 or 1000, as before, and divide by 4, since $2.5=\frac{10}{4}$, $25=\frac{100}{4}$, and $250=\frac{1000}{4}$. To multiply by 7.5, 75, or 750, multiply by 5, 50 or 500 and add to this product, in each case, ½ of itself.

Examples: 25x48 is $\frac{4800}{4}$ or 1200; 50×48 is 2400; 75×48 is 2400+1200 or 3600

To multiply by ¾, think of ¾ as ½+¼, to ½ the number add ½ of ½ of the number; ¾ of 48 is 24+12 or 36.

50 and 25 are called aliquot parts of 100; two other aliquot parts of 100 are frequently useful, 12½ or ⅛ of 100, and 33⅓ or ⅓ of 100. If you wish to know approximately what 34 or 35×186 you can at a glance state that 33⅓×186 is 186×100 or 6200, and 34×186 is ⅔ of 186 or 124 more than 6200.

EFFICIENCY RULES

Multiplication of Decimals Abbreviated. In finding the cost of 328.4 lbs. of milk at $3.38 per hundred it is not necessary to multiply in the ordinary way $3.38 by 3.284 as this gives numbers in the fifth decimal place where nothing finally beyond the second decimal place is needed.

$\begin{matrix}3.380\\3.284\\-\\10140\\676\\270\\13\\-\\11.099\end{matrix}$ In any product of decimals remember that the first place times the first gives second place, and first times second gives third place, and so on. In such a product begin with the highest place of the multiplier and carry results one place farther than desired in the final result. If both numbers have not the same number of places make the number of places agree by adding zeros as above.

or $11.10

Multiply .37628×.41329, retaining finally only 4 places of decimals.

$\begin{matrix}.37628\\.41329\\-\\15051\\376\\113\\7\\3\\-\\.15550\end{matrix}$ Begin to multiply with the highest place of the multiplier, not the lowest.

Begin 4×2, 8 in 5th place, carry 3 from 4×8, making 11. Then 4×6, 24+1, 25, etc. Cross out the 8 and the 2 in upper number.

Then 1×6, 6, nothing to carry since 1×2 is less than ½, etc. Cross out 6.

Then 3×7, 21, +2 carried from 3×6=18, etc. Cross out 7.

Then 2×3, 6, +1 (from 14), .7. Cross out 3 above.

Then 3, carried from 9×3=27 which is nearer 3 than 2 in the fifth place.

Final result, .1555.

EFFICIENCY IN DIVIDING

Short Cuts in Division. In division, many unnecessary figures can be cut off when only an approximate result is desired. If 3280 articles are manufactured at a total cost of $18,834, what is the cost per article, to one cent?

5.742		5.74
3280)18,834		3280)18,834
16,400		16,400
2434	0	2434
2296	0	2296
138	00	138
131	20	131
6	800	7
6	560	
	240	

After each division cut off one figure in the divisor and use the part left as new divisor; this will keep the right hand digit of all the partial products in a vertical line.

Long Division Made Short. Use the form of short division for long division, and teach children to see that it is the same process. Some children are assisted by having the complete form of quotients and partial products retained in the explanatory solution.

```
          7
         30
        400
     ------
134)58639          437
    53600       -------
    -----   for 134)58639
     5039           536
     4020           ---
     ----           503
     1019           402
      938           ---
      ---          1019
       81           938
                    ---
                     81
```

ELIMINATING PARTIAL PRODUCTS

The Addition Method in Division.—By using the additive method of subtraction, subtracting from the dividend each part of each partial product as it is obtained, only the remainders need be written, leaving the work quite compact.

```
     437
   -----
134)58639
     50
    101
     81
```

4 in the quotient is obtained in the usual way.

Now 4×134 is to be subtracted, by the additive method, from 586.

Then 4×4 is 16, +0, makes 6; the *0* is the first figure in the remainder; 4×3, 12, +1 carried from 16, 13, +5, makes 18. 4×1, 4, +1 carried from 18, 5, +0 makes 5.

Then 3×4, 12, +*1*, 13; 3×3, 9, +1, carried from 13, 10, +*0*, 0; 3×1.
3, +1 from 10, 4, +*1* makes 5.

Then 7×4, 28, +*1*, 29; 7×3, 21, +2 from 28, 23, +*8*, 31; 7×1, 7, +3, 10.

50 is the first, 101 the second, and 81 the third remainder.

THE CHECK BY NINES

Casting Out Nines. When 4,328 is divided by 9 the remainder is the same as when 4+3+2+8 is divided by 9; 1000 is 999+1, 100 is 99+1, 10 is 9+1; when 1000 is divided by 9 the remainder is 1, when 100 is divided by 9 the remainder is 1, when 10 is divided by 9 the remainder is 1;

when 4000 is divided by 9 the remainder will be 4×1 or 4;
when 300 is divided by 9 the remainder will be 3×1 or 3;
when 20 is divided by 9 the remainder will be 2×1 or 2;
8 divided by 9 gives as remainder 8.

The total remainder of 4,328 divided by 9 is 4+3+2+8, the sum of the digits, and out of these we can *cast a nine* leaving 8 as remainder. When you have the sum of a column of figures nines can be cast out of all the summands, and the total remainder should be the same as the remainder when nines are cast out of the sum; in subtraction the difference of the remainders of minuend and subtrahend should be the same as the remainder when nines are cast out of the remainder (the answer); in multiplication the remainder, by nines, of the product is the same as the product of the remainders. In division the remainder of quotient, multiplied by remainder of divisor, and added to the remainder's remainder, equals the remainder of dividend

```
1346 rem. 5)                           2347 rem. 7      247 rem.  4
2347 rem. 7) Sum of remainders, 13;    1346 rem. 5       25 rem.  7
1350 rem. 0)    cast out 9, 4.         ----      -      ----      -
3574 rem. 1)                           1001 rem. 2      1235      28, rem. 1
----      -                                              494
8617 rem. 4                                             ----
                                                        6175 prod. rem. 1
```

DECIMALS—SEE THE POINT

The Point about Decimals. If the decimal point is kept straight there is absolutely *no difference* between division of decimals and division of integers. If .1437 is divided by .123 your quotient will evidently be a little more than one, as 14 hundredths contain 12 hundredths once and a little over; .01437÷.123 gives .1 as first place in the quotient since .1 of .123 is .0123. If in doubt multiply both dividend and divisor by 10, 100, 1000, so as to have the divisor an integer; then the number of places in the dividend required to obtain your successive remainders equals the number of places in the quotient.

The Rule. The number of places in the quotient + the number of places in the divisor must equal the number of places in the dividend. Remember that the quotient multiplied by the divisor must equal the dividend, except for the small remainder.

```
                                .01
                               -----
For .123).00143, write 123)1.43, shifting the decimal point
                               1.23
                                 20
```

3 places in each number, or multiplying dividend and divisor by 1000

```
                                .0002
                               ------
For .62)000143, write 62).0143; or write       .0002
                                              -------
                               124       .62).000143
                               ---             ^124
                                19              ---
                                                 19
```

STANDARDIZING ARITHMETIC

Trouble Points.—How to Locate Them. In large factories they hold stop-watches on men who are doing the same kind of work to compare the daily out-put of the men; every man is expected to come up to a certain standard of production. In arithmetical operations there are certain standard rates at which pupils in different grades should be able to perform these operations.

```
7  6  3  0  8  9  1  6  4  2  7  2  5  4  8  3  9
8  4  2  5  5  4  3  6  3  7  5  8  9  6  1  0  8
-  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -
```

Place on paper before the child, or have him copy, about 100 of these addition or multiplication combinations, be sure to include all combinations up to 9 with 9 and some combinations involving zero. Time the child, using a watch with a second hand; have paper and pencil prepared; have the child hold up his hand with the pencil, telling him 5 seconds before the minute hand reached 60 to get ready; at exactly the 60 mark, say "Write." The time of copying the examples is not to be included; take only the time of writing the series of answers to problems *previously* copied.

In one minute a child should be able to write the answers, correctly, as follows, depending upon the grade in school:

	III	IV	V	VI	VII	VIII	Middle of Grade
Addition Combinations	26	34	42	50	58	63	

The same combinations, recopied, can be used for multiplication; the inverse combinations can be used for subtraction and division (inverse of $\frac{7}{8}$ is 15 over 8 or 15 over 7 (i.e. $\underline{\;\;}$); inverse of $\begin{array}{r}8\\7\\\hline 56\end{array}$ is 7)56 or 8)56)

```
(inverse of  7  is  15  or  15 ;
             8       7       8
             -       -       -
            15

             8    --      --
inverse of   7 is 7)56 or 8)56)
             -
            56
```

STANDARD SCORES

	III	IV	V	VI	VII	VIII
Multiplication	16	23	30	37	41	45
Subtraction	19	25	31	38	44	49
Division	16	23	30	37	44	49
Copying Digits	63	75	84	92	100	108

AVOID DRILL WITHOUT PURPOSE

If a child falls below standard in all four fundamental operations the probability is that he is slow in copying digits. The standard scores for copying digits are for copying, from a printed (or carefully written) sequence of digits, written in no systematic order, e. g., 3, 4, 0, 7, 6, 8, 5, 2, 4, 9, 1, 3, 5.

Take the time you make with each of the four operations. Find out in this way just where your arithmetical weakness lies. Having located the trouble point, drill on that particular work, following the methods indicated in the preceding articles.

Another good type of time drill, devised like the preceding by Mr. S. A. Courtis of Detroit, involves the actual fundamental operations in problems. In addition, place before the individual to be tested about 25 problems, each consisting of nine three-place numbers, time 8 minutes; in subtraction set 24 problems each consisting of an eight-place number to be subtracted from an eight or nine place, time 4 minutes; in multiplication, set 24 problems each consisting of a four place number to be multiplied by a two-place or a three-place number with a zero, like 250, time six minutes; in division place a 4 or 5 place number divided by a two place, having an exact quotient of three places, time eight minutes.

STANDARDS SET FOR THE PRECEDING EXERCISES

	IV	V	VI	VII	VIII
Addition	6	7	9	10	11
Subtraction	6	8	9	10	12
Multiplication	4	6	7	8	9
Division	3	5	6	7	9

After a child attains the standard for his grade in any operation his time should be devoted to bringing up his record in the other operations, and to practical applied problems.

BUSINESS ARITHMETIC

Interesting Interest. (See Index.) At the present time the rules of interest and the problems, should be concerned with the real practise of banks and particularly with war savings. Take the $5.00 first government war savings stamps, sold when issued at $4.12 which pay 4% compound interest. Find the interest on $4.12 and add it to the principal at the end of the first year; do this for five years, carrying the work only to the second decimal price; the result will be the $5.00 which the Government agreed to pay at the end of 5 years. The process illustrates fully the fundamental principles of compound interest. Discuss postal savings bank, according to the actual rules, and discuss the Liberty Bonds This will make interest interesting.

Problem.—Compound interest on $4.12 for 5 years at 4%.

```
$4.12  $4.12                        $4.28  $4.28
  .04    .16                          .04    .17
-----  -----                        -----  -----
.1648  $4.28 end of 1st year.       .1712  $4.45 end of 2nd year.
$4.45  $4.45                        $4.63  $4.63
  .04    .18                          .04    .18
-----  -----                        -----  -----
.1780  $4.63 end of 3rd year.       .1852  $4.81 end of 4th year.
       $4.81  $4.81
         .04    .19
       -----  -----
       .1924  $5.00 end of 5 years.
```

At the end of the fourth year, interest .1852, only 18 cents is credited as in the preceding year the next larger unit, .18, was taken instead of .1780.

NOTE NOTES

Notes on Interest on Notes. (See Index.) Ninety-nine notes out of a hundred are now drawn for 2 months, or 3 months or 6 months, and in most parts of the U. S. at 6% interest. Whether the interest is paid when the note becomes due, or whether it is taken out in advance as discount, the method of computation is the same. Since the interest for 12 months is 6%, the interest for 2 months is 1% of the principal; the interest for 1 month is ½% of the principal; the interest for 3 months or 6 months is respectively 1½% or 3%.

Moving the Decimal Point. The interest on a note of $490 for 2 months, or 60 days, at 6%, is obtained by simply moving the decimal point two places, $4.90 is this interest; moving the decimal point again gives the interest for one tenth of 60 days, or $0.49 for 6 days. For one month take one-half of the interest for 2 months; for 90 days add these two. Work from the interest for 60 days, and it will be easy.

To find the interest at 5% or 7%, subtract or add, respectively, to the interest which you find at the 6% rate, one-sixth of itself. For 4½% take from the interest at 6% one-fourth of itself.

Discount is Interest. The principles of discount are fully discussed in the preceding section, as discount is nothing but interest taken out *in advance*. The discount on a note of $490 for 60 days at 6% is $4.90; the bank gives to the maker of the note not $490, but $490 less the *discount*, $4.90.

COMPOUND INTEREST

How Money Grows. One dollar placed at interest for one year at 6% grows to $1.06; in five years at compound interest it grows to $1.338, and in ten years to $1.790; at the end of 12 years the dollar has more than doubled itself.

HOW ONE DOLLAR GROWS!

	4%	5%	6%
1 year	1.04	1.05	1.06
5 years	1.216	1.276	1.338
10 years	1.480	1.628	1.790
12 years	1.601	1.795	2.012
15 years	1.801	2.078	2.396
18 years	2.025	2.406	2.854
20 years	2.191	2.653	3.207
50 years	7.106	11.467	18.420
100 years	50.504	131.501	339.02

MEASURES AND MONEYS

Denominate Numbers. (See index for tables.) So far as practical problems are concerned these should deal, in general, with only two denominations; to change miles to inches is arithmetical exercise, but the practical value is almost *nil.* Children in public schools should not be required to learn Troy and apothecary tables, and obsolete measures; their work should be on the measures which ordinary people use in ordinary business.

SPENDING MONEY

How the Money Goes—Foreign and Domestic Exchange. (See Index.) Send the boy to the post-office to get a foreign and a domestic money order blank, send him to the Express office for similar blanks, show to the boy your checks as you send them even to out-of-town firms; when you have done these three things you can make clear to him the way money is sent from one place to another, whether at home or abroad. A boy who has *actually sent real money* by P. O. order, or by Express order, ot by his father's check knows more about domestic exchange than any book can teach him. Give the boy and girl a chance to do things in a real way, and arithmetic will become easy and interesting.

EXTRACTING THE ROOT

Square Root—the Easy Way. The easiest way to get square root is to find by trial, some number whose square is near to the given number; divide the given number by this trial root; half the sum of the trial root and the quotient, carried to only one place farther than the trial root, is a nearer trial root.

Example.—Find the square root of 153.16. Evidently 12 is near to the root.

```
     12.76
 12)153.16
    12
    ---
     33
     24
     ---
      91
      84
      ---
       76
       72
       ---
        4
```

12 is too small; 12.76 is too large, since 12 ×12.76 gives 153.16. Try $\frac{12+12.76}{2}$ or 12.38; taking the nearest number one place, farther gives 12.4 which is shown, by division, to be the exact root.

The ordinary process of square root can be readily explained by a diagram on cross-section paper which can be procured at any book-store, or supply house.

Build up on the diagram $(32.4)^2$ as $30\,(+2+.4)^2$. Note that 30^2 is 900, the larger square; 32^2 is $30^2 + 2\times30\times2$ (the two rectangles) $+2^2$ (the little square), $(32.4)^2$ is 32^2 (the second of the large squares, with side 32) $+2\times32\times.4$, or the two rectangles, one at the side and one at the top, with longest dimension 32 and shorter dimension .4. Note that in extracting the square-root of 1049.76 you take out these squares and rectangles and little squares in the order mentioned. Looking at 1049 you see that 30 is the largest even ten whose square can be taken out of 1049.76. Doubling 30 gives 60, the total length of our two rectangles which are at the top and side of our square of side 30. Dividing 149 by 60 we see that the width of these two rectangles is greater than 2 and less than 3. We add the 2 to 60, making 62 and multiply by the 2, giving 2 ×60 +2 ×2 or the area of the two rectangles and the little square of side 2.

```
           32.4
 30    )1049.76
         900      the large square
 60      149.76

 62      124
  2
 --      ----
 64      2576
```

Now we have taken out 900 +124 or 1024 which is the square of 32. The total length of the two rectangles, at top and side of our square of side 32, is 64. Divide 25.76 by 64 and we get .4; evidently the other dimension of our long, narrow rectangles is near to .4; to the 64 add the .4 and multiply the sum by .4 giving the area of the two narrow rectangles .4 ×64 or 25.6 and the area of the tiny square of side .4, .4 ×.4 or .16, total 25.76.

Problem. Extract the square root of 1176.49, both methods.

In each method begin by dividing 1176.49 off in periods of two digits each way from the decimal point. The root of this number will then have two places to the left of the decimal point. The first trial root is 30, since 30^2 is 900 and 40^2 is 1600.

By Division.

```
     39.2        1176.49÷30 =39.2
 30)1176.49
30 is too small;  39.2 is too large.
Try ½ (30 +39.2) or 34.6.
     34.00       1176.49÷34.6 =34.00

 34.6)1176.490   34.6 is too large; 34. is
      1038          too small.
      ----       Try ½ (34.6 +34) or
       1384         34.3
       1384
       ----
         90

        34.3
 34.3)1176.49
      1029
      ----
       1474
       1372
       ----
       1029
       1029
```

34.3 is the number which multiplied by itself gives 1176.49.

By Regular Process.

```
 3     )1176.49
         9
        ----
 64      276
         256
         ---
 68.3     20.49
          2049
```

the 3 for 30, the 9 for 900, 30^2; the 6 (first 3 doubled) for 60; divide 276 by 60 gives 4; annex to 6, 64 ×4, gives two rectangles 4 ×30 and 4 ×30 and little square 4 ×4.

The 4 doubled, 68; and 20.49 ÷ by 68 (or 20 by 60) gives .3; annex to 68. 68.3 ×.3 gives two rectangles 34 ×.3 and 34 ×.3 and tiny square .3 ×3.

BIG BUSINESS

Stocks and Bonds. Stock brokers charge ⅛ of one dollar for buying or for selling a share of stock, with a minimum charge of $1.25, the price of buying or selling 10 shares of stock. The minimum charge is disregarded in ordinary arithmetical work. To find the price of a share of stock to a purchaser add ⅛ to the quotation, which on reliable stocks is given in dollars and fractions of dollars; to find the price received by one who sells given shares of stock through a broker, subtract from the market price, ⅛, and multiply by the number of shares sold. Brokers usually make a separate item on the bill for their brokerage. On bonds the brokerage is commonly computed on each $100 of the face of the bond. To make this work mean anything to a boy or girl in the eighth grade, get a newspaper which gives stock quotations and make up actual problems from actual quotations in the paper.

GOVERNMENT ARITHMETIC

Duties, Customs, Commission. (See Index.) The fundamental idea in duties *ad valorem* (on the value) and commission on price of articles bought or sold is precisely the same. In each case a certain *percentage* of the money is found; when the government receives this percentage for permitting the goods to be imported into the country (or for permitting the manufacture as in liquor) it is called *duty*, but when the buyer or seller of goods receives the percentage as pay for buying or selling the goods, the percentage is called commission. A *duty* of 15% on books worth $400, at the price of purchase, is the same in value as a commission of 15% on selling 400 bushels of corn at $1.00 per bushel. *Customs revenue* or *tariff* or *duty* determined on the quantity of goods imported, irrespective of the cost, is called *specific duty*; to find this duty is always a matter of multiplication.

Problem. Find the import duty on 400 lbs. of Cigars, at $4.50 per lb. *Specific duty*, plus 25% *ad valorem*; value of cigars, $1200.

$4.50	$1200	$1800
400	.25	300
$1800 *specific* duty.	$ 300 *ad valorem* duty.	$2100 total import duty.

If these cigars were sold for $4500, with a commission of 10%, the importer would receive not $4500 from their sale but $4500 less 10% of $4500.

$4500	$4500
.10	450
$ 450 commission.	$4050 net proceeds of sale.

ARITHMETIC ON THE FARM

Gallons in a Gasolene Tank. Measure the diameter of the circular base and the height in inches; multiply the diameter by itself and the product by the height; take ⅕ of 1% of this number and the result is the number, correct to one gallon for any tank holding less than 50 gallons. Where greater accuracy is desired, add to this 1 gallon for every 50 gallons, and proportionally for smaller parts (i.e., add 2% of your first result).

Find capacity in gallons of a tank 15 inches circular base, by 20 inches high, 15 ×15 ×20 =4500; 1% is 45; ⅓ of 1% is 15. The tank holds 15 gallons, or, if accurately measured, you can add 2% of 15, or 3 gallons. A circular tank, 30 inches diameter by 36 inches high, holds 108 +2.16 gallons, or about 110 gallons. Computation 30 ×30 ×36 =32400; take ⅓ after moving decimal point two spaces, gives 108; for greater accuracy, add 2% of 108 or 2.16. Total capacity, 110.16 gallons.

The 1918 Ford tank is 10 inches in diameter by 30 inches long. 10 ×10 =100, 100 ×30 =3000; 1% is 30; ⅓ of this gives 10 gallons, *the capacity.*

The rule depends, of course, on the formula $\frac{3.1416 \times d^2 \times h \times 15.}{4 \times 1728}\ \frac{—}{2}$ The area of a circle is $\frac{3.1416d^2}{4}$ or $\frac{22 \times d^2}{7 \times 4}$ where d is the diameter; $\frac{22 \times d^2 \times h}{7 \times 4}$ is the volume of a circular cylinder of height, base of diameter d; $\frac{22 \times d^2 \times h}{7 \times 4 \times 1728}$ is the volume in cubic

feet, 1728 cu. in.=1 cu. foot; since a gallon contains 231 cu. in., a cubic foot equals 7½ gallons giving an error, of excess, of 2 gallons in 100 cu. feet (100 cu. ft. =748.05 gallons). $\frac{22\times d^2\times h\times 15}{7\times 1728\times 2}=.00341\times d^2\times h$, and using the more accurate values 7.48 instead of $\frac{15}{2}$ and 3.14159 instead of $\frac{22}{7}$, gives .003399 or .003333 +.000066; now ⅓ of 1% is .003333, and 2% of this number is .000066; this sum gives our required .003399, and so the above rule.

THE CISTERN MEASURED

Barrels in a Cistern. Take the diameter and the height in feet, multiply the square of the diameter by the height; of this number take 1/6 and also take 2%; the sum gives the number of barrels within 1 barrel in 1000.

How many barrels in a cistern 8 feet in diameter, 9 feet high? 8×8×9=576; 1/6 of 576=94; 2% of 576 is 11.52; 94+11.52=105.52 bbl.

Check up on this by finding the number of cubic feet in the cistern $\frac{22\times d^2\times h}{7\times 4}$ and dividing by 4.21, which is the number of cubic feet in a barrel (31½ gallons).

For a square tank find the number of cubic feet and divide by 4.2 or 4.21; or take ¼ of the number of cubic feet and from this number subtract ½ of 1/10 of itself. Thus a tank 8×8×9 holds ¼ of 8×8×9 or 144 bbls. less 7.2 bbl. (1/10 of 144 is 14.4, and ½ of this is 7.2 bbl.).

GAUGING THE SILO

Capacity of Silos. To find the number of cubic feet of content within a silo, measure accurately the inside diameter. Square the diameter and divide the result by 4; this number multiplied by 3 1/7 gives the number of cubic feet per foot of height.

Problem. How many cubic feet in a silo 24 feet high, with inside diameter 12 feet, 14 feet, 16 feet?

12×12=144; 144÷4=36; 3 1/7×36=133 1/7 cu. feet per foot of height; 24×113 1/7=2715 cubic feet.

14×14=196; 196÷4=49; 3 1/7×49=154; 24×154=3696 cu. feet.

16×16=256; 256÷4=64; 3 1/7×64=201 1/7; 24×201 1/7=4827 cu. feet.

For 13, 15, and 17 foot diameters, you would get 3187, 4243, and 5450 cu. ft. for this height, or 132 5/6, 176 5/6, and 227 cu. ft., respectively, per foot of height. No appreciable error is made if with a 12½ foot silo, or 14½ foot silo, you take the middle value, thus between the 12 foot and 13 foot values of 113 1/7 and 132 5/6 you find 123 as middle value, ½ (113 1/7 +132 5/6).

In general in measuring the capacity of silos the computation should not be carried out beyond whole cubic feet, as the measurements of silos are not sufficiently accurate to warrant carrying the computation to fractions.

A SILO CAPACITY TABLE

The Silo Table. This table gives for 12 to 18 foot circular silos the capacity in cubic feet and in tons, figuring 40 lbs. of silage to the cubic foot; heights of 20, 24, and 30 feet are given.

	12 Foot		13 Foot		14 Foot		15 Foot		16 Foot		17 Foot		18 Foot	
Height	Cu. Ft.	T'ns	Cu. Ft.	T'ns	Cu. Ft.	T'ns	Cu. Ft.	Tons	Cu. Ft.	Tons	Cu. Ft.	Tons	Cu. Ft.	Tons
20 feet..	2262	45.2	2655	53.1	3080	61.6	3536	70.7	4023	80.4	4541	90.8	5089	111.8
24 feet..	2715	54.3	3186	63.7	3696	73.9	4243	84.9	4827	96.5	5449	109	6107	122
30 feet..	3393	67.8	3983	79.6	4620	92.4	5304	106	6035	120.6	6811	136.2	7633	167.7

CANCELLATION

The Ice by Cancellation. Cancellation simplifies calculation in many problems that arise in business. A cubic foot of ice, containing 12×12×12 cubic inches, weighs 56 lbs. How much ice will your ice box hold if it takes a piece 24×18×15 inches?

$$\frac{\cancel{24}^{2}\times\cancel{18}^{3}\times 15\times\cancel{56}^{14}}{\cancel{12}\times\cancel{12}\times\cancel{12}}$$ lbs. or 15×14 lbs. or 210 lbs.

A piece 8×9×12 weighs $\frac{\cancel{8}^{2}\times\cancel{9}^{3}\times\cancel{12}\times\cancel{56}^{28}}{\cancel{12}\times\cancel{12}\times\cancel{12}}$ lbs., or 28 lbs.

The same principle applies to finding the weight of 500 sheets of paper of size 33×45 inches when you know that 500 sheets 25×36 inches weigh 50 lbs. 500×33×45 will be the number of square inches of paper in the new ream; but 50 lbs. contains 500×25×36 square inches; the weight of the new ream is then

$$\frac{\cancel{500}\times 33\times\cancel{45}^{9}\times\cancel{50}^{10}}{\cancel{500}\times\cancel{25}\times\cancel{36}^{4}}=\frac{165}{2}$$ lbs. =82½ lbs. per ream.

FRACTIONS MADE EASY

Refractory Fractions. No one in business has any use for such fractions as $\frac{53}{379}$ and 173; it would be well in arithmetic to confine the work largely to those fractions which are used in business. Work many problems with ½, ⅓, ⅔, ¼, ¾, ⅛, ⅝, 1/10, ⅕, 5/6, fifths, tenths, twelfths, and sixteenths; get the fundamental principles firmly fixed in mind with these easy fractions, by much practise, then the drill with more awkward denominators will be easy.

Practise of This Kind. Problems.—Add ½ yd., ¾ yd., ⅜ yd. Note that ¾ is ½+¼; in adding mentally, combine ½ and ¾, giving 1¼, or 1 2/8; then add the 3/8, making 1 5/8. *Three quarters is a half and a quarter.* Find the cost of ¾ yd. ribbon at 24c a yd. Note that ½ yd. costs 12c, and ¼ yd. 6 cents, hence ¾ yd. costs 18c. At 18c a yard, a clerk should say 9+4½, gives 13½; the rule is to charge 14 cents if change is made, or 13 cents if the customer has exact change.

A BURNING QUESTION

Coal in Your Coal-Bin. Anthracite coal varies somewhat in weight per cubic foot, depending on the size and slightly on quality. However, 32 cu. ft. to 34 cu. ft. to the ton is about the average in ordinary sizes of coal. For all practical purposes 3% of the number of cubic feet in a bin gives the number of tons of anthracite coal which a bin will hold; ½ of this is approximately the number of tons of coke; 2½% of the number of cubic feet gives the number of tons of bituminous coal, which runs about 40 cubic feet to the ton.

Problem. Find the number of tons of coal in a bin 8×10×6 feet high; 8×10×6=480; 3% of 480 is 14.40, the number of tons of anthracite which this will hold; 2½% of 480 is 12, the number of tons of bituminous (Pocahontas or soft coal) which the bin will hold.

HAY

Hay in the Mow. Alfalfa hay stacked 30 days runs about 512 feet to the ton. A simple rule is to find the number of cubic feet in the mow by multiplying length by breadth by height, all in feet, then move the decimal point over three places and multiply by 2. This will be too large by one ton in fifty, unless the hay has been standing longer.

A mow 30×40×8 contains 9600 cubic feet; shift the point three places making 9.6 and multiply by 2, gives 19.2 tons for the capacity.

Hay in the Stack. A stack consists of a cone on a cylinder; measure the circumference of the cylindrical base and the height up to the point where the stack begins to taper off; multiply the circumference by itself and by 8 and divide by 100, giving the number of cubic feet for each foot of height of the cylindrical part. Multiplying by the height of the cylindrical part and shifting the decimal point three places gives one-half the number of tons in the cylindrical part. As the tops vary so much it is better to estimate the top separately as a fractional part of the base.

A stack of hay measures 60 feet in circumference and 14 feet high to the point where it begins to taper to the top. How many tons of hay?

$\frac{50\times 50\times 14\times 8}{100}=2800$ cubic feet; moving the decimal point three places gives 2.8 as half the number of tons, or 5.6 tons for a new stack; a six months' stack will contain at least one-fourth more, and an old stack almost one-half more.

WHERE YOU ARE AND WHEN

Latitude and Longitude. (See Index in book.) This topic belongs rather to geography than to arithmetic. The difference between Eastern and Central time should be clearly understood, but elaborate problems on finding the difference in time between two places when the longitude is given have no real meaning in fact except for the astronomer. The sun rises in the East and sets in the West; of two points the one farther east is reached first by the sun so that sunrise takes place earlier at this place, than at the place to the west of it, consequently the time of day, by the sun, is later at the place farthest east. It takes the earth 24 hours to complete the rotation of 360° about its axis, and hence it takes the sun 24 hours to complete the apparent rotation of 360° about the earth; in one hour the sun, or earth really, completes 1/24 of its course, or 1/24 of 360°; a difference of 1 hour in time corresponds then to a difference of 15° of longitude.

In our table of longitudes value are given in hours, minutes, and seconds; multiplying by 15 would give the longitude in degrees, minutes, and seconds. Note that Washington in Eastern time is given as 5 hr. 8 min. +West, or earlier than Greenwich; Chicago in the Central time belt is 5 hrs. 50 min. +West, or about one hour earlier; Denver in the Mountain time belt is 6 hrs. 59 min. +West; and San Francisco in Western time is 8 hrs. 9 min. West. Note that Honolulu is 10 hrs. 31 min. +West, or earlier time than Greenwich, while Yokohama in Japan is 9 hrs. 18 min. East, or later time than Greenwich. Between these two points lies the part of the Pacific which can be considered as either 180° East or 12 hrs. later or as 180° West or 12 hrs. earlier Greenwich; then on the West of this line the date is one day later than on the East. A person who goes around the world westward apparently loses a whole day at the international date line in the Pacific, but he gains by single hours 24 hours as he progresses westward.

SENSIBLE MEASURES

Metric System. (See Index.) The metric system should be understood as a matter of general information, since so much of the civilized world uses that system at the present time. The interest of the boy in this subject can be aroused today by a discussion of the famous French 75-millimeter gun, and by discussing the rations of soldiers and civilians in France and Italy. An item taken from the daily newspaper is worth ten taken from the arithmetic.

Problem. About how large in inches is the 75 mm. gun? the 375 mm.? Our table, page 388, tells us that 10 millimeters = 1 centimeters, and 1 centimeter = .3937 inches. Now 5 centimeters or 50 mm. equals 1.968 inches and 2.5 centimeters equals one-half of this or .984 inches. The total is 2.952 inches; for all practical purposes of discussion, but not for making shells, the 75 mm. gun can be thought of as a three inch gun.

1 cm. is nearly 2/5 of an inch; 5 cm. make 2 inches, lacking .0325 inches, an error of 1⅓%.

ALGEBRA IS HIGHER ARITHMETIC

Algebra Applied to Arithmetic. In elementary algebra you learn that $(x+a)(x+b)=x^2+ax+bx+ab$; now this rule is equally good if we substitute 10 for x. Then $(10+a)(10+b)=10\times 10+10\times a+10\times b+ab$, or $10(10+a+b)+ab$. If you think of a and b as numbers between 1 and 9, this algebraic formula gives the complete explanation for the rule which we have given above, under multiplication, for the product of any two "teens." Note that 10+a is the whole of one number; b as the units of the other; 10+a+b is the sum of one plus the units of the other; 10x (10+a+b) is the product of this sum by 10; ab is the product of the units.

An easy rule for squaring numbers under 100 follows from an easy algebraic formula. $(50+a)^2=2500+100a+a^2$, $(50-a)^2=2500-100a+a^2$; or $(50+a)^2=100(25+a)+a^2$ and $(50-a)^2=100(25-a)+a^2$. The rule then is: find the difference between your given number and 150; if greater than 50, add this difference to 25, and if less, subtract from 25; to this number, resulting, annex two zeros (to multiply by 100); to this number add the square of the difference between 50 and your given number. Find $(57)^2$, $(43)^2$, $(62)^2$. In 57, a is 7, 25+7=32, 3200, $7^2=49$, 3249 $=57^2$; in 43, a is 7 as 43 is (50—7); 25—7=18, 1800, 7^2 is 49, 1849 $=43^2$; in 62, a is 12, 25+12=37, 3700, $12^2=144$, 3844 is 62^2.

As you work problems in algebra learn to substitute numbers, and so make your algebra useful in arithmetical computation.

MATHEMATICS APPLIED TO LIFE PROBLEMS

The training in accuracy and the familiarity with computation which is given by the work explained above is absolutely essential for the individual who works along scientific lines, whether in agriculture, commercial lines, or in the laboratory.

ALGEBRA

H. C. BARBER

WHAT ALGEBRA IS. For three thousand years men have been looking for a brief way to write the explanations of arithmetic problems. The result of this search we call algebra. It is a systematic way of putting down the steps taken to get the answers to problems. It may be thought of as a sort of shorthand, making hard problems easier.

It also shows how to write arithmetic rules very briefly. We call these rules Formulas and find them very useful in learning about many things in science and in business and all sorts of practical affairs. We have formulas for interest and engines, electricity and lighting, ships and sailing, and the study of the stars, and for a thousand other things.

Algebra is not hard if you will study the *reason* for each step you take. Do not think of it as a rule but as the most sensible way to meet the difficulty you have before you. If you will study these paragraphs in this way you will find that you can solve many kinds of problems yourself and that you can read books that have formulas in their explanations, and even use these formulas yourself.

EQUATIONS. The most important tool that algebra uses in doing these things is the equation. To learn what an equation is and how it works is the biggest part of the study of algebra. We are now ready to take some problems and to find how to solve them by means of equations. Very simple ones will be best so that we shall not have to think much about the problem but about the method. It is a curious thing about beginning algebra that you must not think at all about what the answer is. Think only about how to get the equation. The answer will take care of itself.

PROBLEM 1. Four hundred fifty dollars is to be divided between John and Mary so that Mary will have 4 times as much as John.

Let j stand for the number of dollars John gets. Then 4 times j will stand for the number of dollars Mary gets. The algebra way of writing 4 times j is merely $4j$. We read it "four j." We think of it as four j's or as four times j.

We now know that $j+4j=450$. This is our equation. The word "equation" comes of course from the word equals. All of our equations will contain this sign, =, which we read "equals."

① $j+4j=450$

One j and $4j$'s make $5j$'s, so our second equation becomes

② $5j=450$

We want to know how many dollars j stands for. We know that $5j=450$. How shall we find j? You can see for yourself that we must *divide* by 5.

③ $j=90$

This means that John gets \$90. We also want to know Mary's share. The second line we wrote tells us that $4j$ stands for the number of dollars Mary gets. To get $4j$ from ③ we must multiply by 4.

④ $4j=360$

The answer is \$90 for John and \$360 for Mary. We show that this is the correct answer by adding \$90 and \$360 which gives us the right total, \$450.

The numbers ①, ②, ③, and ④ are going to be very useful in talking and writing about our equations. Form the habit of numbering each equation you write.

① is read "equation one."

This problem and its solution are very simple but if you have understood each step you have already gone a long way toward understanding what algebra is, and you are ready to go ahead.

The next problem can be done in the same way. We will put it down without the explanation. Study it carefully, rereading the explanation of problem one. Remember that you are laying the foundation for all your understanding of algebra.

PROBLEM 2. Father and Mother have 1800 books in all. If Father has 24 times as many as Mother, how many has each?

Let M = the number of books Mother has.

Then $24M$ = the number of books Father has.

①	$M+24M=1800$	
②	$25M=1800$	
③	$M=72$	②÷25
④	$24M=1728$	③×24

Check	*Ans.*
1728	Mother, 72 books
72	Father, 1728 books
1800	

Notice that we do not set down the units in the equations. In problem 1 we did not write dollars in the equations: nor did we write "books" in the equations of Problem 2. We do however set down these words in the *first lines* and in the *answer*.

At the right of ③ and ④ is written the explanation or "history" which tells exactly what was done in getting ③, namely divide ② by 25; and in getting ④, namely multiply ③ by 24. Always write your history *before* you write your equation.

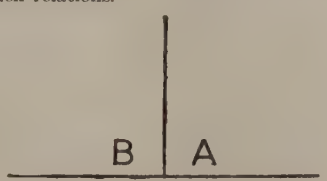
Where you have the answer to a problem your first question should be, "Is my answer right?" Look back to the problem. Both together had 1800 books. To see if we are correct, add the 72 books of Mother's to the 1728 of Father's and get the total 1800. This checks our solution. We *know* we are right.

The next problem is left for you to solve.

PROBLEM 3. There are twice as many lights on the first floor of a house as on the second floor. There are 48 lights on both floors. How many on each?

More of these problems can be found in the Evans & Marsh, First Year Mathematics.

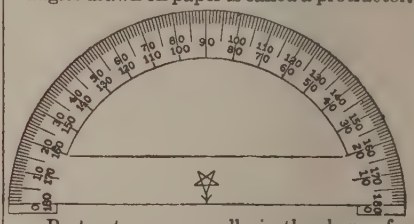
ANGLES. Our next problems are about angles. Before we are ready to solve them we will learn something about angles and their relations.



When two lines meet, as in the figure, so that $\angle A = \angle B$, (The symbol $\angle$ is read "angle"). Each angle is called a *right angle*. For the purpose of measuring smaller angles a right angle is divided into ninety equal parts called degrees. The angle A is 90 degrees. More briefly, $\angle A = 90°$. Also $\angle B = 90°$. If we let A stand for the numbr of degrees in the Angle A, we write

① $A = 90$
② $B = 90$
③ $A+B=180$ ①+②

The instrument used for measuring angles drawn on paper is called a protractor.



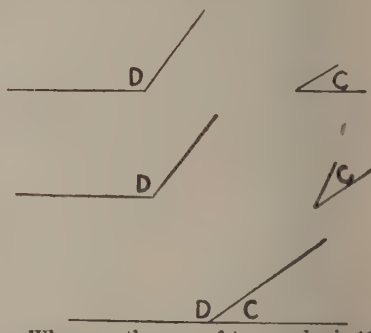
Protractors are usually in the shape of a half circle.

A very convenient form of protractor is the ruler-protractor made of celluloid.

In each protractor you will notice the division into 180 degrees.

In each of these figures

$\perp C = 180°$



Whenever the sum of two angles is 180° the angles are supplementary. 50° and 130° are *supplementary:* so are 10° and 170°, 20° and 160°, 27.5° and 152.5°.

Which of the following pairs of angles are supplementary? How do you know?

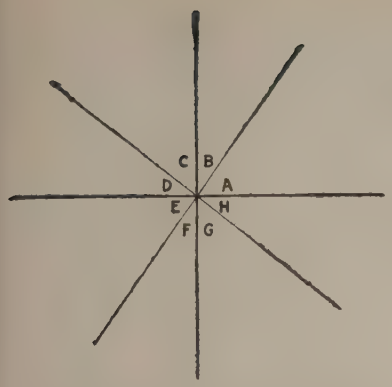
(a)	45° 135°	(d)	18° 148°
(b)	59° 121°	(e)	99° 81°
(c)	75° 105°	(f)	176° 22°

If you can get a protractor and draw these angles and measure them you will understand them much better.

In this diagram we have four right angles made by the heavy lines. Each right angle is divided into two parts by a light line.

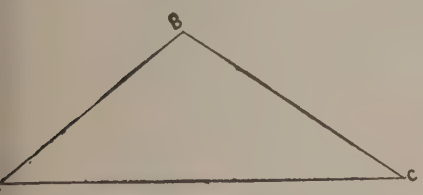
$A+B=90$
$C+D=90$
$E+F=90$
$G+H=90$

Two angles whose sum is 90° are *complementary*.

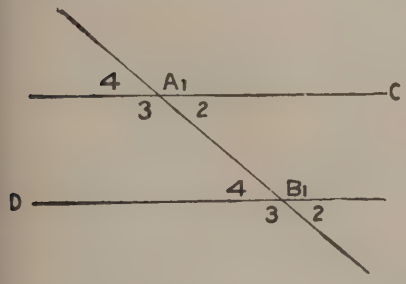


This figure is a triangle. If you measure its three angles and add them the total is 180. The sum of the angles of any triangle is 180 degrees.

$$A+B+C=180$$



This figure is a stripe cut by a transversal. The lines CA and DB are parallel. that is they go in the same direction. AB is a transversal which cuts the two parallels. Eight angles are formed. $A_1+A_2=$ how many degrees? If you cannot answer reread the paragraph about supplementary



angles. You will find that ① $A_1+A_2=180°$ ② $A_3+A_4=180°$. ③ $B_1+B_2=180°$, ④ $B_2+B_3=180°$. Are there other pairs of supplementary angles?

Look at A_1 and A_3. They are equal because their sides are the same lines. Such angles as these, such as $\angle R$ and $\angle S$ in

this small diagram are *vertical* angles. Vertical angles are equal. Returning to the diagram of the stripe, A_1 and B_1 have their sides going in the same direction and are equal. $A_2=B_2$, and $A_3=B_3$ for the same reason.

We can sum this all up in these three statements, calling angles marked 1 and 3 odd, and 2 and 4 even. In a stripe:

① The four odd angles are equal

② The four even angles are equal

③ One odd added to one even angle makes 180 degrees.

These facts about angles will give us many interesting problems to solve.

PROBLEM 4. One of the angles in a stripe is 8 times another. How many degrees in each?

Let $x=$the number of degrees in the smaller angle.

Then $8x=$the number of degrees in the larger angle.

①	$x+8x=180$	
②	$9x=180$	
③	$x=20$	②÷9
④	$8x=160$	③×8

Check
20
160
180

Ans. 20° and 160°

You can now make such problems, for yourself, and solve them.

PROBLEM 5. In the triangle $A\ B\ C$ angle B is twice angle A, and angle C is 3 times A. Find the angles.

Let $x=$no. of degrees in $\angle A$.
Then $2x=$no. of degrees in $\angle B$.
And $3x=$no. of degrees in $\angle C$.

Now we know that the sum of three angles of a triangle is 180 degrees, therefore

①	$x+2x+3x=180$	
②	$6x=180$	
③	$x=30$	②÷6
④	$2x=60$	③×2
⑤	$3x=90$	③×3

Check
30
60
90
180

Ans. $A=30°$, $B=60°$, $C=90°$.

PROBLEM 6. In paying \$68, I used only \$5 and \$2 bills. The number of \$5 bills was 3 times the number of \$2 bills. How many of each?

Let $x=$the no. of \$2 bills
Then $3x=$the no. of \$5 bills

Now we cannot add the number of *bills* and get the number of *dollars*. Think this over carefully. If you count the number of bills in a pile, do you know how many dollars the pile is worth? Does it make a difference whether the bills are ones or twos or fives or tens? Seven \$5 bills make how much money? 10, \$5 bills? x, \$5 bills? The answers to these three questions are found by multiplying five by seven, five by ten and five by x. The answers are \$35, \$50 and $5x$ dollars. How many dollars in 8 \$2 bills? in 20 \$2 bills? in 3 \$2 bills?

Ans. \$16, \$40 and \$6.

Now look back at our problem. How many dollars in x\$2 bills? Answer $2x$ dollars. How many dollars in $3x$\$5 bills? Answer $15x$ dollars. The next two lines of our solution will be

$2x=$the no. of dollars in \$2 bills.
$15x=$the no. of dollars in \$5 bills.

Now we are ready to add *dollars* and find the number of dollars in all.

① $2x+15x=68$

Because the problem says there were 68 dollars in all.

②	$17x=68$	
③	$x=4$	②÷17
④	$3x=12$	③×3

Check
4 \$2 bills = \$ 8
12 \$5 bills = 60
68

Ans.
4 \$2 bills
12 \$5 bills

PROBLEM 7. To pay \$168 I use \$10 and \$2 bills only, 4 times as many 10's as 2's How many of each?

Let $x=$the number of \$2 bills.
Then $4x=$the number of \$10 bills.
$2x=$the number of dollars in 2's.
$40x=$the number of dollars in 10's.
$2x+40x=$the number of dollars in all.
But $168=$the number of dollars in all. therefore.

①	$2x+40x=168$	
②	$42x=168$	
③	$x=4$	②÷42
④	$4x=16$	③×4

Check
4 2's = \$ 8
16 10's = 160
168

Ans.
4, 2's
16, 10's

The next problem does not read at all like problems 6 and 7 but it really is the same kind.

PROBLEM 8. A dealer sold out his stock of used Fords at \$430 each and Buicks at \$920 each. There were 3 times as many Fords as Buicks. He received in all \$15470. How many cars of each kind did he sell?

Let $x=$the number of Buicks sold.
Then $3x=$the number of Fords sold.

$920x=$the number of dollars received for the Buicks.

$1290x=$the number of dollars received for the Fords.

The $1290x$ was found by multiplying $3x$ the number of Fords, by 430, the number of dollars each Ford sold for.

①	$920x+1290x=15470$	
②	$2210x=15470$	
③	$x=7$	②÷2210
④	$3x=21$	③×3

Check
7 Buicks at 920 = 6440
21 Fords at 430 = 9030
15470

Ans.
7 Buicks
21 Fords

PROBLEM 9. A bookseller shipped dictionaries weighing $7\frac{1}{2}$ pounds each and 6 times as many algebra books weighing 2 pounds each.

The total weight of the shipment was 195 pounds. How many books of each kind?

Let $x=$the no. of dictionaries.
Then $6x=$the no. of algebras.
$7\frac{1}{2}x=$the no. of pounds the dictionaries weighed.

$12x=$the no. of pounds the algebras weighed.

Why is it $12x$? Because there are $6x$ algebras at 2 pounds each.

①	$7\frac{1}{2}x+12x=195$	
②	$19\frac{1}{2}x=195$	
③	$x=10$	②÷$19\frac{1}{2}$
④	$6x=60$	③× 6

Check
10 dictionaries at $7\frac{1}{2}$ lb. = 75 lb.
60 algebras at 2 lb. = 120
195 lb.

Ans.
10 dictionaries
60 algebras

One more for you to solve. You can make more problems for yourself about bills or coins; or find them in Evans and Marsh, First Year Mathematics.

PROBLEM 10. To pay \$245 use \$20 and \$5 bills only. Three times as many 5's as 20's. How many of each?

SECOND KIND OF EQUATION

PROBLEM 11. One angle of a stripe is 8 degrees more than the other. Find the number of degrees in each angle.

Let x = the no. of degrees in the smaller angle.

Then $x+8$ = the no. of degrees in the larger angle.

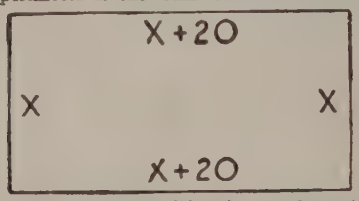
To find a number 8 larger than x, we must add 8 to x. This gives us $x+8$.

① $x+x+8=180$
② $2x+8=180$

This equation cannot be solved by the steps we have been taking. What is the difficulty? Clearly the "8" is in the way. How can we remove it without making our equation untrue? If we have eight too much, the remedy must be to *subtract* eight.

③	$2x=172$	②−8
④	$x=86$	③÷2
⑤	$x+8=94$	④+8
Check		*Ans.*
86°		86°, 94°
94°		
180°		

PROBLEM 12. The perimeter of a rectangle is 136 feet. One side is 20 feet shorter than the other. Find the length of each side. The diagram shows a rectangle. Each of its angles is a right angle. You notice that the two short sides are equal, and the two long sides are equal. The perimeter is the sum of the four sides.



Let x = the no. of feet in one short side.

Then $x+20$ = the no. of feet in a long side.

Adding the four sides to get the perimeter we get $x+x+20+x+x+20$. Uniting these we get $4x+40$. Therefore

①	$4x+40=136$	
②	$4x=96$	①−40
③	$x=24$	②÷4
④	$x+20=44$	④+20
Check		*Ans.*
24		24 feet
44		44 feet
24		
44		
136		

PROBLEM 13. Solve problem 12 in case the perimeter was 150 feet, and one side was 35 feet shorter than the other. Answer 20 ft. and 55 ft.

Make many more of these problems and solve them.

PROBLEM 14. I sold canned corn at 11 cents a can and 5 times as many cans of tomatoes at 14 cents each, and one can of peas at 12 cents. If the total receipts were $4.98, how many cans of corn and tomatoes did I sell?

Let x = the no. of cans of corn.

Then $5x$ = the no. of cans of tomatoes.

$11x$ = the no. of cents for the corn.

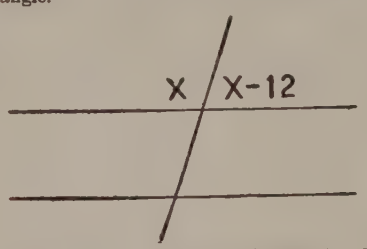
$70x$ = the no. of cents for the tomatoes—because there were $5x$ cans at 14 cents a can.

①	$11x+70x+12=498$	
②	$81x+12=498$	
③	$81x=486$	②−12
④	$x=6$	③÷81
⑤	$5x=30$	④×5

Check		*Ans.*
6 cans corn at .11 =	$ .66	6 cans corn.
30 cans tom. at .14 =	4.20	30 cans tomatoes.
1 can peas at .12 =	.12	
	$4.98	

THE THIRD KIND OF EQUATION SHORTAGES

PROBLEM 15. If one angle of a stripe is 12 degrees less than another angle of the same figure, fin the number of degrees in each angle.



Let x = the number of degrees in the larger angle.

Then $x-12$ = the no. of degrees in the smaller angle—because 12 taken away from x gives $x-12$. This is read x less 12 or x minus 12.

① $x+x-12=180$

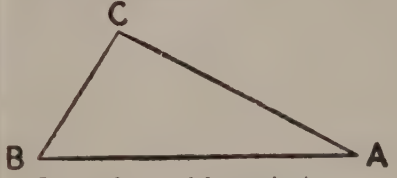
Because the sum of 2 angles of a stripe is 180°.

② $2x-12=180$

None of the steps we have taken so far will solve this equation. What is the difficulty? We are short 12. The left hand side is 12 less than $2x$. If it was just $2x$ we could go ahead. How can we make it just $2x$? By *adding* 12.

③	$2x=192$	②+12
④	$x=96$	③÷2
⑤	$x-12=84$	④−12
Check		*Ans.*
96°		96°, 84°
84		
180		

PROBLEM 16. The $\angle B$ of a triangle is double the $\angle A$, and $\angle C$ is 30 degrees less than the sum of A and B. How many degrees in each angle?



Let x = the no. of degrees in A.

Then $2x$ = the no. of degrees in B.

And $3x-30$ = the no. of degrees in C.

Because the sum of $\angle A$ and $\angle B$ is $3x°$. Thirty degrees less is $3x-30$.

But the sum of the three angles of a triangle is 180°.

①	$x+2x+3x-30=180$	
②	$6x-30=180$	
③	$6x=210$	②+30
④	$x=35$	③÷6
⑤	$2x=70$	④×2
⑥	$3x-30=75$	④+(5)−30
Check	*Ans.*	
35	$A=35°$, $B=70°$, $C=75°$	
70		
75		
180		

Problems like 11 and 12 will give equations of this kind if you let x stand for the *larger* number. Try them.

The Convenience of the Parenthesis in an Equation

PROBLEM 17. I paid $1.45 with nickels and dimes using 7 less nickels than dimes. How many of each?

Let x = the number of dimes.

Then $x-7$ = the number of nickels.

$10x$ = the number of cents in dimes.

$5(x-7)$ = the number of cents in nickels.

The ( ) is a parenthesis. A parenthesis is used to tie two or more terms together to show that they are all to be treated alike. Think of it as a string tieing together the terms inside. The parenthesis containing the $x-7$ merely tells us that the x and the minus 7 are to be treated alike. The 5 in front of the parenthesis means that both the x and the minus 7 are to be *multiplied* by 5. To read an expression with a parenthesis in it merely read "5 times the parenthesis $x-7$" or "five times the quantity $x-7$."

① $10x+5(x-7)=145$. Because this is the number of cents in all.

We will now carry out the instructions in the expression $5(x-7)$, namely multiply the $x-7$ by 5.

② $10x+5x-35=145$

Why is it *Minus* 35. Because we are short 7 five times, that is we are short 35 in all.

③	$15x-35=145$	
④	$15x=180$	③+35
⑤	$x=12$	④÷15
⑥	$x-7=5$	⑤−7
Check		*Ans.*
12 dimes	= $1.20	12 dimes
5 nickels	= .25	5 nickels
	$1.45	

PROBLEM 18. John is twice as old as Will. Eighteen years ago John was five times as old as Will. How old are they?

Let x = the no. of years in Will's age now.

Then $2x$ = the no. of years in John's age now.

The next quantities we must list are their ages 18 years ago. If a man is 38 now how old was he 18 years ago? To answer you must *subtract* 18, therefore

$x-18$ = the no. of years in Will's age 18 years ago.

$2x-18$ = the no. of years in John's age 18 years ago.

But John was then 5 times as old as Will. This gives us the equation

① $5(x-18)=2x-18$

Now multiply both x and minus 18 by 5.

② $5x-90=2x-18$

We now have a shortage on each side of the equation. We must get rid of both of them. How? By adding the larger shortage, that is 90. Try it.

③ $5x=2x+72$ ②+90

Where did we get the 72? We were short 18 and added 90. If the thermometer stood at −18 and rose 90 where would it stand? If you owed a man $18 and you worked for him until you had earned 90, how much should he pay you to balance the accounts? Equation three might be written first in the form ③ $5x+90-90=2x+90-18$ then reduced to $5x=2x+72$.

There is another difficulty in ③. There is a term with x in it in *each* side. We want x on one side and a number on the other. The $2x$ is in the way. How can we get rid of it?

We must *subtract* $2x$.

④	$3x=72$	③−2x
⑤	$x=24$	④÷3
⑥	$2x=48$	⑤×2

Check			*Ans.*
NOW	18 Y's	AGO	
Will	24	6	Will is 24
John	48	30	John is 48
24×2 = 48	6×5 = 30		

Do you understand the check? Is John twice as old as Will now? Eighteen years ago was he 5 times as old?

PROBLEM 19. A father is twice as old as his son. Twenty-two years ago he was 3 times as old. How old are they now?

Let x = the no. of years in son's age now.
Then $2x$ = the no. of years in father's age now.
$x-22$ = the no. of years in son's age 22 years ago.
$2x-22$ = the no. of years in father's age 22 years ago.

① $3(x-22)=2x-22$
② $3x-66=2x-22$
③ $3x=2x+44$ ②+66
④ $x=44$ ③−2x
⑤ $2x=88$ ④×2

Check		*Ans.*
NOW	22 Y's AGO	Father 88 years
Father 88	66	Son 44 years
Son 44	22	
$22\times3=66$		

PROBLEM 20. Apples cost 15 cents a dozen less than oranges. If 2 dozen apples and 3 dozen oranges cost $1.65, what is the cost of a dozen of each?

Let x = the no. cents for 1 doz. oranges.
Then $x-15$ = the no. cents for 1 doz. apples.
$3x$ = the no. cents for 3 doz. oranges.
$2(x-15)$ = the no. cents for 2 doz. apples.

① $3x+2(x-15)=165$
② $3x+2x-30=165$
③ $5x-30=165$
④ $5x=195$ ③+30
⑤ $x=39$ ④÷5
⑥ $x-15=24$ ⑤−15

Check	*Ans.*
2 doz. at .24 = $ .48	Oranges $.39 a doz.
3 doz. at .39 = 1.17	Apples .24 a doz.
1.65	

We will now take some *equations* to practice on. They have been made from problems but just what the problems are we do not know.

Exercise 1

① $13(8-x)+2(x-6)=2x+1$

The first thing to do is to do the multiplying indicated by the parentheses. (Notice how the plural of this word is spelled.)

② $104-13x+2x-12=2x+1$

The next step is to unite the similar terms. $104-12$ gives 92. Short $13x+2x$ leaves us short $11x$.

③ $92-11x=2x+1$

The next step is to remove the shortage by adding $11x$.

④ $92=13x+1$ ③+$11x$

Which term is in the way now? Clearly the "one" because we want x on one side and a number on the other. Therefore take away the number which stands on the same side as the x term.

⑤ $91=13x$ ④−1

To find x we must divide by 13.

⑥ $7=x$ ⑤÷13

Ans. 7

Since there is no problem to check in, in order to discover whether our answer is correct, we must check in ①.

The only kind of a sentence that has an answer is a question. Equation one has an answer therefore it is a question, even though it is written without any question mark. What is the question? It is this. How big is x if $13(8-x)+2(x-6)$ equals $2x+1$.

Our solution indicates that 7 is the answer to this question. Let us see if 7 does make these two quantities equal.

① $13(8-x)+2(x-6)=2x+1$
Supposing x to be 7 we get:
$13(8-7)+2(7-6)=14+1$
$13(1)+2(1)=15$
$13+2=15$
$15=15$

Therefore 7 is the number which makes these two quantities equal. Try all the other numbers you want to. There is no other number which will do.

Exercise 2

① $15(7x-3)=8(13x+7)-20$
② $105x-45=104x+56-20$
③ $105x-45=104x+36$
④ $105x=104x+81$ ③+45
⑤ $x=81$ ④−$104x$

Check	*Ans.*
$15(567-3)=8(1053+7)-20$	81
$15(564)=8(1060)-20$	
$8460=8480-20$	
$8460=8460$	

The parts of an equation which are separated by plus or minus signs are called *terms*. Any term with an x in it is called an x-term.

The steps to take in solving such simple equations as these are:

(1) Perform any indicated multiplications.

(2) Unite similar terms on each side.

(3) If there are any terms with minus signs before them, add enough to make up these shortages.

(4) Subtract from each side the smaller x-term.

(5) Subtract from each side the number that stands beside an x-term.

(6) Divide by the coefficient of the x-term.

You can see for yourself what the long word coefficient means. In exercise 1, the last history was ⑤÷13. In ⑤ the 13 is the coefficient of the x.

Rule (3) is interesting because the arabic word for this step is the source of the word Algebra from which our subject takes its name.

These rules were first formulated for modern students in the Evans & Marsh, First Year Mathematics, Merrill, which you will find very helpful in the further study of Algebra.

Try these exercises, thinking *first* which step you are going to take to meet the difficulty before you.

3. $3(x-7)=2x-11$
4. $2(x+5)=10x-6$
5. $2x+5=3x$
6. $5x-7=3(x+1)-4$
7. $7(x-2)=4(x-4)$
8. $6x=7(10-x)$
9. $8(x+10)=12(x+7)-8$
10. $5(x+4)=14x+2$

Try these problems, looking back, if necessary, to previous models.

PROBLEM 21. One angle of a stripe is seven less than twice the other. Find the number of degrees in each.

PROBLEM 22. Sugar costs 34 cents a pound less than tea. Ten pounds of sugar and 6 of tea cost $3.32. Price of each?

PROBLEM 23. Twenty-one coins, quarters and halves amount to $8.50. How many of each?

Let x = the no. of quarters.
What will stand for the number of halves? There are 21 coins in all x of them are quarters. How many does that leave for the halves?

If you cannot answer, imagine that x is 15. If there are 21 coins in all and 15 of them are quarters, how many are halves. Clearly $21-15$. If x of them are quarters there will be $21-x$ halves.
$21-x$ = the no. of halves.
$25x$ = the no. of cents in quarters.
$50(21-x)$ = the no. of cents in halves.

① $25x+50(21-x)=850$
② $25x+1050-50x=850$
③ $1050-25x=850$
④ $1050=850+25x$ ③+$25x$
⑤ $200=25x$ ④−850
⑥ $8=x$ ⑤÷25
⑦ $13=21-x$ $21-$⑥

Check	*Ans.*
8 quarters = $2.00	8 quarters
13 halves = 6.50	13 halves
$8.50	

PROBLEM 24. Sixteen coins, quarters and dimes amount to $2.95. How many of each?

PROBLEM 25. Forty pounds of tea, part costing 32 cents a pound and part 44 cents a pound come to $15.32. How many pounds of each?

HOW TO FORM AN EQUATION

One of the difficulties in solving the problems of algebra is the construction of the equation. Study of the problems we have solved shows that the steps to take are three. First make a list of the numbers talked about in the problem but not actually given in figures. Second select one of them to be represented by x and then represent the others according to their relations to this first one. Third, when this has been done make a statement that two things are equal, either by using some statement of the problem not used in making the list, or by using two abbreviations for the same number in the list.

Study of the models and of your problems with these three rules in mind will make the formation of equations easier.

Another great help is this: when the answer to a problem is found go over each statement of the problem very carefully to see if the answer meets every condition of the problem. This not only checks the accuracy of the answer but it makes clear the steps you took in forming your equation. Check the answer to every problem.

FRACTIONAL EQUATIONS

The next problems will give us equations with fractions. Suppose we have the equation

① $\frac{x}{2}=9$

how shall we solve it? If x over 2 or $\frac{1}{2}x$ equals 9, how much is the whole of x? We must multiply by 2.

② $x=18$ ①×2

This then is the key to all fractional equations.

Exercise 1

① $\frac{x}{5}=8$

② $x=40$ ①×5

PROBLEM 26. One half of a certain number and one fifth of it make 28. What is the number?

Let x = the number.

$\frac{x}{2}$ = one half the number.

$\frac{x}{5}$ = one fifth the number.

The statement in our problem which we have not used in our list is that one half the number and one fifth the number equal 28. Saying this fact and using the expression in our list we get,

$$① \quad \frac{x}{2}+\frac{x}{5}=28$$

This is read x over 2 plus x over 5 equals 28.

We can take care of the $\frac{x}{2}$ by multiplying by 2.

$$② \quad x+\frac{2x}{5}=56 \qquad ①\times 2$$

We can take care of the $\frac{2x}{5}$ by multiplying by 5.

③	$5x+2x=280$	②×5
④	$7x=280$	③ same values
⑤	$x=40$	④÷7
Check		*Ans.*
One half of 40 = 20		40
One fifth of 40 = 8		
	28	

PROBLEM 26A. Two thirds of a number added to four sevenths of it make 520. What is the number?

Let x = the number.

$\frac{2x}{3}$ = two-thirds of the number.

This may be written $\frac{2}{3}x$ or $\frac{2x}{3}$. The first is read "two thirds x;" the second "two x over three."

$\frac{4x}{7}$ = 4/7 of the number.

$$① \quad \frac{2x}{3}+\frac{4x}{7}=520$$

Instead of multiplying first by 3 and then by 7, what one number can we multiply by? Twenty-one of course.

$$② \quad 14x+12x=10920 \qquad ①\times 21$$

To be sure of each term as you multiply, set it down.

$$\frac{2x}{3}\times 21=14x, \quad \frac{4x}{7}\times 21=12x$$

③	$26x=10920$	③÷26
④	$x=420$	
Check		*Ans.*
2/3 of 420 = 280		420
4/7 of 420 = 240		
	520	

PROBLEM 27. One line is 3 times another, and half the shorter line is 20 in. less than the longer line. Find the length of each line.

Let x = the no. of inches in length of shorter line.

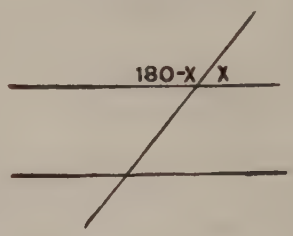
Then $3x$ = the no. of inches in length of longer line.

$\frac{x}{2}$ = the no. of inches in half of shorter line.

The fact not used in making our list is that "half the shorter is 20 in. less than the longer." To say this fact using the word "equals" we may write, half the shorter equals the longer less 20 inches. Say the same thing using the expressions in our list.

①	$\frac{x}{2}=3x-20$	
②	$x=6x-40$	①×2
③	$x+40=6x$	②+40
④	$40=5x$	③−x
⑤	$8=x$	④÷5
⑥	$24=3x$	⑤×3
Check		*Ans.*
1/2 of 8 = 4		8 inches
4 is 20 less than 24		24 inches

PROBLEM 28. In the figure formed by a stripe and a transversal one half the smaller angle equals two-fifths of the larger angle. How many degrees in each angle?



Let x = the number of degrees in the smaller ∠.

How shall we represent the number of degrees in the larger ∠? The larger added to the smaller equals 180°. If the smaller is x the larger will be $180-x$.

$180-x$ = the no. of degrees in the larger ∠.

We are told that

1/2 the smaller = 2/5 the larger, that is:

$$① \quad \frac{x}{2}=\frac{2}{5}(180-x)$$

②	$5x=4(180-x)$	①×10
③	$5x=720-4x$	② same values
④	$9x=720$	③+4x
⑤	$x=80$	④−9
⑥	$180-x=100$	180−⑤
Check		*Ans.*
1/2 of 80° = 40°		80°
2/5 of 100° = 40°		100°

PROBLEM 29. Solve problem 28 changing it to read, one-third the smaller angle equals one-fifteenth the larger.

PROBLEM 30. One angle exceeds half of another by 10° and exceeds the complement of their sum by 30°. Find the angles.

This kind of problem often gives much trouble to beginners but if you will reread, "How to Form an Equation" on page 841 and if you will use care in making your list you will not find it hard.

Let x = the number of degrees in the second ∠.

The first ∠ exceeds half the second by 10°. That is:

$x/2+10$ = the no. of degrees in first ∠.

$x+x/2+10$ = the no. of degrees in the sum of the two ∠s.

The next quantity to set down in our list is, the complement of their sum. How do we find the complement of an angle? What is the complement of 10°, answer 90−10 or 80°; of x, answer $90-x$; of $x+x/2+10$, answer $90-(x+x/2+10)$, therefore $90-x-x/2+10$ = the no. of degrees in the complement of their sum. This completes our list and there is still one statement in the problem which we have not used. The (first) angle exceeds the complement of their sum by 30 degrees. Stating this with the word "equals" we have: The first angle equals the complement of their sum, plus 30°, which when translated from our list reads:

① $x/2+10=90-(x+x/2+10)+30$

② $x/2+10=90-x-x/2-10+30$ ① same values

Notice that the minus sign before the parenthesis told us to subtract all the terms in the parenthesis. Have we *subtracted* all three of them in ②?

③ $x+20=180-2x-x-20+60$

④ $x+20=220-3x$ ②×2

③ same values

Where do we get the $-3x$? You notice that we are *short* $2x$ and *short* x. This makes us *short* $3x$ in all.

⑤	$4x+20=220$	④−3x
⑥	$4x=200$	⑤−20
⑦	$x=50$	⑥÷4
⑧	$x/2+10=35$	⑥/2+10
Check		*Ans.*
1st ∠ = 35°		35°, 50°
Sum = 85°		
Comp. of Sum = 5°		
35° exceeds 5° by 30°		

PROBLEM 31. One angle exceeds half another by 15° and exceeds the complement of their sum by 20°. Find the angles.

Study problem 30 and do this one yourself.

Ans. 35°, 40°.

PROBLEM 32. John, James and Henry shared a sum of money so that John had $30 more than half, James $33 more than a third, and Henry had the rest which was $10. How much did John and James have?

Let x = no. of $ in all.

Then $x/2+30$ = no. of $ John has.

And $x/3+33$ = no. of $ James has.

Adding the shares of John, James, and Henry, we get

①	$x/2+30+x/3+33+10=x$
②	$3x+180+2x+198+60=6x$
③	$5x+438=6x$
④	$438=x$
⑤	$249=x/2+30$
⑥	$179=x/3+33$

Check

$249 John

179 James

10 Henry

438 Total

Ans.

John, $249

James, $179

Considerable practice is required to develop speed and accuracy with fractional equations.

1. $x/3+x/5+4=x-3$
2. $x/2+x/3+1/2=x-1$
3. $x/2-x/5=x/2-3$
4. $x/7-\frac{3x}{7x}=17$
5. $\frac{7x-6}{5}+\frac{-3x-5}{3}=\frac{+x-1}{2}$

$$① \quad \frac{7x-6}{5}+\frac{x}{3}+\frac{3x-5}{2}=+x-1 \qquad ①\times 30$$

②	$42x-36+10x=45x-75+30x-30$	
③	$52x-36=75x-105$	③ same values
④	$52x+69=75x$	③÷10
⑤	$69=23x$	④−52
⑥	$3=x$	⑤÷23

Check *Ans.* 3
[Put 3 in place of x in ①]
$\frac{21-6}{5}+\frac{3}{3}=\frac{9-5}{2}+3-1$
$3+1=2+3-1$
$4=4$

6. $\frac{3x-7}{4}-\frac{3x}{11}=\frac{x-5}{2}$

7. $\frac{x+1}{2}+2+\frac{x+3}{4}=x$

8. $\frac{x-1}{7}+\frac{3x-1}{5}+\frac{1}{7}=\frac{x-7}{3}+\frac{4x-3}{5}$

9. $\frac{x-1}{2}-\frac{2}{5}-\frac{x+3}{5}=0$

① $\frac{x-1}{2}-\frac{2}{5}-\frac{x+3}{5}=0$

② $5x-5-4-(2x+6)=0$ ①×10

The parenthesis is left in ② because the two terms of the numerator of the last fraction must be both *multiplied* and *subtracted*. The minus sign before the fraction says to subtract, and our history, ①×10, says to multiply. Trying to do both of these at once often leads to errors.

③ $5x-9-2x-6=0$ ② same values

Notice that the last term is minus 6 because we are instructed to *subtract* both the $2x$ and the 6.

④ $3x-15=0$ ③ same values
⑤ $3x=15$ ④+15
⑥ $x=5$ ⑤÷3

Check *Ans.* 5
$\frac{5-1}{2}-\frac{2}{5}-\frac{5+3}{5}=0$
$2-\frac{10}{5}=0$
$2-2=0$

10. $\frac{5x-x+7}{10}=8-\frac{1}{2}+\frac{x+1}{5}$

11. $\frac{x+5}{6}-\frac{x+1}{8}=\frac{x+3}{4}$

12. $\frac{x}{4}-\frac{x-5}{3}=\frac{x-8}{4}$

This example looks much like those above but is in fact much more troublesome.

① $\frac{x}{4}-\frac{x-5}{3}=\frac{x-8}{4}$

② $3x-(4x-20)=3x-24$ (1)×12

The quantity to be subtracted is $4x-20$; we are not told to subtract as much as $4x$, we are told to subtract 20 *less* than $4x$. Suppose it read $30-(25-20)$. This says to take from 30 a number which is 20 less than 25. This of course means from 30 take 5. The answer is 25. If we wrote $30-25$ we would be taking away too much, 20 too much because we were told to take away not 25 but 25 less 20. To correct our mistake we must *put back* the 20, and write $30-25+20$ which gives us 25, the correct answer.

③ $3x-4x+20=3x-24$ ② same values

Do you understand the +20? Study the explanation through again. We took the whole of $4x$ when we were told to take away $4x-20$. Consequently we must *put back* the 20. We took away 20 too much, then we put back the 20.

④ $-x+20=3x-24$ ③ same values
⑤ $44=4x$ ④+x+24
⑥ $11=x$ ⑤÷4
Check *Ans.* 11
$\frac{11}{4}-\frac{11-5}{3}=\frac{11-8}{4}$
$11/4-6/3=3/4$
$11/4-2=3/4$
$11/4-8/4=3/4$
$3/4=3/4$

13. $\frac{x+5}{7}=\frac{x-4}{2}-\frac{x-5}{8}$

14. $\frac{7x-11}{45}-1=\frac{x+7}{15}-\frac{3x+1}{25}$

15. $5x+20-2(x+2)=40-4(x-15)$
① $5x+20-2(x+2)=40-4(x-15)$
② $5x+20-(2x+4)=40-(4x-60)$ ① same values

We keep the parentheses in order to avoid the mistakes which come from trying to multiply and subtract at the same time.

③ $5x+20-2x-4=40-4x+60$ ② same values

Why do we write −4, and +60? The $2x$ and 4 are *both* to be subtracted. In the last parenthesis however we are told to take away 60 less than $4x$. When we wrote $-4x$ we took away 60 too much. Then we *put back* the 60.

④ $3x+16=100-4x$ ③ same values
⑤ $7x+16=100$ ④+$4x$
⑥ $7x=84$ ⑤−16
⑦ $x=12$ ⑥÷7

Check *Ans.*
$60+20-2(14)=40-4(-3)$ 12
$80-28=40-(-12)$

Notice the last parenthesis. This is the strangest of all the subtraction cases. We are told to take away minus 12 from 40. Taking away minus 12 is the same as taking away a *debt* of 12, that is the same as adding twelve.

⑧ $80-28=40+12$
⑨ $52=52$

A rule is sometimes stated in algebra as follows: To remove any term from a minus parenthesis change its sign. This is a dangerous rule for two reasons. First because the "change of sign" seems to have something to do with the parenthesis while it really has to do instead with the subtraction which the *minus* sign before the parenthesis tells us to perform. Second because signs do not "change" in algebra and such statements lead us to think of algebra as a kind of juggling instead of something which we can reason out for ourselves. Never use such a rule unless you can tell definitely *why* you put down the plus or the minus sign.

16. $5(x-6)-110=-17-2(x-5)$
17. $2+x+3/5-2x-13/11=x/3$
18. $\frac{8x-3}{7}-\frac{4x-7}{5}=5x-13$

Problems of Rate, Time, and Distance

PROBLEM 33. A man can ride 11 miles per hour and walk 3 miles per hour How long will it take him to go 168 miles if he walks half the time and rides half the time.

Before trying to solve this problem we must understand the simple relation connecting rate, time, and distance. One of the tasks of algebra is to use the formulas which show the relations of such quantities.

If a man walks $3mi/h$ (this is read, three miles per hour) for 5 hours what distance does he walk? Clearly 5 times 3 or 15 miles. In general, the number of hours times the number of miles per hour gives the total number of miles. The *time* multiplied by the *rate* equals the distance. Stated in the symbols of algebra, $TR=D$.

You will notice that TR means T times R just as $5x$ means 5 times x. This equation may be transformed as follows:

① $TR=D$
② $T=D/R$ ①÷R
③ $R=D/T$ ①÷T

All three equations state the same relation but from different points of view. In studying such formulas it is important to be able to see all three of these facts by looking out any ONE of them. If time times rate equals distance, then time equals distance divided by rate, and rate equals distance divided by time.

One mistake to avoid. Do not try to *learn* these formulas. Learn to make up the formula from a simple illustration just as is done on this page.

Now reread these paragraphs thoughtfully, then reread the problem and we will solve it.

	T	R	D
WALKING	$\frac{X}{2}$	$3^{MI}/_{H}$	$\frac{3X}{2}$
RIDING	$\frac{X}{2}$	$11^{MI}/_{H}$	$\frac{11X}{2}$
TOTAL			168 MI.

Make a table and fill in the squares one at a time, beginning with the ones we know most about. In this case the R column can be filled in first, since we know both rates; and the total D is 168 miles.

Next we must decide on what x is to stand for.

Let x=the no. of hours it takes him to go 168 miles. Then $x/2=1/2$ the time, that is, the no. of hours he walks. We can now fill in the T column. The rest is easy because whenever we know two numbers in one *row* we can find the third by one of the three formulas.

This time we use $TR=D$.

The last step is to form an equation.

The D he walks plus the D he rides is the total D.

① $3x/2+11x/2=168$
② $3x+11x=336$ ① ×2
③ $14x=336$ ② same values
④ $x=24$ ③ ÷14

Check
12 h. at $3mi/h$ = 36 mi.
12 h. at $11mi/h$ = 132
168

Ans.
24 hours
12 hours riding and 12 hours walking.

PROBLEM 34. A boy can ride on his wheel 10 miles per hour and walk 4 miles per hour. How long will it take him to go 126 miles if he rides half the time and walks half the time? *Ans.* 18 hours.

PROBLEM 35. Soldiers can hike an average of 2 3/4 miles per hour, trucks transport them 13 miles per hour. How long will it take a regiment to cover 115 miles if they walk 1/3 of the time and ride in trucks 2/3 of the time?

	T	R	D
HIKING	$\frac{X}{3}$	$2\frac{3}{4}$	$\frac{11X}{12}$
RIDING	$\frac{2X}{3}$	13	$\frac{26X}{3}$
TOTAL			115 MI.

The order of filling in the spaces is the same as in problem 33.

Notice the $D-$ hiking space. $x/3$ must be multiplied by $2\ 3/4$, $x/3\times 11/4=11x/12$.

① $11x/12+26x/3=115$
② $11x+104x=1380$ ① ×12
③ $115x=1380$ ② same values
④ $x=12$ ③ ÷115

Check
4 h. at $2\ 3/4$ *mi/h* = 11 mi.
8 h. at 13 *mi/h* = 104
115

Ans.
12 hours
4 hours hiking
8 hours riding

PROBLEM 36. A boy has $3\frac{1}{2}$ hours for exercise: how far can he ride with his father, at the rate of 21 miles per hour, before getting out to walk back, if he walks $3\frac{1}{2}$ miles per hour?

	T	R	D
WALKING	$\frac{2X}{7}$	$3\frac{1}{2}$ MI/H	X
RIDING	$\frac{X}{21}$	21 MI/H	X
TOTAL	3½H		

The known numbers go in first: they are the R's and the total T.

Let x = the no. of miles he can ride. The number of miles he must walk back will be the same.

To fill in the T column we use the formula that $T=D/R$. (Can you get this from the formula at the top of the table?)

T—walking will be $\frac{x}{3\frac{1}{2}}$. T—riding will be $x/21$.

The fraction $\frac{x}{3\frac{1}{2}}$ is rather clumsy. Write it $\frac{x}{\frac{7}{2}}$. It is still clumsy. We would like to get rid of the 2 in the denominator. How? Multiply the numerator and denominator by 2. $7\times\frac{x}{\frac{7}{2}}=\frac{2x}{7}$.

(Notice that the sign ≡ may be used when it is convenient, to show that two expressions are actually the same, though written in different form. This equation is not an equation to be solved. The right side is merely the left side simplified. Such equations are called *identities*.)

This completes the table. It remains to find an equation.

The time walking plus the time riding = the total time.

① $2x/7+x/21=3\frac{1}{2}$
② $12x+2x=147$ ① ×42
③ $14x=147$ ② same values
④ $x=10\frac{1}{2}$ ③ ÷14

Check
$10\frac{1}{2}$ mi. at 21 *mi/h* take ½ hour
$10\frac{1}{2}$ mi. at $3\frac{1}{2}$ *mi/h* take 3 hours
$3\frac{1}{2}$ hours

Ans.
$10\frac{1}{2}$ miles

PROBLEM 37. A certain river flows one mile per hour. A fisherman finds that he can row upstream a few miles in 3 hours, but it takes him only one hour and 48 minutes to come back. How fast can he row in still water?

	T	R	D
DOWN STREAM	1⅗H	X+1	9/5(X+1)
UP STREAM	3 H	X-1	3(X-1)

The known numbers are the $T-$upstream and the $T-$downstream. The one hour and 48 min. may better be written 1 4/5 h.

Let x = the no. *mi/h* he rows in still water.

What then is the $R-$downstream? He rows through the water x miles per hour, and the current carries him along 1 mile per hour. His rowing and the current together carry him $x+1$ miles per hour.

Going upstream however the current carries him *back* one mile every hour. His rate will be $x-1$ miles per hour.

How can we fill in the D column? $D=TR$. $D-$upstream is $9/5(x+1)$. $D-$downstream is $3(x-1)$.

What fact will give us an equation?
Distance downstream = distance back.

① $9/5(x+1)=3(x-1)$
② $9(x+1)=15(x-1)$ ① ×5
③ $9x+9=15x-15$ ② same values
④ $24=6x$ ③ $+15-9x$
⑤ $4=x$ ④ ÷6

Check *Ans.*
R—upstream is $(4-1)mi/h$ 4 *mi/h*
R—downstream is $(4+1)mi/h$
3*h* at 3 *mi/h* = 9*mi*
9/5 at 5 *mi/h* = 9*mi*

PROBLEM 38. A stream flows 4 miles per hour. A boat goes downstream for an hour and takes 3 hours to get back. How fast does the boat go in still water?

PROBLEM 39. A man rows 5 miles per hour in still water. It takes him 5 hours to row upstream a certain distance and only 4 hours to return. How fast does the current flow?

	T	R	D
DOWN	4H	5+X	4(5+X)
UP	5H	5-X	5(5-X)

What are the known numbers?
$T-$downstream and upstream. Let x = the no. *mi/h* the stream flows.

How fast can the man go downstream? Five miles an hour by rowing, plus x miles an hour which the stream carries him. His rate upstream is five *mi/h* which he rows, minus x*mi/h* which the stream carries him back. Some pupils who try to do algebra problems without thinking do not know whether to write $x-5$ or $5-x$. Ask your self which is larger. If the stream flowed faster than the man rowed could he go upstream?

We now find D by the formula, as usual. $TR=D$

Next the equation: the $D-$up = the $D-$back.

① $4(5+x)=5(5-x)$
② $20+4x=25-5x$ ① same values
③ $9x=5$ ② $+5x-20$
④ $x=5/9$ ③ ÷9

Check *Ans.*
$R-$down = 5-5/9*mi/h* stream flows
$R-$up = 5-5/9 = 4 4/9*mi/h* 5/9*mi/h*
4*h* at 5 5/9*mi/h* = 22 2/9*mi*.
5*h* at 4 4/9*mi/h* = 22 2/9*mi*

PROBLEM 40. A boat goes 11 miles per hour in still water. It takes the boat $3\frac{1}{2}$ hours to reach a landing upstream, and only 2 hours to return. How fast does the current flow?

Problems of Ability and Time

PROBLEM 41. It takes B 12 days to do a certain piece of work which A can do in 4 days. In how many days will they do it if they work together?

Should we add the 12 days and 4 days together and answer 16 days for them both? If one man could do the work alone in 4 days would it take them both 16 days? Clearly this is not the way to proceed.

A can do what part of the work in one day? One-fourth.

B can do one-twelfth.

Let x = the no. of days for them both together.

If it takes them x days they would do each day $1/x$ of it.

For our equation: The *Part A* does in one day + the *Part B* does in one day = the part both do in one day.

① $1/4+1/12=1/x$
② $3x+x=12$ ① ×12*x*
③ $4x=12$ ② same values
④ $x=3$ ③ ÷4

Check *Ans.*
A does 1/4 each day 3 days for both
B does 1/12 each day together
Both do $1/4+1/12=4/12=1/3$

Therefore it takes them both 3 days.

PROBLEM 42. B can do a piece of work in 18 days which A can do in 15 days. How long will it take them if they work together?

PROBLEM 42. A boy can run around a block in 6 minutes. His father can walk it in 9 minutes. If they start from the same place, in opposite directions, how long before they will meet?

Let x = no. of minutes they go.

$1/6$ = *Part* of the distance boy can run in 1 minute.

$x/6$ = *Part* of the distance boy can run in x minutes.

$x/9$ = *Part* of the distance father can walk in x minutes.

If we add the *part* the boy runs and the *part* the father walks, what shall we get for the total? We shall get the whole distance. How shall we put this down in our equation? If the boy ran, say, 2/3 of the distance and the father walked 1/3, both would cover 3/3 or 1.

The *part* the boy runs + part father walks = total distance or 1.

① $x/6+x/9=1$
② $3x+2x=18$ ① ×18
③ $5x=18$ ② same values
④ $x=18/5$ ③ +5

Check *Ans.*
$18/5\times 1/6=\frac{3}{5}$ of distance. They will meet
$18/5\times 1/9=\frac{2}{5}$ of distance in 3 3/5 minutes
1, or total distance.

PROBLEM 43. A man can walk to his office in 40 minutes, or he can ride it in10 minutes. How long will it take him if he walks half the time and rides half the time?

Let $2x$ = no. of minutes to reach office.
then x = no. of minutes he walks.
x = no. of minutes he rides.
$1/40$ = *Part* of distance he walks in one min.
$x/40$ = *Part* of distance he walks in x min.
$x/10$ = *Part* of distance he rides in x min.
The part he walks + the part he rides = the total distance or 1.

① $x/40 + x/10 = 1$
② $x + 4x = 40$ ① ×40
③ $5x = 40$ ② same values
④ $x = 8$ ③ ÷5

Check
$8 \times 1/40 = 1/5$ of distance
$8 \times 1/10 = 4/5$ of distance
1 = total distance.

Ans.
16 minutes to reach the office. 8 min. walking, 8 min. riding.

GRAPHS.

PROBLEM 44. Six horses and 11 cows cost \$810. Thirteen horses and 5 cows, at the same prices as before, cost \$1190. Find the cost of each animal.

Let x = the no. of \$ for 1 horse.

It is not easy to find an expression in x for the number of dollars for 1 cow We can however, choose some other letter to stand for this number of dollars.

Let y = the no. of \$ for 1 cow.
$6x$ = the no. of \$ for 6 horses.
$11y$ = the no. of \$ for 11 cows.
From the first statement in our problem:

① $6x + 11y = 810$

From the second statement:

② $13x + 5y = 1190$

Here we are faced by new difficulties. We have two equations to start with instead of one, and each equation has two letters in it. None of the methods previously studied enable us to find the values of x and y.

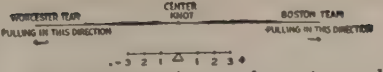
Mathematicians have found a method of solving these problems by drawing lines on ruled sheets of paper. The method has proved so interesting and helpful to the mathematicians, and has been found to have so many practical applications, that it is now one of the most fascinating chapters in algebra. We will take up the method step by step, and then apply it to the solution of problem 44.

SCALES

Study the scale of a thermometer. It is numbered up to perhaps 140° at the top and down to perhaps 40° below zero at the bottom. Temperatures are usually recorded by observers as + if above zero and as − if below zero. Our scale then goes from −40° to +140°. How many degrees is this in all? It is 140° above the zero mark and 40° below the zero mark, or 180° in all.

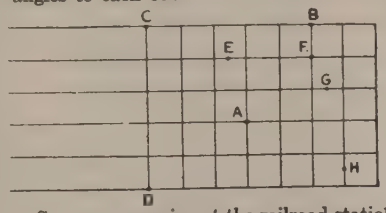
If you compare a very large thermometer with an ordinary small thermometer you will see that the space occupied by one degree on the large thermometer may be perhaps as much as one-fourth of an inch, while on the small one it is only perhaps one sixty-fourth of an inch. Evidently we can adapt the length of our degrees to fit any particular requirements. Would you use the same scale to record the temperature of molten iron and the temperature of a fever patient? The first step in the graphical method is to draw, on our paper, a scale suited to the numbers of our problem.

A scale could be drawn to show the changes in fortune in a tug of war.



When the knot is over the center mark neither team is ahead. When the knot is at 2, which team is ahead? Boston is, by 2 feet. When the knot is at −3 Boston is the loser by 3 feet. And so on.

Many of the cities of the United States are laid out in blocks, with streets at right angles to each other.



Suppose we arrive at the railroad station at A and ask directions to an office at B: we will be told to go 2 blocks east and 3 blocks north. What are the directions for going from A to C? Three blocks west and 3 blocks north. From A to D? Three blocks west and 2 blocks south. From A to E? Two blocks north and ½ block west. From A to F? A to G? G to H? Evidently every building in the city can be located by two numbers measured in two different directions.

The location of a ship at sea by its latitude and longitude depends upon the same idea.

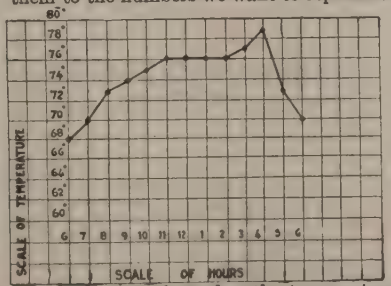
It is just this principle which mathematicians have hit upon for representing facts and solving problems by charts or graphs. As soon as we have illustrated some facts on these charts we shall be ready to use them for solving our problem.

Temperatures for a summer day are observed

to be 68° at	6 A.M.	76° at	1 P.M.
70° at	7 A.M.	76° at	2 P.M.
73° at	8 A.M.	77° at	3 P.M.
74° at	9 A.M.	79° at	4 P.M.
75° at	10 A.M.	73° at	5 P.M.
76° at	11 A.M.	70° at	6 P.M.
76° at	12 M.		

Here are numbers which are changing: the hour of the day, and the temperature. We will represent the hours of the day on a horizontal scale by marking the first line of the scale 6 A.M., the second line 7 A.M. and so on for 13 lines to the right which brings us to 6 P.M.

The temperature will be represented on a vertical — that is, up and down, scale. The range to be covered is from 68° to 79°. Suppose we call the lowest line 60°, the next line above 62° and so on up to 80°. We have now completed our two scales, at right angles to each other, and adapted them to the numbers we want to represent.



How can we show that the temperature was 68° at 6 A.M.? By a dot on the 6 A.M. line just high enough up to be on the 68° line. Can you find this dot? It is the first one at the left.

Next represent a temperature of 70° at 7 A.M. by a dot on the 7 A.M. line, and just high enough up to be on the 70° line. It is the second dot going toward the right. Continue to locate the dots as shown in the figure.

If we connect these dots with a curved line we shall have a graph which will show the approximate temperature at any hour of the day.

At about what time was the temperature highest? How does our graph show this? By the highest point at 4 P.M. At what hours was the temperature changing very little if at all?

At 11, 12, 1, and 2 the temperature stood at 76°.

What was the coolest hour of the day? Six A.M. This is shown by the lowest point on the graph.

As soon as we understand a graph we can see at a glance, facts that would take us some time to discover from a study of the table from which the graph was made. It is for this reason that graphs are used increasingly in magazines and by business and professional men.

If you secure from a stationer some properly ruled paper, you can draw these graphs yourself.

The next table shows the time two Boston and Albany trains leave the stations indicated. Notice that one train goes from Boston to Albany, the other from Albany to Boston.

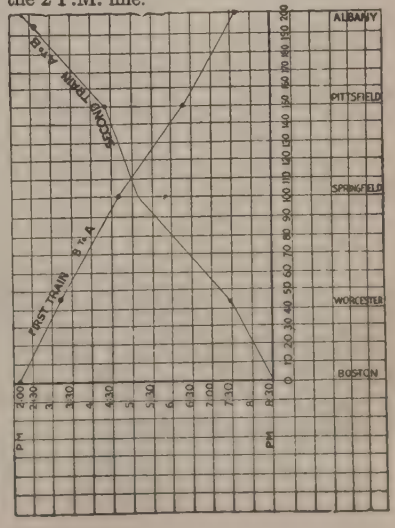
Miles		P.M.	P.M.
0	Boston	2:00	8:35
45	Worcester	3:15	7:25
100	Springfield	4:35	5:55
150	Pittsfield	6:20	4:18
200	Albany	7:35	2:42

The two numbers which are changing are the hour, and the number of miles from Boston. Represent the number of miles on the horizontal scale. To fit 200 miles to our scale we shall use how many miles for each space? Ten will do very nicely.

On the vertical scale we must represent the time. The range is from 2 P.M. to 8:35 P.M. or 6 hours and 35 minutes.

Let each space represent ½ hour.

To show that the first train leaves Boston at 2 P.M., we place a dot on the Boston line and high enough up to be on the 2 P.M. line.



This is the first dot to the right. Put in all the dots and connect them.

Construct the graph for the second train in the same way.

How far from Boston do the trains meet, and at what time? The two lines cross at a point which is on, or very near the 110 mile line. This means that the trains pass about 110 miles from Boston. This same point is on, or very close to the 5 o'clock line, therefore the trains will pass at about 5 P.M.

At 6 P.M. the railroad president steps into the office and asks where each train is at that time. A clerk glances at the graphs, letting his eye follow across the 6 P.M. line. He finds the first train 140 miles from Boston: the second train 80 miles from Boston.

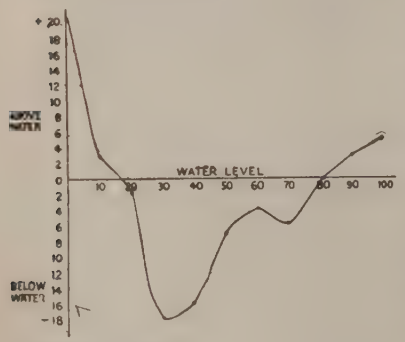
Several other facts can be seen immediately from the graphs after you are familiar with them. All trains from Boston to Albany will be represented by lines sloping *down* to the right: trains from Albany to Boston by lines sloping *up* to the right. The more slowly the train moves the steeper the line becomes. You will notice that the graph for the first train has the steepest slope between Springfield and Pittsfield. This is because it goes slowly between these cities because of the up grade. What similar fact can you discover concerning the second train? The fact that the slope of the graph shows the rate, leads to some very important studies farther along in mathematics.

One more illustration of the use of a graph to show facts at a glance.

Measurements are made of the height of the banks of a river and of the depth of the river, at intervals of ten feet, on a line that passes straight across the river from bank to bank.

The results are as follows, starting at the top of the left bank and making the measurements from the water level. For convenience heights *above* the water level are marked plus: depths below are marked minus.

Distance
From left to right
0 10 20 30 40 50 60 70 80 90 100



Height or Depth
+20 +3 −2 −18 −16 −7 −4 −6 0 +3 +5

The range on our horizontal scale will be 0′ to 100′. Let each space equal 5′.

The range on the vertical scale will be +20 to −18. Let each space equal 2′.

Locate the dots and connect them. This shows at a glance the approximate depth of the river at any point.

Where is the channel, or deepest part of the river? About 30 feet from the top of left bank. Where is a shallow place? About 20 feet from the right edge of the river. Which bank is the steeper?

THE SOLUTION OF PROBLEMS BY GRAPHS

If you will now reread problem 44 you will find that it gave us two equations:

① $6x+11y=810$
② $13x+5y=1190$

Each equation contains two quantities which may change in value, namely x and y. In ① if $x=124$, y will equal 6. Try it for yourself. Substitute 124 for x. $6x$ will then be 744.

③ $744+11y=810$
④ $11y=66$ ③-744
⑤ $y=6$ ④$\div 11$

In the same way if $y=0$ in ①

⑥ $6x+0=810$
⑦ $x=135$ ⑤$\div 6$

Substitute any number you choose in place of y and you can find a value for x For every value of x there is a corresponding value for y.

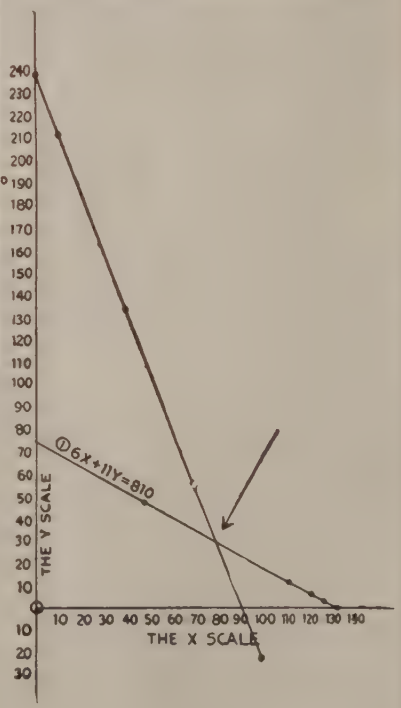
Equation one cannot be said to have an answer, but it has an unlimited number of *pairs* of *answers*. If $x=124$ and $y=6$, $6x+11y$ will equal 810. Try it. $744+66=810$.

Again if $x=135$ and $y=0$, $6x+11y$ will equal 810.

Try it $810+0=810$.

You have probably already discovered that we have just the conditions needed for a graph, namely two numbers that change together.

Make a table of values for equation one.



①	
x	y
0	73 7/11
135	0
129 1/2	3
124	6
113	12
47	48

The first pair was found by letting $x=0$. The second pair by letting $y=0$. The third by letting $y=3$. And so on. Make a similar table for

②	
x	y
0	238
91 7/13	0
10	212
40	134
70	56
100	−22

The complete range for x, in both equations, is from 0 to 135. Let each space represent 10. It is customary to represent x on the horizontal scale. The complete range for y is −22 to 238. Represent the values of y on the *vertical* scale, letting each space represent ten.

We are now ready to represent each pair of values by a dot on our chart. Take the first equation first. The first pair is 0 for x and 73 7/11 for y. Where is the 0 line for x? It is the vertical line marked 0, on which we have placed the y scale. How far upward on this line shall we go? Up to 73 7/11, that is about 1/3 of the distance from 70 to 80. Can you find this first dot?

Now the second dot, $x=135$, $y=0$. Where is the $x=135$ line? It is a vertical line midway between the numbers 130 and 140. How far upward on this line shall we go? Only to $y=0$. In other words we do not go upward at all. The dot is on the x scale line. The third dot, $x=129$ 1/2, $y=3$. This is almost over to the 130 line, and how far up? Up 3, that is about 1/3 of the distance from 0 to 10. Locate all the dots for equation ①.

Connect these dots with a line. A rather curious thing occurs. This line through all these dots is a *straight line*. It is called the graph or the locus of the equation. All such equations have straight line graphs and for this reason are called *linear* equations. (If you are not sure how to pronounce this word look it up in a dictionary).

Draw the graph of ② in the same way, locating the dots and connecting them with a line. This proves to be a straight line as we knew it would.

You have already noticed that every point on our chart can be located by two numbers, an x number and a y number, just as every building in our western city could be located by two distances, one north and one east, or one south and one west, etc., and just as every point on the surface of the earth can be located by a latitude number and a longitude number.

There is one peculiar point on our chart. The point where the two graphs cross. Can you find the two numbers which locate it? They are $x=80$ and $y=30$. Let us see just what must be true of these numbers. How many pairs of numbers will "satisfy" ①, that is make its two sides equal? All the pairs in our table and hundreds more pairs which we could have found in the same way. How many pairs of numbers will satisfy ②? Again the answer is an unlimited number. But of all these two sets of number pairs there is only *ONE* pair that will satisfy both equations, namely 80 and 30.

Try these two numbers in both equations.

① $6(80)+11(30)=810$
$480+330=810$
$810=810$
② $13(80)+5(30)=1190$
$1040+150=1190$
$1190=1190$

These two numbers are the answers to our two equations, and consequently the answers to our problem.

Look back to problem 44 and see if they will check.

6 horses at $80 cost	$480
11 cows at $30 cost	330
Total	$810
13 horses at $80 cost	$1040
5 cows at $30 cost	150
Total	$1190

Ans.
$80 for each horse
30 for each cow

The explanation of this problem has surely been long enough, but you will not wonder at it when you learn that college students often spend a year's time studying these graphs, and that our great statistical organizations have scores of clerks at work all the time making such graphs for the use of factories and business house.

PROBLEM 45. A farmer pays 6 men and 8 boys $32 for a day's work. The next day, paying the same wages, he pays 10 men and 2 boys $42 for the day's work. How much does he pay a man? A boy?

Let x = no. of $ for a man per day
Let y = no. of $ for a boy per day

① $6x+8y=32$
② $10x+2y=42$

A table of pairs of values for ①;
First let $x=0$, then how much is $6x$?
$6x=0$ and ① becomes $8y=32$. Divide by 8, $y=4$.
Next let $y=0$, $6x$ will equal 32, and x will equal 5 1/3
If we subtract $8y$ from ① it will read $6x=32-8y$
Dividing by 6 we get $x=\frac{32-8y}{6}$ or

$$x=\frac{16-4y}{3}$$

①

x	y
0	4
5 1/3	0
2 2/3	2
1 1/3	3

①

X	Y
0	4
5⅓	0
2⅔	2
1⅓	3

Now substitute any number for y and it will be very easy to find the corresponding value of x.

If $y=2$, $x=\frac{16-8}{3}=2\ 2/3$
If $y=3$, $x=1\ 1/3$
A table of pairs of values for ②

③ $10x+2y=42$
④ $2y=42-10x$ ③$-10x$
$y=21-5x$ ④$\div 2$

If $x=0$, $y=21$
If $y=0$, $x=4\ 1/5$
If $x=1$, $y=16$
If $x=5$, $y=4$
We are now ready to plot the graph.

②

x	y
0	21
4½	0
1	16
5	−4

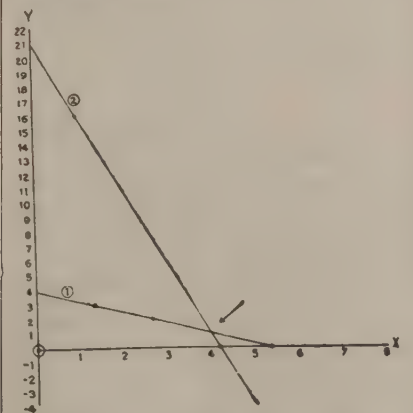
②

X	Y
0	21
4½	0
1	16
5	-4

The range for x is 0 to 5 1/3. Let one space on the x scale represent 1/3.

The range for y is −4 to 21.

Let each space on the y scale represent one. Locate the dots as before $x=0$, $y=4$. If x is 0 we do not go to the right at all. If y is 4 we go *up* 4. $x=5\ 1/3$, $y=0$. If x is 5 1/3 we go to the right 5 1/3. If y is 0 we do not go up at all. If x is 2 2/3 we go 2 2/3 to the right. If y is 2 we go up 2. This gives us a straight line graph for ①.



Plot ② in the same way. Notice the last pair. If x is 5 we go to the right 5. If y is −4 we of course go 4 *downward*.

Again the graphs intersect. What two numbers locate the intersection? $x=4$, $y=1$.

Try these two numbers in our problem.

Check *Ans.*

①	6 men at $4 = $24	Men $4 per day
	8 boys at $1 = 8	Boys $1 per day
	$32	
②	10 men at $4 = 40	
	2 boys at $1 = 2	
	$42	

This is a somewhat cumbersome way to solve problems perhaps but there are two things to be said in its favor. With a little practice and with proper devices it gives solutions very rapidly. In fact modifications of this device are used more and more for the purpose of saving time.

Then too graphs are coming into such common use that we all need to know how to read them and, if need be, to make them.

PROBLEM 46. Six men and 3 boys earn $39 per day. Eleven men and 1 boy earn $38. How much does a man earn in a day? A boy?

Solve by the graphical method

① $5x-8y=-1$
② $15x+y=47$
③ $5x=8y-1$ ①$+8y$
④ $x=\frac{8y-1}{5}$ ③$\div 5$
⑤ $y=47-15x$ ②$-15x$
$x=\frac{8y-1}{5}$ $y=47-15x$

①

−1/5	0
2 2/5	1
3	2
11	7
19	12

②

x	y
0	47
3 2/5	0
5	−28

The range for x is −1/5 to +31
The range for y is −28 to +47

①

X	Y
-⅕	0
2⅖	1
3	2
11	7
19	12

②

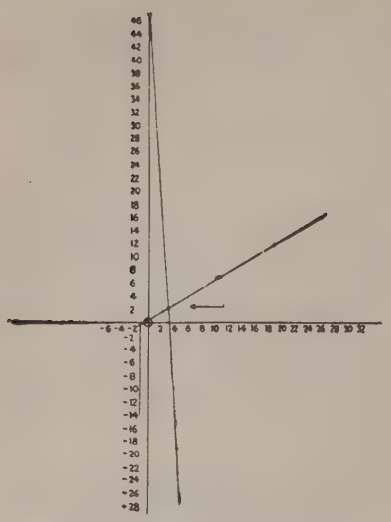
X	Y
0	47
3⅖	0
5	-28

Answer $x=3$, $y=2$

Checks

① $5(3)-8(2)=-1$
$15-16=-1$
$-1=-1$

② $15(3)+2=47$
$45+2=47$
$47=47$



Solve by the graphical method.

1. $x+2y=5$ $3x+7y=17$ *Ans.* 1, 2
2. $3x+7y=22$ $2x+y=11$ *Ans.* 5, 1

It is interesting to try to solve by the graphical method $x+y=8$ and $x+y=12$. Try it.

You will find that the graphs are parallel. They do not meet at all. Why not? Because it is impossible to find two numbers which will add to make 8 and at the same time add to make 12.

ADDITION AND SUBTRACTION

Before studying the *algebraic* method of solving these pairs of linear equations, it may be helpful to review what we have learned about combining terms.

Addition in algebra is more often arranged horizontally than vertically. Ordinarily we have such combinations as we have already made in solving equations.

Unite similar terms:

$3x+6-2x+5+x-3-12$

This is done mentally as follows:

$3x$ less $2x$ is x, plus x is $2x$
6 plus 5 is 11, less 3 is 8, less 12 is minus 4
Ans. $2x-4$

Unite

$6-7x+4-x-2+5x-3$
6 plus 4 is 10, less 2 is 8 less 3 is 5
Short $7x$ less x is short $8x$, plus $5x$ is short $3x$
Ans. $5-3x$

$12x+3-15x-3+8x-2$
$12x$ less $15x$ is short $3x$, plus $8x$ is $5x$
3 less 3 is 0, less 2 is short 2
Ans. $5x-2$

1. $10x-8+3x-2x+7-x$
2. $5x-4x-3x+6+8x-1$
3. $A+B-2A-3B+8A$

It will be found profitable to make several more exercises like these and practice them orally until they go quickly and easily. There are two illustrations which are very helpful. One is money or profit and loss, the other is the thermometer scale.

We wish to unite $8x$ and $-10x$. The illustration is: We *have* \$8, we *spend* \$10. This leaves us \$2 *in debt*. $8x-10x\equiv-2x$. Again $-12x+3x$. The thermometer stands at 12 *below*, it goes *up* 3. Where does it stand? At 9 *below*. $-12x+3x\equiv-9x$.

Use these illustrations while you are learning.

Add $3x-2y+8$
$4x-y-2$

We say mentally $3x$ and $4x$ is $7x$
Short $2y$ and short one more y is $-3y$
8 less 2 is 6

Our answer then is

$7x-3y+6$

Add $x-3y-5$
$2x+8y+5$

$3x+5y$

Add $-2x+8y-7$
$-2x-y+3$

$-4x+7y-4$

Add $A-B+C-8$
$-A-B-3C$

$-2B-2C-8$

Make more of these exercises for practice.

Perform the *subtraction* indicated

$3x-7y-(2x+8y)$

Noticing that the directions tell us to subtract *both* terms in the parenthesis, we write $3x-7y-2x-8y$. Uniting we have $x-15y$.

Again $17-4x-(2x+5)$

We can do this mentally: Say 17 *minus* 5 is 12. Why do we say *minus* 5? Because the 5 is in the parenthesis and we are told to *subtract* all the terms in the parenthesis.

Short $4x$ and *short* $2x$ gives a shortage of $6x$.

The answer is, $12-6x$.

$2A-6B-C-(A+B+C)$
$2A$ minus A is A
Short $6B$ minus B is short $7B$
Short C minus C is short $2C$
Ans. $A-7B-2C$

$2a+3b-(2a+2b+6c)$
$2a$ minus $2a$ is zero
$3b$ minus $2b$ is b

The $6C$ must also be subtracted but there is no C to subtract it from. If you have no money in your pocket and you order a pair of shoes at \$6, you *owe* \$6. From no C subtract $6C$ and we have minus C.

Ans. $b-6C$.

$7-(2a-3)$

Write this out because it is the hardest case in subtraction. $7-2a$——but what about the 3? The directions say from 7 take $(2a-3)$, that is take 3 less than $2a$. When we write $7-2a$ we have taken away too much. We were told to take away 3 less than $2a$, and we have taken away the whole of $2a$. Since we have taken away too much we must *put back* something. We took away 3 too much so we will *put back* 3.

Our answer is $7-2a+3$. Uniting the 7 and 3 we have $10-2a$.

A good illustration of what we have just done is this:

$15-(8-2)$

This says from 15 take $(8-2)$, that is take away 2 less than 8, or take away 6.

$15-6=9$

Writing it as we did in the preceding exercise: $15-8$——we have now taken away 2 too much. We must put back the 2.

$15-8+2=9$, the correct answer.

Another way to look at this case.

$7-(2a-3)$ We are told to take away a shortage of three, a debt of 3. Now taking away your debt is the same as *giving* you money. If your father pays \$3 that you owe at the store he helps you as much as if he gave you \$3 and let you pay the debt.

In other words taking away minus 3 is the same as adding 3. Hence we write $7-2a+3$.

$3x-2y+8-(x+3y-2)$

$3x$ less x is $2x$
Short $2y$ less $3y$ is short $5y$
8 *plus* 2 is 10. We say *plus* 2 because taking away a shortage is the same as *adding*.

Ans. $2x-5c+10$.

$7a-6b+2c-5-(7a-8b+3)$
$7a-6b+2c-5-7a+8b-3$
Ans. $2b+2c-8$

Compare the last three terms in the second line with the last three terms in the first line.

The $7a$ was plus $7a$: it is now minus $7a$.
The $8b$ was minus, now it is plus.
The 3 was plus and is now minus.

Subtracting then had the effect of making each plus sign into a minus and each minus into a plus.

A rule is often stated in algebra: to subtract change all the signs in the number to be subtracted and then add. By "change the signs" is meant to read each *plus* as a *minus*, and to read each minus as a plus.

This rule will do well enough if you remember that it applies only in subtraction and that merely means that to *take away* $2a$ we write $-2a$, while to take away $-3b$ we must add $3b$.

One of the most dangerous habits in algebra is to say glibly, "Change the signs" without thinking why. In reality there is no such process in algebra as changing the signs.

Subtract $3x-4y+5$
$2x+5y+3$

Say mentally $3x$ *minus* $2x$ is x
$-4y-5y-9y$
5 -3 is 2
Ans. $x-9y+2$

Subtract $2a+7b-8c-6$
$3a-5b+c-2$

$-a+12b-9c-4$

Mentally

$2a$ minus $3a$ is $-a$, $7b+5b$ is $12b$
$-8c-c$ is $-9c$, $-6+2$ is -4

The pupil who goes past this point in algebra without *understanding* how to subtract and without practicing enough to subtract well is almost sure to fail.

Before taking more exercises we want to learn how to check so that we may be sure that we are subtracting correctly.

Subtract 8
3

5

How can we be sure that 5 is the correct answer? By *adding* the 3 and 5 which gives us the 8 we started with.

Subtract $3x+7y-2$
$2x-3$

$x+7y+1$ *ans.*
$3x+7y-2$ *check*

Subtract $2a+3b-4c$
$3a-3b+3c+5$

$-a+6b-7c-5$ *ans.*
$2a+3b-7c$ *check.*

In doing the rest of these exercises do not depend too much on the rule. Better use your common sense in subtracting.

1. $2a-2b+3c-d-(5a-3b+4c-7d)$
2. $3x-7y+5xy-(2x-7y+3xy)$
3. $a-(2a-2b+3c-5)$

Subtract

4. $2-7x-5y$
   $3-6x+2y$
5. $2a+3b-c$
   $3a-b+5$

You can make more practice exercises for yourself.

SIMULTANEOUS EQUATIONS

The pairs of two-letter linear equations we solved in problems 44 and 45 are called by the long name, simultaneous, which means, "at the same time." This is because we solve them by finding one pair on numbers which will check both equations at the same time. Another and better name is, "linear pair."

We are now ready to solve them by algebraic means without using graphs.

1. $\begin{cases} ① \ x+2y=11 \\ ② \ x+\ y=\ 8 \end{cases}$

Why can we not solve this pair as we did our simple equations at the beginning of algebra? Because we have *two* letters. If we could get rid of one letter we could go ahead as before.

The question then is how to get rid of one letter. There is one step which will get rid of the x's in the two equations above.

Shall we add, subtract, multiply, or divide them?

Try it. The one which succeeds is subtraction.

③ $y=3$ ① − ②

This gives us one answer. Finding the other is an entirely different task. If we know that $x+y$ is 8 and that y is 3, how can we find x?

④ $x+3=8$	③ substituted in ②

We substitute the 3 in place of y in ②

⑤ $x=5$	④ −3

Check

① $5+2(3)=11$
$5+6=11$
$11=11$

③ $5+3=8$
$8=8$

Ans. $\begin{cases} x=5 \\ y=3 \end{cases}$

2. $\begin{cases} ① \ 5x+y=21 \\ ② \ 3x+y=13 \end{cases}$

③ $2x=8$	① − ②
④ $x=4$	③ ÷ 2
⑤ $20+y=21$	④ sub. in ①
⑥ $y=1$	⑤ −20

Check

① $5(4)+1=21$
$20+1=21$
$21=21$

② $3(4)+1=13$
$12+1=13$
$13=13$

Ans. $\begin{cases} x=4 \\ y=1 \end{cases}$

3. $\begin{cases} ① \ 6x+y=22 \\ ② \ 5x+y=19 \end{cases}$

Ans. $x=3$, $y=4$

4. $\begin{cases} ① \ x+\ 8y=16 \\ ② \ x+13y=16 \end{cases}$

5.

① $2x+7y=52$	
② $2x-3y=\ 8$	
③ $10y=60$	① − ②
④ $y=\ 6$	③ ÷ 10
⑤ $2x+42=52$	④ in ①
⑥ $2x=10$	⑤ −42
$x=\ 5$	⑥ ÷ 2

Check

① $10+42=52$
$52=52$

② $10-18=-8$
$-8=-8$

Ans. $x=5$, $y=6$

6.

① $8y+x=23$	
② $6y-x=\ 5$	
③ $14y=28$	① + ②
④ $y=\ 2$	③ ÷ 14
⑤ $16+x=23$	④ in ①
$x=\ 7$	⑤ −16

Here we have a little something new. Subtracting one of these equations from the other will not get rid of the x. What process will do so? Addition.

Check

① $16+7=23$
$23=23$

② $12-7=\ 5$
$5=\ 5$

Ans. $x=7$, $y=2$

7.

① $6x+9y=66$	
② $-6x-2y=-38$	
③ $7y=28$	① + ②
④ $y=\ 4$	③ ÷ 7
⑤ $6x+36=66$	④ in ①
⑥ $6x=30$	⑤ −36
⑦ $x=\ 5$	⑥ ÷ 6

Check

$30+36=66$
$-30-8=-38$

Ans. $x=5$, $y=4$

8. $\begin{cases} 10x-2y=96 \\ 8x+2y=84 \end{cases}$

9. $\begin{cases} ① \ 5x+8y=34 \\ ② \ 9x+2y=24 \end{cases}$

In this pair of equations neither addition nor subtraction will eliminate, that is get rid of, either the x or the y. Why did the x's drop out in exercise 5 when we subtracted, while they will not do so in exercise 9? Because the two x's had the same coefficient. If we can alter our equations so that either the x's or the y's will have the same coefficient, we can subtract and go ahead. If we multiply ② by 4, what coefficient will y have?

③ $36x+8y=96$	② ×4
④ $-31x\ \ =-62$	① − ③
⑤ $62=31x$	④ +31x+62
⑥ $2=x$	⑤ ÷31
⑦ $10+8y=34$	⑥ in ①
⑧ $8y=24$	⑦ −10
⑨ $y=\ 3$	⑧ ÷ 8

Check

① $10\div 24=24$
$34=34$

② $18+\ 6=24$
$24=24$

Ans. $x=2$, $y=3$

10.

① $6x+\ 4y=\ 90$	
② $3x+15y=123$	

First we shall make the coefficients of the x's alike.

③ $6x+30y=246$	② ×2
④ $-26y=-156$	① − ③
⑤ $156=\ 26y$	④ +26y+156
⑥ $6=\ y$	⑤ ÷26
⑦ $6x+24\ =\ 90$	⑥ in ①
⑧ $6x=\ 66$	⑦ −24
⑨ $x=\ 11$	⑧ ÷ 6

Check

① $66+24=\ 90$
$90=\ 90$

② $33+90=123$
$123=123$

Ans. $x=11$, $y=\ 6$

11.

① $2x+7y=49$	
② $6x-5y=17$	
	① ×3

12.

① $4x+3y=22$	
② $3x+5y=11$	

In this pair we cannot make the coefficients of either x or y alike by multiplying either equation. How shall we accomplish it? By multiplying *both* equations.

③ $12x+\ 9y=66$	① ×3
④ $12x+20y=44$	② ×4
⑤ $-11y\ =22$	③ − ④
⑥ $-22\ =11y$	⑤ +11y−22
⑦ $-\ 2\ =\ y$	⑥ ÷11
⑧ $4x+3(-2)=22$	⑦ in ①
⑨ $4x-\ 6\ =22$	⑧ same values
⑩ $4x=28$	⑨ +6
⑪ $x=\ 7$	⑩ ÷4

Check

① $28-\ 6=22$
$22=22$

② $21-10=11$
$11=11$

Ans. $x=\ 7$, $y=-2$

We can just as well solve exercise 12 by eliminating the y's instead of the x's. Try it.

③ $20x+15y=110$	① ×5
④ $\ 9x+15y=\ 33$	② ×3
⑤ $11x\ \ =\ 77$	③ − ④
⑥ $x=\ 7$	⑤ ÷11
⑦ $28+\ 3y=\ 22$	⑥ in ①
⑧ $3y=-6$	⑦ −28
⑨ $y=-2$	⑧ ÷3

The check consists in comparing this pair of answers with the pair obtained by the first method.

Ans. $x=\ 7$, $y=-2$

13.

① $2x/3+3y/4=\ 700$	
② $y+100=\ 5x/6$	
③ $8x+9y=\ 8400$	① ×12
④ $6y+600=\ 5x$	② × 6
⑤ $-5x+6y=-\ 600$	④ −5x−600
⑥ $16x+18y=\ 16800$	③ ×2
⑦ $-15x+18y=-1800$	⑤ ×3
⑧ $31x\ =\ 18600$	⑥ − 7
⑨ $x=\ 600$	⑧ ÷31
⑩ $4800+9y=\ 8400$	⑨ in ③
⑪ $9y=\ 3600$	⑩ −4800
⑫ $y=\ 400$	⑪ ÷9

Check

① $\frac{1200}{3}+\frac{1200}{4}=700$
$400+300\ =700$
$700\ =700$

② $\frac{400}{400}+\frac{1200}{100}=3000$
$500=500$

Ans. $x=600$, $y=400$

14.

① $\frac{x+3}{y+3}=\frac{5}{6}$

② $\frac{x-3}{y-3}=\frac{2}{3}$

③ $6(x+3)=5(y+3)$	① ×6(y+3)
④ $6x+18=5y+15$	③ same values
⑤ $6x-5y=-3$	④ −5y −18
⑥ $3(x-3)=\ 2(y-3)$	② ×3(y−3)
⑦ $3x-9\ =2y-6$	⑥ same values
⑧ $3x-2y=\ 3$	⑦ −2y+9
⑨ $6x-4y=6$	⑧ ×2
⑩ $-y=-9$	⑤ −⑨
⑪ $9=y$	⑩ +y+9
⑫ $3x-18=\ 3$	⑪ in ⑧
⑬ $3x=21$	⑫ +18
⑭ $x=\ 7$	⑬ ÷3

Check

① $10/12=5/6$
$5/6=5/6$

② $4/6=2/3$
$2/3=2/3$

Ans. $x=7$, $y=9$

Turn back to problems 44, 45, 46 and see if you can solve their equations by the method of elimination and get the same results we got by the graphical method.

It was suggested that we try to solve by the graphical method the pair.

① $x+y=\ 8$
② $x+y=12$

If you tried it you found that the two graphs were parallel. They had no intersection. The equations were inconsistent, that is they could not both be true at the same time.

Try the new method on them.

① $x+y=\ 8$
② $x+y=12$
③ $0=-4$ ① − ②

Equation ③ is an absurdity.

When we subtract both x and y drop out. Again we have no answer.

Sometimes we have more than two unknown letters in a set of equations.

①	$3x+4y+5z=39$	
②	$x+2y+3z=19$	
③	$4x+5y+7z=51$	
④	$3x+6y+9z=57$	②×3
⑤	$-2y-4z=-18$	①−④
⑥	$4x+8y+12z=76$	②×4
⑦	$-3y-5z=25$	③−⑥

What have we accomplished so far? We have reduced our set from three equations with three unknowns to two equations with two unknowns. Now proceed as usual.

⑧	$-y-2z=-9$	⑤÷2
⑨	$-3y-6z=-27$	⑧×3
⑩	$z=2$	⑦−⑨
⑪	$-y-4=-9$	⑩ in ⑧
⑫	$5=y$	$11+y+9$
⑬	$3x+20+10=39$	⑩ and ⑫ in ①
⑭	$3x=9$	$13-30$
⑮	$x=3$	$14\div3$

Check

① $9+20+10=39$
$39=39$

② $3+10+6=19$
$19=19$

③ $12+25+14=51$
$51=51$

Ans.
$x=3$
$y=5$
$z=2$

APPROXIMATE COMPUTATION AND MEASUREMENT

The first thing to decide in making any measurement is the unit in which to express the result. A distance may be measured in miles or feet or inches or meters or in any one of many other units. We ordinarily let our convenience decide what unit we shall use.

When the last measurement mark comes exactly at the end of the distance we are measuring, the length number is a whole number; when it does not come exactly at the end of the distance, the measurement is continued in subdivisions of the unit. We divide a foot up into 12 inches and divide the inch in halves, fourths, eights and so on. This system of subdivision is cumbersome and has been replaced where accurate work is done by a division of the foot into tenths. Why? You will see for yourself if you undertake to find the area of a rectangular field using first the ordinary subdivision and then the decimal subdivision.

Find the area of a rectangular field whose length is 32 feet 8 1/4 inches and width is 11 ft. 6 1/8 inches. The same problem stated decimally gives the length 32.7 ft. and width 11.5 ft. Which can you compute the more quickly? Wherever we can we shall use decimal subdivisions, to save time.

No human measurement is absolutely correct. This surprising statement may require considerable thought to convince you of its truth, but let us see. A carpenter in fitting boards measures them and saws them to perhaps the nearest eighth of an inch; for fine cabinet work he measures and saws to the nearest thirty-second of an inch. Only experienced and careful carpenters can do such fine work. A machinest making tools may work to the nearest thousandth of an inch; but no trained workman, no matter how expert, ever claims that his work is precisely correct. He tells instead how close it is. After making the finest measurements that have ever been made, using the most elaborate instruments and painstaking care, the expert discusses the *amount of his error.*

If you will measure the width of a block of wood yourself you will be convinced that a skilled workman with a better ruler could measure more accurately than you have. His measurement could be improved in turn by the use of a magnifying glass, and so on. No human measurement is absolutely correct.

The precision of measurement is shown by the *number of figures* required to express the result and not, as is often assumed, by the number of places *after* the decimal point. Suppose a length of a line is measured to the nearest hundredth of a foot, as 7.35 feet; the result may just as well be recorded as 88.2 inches, or 2.24 meters or even as .00139 miles. Each of these numbers expresses the same degree of accuracy though one of them has one place after the point and another has five places.

Quoting from the Evans & Marsh "First Year Mathematics": "Measurements which are expressed like these, in three figures, are said to be of three-figure accuracy: they may be made with ordinary instruments and skill. Five-figure accuracy requires good instruments and great care, as where a city building lot is measured to thousandths of a foot: six-figure accuracy is possible to experts: and eight-figure accuracy is beyond human skill at present."

Ordinary measurements are made as close as we need them for the use to which they are to be put. Some measurements are made as accurately as we can make them. Cases of the second kind are the standards of length which are kept by the United States government, or better still the international standard which is kept in Paris. It is measured just as accurately as men know how to measure.

Let us examine the last figure of a measured number. The length of a building lot is recorded as 43.7 feet. Is the 7 exactly 7 or may it be a little more than 7 or a little less? Suppose the field was remeasured with more care, the length might be found to be 43.72 feet. Again it might be measured with great care and this time the result might be 43.718. Now if the last measurement is correct to five figures, was the 7 of our first measurement exactly 7? No, it was really a little more than 7. It was the closest we could record it to three figures.

Change one third to a decimal. The answer is .3. But this is not exactly correct. Try again .33. Again our answer is not exact, .333 is closer, and .3333 is closer still. In fact we cannot write a decimal which is exactly equal to 1/3. The last figure is never exact. It is the best we can do to three figures or four figures or five figures, etc.

One more illustration: the number 3.1416 which is the ratio of the circumference of a circle to its diameter is not exactly 3.1416, more accurately stated it is 3.14159—and so on. For ordinary use 3.14 is sufficiently accurate, but the 4 is not exactly 4 as you know.

The last figure of all such numbers is peculiar; it is never an exact number: it is the best we can do in that place.

This has very important results in computing with such numbers. Let us find the area of a rectangular strip whose length is 43.72 ft. and width 3.831 feet. The last figure of each number is approximate. Whenever we multiply by the 2 or the 1 our product will be only approximate. Underline all the approximate figures.

```
 43.72
  3.831
 ------
  4372      The 9 is an approximation
 13116      only and all the figures after
 34976      the 9 are entirely worthless.
 13116      There are two things to be
 ------     understood here.
167.49132
```

First that we do not *care* what the area of the strip is to the nearest $\frac{1}{100000}$ of a square foot, as our answer pretends to show. It is not necessary to measure land to such a degree of accuracy.

Second we *cannot* get our answer correct to more than four figures because we measured to only four figures.

The area of our field will then be set down as 167.5 square feet. This is as close as we can get it from our measurements and it is as close as we need it for any practical purposes.

Men who figure with measured numbers have resorted to various devices to shorten the labor of computation. A table of logarithms is one such device and a slide rule is another. Both these and other similar devices make use of the principle we have just learned: thay *cut off the number at the required number of places.*

The question for us is, Is there a method of multiplication which will save setting down these unnecessary figures? There is and it takes but a few minutes to learn it. Once learned it saves a great deal of time.

It will seem a little strange at first but after a little practice you will never multiply in the old way again.

The first thing to notice is that we can get the same result by multiplying "backwards" as forwards. It makes no difference whether we begin to multiply these numbers with the 7 or with the 2. The product is the same either way.

```
  134        134
  247        247
 ----       ----
  938        268
  536        536
  268        938
 ----       ----
32098      32098
```

One way is no harder or easier than the other, except that one way is strange and one is familiar.

We will now find the area of our rectangular strip again multiplying in the reverse or natural order.

```
 43.72
  3.831
 ------
 13116      The result is the same
 34976      as before.
 13116
  4372
 ------
167.49132 Square feet.
```

Now we will cut off the doubtful figures as we multiply.

```
 43.72
  3.831
```

We want only four figures in our result. When we multiply 43.72 by 3 we get five figures. Therefore we

check off the 2 before beginning to multiply. Then we say 3 times 2 is 6 but do not put down the 6; instead say carry one. 3 times 7 is 21 and 1 is 22. Set down 2 and carry 2.

1312 Continue as usual.
Check off the 7. 8 times 7 is 56 do not put it down, but carry 6 because 56 is nearer to 6 tens than to 5 tens.
350 Check off the 3. 3 times 3 is 9, carry 1.
13 Check off the 4. 1 times 4 is 4, nothing to carry, because we do not carry to the next column unless we have 5 or more.
Add:
167.5 Square feet.

We still have to locate the point in our answer. We do this by common sense. The number we had to multiply was about 40. The number we had to multiply it by was about 4. Therefore our answer is about 40 times 4 or 160. Therefore our point goes after the 7. We *know* that our answer is 167.5 not 16.75 or 1.675 or 1675.

This is very important in handling numbers to know about how large our answer ought to be before we begin. This prevents absurd results.

We will check by setting the 3.831 above the 43.72 and multiplying again.

3.831 Estimate: 40×4 is 160.
43.72 Check off the 1 and go ahead as before.
1532
115
27
1
167.5
Check

The "5 case"

The number we have last checked off never gives us anything to *set down* but it may give us something to *carry*.

15.25 Estimate: 15 times 2 is 30.
2.123 We do not check off the 5 the first time because 15.25 times 2
3050 gives us only 4 figures. Now check off the 5. 1 times 5 is 5, shall we carry 1 or nothing? 5 is
153 just midway between 0 and 10.
30 The simplest rule is to carry when
5 we have 5 or more. Now say 1 times 2 is 2 and 1 is 3. Check off
32.38 the 5. 3 times 5 is 15, carry 2. Point off after the 2 because we *know* our answer is about 30.

Check
2.123
15.25
Estimate: 2×15=30.
2123
1062
42
11
32.38

Make more exercises for yourself.

345 350×20 is 7000.
21.6
690
35
20
7450 We must add a cipher in order to get about 7000.

Check 20×300=6000.

21.6
345
648
86
11
7450

2.19 Division
80
Estimate —=2
35.2)87.2 35
704
Now check off the 2 in the
68 divisor because it would give
35 us too many figures.
The point will come after the
33 2, because the answer must be
32 about 2.

Check
35×2=70
2.19 It is clear that our answer, 2.19,
35.2 is a little too small. When we check our product is 87.1. This is
657 .1 too small. It is possible that 2.20
110 might be more accurate. Let us
4 try it.
87.1

Second Check

2.20
35.2
660
110
4
87.4 This time we get 87.4 which is .2 more than the correct value. Therefore 2.20 is *not* a more accurate answer; 2.19 is the best possible answer to three-figure accuracy.

It is important to think correctly here. A great deal of the figuring done by practical men, in technical schools, and in the great fields of engineering, is done to three-figure accuracy only, because that is sufficient for their purpose.

Such men would call the answer to our division, 2.19, choosing always the *nearest* figure in the *last* place.

Divide 7267 by .1146.

.1146 It is a little more convenient to place the divi-
sor over the dividend,
63410 Answer leaving space for the answer.
7267 Our estimate, or rough
6876 check, is 1/10 into 7000 = 70,000.
391 When we get the four
344 figures of our answer, 6341 we have still to place the
47 point.
46 We know that 1/10 will
go into 7000 about
1 70,000 times. We must add a zero to make our answer 63,430.

Check
63410
.1146 1/10 of 60,000=6000
6341
634
254
38
7267

Divide 5.234 by 8.967.

Estimate 5/9 =.6
8.967 Point goes before the 5 because answer must be
.5838 Answer about .6.
5.234
4484
750
717
33
27
6
Check
.5838 5/10 of 9=5.
8.967
4670
525
35
4
5.234

Square Root

What is the square root of 16? It is 4. If we divide 16 by 4 what is the answer? It is 4. Whenever we divide a number by its own square root we get the same square root for an answer. Stated another way that is merely saying that 4×4=16.

A square root may be defined as *one of the two equal factors* of a number.

There are several methods of finding the square root of a number. The guess and try method will teach you most about square root and most about dealing with numbers. The use of a table is the quickest. We will consider the guess and try method. You can learn the use of a table yourself.

Find the square root of 16. Suppose we do not know what it is. We *estimate* that it is 3. Divide 3 into 16. If 3 is the correct square root how will we know? The answer will be 3. But 3 into 16 goes about 5 times. Therefore 3 is not *one of the two equal factors* of 16, 3 is too small, 5 is too large. If we "split the difference" we get 4 which is the correct square root of 16.

These steps will find the square root of any number. Reread the last paragraph and find the square root of 41.12.

First we will make as good a guess as possible.

6×6=36 Therefore 6 is too small.
7×7=49 Therefore 7 is too big.
6.5×6.5=42.25 Therefore 6.5 is too big.

We will try 6.4.
First trial.

6.400 Our guess was 6.400. Our
answer is 6.426. Our two
6.426 *Ans.* 1. factors are not equal. Split
the difference. The dif-
41.12 ference is .026. Half of it
3840 is .013. Add this to the
6.400 or subtract it from
272 the 6.426. In either case
256 we get 6.413.
16
12
4

Second trial.

6.413
6.413 *Ans.* 2. This time our two factors are equal.
41.12 The square root of 41.12
3848 is 6.413.
264
256
8
6
2

Find the square root of 86.32.

$8\times 8=64$
$9\times 9=81$
$10\times 10=100$

86 is between 81 and 100, therefore the square root is between 9 and 10 but much nearer 9 than 10. Try 9.2.

First trial		Second trial
9.200	Difference .182	9.291
9.382		9.290
86.32		86.32
8280	1/2 of .182 = .091	8363
352	9.200	269
276	.091	186
76	9.291	83
74		83
2		0

The only question remaining is whether 9.291 or 9.290 is nearer.

First check	Second check
9.291	9.290
9.291	9.290
8362	8361
186	186
83	83
1	
86.32	85.30

The first product is nearer the correct value, therefore 9.291 is the square root to four place accuracy.

Find to four places, the square root of 2.

$1\times 1=1$
$2\times 2=4$
$1.5\times 1.5=2.25$

The square root lies between 1 and 1.5 but nearer 1.5. Try 1.4.

First trial.		Second trial.
1.400		1.414
1.428	Difference .028	1.414 *Ans.*
2.000		2.000
1400		1414
600	1/2 of .028 = .014	586
560		566
40		20
28		14
12		6
11		6

This is sometimes written $\sqrt{2}=1.414$.

In this way you can make a table for yourself. Next find the square root of 3, and so on.

Equations With Approximate Coefficients.

① $3.42x-4.25+8.13x=18.11$
② $11.55x=22.36$ ① + 4.25
③ $x=1.94$ ② ÷ 11.55

Check

$3.42\times 1.94-4.25+8.13\times 1.94=18.11$
$6.64-4.25+15.77=18.11$
$18.2=18.1$

Ans.
1.94

Notice that we expect this equation to check to 3 figures only.

COMPUTATION

,,,,
11.55
1.935
22.36
1155
1081
1040
41
35
6
6

$\frac{22}{11}=2$ 3.42 $3\times 2=6$ 8.13 $8\times 2=16$ 6.64
1.94 1.94 4.25
342 813 2.39
308 732 15.77
14 32 18.16
6.64 15.77

1. $2.73x-42.1+7.63x=54.6$
2. $82.7+36.1x=18.2x-3.00$

MULTIPLICATION

We have considered the simple and most common cases of multiplication:

$4(x-3)$ which equals $4x-12$.

and $x-4(x-2)$ which equals $x-(4x-2)$ which equals $x-4x+8$. Now consider the case:

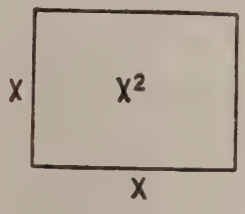
$(x+3)(x+5)$. This clearly means that both terms in the first parenthesis are to be multiplied by both terms of the second parenthesis.

That is $x(x+5)+3(x+5)$
$xx+5x+3x+15$

Uniting similar terms
$xx+8x+15$

The form xx becomes cumbersome if we have much multiplying to do. For convenience it is written x^2, and read x square.

The reason for this name is that it is the area of the square which is x on each side.



In the same way xxx is x^3, read $x-$ cube; $xxxx$ is x^4, read $x-$ fourth; $xxxxx$ is x^5, read $x-$ fifth, and so forth.

Multiply $(x-5)(x-6)$
$x(x-6)-5(x-6)$
$x^2-6x-(5x-30)$
$x^2-6x-5x+30$
$x^2-11x+30$

The same two multiplications may be more conveniently arranged thus:

$x-5$
$x-6$
x^2-5x
$-6x+30$
$x^2-11x+30$

The four lines indicate the four steps of the multiplication. The x^2 and the 10 are called the straight products. The $3x$ and $5x$ are cross products.

x^2+3x
$+5x+15$
x^2+3x
$+5x+10$
$x^2+8x+10$

Just why it is $+30$ is not clear in this case but looking back to the other method we see that we had to subtract -30, which is the same as *adding* 30.

Whenever you have two numbers both with minus signs, to multiply, the product is plus because one of them in effect puts the other in a minus parenthesis.

x^2-5x-3
$-x+4$
$-x^3+5x^2+3x$
$4x^2-20x-12$
$-x^3+9x^2-17x-12$

$x-y$
$x+y$
x^2-xy
$+xy-y^2$
x^2-y^2

This is a very common case in multiplication and becomes so familiar that we remember it. Other illustrations of the same case are:

$(a+b)(a-b)\equiv a^2-b^2$
$(x+5)(x-5)=x^2-25$
$(ax+4)(ax-4)=a^2x^2-16$
$[(x-3)-5][(x-3)+5]\equiv(x-3)^2-25$
$[(x+2)-7][(x+2)+7]\equiv(x+2)^2-49$

There are other cases to remember.

$(x+3)(x+3)\equiv(x+3)^2\equiv x^2+6x+9$
$(x+8)^2\equiv x^2+16x+64$

$x+8$
$x+8$
x^2+8x
$+8x+64$
$x^2+16x+64$

Notice that 16 is *double* the 8, and that 64 is the *square* of 8.

$(x-3)^2\equiv x^2-6x+9$
$(x-8)^2\equiv x^2-16x+64$
$(x+y)^2\equiv x^2+2xy+y^2$
$(x-y)^2\equiv x^2-2xy+y^2$
$(x+10)^2\equiv x^2+20x+100$
$(x-10)^2\equiv x^2-20x+100$
$(x-10)(x+10)\equiv x^2-100$

x^2y+xy^2
$x-y$
$x^3y+x^2y^2$
$-x^2y^2-xy^3$
x^3y-xy^3

Division

If we multiply 2 by 6 we get 12. If we divide the 12 by the 6 we get back the 2. This gives us the key to division.

$x\times x=x^2$, therefore $\frac{x^2}{x}\equiv x$

This may also be written $\frac{xx}{x}\equiv x$

$2x)6x^3$ $\qquad$ $5xy^2)10xy^3$
$3x$ $\qquad$ $2y$
$7x^2y^3)21x^5y^3$
$3x^3$

Now try a longer division.

First multiply $(x+6)(x+5)$

$x+6$
$x+5$
x^2+6x
$+5x+30$
$x^2+11x+30$

Divide $x^2+11x+30$ by $x+6$.

We know the answer must be $x+5$. We want a method for getting $x+5$. Arrange our work as in arithmetic.

$x+6$

x

$x^2+11x+30$

The first step is simple: x into x^2 goes x times. x then is the first term of the answer.

Looking back to the multiplication we see that the $11x$ is made of two parts, $6x$ and $5x$. We must get out the $5x$ in order to get the second term in our answer, namely 5.

$x+6$

$x+5$ *Ans.*

Multiply the $x+6$ by the x.

$x^2+11x+30$

x^2+6x

$5x+30$

$5x+30$

Subtract

This gives $5x+30$, the lower line of our product back again.

x into $5x$ goes 5 times.

There are than three steps in each long division divide, multiply, subtract; and these are repeated in the same order as many times as is needful.

Divide $x^2+5x-24$ by $x-3$.

$x-3$

$x+8$ *Ans.*

$x^2+5x-24$

x^2-3x

$8x-24$

$8x-24$

$x+7$

$x-10$ *Ans.*

$x^2-3x-70$

x^2+7x

$-10x-70$

$-10x-70$

$x-y$

x^2+xy+y^2 *Ans.*

x^3-y^3

x^3-x^2y

x^2y-xy^2

x^2y-y^3

xy^2-y^3

xy^2-y^3

Notice that x^2y cannot be subtracted from $-y^3$ because they are not similar terms.

$x+y$

x^2-xy+y^2 *Ans.*

Check

x^2-xy+y^2

$x+y$

x^3+y^3

x^3+x^2y

$x^3-x^2y+xy^2$

$-x^2y+y^3$

$+x^2y-xy^2+y^3$

$-x^2y-xy^2$

$x^3 \quad + y^3$

xy^2+y^3

xy^2+y^3

Divide $a^5+15+10a-a^4-3a^3-4a^2$ by a^2+2a+3.

Notice that the terms are not arranged in systematic order.

Rearrange thus:

$a^5-a^4-3a^3-4a^2+10a+15$ putting the highest power first.

a^2+2a+3

a^3-3a^2+5 *Ans.*

$a^5-a^4-3a^3-4a^2+10a+15$

$a^5+2a^4+3a^3$

$-3a^4-6a^3-4a^2$

$-3a^4-6a^3-9a^2$

$5a^2+10a+15$

$5a^2+10a+15$

Check

a^3-3a^2+5

a^2+2a+3

$a^5-3a^4 \quad +5a^2$

$2a^4-6a^3 \quad +10a$

$3a^3-9a^2 \quad +15$

$a^5-a^4-3a^3-4a^2+10a+15$

FACTORING

The expression $5(x-2)$ tells us to multiply x and -2 both by 5. This gives $5x-10$. It is sometimes convenient to be able to reverse this process and take the five out again.

$5x-10 \equiv 5(x-2)$. This simple process is called taking out a distributive factor. We take out the 5 which is distributed; that is which is in both the $5x$ and the -10, and put it out side the parenthesis.

Cover up the left hand row below and see if you can write them yourself.

$3x-9 \equiv 3(x-3)$

$5x+50 \equiv 5(x+10)$

$ax+a^2 \equiv a(x+a)$

$3a^2b-3ab^2-6a^2b^2 \equiv 3ab(a-b-2ab)$

$8x^2-72x+32 \equiv 8(x^2-9x+4)$

Learn to recognize a distributive factor at a glance.

The three special cases of multiplication which were mentioned as worth remembering give us three more kinds of factoring.

First: $(x+y)^2 = x^2+2xy+y^2$

$(x+9)^2 = x^2+18x+81$

$(x+2a)^2 = x^2+4ax=4a^2$

$(3x+5)^2 = 9x^2+30x+25$

Multiply out some of these yourself, both on paper and mentally.

A harder one:

$[(x+3)+a]^2$

We will do as we did before, square the first part $(x+3)^2$; then multiply the first by the second and double the answer $2a(x+3)$: then square the second a^2

$(x+3)^2+2a(x+3)+a^2$

Second: $(x-y)^2$

This is really just the same as the first only the sign of the y is minus instead of plus.

Multiply and discover for yourself how much of a change this makes in the product.

$(x-y)^2 \quad \equiv x^2-2xy+y^2$

$(x-9)^2 \quad \equiv x^2-18x+81$

$(3x-5)^2 \quad \equiv 3x^2-30x+25$

$[(x+3)-a]^2 \equiv (x+3)^2-2a(x+3)+a$

Third: $(x+y)(x-y)$

This is the odd case where the cross products disappear and only the end products remain.

$x+y$

$x-y$

x^2+xy

$-xy-y^2$

x^2-y^2

$(x+y)(x-y) \equiv x^2-y^2$

$(x+8)(x-8) \equiv x^2-64$

$(x+2a)(x-2a) \equiv x^2-4a^2$

$(3x+5)(3x-5) \equiv 9x^2-25$

$[(x+3)-a][(x+3)+a] \equiv (x+3)^2-a^2$

$[(x+5)-2][(x+5)+2] \equiv (x+5)^2-4$

Learn to go, in these columns, from left to right (multiplication) and from right to left (factoring).

Factor

$x^2+2xy+y^2$ *Ans.* $(x+y)^2$

$x^2-2xy+y^2$ *Ans.* $(x-y)^2$

$x^2-8x+16$ *Ans.* $(x-4)^2$

$x^2-10x+25$ *Ans.* $(x-5)^2$

x^2-25 *Ans.* $(x-5)(x+5)$

x^2-64a^2 *Ans.* $(x-8a)(x+8a)$

$25x^2-100y^2$ *Ans.* $(5x+10y)(5x-10y)$

$(x+2)^2-36$

Ans. $(x+2-6)(x+2+6) \equiv (x-4)(x+8)$

$(3x-4)^2-49$

Ans.

$(3x-4-7)(3x-4+7) \equiv (3x-11)(3x+3)$

x^4-y^4

Ans.

$(x^2-y^2)(x^2+y^2) \equiv (x-y)(x+y)(x^2+y^2)$

$a^2-20ab+100$ *Ans.* $(a-10b)^2$

Notice that in the first and second kinds the coefficient of the second term is a *double* and the last term is the *square* of the same number.

$x^2-10x+25 \equiv (x-5)^2$

The 10 is double 5, the 25 is the square of 5.

If we multiply $x+3$ by $x+2$:

$x+3$

$x+2$

x^2+5x+6

The coefficient of the second term is the sum of the 3 and 2. The last term is the product of 3 and 2.

Factor

x^2+5x+6 *Ans.* $(x+3)(x+2)$

We factored this expression by finding two numbers whose sum is 5 and whose product is 6. It is another guess and try method. Practice it.

$x^2+8x+12$ *Ans.* $(x+6)(x+2)$

$x^2+10x+9$ *Ans.* $(x+9)(x+1)$

$x^2+18x+32$ *Ans.* $(x+16)(x+2)$

$x^2+22x+57$ *Ans.* $(x+3)(x+19)$

$x^2-11x+18$ *Ans.* $(x-9)(x-2)$

Here the signs of the 9 and 2 must be minus so that their sum will be -11.

$x^2-15x+50$ *Ans.* $(x-10)(x-5)$

$x^2-8a+12$ *Ans.* $(a-6)(a-2)$

$a^2-8ab+15b$ *Ans.* $(a-8b)(a-3b)$

$x^2+10x-24$ *Ans.* $(x+12)(x-2)$

The sum of $+12$ and -2 is $+10$: the product of $+12$ and -2 is -24.

$x^2+18x-63$ *Ans.* $(x+21)(x-3)$

$x^2+20x-125$ *Ans.* $(x+25)(x-5)$

$a^2+6ab-55b$ *Ans.* $(a+11b)(a+5b)$

$x^2-10x-24$ *Ans.* $(x-12)(x+2)$

The sum of -12 and $+2$ is -10; their product is -24.

$x^2-18x-63$ $(x-21)(x+3)$

$a^2-3a-460$ $(a-23)(a+20)$

$x^2-14xy-51y^2$ $(x-17y)(x+3y)$

The next kind is a little harder. At least it often takes more trials.

Multiply

$4x+15$

$2x+9$

$8x^2+30x$

$36x+135$

$8x^2+66x+135$

Factor $8x^2+66x+135$

To get $8x^2$ we may multiply x by $8x$
or $2x$ by $4x$
To get 135 we may multiply 1 by 135
or 3 by 45
or 9 by 15

We want the combination which will give cross products whose sum is $66x$
Try some:

x	1	
$8x$	135	
	$135x$	
	$8x$	
	$143x$	This is not the combination.
x	3	
$8x$	45	
	$24x$	
	$45x$	
	$69x$	Not the one
x	9	
$8x$	15	
	$72x$	
	$15x$	
	$87x$	No.
x	15	
$8x$	9	
	$120x$	
	$9x$	
	$129x$	No.
$2x$	15	
$4x$	9	
	$18x$	
	$60x$	
	$78x$	Not the one.
$2x$	9	
$4x$	15	
	$36x$	
	$30x$	
	$66x$	This is the combination we are seeking. Our factors are

$2x+9$ and $4x+15$.

Factor $6x^2+46x+80$

$3x$	1		$3x$	40
$2x$	80		$2x$	2
	$240x$			$80x$
	$2x$			$6x$
	$242x$	No		$86x$ No
$3x$	8			
$2x$	10			
	$16x$			
	$30x$			
	$46x$	This is the one.		

Ans. $(3x+8)(2x+10)$

$3x$	80		$3x$	4
$2x$	1		$2x$	20
	$160x$			$8x$
	$3x$			$60x$
	$163x$	No		$68x$ No
$3x$	2		$3x$	20
$2x$	40		$2x$	4
	$120x$			$20x$
	$4x$			$12x$
	$124x$	No		$32x$ No

Factor $15x^2+28x+12$

$5x$	2		$5x$	6
$3x$	6		$3x$	2
	$6x$			$18x$
	$30x$			$10x$
	$36x$	No		$28x$ Yes

Ans. $(5x+6)(3x+2)$

Check

$5x + 2$
$3x + 2$

$15x^2+18x$
$10x+12$

$15x^2+28x+12$

Factor $20x^2-23x+6$

$4x$	2		$4x$	3
$5x$	3		$5x$	2
	$10x$			$8x$
	$12x$			$15x$
	$22x$	No		$23x$ Yes

Ans. $(4x-3)(5x-2)$

Multiply: $6x - 5$
$2x + 3$

$12x^2-10x$
$+18x-15$

$12x^2+ 8x-15$

Notice that the sign of the 15 is minus, and that the $8x$ is the *difference* between the $18x$ and the $10x$.

Now factor $12x^2+8x-15$

Try	$3x$	1	$6x$	3
	$4x$	15	$2x$	5
		$45x$		$30x$
		$4x$		$6x$
		$41x$ No		$24x$ No
	$3x$	15	$6x$	5
	$4x$	1	$2x$	3
		$60x$		$10x$
		$3x$		$18x$
		$57x$ No		$8x$ Yes: but it

still remains to decide which is minus, the 5 or the 3.

Try making it -3. This gives us $-8x$. This is wrong.

Then it must be -5.

Ans. $(6x-5)(2x+3)$

Factor $24x^2-53x-7$

Ans. $(8x+1)(3x-7)$

Factor $6a^2-11a-10$

Ans. $(2a-5)(3a+2)$

Factor $12a^2-7ab-45b^2$

Ans. $(4a-9b)(3a+5b)$

It is not difficult to remember two more cases.

Factor x^3+y^3

Ans. $(x+y)(x^2-xy+y^2)$

Factor x^3-y^3

Ans. $(x-y)(x^2+xy+y^2)$

QUADRATIC EQUATIONS

PROBLEM 47. A farmer sets out apple trees so that the number of trees in a row is two more than the number of rows. If there are 624 trees, how many rows and how many trees in a row?

Let x=no. of rows.

Then $x+2$=no. of trees in a row.

$x(x+2)$=no. of trees in all (that is 624).

①	$x(x+2)=624$	
②	$x^2+2x=624$	① same values
③	$x^2+2x-624=0$	② -624
④	$(x+26)(x-24)=0$	③ factored

We have here two numbers multiplied together giving as a product zero. This is only possible if one or the other of the numbers equals zero.

⑤	$x-26=0$	
⑥	$x-24=0$	
⑦	$x=26$	⑤ $+26$
⑧	$x=24$	⑥ $+24$

Check

24 rows of 26 = 624 trees

Ans.

24 Rows. 26 trees in a row. The 26 rows would be the answer if the problem read, "two less trees in a row than rows."

Try problem 47 with these numbers.

1. 5 more trees in a row than rows, trees in all, 500.

2. 6 more trees in a row than rows, trees in all, 216.

3. 8 more trees in a row than rows, trees in all, 128.

PROBLEM 48. A rectangle is 15 feet long, and its area is 36 sq. ft. more than a square of the same width. How wide is it?

Let x=no. of ft. in width of rectangle (and square).

$15x$=no. of sq. ft. in area of rectangle.

x^2=no. of sq. ft. in area of square.

Area of square plus 36 sq. ft. = area of rectangle.

That is ①	$x^2+36=15x$		
②	$x^2-15+36=0$	①	$-15x$
③	$(x-12)(x-3)=0$	②	factored
④	$x-12=0$		
⑤	$x-3=0$		
⑥	$x=12$	④	$+12$
⑦	$x=3$	⑤	$+3$

Check

12′ by 12′ = 144
12′ by 15′ = 180
144 + 36 = 180

Ans. Rectangle is 12 ft. wide

OR

3′ by 3′ = 9
3′ by 15′ = 45
9 + 36 = 45

Rectangle is 3 ft. wide

Here we have *two* answers to one problem and both answers are correct.

PROBLEM 49. A rectanglar room takes 68 feet of picture molding and 32 square yards of carpet. What is the size of the room?

Let x=no. of feet in width (short side).

$2x$=no. of feet in two short sides.

$68-2x$=no. of feet in two long sides, because there are 68 feet in all four sides.

$1/2(68-2x)$=no. of ft. in length. That is $34-x$.

$x(34-x)$=no. of sq. ft. in area. That is 288.

[Change 32 square yards to ft.]

①	$x(34-x)=288$	
②	$34x-x^2=288$	① same values
③	$0=x^2-34x+288$	② $+x^2-34x$
④	$0=(x-18)(x-16)$	③ factored
⑤	$x=18.$ 16	

Check *Ans.*

18 18′ by 16′
18
16
16

68 ft. of molding
$18\times16=288$ sq. ft. = 32 sq. yds.

PROBLEM 50. A fraction having 70 for its numerator is inverted and multiplied by 6. Its new value is one more than its original value. What is the fraction?

Let x=the denominator.

Then $\frac{70}{x}$=the fraction.

And $\frac{6x}{70}$=the fraction inverted and multiplied by 6.

The new value = one more than its original value.

$$\textcircled{1}\quad \frac{6x}{70}=\frac{70}{x}+1$$

② $6x^2=4900+70x$	①×70x
③ $6x^2-70x-4900=0$	②−70x−4900
④ $3x^2-35x-2450=0$	③÷2
⑤ $(x-35)(3x+70)=0$	④ factored
⑥ $x=35$	
⑦ $3x=-70$	
-70	
⑧ $x=\frac{-70}{3}$	

Check	*Ans.*
35	70
$\frac{70}{35}\times 6=3$	$\frac{70}{35}$
70	
$\frac{70}{-70}=2$	
$2+1=3$	

The $\frac{-70}{3}$ will also check, though it makes a curious fraction.

Such equations as ④ above are often laborious to factor by the guess and try method. We need a more systematic process. "Completing the square" is such a process for factoring quadratics. Remember that if we square $x+6$ we get $x^2+12x+36$. The 12 is *double* the six and 36 is the *square* of 6. If we had the 12 but not the 36 how could we find the 36? By taking half of the double term and squaring it.

Factor $x^2+20x+96$.

The 20 is the double, therefore the original number is 10.

Its square is 100

$x^2+20x+100$ is the complete square.

$x^2+20x+100\ +96-100$ If we add 100 in order to get a perfect square, we must subtract 100 to bring the expression back to its former size.

Rewrite: $(x+10)^2-4$

or $(x+10)^2-(2)^2$

This is a familiar kind of expression to factor. It is called the difference of two squares.

$$(x+10-2)(x+10+2)$$

or $(x+8)(x+12)$ *Ans.*

Check

$x+8$

$x+12$

x^2+8x

$+12x+96$

$x^2+20x+96$

Solve

$$x^2-6x-27=0$$

②	$x^2-6x+9-27-9=0$
③	$(x-3)^2-36=0$
④	$(x-3-6)(x-3+6)=0$
⑤	$(x-9)(x+3)=0$
⑥	$x=9,-3$

Check	*Ans.*
$81-54-27=0$	9 or −3
$0=0$	
$9+18-27=0$	
$0=0$	

Solve

$$\textcircled{1}\quad x^2+7x-18=0$$

$$\textcircled{2}\quad x^2+7x+\frac{49}{4}-18-\frac{49}{4}=0 \qquad \textcircled{2}\quad +\frac{49}{4}-\frac{49}{4}$$

$$+\frac{7}{2}$$

If 7 is the double, the original is $\frac{7}{2}$. Its square is $\frac{49}{4}$

$$\textcircled{3}\quad \left(x-\frac{7}{2}\right)^2-\frac{72}{4}-\frac{49}{4}=0$$

$$\textcircled{4}\quad \left(x-\frac{7}{2}\right)^2-\frac{121}{4}=0$$

$$\textcircled{5}\quad \left(x+\frac{7}{2}-\frac{11}{2}\right)\left(x+\frac{7}{2}+\frac{11}{2}\right)=0$$

Check	*Ans.*
$4+14-18=0$	2, −9
$0=0$	
$81-63-18=0$	
$0=0$	

This is a hard way to solve an easy quadratic, and an easy way to solve a hard quadratic.

Solve

$$\textcircled{1}\quad 3x^2-x-2=0$$

$$\textcircled{2}\quad x^2-\frac{1}{3}x-\frac{2}{3}=0$$

$$\textcircled{3}\quad x^2-\frac{1}{3}x+\frac{1}{36}-\frac{2}{3}-\frac{1}{36}=0$$

$$\textcircled{4}\quad \left(x-\frac{1}{6}\right)^2-\frac{25}{36}=0$$

$$\textcircled{5}\quad \left(x-\frac{1}{6}-\frac{5}{6}\right)\left(x-\frac{1}{6}+\frac{5}{6}\right)=0$$

$$\textcircled{6}\quad (x-1)\left(x+\frac{4}{6}\right)=0$$

$$\textcircled{7}\quad x=1,\ -2/3$$

Check	*Ans.*
$3-1-2=0$	1, −2/3.
$0=0$	
$3(4/9)+2/3-2=0$	
$4/3+2/3-2=0$	
$0=0$	

Solve

$$\textcircled{1}\quad x^2-8x+5=0$$

$$\textcircled{2}\quad x^2-8x+16+5-16=0$$

$$\textcircled{3}\quad (x-4)^2-11=0$$

$$\textcircled{4}\quad (x-4-\sqrt{11})(x-4+\sqrt{11})=0$$

$$\textcircled{5}\quad (x-4-3.32)(x-4+3.32)=0$$

$$(x-7.32)(x-.68)=0$$

$$\textcircled{7}\quad x=7.32 \text{ or } .68$$

Check	*Ans.*
$53.5-58.6+5=0$	7.32 or .68
$-5.1+5=0$	

Notice the slight discrepancy in the check, which we always expect in approximate computation.

7.32	7.32	Try the second check
7.32	8	for yourself.
512	58.6	
22		
1		
53.5		

We are now able to solve the three kinds of equations of elementary algebra. They are sufficient for the use of most of the equations and formulas you will find in your reading. The study of geometry and trigonometry will bring many more formulas within your reach.

PLANE GEOMETRY

George Macfeely Conwell, Ph. D.

INTRODUCTION

"The enemies of geometry, those who know it only imperfectly, look upon the theoretical problems, which constitute the most difficult part of the subject, as mental games which consume time and energy that might better be employed in other ways. Such a belief is false, and it would block the progress of science if it were credible. But aside from the fact that the speculative problems, which at first sight seem barren, can often be applied to useful purposes, they always stand as among the best means to develop and to express all the forces of human intelligence." —Abbé Bossut.

"It may seem strange that geometry is unable to define the terms which it uses most frequently, since it defines neither movement, nor number, nor space—the three things with which it is chiefly concerned. But we shall not be surprised if we stop to consider that this admirable science concerns only the most simple things, and the very quality that renders these things worthy of study renders them incapable of being defined. Thus the very lack of definition is rather an evidence of perfection than a defect since it comes not from the obscurity of the terms, but from the fact that they are so well known." —Pascal.

"We may look upon geometry as practical logic, for the truths which it studies, being the most simple and most clearly understood of all truths, are on this account the most susceptible of ready application in reasoning."—D'Alembert.

"The method of making no mistakes is sought by every one. The logicians profess to show the way, but the geometers alone ever reach it, and aside from their science there is no genuine demonstration."—Pascal.

HISTORICAL

Mathematics in general and geometry in particular have a very ancient and honorable history. Of all the sciences its development has been accompanied by the least error. One generation of mathematicians has not been chiefly occupied with the correction of the mistakes of the previous generation but has been free to devote its energies to further developments of the science.

The virtues of mathematics, precision in definition and logical exactness in reasoning, are especially evident in geometry. Its elements—the point, the line, and the plane—are the most universal of all concepts, and have always meant the same thing to all peoples, and this gives a common and undisputed ground for development. On the contrary, what may seem beautiful to one people at one time may not seem to be so at a later date. Even the moral values of acts are differently appraised by different ages and by different races, but the geometrical concepts have in them the elements of the unchangeable and eternal. The shortest distance between two points always has and always will bring to the mind the same concept—the line.

Our knowledge of what the ancients knew of geometry is limited to what may be inferred from inscriptions and tablets. Necessity often serves as the mother of invention, and hence the earliest geometry deals with the practical problems, such as the measurement of lands. The Babylonians had formulas for areas of squares, rectangles, and right triangles. They asserted that the circumference of a circle was three times its diameter. This is also the statement in the Bible in I Kings 7:23. The Egyptians, whose civilization goes back beyond record, had a practical use for geometry in the surveying of land, especially in the vicinity of the Nile, which so often floods its banks. In Herodotus we find: "They said also that this king divided the land among all Egyptians so as to give each one a quadrangle of equal size and to draw from each his revenues, by imposing a tax to be levied yearly. But every one from whose part the river tore away anything, had to go to him and notify what had happened; he then sent overseers, who had to measure out how much the land had become smaller, in order that the owner might pay on what was left, in proportion to the entire tax imposed. In this way, it appears to me, geometry originated, which passed thence to Hellas." The pyramids also are an enduring monument to the geometrical science of the Egyptians.

From the seventh century B. C. the Greeks came into active contact commercially and intellectually with the Egyptians. Plato, who visited Egypt said: "Whatever we Greeks receive, we improve and perfect." By 320 B. C. a Greek, Euclid, had written a geometry which in its translation has been used as the standard text almost universally in England until this century and is used at the present time in some places. The vogue of this text for over 2,200 years was deserved and has made the word Euclid synonymous with geometry. The Egyptians cared only for geometry as required in every day life but the Greeks were interested in the logical and speculative side of the science.

Soon there arose the three famous problems of geometry:

(1) To trisect an angle.

(2) To "double the cube", i. e., to find a cube whose volume is double that of a given cube.

(3) To "square the circle", i. e., to find a square exactly equal in area to a given circle.

These problems became the incentive of much geometrical study, and while they were never satisfactorily dealt with in ancient times those engaged in seeking the solutions were always finding out new and important geometrical truths. Many of the Greek philosophers, as Plato and Aristotle, were keenly interested in geometry. Plato wrote over the entrance to his school, "Let no one who is unacquainted with geometry enter here."

Euclid, whose name is by far the greatest in geometry, was born about 365 B. C. and wrote his Elements 330-320 B. C. He was extraordinarily skillful in arranging in an orderly and logical manner the facts and theorems of geometry. Very few of the separate proofs were his own, but his power to organize and systematize all the available knowledge of geometry entitles him to the high place he holds.

There are two stories handed down from the days of Euclid which indicate that human nature does not change and that the conflict between knowledge for its own sake and knowledge for utilitarian purposes only is not modern. When Ptolemy asked if there was no easy method of acquiring geometric knowledge Euclid replied: "There is no royal road to geometry." Literally hundreds of geometric texts have been written whose object is to make Euclid easy, but there are many who maintain that this product of Greek culture has never been surpassed.

A youth who had begun to read geometry with Euclid, when he had learned the first proposition inquired: "What do I get by learning these things?" So Euclid called his slave and said: "Give him three pence, since he must make gain out of what he learns." While the average man uses geometry very little yet he enjoys the advantages of modern inventions, all of which are the products of applied geometry.

Practical Utility.—How is geometry used? I walk a certain distance; here is the problem of the measurement of distance. I buy a piece of ground, a drawing must be made to indicate its shape and position for the deed; here is a problem of area. A tank must be constructed to hold so many gallons; here is a question of volume. A tunnel is to be made under a river, a bridge is to be constructed, a ship is to be built; all these are but a few of the many thousands of geometric problems. In war there are endless problems of geometry to solve. The position of a big gun, of an airplane, or of a submarine, is found by geometrical means.

Relation to Sciences.—Without a knowledge of geometry, progress in the study of physics is impossible. Indeed in the modern developments of physics, there has arisen a demand for peculiar concepts of space called non-Euclidean geometries and for what is known as four dimensional geometry. At present all matter is supposed to be composed of electric charges, positive and negative. The physical and chemical properties of all substances thus depend upon the manner in which these electrical charges are arranged. In the case of crystals many geometrical solids are found in nature.

Universality.—Geometry is founded upon statements about which there is universal agreement. History is supposed to deal with facts, but what passes for history in one country will not be accepted in another, and even in the same country opinions differ. Moreover, if the facts

themselves are not disputed, at least their interpretation is called in question. What is music to the Oriental ear is mere noise to the European. Often that which is considered beautiful in one age is derided in the next. But objects like the monuments of Greek architecture, which found their inspiration and proportions in the laws of geometry, have found universal admiration and approval, since the fundamental laws of geometry have been the same for all times and all peoples.

Essentials.—Geometry teaches the student to separate the essential from the non-essential. The statements of geometry when they have reached a final form are such that a single word can not be added or taken away without destroying the meaning.

Intellectual Beauty.—There is a unity, simplicity, and beauty in the development of geometry which appeals to many. Lincoln, whose writings and speeches are especially noteworthy for the above qualities, found joy in middle life in reading the proofs of Euclid.

Intellectual Requirements.—Geometry is especially fitted as a subject of study for the youthful mind. It demands intelligence, imagination, and diligence. Travel and experience add much to the ability to master many subjects but "there is no royal road to geometry."

1. Elements.—The elements first met with in plane geometry are the point and the line. We also require one plane in which all the points and lines are supposed to lie. Before we attempt to define these terms we must consider the nature of a definition.

2. Definition.—A definition is a statement explaining the precise meaning of a word or phrase. It should be complete and clear and in terms more simple and better known than the word defined.

3. Geometrical Definitions.—A few moments of thought will show the impossibility of definitions for the elements of geometry. We naturally choose for our fundamental elements the simplest; and if there were anything simpler than the point we should choose it as our first element rather than the point itself. Here is one of the advantages of geometry as a study: we all know what is meant by a point and a line and thus have a common body of knowledge upon which to build. There have been many clever descriptions of a point and of a line but one must acknowledge that if one did not know what was meant by the word point before reading the description one would not know afterward.

4. Point.—A point is that which has no part. A point is that which has position but no magnitude.

5. Line.—A line is that which has length without breadth or thickness. A line is breadthless length. Euclid's definition of a straight line is: A straight line is that which lies evenly with respect to the points on itself.

6. Axiom.—Certain facts are so elemental they can not be reduced to anything simpler. They are statements which meet with universal agreement and are called axioms.

7. Postulate.—A postulate is a geometric statement whose truth is assumed. The distinction between a postulate and an axiom is merely that the postulate is a geometric truth while the axiom is of broader application. Many ignore or neglect this distinction, and we shall at times.

There is a certain amount of freedom in our choice of axioms and postulates. There is always a choice in the fundamental unit. If one chooses the dollar as the unit then the cent is the one hundredth part of a dollar; if the cent is the unit then the dollar is one hundred cents.

Just as there are many different orders in which the separate stones of a building may be set, so also there have been many different lists of assumptions in geometry. We shall use the list from the New York State Syllabus in Geometry, which has itself been based on a list used by Harvard University in its entrance examinations.

8. One straight line, and only one, can be drawn through two given points.

9. Two points determine a straight line.

10. Two straight lines can intersect in only one point.

11. A straight line may be produced to any required length.

12. A straight line is the shortest path between two points.

13. A circle may be described with any given point as a center, and any given line as a radius.

14. Any figure may be moved from place to place without altering its size or shape.

15. Through any point outside a given line, one line, and only one, can be drawn parallel to the given line.

16. All straight angles are equal.

17. All right angles are equal.

18. From a given point in a given line, one perpendicular, and only one, can be drawn to the line.

19. Equal angles have equal complements, equal supplements, and equal conjugates.

If a careful man should build a house he might make a complete list of all the kinds of materials which entered into its construction and of the various tools which were necessary. Thousands of careful students and teachers have been over the subject of geometry and the above postulates, or assumptions, are the ones which have been found to be the most necessary and convenient.

Again, in the building of a house one might try to determine what was the least number of tools that were necessary, but in actual practice it is better to have a sufficient number. As a matter of fact, some of the above list of assumptions result from the others so the list is not so small as it might be. In a course in higher mathematics it would be proper to consider the question of the least number of assumptions, but for the beginner in geometry the number of the assumptions is not so important as their convenience. Having the assumptions listed, it is possible, when one becomes more familiar with the subject, to investigate their relations.

20. Equipment.—What equipment does a student need in the study of geometry? When we discuss this question we shall see the relation of the practical to the theoretical.

First, the student needs a sheet of paper, a slate, or a blackboard as a representation of a plane. On consideration it will be evident that no such thing as a perfect plane can be obtained. Your slate or blackboard is full of imperfections and your sheet of paper will refuse even to be flat unless it is placed on a good desk top. However, the idea of a perfect plane is fixed in our minds. We are content if a concrete sidewalk is fairly smooth, a plate glass window must be more accurately made, while the manufacturer of an astronomical instrument may work for months or years to obtain a smooth surface for an instrument requiring great accuracy. He must have a pencil, a piece of chalk, or an instrument of some kind to indicate points and draw lines. Any point we can make with a pencil has size but again as we make the point smaller, thus approaching the ideal, we increase the accuracy of our work. A ruler is necessary to aid in the drawing of straight lines and again this can only be approximately free from error. Finally a pair of compasses is necessary to draw circles. We shall leave to the reader the consideration of the question—why is a pair of compasses a more accurate instrument than a ruler?

From the earliest days the ruler and the compasses have been the only instruments that have been considered legitimate in the solution of plane geometry problems. To become proficient in many sciences requires elaborate equipment and costly apparatus but even crude drawings made in the sand enabled the ancient Greek scholars to attain their perfection in geometry.

21. Drawings.—We can now discuss the postulates §8-19 in reference to the making of geometrical drawings.

We represent points by small dots and put a capital letter as A in the vicinity of the point to label it.

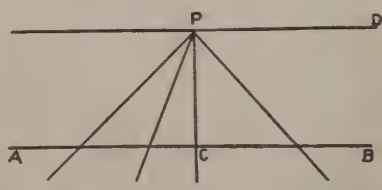
Two given points A and B determine the position of our ruler to draw the line with the symbol AB in agreement with §8-9 which line by §11 we can extend in either direction beyond the points A or B.

With our pencil we can draw any number of paths or curves between the points A and B but §12 tells us that the straight line drawn with our ruler is the shortest distance between the two points.

In the moving of a figure from one position to another according to §14 we have a theoretical and practical difference. Any physical object, if moved from one position to another on our earth, would in general experience many changes due to the alteration of the force of gravity, of the atmospheric pressure, of the temperature, etc., which would change its shape, but one readily imagines the ideal solid which experiences no change.

22. Uniqueness.—Geometry is particularly concerned with unique objects. The highest mountain, the largest city, the worst war have an immediate significance. The designation of any other mountain, city or war requires many words. When two points A and B are given the first unique object determined is the line AB which can be prolonged in either direction.

23. Segment.—When we consider the portion of the line AB which lies between A and B we have a second unique object called the line—segment AB, which has related to it a unique number called its length.

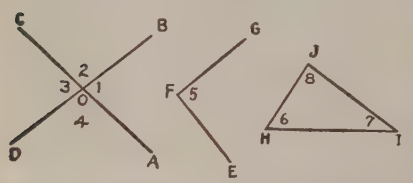


Consider the line AB and the point P outside it. Consider all the lines which can be drawn through P, two of these lines are unique in reference to AB, i. e., PC and PD.

24. Parallel.—(Symbol II). Two lines are called parallel when they lie in the same plane and do not intersect however far they are produced. There is one line and one only, §15, which passes through P and is parallel to AB, i. e. PD. This is a very famous axiom or postulate and in the past there have been many attempts by well known mathematicians to derive it from the other postulates.

The two rails of a railroad correspond to our ideas of parallel lines and if prolonged forever in straight lines we believe they would never meet, and it seems as if there should be some way to prove it.

The proof is impossible, for it has been shown that it is the realm of possibility for something entirely different to take place. Lobatschewski (1793-1856) showed that the postulate that more than one parallel can be drawn through a point to a given line leads to a consistent and at the same time a different geometry. In this geometry the sum of the angles of a triangle is less than two right angles. Riemann (1826-1866) took as his postulate that there is no parallel to a line from a point outside it. This leads to still another consistent geometry in which the sum of the angles of a triangle is greater than two right angles. This of course leaves it to experiment or observation to find out which is the true geometry. If the true geometry is that of Euclid then the sum of the angles of a triangle should be always two right angles. I see a man in New York and I again see him in Canton, China. He may have gone from one place to the other by way of the Atlantic or the Pacific oceans, but it is also a geometric possibility that he went through the center of the earth. How he did go can be accurately answered only from observation of his trip.



25. Ray or Half Line.—When two lines intersect in a point the plane is divided into four parts. AC and BD intersect in O dividing the plane into the four parts 1, 2, 3, 4.

We designate a line beginning at a definite point and extending indefinitely in only one direction as a ray or half line. OA and OC are half lines.

26. Angle.—(Symbol ∠). When two half-lines or rays extend indefinitely from a common point the figure formed is an angle. The concept of the half-line or ray is introduced to secure uniqueness. When two lines as AC and BD intersect in O we have four angles determined which we can designate by the numbers 1, 2, 3, 4. The common point is called the *vertex* and the two rays the *sides*. Thus angle 1 has the vertex O and the sides OA and OB and can be named the angle AOB or the angle BOA; the vertex letter is always written between the other two letters. When there is no danger of ambiguity we can designate the angle by a single letter or number, thus ∠JHI = ∠6 = ∠H; but it would not do to say the angle O, for there is not a unique angle at O.

27. Straight Angle.—Closely connected with the angle is the idea of a rotation. If OB turns about O as a fixed point counterclockwise while OA remains fixed the angle AOB will increase and OB will ultimately coincide with OC. The angle AOC or COA is called a straight angle. A straight angle is formed when the sides extend in opposite direction from a common vertex and form a straight line.

28. Geometric Figure.—Any combination of the geometric elements, points, lines, surfaces, and solids is a geometric figure.

29. Boundaries.—The boundaries of a geometric figure are the points, lines, or surfaces by which it is limited.

30. Polygon.—A polygon is a plane figure bounded by three or more straight lines.

Triangle.—(Symbol △). A triangle is a portion of the plane bounded by three straight lines, and is the simplest of the polygons.

31. Equality.—(Symbol =). Equality has various meanings in geometry. The fundamental equality is congruence.

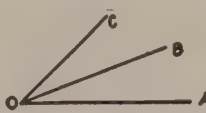
32. Congruence—(Symbol ≅). Two geometrical figures are congruent if they can be made to coincide in all their parts by use of postulate §14.

The segment AB is congruent or equal to segment CD if AB can be made to coincide with CD. A can be made to coincide with C, the line AB to coincide with the line CD, then if B falls on D the segments coincide throughout and are congruent. Also if AB ≅ CD then AB ≅ DC.

The two angles AOB and CLD are congruent if it is possible to place them so that OA coincides with LC at the same time that OB coincides with LD, or in general that the vertices and sides can be made to coincide at the same time. Also they can then be made to coincide in the reverse order, that is OA with LD and OB with LC. These two methods are denoted symbolically by ∠AOB ≅ ∠CLD or ∠AOB ≅ ∠DLC.

A circle and a square, however, may have equal areas, but they are not capable of being made to coincide.

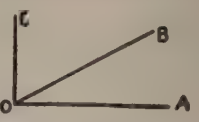
The method of showing that two figures are congruent by placing one upon the other so they coincide in all their parts is called proof by the method of *superposition*.



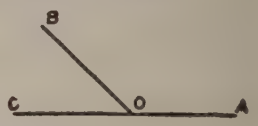
33. Adjacent Angles.—Two angles which have the same vertex and the side between them common are adjacent. Thus ∠AOB and ∠BOC are adjacent and ∠AOC is their sum.

34. Right Angles.—When two straight lines meet so that any two of the adjacent angles are equal the angles are called right angles. An angle less than a right angle is called an acute angle. An angle greater than a right angle is an obtuse angle.

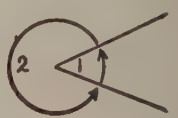
35. Perpendicular.—(Symbol ⊥). Two lines are perpendicular when they meet to form right angles. There is but one line perpendicular to a given line at a given point by postulate §18. This is the second unique line PC of §23.



36. Complementary Angle.—One angle is the complement of another when their sum is a right angle. ∠AOB and ∠BOC are complementary angles.



37. Supplementary Angles.—One angle is the supplement of another if their sum is a straight angle or two right angles. ∠AOB and ∠BOC are supplementary.



38. Conjugate Angles.—One angle is the conjugate of another if their sum is two straight angles or four right angles, ∠1 and ∠2 are conjugate.

AXIOMS

39. If equals are added to equals, the sums are equal.

40. If equals are subtracted from equals, the remainders are equal.

41. If equals are multiplied by equals, the products are equal.

42. If equals are divided by equals, the quotients are equal.

43. Like powers or like positive roots of equals are equal.

44. If unequals are operated on by positive equals in the same way, the results are unequal in the same order.

45. If unequals are added to unequals in the same order, the sums are unequal in the same order; if unequals are subtracted from equals, the remainders are unequal in the reverse order.

46. Quantities that are equal to the same quantity or to equal quantities are equal to each other.

47. A quantity may be substituted for its equal in an equation or in an inequality.

48. If the first of three quantities is greater than the second, and the second is greater than the third, then the first is greater than the third.

49. The whole is greater than any of its parts and is equal to the sum of all its parts.

50. Magnitude.—Any thing that is measurable is a magnitude. The above axioms are universal statements which apply to numerical quantities or magnitudes. They enumerate all the operations that are necessary in dealing with numbers.

Consider axiom 45.

7 is greater than 3 or in symbols $7>3$,
6 is greater than 4 or in symbols $6>4$,

Adding 13 is greater than 7 Adding $13>7$.
10 equals 10 or in symbols $10=10$
6 is greater than 4 or in symbols $6>4$

Subtracting 4 is less than 6 Subtracting $4<6$

Of course nothing can be said about the result of adding unequals to unequals which are in the reverse order, as can be seen below.

$10>6$,
$3<13$,
Adding $13<19$,
but $10>6$,
$3<4$,
Adding $13>10$.

Thus the first sum may be either greater or less than the second. The reader can verify the other axioms for numbers in a similar way.

51. Solids.—All the objects which we can see are solids. Physics is concerned with the nature and properties of the substances of which the physical solids are constituted, while geometry is concerned only with the shape and size of the solid. Thus a geometrical solid can not be seen or touched and has its existence only in the imagination.

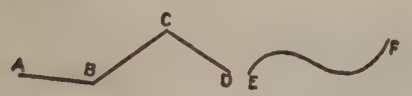
52. Geometrical Solid.—A geometrical solid is a limited portion of space.

53. Surface.—The boundaries of a geometric solid are called surfaces. Consider some water standing in a glass. The exposed surface of the water is neither air nor water, it is what is between the air and the water.

A sheet of paper is a representation of a surface, or rather of two surfaces, as its two faces are separated by the thickness of the paper.

54. Line.—A line is the intersection of two surfaces. Thus in the case of water standing in a glass the surface of the water meets the surfaces of the glass in a curved line or an approximate circle, if the glass is an ordinary drinking glass.

We have already considered the straight line in § 5.



55. Broken Line.—A broken line is composed of portions of straight lines. AB+BC+CD is a broken line.

56. Curved Line or Curve.—Any line which is neither straight nor broken is a curved line. EF is a curved line.

57. Motion in Geometry.—Since geometry is closely connected with mechanics, which discusses the motion of physical objects, we should see the relation of motion to the fundamental elements of geometry.

A moving point generates a line.

A moving line generates a surface unless it moves along itself.

A moving surface generates a solid unless it moves along itself.

58. Plane.—A definition of a plane can be given in terms of points and lines. A plane is a surface such that a straight line joining any two of its points lies wholly within the surface.

59. Theorem.—Geometry is the study of the properties of figures and the relations which exist between them. The results of these studies are formulated in statements called theorems. A theorem consists of two parts: the hypothesis and the conclusion. The *hypothesis* gives all the conditions which are granted or assumed. The *conclusion* gives the result of these conditions. From the stand point of the student, a theorem is something which is to be proved; that is, he is to reproduce the steps by which the original discovery was made.

60. Proof.—A proof is an argument or an ordered arrangement of statements by which we show the truth of an assertion. For each statement given, a reason must be assigned.

These reasons must be—

(1) granted in the hypothesis,
(2) an axiom or postulate,
(3) a definition,
(4) or a theorem which has itself been previously proved. The student must take every opportunity to learn what the axioms postulates, and definitions mean; then he will be able to write them in his own words.

Read every word in a theorem, and if there is a single word or phrase of which you do not know the exact meaning, consult the definitions; because you can not be honest with yourself if you attempt to prove something when you do not understand what it is you are about to prove.

61. Method of Writing a Proof.—

(1) Write the theorem.
(2) Draw a figure indicating what is given.
(3) Write down the hypothesis.
(4) Write down the conclusion.
(5) Draw a line down the middle of the page and for each step written on the left of the line give the reasons on the right. This method will be followed for only a part of the propositions.

62. Symbols.—

$+$ plus.	$\triangle$ triangle.
$-$ minus.	$\triangleq$ triangles.
$\times$ or multiplied by.	$\perp$ perpendicular, is perpendicular to.
$=$ equals.	$\perp s$ perpendiculars.
$\doteq$ equivalent, is equivalent to.	$\parallel$ parallel, is parallel to.
$\cong$ congruent, is congruent to.	$\parallel s$ parallels.
$\sim$ similar, is similar to.	$\square$ parallelogram.
$>$ is greater than.	$\square s$ parallelograms.
$<$ is less than.	$\bigcirc$ circle.
$\therefore$ therefore.	$\bigcirc s$ circles.
$\because$ since.	π ratio of the circumference to the diameter of a circle.
$\angle$ angle.	
$\measuredangle s$ angles.	

$\sqrt{}$ square root, $\sqrt{16}=4$.
$^\circ$ degrees.
$'$ minutes.
$''$ seconds.

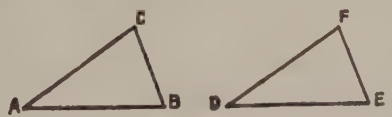
63. Abbreviations.—

Adj.	Adjacent.
Alt.	Alternate.
Ax.	Axiom.
Con.	Conclusion.
Cons.	Construction.
Corresp.	Corresponding.
Def.	Definition.
Ext.	Exterior.
Hyp.	Hypothesis.
Int.	Interior.
Post.	Postulate.
Rect.	Rectangle, Rectangular.
Rt.	Right.
Str.	Straight.
Sup.	Supplementary.

ANGLES, TRIANGLES AND PERPENDICULARS.

64. Theorem 1.—

If two triangles have two sides and the included angle of one equal respectively to two sides and the included angle of the other, the triangles are congruent.



Hyp. Given the triangles ABC and DEF, in which AB equals DE, AC equals DF, and the angle A equals the angle D.

Con. The triangle ABC is congruent to the triangle DEF.

Proof.

Statements.	Reasons.
1. Place the triangle ABC on the triangle DEF so that the side AB coincides with its equal DE, and so that the point A falls on the point D and the point B on the point E.	1. §14. Postulate. Any figure may be moved from place to place without altering its size or shape. § 32. Definition. The segment AB is equal to the segment DE if AB can be made to coincide with DE.
2. The side AC will coincide with the equal side DF since the angle A equals the angle D.	2. §32. Definition. Two angles which are equal can be made to coincide. Angle A equals angle D by hypothesis.
3. Point C will fall on point F.	3. Segment AC equals segment DF by hypothesis.
4. Point B now coincides with point E, hence the side BC coincides with the side EF.	4. §8. Postulate. One straight line, and only one can be drawn through two given points.
5. Triangle ABC is congruent to the triangle DEF.	5. §32. Definition. Two geometrical figures are congruent if they can be made to coincide in all their parts.

Let us consider the proof of the theorem. It is obvious that when one looks at the drawing alone it is impossible to tell what is given or what is to be proved. There are six statements which can be made regarding the two triangles, (we will use the symbols of §62.)

$\angle A = \angle D$
$\angle B = \angle E$
$\angle C = \angle F$
$AB = DE$
$BC = EF$
$CA = FD$

But in geometry it is not enough to tell the truth. I may write down six truths

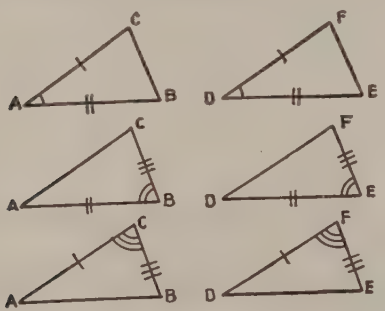
Water is wet.
The sky is blue.
The moon is a sphere.
There are seven days in the week.
Honesty is the best policy.
All crows are black.

It is impossible to trace any sequence in the above statements, or to show that one is the result of any number of the others, as is required in a geometric proof.

There are three ways in which the above figures can be used to prove the same theorem, starting with the three different hypotheses,

(1) $AB = DE$, $AC = DF$, $\angle A = \angle D$;
(2) $AB = DE$, $BC = EF$, $\angle B = \angle E$;
(3) $BC = EF$, $CA = FD$, $\angle C = \angle F$.

So it is especially important to know just which of these three cases has been chosen. This can often be indicated by markings on the equal segments and angles so that immediately on looking at the figure it will be possible to tell what facts are given in the hypothesis. The three figures below give in order the three possible hypotheses enumerated above.



From this point on we shall frequently make use of this method of indicating equal segments and angles.

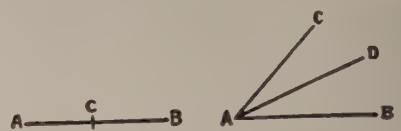
65. Theorem 2.—
If two triangles have a side and the two adjoining angles of one equal respectively to a side and the two adjoining angles of the other, the triangles are congruent.

Hyp. In the triangles ABC and DEF, AB equals DE, angle A equals angle D, and angle B equals angle E.
Con. The triangles ABC and DEF are congruent.

Statements.	Reasons.
1. Place triangle ABC on triangle DEF so that segment AB coincides with its equal DE, with A falling on D and B on E.	1. §14. Postulate. Any figure may be moved from place to place without altering its size or shape. §32. Definition. The segment AB is equal to the segment DE if AB can be made to coincide with DE.
2. Then the line AC will coincide with the line DF and the line BC with the line EF, since angle A equals angle D and angle B equals angle E.	2. Angles are equal by hypothesis. They will coincide by definition, §32.
3. Point C will coincide with point F.	3. §10. Postulate. Two straight lines can intersect in only one point.
4. Triangle ABC coincides with triangle DEF. They coincide in all their parts.	4. Definition, §32.

66. Isosceles Triangle.—An isosceles triangle has two of its sides equal.

67. Bisect.—



To bisect a segment AB is to find the point C in the interior of the segment so that $AC = CB$. In which case C is called the mid-point of AB.

To bisect an angle BAC is to draw the half-line or ray AD so that $\angle BAD \cong \angle DAC$ in which case AB is called the bisector of the angle BAC.

How to actually find the point C and the line AD with the ruler and compasses will be shown later.

68. Corresponding, or Homologous Parts.—When two geometrical figures can be made to coincide, any two segments which coincide are called corresponding, or homologous, segments, and any two angles which coincide are called corresponding, or homologous, angles.

Corresponding, or homologous parts, of congruent figures are equal.

69. Theorem 3.—
In an isosceles triangle the angles opposite the equal sides are equal.

Hyp. In the triangle ABC, the side AC equals the side BC.
Con. The angle A equals the angle B.

Statements.	Reasons.
1. Draw CD the bisector of the angle C, meeting the side AB in D. Then the angle ACD equals the angle DCB.	1. §67. Definition of bisection.
2. Side AC equals side BC.	2. Hypothesis.
3. Side CD equals side CD.	3. Identical.
4. Triangle ACD is congruent to triangle BCD.	4. §64. Theorem. If two triangles have two sides and the included angle of one respectively equal to two sides and the included angle of the other, the triangles are congruent.
5. Angle A equals angle B.	5. Corresponding angles of congruent triangles, §68.

70. Theorem 4.—If two angles of a triangle are equal, the triangle is isosceles.

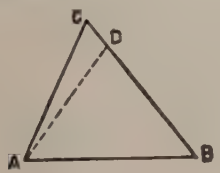
Hyp. Given $\triangle ABC$ with $\angle A = \angle B$.
Con. $AC = BC$ or $\triangle ABC$ is isosceles.

1. Suppose that EFG is ABC in a second position so that $ABC \cong EFG$.	1. Post. §14. Any figure can be moved from place to place without altering its size or shape.
2. Turn EFG over and place it on ABC so that F falls on A and E on B.	2. Post. §14. Same as above.
3. Since $\angle A = \angle B$, and $\angle B = \angle F$, $\angle A = \angle F$.	3. Ax. §46. Quantities that are equal to the same quantity or to equal quantities are equal to each other.

4. $\therefore$ the line FG falls along the line AC.	4. Def. §32. Relative to congruent angles.
5. Similarly the line EG falls on the line BC.	
6. Hence G will coincide with C.	6. Post. §10. Two straight lines can intersect in only one point.
7. GF = AC.	7. §32. Definition.
8. But GF = CB.	8. Const.
9. $\therefore$ AC = BC.	9. Ax. §46. Quantities that are equal to the same quantity or equal quantities are equal to each other.

71. Converse.—If the hypothesis and conclusion of a theorem are interchanged to form a new theorem, this theorem is called the converse of the original theorem. It will be observed that the theorem of §70 is the converse of the theorem of §69.

72. Theorem 5.—If one angle of a triangle is greater than a second angle, the side opposite the first angle is greater than the side opposite the second angle.



Hyp. Given $\triangle ABC$ with $\angle A > \angle B$.
Con. $BC > AC$.

1. Draw the line AD meeting the side CB in D forming the $\angle BAD = \angle CBA$.	1. Construction.
2. AD will be in the interior of the $\angle CAB$.	2. Ax. §49. The whole is greater than any of its parts.
3. AD + DC > CA.	3. Post. §12. A straight line is the shortest path between two points.
4. In $\triangle ABD$, $\angle DAB = \angle DBA$, $AD = BD$.	4. Construction. Theorem 4, §70. If two angles of a triangle are equal, the triangle is isosceles.
5. Substitute BD for its equal in 3, BD + DC > CA.	5. Ax. §47 A quantity may be substituted for its equal in an equation or in an inequality.
6. BD + DC = BC, $\therefore$ BC > CA.	6. Ax. §49. The whole is equal to the sum of its parts. Ax. §47. A quantity may be substituted for its equal in an equation or in an inequality.

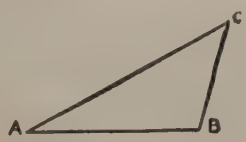
73. Proof by Exclusion.—Sometimes it is not possible or feasible to give a direct proof of a theorem, as has been done with the theorems so far considered. Another method is to make a complete enumeration of all the possible things which can happen and then to eliminate them one by one until there remains but a single possibility, and this must be the true condition of affairs.

The success of this method depends upon the completeness of the enumeration. Because a color is not green does not prove it is red. You do not necessarily find the letter which you were to mail and which you have concealed in a pocket, if you overlook a single pocket in going through your clothes.

In plane geometry a line is either perpendicular to another line or it is not perpendicular to it. Hence you have but two possibilities here; disprove one and you prove the other. In the case of two numbers x and y there are three possibilities, x greater than y, x less than y, or x equal to y; here you must show that two of these are impossible to be certain of the true result.

We shall now have opportunity to use this method.

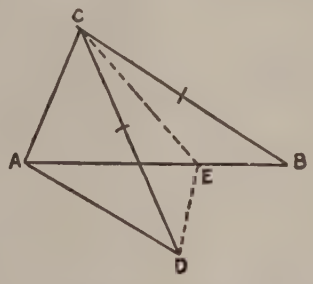
74. Theorem 6.—If one side of a triangle is greater than a second side, the angle opposite the first side is greater than the angle opposite the second side.



Hyp. Given $\triangle ABC$ with $AC > BC$.
Con. $\angle B > \angle A$.

1. There are only three possibilities regarding the $\angle A$ and B, (I) $\angle A = \angle B$, (II) $\angle A > \angle B$, (III) $\angle A < \angle B$.	1. §73.
2. (I) If $\angle A = \angle B$ then AC = BC, which is impossible.	2. Theorem 4. §70. If two angles of a triangle are equal the triangle is isosceles. Contradicts the hypothesis.
3. (II) If $\angle A > \angle B$ then CB > AC, which is impossible.	3. Theorem 5. §72. If one angle of a triangle is greater than a second angle, the side opposite the first angle is greater than the side opposite the second angle. Contradicts the hypothesis.
4. $\therefore \angle A < \angle B$ or $\angle B > \angle A$.	4. The only remaining possibility.

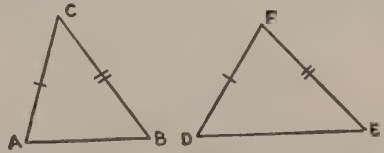
75. Theorem 7.—If two triangles have two sides of one respectively equal to two sides of the other, and the included angles unequal, the triangle which has the greater included angle has the greater third side.



Hyp. Given $\triangle ABC$ and ADC with AC = AC and CD = CB but with $\angle ACB > \angle ACD$.
Con. AB > AD.
Note. According to §14 we can imagine the two triangles moved until they have one pair of equal sides in common as AC.

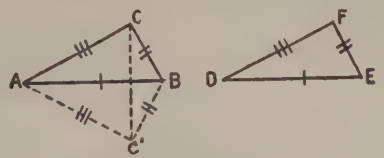
1. Draw CE the bisector of the $\angle DCB$ which meets AB in E.	1. §67.
2. CD = CB, CE = CE, $\angle DCE = \angle ECB$.	2. Hypothesis, Identical, Construction.
3. $\therefore \triangle DEC \cong \triangle BEC$.	3. Theorem 1, §64. If two triangles have two sides and the included angle of one respectively equal to two sides and the included angle of the other, the triangles are congruent.
4. DE = EB.	4. Corresp. parts of congruent triangles §68.
5. AE + ED > AD.	5. Post. §12. A straight line is the shortest distance between two points.
6. AE + EB > AD.	6. Replacing ED by its equal EB.
7. AB > AD.	7. Ax. §49. The whole is equal to the sum of all its parts.

76. Theorem 8.—If two triangles have two sides of one respectively equal to two sides of the other, and the third sides unequal, the triangle which has the greater third side has the greater included angle.



Hyp. Given $\triangle ABC$ and DEF with AC = DF, BC = EF, but DE > AB.
Con. $\angle DFE > \angle ACB$., or $\angle F > \angle C$.
Hint. There are only three possibilities; (1) $\angle C = \angle F$, by §73.
(2) $\angle C > \angle F$,
(3) $\angle C < \angle F$.
Prove that the first two are impossible hence the third must be true.

77. Theorem 9.—If two triangles have the three sides of one respectively equal to the three sides of the other, the triangles are congruent.



Hyp. Given the △ABC and DEF with AB = DE, BC = EF, and CA = FD.

Con. △ABC ≅ △DEF.

Let AB and DE be the longest sides of their respective triangles.

1. Suppose △DEF is brought into the position indicated by △ABC¹ so that DE coincides with its equal AB, D falling on A and E on B and F taking the position C¹.	1. Post. §14. Any figure may be moved from place to place without altering its size or shape.
2. Draw the line CC¹.	2 Post. §9. Two points determine a straight line.
3. AC = DF, DF = AC¹, ∴ AC = AC¹.	Ax. §47. A quantity may be substituted for its equal in an equation or in an inequality.
4. △C¹AC is isosceles and ∠ACC¹ = ∠AC¹C.	4. Theorem 3, §69. In an isosceles triangle the angles opposite the equal sides are equal.
5. In the same way ∠BCC¹ = ∠BC¹C.	
6. ∠ACC¹ + ∠BCC¹ = ∠AC¹C + ∠BC¹C.	6. Ax. §39. If equals are added to equals the sums are equal.
7. ∠ACB = ∠AC¹B.	7. Ax. §47. Same as above.
8. △ABC ≅ △AC¹B.	8. Theorem 1, §64. If two triangles have two sides and the included angle of one respectively equal to two sides and the included angle of the other, the triangles are congruent.
9. △AC¹B ≅ △DEF, ∴ △ABC ≅ △DEF.	9. Ax. §46. Quantities that are equal to the same quantity or to equal quantities are equal to each other.

78. Symmetrical Triangles.—Consider the three △, $A^1B^1C^1$, ABC, and $A^{11}B^{11}C^{11}$ with $AB = A^1B^1 = A^{11}B^{11}$, $BC = B^1C^1 = B^{11}C^{11}$, and $CA = C^1A^1 = C^{11}A^{11}$. If $\triangle A^1B^1C^1$ were cut out with a knife it

would be possible to slide it along to coincide with △ABC without removing it from its plane. In this case the two are called identical. But in order to make $\triangle A^{11}B^{11}C^{11}$ coincide with △ABC it is necessary to remove it from the plane and turn it over. Triangles ABC and $A^{11}B^{11}C^{11}$ are called symmetrical triangles.

Two triangles are identical when they have their sides arranged in the same order, symmetrical when they are arranged in the opposite order.

79. Vertical Angles.—Two angles are vertical when the sides of one are the prolongations of the sides of the other. See figure for theorem 10. Here are two pairs of vertical angles, ∠AOB, DOC and ∠AOD, BOC.

80. Theorem 10.—If two straight lines intersect each other, the vertical angles are equal.

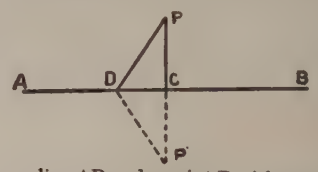
Hyp. Given the two pairs of vertical angles ∠AOB and ∠COD, ∠BOC and ∠AOD formed by the straight lines AC and BD intersecting in O.

Con. ∠AOB = ∠COD and ∠BOC = ∠AOD.

1. ∠AOB + ∠BOC = a straight angle.	1. Def. §27.
2. ∠BOC + ∠COD = a straight angle.	2. Def. §27.
3. ∴ ∠AOB + ∠BOC = ∠BOC + ∠COD.	3. Ax. §46. Quantities that are equal to the same quantity or equal quantities are equal to each other.
4. ∠AOB = ∠COD, subtracting ∠BOC from each side of the above equality. In the same way prove that ∠BOC = ∠AOD.	4. Ax. §40. If equals are subtracted from equals, the remainders are equal.

81. Theorem 11.—There is not more than one perpendicular from a given point without a line to a line.

(Note. We will assume that there is one perpendicular, the method of constructing this perpendicular will be given later on §240.)



Hyp. Given a line AB and a point P without the line, with PC ⊥ AB and PD any other line through P meeting AB in D.

Con. PD is not ⊥ AB.

1. Prolong PC through C to P^1 making $CP^1 = PC$ and draw DP^1.	1. Post. §11. A straight line may be prolonged any required length.
2. In △DPC and DP^1C, $\angle PCD = \angle P^1CD$.	2. Def. §35. All right angles are equal.
3. $PC = P^1C$.	3. Cons.
4. DC = DC.	4. Identical.
5. $\triangle DPC \cong DP'C$.	5. Theorem 1, §64.
6. $\therefore \angle PDC = \angle P'DC$.	6. Def. §68. Corresponding parts of congruent figures.
7. Since PCD′ is a straight line PDP′ can not be a straight line.	7. Post. §8. One straight line, and only one, can be drawn through two given points.
8. $\therefore \angle PDC + \angle P'DC$ is not a straight angle.	8. Def. §27.
9. $\therefore 2(\angle PDC)$ is not a straight angle.	9. Ax. §47. A quantity may be substituted for its equal in an equation or in an inequality.
10. ∴ ∠PDC is not one half of a straight angle or a right angle.	10. Ax. §42. If equals are divided by equals, the quotients are equal. Def. §27, 34. A right angle is one half of a straight angle.
11. PD is not ⊥ AB.	11. Def. §35.

When we know how to draw the one perpendicular PC to the line AB we will be able to prove the theorem below.

From a given point without an unlimited straight line one perpendicular can be drawn to the line, and but one.

82. Theorem 12.—

The perpendicular is the shortest line that can be drawn from a point to a straight line.

We will merely indicate the steps in the proof leaving the reader to fill in the reasons. Making use of the figure of the previous theorem we must prove that PC is less than PD.

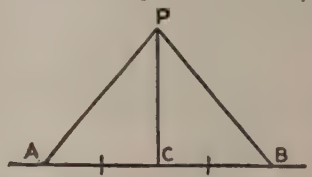
$PC = \frac{1}{2}(PP^1)$, $PD = \frac{1}{2}(PD + DP^1)$, but $PD + DP^1 > PP^1$.

$\therefore PD > PC$.

83. Oblique Straight Line.—Any line which is not perpendicular to a given line is oblique to the line.

84. Theorem 13 —

If two oblique straight lines drawn from a point to a straight line meet the line at equal distances from the foot of the perpendicular drawn from the point to the line, they are equal.



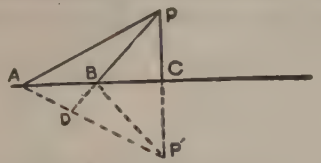
Hyp. PC is the ⊥ from P on AB, meeting it in C, the foot of the ⊥; PA and PB, two oblique straight lines, meeting AB in A and B respectively, so that AC = CB.

Con. AP = BP.

1. ∠ACP = ∠BCP.	1. Both are right angles.
2. PC = PC.	2. Identical.
3. AC = CB.	3. Hyp.

4. $\triangle ACP \cong \triangle BCP$.	4. Theorem 1, §64.
5. $AP = BP$.	5. Def. §68.

85. Theorem 14.—If two oblique straight lines drawn from a point to a straight line meet the line at unequal distances from the foot of the perpendicular, the more remote is the greater.



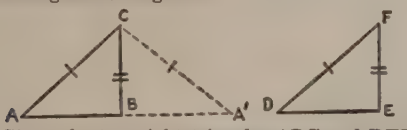
Hyp. C is the foot of the $\perp$ PC from P on AB. The two oblique lines PA and PB meet AB in A and B respectively so that $AC > BC$.

Con. $AP > PB$.

1. Prolong PC through C to P^1 so that $PC = CP^1$. Draw BP^1, AP^1. Let D be the intersection of AP^1 and PB, and if $AC > BC$ then D will be a point in the interior of the segment AP^1.	1. Post. §11.
2. $AD + AP > DP$.	2. Post. §12.
3. $AD + AP > DB + BP$.	3. Ax. §47.
4. $DB + DP^1 > BP^1$.	4. Post. §12.
5. Add the inequalities 3 and 4 $AD + AP + DB + DP^1 > DB + BP + BP^1$.	5. Ax. §45.
6. $DB = DB$.	6. Identical.
7. Subtract equation 6 from equation 5. $AD + AP + DP^1 > BP + BP^1$.	7. Ax. §44.
8. $AD + DP^1 = AP^1$.	8. Ax. §47.
9. $PA = AP^1$ and $PB = BP^1$.	9. Same proof as in Theorems 13, 84.
10. $2AP > 2BP$.	10. Ax. §47.
11. $AP > BP$.	11. Ax. §44.

86. Right Triangle.—A right triangle is a triangle which has one of its angles a right angle. The side opposite the right angle is called the hypotenuse. The other two sides are cal'ed the legs.

87. Theorem 15.—If two right triangles have the hypotenuse and a leg of one respectively equal to a hypotenuse and a leg of the other, the triangles are congruent.



Hyp. Given the two right triangles ABC and DEF with the right angles at B and E respectively. AC equals DF and CB equals FE.

Con. Triangle ABC is congruent to triangle DEF.

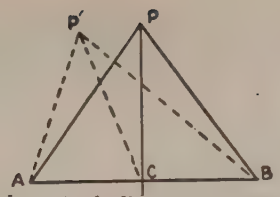
Hint. Place triangle DEF in the position CBA^1 so that FE coincides with its equal BC, E falling on B and F on C, while D takes the position A^1. Then ACA^1 is an isosceles triangle and $\angle A = \angle A^1$. (§69, Theorem 3. In an isosceles triangle the angles opposite the equal sides are equal.) Since $\angle A^1 = \angle D$, we have $\angle A = \angle D$. Now place triangle DEF on triangle ABC so that D falls on A and angle D coincides with its equal angle A. Since $AC = DF$, point F will coincide with C, while line DE falls along line AB. FE will fall along CB, since CB and FE are now perpendiculars from the same point to the same line. (§81. Theorem 11. From a given point without an unlimited straight line one perpendicular can be drawn to the line, and only one.) Hence CB coincides with FE and the triangle ACB and DEF are congruent.

88. Locus.—A locus consists of all points satisfying a given condition and of only those points satisfying the condition.

If you are given a box containing white and black balls and are told to sort out the white balls, you are to get all the white balls and none but the white balls.

In a locus problem you are to sort all the points in the plane and find those which satisfy the condition and those only. What makes the problem different from the sorting of the white and black balls is the fact that the number of points in the plane is very great, or infinite, so that in any particular problem some way must be likewise found to pick out a great number at once, such as finding a line, which consists of an infinite number of points, such that all the points of the line satisfy the condition.

89. Theorem 16.—The locus of points equidistant from two given points is the perpendicular bisector of the line joining them.



Hyp. PC is the $\perp$ to the line AB at its mid-point C.

Con. PC is the locus of points equidistant from A and B.

1. Let P be any point of the line PC and draw the lines AP and BP.	1. Pos. §9.
2. $AC = CB$, $\measuredangle ACP$ and BCP are rt. $\measuredangle$.	2. Hyp.
3. $\therefore \triangle APC \cong \triangle BCP$.	3. Theorem 15. §87.
4. $\therefore AP = BP$.	4. Corresponding parts of congruent triangles §68.

This proves that all points on CP are equidistant from A and B, but we must show that we have all points which are equidistant from A and B. Two methods are possible to complete the proof. First, we can show that all points which are equidistant from A and B are on PC. Second, we can show that any point which is not on PC can not be equidistant from A and B.

First Method.

5. Let P^1 be a point which is equidistant from A and B. Draw the straight lines AP^1, CP^1, and BP^1.	
6. $AP^1 = P^1B$, $AC = CB$, $P^1C = P^1C$.	6. Assumed in 5. Hyp. Identical.
7. $\therefore \triangle AP^1C \cong \triangle BP^1C$.	7. Theorem 9, §77.
8. $\therefore \angle P^1CA = \angle PCB =$ a rt. $\angle$. and P^1C is $\perp$ AB at C.	8. Corresponding parts of congruent triangles, §68. Def. §35.
9. $\therefore$ Lines PC and P^1C coincide, P^1 must be on CP.	9. Pos. §18.

Second Method.

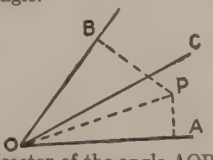
5. Let P^1 be a point which is not on CP^1, then draw AP^1, BP^1 and CP^1.	
6. P^1C cannot be $\perp$ AB at C $\angle ACP^1$ cannot equal $\angle BCP^1$.	6. Pos. §18. Def. §35.
7. Consider the $\measuredangle ACP^1$ and BCP^1, $AC = CB$, $P^1C = P^1C$, $\angle P^1CB > \angle P^1CA$.	7. Hyp. Identical. Reason in 6.
8. $P^1B > P^1A$.	8. Theorem 7. §75.

Hence any point P^1 not on PC is not equidistant from A and B.

90. Distance from a Point to a Line.—(Theorem 12, §82. The perpendicular is the shortest distance that can be drawn from a point to a line.) This is defined to be the distance from the point to the line.

91. Theorem 17.—

The locus of points equidistant from the sides of an angle is the bisector of the angle.



Hyp. OC is the bisector of the angle AOB.

Con. OC is the locus of all points equidistant from OA and OB.

1. Let P be any point such that its distance PB from the line OB equals its distance PA from the line OA. Draw OP.	1. Def. §90.
2. In $\measuredangle OAP$ and OPB, $OP = OP$, $PA = PB$, $\angle PBO = \angle PAO =$ a rt. $\angle$.	2. Identical. Assumed in 1. Def. §90.

3. $\therefore \triangle OAP \cong \triangle OBP$.	3. Theorem 15, §87.
4. $\therefore \angle AOP = \angle BOP$.	4. Corresponding angles of congruent triangles §68.
5. $\therefore$ OP coincides with OC, for an angle has but one bisector.	5. Ax. §42.

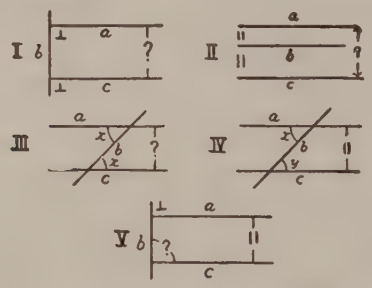
We now know that every point equidistant from OA and OB as P is on the bisector OC.

It remains to prove that every point on the bisector is equidistant from OB and OA.

6. Let P be considered as any point on OC and draw the $\perp$s PA and PB to OA and OB respectively, meeting them in A and B.	
7. Consider $\triangle OAP$ and OBP,	7.
$\angle POA = \angle POB$,	Hyp.
$OP = OP$.	Identical.
8. Place $\triangle OBP$ on $\triangle OAP$ so that $\angle POB$ coincides with its equal $\angle POA$, with line OB falling on OA and line OP falling on OP.	8. Pos. §14.
Since $OP = OP$, O and P will remain fixed.	
9. PB will coincide with PA.	9. Theorem 11, §81.
10. $\therefore$ PB = PA.	10. Corresponding parts of congruent triangles.
And every point as P on OC is equidistant from A and B.	

PARALLELS AND PARALLELOGRAMS.

92.—There are many propositions in geometry which have to do with the relations of three objects to each other. If we are given three objects a, b, and c, they can be formed into pairs in three ways, a, b; b, c; and a, c. When we know the relations existing between the elements of two of the pairs, the problem is to find the relation between the two elements of the third pair. We shall give a few examples below, and the reader is advised to study the situation as indicated in each drawing as they are all important geometrical theorems.



It is a sine qua non of geometry to recognize these theorems at once. In each case we have three lines given which are denoted by a, b, and c.

Case I. Line a is perpendicular to line b, line b is perpendicular to line c; the question is the relation of a to c. In symbols, $a \perp b$, $b \perp c$, b ? c. The answer is given in the theorem—Two straight lines perpendicular to the same straight line are parallel.

Case II. Line a is parallel to line b, line b is parallel to line c, the question is the relation of line a to line c. In symbols a ∥ b, b ∥ c, a ? c. The answer is given in the theorem,—Two straight lines parallel to the same straight line are parallel to each other.

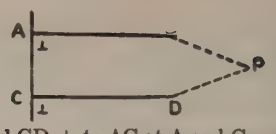
Case III. Line a forms the angle x with the line b, line c forms an angle equal to x with the line b; the question is the relation of line a to line c. The answer is given in the theorem,—When two straight lines are cut by a third, if a pair of corresponding angles are equal, the lines are parallel.

Case IV. Line a is parallel to line c, line b forms an angle x with the line a, line b forms an angle y with the line c; the question is the relation of angle x to angle y. The answer is the theorem,—If two parallel lines are cut by a third line, any two corresponding angles are equal.

Case V. a $\perp$ b, a ∥ c, b ? c. The answer is the theorem,—If a straight line is perpendicular to one of two parallel lines, it is perpendicular to the other.

93. Theorem 18.—

Two straight lines perpendicular to the same straight line are parallel.



Hyp. AB and CD $\perp$ to AC at A and C respectively.

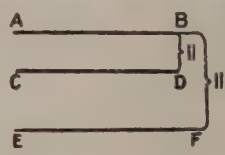
Con. AB ∥ CD.

1. There are only two possibilities, either AB is ∥ CD or AB is not ∥ CD. Suppose that AB meets CD, when they are prolonged, in a point P.	1. §73. There are only two possibilities.
2. This is impossible as we would have two perpendiculars from a point to a line.	2. §81, Theorem 11. From a given point without an unlimited straight line one perpendicular, and only one, can be drawn to the line.
3. $\therefore$ AB ∥ CD.	

94. Reductio ad absurdum.—The above proof is a sample of the proof called by some "reductio ad absurdum." It shows that any other assumption than the given one leads to an absurdity, which in geometry means to a violation of one of the postulates or axioms.

95. Theorem 19.—

Two straight lines parallel to the same straight line are parallel to each other.



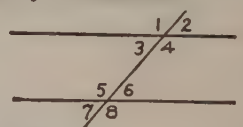
Hyp. CD and EF ∥ AB.

Con. CD ∥ EF.

1. Either CD is ∥ EF or CD is not ∥ EF.	1. §73. There are only two possibilities.
2. If CD is not ∥ EF, suppose they meet in a point P, then there are two lines through P ∥ AB, which is impossible.	2. §15. Pos. Through any point outside a given line, one line, and only one, can be drawn parallel to the given line.
3. Hence CD ∥ EF.	

96. Transversal.—A transversal is a line cutting two or more lines.

97. Angles Formed by a Transversal.—



Exterior angles 1, 2, 7, 8.

Interior angles 3, 4, 5, 6.

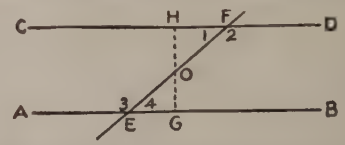
Alternate-interior angles, there are two pairs 3, 6; 4, 5.

Alternate-exterior angles, there are two pairs 1, 8; 2, 7.

Corresponding angles, there are four pairs 1, 5; 2, 6; 3, 7; 4, 8.

98. Theorem 20.—

When two straight lines are cut by a third, if the alternate interior angles are equal, the two straight lines are parallel.



Hyp. Given the line EF meeting the lines AB and CD in E and F respectively, forming the pairs of alternate interior angles 1, 4 and 2, 3, so that $\angle 1 = \angle 4$ and $\angle 3 = \angle 2$.

Con. Line AB is parallel to line CD.

1. Bisect EF and through the point of bisection O draw OH $\perp$ CD, meeting CD in H and AB in G.	1. §67. §81, Theorem 11.
2. Consider $\triangle OEG$ and OHF	2.
$OF = OE$,	Construction.
$\angle 1 = \angle 4$,	Hypothesis.
$\angle EOG = \angle FOH$,	§80, Theorem 10.
$\therefore \triangle OEG \cong \triangle OHF$.	§65, Theorem 2.
3. OG $\perp$ AB or HG $\perp$ AB, since $\angle OHF = \angle OGE$.	3. Corresponding angles of congruent triangles.
4. HG $\perp$ CD.	4. Construction.
5. $\therefore$ CD ∥ AB.	5. §93, Theorem 18.

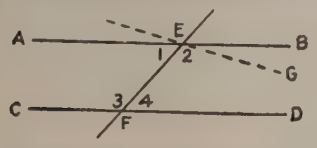
99. Theorem 21.—
When two straight lines are cut by a third, if a pair of corresponding angles are equal, the lines are parallel.

In referring to the figure of §97, it will be seen the equality of corresponding angles always demands the equality of the alternate interior angles, so the theorem follows from theorem 20.

100. Theorem 22.—
When two straight lines are cut by a third, if the sum of two interior angles on the same side of the transversal is equal to two right angles, the two lines are parallel.

Again referring to the figure of §97, if 4+6=two right angles, since 3+4=two right angles, then 3+4=4+6 or 3=6. Thus again we are brought to the equality of alternate interior angles.

101. Theorem 23.—
If two parallel lines are cut by a third line, the alternate interior angles are equal.



Hyp. Two parallel lines AB and CD are cut by the line EF in the points E and F respectively, forming the pairs of alternate interior angles 1 and 4, 2 and 3.

Con. 1=4 and 2=3.

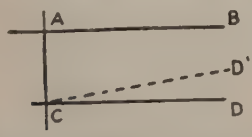
Hint. Draw the line EG through E so that ∠GEF=3, then EF meets CD and EG, so as to form equal alternate interior angles, and EG is parallel to CD. (§98, Theorem 20. When two straight lines are cut by a third, if the alternate interior angles are equal, the two straight lines are parallel.) But EG must coincide with AB, otherwise there are two lines through E parallel to CD, but this is impossible. (§15. Postulate. Through any point outside a given line, one line, and only one, can be drawn parallel to the given line.) ∴ ∠GEF=2=3.

102. Theorem 24.—
If two parallel lines are cut by a third straight line, any two corresponding angles are equal.

103. Theorem 25.—
If two parallel lines are cut by a third straight line, any two corresponding angles are equal.

Both these theorems follow at once from §101 using the figure and definitions of §97.

104. Theorem 26.—
If a straight line is perpendicular to one of two parallel lines it is perpendicular to the other.



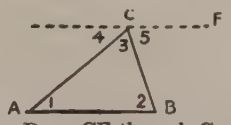
Hyp. AB parallel to CD and AB perpendicular to AC at A. CD meets AC in C.

Con. CD is perpendicular to AC at C.

Hint. Through C draw CD¹ perpendicular to AC, then AB is parallel to CD¹. (§93, Theorem 18. Two straight lines perpendicular to the same straight line are parallel.) Then CD and CD¹ coincide. (§15, Postulate. Through any point outside a given line, one line, and only one, can be drawn parallel to the given line.)

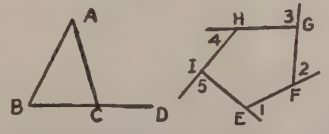
105. Theorem 27.—
If the sides of one angle are parallel respectively to the sides of another, the angles are either equal or supplementary. This follows at once from §101, §102, §103.

106. Theorem 28.—
The sum of the angles of any triangle is a straight angle.



Hint. Draw CF through C parallel to AB. Then 1=4, 2=5 alternate interior angles. 4+3+5=a straight angle, replacing 4 by its equal 1 and 5 by its equal 2 we have 1+2+3=a straight angle.

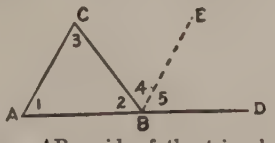
This is an important theorem. We may make the sides of a triangle vary as we please as long as the sum of any two sides is greater than the third, but the sum of the angles of a triangle is always the same. To know two angles of a triangle is the same as knowing all three; hence if two angles of one triangle are equal to two angles of another, the third angle of the first is equal to the third angle of the second.



107. Exterior Angle.—If a side of a triangle as BC is prolonged through a vertex C to a point D, the angle ACD is called an exterior angle of the triangle. Each triangle has six exterior angles, each side can be prolonged in two directions.

In the case of the polygon EFGHI, exterior angles are obtained by prolonging the sides in the same manner as for a triangle. 1, 2, 3, 4, 5 are one set of exterior angles, another set can be obtained by prolonging the sides in the opposite direction.

108. Theorem 29.—
Any exterior angle of a triangle is equal to the sum of the two opposite interior angles.

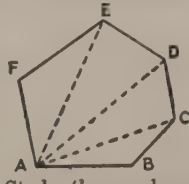


Hyp. AF, a side of the triangle ABC, is prolonged through B to a point D, giving the exterior angle CBD.

Con. ∠CBD=∠1+∠3.

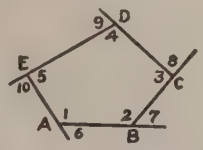
Hint. Draw BE through B parallel to AC. 3=4 and 1=5, therefore 1+3=4+5=∠CBD.

109. Theorem 30.—
The sum of the angles of a polygon of n sides is (n—2) straight angles.



Hint. Study the number of triangles that a polygon of n sides can be cut into and remember that the sum of the angles of each triangle is one straight angle.

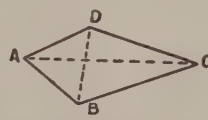
110. Theorem 31.—
The sum of the exterior angles of a polygon, made by producing each of its sides in succession, is equal to two straight angles.



By the previous theorem 1+2+3+4+5=(n—2) straight angles. At each vertex the sum of the interior and exterior angles is one straight angle, i.e., at A we have 1+6=a straight angle. Hence (1+6)+(2+7)+(3+8)+(4+9)+(5+10)=n straight angles. Subtracting the first equation from the second 6+7+8+9+10=n straight angles—(n—2) straight angles =2 straight angles.

111. Theorem 32.—
If the sides of one angle are perpendicular respectively to the sides of another, the angles are either equal or supplementary.

From a drawing it is evident that 1=5=4, but 1 is supplementary to both 2 and 3.

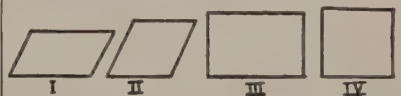


112. A quadrilateral is a portion of a plane bounded by four straight lines. The lines AB, BC, CD, DA are called the sides. The points A, B, C, D the vertices. The lines AC and BD joining the opposite vertices in pairs are the diagonals.

A trapezium is a quadrilateral no two of whose sides are parallel, I.

A trapezoid is a quadrilateral with two and only two sides parallel, II.

A parallelogram is a quadrilateral whose opposite sides are paralled, III.



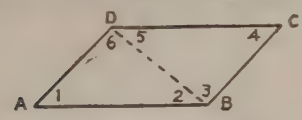
A rhomboid is a parallelogram whose angles are not right angles, and whose adjacent sides are unequal, I.

A rhombus is a parallelogram whose angles are not right angles, and whose adjacent sides are equal, II.

A rectangle is a parallelogram whose angles are right angles, III.

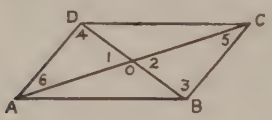
A square is a rectangle whose sides are equal, IV.

113. Theorem 33.—
The opposite sides of a parallelogram are equal, and the opposite angles are equal.



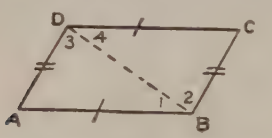
Hint. Draw the diagonal BD. Prove triangle ABD congruent to triangle BCD. (§65, Theorem 2. If two triangles have a side and the two adjoining angles of one respectively equal to a side and two adjoining angles of the other, the triangles are congruent). Hence DC equals AB, CB equals DA, and angle A equals angle C.

114. Theorem 34.—
The diagonals of a parallelogram bisect each other.



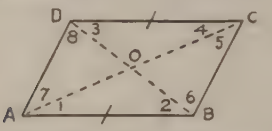
Hint. Prove triangles OAD and OBC congruent. AD=BC, 4=3, and 6=5. (§65, Theorem 2. If two triangles have a side and two adjoining angles of one respectively equal to a side and two adjoining angles of the other, the triangles are congruent.) Hence OB=OD and OA=OC.

115. Theorem 35.—
If the opposite sides of a quadrilateral are equal, the figure is a parallelogram.



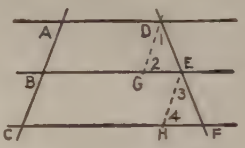
Hint. Draw the diagonal BD. Triangles ABD and BCD are congruent. (§77, Theorem 9. If two triangles have the three sides of one respectively equal to the three sides of the other, the triangles are congruent.) Hence the alternate interior angles 1 and 4 are equal and AB and DC are parallel. (§98, Theorem 20. When two straight lines are cut by a third, if the alternate interior angles are equal, the two straight lines are parallel.) In the same way since 2=3, the sides AD and BC are parallel.

116. Theorem 36.—
If two opposite sides of a quadrilateral are equal and parallel, the figure is a parallelogram.



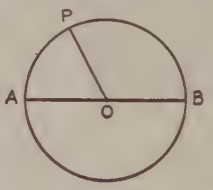
Hyp. AB and DC are parallel and equal.
Con. ABCD is a parallelogram.
Hint. Draw the two diagonals meeting at O. Prove triangles AOB and ODC congruent, then prove triangles OAD and OBC congruent. Then since the alternate interior angles 5 and 7 are equal the sides AD and BC are parallel.

117. Theorem 37.—
If a series of parallel lines cut off equal segments on one transversal, they cut off equal segments on any other transversal.



Hyp. The parallel lines AD, BE, CF cut off equal segments on AC or AB=BC.
Con. The parallel lines cut off equal segments on DF or DE=EF.
Hint. Draw through D, DG parallel to AB and through E, EH parallel to BC. Then ABGD and BCHE are parallelograms, hence DG=AB=BC=EH. Prove the triangles DGE and EHF congruent, 1=3, 2=4, and DG=EH. Therefore DE=EF corresponding sides of congruent triangles.

The Circle and the Measure of Angles.



118. Circle.—A circle is the curved line passing through all points in a plane which are at a given fixed distance from a fixed point of the plane. When there is no ambiguity a circle can be designated by its center.

119. Center of a Circle.—The fixed point is the center.

120. Radius.—A radius of a circle is a straight line drawn from the center to any point of the circle and is equal to the given fixed distance.

121. Diameter.—A diameter is a straight line passing through the center of the circle and having its two extremities on the circle.
In the above figure O is the center, OA and OB are radii, and AB is a diameter.

122. Circumference.—The length of a circle is the circumference. It is the distance traversed by a point in making a complete circuit of a circle.
Note. The word circle has two distinct meanings in ordinary language. We may mean the area bounded by the circumference or we may mean only the circumference itself. It is better, from the geometrical standpoint, to understand the circle to be a curved line and not the surface bounded by the line.
Note. A circle can be defined in terms of its locus properties, §88. A circle is the locus of points in a plane at a given fixed distance from a fixed point. When we choose a center and a radius we divide the points of the plane into three classes: (a) those which are at a greater distance from the center than the radius, and which are said to be outside the circle, (b) those which are at a lesser distance from the center than the radius, and which are said to be inside the circle: (c) those which are at the given distance and which constitute the circle itself.

123. Arc.—An arc is a continuous portion of a circle. AP is an arc.

124. Semicircle.—A semicircle is an arc which is half of a circle.

125. Major Arc.—An arc greater than a semicircle is a major arc.

126. Minor Arc.—An arc less than a semicircle is a minor arc.
If we choose two points as P and B, there are two arcs which have these for end points. A minor arc is described by a point which starts at P and moves clockwise to B, a major arc by a point which starts at P and moves counter clockwise to B. The addition of a point in the major arc will do away with this ambiguity, thus PB denotes the minor arc and PAB the major arc.

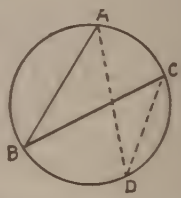
127. Central Angle.—A central angle is the angle formed by the radii of a circle. Since all radii pass through the center the vertex of a central angle is always at the center. Angle POB is a central angle.

128. Intercept and Subtend.—An angle is said to intercept an arc included between its sides and the arc is said to subtend the angle.
The angle POB intercepts the arc PB and the arc PB subtends the angle POB. Two parallel lines can also cut a circle in two pairs of points, thus they are said to intercept two arcs.

129. Chord.—A chord is a straight line joining the extremities of an arc, the chord is said to subtend the arc. Draw the line PB and you have a chord subtending the arc PB.

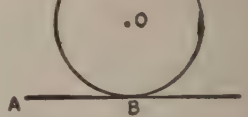
130. Segment.—A segment is a portion of the plane bounded by an arc of a circle and its chord.

131. Sector.—A sector of a circle is a portion of the plane included between an arc and the radii drawn to its extremities. The radii OA and OP with the arc AP bound a sector.



132. Inscribed Angle.—An angle whose vertex is on a circle and whose sides are chords is called an inscribed angle. Angle ABC is an inscribed angle. An angle is inscribed in a segment when its vertex lies on the arc of the segment and its extremities pass through the ends of the segment. Angles ABC and ADC are two angles inscribed in the same segment, the segment denoted by ABC, ADC or ABDC.

133. Concentric Circles.—Circles are concentric when they have the same center.



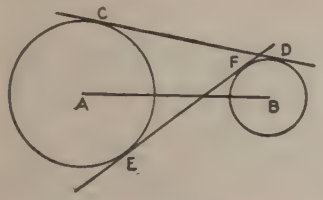
134. Tangent.—A straight line is said to be tangent to, or to touch a circle when it has but a single point in common with the circumference no matter how far the line is extended. The circle is also said to be tangent to the line. Line AB is tangent to the circle with center at O.

135. Point of Contact.—The single point which a line and circle have in common is called the point of contact.

136. Secant.—A straight line meeting a

circumference in two points is a secant.

137. Tangent Circles.—When two circles are tangent to the same line at the same point they are said to be tangent to each other or tangent circles. They are tangent internally or externally according as one circle lies entirely within or entirely without the other.



138. Common Tangent.—A line which is tangent to two circles is called a common tangent. An internal tangent as EF passes between the two circles. A tangent which does not pass between the circles is called an external tangent.

139. Line of Centers.—The line joining the centers of two circles is called the line of centers.

The following statements follow easily from the postulates and axioms.

140.—All radii of a circle are equal, also all diameters are equal.

141.—Two circles are congruent when their radii or diameters are equal.

142.—Two radii or diameters of equal circles are equal.

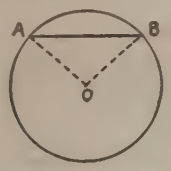
143.—Every diameter bisects the circle and its circumference.

144.—If the centers of two equal circles which lie in the same plane be made to coincide, the circles will coincide.

145.—A radius is equal to one half a diameter.

146. Theorem 38.—

The diameter of a circle is greater than any other chord.



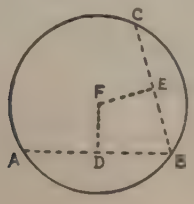
Hyp. AB is any chord of the given circle.

Con. AB is less than a diameter.

Draw the radii OA and OB. OA+OB >AB. (Postulate, §12. A straight line is the shortest distance between two points.) OA+OB is equal to a diameter. ∴ AB is less than a diameter.

147. Theorem 39.—

Through three points not lying in a straight line one circle, and only one, can be drawn.

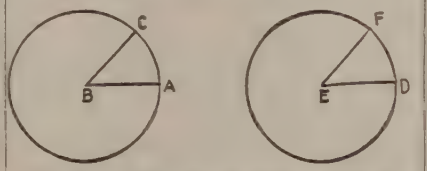


Hyp. Given the three points A, B, and C not in a straight line.

Con. One circle and only one can be drawn through A, B, and C. Imagine a circle drawn through A, B, and C and let F be the center of this circle. Then AF=BF=CF since they are radii of the same circle. Hence F must be on the perpendicular bisector of AB. (§89. The locus of points equidistant from two given points is the perpendicular bisector of the line joining them.) By the same reasoning F must be on the perpendicular bisector of CB. Hence F is the point of intersection of the perpendicular bisectors DF and EF. These two lines must intersect since if they do not they are parallel which means that A, B, and C are in a straight line. This proves that one center exists. There can not be more than one center because the two bisectors can only intersect in a single point.

148. Theorem 40.—

If in the same circle or in equal circles, two angles at the center are equal, the arcs which they intercept are equal.



Hyp. Given the two equal circles with the centers B and E, with the angles B and E equal which intercept the arcs AC and DF respectively.

Con. The arc AC equals the arc DF.

Place the circle with center D on the circle with center B so that the angle B coincides with its equal E. Then the two circles will coincide and the point A will coincide with D and the point C with the point F. Hence AC will coincide with DF, the two end points of an arc determine the arc. If the angles are in the same circle, one angle can be rotated until it coincides with the other.

Note. Many theorems in plane geometry contain the expression "in the same circle or equal circles." The shortest distance between any two points on the surface of a sphere is the arc of a certain circle passing through the two points and this circle always has the same radius no matter what two points are chosen so the theorems are at once useful for different circles on the sphere. When we speak of the distance between New York and London we do not mean the straight line distance but the distance measured along the circumference of a circle drawn on the earth joining the two points. Also when we compare the distances between two pairs of places we are comparing arcs of two different equal circles.

149. Theorem 41.—

If in the same circle, or in equal circles, two arcs are equal, the angles which they subtend at the center are equal.

The figure of theorem 40 can be used.

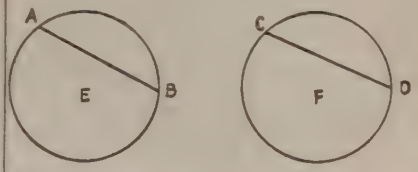
Hyp. Arcs AC and FD, drawn in the equal circles, are equal.

Con. Angles B and E are equal.

The proof is by superposition. Make the two circles coincide with the arcs AC and DF coinciding, then show that the angles B and E coincide. If the arcs are in the same circle make them coincide by a rotation.

150. Theorem 42.—

If in the same circle, or in equal circles, two arcs are equal the chords subtending them are equal.



Hyp. Given the equal circles E and F with the equal arcs AB and CD respectively.

Con. Chord AB equals the chord CD. The proof is by superposition.

151. Theorem 43.—

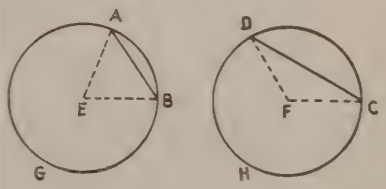
If in the same circle, or in equal circles, two chords are equal, the arcs subtended by them are equal. This is the converse of the previous theorem and the same method of superposition can be used.

Hyp. The chord AB equals the chord CD.

Con. The arc AB equals the arc CD.

152. Theorem 44.—

If in the same circle or in equal circles, two arcs, each less than a semicircle, are unequal, the chords subtending them are unequal; and the greater arc is subtended by the greater chord.



Hyp. Given the equal circles E and F with the unequal arcs AB and CD respectively, with minor arc DC greater than minor arc AB.

Con. Chord DC is greater than the chord AB.

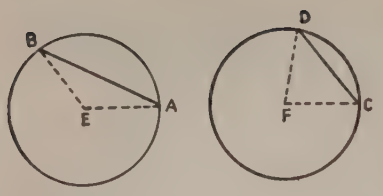
Draw the radii, EB, EA, FC, and FD. If the two circles are made to coincide, with FC coinciding with EB, then since arc DC is greater than arc BA, angle CFD is greater than angle BEA.

Consider the two triangles BEA and CFD. EB=EA=FC=DF, radii of the same or equal circles, but angle CFD is greater than angle BEA. (§75. If two triangles have two sides of one respectively equal to two sides of the other, and the included angles unequal, the triangle which has the greater included angle has the greater third side.) Hence DC is greater than BA.

Note. If we use the arcs which are greater than a semicircle as BGA and CHD, then the greater arc corresponds to the lesser chord.

153. Theorem 45.—

If in the same circle, or in equal circles, two chords are unequal, the arcs subtending them are unequal; and the greater chord subtends the greater arc, provided neither arc exceeds the semicircle.



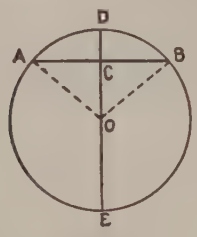
Hyp. Given the equal circles E and F with the chords AB and CD unequal and with AB greater than CD.

Con. Minor arc BA is greater than minor arc CD.

Draw the radii EA, EB, FC, and FD, which are all equal. Consider the triangles EAB and FCD. (§76. Theorem 8. If two triangles have two sides of one respectively equal to two sides of the other, and the third sides unequal, the triangle which has the greater third side has the greater included angle.) Therefore angle AEB is greater than angle CFD. Evidently the greater angle corresponds to the greater arc.

154. Theorem 46.—

The diameter perpendicular to a chord bisects the chord and the arcs which the chord subtends.

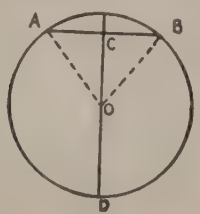


Hyp. The diameter ED is perpendicular to the chord AB, meeting it in the point C, and meeting the minor arc AB in the point D and the major arc AEB in the point E.

Con. AC equals CB, arc AD equals arc DB, and arc AE equals arc EB. Draw the radii OA and OB, which are equal. The right triangles OCA and OCB have OC common and AO equal to OB. (§87. Theorem 15. If two right triangles have the hypotenuse and a leg of one respectively equal to the hypotenuse and a leg of the other, the triangles are congruent.) Hence AC = CB. Also angle AOC equals angle COB. (§148. Theorem. Equal angles at the center subtend equal arcs.) Hence arc AD equals arc DB. Arc DAE equals arc DBE since both are semicircles. Subtracting the equal arcs AD and DB we have arc AE equals arc BE. (§40. Axiom. If equals are subtracted from equals, the remainders are equal.)

155. Theorem 47.—

The perpendicular bisector of a chord passes through the center of the circle.



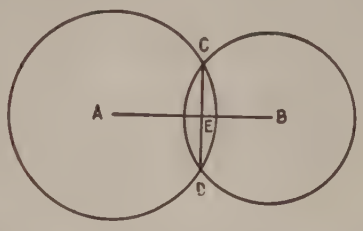
Hyp. CD is the line perpendicular to the chord AB at its mid-point C.

Con. CD passes through O, the center of the circle.

Draw OA and OB radii of the circle. All radii of the same circle are equal, hence OA equals OB, thus O is a point equidistant from A and B. (§89. Theorem 16. The locus of points equidistant from two given points is the perpendicular bisector of the line joining them.) Therefore O is on CD.

156. Theorem 48.—

When two circles intersect each other the straight line through their centers is the perpendicular bisector of their common chords.



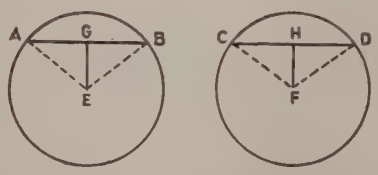
Hyp. The two given circles A and B intersect in C and D. CD is the common chord and AB the line of centers, intersecting in the point E.

Con. AB is the perpendicular bisector of CD.

If AB is not the perpendicular bisector of AB, draw the line perpendicular to CD at its midpoint. By the previous theorem, the line just drawn will pass through the centers of both circles, hence through the points A and B. Hence AB is the perpendicular bisector of AB. (§8. Postulate. One straight line, and only one, can be drawn through two given points.)

157. Theorem 49.—

If in the same circle, or in equal circles, two chords are equal, they are equally distant from the center.



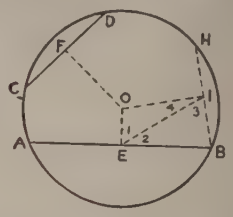
Hyp. Given the equal circles E and F with the equal chords AB and CD respectively. EG and FH the perpendiculars from the centers on their respective chords.

Con. EG equals HF.

Draw the radii FA and FC, which are equal. (§154. Theorem 46. The diameter perpendicular to a chord bisects the chord and the arc which the chord subtends.) Hence AG = ½AB and CH = ½CD but by hypothesis AB = CD, therefore AG = CH. (§46. Postulate. Quantities that are equal to the same quantity or to equal quantities are equal to each other.) Consider the right triangles AGE and CHF. (§87. Theorem. If two right triangles have a leg and the hypotenuse of one equal to a leg and the hypotenuse of the other, the triangles are congruent.) Therefore AGE and CHF are congruent and GE equals FH. The case where they are chords of the same circle permits of the same proof.

158. Theorem 50.—

If in the same circle, or in equal circles, two chords are unequal, the greater chord is at the less distance from the center.



Hyp. Chord AB is greater than the chord DC. OE is the perpendicular from O on AB, meeting it in E, and OF the perpendicular from O and CD, meeting it in F.

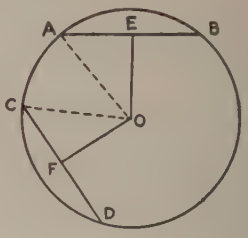
Con. OF is greater than OE.

Let BH be a chord equal to CD and let OI be the perpendicular from O on BH, meeting it in I. By the previous theorem OI equals OF. Draw EI. EB = ½AB and BI = ½BH. Since AB is greater than CD or its equal BH, EB is greater than BI. (§44. Axiom. If unequals are operated on by positive unequals in the same way, the results are unequal in the same order.) In the triangle EBI angle 3 is greater than angle 2. (§74. Theorem. If one side of a triangle is greater than a second side, the angle opposite the first side is greater than the angle opposite the second side.) $\angle 4 + \angle 3 =$ a right angle, $\angle 1 + \angle 2 =$ a right angle, therefore $\angle 1 + \angle 2 = \angle 3 + \angle 4$. But $\angle 2 < \angle 3$ therefore $\angle 4 < \angle 1$. (§45, Axiom. If unequals are subtracted from equals the remainders are unequal in the reverse order.) Now consider triangle OEI with $\angle 4$ less than $\angle 1$; side OE is less than side OI. (§72. Theorem. If one angle of a triangle is greater than a second angle, the side opposite the first angle is greater than the side opposite the second angle.) If OE is less than OI, then OE is less than OF.

Note. The proof when the chords are in different circles is the same.

159. Theorem 51.—

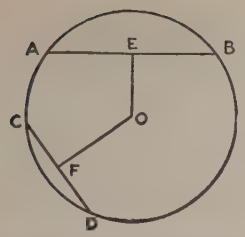
If in the same circle, or in equal circles, two chords are equally distant from the center, they are equal.



Hint. Prove that the two right triangles OEA and OCF are congruent. (§87. Theorem 15. If two right triangles have the hypotenuse and a leg of one respectively equal to the hypotenuse and leg of another, the triangles are congruent.)

160. Theorem 52.—

If in the same circle, or in equal circles, two chords are unequally distant from the center, the chord at the less distance is the greater.



Hyp. OE the perpendicular distance from O, the center of the circle to the chord AB, and OF the perpendicular distance to the chord CD. OF is greater than OE.

Con. AB is greater than CD.

Hint. Use the method of exclusion. There are three possibilities;

(a) AB equal to CD,

(b) AB less than CD,

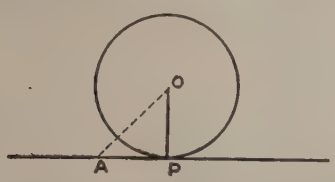
(c) AB greater than CD.

§157. **Theorem 49.**—If in the same circle, or in equal circles, two chords are equal, they are equally distant from the center. This would require in case (a) that OE equals OF, which is impossible.

§158. **Theorem 50.**—If in the same circle or in equal circles, two chords are unequal, the greater chord is at the less distance from the center. This would require in case (b) that OE was greater than OF. Hence only (c) remains as possible.

161. Theorem 53.—

A straight line tangent to a circle is perpendicular to the radius drawn to the point of contact.



Hyp. PA is the tangent to the circle O at the point P.

Con. AP is perpendicular to the radius OP at P.

From the definition of a tangent §134 it follows that the line AP is entirely outside the circle. Take any other point A of the tangent AP and draw AO. Evidently OA is greater than OP, and the least distance from O to AP is OP. Hence OP is perpendicular to AP. (§82. Theorem. The perpendicular is the shortest line that can be drawn from a point to a straight line.)

Note. This shows there is only one tangent to a circle at a given point. (§18. Postulate. From a given point in a given line, one perpendicular, and only one, can be drawn to the line.)

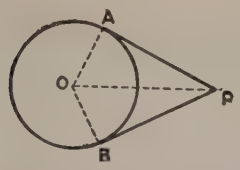
162. Theorem 54.—

A perpendicular to a tangent at the point of contact passes through the center of the circle.

Hint. There is only one tangent at a point and this tangent is perpendicular to the radius drawn to the point of contact by a previous theorem.

163. Theorem 55.—

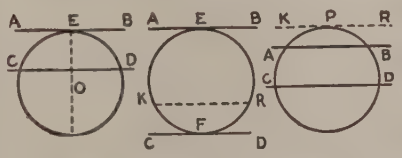
The tangents drawn to a circle from an external point are equal.



Hint. (§161. Theorem 53. A straight line tangent to a circle is perpendicular to the radius drawn to the point of contact.) Hence A and B are right angles. OA and OB are equal radii of the same circle and OP is common to the two right triangles OPA and OBP. (§87. Theorem 15. If two right triangles have the hypotenuse and a leg of one respectively equal to the hypotenuse and a leg of the other, the triangles are equal.) Therefore AP equals BP.

164. Theorem 56.—

Two parallel lines intercept equal arcs on a circle.



Case I Case II Case III

Case I. Only one of the parallels is tangent to the circle.

Hyp. Given AB tangent to the circle at E and CD parallel to AB meeting the circle in C and D.

Con. Arc EC equals arc ED.

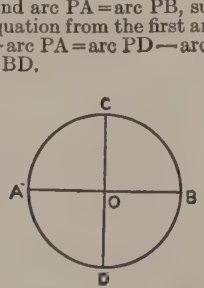
Draw EO which is perpendicular to AB. (§161. Theorem 53. A straight line tangent to a circle is perpendicular to the radius drawn to the point of contact.) Then OE is perpendicular to CD also. (§104. Theorem 26. If a straight line is perpendicular to one of two parallel lines it is perpendicular to the other also.) Arc CE equals ED. (§154. Theorem 46. The diameter perpendicular to a chord bisects the chord and the arcs, which the chord subtends.)

Case II. Both parallels are tangents.

Hint. Draw a line KR parallel to AB and meeting the circle in KR. By case I, arc EK = arc ER, and arc KF = arc FR, add these two equations and we have arc EK + arc KF = arc ER + arc RF or arc EKF = arc ERF.

Case III. Both parallels are secants.

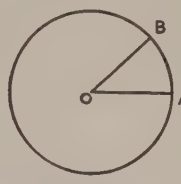
Hint. Draw KR parallel to AB and tangent to the circle at P. Then arc PC = arc PD and arc PA = arc PB, subtract the second equation from the first and we have arc PC − arc PA = arc PD − arc PB or arc AC = arc BD.



165. Measurement of Angles.—If we draw two perpendiculars diameters of a circle as AB and CD we divide the circumference of the circle into four equal arcs AD, BD, BC, and AC and they correspond to the four equal right angles at O. In the same way if we divide the circumference into any number of equal parts and draw the radii to the points of division we will have the same number of equal angles formed at the center of the circle.

166. Degree of Arc.—If the circumference of a circle is divided into 360 equal parts, one of these parts is called a degree of arc. This corresponds to dividing an arc like BC into 90 equal parts.

167. Degree.—If a right angle is divided into 90 equal angles, we call each angle an angle of one degree. Symbol °, A right angle = 90°.

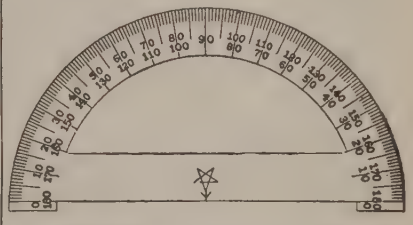


Minute.—If a degree is divided into 60 equal angles, each angle is called a minute. Symbol ′. 1° = 60′.

Second.—If a minute is divided into 60 equal angles, each angle is called a second. Symbol ″. 1′ = 60″.

A central angle is measured by its intercepted arc, where the angle is measured in angle degrees and the arc in arc degrees. When we say that AOB = 45°, we mean that ∠AOB is 45/360 of two straight angles or four right angles. When we say the arc AB is 45° we mean it is 45/360 of the circumference of the circle.

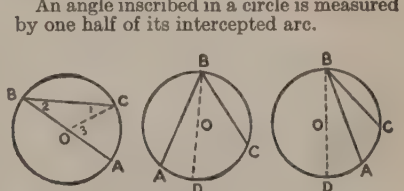
The numbers used in the measuring of the angle and the arc which it subtends are chosen so as to be the same for the sake of convenience. If the railroad fare were one cent a mile, then the number giving the miles would be the same as the number giving the cost of a ticket in cents, it does not mean that one cent is the same as one mile.



168. Protractor.—Based on the ideas just explained, the instrument in common use for the measurement of angles is called a protractor and is illustrated above.

169. Theorem 57.—

An angle inscribed in a circle is measured by one half of its intercepted arc.



Case I Case II Case III

Hyp. Given the inscribed angle ABC, intercepting the arc AC.

Con. Angle ABC is measured by one half the arc AC.

Case I. When one side passed through the center O.

Draw OC. Then triangle OBC is an isosceles triangle and $\angle 1 = \angle 2$. §69. Theorem. In an isosceles triangle the angles opposite the equal sides are equal.) But $\angle 3$ equals $\angle 1 + \angle 2$. (§108. Theorem. The exterior angle of a triangle is equal to the sum of the two opposite interior angles.) But by the previous section $\angle 3$ is measured by the arc AC, hence $\angle 2$, which is one half of $\angle 3$, is measured by one half the arc AC.

Case II. When the center of O falls inside the angle.

Hint. Draw the diameter BO meeting the circle in D. Then $\angle ABD$ is measured by one half arc AD and $\angle DBC$ is measured by one half the arc DC. Adding, we have $\angle ABC$ measured by one half arc AC.

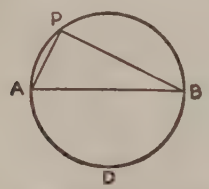
Case III. When the center O falls outside the angle.

Hint. Draw the diameter BO meeting the circle in D. $\angle ABC = \angle DBC - \angle DBA$. Apply case I to each of these angles.

If AC is 80 arc degrees, then angle B is 40 angle degrees.

170. Theorem 58.—

An angle inscribed in a semi-circle is a right angle.



Hyp. Angle APB is angle inscribed in a semi-circle.

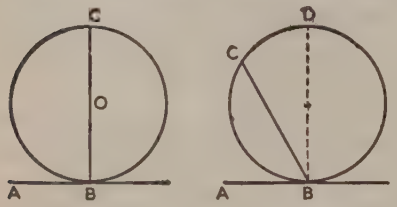
Con. Angle APB is a right angle.

By the previous theorem, APB is measured by one half the arc ADB which is a semi-circle. One half a semi-circle is 90 arc degrees, hence APB is 90 angle degrees.

Note. However P moves about the circle the angle APB will always be a right angle. The locus of a point which subtends a right angle with two fixed points is a circle having the two points for the extremities of a diameter.

171. Theorem 59.

An angle formed by a tangent and a chord through the point of contact is measured by one-half the intercepted arc.



Case I Case II

Hyp. Given an angle formed by a tangent at B, AB, and a chord CB.

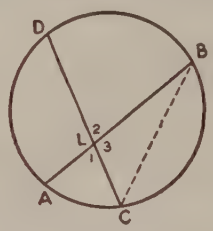
Con. The angle is measured by one-half the intercepted arc.

Case I. BC passes through O, the center of the circle. §161 Theorem 53. A straight line tangent to a circle is perpendicular to the radius drawn to the point of contact. Hence angle ABC is a right angle, or 90°. The intercepted arc BC is 180° arc degrees. Therefore $\angle ABC = \frac{1}{2}$ arc BC.

Case II. BC does not pass through O, the center of the circle. Draw the diameter BO meeting the circle in D. §169 Theorem 57. An angle inscribed in a circle is measured by one-half its intercepted arc. Therefore $\angle CBD = \frac{1}{2}$ arc CD. $\angle ABD = \frac{1}{2}$ arc ACD by Case I. Subtracting $\angle ABC = \frac{1}{2}$ arc BC.

172. Theorem 60.

An angle formed by two chords intersecting each other within a circle is measured by one-half the sum of the arc intercepted between its sides and the arc intercepted between the sides of its vertical angle.



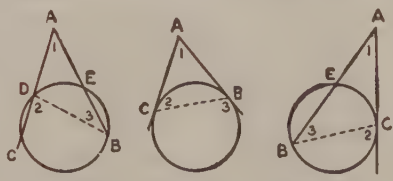
Hyp. Chords AB and CD intersecting in L to form the angle 1 and 2 which are vertical angles.

Con. $\angle 1$ and $\angle 2$ are measured by $\frac{1}{2}$ (arc AC+arc DB).

Draw CB. $\angle 1 = \angle B + \angle C$. (§108. Theorem 29. Any exterior angle of a triangle is equal to the sum of the two opposite interior angles.) $\angle C$ is measured by $\frac{1}{2}$ arc DB and $\angle B$ is measured by $\frac{1}{2}$ arc AC. (§169. Theorem 57. An angle inscribed in a circle is measured by one-half its intercepted arc.) Hence $\angle 1 = \angle 2$, is measured by $\frac{1}{2}$ (arc AC+arc DB).

173. Theorem 61.

An angle formed by two secants, or two tang nts, or a secant and a tangent, intersecting without a circle, is measured by one-half the difference of the intercepted arcs.



Case I Case II Case III

Case I. Hyp. AB and AC are two secants meeting in the point A, outside the circle.

Con. Angle A is measured by $\frac{1}{2}$ (arc BC — arc ED).

Draw DB. $\angle 2 = \angle 3 + \angle 1$. (§108. Theorem. Any exterior angle of a triangle is equal to the sum of the two opposite interior angles.) Therefore $\angle A = \angle 1 = \angle 2 - \angle 3$. $\angle 2$ is measured by $\frac{1}{2}$ arc BC, $\angle 3$ is measured by $\frac{1}{2}$ arc ED (§169. Theorem 57. An angle inscribed in a circle is measured by one-half its intercepted arc). Hence A is measured by $\frac{1}{2}$ (arc BC — arc ED).

Case II. Hint. $\angle 3 = \angle 2 + \angle 1$, therefore $\angle 1 = \angle 3 - \angle 2$.

Case III. Hint. $\angle 2 = \angle 3 + \angle 1$, therefore $\angle 1 = \angle 2 - \angle 3$.

Similar Polygons

We are perfectly familiar in every day life with objects which are just alike except for size. We speak for instance of enlarging a photograph to be two or three times its original size, or of drawing a map to a certain scale so that one inch represents a mile. It will be the purpose of the present chapter to give expression to these ideas in precise gometrical language.

174. Measurement.—The first problem of measurement is that of determining a length. The unit of length must be an arbitrary distance, the straight line distance between two marks on a rod which is fixed as the standard unit.

Each government preserves a platinum rod on which is indicated the standard unit of length and all other units are derived from this by comparison. The French government at the time the metric system was established intended that the unit of length, the meter, should depend upon the size of the earth; but the data upon which the calculations were made have since been found to be incorrect, so that the meter is also an arbitrary distance.

A E F B C D

What do I mean when I say that the rod or line AB is 3 feet long? If I take a rod or line CD, one foot long, and make it coincide with the line AB so that C coincides with A, then D will fall at some point E, and AE will be one foot, repeating the operation on EB, D will fall on some point F, again repeating the operation on FB, if D coincides with B, I say that AB is 3 feet long. When I wish to measure 5 inches, I must divide CD into 12 equal parts and measure off one of these units 5 times.

175. Ratio.—The ratio of one magnitude a to another magnitude b is the quotient resulting from dividing a by b or a/b. It is read, the ratio of a to b. The numerator a is called the antecedent and the denominator b is called the consequent.

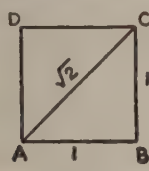
176. Relation of Ratio to Measurement.—When we measured the rod AB in §174 we were in reality finding the ratio of AB to the unit length CD, that is AB/CD=3. In finding the value of a geometric ratio it is very important that the two distances are measured in the same units. If we were allowed to measure AB in inches while CD was measured in feet, AB/CD=36/1=36. Thus any number of values could be obtained for the ratio, if this essential is neglected. The true value of the ratio is independent of the units used; thus if both AB and CD are expressed in inches AB/CD=36/12=3.

177. Difficulties in Measurement. — There are difficulties in an exact treatment of measurement, which correspond to certain complications in our number system. We will illustrate some of these difficulties and show how they are related to measurement.

If we try to express 1/3 as a decimal we have a never ending sequence, 1/3=.33333 . . . which is the same as 3/10+3/100+3/1000+3/10000 . . . This means that if we have any numbers of rods 1/10, 1/100, 1/1000 . . of an inch long and take 3 of the 1/10 inch rods, 3 of 1/100 inch rods, 3 of 1/1000 inch rods and place them end

to end we will obtain a length which is only approximately 1/3. No matter how many such rods we take we can never obtain exactly 1/3 of an inch. The mathematician prefers if possible to solve his problem in a definite number of steps. Perhaps we can imagine an infinite number of steps, but life is short and we can actually carry out only a finite number. Of course we can obtain 1/3 of an inch by dividing an inch into 3 equal parts.

But we now come to a difficulty that cannot be dismissed so easily.



If we take a square ABCD with each side one inch, then the length of the diagonal AC is $\sqrt{2}$ inches. What shall we mean by the ratio AC/AB? We should call this $\sqrt{2}$. But how are we to interpret it in terms of measurement? $\sqrt{2} = 1.4142\ldots. = 1+4/10+1/100+4/1000+2/10000\ldots.$ We can take a rod 1 inch long, 4 rods 1/10 inch long, one rod 1/100 inch long, 4 rods 1/1000 inch long, ...put them end to end and obtain an approximation to AC. In the case of 1/3 we could escape the difficulty by trisecting the unit instead of repeatedly dividing it into 10 parts, but there is no such escape here. There is no finite number of parts into which AB can be divided so that their sum will be exactly equal to AC. This is only a theoretical difficulty as it is evident that we can calculate the value of $\sqrt{2}$ as closely as we please. What gives the mathematician concern is that he must use an infinite number of processes to obtain the exact result, and these can only be carried out in the imagination.

178. Commensurable Magnitudes.—Two magnitudes are said to be commensurable when there exists a unit of measure which is contained an integral number of times in each. Lines of length 2 1/3 feet and 4 3/5 feet are commensurable, for $2\ 1/3 = 7/3 = 35/15$ and $4\ 3/5 = 23/5 = 69/15$, thus 1/15 of a foot is contained 35 times in 2 1/3 feet and 69 times in 4 3/5 feet.

179. Incommensurable Magnitudes.—Two magnitudes are said to be incommensurable when there is no unit of measure which is contained an integral number of times in each. As explained in §177, $\sqrt{2}$ and 1 are incommensurable.

180. Proportion.—Four magnitudes a, b, c, and d, are in proportion if the ratio of the first pair equals the ratio of the second. Symbol $a/b = c/d$ or $a:b = c:d$. This is read, a is to b as c is to d or a divided by b equals c divided by d.

There are many different forms that can be derived from the equality $a/b = c/d$ by use of the axioms.

I. Thus if $a/b = c/d$,

$1 = 1$, identity,

$a/b + 1 = c/d + 1$, §39,

therefore $\frac{a+b}{b} = \frac{c+d}{d}$ reducing to a common denominator. This is called the addition theorem of proportion.

II. Again, if $a/b = c/d$,

Then $bd(a/b) = bd(c/d)$, §41,

Thus $ad = bc$, reducing.

Dividing by cd, $\frac{ad}{cd} = \frac{bc}{cd}$ §42.

Reducing $a/c = b/d$.

This is called the alternation theorem in proportion.

III. Given $\frac{a}{b} = \frac{a_1}{b_1} = \frac{a_2}{b_2} = \frac{a_3}{b_3}$.

Con. $\frac{a+a_1+a_2+a_3}{b+b_1+b_2+b_3} = \frac{a}{b} = \frac{a_1}{b_1} = \ldots\ldots$

Let $\frac{a}{b} = \frac{a_1}{b_1} = \frac{a_2}{b_2} = \frac{a_3}{b_3} = r$.

Then $a = br$,

$a_1 = b_1 r$,

$a_2 = b_2 r$,

$a_3 = b_3 r$.

Adding $a + a_1 + a_2 + a_3 = br + b_1 r + b_2 r + b_3 r$,

$= (b + b_1 + b_2 + b_3) r$.

$\therefore \quad \frac{a+a_1+a_2+a_3}{b+b_1+b_2+b_3} = r$.

Hence $\frac{a+a_1+a_2+a_3}{b+b_1+b_2+b_3} = \frac{a}{b} = \frac{a_1}{b_1} = \ldots\ldots$

This is called the general addition theorem in proportion.

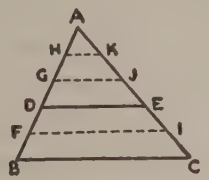
IV. **Mean Proportional.**—A mean proportional between two magnitudes a and b is the magnitude x defined by $a/x = x/b$, or $x = \sqrt{ab}$.

V. If $a/b = c/d$,
then $b/a = d/c$.

This is called the inversion theorem in proportion.

181. Theorem 62.—

A straight line parallel to the base of a triangle divides the other two sides proportionally.



Hyp. The line DE parallel to the base BC of the triangle ABC meets AB in D and AC in E.

Con. $\frac{AD}{DB} = \frac{AE}{EC}$

First we shall prove the so called commensurable case, that is where it is possible to find a segment as BF which is contained an integral number of times in the two segments BD and DA.

For the sake of clarity we will assume that BF is contained 2 times in BD and 3 times in DA. Let F, G, and H be the points corresponding to the division of the segments into multiples of BF. Then draw through each of the points F, G, and H, lines parallel to BC which meets AC in the points I, J, and K. Then by §117, Theorem 37. (If a series of parallel lines cut off equal segments on one transversal they cut off equal segments on any other transversal.) $CI = IE = EJ = JK = KA$

Hence $\frac{AD}{BD} = \frac{3(BF)}{2(BF)} = \frac{3}{2}$, and $\frac{AE}{EC} = \frac{3(IC)}{2(IC)} = \frac{3}{2}$

Therefore $\frac{AD}{BD} = \frac{AE}{EC}$, (§46, Axiom. Things equal to the same things are equal to each other).

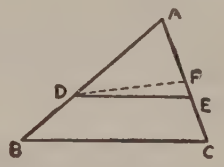
The proof of the incommensurable case goes beyond the work in a first reading of geometry.

It follows also by the method of §180, that $\frac{AD}{AB} = \frac{AE}{AC} = \frac{3}{5}$.

182. Theorem 63.

If a straight line divides two sides of a triangle proportionally, it is parallel to the third side.

This is the converse of the previous theorem.



Hyp. DE meets the sides AB and AC of the triangle ABC in the points D and E respectively, so that $\frac{AD}{DB} = \frac{AE}{EC}$

Con. DE is parallel to BC.

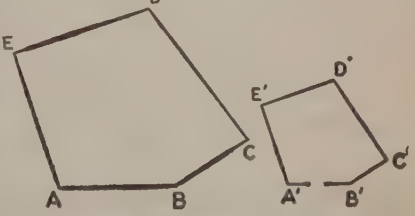
DE is either parallel to BC or it is not.

If it is not parallel, draw DF parallel to BC through D, meeting AC in F; but by the previous theorem, $\frac{AD}{DB} = \frac{AF}{FC}$ or $\frac{AD}{AB} = \frac{AF}{AC}$.

But if $\frac{AD}{DB} = \frac{AE}{EC}$ then $\frac{AD}{AB} = \frac{AE}{AC}$ by the previous theorem. Hence $\frac{AE}{AC} = \frac{AF}{AC}$ (§46 Axiom. Things equal to the same things are equal to each other.) Then $AE = AF$ (§41 Axiom. If equals are multiplied by equals the products are equal.) Therefore E coincides with F.

183. Polygon.—A polygon is a plane figure bounded by three or more straight lines. A polygon bounded by three lines is a triangle, one bounded by four lines is a quadrilateral, one bounded by five a pentagon, one bounded by six a hexagon, etc.

184. Convex and Reentrant Polygons.—A polygon is convex if each of its angles is less than two right angles and reentrant if one of its angles exceeds two right angles.



185. Similar Polygons.—Two polygons are similar (symbol ∾) when the angles of one are equal respectively to the angles of the other and the sides taken in order are proportional each to each. The conditions which must be satisfied in order that the two polygons ABCDE and $A^1B^1C^1D^1E^1$ may be similar are:

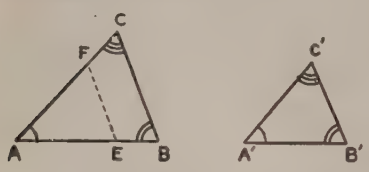
Angles equal $\angle A = \angle A^1$, $\angle B = \angle B^1$,

$\angle C = \angle C^1$, $\angle D = \angle D^1$, $\angle E = \angle E^1$,
Sides proportional

$$\frac{AB}{A^1B^1} = \frac{BC}{B^1C^1} = \frac{CD}{C^1B^1} = \frac{DE}{D^1E^1} = \frac{EA}{E^1A^1}$$

186. Theorem 64.—

If two triangles have the angles of one respectively equal to the angles of the other, the triangles are similar.



Hyp. Given the triangles ABC and $A^1B^1C^1$ with $\angle A = \angle A^1$, $\angle B = \angle B^1$ and $\angle C = \angle C^1$.

Con. $\frac{AB}{A^1B^1} = \frac{BC}{B^1C^1} = \frac{CA}{C^1A^1}$

Since $\angle A = \angle A^1$ it is possible to place triangle $A^1B^1C^1$ on ABC so that A^1B^1 takes the position AE, A^1C^1 the position AF, and B^1C^1 the position EF. Then FE is parallel to BC. (§99, Theorem 21. When two straight lines are cut by a third, if a pair of corresponding angles are equal, the lines are parallel.) Since $\angle E = \angle B^1 = \angle B$.

Then $\frac{AE}{AB} = \frac{AF}{AC}$, (§181, Theorem 62, A straight line parallel to the base of a triangle divides the other two sides proportionally.) Replace AE and AF by their equals A^1B^1 and A^1C^1 respectively we have $\frac{A^1B^1}{AB} = \frac{A^1C^1}{AC}$. The theorem can be completed by causing angle B^1 to coincide with B.

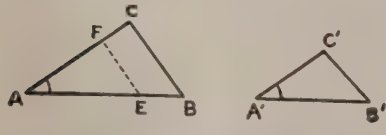
187. Theorem 65.—

If two triangles have two angles of one respectively equal to two angles of the other, the triangles are similar.

This follows at once from the previous theorem, for if two angles of one triangle are equal to two angles of another, the third angles are also equal. (§106, Theorem 28. The sum of the angles of any triangle is a straight angle.)

188. Theorem 66.—

If two triangles have an angle of one equal to an angle of the other and the sides including these angles proportional, the triangles are similar.



Hyp. Given the triangles ABC and $A^1B^1C^1$ with $\angle A = \angle A^1$ and $\frac{A^1C^1}{AC} = \frac{A^1B^1}{AB}$

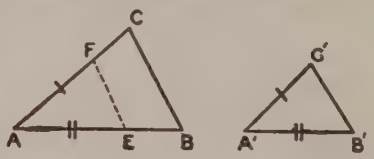
Con. ABC and $A^1B^1C^1$ are similar.

Hint. Place $A^1B^1C^1$ on ABC so that A^1 coincides with its equal A and B^1 takes the position E and C^1 the position F. Then EF divides AC and AB proportionally, which follows from replacing A^1B^1 and A^1C^1 by their equals AB and AF in $\frac{A^1C^1}{AC} = \frac{A^1B^1}{AB}$ to give $\frac{AF}{AC} = \frac{AE}{AB}$. Then FE is parallel to BC. (§182, Theorem 63. If a straight line divides two sides of a triangle proportionally it is parallel to the third side.) Then $\angle F = \angle C = \angle C^1$ and $\angle E = \angle B = \angle B^1$. (§102, Theorem 4. If two parallel lines are cut by a third line any two corresponding angles are equal.)

Hence the three angles of $A^1B^1C^1$ are equal to the three angles ABC and we are led back to the previous theorem. (§186, Theorem 64. If two triangles have the angles of one respectively equal to the angles of the other, the triangles are similar.)

189. Theorem 67.—

If the sides of two triangles are proportional, the triangles are similar.



Hyp. Given the two triangles ABC and $A^1B^1C^1$ with $\frac{AB}{A^1B^1} = \frac{BC}{B^1C^1} = \frac{CA}{C^1A^1}$

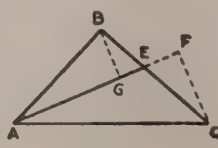
Con. The triangles ABC and $A^1B^1C^1$ are similar.

On AC measure off AF equal to A^1C^1 and on AB measure off AE equal to A^1B^1. Replace A^1B^1 and A^1C^1 by their equals AE and AF respectively in $\frac{AB}{A^1B^1} = \frac{AC}{A^1C^1}$ we have $\frac{AB}{AE} = \frac{AC}{AF}$. Hence triangles ABC and AEF are similar. (§188, Theorem 66. If two triangles have an angle of one equal to an angle of the other and the sides including these angles proportional, the triangles are similar.) Hence $\frac{FE}{CB} = \frac{AE}{AB}$ from the definition of similar triangles. Replace AE by its equal A^1B^1 and we have $\frac{FE}{CB} = \frac{A^1B^1}{AB}$, but $\frac{C^1B^1}{CB} = \frac{A^1B^1}{AB}$ by hypothesis. We now have two values for $\frac{A^1B^1}{AB}$, $\frac{FE}{CB}$ and $\frac{C^1B^1}{CB}$, and these are equal to each other. (§46, Axiom. Things equal to the same things are equal to each other.)

Hence $\frac{FE}{CB} = \frac{C^1B^1}{CB}$. Multiply both sides by CB and we have $FE = C^1B^1$. (§41, Axiom. If equals are multiplied by equals, the products are equal.) This shows that the triangle AEF has its three sides equal to those of the triangle $A^1B^1C^1$. Since AEF is similar to ABC its equal $A^1B^1C^1$ is also similar.

190. Theorem 68.—

The bisector of an angle of a triangle divides the opposite side into segments proportional to the adjacent sides.



Hyp. AE is the bisector of the Angle A of the triangle ABC.

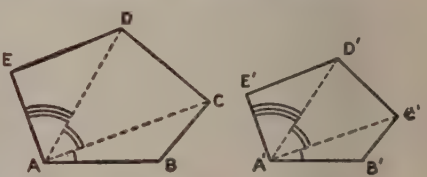
Con. $\frac{BE}{AB} = \frac{EC}{AC}$

Prolong AE sufficiently and draw the perpendicular from C to AE, meeting it in F, and draw the perpendicular from B on meeting it in G. Triangles ABG and AFC are similar; $\angle BAG = \angle FAC$ by hypothesis and $\angle G = \angle F$, both right angles. (§187, Theorem 65. If two triangles have two angles of one respectively equal to the angles of the other, the triangles are similar.) Therefore $\frac{AB}{AC} = \frac{BG}{FC}$, definition of similar triangles. $\angle BEG = \angle CEF$, being vertical angles; $\angle F = \angle G$, both being right angles.

Hence, by Theorem 65 quoted above, the triangles BGE and CEF are similar. Therefore $\frac{BG}{FC} = \frac{BE}{EC}$, definition of similar triangles. Equating the equal values for $\frac{BG}{FC}$ we have $\frac{AB}{AC} = \frac{BE}{EC}$.

191. Theorem 69.—

If two polygons are composed of the same number of triangles, similar each to each and similarly placed, the polygons are similar. We shall prove this for the case where the triangles of which each polygon is composed have a vertex in common.



Hyp. Two polygons ABCDE and $A^1B^1C^1D^1E^1$ composed of the same number of triangles which are similar each to each and similarly placed, that is, ABC similar to $A^1B^1C^1$, ACD similar to $A^1C^1D^1$.....

Con. ABCDE is similar to $A^1B^1C^1D^1E^1$.

Hint. The angles of the two polygons are equal because they are either equal angles or the sum of equal angles.

$\frac{A^1B^1}{AB} = \frac{B^1C^1}{BC} = \frac{A^1C^1}{AC}$, since ABC is similar to $A^1B^1C^1$.

$\frac{A^1C^1}{AC} = \frac{C^1D^1}{CD}$, since ACD and $A^1C^1D^1$ are similar.

Therefore $\frac{A^1B^1}{AB} = \frac{B^1C^1}{BC} = \frac{C^1D^1}{CD}$, (§46, Axiom. Things equal to the same thing are equal to each other.)

192. Theorem 70.—

If two polygons are similar, they can be resolved into the same number of triangles, similar each to each and similarly placed.

Hint. Use the figure of the previous theorem, and draw the lines, AC, AD, A^1C^1, and A^1D^1. First prove ABC similar to $A^1B^1C^1$, then ACD similar to $A^1C^1D^1$ and so on.

193. Theorem 71.—

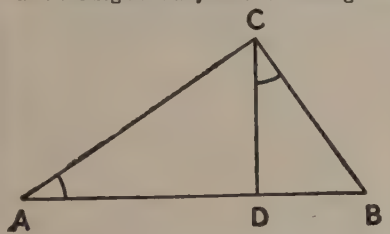
The perimeters of two similar polygons are in the same ratio as any two corresponding sides.

Hint. Make use of the figure in theorem 69. From the definition of similar polygons, $\frac{A^1B^1}{AB}=\frac{B^1C^1}{BC}=\frac{C^1D^1}{CD}=\frac{D^1E^1}{DE}=\frac{E^1A^1}{EA}$.
Apply the result of §180, section III to the above gives $\frac{A^1B^1+B^1C^1+C^1D^1+D^1E^1+}{AB+BC+CD+DE+}$

$\frac{E^1A^1}{EA}=\frac{A^1B^1}{AB}=\frac{B^1C^1}{BC}=\ldots\ldots\ldots$

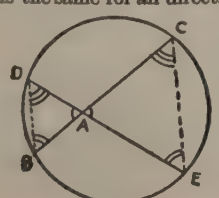
or $\frac{\text{the perimeter of } P^1}{\text{the perimeter of } P}=\frac{A^1B^1}{AB}=\frac{B^1C^1}{BC}$

194. Theorem 72.—
If in the right triangle a perpendicular is drawn from the vertex of the right angle to the hypotenuse.
(a) the two triangles thus formed are similar to the given triangle and similar to each other.
(b) the perpendicular is the mean proportional between the segments of the hypotenuse.
(c) each leg of the right triangle is the mean proportional between the hypotenuse and the segment adjacent to that leg.



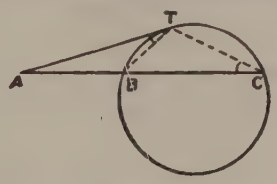
Hyp. ABC is a triangle with a right angle at C. From C a perpendicular is dropped on AB, the hypotenuse, meeting it in D.
Con. (a) ADC, BDC, and ABC are similar triangles.
(b) $(CD)^2=(AD)(DB)$. Definition §180, IV.
(c) $(AC)^2=(AB)(AD)$ and $(CB)^2=(AB)(DB)$. Definition §180, IV.
(a). $\angle A$ equals $\angle DCB$. (§111, Theorem. If the sides of one angle are perpendicular respectively to the sides of another, the angles are either equal or supplementary.) Hence the three triangles ABC, DBC, and ABC, have an acute angle equal, a right angle equal and hence all their angles equal. Therefore they are similar. (§187, Theorem 65. If two triangles have the angles of one respectively equal to the angles of the other, the triangles are similar.)
(b). Since the triangles ACD and CBD are similar, from definition we have $\frac{AD}{CD}=\frac{CD.}{BD}$ Hence $(CD)^2=(AD)(BD)$.
(c). Since the triangles ACD and ABC are similar, from definition we have $\frac{AB}{AC}=\frac{AC.}{AD}$ Hence $(AC)^2=(AB)(AD)$. In the same way we can prove that $(CB)^2=(AB)(DB)$.

195. Theorem 73.—
The product of the segments of a chord that passes through a fixed point within a circle is the same for all directions of the chord.



Hyp. Let A be any point within the circle and DE any chord through A.
Con. The product (AE)(AD) is a constant.
We will prove it a constant by taking any other chord through A as BC showing that (AE)(AD) = (AB)(AC).
$\angle BAD=\angle EAC$, (§80, Theorem 10. If two straight lines intersect each other, the vertical angles are equal.) Draw the lines CE and BD. $\angle DEC=\angle DBC$. (§169, Theorem 57. An angle inscribed in a circle is measured by one-half its intercepted arc.) Thus $\angle DEC$ and $\angle DBC$ are each measured by one-half the arc DC. In the same way $\angle BDE=\angle BCE$. Hence the two triangles AEC and BAD are similar. (§186, Theorem 64. If two triangles have the angles of one respectively equal to the angles of the other, the triangles are similar.) By definition of similar triangles,
$\frac{AE}{AB}=\frac{AC}{AD}$ or $(AE)(AD)=(AB)(AC)$.

196. Theorem 74.—
If through a point outside a circle a tangent and a secant are drawn, the tangent is the mean proportional between the whole secant and its external segment.

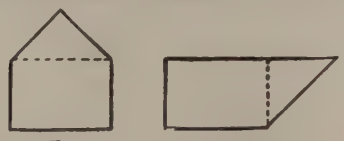


Hint. Show that the triangles ATB and ACT are similar. How is an angle formed by a tangent and a chord measured? See §171. Hence $\frac{AC}{AT}=\frac{AT}{AB}$ or $(AC)(AB)=(AT)^2$.

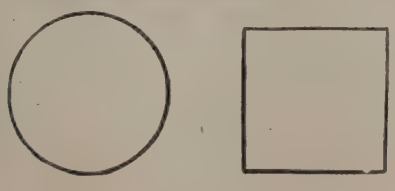
AREAS OF POLYGONS.

We now come to another fundamental concept of geometry, the area of a closed figure.

197. Equal Areas. Equivalence.—Two figures which can be made to coincide are identical and have the same area. But it may be possible in the case of two figures which do not coincide to cut one area up in such a manner that on rearranging its parts it coincides with the second figure. Evidently in this case we must also say that the areas are equal.



Thus figures I and II, which will not coincide as they stand, can be made to coincide by cutting off the triangle along the dotted line in figure I and moving it to the position indicated in figure II. In these circumstances the areas are called equivalent, symbol $\backsim$. However one ordinarily uses merely the term equal.



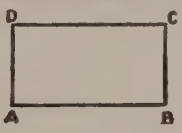
The circle and the square above may have the same area but it is not possible by a finite number of operations to divide the square into pieces so that they will coincide with the circle. We here encounter the same kind of difficulty that occurred in the case of the incommensurable quantities discussed in §177.

One of the famous problems of geometry is to "square the circle," i.e. to construct a square whose area is equal to the area of a given circle. In the process of cutting up the circle to form a square an infinite number of steps would be required, which can not actually be performed.

198. Unit of Area.—The unit of area which is most convenient is the area of a square whose side is one unit in length. This square is called the unit square. If we are measuring the length of straight lines in feet it is convenient to measure the area in terms of a square of side one foot.

199. Area.—The area of a plane figure is its ratio to the unit square.

200. Base and Altitude of a Rectangle.—

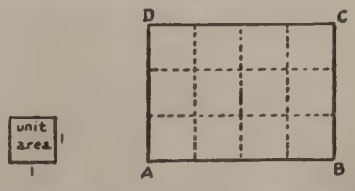


Either one of two adjacent sides of a rectangle can be considered its base. An altitude of a rectangle is a line drawn from any point in one base perpendicular to the other side. If AB is chosen as base, then AD is an altitude. If AD is chosen as base then AB is an altitude. If AB is chosen for the lower base, then DC is the upper base.

201. Base and Altitude of a Parallelogram.—

Either pair of parallel sides can be chosen for the bases, thus if BC is called the lower base then AD is the upper base. The corresponding altitude is the perpendicular distance between the bases. If AB and DC are the bases then EF is the altitude.

202. Area of a Rectangle.—



When the lengths of the two sides are commensurable with the side of the unit square there is no difficulty in proving that the area is the product of the base and the altitude. The rectangle above has its base AB, 4 units long, and its altitude

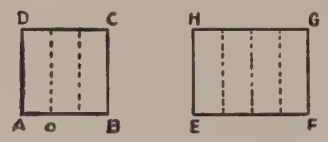
BC, 3 units long. It is evident that it can be cut into $4\times3=12$ squares, each congruent with the unit square. When AB and BC are not commensurable with the side of the unit square we encounter a difficulty which we mentioned before in §197. We pass over the proof of this incommensurable case and assume the truth in all cases of the following theorem:

203. Theorem 75.—

The area of a rectangle is equal to the product of its base and its altitude.

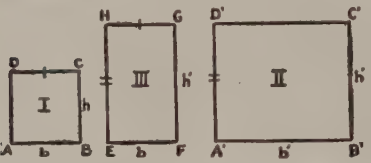
204. Theorem 76.—

The areas of two rectangles having equal altitudes are to each other as their bases.



Hint. If AB and EF are commensurable so that it is possible to find a length as AO which is contained in both AB and EF an integral number of time, the theorem is evident. $\frac{ABCD}{EFGH}=\frac{AB}{EF}=\frac{3}{4}$

205.—The areas of two rectangles are to each other as the product of their bases and altitudes.



Hyp. Given the rectangles ABCD and $A^1B^1C^1D^1$, with the bases b and b^1, and with the altitudes h and h^1 respectively.

Con. $\frac{ABCD}{A^1B^1C^1D^1}=\frac{bh}{b^1h^1}$

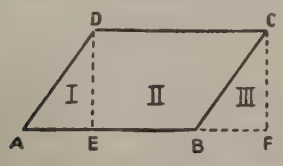
Hint. Construct the rectangle EFGH with the base $EF=b$ and the altitude $FG=h^1$. Rectangles I and III have equal altitudes, b, when BC and FG are considered the bases. Hence by the previous theorem $\frac{I}{III}=\frac{h}{h^1}$. In the same way $\frac{III}{II}=\frac{b}{b^1}$.

Take the product of these two equations,

$\frac{I}{III}\cdot\frac{III}{II}=\frac{I}{II}=\frac{hb}{h^1b^1}$.

206. Theorem 78.—

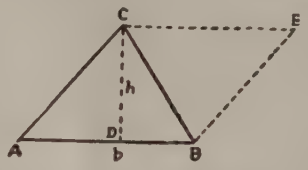
The area of a parallelogram is equal to the product of its base and its altitude.



Hint. Drop the perpendiculars from D and C on AB, meeting it in E and F. Show that triangle I is congruent to triangle III. The parallelogram ABCD is composed of I+II. The rectangle EFCD is composed of II+III. Since I=III, I+II=II+III. Hence the parallelogram is equivalent to the rectangle. The area of the rectangle is (DC)(DE). (§203, Theorem 75. The area of a rectangle is equal to the product of its base and its altitude.) Hence the area of the parallelogram is also (DC)(DE) = (base) (altitude); where DC is considered the base of the parallelogram and DE the altitude of the parallelogram.

207. Theorem 79.—

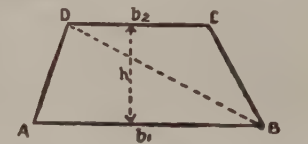
The area of a triangle is equal to half the product of its base and altitude.



Hint. Complete the triangle ABC into the parallelogram ABEC. Show that triangle BEC is congruent to the triangle ABC, hence ABC is one-half the area of the parallelogram. By the previous theorem the area of the parallelogram is bh, hence the area of the triangle is $\frac{1}{2}bh$. AB = b is the base of the triangle and CD = h, the perpendicular distance from C on AB is the altitude.

208. Theorem 80.—

The area of a trapezoid is equal to one-half the product of its altitude and the sum of its bases.



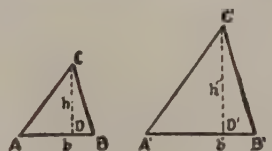
Hint. Draw the diagonal BD dividing the trapezoid ABCD into the two triangles ABD and BDC. $ABD=\frac{1}{2}b_1h$ and $BCD=\frac{1}{2}b_2h$. Therefore

$ABCD=\frac{1}{2}b_1h+\frac{1}{2}b_2h=\frac{1}{2}(b_1+b_2)h$.

Definition. The two parallel sides of a trapezoid are called the bases and the altitude is the perpendicular distance between the bases.

209. Theorem 81.—

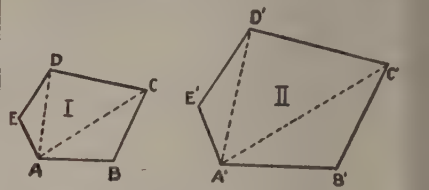
The areas of two similar triangles are to each other as the squares of any two corresponding sides.



Hint. Show that the triangles ACD and $A^1C^1D^1$ are similar. (§187, Theorem 65. If two triangles have two angles of one respectively equal to two angles of the other, the triangles are similar.) Hence $\frac{h}{h^1}=\frac{AC}{A^1C^1}$ but $\frac{AC}{A^1C^1}=\frac{AB}{A^1B^1}$ therefore $\frac{h}{h^1}=\frac{AB}{A^1B^1}=\frac{b}{b^1}$. Area $ABC=\frac{1}{2}bh$, area $A^1B^1C^1=\frac{1}{2}b^1h^1$. Thus $\frac{ABC}{A^1B^1C^1}=\frac{\frac{1}{2}bh}{\frac{1}{2}b^1h^1}$ replacing $\frac{h}{h^1}$ by its equal $\frac{b}{b^1}$, $\frac{ABC}{A^1B^1C^1}=\frac{b}{b^1}$.

210. Theorem 82.—

The area of two similar polygons are to each other as the squares of any two corresponding sides; and also as the squares of their perimeters.



Hint. §192, Theorem 70. If two polygons are similar, they can be resolved into the same number of triangles, similar each to each and similarly placed. Resolve ABCDE into triangles ABC, ACD, and ADE, which are similar to the triangles $A^1B^1C^1$, $A^1C^1D^1$, and $A^1D^1E^1$, respectively, into which $A^1B^1C^1D^1E^1$ is resolved.

Then $\frac{ABC}{A^1B^1C^1}=\frac{(AB)^2}{(A^1B^1)^2}$, $\frac{ACD}{A^1C^1D^1}=\frac{(CD)^2}{(C^1D^1)^2}$ and $\frac{ADE}{A^1D^1E^1}=\frac{(DE)^2}{(D^1E^1)^2}$ (§209, Theorem 81. The areas of two similar triangles are to each other as the squares of any two corresponding sides.)

From the definition of similar polygons we have $\frac{AB}{A^1B^1}=\frac{CD}{C^1D^1}=\frac{DE}{D^1E^1}$. Therefore

$\frac{(AB)^2}{(A^1B^1)^2}=\frac{(CD)^2}{(C^1D^1)^2}=\frac{(DE)^2}{(D^1E^1)^2}$ (§43, Axiom. Like powers of equals are equal.) Hence $\frac{ABC}{A^1B^1C^1}=\frac{ACD}{A^1C^1D^1}=\frac{ADE}{A^1D^1E^1}=\frac{(AB)^2}{(A^1B^1)^2}$ Applying the properties of a proportion §180, III to this expression gives

$\frac{ABC+ACD+ADE}{A^1B^1C^1+A^1C^1D^1+A^1D^1E^1}=\frac{(AB)^2}{(A^1B^1)^2}$, or

$\frac{ABCDE}{A^1B^1C^1D^1E^1}=\frac{(AB)^2}{(A^1B^1)^2}$.

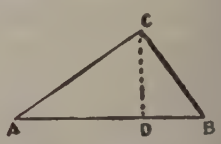
The second part of the theorem follows from §193, Theorem 71. The perimeters of two similar polygons are in the same ratio as any two corresponding sides. Hence $\frac{\text{Perimeter of I}}{\text{Perimeter of II}}=\frac{AB}{A^1B^1}$, thus

$\frac{(\text{Perimeter of I})^2}{(\text{Perimeter of II})^2}=\frac{(AB)^2}{(A^1B^1)^2}$. Therefore

$\frac{ABCDE}{A^1B^1C^1D^1E^1}=\frac{(\text{Perimeter of I})^2}{(\text{Perimeter of II})^2}$.

211. Theorem 83.—

The square of the hypotenuse of a right triangle is equal to the sum of the squares of the other two sides.

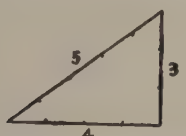


Hyp. Given the triangle ABC with a right angle at C.

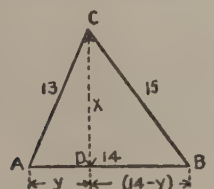
Con. $(AB)^2=(AC)^2+(BC)^2$.

Hint. Draw the perpendicular from C on AB, meeting it in D. Then $(AC)^2=(AB)(AD)$ and $(BC)^2=(AB)(DB)$. (§194, Theorem 72. Each leg of a right triangle is the mean proportional between the hypotenuse and the segment adjacent to

that leg.) Adding these two equalities, $(AC)^2+(BC)^2=(AB)(AD)+(AB)(DB)=AB(AD+DB)=(AB)(AB)=(AB)^2$. This theorem is one of the most important of the theorems of plane geometry and is called the theorem of Pythagoras, a very celebrated Greek geometer (580-500 B. C.). The 3, 4, 5 right triangle was known to the Egyptians, who used a rope 12 units long with knots in it at the proper points to stake out a triangle whose sides should be 3, 4, and 5 units respectively, thus giving them a right angle opposite the side of 5 units.



212. Area of Any Triangle When the Three Sides are Given.—As an application of the theorem of Pythagoras we will find the area of a triangle whose three sides are 13, 14, and 15 inches.



Let ABC be the triangle with the given sides so that AB=14, BC=15, and CA=13. Drop the perpendicular from C on AB, meeting it in D. Let CD=x, and AD=y, then DB=14—y. Applying the theorem of Pythagoras to the two right triangles ADC and CDB gives

(1) $x^2+y^2=(13)^2$,
(2) $x^2+(14-y)^2=(15)^2$.

Square out (2) gives (3) $x^2+196-28y+y^2=225$.

Subtract (1) from (3) gives (4) $196-28y=56$,
or (5) $28y=140$,
or (6) $y=5$.

Substituting $y=5$ in (1) gives (7) $x^2+(5)^2=(13)^2$,
or (8) $x^2=144$,
or (9) $x=12$.

The area equals one half the base times the altitude $=\frac{1}{2}(14)(12)=84$ square inches. §207, Theorem 79.

By the same method a general formula can be obtained for the area of a triangle of sides a, b, c. The area is $\sqrt{s(s-a)(s-b)(s-c)}$, where $s=\frac{1}{2}(a+b+c)$. We will apply this formula to the example above.

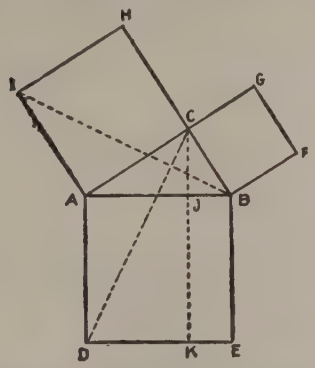
$a=15$
$b=13$
$c=14$

$2s=a+b+c=42$.
$\therefore s=21$.
$s-a=6$,
$s-b=8$,
$s-c=7$,

$\Delta=\sqrt{s(s-a)(s-b)(s-c)}=\sqrt{(21)(6)(8)(7)}$
$=\sqrt{7056}=84$ square inches.

213.—The theorem of Pythagoras has a score of proofs. Its importance justifies the outline of a second proof. We will also change the wording

The square on the hypotenuse of a right triangle is equivalent to the sum of the squares on the other two sides.



Hyp. Given the triangle ABC with C a right angle. On AB erect the square DEBA, on BC the square FGCB, on AC the square HIAC.

Con. DEBA=FGCB+HIAC.

Draw CJ perpendicular to AB through C, meeting AB in J and DE in K. Draw CD and IB. Prove $\triangle IAB=\triangle CAD$, hence $2(\triangle IAB)=2(\triangle CAD)$. But $2(\triangle IAB)=$ HIAC and $2(\triangle CAD)=$ADKJ. Hence square HIAC equals rectangle ADKJ. By drawing AF and CE, in just the same way, square FGCB=rectangle JKEB. Adding these equalities, square FGCB+square HIAC=rectangle ADKJ+rectangle JKEB =square ADEB.

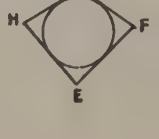
REGULAR POLYGONS AND THE MEASURE OF THE CIRCLE

214.—Equilateral Polygon.—A polygon all of whose sides are equal is an equilateral polygon.

215. Equiangular Polygon.—A polygon all of whose interior angles are equal is an equiangular polygon.

216. Regular Polygon.—A regular polygon is a polygon all of whose angles and all of whose sides are equal. It is both equilateral and equiangular.

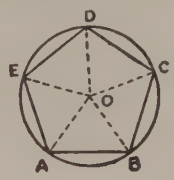
217. Inscribed Polygon.—A polygon is inscribed in a circle when all its vertices lie on the circumference, as ABCD. The circle is said to circumscribe the polygon.



218. Circumscribed Polygon.—A polygon is circumscribed about a circle when all its sides are tangent to the circle, as EFGH. The circle is said to be inscribed in the polygon.

219. Apothem.—The apothem of a regular polygon is the perpendicular from the center of its circumscribed or inscribed circle to any side of the polygon.

220. Theorem 84.—
An equilateral polygon inscribed in a circle is a regular polygon.



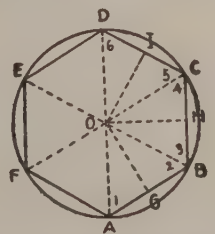
Hyp. The sides of the polygon ABCDE inscribed in the circle are equal, AB=BC=CD=DE=EA.

Con. The polygon is a regular polygon.

Hint. A regular polygon has all of its sides and all of its angles equal, §216. Since the sides are equal by hypothesis it remains to prove that the angles are equal. Angle A is measured by ½ arc BCDE, which is 3/5 of a circumference. (§169, Theorem 57. An angle inscribed in a circle is measured by one-half of its intercepted arc.) In the same way angle B is measured by ½ of the arc AEDC, which is 3/5 of a circumference. Hence $\angle A=\angle B=\angle C=\angle D=\angle E$.

A second method of proof is to draw the radii OA, OB, OC, OD, OE, and show that all the triangles OAB, ODC, OCD,...., are congruent.

221. Theorem 85.—
A circle may be circumscribed about any regular polygon, and a circle may also be inscribed in it.



Hyp. Given the regular polygon ABCDEF.

Con. A circle may be circumscribed about ABCDEF, and a circle may be inscribed in ABCDEF.

Hint. Draw the circle through the three points A, B, and C. Let the center of this circle be O. (§147, Theorem 39. Through three points not lying in a straight line one circle, and only one, can be drawn.) Draw the radii OA, OB, OC and the line OD, which we do not know to be a radius of the circle, through A, B, C until we prove that it is. Consider the triangles OAB and OCD, OB=OC, AB=CD, $\angle 2+\angle 3=\angle 4+\angle 5$ but $\angle 3=\angle 4$, subtraction of equals from equals gives $\angle 2=\angle 5$. Hence the triangles OAB and OCD are congruent. (§64, Theorem 1. If two triangles have two sides and the included angle of one equal to two sides and the included angle of the other, the triangles are congruent.) Hence OA=OD, being corresponding sides of congruent triangles. Therefore OD is a radius of the circle.

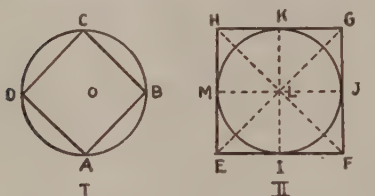
To prove that a circle can be inscribed. Draw all the perpendiculars from O to the sides of the polygon, as OG, OH, OI, ... and prove these all equal. Then a circle with O as center and OG for radius will pass through G, H, I...and this circle will be tangent to the sides AB, BC, CD,... (§161, Theorem 53. A straight line tangent to a circle is perpendicular to the radius drawn to the point of contact.) Hence the centers of the inscribed and circumscribed circle coincide.

222. Center of a Regular Polygon.—The center of a regular polygon is the common center of its circumscribed and inscribed circles, as the point O of §221.

223. Radius of a Regular Polygon.—The radius of a regular polygon is the radius of the circumscribing circle, as OA of §221.

224. Angle at the Center of a Regular Polygon.—The angle at the center of a regular polygon is the angle subtended by a side of the polygon considered as a chord of its circumscribed circle, as angle AOB of §221.

225. Theorem 86.—
If a circle be divided into any number of equal parts, the chords joining the successive points of division form a regular polygon inscribed in the circle; and the tangents drawn at the points of division form a regular polygon circumscribed about the circle



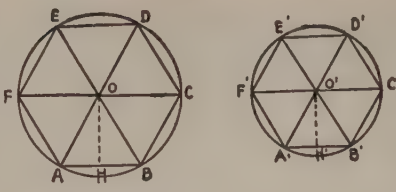
I. II.

See figure I. Hint. The sides AB, CB,... are equal, for the arcs AB, CB,... are equal by hypothesis. (§150, Theorem 42.) The angles A, B,..., are equal, for they are measured by equal arcs. (§169, Theorem 57.) See figure II. Hint. Triangles LJF and LIF are congruent. (§87, Theorem 15.) Hence IF = FJ = JG = ..., therefore the sides are equal, or FG = GH = HE .... Also ∠IFL = ∠LFJ = ∠LGJ = ..., hence the angles are equal, or ∠F = ∠G = = ∠H = ...

226. Theorem 87.—
Regular polygons of the same number of sides are similar.

Hint. We must prove their angles are equal and their sides are in proportion. They can be inscribed in circles. (§221, Theorem 85.) Their angles are equal, for they are measured by one half of the same fractional part of a circumference. Since all the sides of each polygon are equal, the ratio of a side of the first to a side of the second is constant, hence the corresponding sides are in proportion.

227. Theorem 88.—
The perimeters of regular polygons of the same number of sides are to each other as the radii of the circumscribed circles, or as the radii of the inscribed circles; and their areas are to each other as the squares of the radii.



Hint. $\frac{AB + BC + CD + DE + EF,}{A^1B^1 + B^1C^1 + C^1D^1 + D^1E^1 + E^1F^1} = \frac{6(AB)}{6(A^1B^1)} = \frac{AB}{A^1B^1} = \frac{OB}{O^1B^1}$, since triangles OAB and $O^1A^1B^1$ are similar. Also let OH and O^1H^1 be the perpendiculars upon AB and A^1B^1 from the centers O and O^1 respectively, then the triangles OHB and $O^1H^1B^1$ are similar and $\frac{OB}{O^1B^1} = \frac{OH}{O^1H^1}$. Thus

$$\frac{\text{perimeter of ABCDEF}}{\text{perimeter of } A^1B^1C^1D^1E^1F^1} = \frac{OB}{O^1B^1} = \frac{OH.}{O^1H^1}$$

$$\frac{\text{Area of ABCDEF}}{\text{Area of } A^1B^1C^1D^1E^1F^1} = \frac{(AB)^2}{(A^1B^1)^2} =$$

$$\frac{(\text{perimeter of ABCDEF})^2}{(\text{perimeter of } A^1B^1C^1D^1E^1F^1)^2}.$$

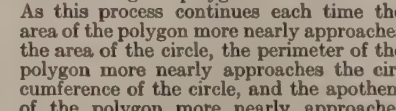
(§210, Theorem 82.) Since $\frac{AB}{A^1B^1} = \frac{OB}{O^1B^1} = \frac{OH}{O^1H^1}$, then $\frac{(AB)^2}{(A^1B^1)^2} = \frac{(OB)^2}{(O^1B^1)^2} = \frac{(OH)^2}{(O^1H^1)^2}$. (§43, Axiom.) Therefore

$$\frac{\text{area of ABCDEF}}{\text{area of } A^1B^1C^1D^1E^1F^1} = \frac{(OB)^2}{(O^1B^1)^2} = \frac{(OH)^2}{(O^1H^1)^2}.$$

228. Theorem 89.—
The area of a regular polygon is equal to one-half the product of its perimeter and its apothem.

Hint. Use the figure of the previous theorem, area ABCDEF = 6(area ABO) = 6(½) (AB) (OH) = ½(6AB) (OH) = ½(perimeter of ABCDEF) (apothem). (§219. Definition).

229. Relation of the Regular Polygons to the Circle.—While the theorems on regular polygons have in themselves interest and use, they have been developed chiefly in order that they may be applied to the circle. We must look upon the circle as a regular polygon of an infinite number of sides.


I II III

Take a series of equal circles. In the first circle inscribe a regular polygon of 4 sides (a square), in the second inscribe a regular polygon of 8 sides, in the third inscribe a regular polygon of 16 sides, in the fourth inscribe a regular polygon of 32 sides.
As this process continues each time the area of the polygon more nearly approaches the area of the circle, the perimeter of the polygon more nearly approaches the circumference of the circle, and the apothem of the polygon more nearly approaches the radius of the circle. If we were able to continue this process an infinite number of times the polygon would coincide with the circle. We shall now restate our theorems for the regular polygons in such a manner that they apply to the circle.

230. Theorem 90.
The circumferences of two circles are to each other as the radii.
This follows from §227, replacing perimeter by circumference.

231. Theorem 91.—
The ratio of the circumference of any circle to its diameter is a constant.
Hint. Given two circles with the radii r and r_1, with the corresponding diameters d and d_1, and with the circumferences C and C_1, then $\frac{C}{C_1} = \frac{r}{r_1} = \frac{2r}{2r_1} = \frac{d.}{d_1}$ (§230, theorem 90.) Since $\frac{C}{C_1} = \frac{d}{d_1}, \frac{C}{d} = \frac{C^2}{d^2}$. (§180, I).
Since $\frac{C}{d}$ or the ratio of the circumference to the diameter is the same for any two circles it must be a constant. This constant is always designated by π. Hence $\frac{C}{d} = \pi$ or $C = \pi d$.

232. Theorem 92.—
The areas of two circles are to each other as the squares of the radii.
Hint. This follows from §227.

233. Theorem 93.—
The area of a circle is equal to half of the product of its circumference and its radius; or the product of the square of the radius and the constant number π.

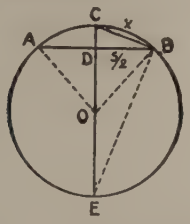
Hint. From §228, Theorem 89, the area of a regular polygon = ½ (perimeter) (apothem), considering the circle as a regular polygon of an infinite number of sides, we must replace perimeter by circumference and apothem by radius. Therefore S = area of a circle = ½Cr = ½(2πr)(r) = πr^2, replacing C by its value 2πr from §231.

234. Computation of π. In §257 we will show that a regular hexagon can be inscribed in a circle and that its side is equal to the radius of the circumscribing circle.

Hence the perimeter of the hexagon is 6r. The circumference of the circle is greater than 6r by a certain amount. If we can calculate the perimeter of a regular polygon of 12 sides this will give us a value nearer to the circumference of the circle. (§229). Instead of calculating the side of a regular polygon of 12 sides in terms of r we will solve the more general problem below.

If s is the side of a regular inscribed polygon, x the side of a regular inscribed polygon having twice as many sides as the first, and r the radius of the circumscribing circle of both, find x in terms of s and r.

Hyp. Given a circle, center O and radius r. Let s=AB be the side of a regular inscribed polygon and x=CB be the side of a regular inscribed polygon of double the number of sides.



Required. To find the value of x in terms of s and r.

Hint. Draw the diameter CE, and the lines OB and BE. Since chord AC=chord CB, CO is perpendicular to AB and meets it in a point D. Triangle CBE is a right triangle, and $(CB)^2=x^2=(CD)(CE)$. (§194, Theorem 72c.) Hence $x=\sqrt{(CD)(CE)}=\sqrt{(CD)(2r)}$. But CD=CO—DO=r—DO and $DO=\sqrt{(OB)^2-(DB)^2}=\sqrt{r^2-\frac{(s)^2}{(2)}}$. (§211, Theorem 83.) Hence $CD=r-\sqrt{r^2-\frac{(s)^2}{(2)}}$, replacing CD by this value in $x=\sqrt{2r(CD)}$ we have the formula desired

$$x=\sqrt{2r^2-2r\sqrt{r^2-\frac{(s)^2}{(2)}}}.$$

If we now put s=r in this equation we will find the length of the side of a regular polygon of 12 sides.

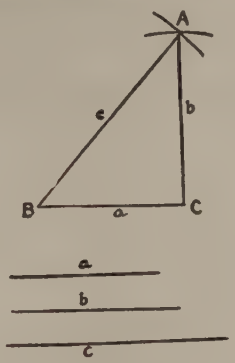
$$x=\sqrt{2r^2-2r\sqrt{r^2-\frac{r^2}{4}}}=r\sqrt{2-\sqrt{3}}.$$

Multiply this by 12 gives the perimeter of a regular polygon of 12 sides, the value is 6.211657r. It is possible to continue the calculations for regular polygons of, 24, 48, 96,... sides. When the value is calculated for a regular polygon of 1,536 sides, the perimeter of the polygon is 6.28318r, dividing by 2r gives the value of π=3.14159, correct to 5 decimal places. In advanced mathematics other and easier methods have been developed for the calculation of this most important constant.

PROBLEMS OF CONSTRUCTION.

235. Constructions by ruler and compasses.—Because I can define an object does not prove that it exists. We define a secant line as a line which cuts a circle in two points. I might define a hypersecant as a straight line which cuts a circle in three points, but it is impossible to draw such a line; in fact it is possible to prove it does not exist. Having defined a geometrical object, the mathematician proceeds, if possible, to prove that it exists. For instance in §69 we made use of the bisector of an angle; we did not at that time tell how to obtain the bisector, we merely assumed that it was possible to obtain it in some as yet unknown manner. Again and again we have drawn lines which we assumed were perpendicular to each other. We will now proceed to show how to carry out these constructions with the use of the ruler and compasses. Note. The constructions are not always given in full, it being assumed that the methods of a previous construction need not be indicated in full in a drawing.

236. To construct a triangle, when the three sides are given.—

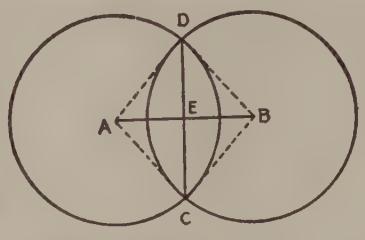


Given the three sides of a triangle a, b, and c.

Required to construct the triangle with these segments for sides.

By use of the compasses mark off BC equal to a. With B as center draw a circle of radius c, with C as center draw a circle of radius b, let these two circles intersect in A. Triangle ABC is the required triangle.

237. To bisect a given line.—

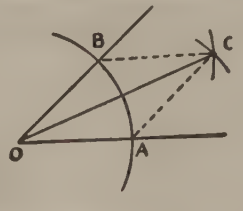


Given the line AB.

Required to construct the midpoint of AB.

Choosing a convenient radius, draw two circles with A and B as centers. Let these two circles intersect in C and D and let CD intersect AB in E. The required midpoint of AB is E. (§91. Theorem 17. The locus of points equidistant from two given points is the perpendicular bisector of the line joining them.) Since AD=BD=AC=BC, C and D are two points equidistant from both A and B, thus they determine the perpendicular bisector.

238. To bisect a given angle.—

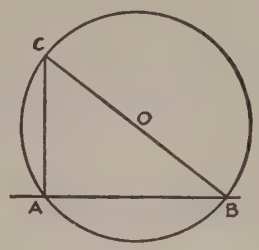


Given the angle AOB.

Required to construct the line bisecting the given angle.

Choosing a convenient radius, draw a circle intersecting the sides of the angle in A and B. Draw two circles with A and B as centers, both circles having the same radius, and let C be the point of intersection of these circles. Draw OC. Consider the triangles OAC and OBC, OA=OB—radii of the same circle; AC=BC—radii of two equal circles; OC is common. Therefore the triangles are congruent. (§77. Theorem 9. If two triangles have the three sides of one respectively equal to the three sides of the other, the triangles are congruent.) Angles AOC and BOC are equal, and AC is the bisector required.

239. At a given point in a straight line to erect a perpendicular to the line.—

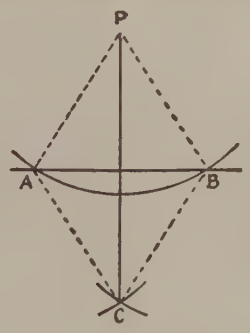


Given a line AB and a point A on it.

Required to construct the line through the point A perpendicular to the given line.

Choose a convenient point as O, and with a radius OA draw a circle cutting AB in A and a second point B. Draw the diameter of the circle BC and the line AC. Angle BAC is measured by one-half of a semicircle, and thus is a right angle. (§170, Theorem 58. An angle inscribed in a semicircle is a right angle.) Therefore AC is the required line.

240. From a given point to let fall a perpendicular upon a given line.—

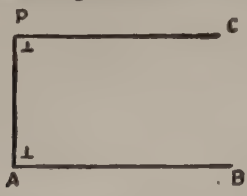


Given a line AB and a point P outside the line.

Required to construct the line through P perpendicular to AB.

Draw a circle with P as center cutting the given line in any two points as A and B. Draw two circles with A and B as centers and having the same radius. Let these two circles intersect in C. Then AP=PB—radii of the same circle; CA=CB—radii of equal circles. Therefore P and C are each equidistant from A and B. Hence PC is the required perpendicular. (§89, Theorem 16. The locus of points equidistant from two given points is the perpendicular bisector of the line joining them.)

241. Through a given point to draw a parallel to a given line.—

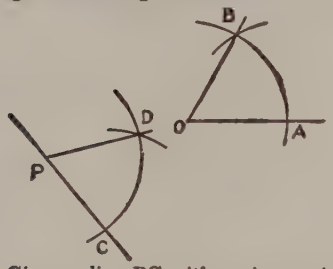


Given a line AB and a point P outside the line.

Required to construct the line through the point P parallel to the line.

From P draw the perpendicular to the line AB; let this line be PA. At P draw the perpendicular PC to the line PA. Then PC is the required parallel to AB. (§93, Theorem 18. Two straight lines perpendicular to the same straight line are parallel.)

242. Through a given point on a straight line, to draw a line making a given angle with the given line.—

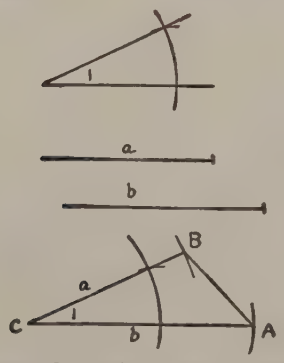


Given a line PC with a given point P upon it, let angle AOB be the given angle.

Required to draw the line through P forming with PC an angle equal to the given angle.

Draw a circle with O for center, cutting the sides of the given angle in the points A and B. With the same radius draw a circle with P for center. Draw a circle with C for center having AB for radius; let D be the point of intersection of the two arcs having P and C for centers. Angle CPD is the required angle. (§149, Theorem 41. If in the same circle, or in equal circles—two arcs are equal, the angles which they subtend are equal.)

243. To construct a triangle, when two sides and the included angle are given.—

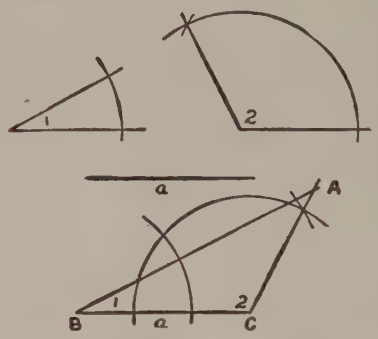


Given the angle 1 and the segments a and b.

Required to construct the triangle, which has a and b for two sides, including the given angle 1.

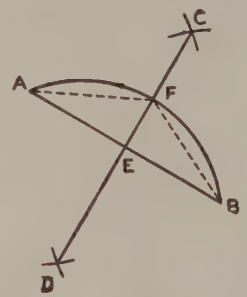
By the method of §242 construct the angle ACB equal to the given angle 1. Mark off CB equal to the segment a, and CA equal to the segment b. Draw AB. ABC is the required triangle.

244. To construct a triangle when two angles and the included side are given.—



The method is the same as the previous construction.

245. To bisect a given circular arc.—

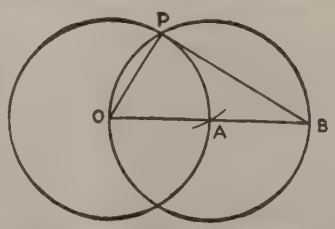


Given the circular arc AB.

Required to construct the mid-point of the arc.

Draw the chord AB and its perpendicular bisector CD. Let the line CD meet the chord AB in E and the arc AB in F. Draw AF and FB. Chord AF = Chord FB. (§89. Theorem 16, The locus of points equidistant from two given points is the perpendicular bisector of the line joining them.) Therefore arc AF = arc FB and F is the required mid-point. (§151, Theorem 43. If in the same circle, or in equal circles, two chords are equal, the arcs subtended by them are equal.)

246. At a given point on a given circle, to draw a tangent to the circle.—

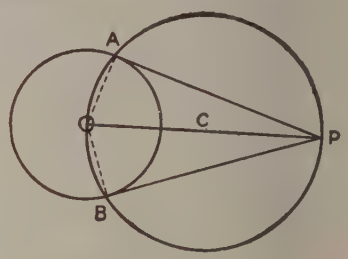


Given a circle of radius r with the center O and the fixed point P on it.

Required to construct the tangent to the given circle at the point P.

One method is to draw the radius OP and construct the line perpendicular to OP at the point P by method of §239. A second method is as follows. With P as center and with a radius equal to r, draw an arc cutting the given circle in A. With A for center draw a circle of radius r. This circle will pass through O and P. Draw OAB the diameter of the circle with the center A, and then draw the chord PB. Angle OPB is a right angle. (§170. Theorem 58. An angle inscribed in a semicircle is a right angle.) Therefore PB is the required tangent. (§161, Theorem 53. A straight line tangent to a circle is perpendicular to the radius drawn to the point of contact.) (18. Axiom. From a given point in a given line, one perpendicular and only one, can be drawn to the line.)

247. Through a given point outside a given circle to draw tangents to the circle.—

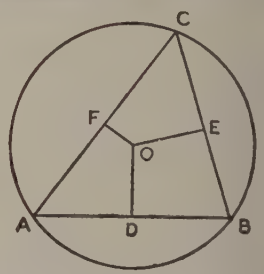


Given the circle with its center at O and the point P outside the circle.

Required to construct the tangents from P to the circle.

Draw the line OP, find the mid-point of this line C, and draw the circle with the center C and the radius OC. Let this circle intersect the given circle in the two points A and B. Draw the lines, OA, OB, AP, and BP. Angles OAP and OBP are right angles. (§170, Theorem 58. An angle inscribed in a semicircle is a right angle.) Therefore AP and BP are the required tangents. As in the previous construction, the tangent is perpendicular to the radius at its extremity.

248. To circumscribe a circle about a given triangle.—



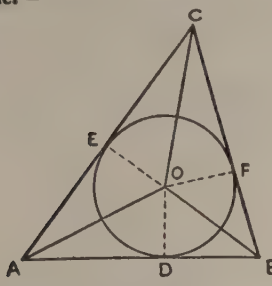
Given the triangle ABC.

Required to circumscribe a circle about ABC.

Draw the perpendicular bisectors of the sides AB and BC, let O be their point of intersection. Designate the perpendicular bisector of AB by DO and the perpendicular bisector of BC by EO. Point O, lying in OD, is equidistant from A and B, lying in OE; it is also equidistant from B and C or OA = OB = OC. Hence the perpendicular bisector of AC also passes through FO. (§89. Theorem 16. The locus of points

equidistant from two given points is the perpendicular bisector of the line joining them.) Since O is equidistant from A, B, and C it is the center of the required circle.

249. To inscribe a circle in a given triangle.—

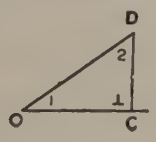


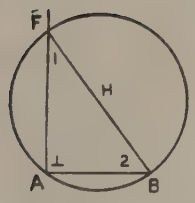
Given the triangle ABC.

Required to inscribe a circle in the triangle ABC.

Let the bisectors of the angles A and B meet in the point O. Then OA and OB are the bisectors of the angles A and B respectively. Draw the perpendiculars from O to AB, BC, and CA, let these be OD, OF, and OE respectively. Every point in AO is equidistant from AC and AB, hence OE = OD. Every point in OB is equidistant from BA and BC, hence OD = OF. We might observe that the bisector of angle C must also pass through the point O. (§91, Theorem 17. The locus of points equidistant from the sides of an angle is the bisector of the angle.) Therefore O is the center of the required circle and the radius = OD = OF = OE.

250. On a given straight line as a base, to construct a circular segment in which a given angle can be inscribed.—



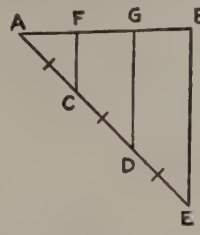


Given the angle COD and the straight line AB.

Required to construct the circular segment in which the given angle can be inscribed.

Take any point D on the side OD of the given angle and drop the perpendicular upon the side OC, meeting it in C. At the point A draw the perpendicular AF to AB; at the point B construct the angle ABF equal to the angle ODC. The triangles ABF and OCD are similar, and angle AFB equals the given angle COD. (§ 187, Theorem, 65. If two triangles have two angles of one respectively equal to two angles of the other, the triangles are similar.) Therefore the circular segment AFB is the segment required, for any angle APB with its vertex P on this segment has the same measure, i. e., one half of the arc AB, as the angle AFB. (§169, Theorem 57. An angle inscribed in a circle is measured by one half its intercepted arc.

251. To divide a given straight line into any number of equal parts.—

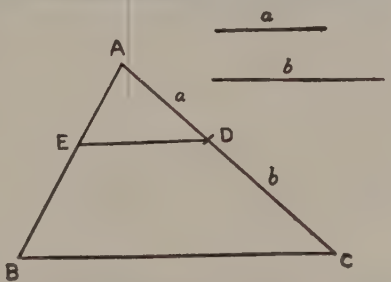


Given the straight line AB.

Required to divide AB into a certain number of equal parts, say three.

Upon any line through A, as AF, lay off by repeated use of the compasses the equal line segments, AC, CD, and DE. Draw the line BE, and the lines through C and D parallel to EB, meeting AB in the points F and G respectively. F and G are the required points to trisection. (§117, Theorem 37. If a series of parallel lines cut off equal segments on one transversal, they cut off equal segments on any other transversal.)

252. To divide a given straight line into parts proportional to two given lines.—



Given the straight line AB and two other given lines a and b.

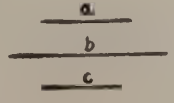
Required to divide the line AB in the ratio of a to b, or to find the point E on AB so that $\frac{AE}{EB} = \frac{a}{b}$.

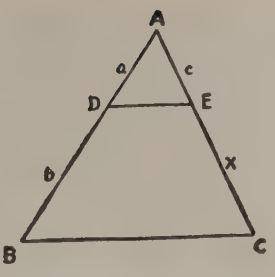
Draw a line through A and on it mark off AD, equal to a, and DC, equal to b.

Draw BC and ED parallel to BC through the point D, meeting AB in E. The required point of division is E. (§181, Theorem 62. A straight line parallel to the base of a triangle divides the other two sides proportionally.)

253. Fourth proportional.—A fourth proportional to three numbers or magnitudes a, b, and c, is the quantity x defined by $\frac{a}{b} = \frac{c}{x}$.

254. To find the fourth proportional to three given lines.—





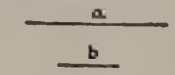
Given the three lines a, b, and c.

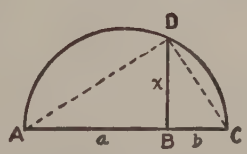
Required to construct the line which is the fourth proportional.

Draw two lines intersecting in a point A. On one of these lines lay off AD equal to a and DB equal to b, on the second line lay off AE equal to c. Draw the line DE and draw a line through B parallel to DE, meeting AE in C. Then EC = x is the fourth proportional required for $\frac{a}{b} = \frac{c}{x}$.

(§181, Theorem 62. A straight line parallel to the base of a triangle divides the other sides proportionally.)

255. To find the mean proportional between two given straight lines.—



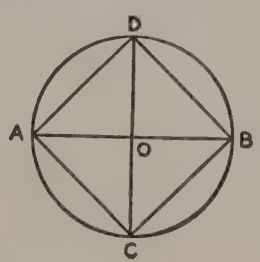


Given the two lines a and b.

Required to construct the mean proportional x between the lines a and b which is defined by the equation $x^2 = ab$.

Draw a straight line through any point A. On this line measure off AB equal to a and BC equal to b. On AC as diameter draw a semicircle. Let the perpendicular to AB at B meet the semicircle in D. BD is the required mean proportional. (194, Theorem 72. The perpendicular is the mean proportional between the segments of the hypotenuse.)

256. To inscribe a square in a given circle.—

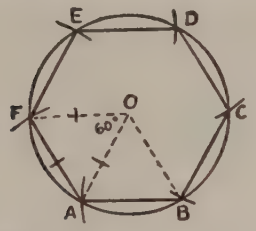


Give the circle O.

Required to inscribe a square in the given circle.

Draw any diameter as AB and draw the diameter CD, which is perpendicular to AB at O the center. Draw AC, CB, BD, DA, which are the sides of the required square. (§148, Theorem 40. If in the same circle, or in equal circles, two angles at the center are equal, the arcs which they intersect are equal.) (§150, Theorem 42. If in the same circle, or in equal circles, two arcs are equal, the chords subtending them are equal.)

257. To inscribe a regular hexagon in a circle.—

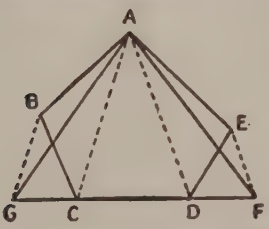


Given a circle.

Required to construct a regular hexagon.

Using any point of the given circle as A for center and with a radius equal to the radius of the given circle draw an arc cutting the circle in F. Draw from O, the center of the given circle, the radii OA and OF. Triangle AOF has all its sides equal, hence all of its angles are equal. Thus angle AOF is one-third of two right angles, or one-sixth of a circumference. Hence AF is the side of the required hexagon.

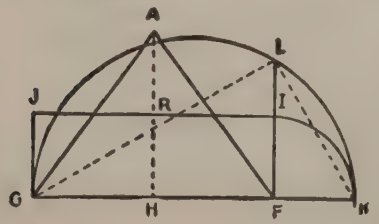
258. To transform any convex polygon into a triangle; a square.—



Given the convex polygon ABCDE.

Required to transform ABCDE (a) into a triangle, (b) into a square.

(a) Choose a vertex as A and draw the lines AC and AD. Prolong a convenient side as CD in both directions. Through B draw a line parallel to AC, to meet CD in G, and through E draw a line parallel to AD, meeting CD in F. Triangles ACB and AGC have a common base AC and equal altitudes, since parallel lines are everywhere equidistant. (§207, Theorem 79. The area of a triangle is equal to half of the product of its base and altitude.) In the same way triangles ADE and AFD are equal. Hence triangle AGF is the required triangle.



(b) Having transformed the polygon into a triangle, we will now transform it first into a rectangle and finally into a square.

Let AGF be the given triangle. Draw the perpendicular from A on GF, meeting it in H. Bisect AH. and let R be the point of bisection. Construct a rectangle which has GF for base and HR for altitude. Let GFIJ be this rectangle. The area of the rectangle equals the area of the triangle. The area of the rectangle is equal to the product (GF) (FI). If x is the side of a square of equal area then $x^2 = (GF)(FI)$. The construction of x leads back to §269. (To construct the mean proportional between two given straight lines.) Following the method of that section, we lay off FK on GF equal to FI, draw the semicircle on FK as diameter, and prolong FI until it intersects the semicircle in the point L. FL is the side of the required square whose area is equal to the area of the rectangle GFIJ, to the area of the triangle AGF, and to the area of the polygon ABCDE.

Note. If the polygon were not convex it would be necessary in the first part of the construction (a) to subtract the areas of certain of the triangles instead of adding them.

PROPOSITIONS AND EXERCISES

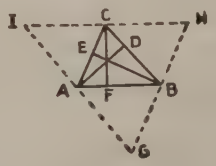
If when three coins are tossed they always all come heads, we know at once that the matter demands investigation. In a like manner in geometry, if three points are always on a straight line, we seek the reason. Again, if three lines are drawn at random in a plane there is small chance that they pass through a point, in general they will form a triangle.

259. Concurrent Lines.—Three or more lines meeting in a common point are called concurrent lines.

We will now consider a few important cases of concurrent lines.

260. Theorem.—The perpendicular bisectors of the sides of a triangle meet in a point equidistant from the three vertices. This point is called the center of the circumscribing circle and the method of proof is given in the construction problem of §248.

261. Theorem.—The perpendiculars from the vertices of a triangle to the opposite sides meet in a point.



Hyp. Given the triangle ABC, with the perpendiculars AD, BE, and CF drawn through the vertices to the opposite sides.

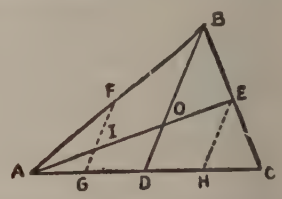
Con. The lines AD, BE, and CF are concurrent.

Hint. Through each vertex of the triangle draw a line parallel to the opposite sides and let these lines intersect to form the triangle GHI. For this triangle the lines AD, BE, CF are the perpendicular bisectors, hence the proof depends upon §260.

262. Theorem.—The bisectors of the angles of a triangle meet in a point equidistant from the three sides. This point is the center of the inscribed circle, and the method of proof is indicated in §289.

263. Median.—A median of a triangle is a line connecting a vertex to the midpoint of the opposite side.

264. Theorem.—The medians of a triangle meet in a point two-thirds of the distance from each vertex to the midpoint of the opposite side.



Hyp. Given the triangle ABC, with D, E, and F, the midpoints of the sides AC, CB, and BA respectively.

Con. The medians AE, BD, and CF are concurrent.

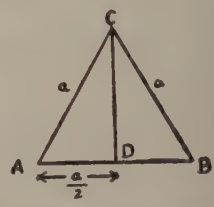
Hint. We will draw only two medians at first, AE and BD intersecting in O. We will show that AO = 2(OE) and BO = 2(OD). Draw FG and EH through F and E respectively parallel to BD to meet AC at G and H. Let FG and AE intersect in I. Then AG = GD = DH = HC. (§117, Theorem 37.) By the same theorem $AI = IO = OE$. Hence $AO = \frac{2}{3}(AE)$. In the same manner we can prove that AE and CF will intersect in a point O^1 such that $AO^1 = \frac{2}{3}(AE)$. Hence $AO = AO^1$, thus O and O^1 coincide, therefore all the medians pass through O.

265. Equilateral Triangle.—A triangle is equilateral when all its sides are equal.

266. Equiangular Triangle.—A triangle is equiangular when all its angles are equal.

267. Scalene Triangle. — A triangle is scalene when no two sides are equal.

268. Exercise.—Find the altitude and area of an equilaterial triangle of side a.



Given the equilateral triangle ABC with the side a.

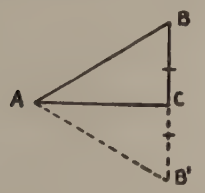
Required to find the altitude CD and the area of the triangle.

The point D is the midpoint of the base, hence AD = a/2. ADC is a right triangle, hence, $a^2 = \left[\frac{a}{2}\right]^2 + (CD)^2$, or $4(CD) = 3a^2$.

(§211, Theorem 83.) Hence $CD = \frac{a\sqrt{3}}{2}$.

The area $= \left(\frac{1}{2}\right)(a)\left(\frac{a\sqrt{3}}{2}\right) = \frac{a^2\sqrt{3}}{2}$. (§207, Theorem 79).

269. Theorem.—If one acute angle of a right triangle is double the other, the hypotenuse is double the shorter side.

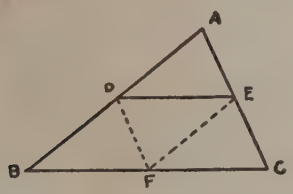


Hyp. Given the right triangle ABC with $\angle C$ the right angle and $\angle B = 2\angle A$.

Con. AB is double BC.

Hint. Prolong BC through C to B^1 making CB^1 equal to BC. Draw AB^1. Triangles ABC and AB^1C are congruent. $\angle BAC + \angle B^1AC = \angle B = \angle B^1$, hence the triangle is equiangular and equilateral. Thus $AB = BB^1$, therefore $AB = 2BC$.

270. Theorem.—The line which bisects two sides of a triangle is parallel to the third side and is equal to one-half of the third side.



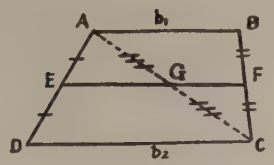
Hyp. D and E are the midpoints of the sides AB and AC respectively of the triangle ABC.

Con. DE is parallel to BC and equal to one-half of BC.

Hint. Take F, the midpoint of BC, and draw DF and EF. DE is parallel to BC, EF is parallel to AB, and DF is parallel to AC. (§182, Theorem 63. If a straight line divides two sides of a triangle proportionally, it is parallel to the third side.) Hence both DEFB and DECF are parallelograms. Thus $DE = BF = FC$. Therefore $DE = \frac{1}{2}$ BC.

271. Theorem.—If a line is parallel to one side of a triangle and bisects a second side it bisects the third side. This is a special case of §181.

272. Theorem.—The line joining the midpoints of the non-parallel sides of a trapezoid is parallel to the two bases and is equal to one-half of the sum of the bases.



Hyp. Given the trapezoid ABCD, with E and F the midpoints of the non-parallel sides AD and BC respectively. Let $AB = b_1$ and $DC = b_2$.

Con. EF is parallel to AB and DC.

$$EF = \frac{1}{2}(b_1 + b_2).$$

Hint. Draw AC and let G be the midpoint of AC. Draw EG, EG is parallel to DC and equal to one-half of it. (§270.) Draw FG. In the same way, FG is parallel to AB and equal to one-half of AB. GF is also parallel to DC. (§95, Theorem 19.) Hence GE and GF are parts of the same straight line. (§15, Postulate.) $EG = \frac{1}{2}b_2$, $GF = \frac{1}{2}b_1$, thus $EG + GF = EF = \frac{1}{2}(b_1 + b_2)$.

273 Theorem.—Two triangles which have their sides respectively parallel or perpendicular are similar. Hint. Prove the angles of one triangle equal the angles of the other and apply §186.

274. Lemma.—A lemma is a preparatory proposition laid down to shorten the demonstration of the main proposition which follows it.

275. Corollary.—A corollary is a consequence drawn immediately from a proposition. In the text books on geometry many theorems are followed by the statement of a particular case as a corollary.

276. Concyclic Points.—Three or more points which lie on a circle are called concyclic points. In general four points chosen at random will not lie on a circle. When we do have four points on a circle there are many relations existing among the lines and angles which are determined by the four points. The consideration of such relations is beyond an elementary discussion of geometry.

277. Conclusion.—The reader who is interested in geometry will never need to grieve for more worlds to conquer, as did Alexander the Great. After the study of plane geometry, naturally comes the study of solid, or three dimensional geometry. In the developments of modern physics it is also convenient, and also almost necessary, to study the geometry of four, five and of any number of dimensions. This is carried out with the assistance of the methods of algebra in what is known as analytical geometry. Geometry also becomes involved in still greater difficulties, for in order that the laws of physics may assume simple forms under all conditions it appears necessary that so called non-euclidean geometries should be developed. Every surface has a geometry of its own. If one is walking in a mountainous country, the shortest distance between two points for a person constrained to walk always on the ground will no longer be a straight line but will be a curve. Three points on the ground will determine three of these shortest distances, bounding an area which we may call a triangle. However two triangles may have their sides equal without being either congruent or equal in area. The curve corresponding to a circle becomes a complicated curve. The reader may investigate a geometry of this kind by stretching strings on the surface of any solid, a taut string in contact with a smooth surface giving the shortest distance between two points. The plane geometry we have studied becomes a special case of this geometry when the surface on which the strings are stretched is a plane.

FORMULAS

278. Symbols.—

a,b,c = sides of a triangle ABC.
p = perimeter.
r = radius.
c = circumference of a circle.
d = diameter of a circle.
h = altitude.
$s = \frac{1}{2}(a+b+c)$.
K = area.
b = base of a triangle, parallelogram.
$\pi = 3.14159\ldots, \frac{22}{7}$ approximately.

279. Length of Lines.—

Right triangle $a^2 + b^2 = c^2$. §211, Theorem 83.

Circle $c = \pi d = 2\pi r$. §231, Theorem 91.

Equilateral triangle $h = \frac{1}{2}a\sqrt{3}$. §268.

Diagonal of a square $d = b\sqrt{2}$. §211, Theorem 83.

Altitude on side c $= h_c = \frac{2}{c}\sqrt{s(s-a)(s-b)(s-c)}$.

Meridian on side c $= m_c = \frac{1}{2}\sqrt{2(a^2+b^2)-c^2}$.

Bisector of the angle opposite $c = t_c = \frac{2}{a+b}\sqrt{abs(s-c)}$.

An arc $= \frac{\text{central angle}}{180^\circ}(r\pi)$.

280. Areas of Plane Figures.—

Rectangle bh. §203, Theorem 75.

Square b^2. §203, Theorem 75.

Parallelogram bh. §206, Theorem 78.

Triangle $\frac{1}{2}bh$. §207, Theorem 79.

Triangle $\sqrt{s(s-a)(s-b)(s-c)}$. §212.

Equilateral triangle $\frac{1}{4}a^2\sqrt{3}$. §268.

Trapezoid $\frac{1}{2}h(b_1+b_2)$. §208, Theorem 80.

Regular polygon $\frac{1}{2}p$(apothem). §228, Theorem 89.

Circle $\frac{1}{2}rc = \pi r^2$. §223, Theorem 93.

Sector of a circle $\frac{1}{2}r$(arc).

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Growing rice terraces on the hillsides.

Threshing rice by making caribou trample over it. This is a very slow process.

TREE SURGERY

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1—Drilling out the decayed matter from the tree. 2—A CONCRETE TRUNK—In the course of years—the bark will gradually close over it. 3—Showing how the bark has gradually closed over the concrete heart. 4—Concrete trunk of tree 17 ft. in circumference. 5—New drill—used in cutting out decayed matter from the inside of trees. Note the burring tool on end of machine. 6—Treating the roots of the tree. 7—A giant tree that was saved by Tree Surgery.

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BOOK XI
SCIENCE

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SCIENCE IN GENERAL

Pure science is a product of research, questioning nature in order to understand. To explain any phenomenon is to state its relationships to other known phenomena. The relationships most commonly sought are those of quantity, order, and cause, existing or acting in time and space. A cause is any determining factor. *The* cause of any given phenomenon is the sum of all antecedent conditions necessary to bring about the given condition. If this definition is accepted, it becomes evident that *the* cause of any experience can never be stated in full, for, in a sense, everything is the cause of anything. Explanations therefore seek the nearest causes, or those which have been noticeably potent in bringing about the condition observed.

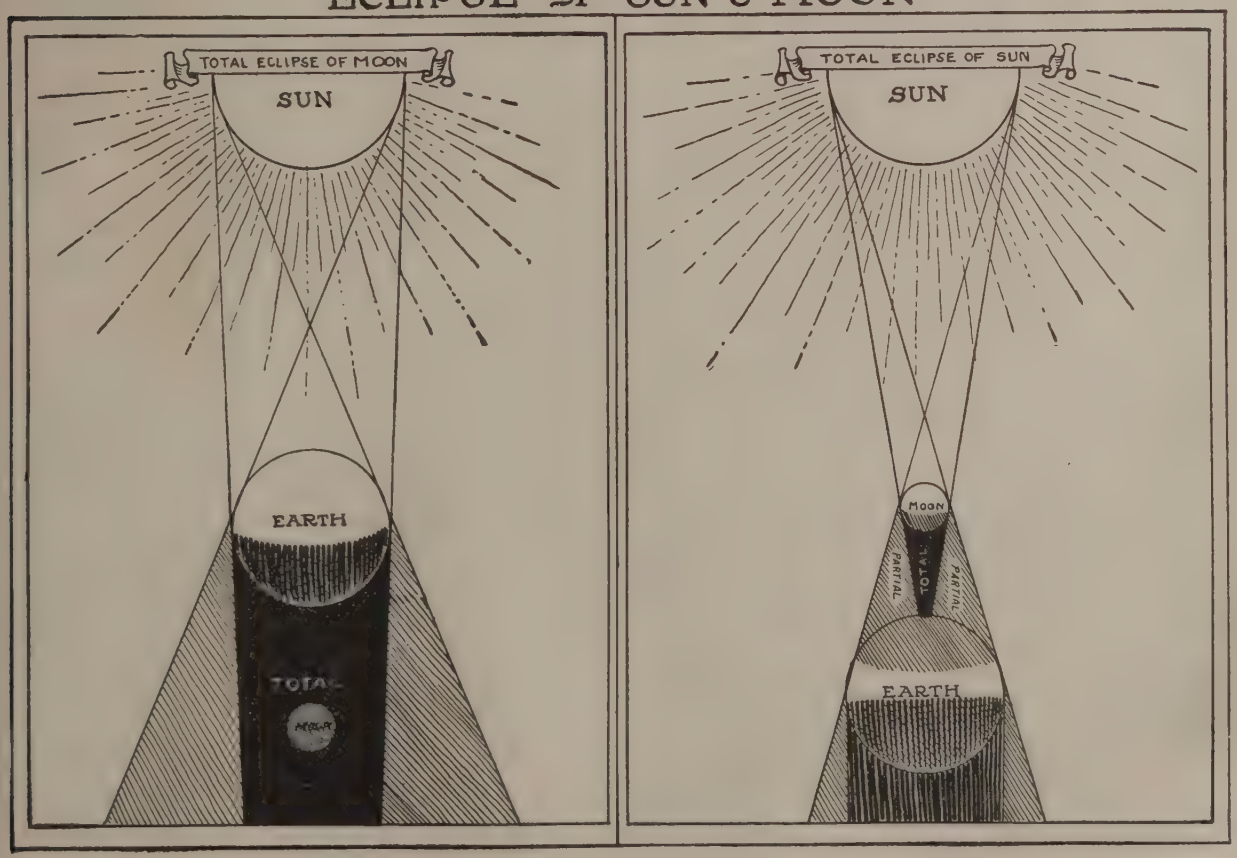
Pure science discovers and explains. Applied science puts the discoveries and the theories of research into practical use, through mechanical inventions. The first production of radium, for example, was a triumph of pure research; but it was promptly followed by mechanical applications resulting in such a commercial demand for radium as to seriously hamper further research in the important field of radio—activity.

Science as such always proceeds by observation of the phenomena to be explained. Experiment is the process of observing phenomena under such control as to permit repetition and variation at the will of the observer. Scientific laws, or laws of nature, are the summaries of observation and experiment approved by "competent authorities" at any given time.

The order of procedure in formulating natural law through experiment is: (1) recognition of the problem; (2) control of the situation; (3) observation of all possible combinations of the variables involved; (4) comparison of the records thus secured; (5) rejection of the irrelevant; (6) synthesis of the relevant; (7) testing of the hypothesis thus formed, by applying it to fresh cases. By sufficiently tested evidence, hypothesis may be confirmed into theories, and theories may become "laws." Natural law thus appears strikingly unlike statute law or ecclesiastical law. Natural law is always held subject to revision whenever authenticated facts in its field fail to conform with the law in question.

Two long accepted "laws of nature" deal with the conservation of matter and the conservation of energy. According to these laws, the sum total of matter in the

ECLIPSE OF SUN & MOON



universe is constant, and the sum total of energy is also constant. The theory of relativity, which is rapidly gaining scientific acceptance, holds that only the sum of matter and energy combined is constant, since matter may pass into and back from a state wherein it is "pure energy," with few or no traits of matter about it. But even if this theory were to become a new law of nature, matter and energy would be two phases of one reality; and nature would still appear as an unbroken web of cause and effect. Ephemerism is thus an ephemerism of form only; and the fact of continuity remains the most sweepingly significant generalization about nature.

CLASSIFICATION OF THE SCIENCES

—Science (Latin, *Scientias*, that which we know) is *human experience, tested* and *set in order*. It differs from creed (that which one believes), resting on bases other than human experience; it differs from philosophy (our generalization as to that which transcends or lies beyond human experience); it differs from mere fact or record not order; it differs from history in dealing set in properly with causes and effects shown in proper relations. It differs also from art, which is essentially action based on human knowledge. In common language, however, the art and the science on which it rests may often receive the same name, as in the case of agriculture, which word implies a science, or group of sciences, relating to the rearing of crops, and also the use of this classified knowledge, or science in actual practice.

In the language of modern Europe, the names of most of the sciences are derived from Greek roots, the second element in each being *Λογος, logos*, a discourse. Thus osteology (*οστεον, osteon*, bone) is a discourse on bones; ornithology (*ορνις, ornis*, bird) a discourse on birds. More exactly we may say that osteology is the science of bones. Again as each science is to the individual man an object of study, osteology becomes pedagogically the study of bones. By the addition of *logy* to a Greek root, an indefinite number of additional words can be framed, and will be framed in the future as the need for expression shall arise. For example, we may have rhodology, the science or the study of roses; orchidology, the science or the study of orchids; cynology, the science or study of dogs.

Other names applied to sciences conventionally terminate in the termination *ics*, which forms in many cases a euphonic ending. Thus optics, the science of vision (*ωκ, ops*, eye); ceramics (*κεραυος*, ceramos, a pitcher), the science of pottery. Other words of this sort might be readily devised, as cynics, the science of dogs; rhodics, the study of roses. Still other terms end in English in graphy (*γραφειν, graphein*, to write), indicating that the science is accompanied by writings or drawings: as geography, description of the earth, as distinguished from geology, the study or science of the earth (*γη, ge*, earth). Still other recognized names of science spring from various roots, mainly from the Greek.

Beginning with inorganic nature, we may make the following classification of those branches of science which have recognized names in the English language.

OUTLINE OF SCIENCES

Concerning the Heavens	ASTRONOMY; science or study of the stars. Cosmology; science of the universe. Uranography; science (mapping) of the heavens.
Concerning the Earth	ANEMOLOGY; science of winds. Climatology; science of climates. Crystallography; science of crystals. Epigene Geology; science of forces molding earth from without. Geodesy: science of the earth's surface. Geognosy; science of the earth's peculiarities. Geography; science (mapping) of the earth's surface. Geology; science of the earth. Hydrography; science of river basins. Hypogene Geology; (Plutonics) science of forces molding earth from within. Lithology; science of stones. Metallography; science of metals. Metallurgy; science (and art) of metals and ores. Meteorology; science of weather phenomena. Mineralogy; science of minerals. Oceanography; science of the ocean basins. Oreography; science of mountains. Petrography; science of rock composition. Physiography; science of the physical features on the earth's surface (also called physical geography). Seismography; science of recording earth tremors. Seismology; science of earthquakes. Stratigraphy; science of rock strata. Topography; science of the modifications of land surfaces.
Concerning Mass and Force	PHYSICS: the science of mass and force. Dynamics; science of force. Mechanics; science of application of force. Thermodynamics; science of force as related to heat. Acoustics; science of sound and hearing. Astrophysics; the science of physical features of the stars. Calorics; science of heat, as a mode of motion. Electricity; the science of the mode of motion known as electric currents. Galvanism; the science of galvanic electricity. Geophysics; science of physical features of the earth. Hydraulics; science of moving water. Hydrodynamics; science of the relation of liquids and power. Hydromechanics; science of power derived from motion of water. Hydrostatics; science of pressure of water at rest. Magnetism; the science of magnetic electricity. Optics; science of light and vision. Pneumatics; science of relations of gases to force or power.
Concerning the Molecules and Lesser Divisions of Matter	CHEMISTRY; the science of the intimate composition of matter. Alchemy; science (and art) of the alleged transformation of baser metals into gold. Biochemistry; the science of the chemistry of living beings. Inorganic Chemistry; science of elements and compounds not produced by the process of life. Organic Chemistry; science of the chemical compounds produced by the processes of life. Physical Chemistry; science of the features of matter involving both physics and chemistry. Physiological Chemistry; science of chemical changes within the bodies of animals. Spectroscopy; science (and art) of relation of chemical substances in the stars or on earth to the light spectrum.
Concerning Living Organisms	BIOLOGY; science of life and of living organisms (animals and plants). Analogy; the science or study of chance relationship. Anatomy; science of the structure of living organisms. Bionomics; science of changes in form of living organisms due to life adjustment and to other causes, from generation to generation. Comparative Anatomy; science of the relation of forms in organs of living beings. Cytology; science of the structure and functions of the organic cells forming tissues in living beings. Dietetics; science of food stuffs in relation to digestion. Ecology; science of the adjustment or behavior toward environment of living organisms (used chiefly in reference to plants). Embryology; science of the development of the fertilized germ-cell through different stages; the science of embryos. Environment; science of the effects of the results of external conditions in the development of individuals or species.* Heredity; science of continuity of type, from generation to generation (the name also applied to the law or fact of such continuity).* Histology; science of the tissues of which organs are formed. Homology; the science of underlying resemblances in man or lower organisms, the supposed impress of common heredity. Hygiene; science of the methods of maintaining health; (is used chiefly in reference to man). Isolation; science of the results of the separation of individuals from the mass of the species.* Morphology: science of forms in organs of living organisms. Ontology; science of the life history of the individual. Organic Evolution; science of orderly change in life forms from generation to generation; (the name more often applied to the fact or process than to the science). Pathology; science of disease in men or other organisms. Phylogeny; science of the history or development of the species or type. Physiology; science of the functions of the organs of living beings. Sanitation; science of the processes of maintaining health. Selection; science of the results of the survival of one class of individuals as compared with others, from generation to generation.* Taxonomy; science of the orderly arrangement of living beings according to their structure or according to their supposed origin or development. Classification is the general name for the processes of taxonomy. Teleology; science of real or supposed purpose or adaptation in structures of men or lower organisms. Teratology; science of monstrosities and their causes among men or other organisms. Variation; science of individuality and the tendencies to divergence from generation to generation.*

† The terms Environment, Heredity, Isolation, Selection and Variation are used more generally in the sense of factors in organic evolution of species or types.

OUTLINE OF SCIENCES

Sciences Chiefly or Wholly Related to Plants

- BOTANY: science of plants.
- Abiogenesis; science of (alleged) spontaneous generation of organisms.
- Agriculture; science (and art) of cultivation of the fields.
- Agrostology; science of grasses.
- Algology; science of seaweeds.
- Arboriculture; science (and art) of tree culture.
- Bacteriology; science of bacteria and microbes.
- Bryology; science of mosses.
- Dendrology; science of trees.
- Diatomology; science of diatoms, minute one-celled plants
- Forestry; science (and art) of care and culture of forests.
- Fungology; science of fungi (toadstools, molds, etc.).
- Horticulture; science (and art) of plant culture.
- Lichenology; science of lichens.
- Limnology; science of swamp-life.
- Paleobotany; science of extinct vegetation.
- Phytogeography; science of the geographical distribution of plants.
- Pteridology; science of ferns.
- Xerophytology; science of desert vegetation.

Sciences Primarily Concerning the Lower Animals or Concerning Man as an Organism

- ZOOLOGY; science of animals.
- Andrology; science of male organisms as such.†
- Animal Psychology; science of nervous impulses and nervous reflexes.
- Carcinology; science of crustaceans (crabs, lobsters).
- Conchology; science of shells.
- Craniology; science of skulls.
- Dermatology; science of the skin and its functions.
- Entomology; science of insects.
- Gastrology; science of the stomach.
- Gynecology; science of female organisms as such.†
- Helminthology; science of worms.
- Herpetology; science of reptiles.
- Ichthyology; science of fishes.
- Laryngology; science of the throat and its functions.†
- Mammalogy; science of mammals.
- Myology; science of muscles.
- Neurology; science (anatomy, physiology, pathology) of nerves.
- Obstetrics; science of the process of birth.†
- Odontology; science of the teeth.
- Oölogy; science of eggs.
- Ophthalmology; science of the eye and its functions.†
- Organography; science of the organs.†
- Ornithology; science of birds.
- Osteology; science of bones.
- Otology; science of the ear and its functions.
- Paleontology; science of extinct organisms.
- Paleozoölogy; science of extinct animals.
- Parasitology; science of parasites.
- Pisciculture; science (and art) of artificial rearing of fishes.
- Protozoölogy; science of protozoans.
- Rhinology; science of the nasal apparatus and its functions.
- Skeletology; science of skeletons.
- Somatology; science of the body.
- Telegony; science of (alleged) effects of the first father on the progeny of a second, by the same mother.
- Therology; science of beasts.
- Thremmatology; the science of selective breeding of domestic animals.
- Trichology; science of the hair.
- Zoögeography; science of geographical distribution of animals.

Sciences Relating Chiefly or Exclusively to Man as a Member of Society

- ANTHROPOLOGY; science of the human species.
- Aëronautics; science (and art) of air flight.
- Æsthetics; science of beauty and of appreciation of beauty.
- Anthology; science of flowers—used chiefly for flowers of expression or choice lyric verse.
- Apologetics; science of truth and falsehood in theological speculation.
- Archæology; science of ancient works of men.
- Archæsthetics; science of the supposed pervading mind preceding the existence of conscious animal life.
- Assyriology; science of ancient relics of Assyrian civilization.
- Astrology; science of the imaginary influences of the stars on human affairs.
- Athletics; science (and art) of bodily exercise.
- Biography; science of individual life records.
- Demonology; science of (supposed) spirits, mostly evil.
- Dialectics; science of argumentation.
- Didactics; science (and art) of instruction.
- Dogmatics; science of asserted truths.
- Doxology; science of belief (commonly used as the name of a brief song of praise).
- Ceramics; science (and art) of pottery and pottery making.
- Chronology; science of time.
- Civics; science of civil relations of man.

Sciences Relating Chiefly or Exclusively to Man as a Member of Society (Continued)

- Cookery; science (and art) of preparing food for man with the aid of heat.
- Criminology; science of crime and criminals.
- Economics; science of property relations of man.
- Education; science (and art) of mental development in man.
- Egyptology; science of ancient Egyptian civilization.
- Epistemology; science of sources of human knowledge.
- Eschatology; science of "doctrines of uttermost things," more especially speculations as to a future state.
- Ethics; science (and art) of human conduct.
- Ethnography; descriptive science of men, races and tribes of men.
- Ethnology; science of the significances of races of men.
- Ethology; science of human behavior.
- Etymology; science of word-derivation.
- Eugenics; science of the conditions of being well born, as regards possibilities of development in the individual life.
- Finance; science of money as a medium of exchange.
- Genealogy; science of lines of descent by heredity.
- Genesis; science of origins.
- Glyptology; science of sculpture.
- Graphics; science of drawing.
- Gymnastics; science (and art) of muscular exertion.
- Hagiology; science of saints and of writings regarded as sacred.
- Harmonics; science of music and of harmony in sound.
- Hellenics; science of Greek culture.
- Hermeneutics; science (or art) of expounding sacred writings.
- Homiletics; science (and art) of teaching by spoken discourse.
- Hymnology; science of hymns or religious poetry.
- Jurisprudence; science of law.
- Linguistics; science of speech.
- Logic; science of proofs in matters of cause and effect.
- Medicine; science (and art) of healing disease.
- Metaphysics; study of matters that transcend physical knowledge.
- Military Science; science of war and of methods of human destruction.
- Mythology; science of myths and legends.
- Papyrography; science (and art) of reading ancient records—on papyrus.
- Pathology; science of disease.
- Pedagogics; science of education in man.
- Pediatrics; science of disorders of childhood.
- Pedology; science of development of the child in man.
- Pharmaceutics; science of drugs.
- Pharmacology; science of the effects of chemical substances on animal organisms.
- Philology; science of words and word evolution.
- Philosophy; a study of that which transcends human experience.
- Phonetics; science of pronunciation of vocal sounds.
- Phonology; science of vocal sounds.
- Politics; science of relations of men as citizens and as groups of citizens; the science of citizenship.
- Psychiatrics; science of nervous disorders.
- Psychology; science of nervous reflexes and mental operations.
- Psychotherapeutics; science of healing agencies operating through the senses (as suggestion, etc.).
- Pugilistics; science (and art) of fist-fighting.
- Sciosophy; study of the shadows cast by imperfections in science.
- Sociology; a group of sciences concerning human society.
- Splanchnology; science of the internal organs or viscera.
- Surgery; science (and art) of healing through cutting diseased or injured tissues or organs.
- Telegraphy; science (and art) of "distance-writing" by the use of the telegraph.
- Telepathy; science of (alleged) transmission of knowledge without the use of sense organs.
- Telephony; science (and art) of "distance-speaking" by means of the telephone.
- Theology; science of deity and of divine control of the universe; also of the opinions entertained by men in regard to these matters.
- Therapeutics; science of healing agencies.
- Toxicology; science of poisons or chemical substances pernicious to animal life.
- Veterinary Medicine; science (and art) of healing disease in domestic animals.

Exact Sciences

- MATHEMATICS; logic applied to space and number.
- Algebra; science of mathematical formulæ.
- Arithmetic; science of numbers.
- Geometry; science of measurements of space.
- Horology; science of measuring time.
- Trigonometry; science of measurement of angles.
- Calculus; science of calculations based on the conception of limit.
- Non-Euclidian Geometry; science of measurements of imaginary space, as space of four dimensions, or, that imagined to have dimensions other than length, breadth and thickness.

† The terms Andrology, Dermatology, Gynecology, Laryngology, Obstetrics, Opthalmology, Organography, and Somatology are applied chiefly to man, constituting branches of medical science.

AERONAUTICS.—The art of sailing in or navigating the air, has occupied the ingenuity of men from the earliest ages. But it was not till the composition of the atmosphere had begun to be ascertained, and that means had been devised of filling vessels with heated air, or other air lighter than atmospheric air, and consequently capable of floating on it, that there came to be a rational prospect of succeeding in the "audacious attempt" of riding in the air.

Balloon.—In 1782, the brothers Montgolfier succeeded in constructing a balloon; and on the 21st of October, 1783, Pilatre de Rozier, a young naturalist, and the Marquis d'Arlandes, ascended from Paris to an elevation of more than 3,000 feet, and alighted safely from their "aërial tour," after describing a circuit of about six miles.

The ascents performed by Gay-Lussac, who attained an elevation of 4½ miles, are memorable for being the first ever undertaken solely for objects of science. In 1862 Mr. Glaisher reached the estimated elevation of 37,000 feet, which was approximated by two German aëronauts at Berlin in 1901. The most daring attempt at an aërial voyage was that of the Swede, Andree, who, with two companions, in 1897 ascended from Spitzbergen in hopes of reaching the north pole, their fate remaining unknown.

The modern balloon is but a slight improvement on that invented by Montgolfier. In place of heated air or hydrogen, common coal gas is now used. This improvement was introduced by Mr. Green, the English aëronaut. As gas expands rapidly as the balloon ascends, and the pressure of the external air is diminished, the neck of the balloon is commonly left open, and the machine is also furnished with a safety valve at the top, which can be opened or shut at pleasure.

Shape. — The balloon is usually a large pear-shaped bag, made of pliable silk cloth, covered with a varnish of caoutchouc, dissolved in oil of turpentine to render it air-tight. The ordinary size may range from 20 to 30 feet in equatorial diameter, with a proportionate height, but balloons of far greater dimensions have been constructed. A car, generally of wicker-work, supported by a network which extends over the balloon, contains the aëronaut; and a valve, usually placed near the top and to which is attached a string reaching the car, gives him the power of allowing the gas to escape, whereby the balloon is lowered at pleasure.

A quantity of sand ballast in small bags is usually taken, and when the balloon tends to descend too far sand is thrown out and it rises again. The guide-rope, a long and heavy rope trailing over the ground, is sometimes used when the country is such that no serious damage will result from its trailing. The principle of this device is that as the balloon tends to rise it must lift more of the rope off the ground, while when the balloon sinks it is relieved of so much weight, and thus it will tend to float at one level above the ground. A *parachute*, a contrivance resembling a huge umbrella, is often used in ballooning, and by its means an aëronaut can leave a balloon and descend slowly to the ground.

Steering.—The problem of how to steer or propel a balloon in a desired horizontal direction can scarcely be said to have been satisfactorily solved, though numerous attempts at producing navigable balloons have lately been made. In a navigable balloon to be propelled through the air by some kind of motor—against the wind if necessary—the familiar balloon shape is departed from as quite unsuitable, and the airship is usually of an elongated form and more or less cylindrical or cigar-shaped. These are floated by gas, and propelled by a screw driven by a dynamo-electric machine, and steered by a large rudder.

Renard and Krebs, two other workers in this field, subsequently built an airship 165 feet long and 127½ feet in diameter, moved by a battery of Renard's invention, a dynamo and a screw 7 feet in diameter. This machine, in 1884, was driven at a speed of 12 to 15 miles an hour in calm weather, and had power enough to contend against a light breeze.

The names of Count Zeppelin and M. Santos-Dumont have recently become well known in connection with such balloons. From 1897 to 1910 the former constructed several huge cylindrical air ships of great length, with paraboloid ends, divided into a number of separate chambers filled with hydrogen gas and these inclosed in an outer air balloon, the whole being braced and made rigid by an aluminum framework, and the means of propulsion being screws driven by Daimler petroleum motors and fixed to the longitudinal axis of the airship.

M. Santos-Dumont has constructed several navigable balloons, and one of them was so successful at Paris in 1901 as to gain a prize of 100,000 francs. On this occasion his airship made the journey from St. Cloud to the Eiffel Tower and back again, a distance of about 9½ miles, in half an hour. In 1907, and since, the British army balloon department made remarkably successful experiments with airships; and successes on the part of Count Zeppelin and others were also reported.

Aviation.—Besides balloons, which are lighter than a corresponding volume of air, and airships depending on the same principle, various apparatus have been constructed for aërial navigation that are heavier than the air. Attempts at navigation by means of such craft is termed *aviation*. Some of these machines are intended more for gliding or soaring through the air than for actual flight, having somewhat the nature of a huge bird with outstretched wings, beneath which a man attached himself, and on springing from a height gradually descends to the bottom.

Aeroplane.—Hence the invention of the *aëroplane*, which shows a large flat surface contrived to float nearly horizontally in the air, but with the front edge very slightly raised, so that in being propelled rapidly along it receives the pressure of the air on the under side, the air thus tending to counteract the force of gravity. Sir H. S. Maxim in 1894 constructed a huge machine with main and several subsidiary aëroplanes, propelled by two large screws driven by steam engines of 300 horsepower, and able to rise with a great weight. As a model, at least, Prof. Langley's *aërodrome* had some success, flying through the air a distance of three-quarters of a mile. It had two rigid pairs of wings about 12 feet in width, with large screw-propellers between them driven by a small steam engine.

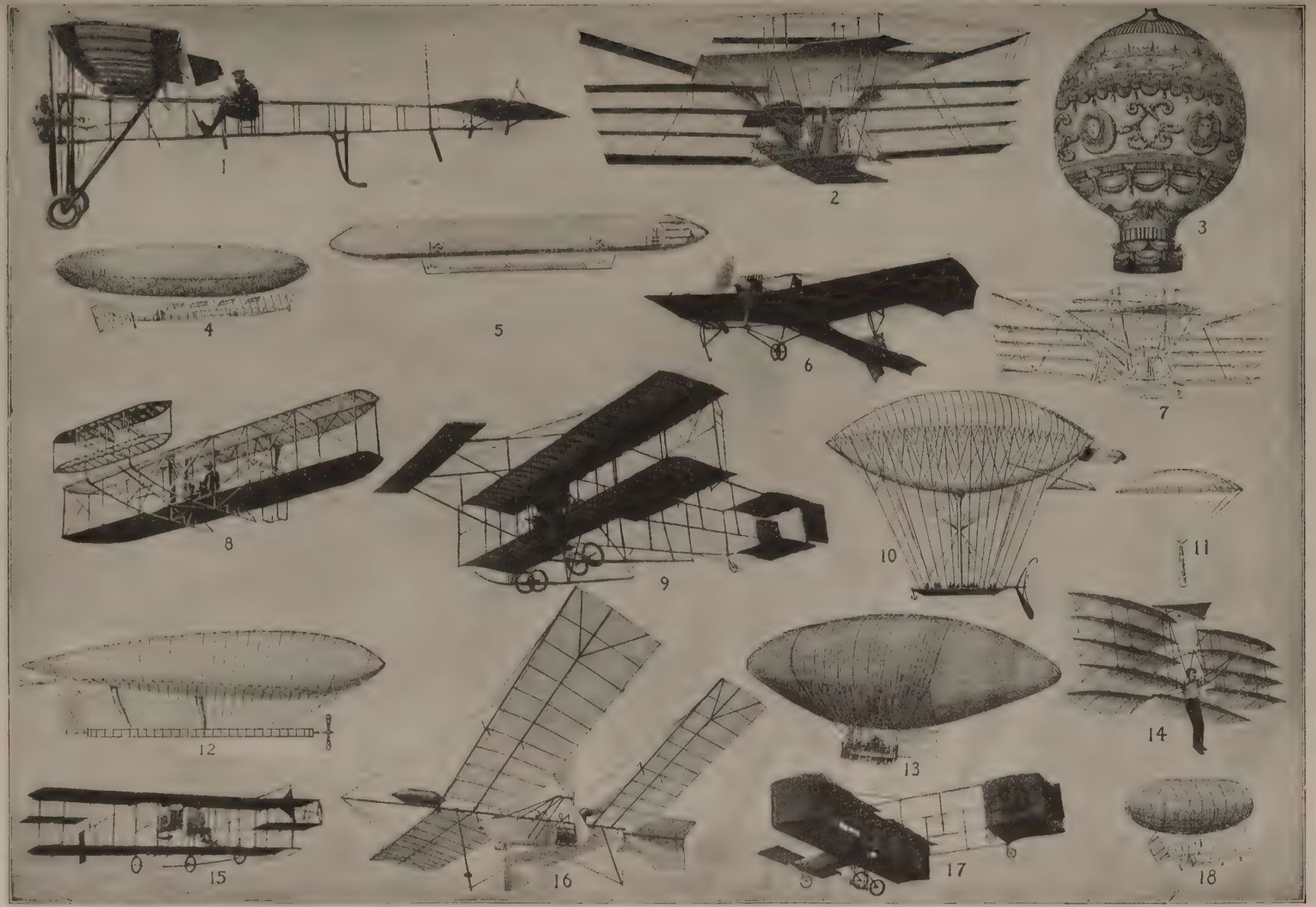
Type of Aeroplane.—Since the first aëroplane types of flying machines, designed by Maxim and Lilienthal, the work of inventors and scientists along the line of motor-driven, heavier-than-air flying machines has shown steady progress. The general and most popular design is that of the simple aëroplane, supported by air, through which it is propelled by detached force. The aëroplane, it should be observed, however, consists of two types—the *monoplane* and the *biplane*. There have been many radical but experimental departures from the aëroplane type, none of which, however, has shown any great degree of success. Among these radical types is the helicopter, the production of Otto Luyties of Baltimore, Md. The design of the machine embraces several pairs of huge wings and two or more upright revolving propellers, the latter operated by a 100-horsepower motor for the purpose of lifting the machine. The entire weight is 1,700 pounds.

Wright Machine.—The first achievement, however, in the form of sustained flight, with power to rise and descend without mishap, and to guide the machine in a circular flight, is confined to the Wright brothers of Dayton, Ohio, one of whom, in 1906, remained in the air thirty-eight minutes and three seconds, making a circular flight of twenty-four and a half miles. The brothers Voison also constructed an aëroplane on lines laid down by M. Octave Chanute, which was driven in a successful flight in November, 1907, at Paris by M. Henry Farman. The aëroplane on the first attempt rose slowly from the ground, and in one minute and fourteen seconds completed a circle.

Officials of the Aëro Club of America, at the international congress held in New York, 1907, admitted that in flights of man-carrying gasless machines the Wright brothers were far ahead of all competitors. What the Wright brothers accomplished in both this country and France, marked a new era in aerial navigation; and the prolonged flights of motor-driven aeroplanes, together with the recent work of Santos Dumont, Voisin brothers, Farman, Bleriot-Levasseur, Curtiss and other aëroplane builders and operators fills the future with great expectations.

NOTABLE EVENTS AND RECORDS OF AVIATION

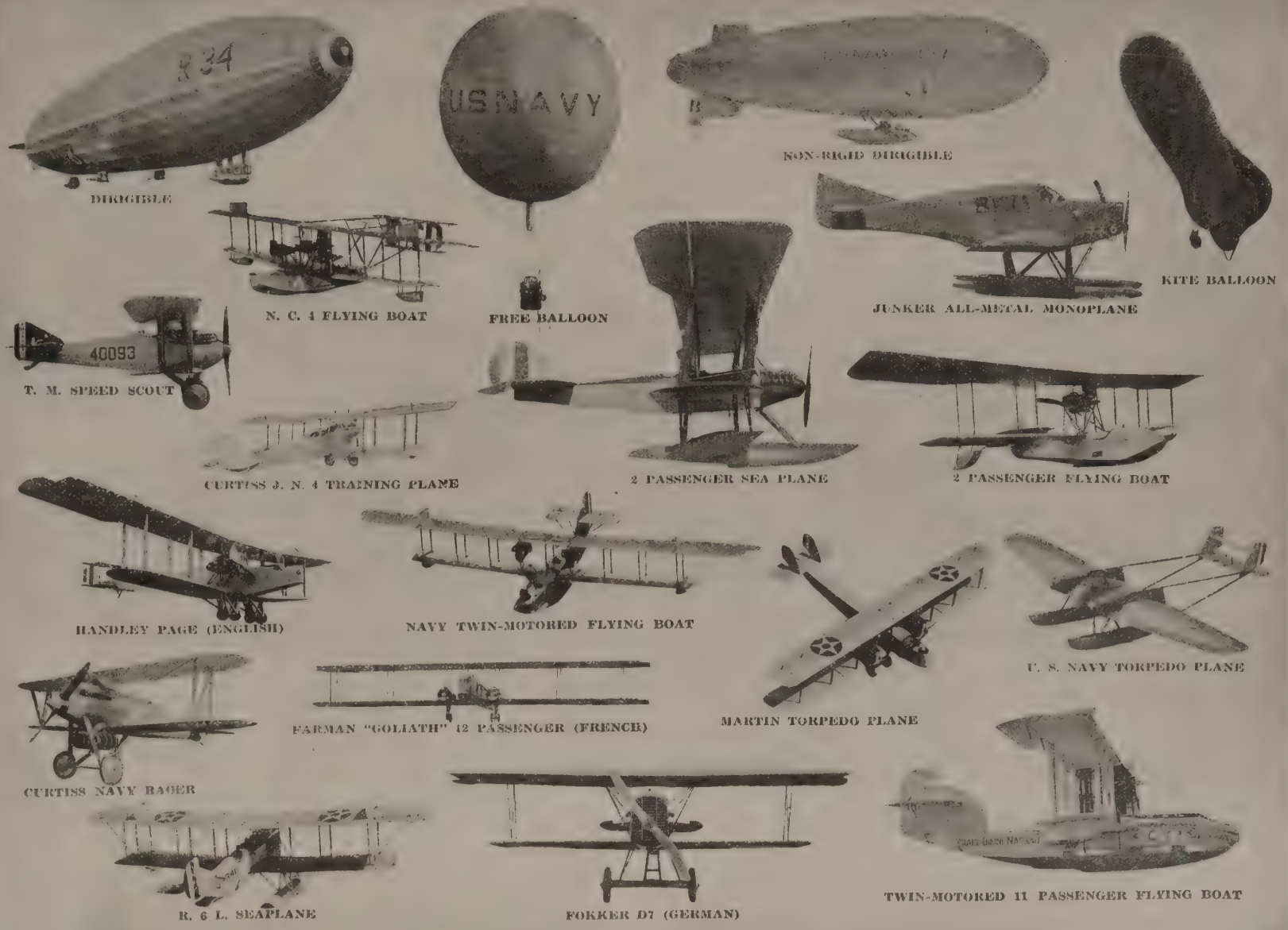
Aviator	Aeroplane	Date	Place	Time	Distance	Remarks
W. Wright	Biplane	Nov. 9, 1904	Dayton, Ohio	0:04:30	3 miles	Wright brothers made 105 flights in 1904.
W. Wright	Biplane	Oct. 5, 1905	Dayton, Ohio	0:38:00	24 miles	Wright brothers made 49 flights in 1905.
Santos-Dumont	Biplane	Nov. 13, 1906	Bagatelle, France	0:00:21½	722 feet	His best record for 1906.
Delagrange	Biplane	May 30, 1907	Bagatelle, France		656 feet	His best record for 1907.
Farman	Biplane	Oct. 26, 1907	Issy, France		2,530 feet	His best record for 1907.
Bleriot	Monoplane	Dec. 6, 1907	Issy, France		1,978 feet	His best record for 1907.
Pelterie	Monoplane	Jan. 8, 1908	Buc, France		3,960 feet	His best record for 1908.
Farman	Biplane	Jan. 13, 1908	Issy, France	0:01:28	4,921 feet	
Farman	Biplane	Mar. 21, 1908	Issy, France		1.25 miles	



1. Farman's Monoplane.
2. Maxim's Flying Machine.
3. Montgolfier's Balloon.
4. Santos Dumont's Balloon.
5. Zeppelin's Airship.
6. Latham's Machine.
7. Maxim's Model.
8. Wright Aeroplane.
9. The Farman Machine.
10. Dupuy de Lomes' Airship.
11. Parachute.
12. Airship of Renard and Krebs.
13. Wolfert's Airship.
14. Chanute's Flying Apparatus.
15. Glen Curtiss' Machine.
16. Langley's Flying Machine.
17. Paulham's Machine.
18. Stanley Spencer's Balloon.

NOTABLE EVENTS AND RECORDS OF AVIATION—Continued

AVIATOR	AEROPLANE	DATE	PLACE	TIME	DISTANCE	REMARKS
Delagrange	Biplane	May 30, 1908	Rome, Italy		7.776 miles	
Delagrange	Biplane	June 22, 1908	Milan, Italy		10.563 miles	
Curtiss	Biplane	July 4, 1908	Hammondsport, N. Y.		3,420 feet	Scientific American cup.
Bleriot	Monoplane	July 4, 1908	Issy, France	0:05:47	3,728 feet	
Farman	Biplane	July 6, 1908	Ghent, France		12.24 miles	
W. Wright	Biplane	Aug. 10, 1908	LeMans, France	0:01:43	1 m. 440 yds.	
W. Wright	Biplane	Aug. 11, 1908	LeMans, France	0:03:41	2 m. 880 yds.	
W. Wright	Biplane	Aug. 12, 1908	LeMans, France	0:06:56	4 miles	
Mengin	Monoplane	Aug. 21, 1908	Issy, France	0:01:30	1 mile	His best record for 1908.
Delagrange	Biplane	Sept. 6, 1908	Issy, France	0:29:53 4-5	15.364 miles	His best record for 1908.
W. Wright	Biplane	Sept. 5, 1908	LeMans, France	0:19:54	16 m. 440 yds.	
O. Wright	Biplane	Sept. 8, 1908	Fort Myer, Va.	1:02:00	40 miles	
O. Wright	Biplane	Sept. 12, 1908	Fort Myer, Va.	1:15:00	50 miles	His longest flight in 1908.
W. Wrigh	Biplane	Sept. 21, 1908	LeMans, France	1:31:25 4-5	41 miles	Made over 100 flights here.
Farman	Biplane	Oct. 2, 1908	Chalons, France	0:44:32	24.854 miles	His best record for 1908.
Bleriot	Monoplane	Oct. 21, 1908	Toury, France		4.34 miles	
Bleriot	Monoplane	Oct. 31, 1908	Toury, France		8.69 miles	
Bleriot	Monoplane	Oct. 31, 1908	Toury, France		17.317 miles	With three stops cross country. His best flight, 1908
W. Wright	Biplane	Dec. 18, 1908	LeMans, France	1:54:53 2-5	62 miles	Rose to 360 feet.
W. Wright	Biplane	Dec. 31, 1908	LeMans, France	2:20:23 1-5	77 miles	Speed about 34 miles per hour. Won Michelin prize. World's record.
Zipfel	Biplane	Dec. 9, 1908	Germany		4,921 feet	His best record in 1908.
Moore-Brabaison	Biplane	Feb. 27, 1909	Issy, France		3.1 miles	
McCurdy	Biplane	Mar. 18, 1909	Baddeck, Nova Scotia		16 miles	His best record in 1908.
Latham	Monoplane	June 5, 1909	Chalons, France	1:07:37		First hour flight by monoplane.
Farman	Biplane	July 19, 1909	Chalons, France	1:23:00	40 miles	
Curtiss	Biplane	July 24, 1909	Garden City, L. I.	0:52:30	25 miles	Won second contest for Scientific American cup.
Gaudart	Biplane	July 27, 1909	Juvisy, France		4.35 miles	
Sommer	Biplane	July 27, 1909	Chalons, France	1:23:30	50 miles	
Sommer	Biplane	Aug. 1, 1909	Chalons, France	1:50:30		
Hansen	Biplane	Aug. 3, 1909	Stockholm, Sweden		3 miles	
Sommer	Biplane	Aug. 4, 1909	Chalons, France	2:00:10		
Paulhan	Biplane	Aug. 7, 1909	Dunkirk, France	1:32:45	23 miles	
Savoia	Biplane	Aug. 7, 1909	Rome, Italy	0:15:00	12 miles	His best record in 1909.
Sommer	Biplane	Aug. 7, 1909	Mourmelon, France	2:27:15		World's record.
Willard	Biplane	Aug. 14, 1909	Garden City, L. I.	0:19:00	12 miles	Cross country flight.
Sommer	Biplane	Aug. 21, 1909	Chalons, France	0:12:00	9 miles	At rate of 45 miles an hour.
Paulhan	Biplane	Aug. 25, 1909	Rheims, France	2:43:24 4-5	81 miles	World's record.
De Lambert	Biplane	Aug. 26, 1909	Rheims, France	1:50:59	68.34 miles	His best record in 1909.
Latham	Monoplane	Aug. 26, 1909	Rheims, France	2:13:09 3-5	96 miles	His best record in 1909.
Latham	Monoplane	Aug. 26, 1909	Rheims, France	2:13:09 2-3	96 miles	At 42 miles an hour.
Latham	Monoplane	Sept. 27, 1909	Germany			Berlin to Johannisthal with the wind; said to have reached a speed of 74½ miles per hour.
Tissandier	Biplane	Aug. 27, 1909	Rheims, France	1:46:52	68.34 miles	His best record for 1909.
Farman	Biplane	Aug. 27, 1909	Rheims, France	3:15:00	112 miles	First man to fly for three hours continuously.
Lefebvre	Biplane	Aug. 28, 1909	Rheims, France		13.4 miles	His best record in 1909.
Bleriot	Monoplane	Aug. 28, 1909	Rheims, France	0:07:47	62.2 miles	
Latham	Monoplane	Aug. 28, 1909	Rheims, France	1:28:17	62.2 miles	
Bleriot	Monoplane	Aug. 28, 1909	Rheims, France	0:07:47 4-5	6.2 miles	
Curtiss	Biplane	Aug. 28, 1909	Rheims, France	0:15:50 3-5	12.4 miles	Wins Gordon Bennett cup.
Curtiss	Biplane	Aug. 29, 1909	Rheims, France	0:23:29	18.6 miles	Wins first prize (speed).
Cody	Biplane	Sept. 8, 1909	Aldershot, England	1:03:00	40 miles	Cross country.
Rougier	Biplane	Sept. 12, 1909	Brescia, Italy	1:10:18	31 miles	Reached 380 feet altitude.
Paulhan	Biplane	Sept. 13, 1909	Tournal, France	1:35:00		Cross country.
Santos-Dumont	Monoplane	Sept. 13, 1909	St. Cyr, France	0:12:00	5 miles	Cross country.
Calderara	Biplane	Sept. 15, 1909	Brescia, Italy		5.6 miles	Won Oldofredi prize.
Santos-Dumont	Monoplane	Sept. 17, 1909	St. Cyr, France	0:16:00	10 miles	Cross country.
O. Wright	Biplane	Sept. 18, 1909	Berlin, Germany	1:35:47		With Capt. Englehardt.
Calderara	Biplane	Sept. 20, 1909	Brescia, Italy	0:50:51	31 miles	Second speed prize.
W. Wright	Biplane	Sept. 25, 1909	New York, U. S. A.			Circled "Liberty."
Latham	Monoplane	Sept. 27, 1909	Berlin, Germany	0:13:00	6.5 miles	Berlin suburbs.
Rougier	Biplane	Sept. 28, 1909	Berlin, Germany	0:45:00	31 miles	Reached 518 feet.
Rougier	Biplane	Oct. 1, 1909	Berlin, Germany	2:38:00	80 miles	First distance prize.
Farman	Biplane	Oct. 3, 1909	Berlin, Germany	1:40:00	62 miles	Third prize.
O. Wright	Biplane	Oct. 4, 1909	Berlin, Germany	0:33:33	21 miles	Reached height 1,600 feet.
W. Wright	Biplane	Oct. 4, 1909	New York, U. S. A.	0:33:33	21 miles	Grant's tomb and back.
De Lambert	Biplane	Oct. 18, 1909	Juvissy, France	0:49:39	31 miles	Eiffel tower and back.
Paulhan	Biplane	Oct. 19, 1909	Blackpool, England	0:32:18	15.75 miles	Third distance prize.
Farman	Biplane	Oct. 20, 1909	Blackpool, England	1:32:16	47 miles	Won $10,000 prize.
Le Blon	Monoplane	Oct. 20, 1909	Doncaster, England			Flight in gale.
Latham	Monoplane	Oct. 22, 1909	Blackpool, England			Flight in gale.
Delagrange	Monoplane	Oct. 26, 1909	Doncaster, England	0:07:36	6 miles	Over 50 miles an hour.
Sommer	Biplane	Oct. 26, 1909	Doncaster, England	0:44:53	29.7 miles	Won Whitworth cup.
Farman	Biplane	Nov. 20, 1909	Mourmelon, France	4:06:25	137.25 miles	Said to be 150 miles.
Paulhan	Biplane	Nov. 20, 1909	Mourmelon, France	0:55:00	37 miles	Cross country at 1,000 feet.
Delagrange	Monoplane	Dec. 30, 1909	Juvisy, France	2:32:00	124 miles	Flew 49.02 miles per hour with 50-h.-p. Gnome motor; had 14-mile wind behind him.
Delagrange	Monoplane	Oct. 26, 1909	Doncaster, England	0:07:36	6 miles	At speed of 49.9 miles per hour.
Paulhan	Biplane	Nov. 1, 1909	Brooklands, England	2:49:20	96 miles	
Farman	Biplane	Nov. 3, 1909	Mourmelon, France	2:00:00	67.64 miles	
Farman	Biplane	Nov. 3, 1909	Mourmelon, France	3:00:00	77 miles	
Farman	Biplane	Nov. 3, 1909	Mourmelon, France	3:42:34	124 miles	
Farman	Biplane	Nov. 3, 1909	Mourmelon, France	4:00:00	133.9 miles	
Farman	Biplane	Nov. 3, 1909	Mourmelon, France	4:06:25	144 miles	
Grahame-White	Monoplane	Nov. 28, 1909	Pau, France			Flew at rate of 70 miles per hour.
Balsan		Feb. 13, 1910	Heliopolis, Egypt	0:03:57	6.2 miles	
Paulhan	Biplane	April 27, 1910	London to Manchester			Won $50,000 prize offered by the London *Daily Mail*.
Paulhan	Biplane	April 18, 1910	Chevilly, France	2:03:00	108 miles in all	Chevilly-Areis-sur-Aube to Chalons in two stages. Record duration and distance flight to date.
Grahame-White	Biplane	April 23, 1910	London, England	2:50:00	117.2 miles	Port Royal, London to Hodemore with stop at Rugby. On April 24 went on to Hardemore. Abandoned flight, which was won by Paulhan, April 27-28.
Paulhan	Biplane	April 28, 1910	London, England	4:12:00	193 miles in all	Flew from London to Manchester, 117 miles; in first stage, Litchfield, 66 miles; second stage, Manchester. Total average speed 44.34 miles an hour.
Labouchere	Monoplane	July 9, 1910	Rheims, France	4:37:00 2-5	211.27 miles	First man to fly 200 miles continuously. World's record.
Olieslaegers	Monoplane	July 10, 1910	Rheims, France	5:03:05 1-5	244.043 miles	First man to fly for five hours continuously. World's record.



DIRIGIBLE

N. C. 4 FLYING BOAT

T. M. SPEED SCOUT

CURTISS J. N. 4 TRAINING PLANE

HANDLEY PAGE (ENGLISH)

CURTISS NAVY RACER

R. 6 L. SEAPLANE

FREE BALLOON

NON-RIGID DIRIGIBLE

KITE BALLOON

JUNKER ALL-METAL MONOPLANE

2 PASSENGER SEA PLANE

2 PASSENGER FLYING BOAT

NAVY TWIN-MOTORED FLYING BOAT

FARMAN "GOLIATH" 12 PASSENGER (FRENCH)

MARTIN TORPEDO PLANE

U. S. NAVY TORPEDO PLANE

FOKKER D7 (GERMAN)

TWIN-MOTORED 11 PASSENGER FLYING BOAT

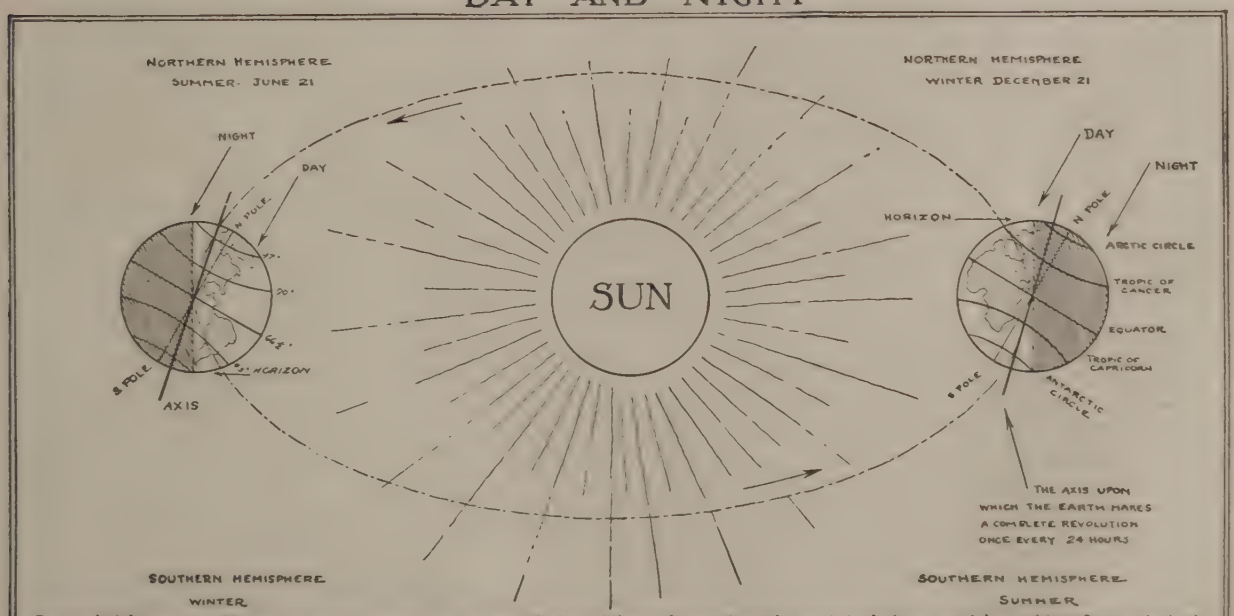
NOTABLE EVENTS AND RECORDS OF AVIATION—Continued

Aviator	Aeroplane	Date	Place	Time	Distance	Remarks
Morane	Monoplane	July 10, 1910	Rheims, France	0:02:48 2-5	3.107 miles	66.417 miles hour. World's record.
Radley	Monoplane	Aug. 10, 1910	Lanark, Scotland	0:00:47 2-5	1 mile	77.6 mi. hr. World's straightaway rec'd.
Le Blanc	Monoplane	Aug. 7-17, 1910	France	10 d. 11 h. 55 m.	485 miles	75 miles one stage. Won first prize.
Aubrun	Monoplane	Aug. 7-17, 1910	France	10 d. 12 h. 15 m.	485 miles	Second prize. 20 minutes later Le Blanc.
Cattaneo	Monoplane	Aug. 13, 1910	Lanark, Scotland	3:18:09 1-5	141 mi. 188 yds.	British record.
Johnstone	Biplane	Sept. 3, 1910	Atlantic, Mass.	3:05:40	101 m. 389 ft.	American record.
Aubrun	Monoplane	Sept. 16, 1910	Bordeaux, France	3:45:30	197 miles	
Brookins	Biplane	Sept. 29, 1910	Chicago, Ill.	5:49:00	192.5 miles	Flew from Chicago to Springfield, Ill.
Hoxsey	Biplane	Oct. 8, 1910	Springfield, Ill.	3:33:00	109 miles	Springfield, Ill., to St. Louis, Mo.
Welsh	Biplane	Oct. 11, 1910	St. Louis, Mo.	3:11:55		
Euler	Biplane	Oct. 25, 1910	Darmstadt, Germany	3:06:11		German record.
Mathieu	Biplane	Oct. 28, 1910	Paris, France		141 miles	Flew within 20 miles of Brussels.
Tabuteau	Biplane	Oct. 28, 1910	Buc, France	6:01:35	289.39 miles	First man to fly six hours continuously.
Moisant	Monoplane	Oct. 30, 1910	Belmont Park, L. I.	0:34:38.84	35 miles (about)	Around Statue of Lbty. $10,000 prize.
Grahame-White	Monoplane	Oct. 30, 1910	Belmont Park, L. I.	0:35:30		
Leganeaux		Dec. 10, 1910	Pau, France			World's high record, reaching 10,500 ft.
Ely		Jan. 18, 1911	San Francisco, Cal.			Alighted on and flew from deck of ship.
Curtiss		Feb. 23, 1911				From land to water and water to land.
Fowler		1912	Jacksonville—San Francisco			First transcontinental flight.
Pegoud		Sept. 1, 1913				First voluntary loop.
	Albatross	July 10, 1914	Johannesthal, Germany			Remained in air 24 hrs. 12 mins.
Oelerich		July 14, 1914	Leipzig, Germany		25,755 ft.	Record altitude flight.
Hawker	Sopwith	1916			24,408 ft.	
Laureati		Aug. 29, 1917	Turin to Naples		920 miles	
	German Dirigible	Nov. 21-25, 1917	Jamboli—East Africa		4,200 miles	
Shroeder	300 hp Wright Mtr.	Sept. 18, 1918	Bristol, England		28,900 feet	
Casale	Spad	1919			31,000 feet	
Read	N.C-4 Plane	May 8-31, 1919	R'k'w'y, L.I.—Ply, Eng.		4,116 miles	Crew 5 men, 1st transAtlantic flight.
Joyce		Jan. 24, 1919	Issondon			300 loops.
Roget & Coll	Breguet Plane	Jan. 26, 1919		5 hours	457 miles	Crossed Mediterranean.
Maynard		Feb. 12, 1919	Romorantin			318 loops.
	Thomas-Morse Scout	Feb. 21, 1919	Ithaca, N. Y.			164 miles per hour.
Macauley	D.H-4	April 16, 1919	Americus,—San Diego	44 hrs. 15 min.		1st round trip transcontinental flight.
White		April 19, 1919	Chicago to New York	106 m. p. h.	727 miles	First non-stop flight.
	U. S. Navy C-5	May 14-15, 1919	Long Isl'd—New Foundl'd		1,115 miles	
Alcock & Brown	Vickers-Vimy	June 14-15, 1919	St. Johns. N.F.—Clifden, Ire.		1,936 miles	First non-stop transAtlantic flight.
Rohlfs	Curtiss "Wasp"	July 30, 1919	Mineola, L. I.		30,700 feet	
	British Dirigible	July, 1919	Gt. Britain—U. S. & return		6,330 miles	First round trip transAtlantic flight.
Shroeder	Liberty Motor	Aug. 2, 1919			18,400 feet	Averaged 137 miles per hour.
Marshall	Thomas-Morse	Aug. 2, 1919	Ithaca, N. Y.		35 miles	Glided.
Goliath		Aug. 11, 1919	Paris to Morocco	16 hrs. 20 min.	1,116 miles	Carried 10 passengers.
Rohlfs	Curtiss "Wasp"	Sept. 18, 1919	Mineola, L. I.		32,450 feet	
Smith	Vickers-Vimy	Nov. 12-Dec. 19, '19	London—Pt. Darwin, Aus.		11,500 miles	
	U. S. Navy Squadron	1920	Philadelphia to Porto Rico	1,192 hrs. 25 m.	12,731 miles	Flew in storms against strong winds.
		1920	Oregon and California	1,995 hours		Fire patrol reported 464 forest fires.
Schroeder	400 hp. Liberty Mtr.	Feb. 26, 1920	McCook Field, Dayton, O.		33,114 feet	Fell 5 miles, recovered, made landing
		Mar. 5, 1920	Calcutta to Bombay	17 hours	1,200 miles	
VanRynev'd & Brand		Mar. 20, 1920	Cape to Cairo			First Cape to Cairo flight.
Knight		Mar. 30, 1920	Chicago to Cleveland	2 hrs. 10 min.	340 miles	Averaged 152 m. p. h., 16,000 letters.
	Handley-Paige	May 4, 1920		1 hr. 20 min.	4,267 meters	Carried load of 1,500 kilograms.
Fronval		June 1, 1920	Villa Coublay, France	3 hrs. 52 min.		Record of 962 loops.
	Farman-Goliath	June 3-4, 1920		24 hr. 19 m. 7 s.	1,915 miles	
Hudson	Curtiss "Wasp"	June 12, 1920	Andes		30,000 ft. ele.	
	Seaplane F-5-L	July 7, 1920	Norfolk		97 miles	Guided by radio to U. S. ship, returned
Street	D.H.-4-B	July 15 to Aug. 24	New York to Alaska	55 hours		First flight to Alaska.
Hamilton	Parachute	Aug. 21, 1920	Carlstrom Field	12 minutes	20,900 feet	
	Two Army Planes	Sept. 5, 1920			75 feet	Var. Pitch props. stop plane 75 ft. from where landing gear 1st touched gr'd.
Lecointe		Oct. 10, 1920	Villa Coublay, France			Speed record of 188 miles per hour.
Mosley	Verville-Packard	Thanksgiving 1920	Garden City, L. I.	44 min. 29.57 s.	132 miles	Average 178 miles per hour.
Kloor, Hinton Farrell	U. S. Balloon	Dec. 24, 1920	New York to Ontario	25 hours	852 miles	
	U. S. Navy Seaplane	Jan. 1, 1921	San Diego—Magdalena Bay	9 hrs. 15 min.	702 miles	Estab. non-stop flight, 6 passengers.
	12 Navy Seaplanes	Jan. 15, 1921	San Diego—Panama Canal	17 days	3,200 miles	Nine stops made.
Chambers	Parachute	Feb. 22, 1921	Fort Sill, Okla.		22,200 feet	Parachute jump.
Coney		Feb. 24, 1921	San Diego to Jacksonville	22 hrs. 27 min.	2,180 miles	Completes transcontinental flight.
Larsen	J-L-6 Monoplane	Mar. 15, 1921	Peace River to Great Slave Lake, Alberta, Can.			Completes long exploring flight.
Hamilton	Parachute	Mar. 23, 1921	Rantoul, Ill.		23,000 feet	Breaks own record jump.
	Curtiss-Wright	Mar. 26, 1921	Belleair, Fla.			Stops within 15 feet.
Macready&Langhan	Biplane	May 6, 1921	McCook Field, Dayton, O.		34,150 feet	Makes two-man altitude record.
Lemon	Parachute	May 28, 1921	El Reno, Okla.		150 feet	Record low altitude parachute jump.
Barrufald		June 10, 1921	Argentine, S. A.		24, 272 feet	South American altitude record.
Klemperer	Glider	Aug. 1, 1921	Wasserkuppe—Gersfeld, G.		5 miles	Arose 400 ft. above starting point.
Armbruster	Balloon	Sept. 17, 1921	Brussels—Lombey Is., Ire.		515.14 miles	Won Int'l Gordon-Bennet balloon race
Lecointle		Sept. 25, 1921	Nieuport, France			Speed of 330 km. p. h. (204.6 m. p. h.)
Macready	Packard-Lepere	Sept. 28, 1921	McCook Field, Dayton, O.		40,800 feet	Makes world's record.
Ramey	D.H-4-B	Oct. 11, 1921	Washington to New York	79 minutes	220 miles	Record flight.
Acosta	Curtiss Navy Racer	Nov. 22, 1921	Curtiss Fld., G'd'n City, L.I.			Speed of 197.8 miles per hour.
	C-7 Navy Blimp	Dec. 1, 1921	Norfolk, Va.			Helium used successfully in first test.
Haynes	D.H.-4 Messenger	Feb. 4, 1922	Dayton, O., to Wash., D. C.	2 hrs. 55 min.		Record non-stop flight, aver. 147 m. p. h.
Trinler	Longren Biplane	Mar. 6, 1922	Topeka, Kan.	140 minutes	17,900 ft. alt.	
Moyer & Fitch	Army Airship C-2	April 6, 1922	Aberdeen Pvg. Grds., Md.		2,000 feet	Made 7 hits out of 8 bombs.
Webster	Flying Yacht	April 17, 1922	Palm Beach, Fla., to N. Y.	9 hrs. 56 min.		Passengers carried, one-stop.
Doolittle & Andrews		Mar. 4, 1922	Kelly Fld., Tex.—Pac. C'st	13 hrs. 25 min.	1,200 miles	Fastest time ever made.
	Aeromarine	May 9, 1922	Havana, Cuba, to New Yk.	17 hrs. 35 min.		Carried nine passengers.
Westover	Balloon	May 31, 1922	Milwaukee, Wis.		866.5 miles	Winner of Nat'l Ballon Race.
Stevens	Martin Bomber	June 12, 1922	McCook Field, Dayton, O.		24,206 feet	Record parachute jump.
	Aeromar'e Flying Bt.	July 21, 1922		82 minutes	117 miles	With 7 passengers estab. speed record.
Hayes & Kolinsky	D.H.-4-B	Aug. 2, 1922	Kelly Fld., Tex.—N. Orl'ns	4 hrs. 30 min.	560 miles	
Wade	Martin Bomber	Aug. 2, 1922	McCook Field, Dayton, O.		23,350 feet	Breaks own record, with 3 passengers.
De Muyter	Free Balloon	Aug. 6, 1922	Geneva, Switzerland		870 miles	Won Gordon-Bennet Int'l balloon race.
Zimmerman	Junker Seaplane	Aug. 7, 1922	Naples, Italy	17 h. 8 m. 5 1/5 s.	1,996.3 km.	Winner of Tyrrhenian Cup.
Biard	Supermarine	Aug. 12, 1922	Naples, Italy	1 h. 34 m. 5 3-5 s.	200 naut. mi.	Won Jacques Schneider Competition.
Hentzen	"Vampire" Glider	Aug. 25, 1922	Rhon, Germany	3 hrs. 10 min.		Record for motorless flying.
Papa		Aug. 29, 1922	Milan, Italy		1 km.	Makes record of 208.5 miles per hour.
Moseley & Coleman	Fokker CO-4	Sept. 1, 1922	Dayton, O., to San Fran.	26 hrs. 15 min.		Fogs and heavy storms no obstacle.
Doolittle		Sept. 5, 1922	Jacksonville to San Diego	21 hrs. 20 min.		1st transcontinental flight under 24 hrs.
Lasne	Biplane	Sept. 30, 1922	Sauvage Airdome, France		186 miles	Won Deutsch de la Meurthe.
Miller		Oct. 2, 1922	San Fran. to Los Angeles	2 hrs. 58 min.		Breaks record by seven minutes.
Gorton	Navy TR-1	Oct. 8, 1922	Detroit, Mich.		257.7 miles	Winner Curtiss-Marine flying race.
Nelson	Martin Transport	Oct. 12, 1922	Mt. Clemens, Mich.		257.7 miles	Won Detroit News Air Mail trophy race.
Mitchell		Oct. 18, 1922				Breaks world's straightaway speed rec.
Kelly & Macready	Fokker Army T-2	Nov. 14, 1922	San Diego to Indianapolis		2,060 miles	Record non-stop flight.
Bossoutrot	Farman F-90	Nov., 1922	France			Winner grand prize of France.

NOTABLE EVENTS AND RECORDS OF AVIATION—Continued

Aviator	Aeroplane	Date	Place	Time	Distance	Remarks
Manyrol	Peyret Glider	Jan. 29, 1923	France	8 h. 4 m. 50.4 s.		Record glider flight.
Pearson	Verville-Sperry	Mar. 29, 1923	McCook Field, Dayton, O.		500 km.	Record 500 km. at 167.8 miles per hour.
Maitland	Curtiss Army Racer	Mar. 29, 1923	Dayton, Ohio			Record speed at 239.95 miles per hour.
Harris	D.H. 4-B	Mar. 29, 1923	Dayton, Ohio		100 km.	World's record for 100 km., 127 m.p.h.
Macready & Kelly	Fokker Army T-2	April 16-17, 1923	Dayton, Ohio	36 h. 4 m. 32 s.		Duration and speed record for 2,500 km.
Macready & Kelly	Fokker Transport	May 2, 1923	N. Y. to San Diego, Cal.	26 hrs. 50 min.	2,516.35 miles	Record non-stop flight.
Smith & Bitcher	D.H. Plane	Aug. 27-28, 1923	San Diego, Cal.	37 h. 15 m. 14 s.		Endurance record.
Williams	Curtiss Navy Racer	Oct. 6, 1923	St. Louis, Mo.			Winner Pulitzer trophy race.
Zimmerman	Flying Boat	Oct. 23, 1923			13,500 feet	Had six other passengers.
Smith & Bitcher	D.H.-4-B Special	Oct. 25, 1923	Canadian—Mexican Border	12 h. 13 m. 40 s.	1,280 miles	Refueled in air three times.
Harris	Barling Bomber	Oct. 29, 1923	Dayton, Ohio	1h.19m.11.8 s.		World's duration rec. with load 3,000 k.
Lecointe	Nieuport Delage	Oct. 30, 1923	Issu-les-Moulineaux, France		36,555 feet	World's Altitude record.
Bonnet	Biplane	Oct. 31, 1923	Paris to Strassburg		745 miles	Winner Lamblin Cup, 122 m. p. h.
Rodgers & Palmer	D.H.-4-B	Nov. 2, 1923	Haiti—San Fran.—Wash.		8,600 miles	Made without a forced landing.
Williams	Curtiss Navy Racer	Nov. 4, 1923	Mitchell Field, L. I.		3 km.	World's speed record, 266.59 m. p. h
Williams	Curtiss Navy Racer	Nov. 6, 1923		1 minute	5,000 feet	World's record.
Laporte	F. B. A. Flying Boat	Nov. 30, 1923	France		19,024 feet	Record Altitude flight.
Chamberlin-Acosta	Monoplane	Apr. 12-14, 1927	Long Island, N. Y.	51 h. 11 m. 25 s.		World's non-stop record.
Lindbergh	Ryan Monoplane	May 21-22, 1927	Long Island, N.Y.—Paris	33 h. 29 m. 30 s.	3,610 miles	World's non-stop record.
Chamberlin-Levine	Bellanca	June 4-5, 1927	N. Y.—Eisleben, Ger.	41 h. 35 m.	3,905 miles	World's non-stop record.
Maitland-Hegenberger	Fokker	June 28-29, 1927	Oakland, Cal.—Hawaii	25 h. 50 m.	2,400 miles	Pacific non-stop record.
Byrd-Acosta-Noville-Balchen	Fokker	June 29-30, 1927	Long Island, N.Y.—Ver-suv Mer, France	39 h. 56 m.	3,435 miles	
Lindbergh	Ryan Monoplane	Dec. 13, 1927, to Feb. 13, 1928	U. S. to Mexico, Central and South Americas	116 flying hrs.	9,060 miles	First non-stop flight, Washington, D. C., to Mexico City. Good will tour.
Chas. Holman		Feb. 12, 1928	Wold-Chamberlain airport, Minneapolis	4 hrs. 47 mins.		World record for 1,093 loops.
Capt. Costes & Lt. Lebrix	Brequet Bi-plane	Oct. 10, 1927, to Feb. 11, 1928	Paris to New York via Africa and South America	Average 107 mi. per hour	23,000 miles	
Haldeman & Stinson	Stinson Monoplane	March 31, 1928	Jacksonville, Fla., U. S.	53 hrs. 36 mins.		New endurance record.
Koehl, Von Huenefeld & Fitzmaurice	Junkers Monoplane	April 12-13, 1928	Berlin to Ireland, to Labrador to U. S.	34 hrs. 32 mins.	2,125 miles	First westward non-stop flight across Atlantic.
Wilkins & Eielson	Lockheed Monoplane	April 15-16, 1928	Pt. Barrow, Alaska, to Svalbard (Spitzbergen)	20½ hours	2,200 miles	Over North Polar Sea.
10 U. S. Army Men	Tri-motor 16-Passenger Ford	April 15, 1928	Chanute Field, Rantoul, Ill.	8.2 mins.		New world's record for successful leaps from airplane.
Kingsford-Smith, Ulm, Lyon & Warner	*Southern Cross*, Fokker Monoplane	May 31, 1928, to June 10, 1928	Oakland, Cal., to Sydney, Australia	11 days	7,800 miles	First flight across Pacific Ocean.
Amelia Earhart, Stultz & Gordon	Fokker Monoplane	June 17, 1928	Newfoundland to Wales	20 hrs. 40 mins.	2,000 miles	First transatlantic flight of a woman.
Maj. Carl Spatz and Associates	*Question Mark*, U. S. Army Fokker Monoplane	Jan. 1 to Jan 7, 1929	Metropolitan Airport, Los Angeles	150 hrs. 40 mins. 15 secs.	Nearly 12,000 miles	Longest flight of any form of aircraft.
Martin Jensen	Bellanca Monoplane	Mar. 27, 1929	Roosevelt Field, L. I., N. Y.	35 hrs. 33 mins. 21 secs.		World's record for non-stop solo flight.

DAY AND NIGHT



Day and night are caused by the turning of the earth on its axis. The half of the earth away from the sun is in darkness or night; and it is day on the half toward the sun. The complete trip of the earth around the sun determines the length of the year.

ASTRONOMY is the science of the heavenly bodies. It has evolved from the ancient astrology which assumed that the relative positions of heavenly bodies, as seen from earth, influenced human life and destiny. Astrology, asserting the ability to ascertain such influence, could predict the future of realms and potentates, even the individual. So it was a useful science, and the earliest astronomers were emperors and princes, who built and maintained observations, and themselves made the observations and all the calculations based on them. The practical needs of astrology, therefore, led to accurate observations of the sun, moon, stars and planets, in order to predict therefrom their future positions. So the astrology of the middle ages merged naturally into the astronomy of the Renaissance. As the fundamentals of astrology were abandoned, the utilities of astronomy were accepted and adopted; and the science of to-day embraces many subdivisions not wholly distinct, and which in many instances blend and overlie.

Chronological Astronomy fixes the exact relations of the time-units of the calendar, and settles disputed dates of ancient battles, reigns of kings and other historic events.

Nautical Astronomy, by observation and calculation, enables the navigator to conduct ships from port to port in safety.

Geodetic Astronomy supplies the basis for

measuring the earth, and mapping all its features accurately.

Spherical Astronomy is the application of spherical trigonometry to the celestial sphere.

Theoretical and Mathematical (formerly called *physical*, or *gravitational*) **Astronomy** unfolds the laws governing the motions of the heavenly bodies, and enables us to calculate their position at any past or future time.

Practical Astronomy is the art of using astronomical instruments, making observations with them, and calculating results therefrom.

Descriptive Astronomy is a systematic presentation of our knowledge of the motions, characteristics, and phenomena of the heavenly bodies.

Physical Astronomy or astrophysics is the science of the physical characteristics and constitution of the heavenly bodies; that is, physics and chemistry applied to astronomy.

Speculative Astronomy includes the cosmogony, planetology, plurality of worlds, habitability of the planets, and other subjects of astronomical investigation where no absolute conclusion is possible.

Astronomical Bodies.—The astronomical philosopher divides the bodies of the visible universe into five general classes:

Nebulae, faint, cloudlike objects, thousands of which are visible in the telescope, widely variant in figure, the most common and probably primordial form being the spiral nebula.

Stars, many millions of which exist, brilliant, self-luminous bodies, and with a single exception (the sun) so vastly remote as to resemble mere glistening points.

Planets, opaque bodies, few in number, far inferior to the stars in size, tributary to and dependent upon the sun, the earth being a planet of medium size.

Comets, peculiar tenants of interplanetary and interstellar space, self-luminous, semi-opaque, and composed of shoals of lesser bodies partly solid and partly gaseous, called meteors.

Meteoric Bodies, fragments of disintegrated comets, made up of elemental combinations similar to terrestrial ones, and scattered everywhere throughout the celestial spaces.

All knowledge of these bodies of the universe is embraced in the astronomy of the present day.

The Solar System is a vast assemblage of many hundred bodies classifiable in five divisions: (1) the sun, central, massive, dominant and self-luminous; (2) about 700 opaque, sun-illumined bodies called planets, of which the earth is one; (3) about 30 bodies called moons, or satellites, revolving around the planets, our moon being one of the largest; (4) many hundred comets, slight in mass but huge in dimension, self-luminous, usually with tails and often spectacular in appearance; (5) innumerable meteors, or shooting stars, fragments of disintegrated comets.

Ptolemaic Theory.—Astronomers of the ancient time taught that the earth was the center of the solar system, and that all the other bodies, even including the sun, traveled around it, each in its own earth-centered sphere of crystal. This false theory is known as the geocentric (that is, earth-centered) or Ptolemaic system, from Ptolemy (A. D. 140) a Greco-Egyptian, perhaps the most eminent of all ancient astronomers, whose chief work is entitled *The Almagest*.

Copernican Theory.—With the dawn of the Renaissance, Copernicus (1473–1543) advocated the true, or heliocentric (that is, sun-centered) system; but many years elapsed before it was accepted. Tycho Brahe (1546-1601) by a lifetime of effort at his famous observatory of Uraniborg, furnished an unparalleled mass of observations of the planets, especially Mars, showing their relative position among the stars.

Kepler's Laws.—Kepler (1571–1630) studied these observations for years, and eventually established three laws of planetary motion: (1) Every planet travels round the sun in an elliptic path, with the sun's center in one focus; (2) the radius vector, or line joining the centers of sun and planet, sweeps over equal areas of the ellipse in equal times; (3) the squares of the planets' times of revolutions around the sun are proportional to the cubes of their average distances from the sun's center.

Law of Gravitation.—Then came Sir Isaac Newton (1642–1727), who combined all three of Kepler's laws into a single one, known as the law of universal gravitation, as follows: Every body in the universe attracts and is attracted by every other body, with a force depending upon their mass, and growing less in exact proportion as the square of the distance between the bodies grows greater. Kepler gave no explanation of his laws, nor did Newton of gravitation, the cause of which remains yet unknown.

Age of Solar System.—The solar system is inconceivably old, but it is believed to have had a beginning, and to be drifting very slowly toward an end. Its entire lifetime is counted in hundreds of millions of years, so that human documents within historic time contain no record of cosmic change, in either the system or the earth itself. Certain it seems, however, that very gradual changes must be taking place. Apparent evidence of this is furnished by close comparative study of the planets. Proctor (1837-88), Flammarion (1842-19—), and Lowell (1855–19—) have devoted much attention to this speculative research.

We may summarize their conclusions briefly by saying that some of the bodies of the solar system (sun, Jupiter, Saturn, Uranus, Neptune) are as yet undeveloped to the life-supporting era, because of intense internal heat; others (earth, Venus, the Galilean moons of Jupiter, and possibly Mars) have a constitution and temperature hospitable to life; while still others (asteroids and lesser satellites, the moon, Mercury, and possibly Mars) have likely been habitable in the remote past, but are no longer capable of sustaining life.

The solar system is not at rest in interstellar space, but the sun with all its planetary freight is voyaging toward the northern constellation Lyra about twelve miles a second. Whether this motion is in a straight line or in a vast orbit around some stellar center is yet unknown.

The Sun is a dense, gaseous sphere, 866,000 miles in diameter, inconceivably hot (perhaps 10,000° F.), and 93,000,000 miles distant from the earth. The sun is exceedingly massive—330,000 planets like the earth fused in one would barely weigh as much as the sun. Gravity at the sun's surface is nearly twenty-eight times greater than here on earth—an average man would weigh a ton there. Slowly round on its axis the sun turns once in 27¼ days.

The Outer Surface of the sun is not solid, but atmospheric; and the phenomena of this surface confirm beyond question the existence of swift, tumultuous currents, not only sidewise but up and down, in the vaporized materials composing the outer layers. Most prominent of these is the photosphere, an unbroken mass of incandescent cloud a few thousand miles in depth. Just outside the photosphere is a vapor-laden atmosphere called the reversing ayer, probably less than a thousand miles deep. It causes the dark absorption lines of the solar spectrum first mapped by Fraunhofer (1787–1826), and named after him. Rising to vastly greater heights than the reversing layer is the chromosphere (color-sphere), chiefly hydrogen, calcium and helium, averaging seven or eight thousand miles in depth. Projected from the chromosphere, sometimes quiescent in form and again violently eruptive, are the scarlet prominences, or protuberances. All these interesting phenomena of the sun's surface are now photographed daily by means of the spectroheliograph of Hale (1868–19—) and Deslanders (1853-19—).

Far outside the chromosphere is a sort of quasi-atmosphere, seen only when the sun itself is totally eclipsed, and called the solar corona—an irregularly filamentous halo of pearly light, whose long streamers often stretch millions of miles into space, with the soft radiance of a comet or a distant searchlight. Its cause and significance are very obscure. In part at least, the corona seems to be an electro-magnetic phenomenon.

Sun Spots.—Spots on the sun are sometimes large enough to be seen without telescopic aid. They are well viewed through a small telescope by projection on a white screen. The largest spots are about 50,000 miles across, and the smallest are mere dark specks 500 miles in breadth. Spots are never permanent, though they sometimes endure for many months. The dark center of a spot (umbra) is surrounded by a less dark, ring-shaped area (penumbra). After many days the umbra usually begins to break up by bridges of penumbral light forming across it, a train of small spots forms, and these gradually fuse into the general surroundings of the photosphere. Schwabe (1789–1875) first discovered that sun spots appear and disappear in a pretty regular period of $11\frac{1}{9}$ years. They were very numerous in 1905 and fewest in 1900 and 1911. Spots are most frequent in solar latitudes 15 degrees north and south.

Students of the sun are not wholly agreed as to the cause and significance of sun spots. The true cause appears to lie in the sun itself; probably the spots are consequent on eruptions. Many of them are hollows, or depressions, in luminous matter ascending as well as descending. Frequently they are cyclonic, as demonstrated by recent photographs of Hale. Epochs of large or numerous spots are nearly always accompanied by displays of the aurora, magnetic disturbances and electric earth-currents, sometimes powerful enough to interfere with the working of telephones and telegraphs.

Whether sun spots, protuberances or corona have any effect upon the weather is not yet sufficiently proven. When spots have been very abundant, the weather (for the earth generally) has been sometimes less rainy, sometimes more so; sometimes warmer, sometimes colder, than the average. So that weather disturbances due to fluctuating conditions on the sun are at best very slight and undetermined. Faculæ, or bright spots, are frequent near the edge, or limb, of the sun, and the spectroheliograph

has proved that they exist everywhere on the sun's surface. Many of them are the tops of incandescent calcium clouds.

Chemical Composition.—Close study of the sun's spectrum for a half century has revealed many terrestrial elements in the sun in the vapor state—aluminium, calcium, carbon, cobalt, copper, hydrogen, iron, magnesium, nickel, oxygen, silicon, silver, sodium, titanium, zinc and many others. Iron, calcium, hydrogen, nickel and sodium are the most strongly indicated. But chlorine, gold, mercury, nitrogen, phosphorus and sulphur are not present.

Light and Heat.—So dazzling is the radiance of the sun that all artificial sources of light pale against it—even the arc light seems black by comparison. Even the spots emit light and are only relatively dark. The sun's total light surpasses that of the full moon 600,000 times. If the sun's heat could be fully utilized, the deck of a steamer on tropical oceans receives enough to maintain it at a ten-knot speed. The sun's light and heat are essentially constant, and their maintenance is satisfactorily explained on the theory of slow but continuous contraction upon itself by its own gravity. A practical method of converting the sun's heat into available mechanical energy will be one of the great discoveries of the future.

The Moon, nearest of all celestial bodies to us (239,000 miles), and brightest of all save the sun, is a solid, opaque sphere of very rough contour, traveling around the earth once in 27⅓ days. The moon's motion easterly from night to night is obvious, if we refer it to the stars; and it passes over its own breadth (about half a degree) every hour. Occasionally a star is hidden behind it (occulted)—a very sudden phenomenon at either disappearance or reappearance. Sometimes a planet suffers occultation; and when the moon occults the sun, a total eclipse takes place. A fortnight earlier (or later) an eclipse of the moon itself is liable; but this is due to the moon's passing through the earth's shadow, so that sunlight is for the time withdrawn from it.

Light.—Half of the moon's sphere is always illuminated by the sun, and it is the amount of this illuminated half turned toward us that causes the moon's phases. Much of the time between new moon and either quarter, the ashy light of the unilluminated part of the moon's disk is faintly visible, called the "old moon in the new moon's arms." It is caused by sunlight reflected from the earth. Eastward progress of the moon makes it rise on the average about three-quarters of an hour later from night to night. The full moons of autumn rise with a daily retardation of less than half this amount; so they are called (in September and October) harvest moon and hunter's moon.

The spectroscope shows that the moon's light and sunlight are identical in composition. We often say the full moon is as bright as day, but a half million full moons would not equal the sun's radiance.

Dimensions.—The diameter of the moon is 2,160 miles, easily ascertained after her distance is found. The distance is not difficult to determine, once we know the size of the earth, and can tell the straight-line distance between two observatories, as Greenwich and Cape Town. This becomes a base-line from which the distance between the earth's center and the moon's can be found by a trigonometric solution. Eighty-one globes like the moon rolled into one would equal the mass, or weight of the earth, and surface gravity is a sixth what it is here. An average man would weigh but 25 pounds there, and an athlete with terrestrial thighs would find a 30-foot standing jump mere exhilaration. The moon turns round on its axis very slowly—only once, in fact, while it is making one complete journey round the earth. So that the half turned toward us is always the same, and no one has ever seen the other side of the moon. Her atmosphere, if the moon has any, must be very slight; and water, if at all, must exist as ice.

Heat.—Lacking an atmosphere to absorb and retain the solar heat, the lunar surface must always be intensely cold. Moon's perigee (least distance) and apogee (greatest distance) cause a slight disturbance of magnetic needles; but the changing phases of the moon, especially the angle of the cusps with the horizon, are not responsible for any weather changes that the critical expert has ever been able to discern.

Surface.—The moon's surface is highly diversified by a wealth of smooth, darkish patches, named *mares* (seas), now regarded as desert plains; a few mountain chains; hundreds of rills or valleys; numerous systems of radiating streaks; and over 30,000 ring mountains of all sizes from a mile in diameter to a breadth sixty times that. All details of the lunar surface are mapped and named. Hevelius (1611-87) of Danzig made the first map of the moon, and Schmidt (1825-84) of Athens the last. The recent photographic atlases of the Lick and the Paris observatories show the lunar surface very satisfactorily, and Ritchey (1864-19—) attained even greater success with the Yerkes telescope. Changes on the moon, if at all, are on a very small scale, too minute for detection with present instruments.

The Planets, in the order of their distance from the sun, are Mercury, Venus, earth, Mars, asteroids (about 700), Jupiter, Saturn, Uranus, and Neptune. No planets have yet been discovered inside of Mercury's orbit, or outside that of Neptune. Venus is the brightest planet, and Jupiter comes next. With Mars, Saturn and Mercury, these are all that are easy to see with the naked eye.

Inferior and Superior.—Mercury and Venus are classified as inferior planets, because their orbits are within the earth's; all the others are superior, that is, outside the earth's. To the naked eye none of the planets have appreciable disks or phases, but with the telescope Mercury and Venus pass through all the phases of the moon. Of the superior planets Mars alone exhibits a considerable phase, being at times gibbous, or like the moon two days from full.

Motion.—The planets are so named because they appear to move among the stars. The general trend of their motion is eastward (direct motion) along the ecliptic, or sun's apparent path. But during a part of each year every planet also travels westward (retrograde motion). When nearest the earth a planet's motion is retrograde; when farthest, direct. The ancients explained this forth and back motion of the planets by means of the epicycle of the Ptolemaic system; whereas it is really due to composition of earth's and planet's own motions around the sun.

Venus is a bright evening star in the western sky in August 1911, March 1913, October 1914, May 1916, December 1917 and August 1919. Mercury and Venus when nearest are at inferior conjunction; superior planets when nearest are at apposition. At inferior conjunction, Mercury and Venus sometimes pass directly between earth and sun, called a transit.

Dates of transits of Mercury are May of 1878, 1891, 1924 and November of 1868, 1881, 1894, 1907, 1914. Transits of Venus are much less frequent—December of 1631, 1639, 1874, 1882 and June of 1761, 1769, 2004, 2012.

For all details of motion of the planets, their distance from earth and sun, and positions in the sky at any time, consult the *Nautical Almanac*, a mathematical work based primarily on what are termed the "elements of the orbits." These technical quantities express with accuracy the size, form and position of the planetary orbits in space.

The Northern Lights (aurora borealis of the northern hemisphere, and aurora australis of the southern) are a phenomenon of the earth's atmosphere. This composite, compressible gas is rather less than one-millionth the earth's weight, is a hundred miles or more in depth, its density increases rapidly downward, and at the bottom of this ocean of air humanity lives and moves and has its being. The atmosphere bends downward the rays of light coming from all celestial bodies, causes the twinkling or scintillation of the stars, and the common phenomena of dawn and twilight. The aurora is another phenomenon of the atmosphere, a soft, vibrating luminosity, streaming upward into the sky, sometimes to the zenith, exhibiting greenish yellow, pale blue and other tints, occasionally with pulsating streamers. The semiperiodic recurrence of the aurora connects it with sun spots and protuberances. The magnetism of the earth as influenced by the condition of the sun appears responsible for the aurora, a species of luminosity in the very rare gases of the upper atmosphere.

Comets nearly a thousand in number have been recorded within historic time. Half have had the paths of their motion in space ascertained. If the orbits of two or more are the same, it is generally true that they are not different comets, but the same body moving in an elliptical track around the sun, which is situated (as in planetary orbits) at one focus of the ellipse.

Halley (1656–1742) first made this important discovery, and the comet which in

Planet's Name	Distance From the Sun		Eccentricity of Orbit	Inclination to Plane of Ecliptic	Time of Revolution Around the Sun	Length of Planet's Day	Diameter of Planet in Miles
	Earth's Equals Unity	In Millions of Miles					
Mercury	0.39	36	0.206	7° 0′	88d.	88d.	3,000
Venus	0.72	67	0.007	3° 24′	225d.	225d.	7,700
Earth	1.00	93	0.017	0° 0′	365¼d.	23h.56m.	7,900
Mars	1.52	142	0.093	1° 51′	687d.	24h.37m.	4,200
Jupiter	5.20	483	0.048	1° 19′	12y.	9h.55m.	87,000
Saturn	9.54	886	0.056	2° 30′	29.5y.	10h.13m.	73,000
Uranus	19.18	1780	0.046	0° 46′	84y.	Unknown	30,000
Neptune	30.06	2790	0.009	1° 47′	165y.	Unknown	30,000

consequence bears his name returns to the sun at intervals of about seventy-six years. Before his time comets were thought to move in straight lines through space. So it seemed quite possible that a comet might collide with the earth and wreak destruction thereon. In such case, however, collision would doubtless destroy the comet.

Description and Development.—If we conceive of a vast congeries of separate particles, varying in size from grains of sand to that of large buildings, these masses not compacted together but loosely related or hundreds of miles apart, traveling in shoals through space, we shall have the modern notion of a comet. During most of the time comets are dark invisible bodies; but, on approaching the sun within 500 million miles, they gradually begin to glow with a self-luminosity, and are visible in the telescope as faint, round patches of cloud-like light. Their true nature is detected by apparent motion among the stars from night to night. Most telescopic comets never develop beyond this simple stage; but the larger ones, on approaching near the sun, form first a nucleus, then a corona, or head with curving envelopes, or sheaths, sometimes opening toward the sun like an unfolding fan. Later follows development of the tail, quite invariably on the side away from the sun. Often it stretches through space many millions of miles, giving the comet a bizarre and spectacular appearance which no other heavenly body possesses.

Comets sometimes have two or more tails; one had six (in 1744). Differences in their curvature are perhaps due to the nature of the volatile gases composing them—the straight tails due to hydrogen, the slightly curving ones to hydrocarbons, and the stubby, sharply curved tails to vapor of iron or chlorine. The showy tail is formed at the expense of the head and its particles never return to the comet again. A slow disintegration thus takes place at every return. When near the sun the head of a comet shines very faintly by reflected solar rays, and the spectroscope shows that the light of comets is mainly due to hydrocarbons, cyanogen and sodium.

The Great Comets and Their Discoverers.—Two French astronomers, Pons (1761–1831) and Messier (1730–1817), are the most famous of all discoverers of comets. In America Swift (1820–19—), Brooks (1844–19—) and Barnard (1857–19—) have been most successful. Discoveries are now sometimes made by photography. Encke's comet moves around the sun in the shortest period (3⅓ years), and is noted also for freaky changes of form. The largest and brightest comet ever seen came in 1843, stretching from horizon to horizon. It approached nearest to the sun of all known comets, and was visible to the naked eye at noon. Probably the outer regions of its head brushed through the streamers of the solar corona. Its velocity at perihelion was more than one and a quarter million miles per hour, and its tail was 150 million miles long. This comet will not return for 500 years. Other very bright and striking comets appeared in 1811, 1858 (Donati's), 1861, 1874 (Coggia's), 1882, 1887, and 1910. In extreme cases comets are visible a year and a half to two years. Occasionally one is discovered during a total eclipse of the sun (as in 1882 and 1893), and never seen again.

Meteors, or shooting stars, are fragments of comets rendered luminous by impact and friction with our atmosphere. Comets have been caught in the act of breaking up, as Biela's in 1845–6, and Brooks' in 1893. Generally, however, disintegration takes place very slowly, and the cometary fragments are thus scattered everywhere along the paths of these bodies. Showers of such fragments come within reach of the earth's attraction every day. For the most part they are dissipated in the upper air; but occasional fragments that reach the earth's surface, called meteorites, are found by chemical analysis to have the same constitution as comets themselves. Meteorites are either stones or irons, the latter yielding a large percentage of nickel. Fine American collections of meteorites are in the museums of Chicago, New York, Washington, Cambridge, New Haven and Amherst.

The Stars are situated at incomprehensible distances in the depths of space. To express these enormous distances, an astronomical unit is employed called the light-year: it is nearly six trillions of miles in length, and is the distance that a light-wave (whose speed is 186,000 miles per second) travels in a whole year. So astronomers have ascertained that Alpha Centauri, the nearest known fixed star, is four light-years away, Sirius is double that, Vega thirty light-years, Polaris seventy, and Castor 120, and so on.

Classification.—The stars are variously classified, first by their apparent magnitudes, or order of brightness. There are about twenty stars of the first magnitude, sixty-five of the second and 200 of the third, proceeding in geometric progression; 5,000 of the sixth, 720,000 of the tenth magnitude, and so on. An average first-magnitude star gives two and a half times more light than one of the second magnitude, and so on, by a nearly constant relation. In a clear, dark sky the average sixth-magnitude star is the faintest visible to the naked eye.

But the telescope reveals stars fainter and fainter, until the seventeenth magnitude is reached, as a *minimum visibile* in a forty-inch lens. Keeping pace with their diminution in brightness, the number of the stars increases, until their total is estimated at 150 millions. Dark or non-luminous stars there are also, and some astronomers think these exceed the luminous ones in number. The total light from all the stars is rather more than a hundredth that of the full moon.

Colors.—Another but less marked classification of the stars is by their colors; still another by their spectra, of which there are not less than five types, by the scheme of Secchi (1818-78):

(I.) *Sirians*, stars with spectra resembling that of Sirius, with broad, dark hydrogen lines.

(II.) *Solars*, with spectra resembling the sun's, with fine, dark metallic lines. Practically all the stars are evenly divisible between types I. and II.; and stars of type II. are least remote from the sun.

(III.) *Dark*, banded spectra, with bands well-defined on the blue-ward side.

(IV.) *Spectra* with dark bands, or flutings, fading out toward the blue. Stars of this type are few, faint, blood-red in hue, and their atmospheres are charged with carbon.

(V.) *Stars* with bright-line spectra.

Classification of stars by their ages, indicated by the character of their spectra, has been attempted. The spectra show that all the stars are self-luminous.

Yet another classification recognizes variable stars, new or temporary stars, double and binary stars, multiple stars, star clusters and nebulæ. About 4,000 stars are variable; that is, their light is subject to fluctuation, regular or irregular. Some of them are like Algol, whose light is for a long time at its brightest, and then faint (minimum) for a relatively brief span. Such fluctuations of brightness are due to temporary occultation by a large, dark star whose orbit lies nearly edgewise to our vision. Others are called Omicron Ceti variables, also after the type star, often called "Mira the Marvelous." Variables are especially numerous in the thick fields of star clusters.

Of double stars more than 10,000 are now catalogued—stars with a near-by companion usually much fainter than the bright component. Burnham is the chief American discoverer of these objects. Hundreds of doubles belong to the class of binaries, whose components revolve around their common center of gravity in an elliptic orbit, generally in a long period of years. These paths are usually very eccentric, and the masses of the stars often nearly equal.

A similar type has been discovered, called the spectroscopic binary. In such the components are so near each other that the telescope unaided is powerless to divide, or separate them; therefore their spectra overlie. Capella, Castor, Polaris and Spica are spectroscopic binaries. Of all the stars so far examined, nearly one-tenth reveal orbital motion. Multiple stars are those with many components: Epsilon Lyræ, near Vega, is a beautiful system of this sort.

Stellar Clusters are either loose, as the Pleiades, with a few scattering bright stars in a region where the photographic plate shows many thousands; or close, like that in Perseus, with thousands of stars compactly aggregated and forming a denser region of the Milky Way. The whole of this marvelous galaxy, stretching all the way around the heavens, is made up of millions of minute stars, each comparable in size and constitution with our sun, and so immensely remote that their effect is that of a continuous sheet of faint luminosity.

The distance of stars can be stated intelligibly in light-years only, and their location around the sun seems nearly central, like the girdle of meteoric masses comprising the ring of Saturn.

The Nebulae are located among the stars, and 12,000 are now known and catalogued. They appear like faint masses of luminous fog, mostly irregular in form and brightness. Many nebulæ are glowing, incandescent gases, mainly hydrogen, as the spectroscope shows. Some, however, are resolvable into separate faint stars, as in the Milky Way; a few are variable; and as a whole the nebulæ appear like the residue of original chaos from which the universe has, through uncounted millions of years, come into its present state.

Classification.—Nebulæ are often classified as (1) annular, or ring-shaped, (2) spiral, (3) planetary, (4) nebular stars, (5) irregular nebulæ, for the most part large, of which the great nebula in Orion is the finest example. Its light emanates from incandescent hydrogen and helium, it is intimately related to the neighboring stars of the constellation, its distance from the sun is increasing eleven miles a second, and this incomparably vast structure of tangled wisps and twisted cloud-shapes has, like nearly all the other nebulæ, persisted for centuries without any certain change of form.

1. Photograph of the Sun.
2. The Moon, photographed at Lick Observatory.
3. Star Nebula, Milky Way.
4. Typical Sun-spot.
5. A Comet.
6. Craters of the Moon, highly magnified.

The nebulæ are more thickly scattered toward the poles of the Milky Way, and their existence suggested the famous nebular hypotheses of Kant and Laplace, which form the basis of the cosmogony of the present day.

Cosmogony is the science of the development of the universe. Beyond a shadow of doubt the universe is inconceivably old, and has come to its present being by an orderly process — an evolution through the long-continued action of fixed natural laws, especially the law of universal gravitation. For countless ages the universe existed only potentially; the celestial spaces were tenanted by nebulous masses of gas, "without form and void." Every molecule attracted every other molecule; centers of attraction formed, and as they drew other masses inward upon themselves, the collision of particles and friction upon each other developed heat; the gaseous condensations grew hotter and hotter; thousands upon thousands of nebular nuclei formed; condensation progressed, in some regions more rapidly than others. The sun itself, in its early history, was one of these centers, every star was such a center, or became one, in the slow process of world-building. As the gaseous masses could not usually fall directly toward their centers of attraction, huge nebular whirlpools were set in motion.

No spiral nebulæ were known to Laplace; the first was discovered by Lord Rosse; but thousands were found by Keeler at the Lick Observatory, by means of photography. Next to the star itself, the spiral nebula is the type of object most frequent in the sky. Their existence is in full accord with the principles of dynamics, as pointed out by Chamberlin and Moulton in their planetesimal hypotheses.

Progressive development from a formless nebula tends toward the flat, revolving disk; contraction makes the inner regions whirl more and more rapidly, thus producing the spiral, or whirlpool structure. So the spiral nebula became the fundamental natural form. In great part the stellar systems, then, and probably our planetary system also, had their origin, not from Laplacian rings left behind as the nebular disk contracted, but from condensation into knots of nebulosity, ever and anon detached from the whirling nebulous mass, each knot subsequently condensing into a separate star or planet.

So Keeler's significant discovery of multitudes of spiral nebulæ has greatly strengthened the evidence in general favor of a nebular hypothesis of origin of the stellar and planetary systems throughout the universe.

INSECTS INJURIOUS TO MAN

Bed Bugs.—A very old pest. Mentioned in Roman documents. Decreasing in civilized countries, because of more cleanly habits, and the prevalence of furniture offering fewer hiding places.

The attack of a bed bug is made by a piercing beak, rather than by a "bite".

In many states of South America, bed bugs cause a disease often fatal to children.

Buffalo Gnats.—Cause the disease *pellagra*, accompanied by a distressing rash, sometimes fatal. The insects develop under running water, and the disease is common in various parts of Europe near swiftly flowing streams.

Fleas.—Bubonic plague, the dreaded "black death" of history, is carried by fleas from mice, cats, squirrels, monkeys, but especially from black rats, ship rats. The best preventive of plague is wholesale poisoning of rats.

House Flies.—House flies do not bite but carry disease germs mechanically, especially from diseased excrement to food. Eighty per cent of the deaths in the Spanish American War were from typhoid, thus carried. Infantile diarrhoea, more deadly than typhoid, is carried by house flies, as are inflammation of the eye and tuberculosis. These pests are accused of spreading many other serious diseases, including diphtheria, dysentery, smallpox, plague, parasitic worms, and anthrax. The last named, also called splenic fever, is a deadly disease of cattle and sheep, which sometimes attacks man; carbuncles are an attendant. One fly may carry millions of bacteria.

Stable Flies.—Stable flies are distinguished from house flies by the fact that stable flies bite sharply. Have been proved to carry infantile paralysis to human beings, and to bear a fatal disease from certain water rodents in South America to horses, mules, etc.

Tsetse Flies.—Tsetse flies are of several species, spread sleeping sickness, both mechanically, and by development within their own bodies. The native hosts of this dread disease are the big game of African jungles.

Itch Mites.—Itch mites produce "seven year itch" in human beings, and similar disturbances in many other animals, domestic and wild. Successive generations live on the same host; hence there is no reason to anticipate that the disease will end in even seven years, if the mites are permitted to live on.

Jiggers, Jigger Fleas.—The female burrows in the flesh of the animal she attacks, leaving only the tip of the abdomen exposed, for the laying of eggs. The distension of an egg-laying jigger is very painful to the host attacked.

Head Louse, Body Louse, Crab Louse.—The three forms of lice parasitic on man. Eggs or "nits" are attached to hairs. Lice are much less common than formerly, but must still be suspected in homes of doubtful cleanliness.

Mites.—"Black-heads" in the human skin are caused by a species of mite.

Mosquitoes.—Mosquitoes transmit three diseases, at least: malaria, yellow fever and thread worm disease. All mosquitoes should be suspected though the worst offenders are confined to two species.

Sand Flies.—Sand flies are very small, long-legged, yellowish insects—cause "phlebotamus fever", common on Mediterranean coasts.

Ticks.—All told, ticks are known to produce at least ten diseases of man and live stock. One species cause spotted fever, in the Rocky Mountains, with a mortality running from 5 to 70 per cent in various localities. Ground squirrels, pine squirrels, chipmunks, horses, cattle, mules, goats, bears, are hosts for the developing ticks, but only the adults attack man.

Ticks and Phlebotamus Flies.—These are both known to transmit Verruga—a deadly South American disease contracted in mountain valleys and gorges.

The "tick fever" of Madagascar and East Africa is spreading into the interior of Africa. Ticks live several years, and a tick once infected remains a source of this "relapsing fever" throughout its life.

INSECTS ECONOMICALLY INJURIOUS

Insects are estimated to damage the farm products of the United States at least $1,000,000,000 annually.

Hens are infested by:
18 known species of mites.
8 known species of lice.
2 known species of fleas.
1 known species of bug.
1 known species of tick.
1 known species of fly.

Other domestic fowls bring the total of poultry parasites to 50 species.

Argentine Ants are spreading rapidly in the United States. They are voracious feeders, devouring almost any food stuff they can get at, and even attacking human beings. They eat young garden seeds, and protect plant lice and scale insects, for the sugary and waxy secretions these creatures exude. Argentine ants are suspected of spreading several diseases, including tuberculosis.

The Colorado Beetle or potato bug, in addition to the direct damage it causes by eating leaves, has been pretty clearly shown to carry the bacillus of potato rot.

Bugs and Beetles carry the spores of cucumber wilt and similar fatal diseases attacking garden plants.

Borers.—Several species of beetles attack trees, especially where the trees have been injured in any way. The mature beetle does the boring, and the larvae live on fungus from spores left in the burrow by the mother beetle.

The *Wood Leopard Moth*, *Goat Moth*, *Currant Clear Wing*, and *Apple Clear Wing* are all borers, very destructive, in the larval stage.

Bot Flies pass their early stages as thread worms in the stomach and intestine of the horse. Eggs found attached to hairs near a horse's nose are of the bot fly. The painfulness of the bot fly's bite is obvious enough, but the effects of the larvae are debatable.

Sheep Bot Flies, or nostril flies, cause much irritation in the nasal passages of sheep, where the larval maggots develop.

Cheese Mites produce living young, and their swarming colonies rapidly consume any fresh food material, such as ham, flour, and preferably cheese. When all available food for the colony has been eaten, the old and young mites, and the strong, middle-ages ones go into quiesence until they are carried to some fresh opportunity.

Cicadas live underground for seventeen years—one species for thirteen—fed by the roots of trees. The mature insect lives only four or five weeks, dying after the eggs for the next generation have been produced. These eggs are placed in slits near the ends of small branches and the young drop to the ground very soon after hatching, to begin their long development.

Clothes Moths.—The eggs are very small, and are attached to fabric. The larvae develop within a case, which is enlarged from time to time by the growing creature within.

Cockroaches.—A nocturnal household pest, eating and fouling almost any sort of food they can get at. Suspected as disease carriers, they have the one merit of attacking bed bugs.

Codling Moth.—The larvae are apple worms, which often cause a loss of 40% to 75% of fruit crops in unsprayed orchards. The codling moth raises two broods a season, and has relatively few enemies.

Cotton Boll Worms are the larvae of a moth. They attack also corn, tomatoes,

and tobacco. The boll worm gets 4% of the cotton crop annually.

Cotton Leaf Worms are destructive to cotton, but incidentally they destroy a worse enemy to cotton than themselves, by attacking the bolls in which larvae of the boll-weevil are at work.

Cotton Boll Weevils are small beetles, with the ill reputation of being the most economically destructive insect in America. Their original home appears to have been in Mexico.

Gypsy Moth caterpillars strip the leaves of woods and orchards, notably apples, oaks, willows, and elms. They were accidentally introduced to America by scientific experimenters, and became a public menace before the taxpaying public could be financially awakened.

Scale Insects produce a gum disease on orange and lemon trees, as a result of fungus growth started by these insects.

Hessian Flies are among the most destructive insects in the world. In some parts of the United States they destroy 50% of the cereal crops, totaling $100,000,000 damage a year. The flies themselves are very small—less than 1-10 inch long—and live only a few hours. The larvae do the damage.

Plant Lice consume juices of leaves, and exude a secretion which supports fungoid diseases often fatal. Prunes, plums, and the like are badly damaged in this way.

Locusts, properly speaking, are not grasshoppers, but are closely related to them. They amount to a national menace, at times, in various parts of the world, though their worst attacks are in South Africa.

Mediterranean Fruit Flies attack fresh fruits. Have caused the abandonment of peach, nectarine, and apricot raising in Spain. This fly first appeared in Florida in 1929 proving disastrous to the citrous crop. The pest has now been fought and controlled by federal aid.

Grape Vine Phylloxera.—Native in America. Has destroyed 30,000 acres of vineyards in California. Is most destructive in the form which attacks the roots of vines. Phylloxera was accidentally introduced into France, where in 25 years it killed one-third of the vineyards, and damaged the rest.

San Jose Scale.—Badly infested trees seem covered with ashes. This insect makes a peculiar flush on fruit, due to the color of a circling ring around young scales. The males fly. Females produce living young. Scales live by sucking the juices of the tree. Certain species of lady birds are their effective enemies.

Mites.—A scab mite causes the most serious parasitic disease of sheep.

Termites.—Most species live out of doors, but some enter buildings, where they reduce timbers and wooden furniture to mere hollow shells.

Warble Flies.—The maggots cause great irritation, with pus, in the flesh of cattle, and ruin the hides where they come out.

USEFUL INSECTS

Cochineal is a scale insect native to Mexico. Has the same life history as the lac insect and the San Jose Scale. One pound of cochineal represents the dried bodies of about 70,000 insects. Analine dies are reducing the importance of cochineal.

Lac Insects are scales living on tree branches in India. From their resinous secretion, shellac is made.

INSECTS AS FOOD

Civilized peoples in the occident make little use of insects as food, but orientals and barbarous tribes set great store by them.

Locusts are highly esteemed, bought and sold as food, in parts of Africa, Arabia, and Persia. Moors enjoy locusts fried in butter. American Indians used to consume quantities of Rocky Mountain locusts. Grasshoppers, crickets and ants have been and are eaten extensively. In Italy and Northern Africa, crickets are captured and kept for their song, and for luck. Large female ants are considered great delicacies by certain tribesmen. The egg-filled abdomens are bitten off, one by one, as an American might bite off a strawberry, throwing away the hull.

Bees.—Honey and bumble bees are valuable as honey makers, but their chief service to man is in the cross fertilization of flowers, without which there could be no fruit. Other insects accomplish this service, but commonly at the expense of an equal or greater damage done by larvae, whereas the good work of bees is accomplished with no harm whatever.

Beetles are next to locusts in wide use as food. Both the larvae and the adults are eaten, in the East and West Indies, Egypt, Mexico, and South America.

Cicadas, roasted brown, were a favorite article of diet with American Indians.

Manna, of Old Testament History, was undoubtedly the sugary secretion from a scale insect inhabiting trees near Mt. Sinai. Early in the morning, such manna "fallen from heaven" would have been very edible and nutritious. Later in the day, the heat of the sun made it disappear into the ground.

Moths and their caterpillars are eagerly consumed by Bushmen and native Australians. The Chinese eat the pupae of silk worm moths after removing the silk from the cocoons.

Warble Fly maggots are eaten raw by certain Indians and are said to be as appetizing as goose berries.

INSECT CONTROL

Birds should be studied and protected in the fight against insects, but the chief reliance for checking insect hordes must be placed upon insects themselves. The secret lies in Jonson's old quatrain

"Naturalists observe, a flea
Has smaller fleas that on him prey,
And these have smaller still to bite 'em,
And so proceed, *ad infinitum.*"

Wherever a useful plant has long survived the fierce "struggle for existence," the enemies of that plant are likely to be held in check by enemies in turn. Scientific procedure calls for the discovery, transfer, and fostering of such insect enemies of our insect enemies.

Table of the Economic Values of Wild Birds, with Their Diet Lists Compiled from Publications of the National Geographic Society.

I. Birds Wholly Useful to Man.—

Blue Bird.—Eats grasshoppers, beetles, caterpillars, elderberries.

Butcher Bird (Logger Head Shrike).—Insects, small rodents, lizards.

Turkey Buzzard.—Scavenger, protected in Southern States. Works as far north as central New York.

Chickadee.—30% seeds of pine, poison ivy, weeds; 70% insects, including moths and caterpillars.

Brown Creeper.—Plant lice and tree insects, the year round.

Cuckoo, Yellow Billed.—Black Hairy caterpillars, tent caterpillars, web worms.

Finch, Gold Finch, (Wild Canary).—Seeds throughout year, insects.

Flicker.—50% ants, wild fruits.

Franklin's Gull.—Insects, chiefly grasshoppers and dragon nymphs.

Herring Gull.—Scavenger.

Humming Bird, (Ruby Throat).—Nectar of flowers, small insects.

Junco.—Weed and grass seed.

Killdeer.—Eats myriads of injurious insects, notably mosquitoes and their larvae.

Purple Martin.—Wasps, bugs, beetles, including weevils.

Nighthawk.—A useful insect catcher, very expert in flight.

Nuthatch.—Tree insects.

Barn Owl, (Monkey Faced Owl).—Field mice, house mice, rats. Should be protected.

Partridge, (Ruffed Grouse).—Wild fruits, beech nuts and other seeds of trees, weed seeds, 10% insects, mostly beetles.

Wood Pewee.—A fly catcher.

Upland Plover.—Very useful destroyer of weevils, grasshoppers, and crickets. Deserves complete protection.

Spotted Sand Piper, (Tip Up).—Army worms, squash bugs, cabbage worms, grasshoppers, green flies, craw fishes.

Chipping Sparrow.—58% weed seeds, 42% caterpillars, weevils, ants, wasps, bugs.

Song Sparrow.—Diet three-fourths weed seeds, one-fourth insects.

Vesper Sparrow.—Weed seeds and insects, including alfalfa weevil.

White Throated Sparrow, (Peabody Bird).—Weed seed, insects, including boll weevil in winter.

Barn Swallow.—Beetles and flies caught on wing.

Chimney Swift.—Insects only.

Black Tern.—Consumes many fish eating insects and crustaceans, as well as land and flying insects, along with valueless fishes and minnows.

Thrushes. (Veery, Wood, Hermit, Varied).—Insects and wild fruits.

Vireo.—Wild berries, plant lice, scales, caterpillars.

Warblers.—This great family have been called the saviors of the forests. Diet is three-fourths insects, mostly harmful.

Whip-poor-will.—Insects.

Downy Woodpecker, Hairy Woodpecker.—Diet 76% tree borers. Merit complete protection.

House Wren.—Grasshoppers, beetles, caterpillars, bugs, spiders, cutworms, weevils, ticks, plant lice.

II. Birds with a Favorable Balance in the Economic Ledger.—

Mourning Dove.—64% weed seed, 32% grain seeds, mostly waste after harvest. No insects.

Cardinal.—Potato beetles, cotton worms, weevils, codling moths—at least fifteen times as much good as harm.

Kingbird.—Protects poultry from hawks and crows. Eats 85% harmful insects, and a few honey-bees, mostly drones.

Quail, (Bob White).—Diet one-half weed seeds, one-fourth grain, one-tenth wild fruits, 15% injurious insects. Most of its grain is waste, from stubble.

Meadowlark.—25% beetles, including cotton boll weevil and alfalfa weevil, 24% grain and weed seeds, 11% caterpillars, including cut worm, army worm.

Rose Breasted Grosbeak.—Some garden crops and fruit, but mostly harmful insects. Sometimes called the "potato bug bird." Eats cucumber beetles, scale insects, locusts.

Bullock's Oriole.—Beetles 35%, including many weevils, ants, wasps, olive scale insects, 41% caterpillars, moths, and pupae. Some fruit.

Mocking Bird.—Is protected for its song, rather than for its credit cash balance. One-fourth its diet is insects, chiefly grasshoppers; one-half is fruit.

Brown Thrasher.—60% injurious insects.

III. Birds of Neutral or Doubtful Value to Man.—

Screech Owl.—Has a good credit list of mice, grasshoppers, beetles, caterpillars, but does kill many valuable birds.

Red Tailed Hawk.—(Hen Hawk) 85% animal pests, 15% poultry and game birds.

Blue Heron.—Its picturesqueness deserves preservation. Often adds mice and gophers to a diet of frogs, tadpoles, small fish, and snakes.

Marsh Hawk.—Chiefly rodents. Some poultry and game.

King Fisher.—Exclusively fish.

Robin.—Eats many kinds of insects, 58% fruit. In fruit growing sections is an economic pest. Its enormous consumption of earth worms is of doubtful value, since the earthworm is so notable a soil maker.

Brewer's Black Bird.—Fruit 4%, grain 54%, weed seed 9%, insects 33%.

Cowbird.—A thief and "moral renegade," of doubtful economic value. Lays eggs in other birds' nests.

English Sparrow.—Quarrelsome, untidy, drives out valuable birds, steals nests, kills birdlings, eats fruit and grain. Does destroy some insects; may check alfalfa weevil; is a city scavenger.

Red Headed Woodpecker.—Two-thirds vegetable food. Is a combination of jay, woodpecker, and fly catcher, with much of the jay's destructiveness.

Red Winged Black Bird.—73% seeds, including grain; 27% insects, including grasshoppers and weevils.

Bobolink.—Useful in the north, but an unmitigated pest in the Southern States. Annually destroys one-tenth of the country's rice crop.

Catbird.—Fruit one-half, insects one-half; domestic fruit especially. Doubtful, sometimes worse.

Sparrow Hawk.—One-half insects; one-fourth small rodents; one-fourth birds, snakes, spiders. Does destroy useful birds. Perhaps a balanced account.

Bald Eagle.—Our national emblem is derived from a

bird whose habits are more picturesque than useful. Eats carrion fish, fresh fish stolen from ospreys, water fowl, and any small animals available.

Osprey.—Live fish. Neutral or worse, but interesting.

IV. Birds of Deservedly Ill Reputation.—

Common Crow.—Admittedly a scavenger; kills many large insects; but is so destructive to wild birds and their eggs, and to seedling corn, that his name is anathema.

Magpie.—Western United States. Habits like crow. Eats carrion, young birds, poultry, wild fruits, berries, insects only when necessary. Is an incorrigible thief.

Yellow Bellied Sap Sucker.—Wild fruits, cambium of trees. Very destructive.

Cooper's Hawk, (Blue Darter).—Kills many useful birds, both wild and domestic. A bad actor.

Starling.—Destroys smaller, useful birds. One of our obnoxious importations from Europe.

Great Horned Owl.—(Hoot Owl) Partridges, quail, pheasants, poultry, squirrels, mice, rabbits—only one really useful service in the list, and that a minor one, in this night pirate's account.

Blue Jay.—Very destructive to other bird life. Three-fourths vegetable food—acorns, beech-nuts, etc.; one-fifth noxious insects.

BOTANY.—One of the natural sciences, dealing with plants, as zoology deals with animals. In its widest sense it includes all kinds of inquiries in regard to plants, their structure, activities, distribution, origin, classification and uses. In fact the study of botany in its entirety includes every inquiry that may be made with regard to plants themselves and their relations to man and other living things, although for convenience the economic relations of plants are now more commonly relegated to agriculture, horticulture, forestry and pharmacy, while the more scientific problems are retained in botany.

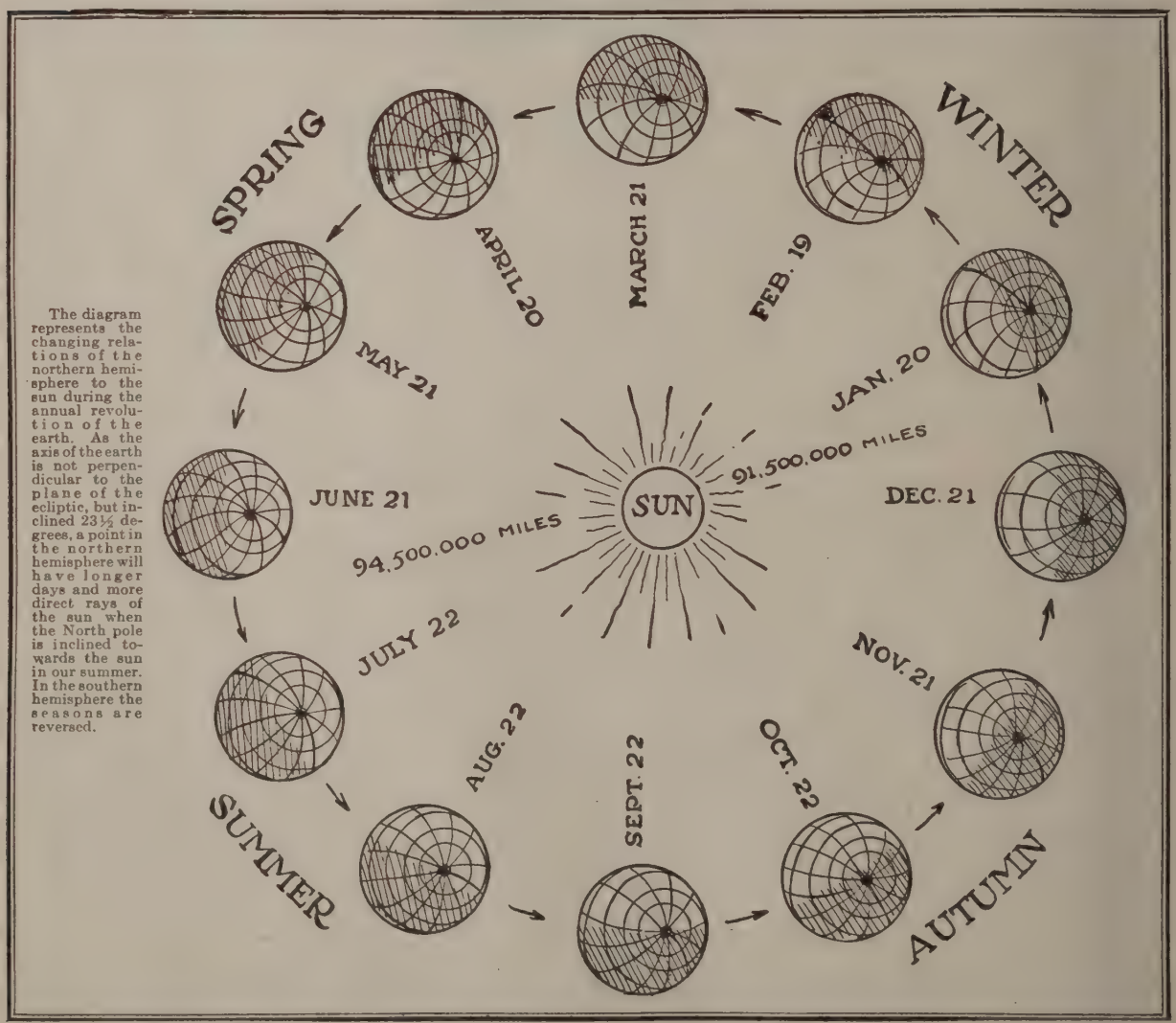
Departments of Modern Botany.—The science may be divided for convenience into about ten departments, although sometimes fewer and again more divisions are recognized. The following is a conservative treatment:

Cytology deals with the minute structure of plants, especially with the *cells,* of which all plants are composed. A typical cell, consists of a minute body of protoplasm (a softish nitrogenous substance) surrounded by a permeable membrane (wall of cellulose). The protoplasm is differentiated into a central denser, roundish part (nucleus), surrounded by a more watery part (cytoplasm). A still further differentiation has been made out for both nucleus and cytoplasm, the protoplasm consisting of a more active granular or fibrillar part (kinoplasm) scattered through the less active, nearly clear part (hyaloplasm). Moreover in the cytoplasm there are generally several (rarely one) rounded bodies of denser cytoplasm (plastids) which are stained by a green pigment.

Cells are the living units, and they produce other cells, and so increase the bulk of the plant. The usual method of the production of new cells is by the division of a cell into two. This is done by the cell itself, and in the process the granular matter of the nucleus (kinoplasm) divides itself very exactly into two equal portions, each of which becomes surrounded by its half of the clear nucleus matter (hyaloplasm); these equal parts of the nucleus now constitute two new nuclei, and each now draws around it its half of the cytoplasm. Thus there are now two cells where there was but one, and these generally build up a partition wall between them.

Histology deals with the *tissues* as made up of different kinds of cells. Here a mass of similar cells constituting a portion of

CHANGE OF SEASONS



The diagram represents the changing relations of the northern hemisphere to the sun during the annual revolution of the earth. As the axis of the earth is not perpendicular to the plane of the ecliptic, but inclined 23½ degrees, a point in the northern hemisphere will have longer days and more direct rays of the sun when the North pole is inclined towards the sun in our summer. In the southern hemisphere the seasons are reversed.

the plant substance is known as a tissue; accordingly tissues may be of as many kinds as there are kinds of cells. A convenient classification of tissues is as follows:

Rudimentary Tissue (meristem) consists of young, thin-walled cells which are still undergoing modification. It constitutes the bulk of all rapidly growing parts of plants.

Soft Tissue (parenchyma) consists of mature, thin-walled, usually short cells which have attained their growth, as the tissue of ripened fruits, the green tissue of leaves, etc.

Thick-Angled Tissue (collenchyma) consists of long prismatic cells with thin walls, but with the longitudinal angles much thickened. It occurs as a strengthening tissue just beneath the epidermis in many stems.

Stone Tissue (sclerenchyma) consists of thick-walled, usually short cells so tightly packed together that they form a hard mass, as in the shells of nuts; *e. g.*, hickory nuts, walnuts, filberts, etc., and in the "stones" of many fruits, as plums, cherries, etc.

Fibrous Tissue consists of thick-walled, elongated cells so tightly packed together that they make up the fibrous part of the wood (wood fibers) and bark (bark fibers) of the stems of most higher plants.

Sieve Tissue consists of elongated, usually large cells, more or less united into tubes, and having only slightly thickened walls. The name is given on account of the fact that the transverse partitions between the cells are perforated in a "sieve-like" pattern, and through these perforations the protoplasm connects from cell to cell. Sieve tissue occurs in the young bark.

Tracheary Tissue, like the preceding, is a tubular tissue, but here the continuity of the cavity is usually more complete. The walls are somewhat thickened, in rings, spirals, or reticulations. When young these tubes contain protoplasm, but eventually they contain air. Tracheary tissue occurs in the woody parts of stems and leaves.

Milk Cells and Tubes (laticiferous tissue) occur singly or in masses in many plants, and are easily recognized by their milky contents, as in the many kinds of milkweeds. The milk (latex) is often very poisonous, while more rarely it is wholesome. In some cases it contains caoutchouc, from which india rubber is manufactured.

Morphology deals with form as applied to the plant as a whole, or to corresponding parts. With respect to the latter it considers especially the correspondence and equivalence of parts of plants.

Plant Body.—Every kind of plant has a "body" of a more or less definite form. In every simple (primitive) plant the body is a single more or less rounded cell. There is no hint of root, stem or leaf. Plants a little higher are unbranched rows of nearly similar cells. Next the body is a row of cells differentiated into base and apex, the former rooting, the latter growing terminally. Branching simple rows rooted basally and growing terminally constitute a higher type.

A still higher type is seen where the rows of cells are not simple, but consist of several parallel cells. From this structure, which is very common in aquatic plants, especially the red seaweeds, the step is an easy one to massive structures, as in the brown seaweeds and the flat plant bodies of many liverworts. Eventually the type of body characteristic of higher plants is reached, in which there are roots, stems, and leaves.

Physiology has to do with the activities of plants, particularly those that relate to nutrition, growth and reproduction.

Absorption.—In the nutrition of plants the first stage is that of absorption of food-matter, which includes the imbibition of water and the solutions held in it, and the absorption of various gases. Naturally those parts of the plant which are normally in contact with the water are those which absorb water, and in like manner those parts which are normally in contact with the air absorb gases, and it is pretty certain that this has come about as an adaptation of each part to its environment.

The method of absorption must be little more than a simple diffusion through the permeable membrane of the cell-wall. It is found that gases and watery substances are absorbed indiscriminately, and that the plant does not have any "power of selection." Thus the plant is supplied with everything gaseous or soluble with which it is in contact. If these are sufficient for its needs, and none is harmful, the plant may thrive, otherwise it will starve.

Ordinary higher plants in their development have accustomed themselves to many of the solutions in common soils, and apparently they are so habituated to these solutions that they languish without them. On the other hand there are solutions that are known to be quite essential; for example, those that contain nitrogen and phosphorus. The gases of importance to plants are carbon dioxide, and oxygen, both of which occur in sufficient quantities in ordinary air.

Synthesis.—The food matters absorbed are subjected to certain synthetic processes by which they are made more available for the plant at large. Thus some of the water and the carbon dioxide are broken up and recombined into carbohydrates of definite composition, which are then available for the use of growing cells.

This particular synthetic process, since it requires light for its accomplishment, is known as photosynthesis. It takes place only in the green cells of plants, and is thus the chief function of the leaves of higher plants. The product of this synthesis is usually a sugar, containing carbon, hydrogen and oxygen (commonly $C_6H_{12}O_6$), which is commonly changed to starch ($C_6H_{10}O_5$).

Growth.—The carbohydrates formed are sooner or later used as proper food for the cells, and here we may use the terms "digestion" for the earlier steps, and "assimilation" for the later steps. The result is that the cells are nourished and increased in substance. This increase in the substance of the cell due to the nourishment by carbohydrates is what we know as growth. Yet in ordinary growth there is usually another factor, namely, the forcible distension and enlargement of the cell by the imbibition of a great amount of water.

And so it is with the growth of tissues, each cell of which increases in substance by the assimilation of carbohydrates (mainly) and increases in size by the distension due to its forcible imbibition of water. Along with this increase in substance and size in tissues there is usually an increase in the number of cells, by cell division as described.

The growth of organs and parts of plants is essentially like that of tissues, but here we have to do with more considerable masses of meristem cells in which cell division is the characteristic feature, especially in the earlier stages, and cell distension of the later stages.

Water Loss.—During the nutrition and growth of plants that grow partly or wholly in the air they are more or less constantly subject to a considerable loss of their water by evaporation, and unless there is a constant supply of water to counterbalance this loss such plants will dry up and die.

Reproduction.—All plants reproduce in some manner. Some merely break into fragments, each of which then grows into a new plant. This simple method is more common with lower, simpler plants, but that it still persists among some of even the higher plants is shown by the ease with which new plants may be grown from "cuttings."

Many lower plants regularly separate certain cells (spores) from particular portions of the plant body, and these on germination give rise to new plants. In many water plants such separated cells are motile by means of cilia, hence called zoöspores. Such production of new plants is known as the asexual (nonsexual) reproduction.

In addition to the asexual modes of reproduction most plants reproduce sexually also. In its simplest form sexual reproduction consists of the union of two free-swimming similar zoöspores (isogametes). The resulting cell sooner or later grows into a plant like that which gave rise to the isogametes. In passing upward we find successively free-swimming but unlike gametes (heterogametes); one free-swimming gamete (sperm), and one motionless gamete (egg); both gametes (sperms and eggs) motionless, and dependent upon other agencies for coming in contact with each other. The latter is the condition in the flowering plants.

Physiologically, sexual reproduction is a special activity of certain cells wherein two fuse into one, thus producing a new cell somewhat different from either. This in its growth produces a plant somewhat different from the plant or plants which produced the sexual cells. Sexual reproduction is thus a mode of growth. It is also a mode of variation.

Pathology considers the diseased or abnormal condition of plants. As physiology has to do with the normal, healthy activities of plants, so pathology has to do with abnormal activities. Diseased conditions of plants are due to many causes, which may be summarized as follows:

Physical Injuries, which may include all kinds of purely mechanical rupture, cutting or puncture of the tissues, due to wind, lightning, hail, or other violence, and the eating by insects, birds, and other animals. The mutilation by such agents interferes with the normal functions of the plant. In this place may be named some of the injuries due to too low temperature (freezing) or too high a temperature (scalding) and probably also the scalding or scorching effect of too intense light.

Errors of Nutrition may include all cases where there is an insufficient amount of any or all of the food substances, including water, solutions, gases, and the carbohydrates and other more complex nutrients. Here the word "starvation" may properly be used. When plants are supplied with too little light they suffer from starvation, there being a deficiency

in carbohydrates. So also plants in too low a temperature are not able to make use of available food substances, and starvation is the result.

Parasitic Injuries may be due to the presence of living animals or plants in the tissues. Under the former the most notable are the nematodes, which are very minute thread-like worms, which seriously injure the parts of the plants that they infest. The nematode disease of sugar beets is a good example, as also the root-knot nematode diseases of many different kinds of plants

Of the plant parasites the most common are bacteria of several kinds which destroy the cells in certain tissues, as in apple blight; external fungi which injure young twigs and leaves, as the powdery mildews; internal fungi which grow through the tissues of stems and leaves, injuring or wholly destroying them, as in rusts, smuts leaf-spot diseases, fruit rots, etc.; flowering plant parasites, as the dodder, mistletoe, etc., which often attack plants and distort or destroy the stems, as clover dodder, pine mistletoe, etc. The number of known disease-producing parasites is very great, and the literature on the subject is very voluminous.

Ecology deals with the relations of plants to their environment. It has been recognized as a distinct part of botanical study for less than twenty years, and is still associated with physiology, of which it is an extension and development. It is sometimes spoken of as out-of-door physiology, and it certainly has led to a closer study of plants in their natural environment than had been the practice in ordinary plant physiology. How plants affect one another, how they come to occupy particular habitats, and how these affect the plants themselves, are among the more common inquiries made by the ecologist.

Phytogeography, or geographical botany, as it is more commonly called, includes all the inquiries that relate to the distribution of plants throughout the world. In its more local inquiries it is identical with ecology, but its scope is much broader in its world-wide application.

Phylogeny and Taxonomy deal respectively with the descent and consequently the relationship of plants, and their natural classification.

Outline of the Taxonomy of Plants.—Botanists are now somewhat acquainted with about 233,000 different kinds of plants, at least they have given names to that many and assigned them to their orders and families.

A careful consideration of this vast mass of plants enables us to recognize a dozen or more rather well-marked groups of related forms. These groups are regarded as the results of definite development along as many evolutionary lines, and to these groups thus understood we now apply the name "phyla." So a phylum is a group of related plants, their relationship being due to the fact that they have had a common origin. Beginning with the lowest the phyla are as follows:

The Blue-Greens (*Myxophyceæ*) are minute water plants of such simplicity of structure that we are warranted in giving them the lowest place in the vegetable kingdom. Their cells for the most part do not have definite nuclei or chromatophores, and their walls are usually soft and more or less gelatinous. The color of the cells is never a bright green, but is blue-green, brown-green or smoky-green. They reproduce by fission, and the production of asexual spores, and there is no sexual reproduction whatever.

About 2,000 species are known, including many "bacteria" which are here regarded as blue-greens that have become hysterophytic and as a consequence have lost their coloring matter.

The Lower Green Algae (*Protophyceæ*) are also minute water plants, but their cells have well developed nuclei and chromatophores, and their walls are usually firm. Their color is a bright green, due to the presence of typical chlorophyll.

Like the preceding, these plants reproduce by fission, but in addition many of them form motile cells (ciliated zoöspores) which swim away and eventually grow into new plants. Some of these zoöspores fuse when two meet, the result being a new cell which then grows into a new plant, this process constituting a simple sexual act. There are above 1,100 species of the lower green algæ now known. The lower members of the phylum are unicellular, but for the most part they are filamentous plants.

The Pond Scums (*Zygophyceæ*) are typically filamentous plants in which a marked sluggishness of habit has entered to such an extent as to have materially modified their structure. Although filamentous, the plants for the most part very easily break into segments, or single cells. Although related to zoöspore-forming plants in the preceding phylum, the pond scums do not form zoöspores, nor do they have free-swimming ciliated gametes; on the contrary the protoplasms of two contiguous cells sluggishly fuse together.

In the treatment here suggested the more filamentous forms are considered more primitive, and those in which the filaments fragment early into single cells or short filaments of few cells are regarded as the later, or derived forms.

All told there are about 7,000 species of the pond scums and of these the diatoms include by far the greater number.

The Tube Algae (*Siphonophyceæ*) show another peculiar modification of the filamentous structure found in the lower green algæ, whereby the filaments instead of forming cross-walls to separate their cells are left partly or wholly tubular. In other respects the tube algæ resemble the lower green algæ, from which phylum they no doubt originated.

There are about 1,260 known species of tube algæ.

The Brown Algae (*Phæophyceæ*) include plants ranging from small filaments to large, massive plants many meters in length. They are peculiar in having a brown-green coloring matter instead of the bright green chlorophyll of ordinary plants. They are here regarded as a marine modification and development from the filamentous lower green algæ.

The brown algæ number somewhat more than 1,000 species.

The Red Algae. (*Carpophyceæ*) are green plants almost wholly marine, whose green color is mostly hidden by an additional red coloring matter which suffuses the protoplasm of the cells. The simpler species are filamentous and often very minute, but many of the higher species are large massive plants of a complex structure.

The red algæ number about 3,050 species, by far the greater part of which are red or purple in color.

The Fungi (*Carpomyceteæ*).—Here are brought together a vast number of hysterophytic plants, apparently related to the plants of the phylum just preceding, but which in becoming dependent have lost their green color, in addition to suffering many other changes.

Structure.—The plant body in all fungi is very simple (no doubt reduced), consisting of slender filaments which creep through the substance or the tissues upon which they feed. In most cases there is an asexual form of reproduction consisting of cells (conidia) that separate from the ends of certain filaments, and on germinating grow into new plants.

This phylum contains an enormous number of species, no less than 63,700 being enumerated in systematic works at the present time (1911), and every year hundreds of additional species are being identified and described.

Classification.—The fungi may be summarily outlined as follows:

1. Class *Ascosporeæ*, the sac fungi, including about fifteen orders and over one hundred families. Here we find the beetle fungi, the powdery mildews, black fungi, black lichens, script lichens, cup fungi, cup lichens, morels, tubers, etc.

2. Class *Teliosporeæ*, the rusts and smuts, including two orders and five families of excessively parasitic plants which live in the tissues of higher plants.

3. Class *Basidiosporeæ*, the basidium fungi, including nine orders and twenty-two families. Here are found the subterranean fungi, stinkhorns, puff-balls, bird-nest fungi, toadstools and mushrooms, pore-fungi, prickle-fungi, shell-fungi, ear-fungi, jelly-fungi, etc., in all of which the structure which we see is the spore-fruit, while the plant itself is the webby mass of filaments from which the spore-fruit grew. Thus the toadstool, with its well-known umbrella-shaped structure, is the fruit of a white filamentous plant growing beneath the surface.

The Mossworts (*Bryophyta*) are green plants of a markedly higher degree of development than any of the preceding phyla. In them we have for the first time a distinct alternation of sexual and asexual generations in the round of life. Thus one generation produces the sperms (in antherids) and eggs (in archegones) and the fertilized egg develops a second generation which does not produce sexual organs, but produces spores, and when the spores germinate they grow into sexual plants, and so on. The two generations are known in science as (a) the gametophyte, that is, the gamete-producing plant, (*i. e.*, the sexual plant), and (b) the sporophyte, that is, the spore-producing plant, (*i. e.*, the asexual plant).

There are all told somewhat more than 16,000 species of mossworts.

1. Class *Hepaticæ*, the liverworts, with mostly bilateral, often thalloid, creeping gametophytes, and globose to elongated, mostly splitting sporophytes, usually with "elaters" mingled with the spores. Here are to be found the crystalworts, horned liverworts, great liverworts and scale-mosses.

2. Class *Musci*, the mosses, with multilateral, mostly erect, leafy-stemmed gametophytes, and more or less elongated, erect sporophytes, which usually dehisce by a circular lid, and are without "elaters." There are more than sixty families of mosses, among which are species of peat mosses, cushion mosses, petticoat mosses, bristle-stalk mosses, ephemeral mosses, wood mosses, hair-cap mosses, humpback mosses, tree mosses, bog mosses.

The Ferns (*Pteridophyta*) are much larger land plants than the mossworts, to

1. Composites: (a) head with rays, (b) ray flower, (c) disk flower, (d) head of tubular flowers.
2. Gagea: flower.
3. Maple (*Acer*): (a) pistillate, (b) staminate flower, (c) fruit.
4. Clove (*Jambosa*): flower section and fruit.
5. Lamium: flower side and front.
6. Orobanche: flower section.
7. Pepper (*capsicum*): flower and fruit.
8. Oenothera: flower section.
9. Aralia: flowers.
10. Cornus: flower.
11. Clover (*Trifolium*): (a) flower, (b) fruit, (c) seed.
12. Beech (*Fagus*): (2) staminate, (3) pistillate flowers.
13. Sage (*Salvia*): flower and section.
14. Oak (*Quercus*): (2) staminate, (3) pistillate flower, (4) acorn.
15. Peach (*Prunus*): flower section.
16. Saxifrage (*Saxifraga*).
17. Ash (*Fraxinus*): apetalous flowers.
18. Grape (*Vitis*): closed, opening and opened flower.
19. Gentian (*Gentiana*): flower section.
20. Cinchona: flower and fruit.
21. Carrot (*Daucus*): flower and fruit.
22. Part of a fern frond.
23. Alfalfa (*Medicago*): (a) flower, (c) seed.

which they are closely allied. They show the same marked alternation of generations, but here the gametophyte is much smaller, sometimes in fact so small as to be actually microscopic, and in all cases it is much shorter lived than the sporophyte. The latter is early provided with roots and leaves, and so becomes quite independent of the gametophyte.

In common ferns the gametophyte is a small, flat, heart-shaped plant, a few millimeters in diameter, and growing attached to the moist soil by the hairs on its lower surface. It bears antherids and archegones on its lower surface, and after the fertilization of an egg in one of the latter, a leafy-stemmed and rooted plant (the sporophyte) develops. The fern as we see it is the sporophyte generation, and eventually it produces spores (in common ferns on the lower surfaces of the leaves) which on germination produce gametophytes again.

There are two great types of ferns, namely, the ancient and the modern, including all told somewhat more than 3,800 species.

The Calamites (*Calamophyta*) represent a phylum once very important but now almost extinct. In these plants the gametophyte is much like that of the ferns, while the sporophyte consists of cylindrical, jointed, often hollow stems, rooted below, and bearing narrow, whorled leaves above.

The spores of calamites are borne in whorled sporangia that compose terminal cones upon the stems. When they germinate they produce the small gametophytes referred to above.

There are only about twenty-four species of living calamites, all belonging to the genus *Equisetum* (horsetails).

The Lycopods (*Lepidophyta*) are represented to-day by about 700 species of small plants.

Here we find such living genera as *Lycopodium* (club-mosses and ground-pines) and *Selaginella* (little club-mosses).

The Cycads (*Cycadophyta*), like the preceding, constitute a phylum from which many types have died out, and what we have left is a mere remnant of a much larger and much more diversified group. In this phylum the gametophytes are very small, so small in fact that they are made out with difficulty even with the aid of the compound microscope, while the sporophyte is large, massive and often of the dimensions of trees. This great difference between the gametophyte and sporophyte generations has obscured the alternation of generations, and this has been emphasized by the fact that the megaspore which gives rise to the archegonial gametophyte does not escape from the sporangium, but remains within it, developing its gametophyte *within the sporangium*. This retention of the megaspore is the most important step that has been taken in the evolution of this part of the vegetable kingdom, resulting as it does in the better nourishment and greater protection of the gametophyte. This retention of the megaspore necessarily results in the formation of the seed, which appears first in this phylum.

Development of the Seed.—The sporangia which produce the microspores are found upon leaf-like structures (microsporophylls, or "stamens") and these are often aggregated into cones (staminate cones). In like manner the sporangia producing megaspores are on similar leaf-like structures (megasporophylls or "carpels"), and these again are often aggregated into cones (carpellary cones). Moreover, since the megasporangia are to retain the megaspores, they develop an external coat of protective tissue (the "seed coat"). When the megaspore is mature it at once develops a minute gametophyte in which several archegones are produced, each containing an egg. While this development is going on in the megasporangium, the microspore falls out from its sporangium and is carried by the wind to the summit of the young seed, where it germinates and produces a very simple, tubular, antheridial gametophyte, which in turn gives rise to two motile sperms, essentially like those in the preceding phyla.

Upon fertilization of an egg by a sperm it grows and rapidly develops into a new plant (young sporophyte) within the protective coats, and a little later the megasporangium, with the embryo plant and the surrounding coat, ripens into a "seed." This falls to the ground, and upon the resumption of growth by the embryo the latter soon splits the seed-coat and escapes, sending its root into the ground and its little leaves into the air, and it is henceforth able to maintain itself independently.

There are four or five known classes of cycads, two of which are wholly extinct, and those remaining are mere remnants of larger groups. The living species number between 125 and 150.

The Conifers (*Strobilophyta*) are related to the cycads, but this is in many respects a more modern group. As in cycads so here the archegonial gametophyte is very small, and permanently inclosed in the young seed. The antheridial gametophyte is tubular but the sperms are not motile. The development of the gametophytes and the fertilization of the eggs and production of the seed are essentially the same in conifers as in cycads. The sporophyte of conifers is much branched, woody, and often developed into enormous trees; the leaves are never large, always simple, and are often narrow or even scale-like, and generally persistent (evergreen). The fact that the megosporophylls and microsporophylls are nearly always in cones (strobili) has given them their common name of "conifers."

About 400 species are known. The principal genera are *Taxodium* (the bald cypress), *Sequoia* (the redwoods), *Araucaria* and *Dammara* (the ancient pines), all of which have many extinct species; *Abies* (the firs), *Picea* (the spruces), *Pinus* (the pines), *Cupressus* (the cypresses), *Thuja* (the arbor vitæ), and *Taxus* (the yew trees).

The Flowering Plants (*Anthophyta*) stand as the highest development reached in the vegetable kingdom. The particular structure which is characteristic of this phylum is the flower. This is a modification of the crude structures found in some ancient cycads, and now is typically composed of an axis on which are borne closed megasporophylls above, microsporophylls next lower, and below these one or more whorls of flower-leaves. More particularly, the megasporophylls are not open and more or less flat, as they are in preceding phyla, but as they grow their edges come together and finally become grown together so that the megasporangia are inclosed in the cavity so formed. This structure is known as a "pistil" in ordinary descriptive botany, and the megasporangia with their one or two coats are the young seeds ("ovules"). The microsporophylls (stamens) are much like those of the two preceding phyla, and the microspores themselves are known as "pollen." The flower leaves are typically two whorls, and then the inner whorl is usually more delicate and colored ("petals" composing the "corolla"), the outer whorl is typically of coarser texture and green ("sepals" composing the "calyx"). The principal modifications of the structure of the flower as here given will be indicated elsewhere.

Fertilization of the Egg.—The ovule develops as in the preceding phyla, but the archegonial gametophyte is delayed and the egg advanced in the sequence of changes, so that the gametophyte is still quite immature when the egg is ready for fertilization, and it is only after fertilization that it completes its development (as the "endosperm" of the seed). Fertilization is effected as follows: The microspore (pollen) falls upon a particular portion of the external surface of the pistil (the "stigma") and there develops a very simple tubular gametophyte which penetrates the soft stigmatic tissues in the direction of the ovule, which it eventually reaches and penetrates. In the end of the tube there are now two motionless sperms, one of which is passed through to the egg. After fusion of sperm and egg the resultant cell (zygote) divides and subdivides until a new plant is formed. At the same time the development of the belated gametophyte (endosperm) is resumed, the ovule tissues become less watery, the seed coat hardens, and the result is the mature seed.

Number of Species.—The flowering plants include an immense number of species, the number now known considerably exceeding 132,000, and with the additions of new species which are constantly being made it is safe to say that the number will eventually reach fully 150,000.

In the development of this vast number some marked modifications of structure have taken place, and these rightly understood give us a clew to the mode and sequence of the evolution, and since taxonomy must follow phylogeny, we have here the key to the classification of these plants.

While it is probable that the embryo plant in the seed of primitive flowering plants had two opposite leaf rudiments, (cotyledons) and hence were dicotyledonous, an early modification appeared in which the embryo had but one leaf rudiment, being monocotyledonous, and this has been adhered to in a group (the monocotyledons) which includes nearly one-fifth of all the flowering plants. These may be briefly arranged as follows:

The Monocotyledons (class *Monocotyledoneæ*) have a single cotyledon, alternate leaves which are parallel-veined, and the fibrovascular bundles of their stems are scattered. There are seven or eight orders and nearly fifty families, beginning with the water plantains and their relatives, *Alisma* (water plantain), *Butomus*, *Potamogeton*, etc., in which the pistils are normally many and separate and the other parts of the flower separate also and normally in whorls of three each.

In the lilies the pistils have been reduced to three and these have fused into a single structure (compound pistil), while the stamens have been reduced to six or three, and the petals and sepals are of three each.

In this central group of the monocotyledons are found such genera as *Lilium* (lily),

1. Cotton (*Gossypium*): fruit and seed.
2. Linden (*Tilia*): flower section.
3. Tamarix: flower section.
4. Morning Glory (*Convolvulus*): flower section, fruit and seed.
5. Willow (*Salix*): 4, 5, 6, 7, 8, 9, 10, flowers and seed.
6. Dammar-pine: leaves, cone, and scale.
7. Magnolia: flower section.
8. Field Horsetail (*Equisetum arvense*): plant form.
9. Arnica: stem, leaf, and flower.
10. Thistle (*Cnicus*): flowers and bristle.
11. Flax (*Linum*): fruit and seed.
12. Monotropa: flower section.
13. Poppy: flower section.
14. Birch (*Betula*): flowers.
15. Melon (*Cucumis*): flower section.
16. Buttercup (*Ranunculus*): section of flower, pistils, stamens, ovals, etc.

Tulipa, (tulip), *Gagea*, *Yucca*, *Asparagus*, *Allium* (onions), *Tradescantia*, *Juncus*, etc.

From the lilies have come at least five other orders by as many modifications of the lily structure. These are the calla lilies, with their crowded, soft, small, lily-like flowers and thick succulent stems and leaves, including *Calla*, *Caladium*, *Calocasia Arisæma* (Indian turnip), *Symplocarpus*, *Acorus*, etc., and the reduced duckweeds (*Lemna*).

Next to these are the palms, with small, firm, lily-like flowers and strong, stiff, spreading leaves upon the summits of woody trunks. Here are the date palms (*Phœnix*), coconuts (*Cocos*), palmettos (*Sabal*), royal palm (*Oreodoxa*), rattan palm (*Calamus*), etc.

Then come the grasses, with their stiff, leafy stems, and reduced, chaffy flowers of the lily type, including also the sedges with three-ranked leaves upon three-angled stems, *Cyperus*, *Scirpus* (rushes), *Carex*, etc. The genuine grasses have two-ranked leaves, borne upon rounded stems.

The genera may be grouped into about a dozen tribes—*viz.*, the bamboos (*Bambusa*), fescues (*Festuca*, *Bromus*, *Poa*, etc.), oats (*Avena*), wheats (*Triticum*, *Hordeum*, *Secale*), grammas (*Bouteloua*, *Buchloe*), red tops (*Agrostis*, *Sporobolus*), canary grasses (*Phalaris*), rices (*Oryza*), panic grasses (*Panicum*, *Setaria*), canes (*Sorghum*, *Saccharum*, *Andropogon*), maize grasses (*Zea*).

In all the foregoing the pistils, whether simple or compound, stand at the summit of the flower axis and are not overgrown or inclosed by any of the other parts of the flower or the petals or sepals (pistil superior), but in the three following orders such overgrowth has taken place and the pistil is said to be "inferior."

The waterworts (*Hydrales*) include a few water plants, as *Vallisneria*, *Hydrocharis*, etc.

The irises include terrestrial, mostly erect plants, with regular and often showy flowers (*Amaryllis*, *Narcissus*, *Agave*, *Iris*, *Ananas* (pineapple), *Musa* (banana), *Zingiber* (ginger), *Canna*.

From this latter order, by the development of "irregularity" in the flower, came the orchids with their odd-shaped flowers adapted to secure the help of insects in the carrying of pollen from flower to flower. Here are *Cypripedium* (lady's slipper), *Orchis*, *Epipactis*, *Vanilla*, *Spiranthes*, etc.

The Dicotyledons (class *Dicotyledoneæ*) have two opposite cotyledons, opposite or alternate leaves which are reticulate veined, and the fibrovascular bundles are arranged in concentric layers in the stem.

The *number of species* of dicotyledons is about four and a half times that of monocotyledons, and accordingly we find more numerous and much greater modifications of structure in this class, and while the dicotyledons probably appeared earlier in time than the monocotyledons, it is true also that they have attained a higher development. In fact, when we consider the flowering plants as a whole, we are led to the conclusion that the dicotyledons are *the typical* flowering plants, and that the monocotyledons constitute a nontypical and much less important modification.

The *flower* of primitive dicotyledons consists of an axis bearing on its terminal portion a considerable number of pistils; below these are whorls of stamens, and still below these the whorls of flower leaves (petals and sepals). Such a flower structure is found in the buttercups and their relatives. From this point of beginning, development has progressed along two main lines, culminating in one case in the mints and in the other in the sunflowers and the dandelions.

First Line.—In the buttercup-mint line there are about fourteen orders and 146 families. The more important orders are as follows:

The buttercups (*Ranales*), with all of the flower parts typically free and distinct from one another. Here are such genera as *Myosurus*, *Ranunculus* (buttercups), *Anemone*, *Magnolia*, *Asimina*, *Berberis*, *Nymphæa* (water lilies), etc.

The crucifers (*Rhoedales*), with the carpels mostly two, and united, as in *Sanguinaria*, *Papaver* (poppy), *Sinapis*, *Brassica* (mustard), *Raphanus* (radish), *Reseda* (mignonette), etc.

The pitcher plants (*Sarraceniales*), *Sarracenia*, *Nepenthes*.

The pinks (*Caryophyllales*), with pistil of three or more united carpels, the petals separate and free, as in *Dianthus* (carnations), *Lychnis*, *Tamarix*, *Salix* (willows), *Populus*, *Portulaca*, *Amaranthus*, *Chenopodium*, *Polygonum*.

The geraniums (*Geraniales*), as in *Geranium Oxalis*, *Linum* (flax), *Ruta*, *Citrus* (orange), *Euphorbia*.

The guttifers (*Guttiferales*), as in *Thea* (tea), *Viola*, *Passiflora*.

The mallows (*Malvales*), as in *Tilia* (linden), *Malva*, *Gossypium* (cotton), *Ulmus* (elm), *Morus*, *Ficus*, *Urtica*, in all of which the petals are free and distinct from one another.

In the following the petals are united (gamopetalous) and there is a gradual reduction in the number of carpels in the compound pistil. The primroses (*Primulales*), as in *Primula Dodecatheon*, *Plantago*.

The heaths (*Ericales*), as in rhododendron, *Kalmia Erica*, *Pirola Monotropa*.

The ebonys (*Ebenales*), as in *Achras*, *Diospyros* (persimmon), *Styrax*.

The phloxes (*Polemoniales*), as in *Gilia*, *Phlox*, *Convolvulus* (morning glories), *Solanum*, *Capsicum*, *Datura*.

The gentians (*Gentianales*), as in *Olea* (olive), *Fraxinus* (ash), *Gentiana*, *Asclepias*.

The figworts (*Scrophulariales*) as in *Verbascum*, *Gerardia*, *Catalpa*, *Orobanche*, *Utricularia*, *Acanthus*.

The mints (*Lamiales*), as in *Verbena*, *Nepeta*, *Lamium*, *Salvia* (sage), *Mentha* (mints).

These plants are at the summit of this line, and represent the highest development attained by plants with gamopetalous flowers whose pistils are superior.

Second Line.—In the rose-sunflower line there are about nine orders and ninety families, the general sequence of which is as follows:

The roses (*Rosales*) are very much like the buttercups, having usually a considerable number of simple pistils, many stamens, and petals and sepals not united. The flower axis has a disk-shaped enlargement at its base, and this appears to be the dominant structure of this line. Here are such genera as *Potentilla*, *Fragaria* (strawberry), *Spiræa*, *Rosa*, *Pirus* (apple), *Prunus*, *Mimosa*, *Gleditsia*, *Trifolium*, *Medicago*, *Vicia*, *Pisum* (pea), *Saxifraga*, *Ribes*, *Crassula*, *Platanus*.

The myrtles (*Myrtales*) have overgrown the compound pistil by the cup-shaped disk, as in *Myrtus*, *Jambosa* (clove), *Eucalyptus*, *Oenothera*, *Fuchsia*.

The cactuses (*Cactales*) have, in addition to myrtle-like flowers, a leafless, fleshy plant body, as in *Opuntia*, *Cereus*, *Cactus*, *Melocactus*, etc.

The loasas (*Loasales*) include such genera with inferior pistils as *Mentzelia*, *Cucurbita* (pumpkins), *Cucumis* (melons), *Citrullus*, *Begonia*.

The buckthorns (*Celastrales*) include *Rhamnus*, *Vitis* (grapes), *Celastrus*, *Ilex* (holly), *Elæagnus*, *Viscum* (mistletoe), etc.

The horse-chestnuts (*Sapindales*), which include a series of trees with more and more simplified flowers, from *Aesculus*, *Acer* (maple) and *Rhus*, to *Juglans* (walnuts), *Betula* (birch), *Corylus*, *Fagus* (beech), *Castanea* (chestnuts), and *Quercus* (oaks).

The umbelworts (*Umbellales*), in which the mostly bicarpellary two-celled pistil is wholly inferior by the adhesion of the disk, and the five stamens and five petals are distinct, while the sepals are small. Here we find *Aralia Hedera* (ivy), *Coriandrum*, *Conium*, *Cicuta*, *Pastinaca*, *Daucus* (carrot), *Cornus*, etc.

The madderworts (*Rubiales*), with the general structure of the umbelworts but with the petals united (gamopetalous), represented by *Galium*, *Coffea Cinchona*, *Sambucus*, *Lonicera* (honeysuckle), etc.

The sunflowers (*Asterales*), with small flowers mostly crowded into heads, the pistil typically bicarpellary but mostly one-seeded and one-celled, the corolla tubular and the calyx reduced to chaff or bristles (pappus) or entirely wanting. Here at the summit of the vegetable kingdom are found the bellworts (*Campanula*) and lobelias (*Lobelia*) and also a vast number of "composites," of which more than 13,000 species are now known. These represent the highest development to be found anywhere in the vegetable kingdom.

The sunflowers proper (species of *Helianthus*) are to be regarded as representing the lower or primitive composites, from which have come the ragweeds (*Ambrosia*), as well as the asters (*Aster*) and golden-rods (*Solidago*) and ironweeds (*Vernonia*) on the one hand, and the chrysanthemums (*Chrysanthemum*) groundsels (*Senecio*, *Arnica*), thistles (*Cnicus*), the chicories (*Cichorium*), the lettuces (*Lactuca*) and the dandelions (*Taraxacum*).

The last-named genus is on many accounts to be regarded as the highest in this group, and, as a consequence, in the vegetable kingdom.

Probable Early Home of Common Food Plants and Time of First Cultivation

Almond.— Mediterranean Countries Western Asia	Prehistoric
Apple.— Europe, S. W. Asia	Prehistoric
Artichoke.— N. America	Modern
Asparagus.— Europe, W. Asia	Ancient
Banana.— S. Asia	Prehistoric
Barley.— W. Asia	Prehistoric
Bean, Kidney.— S. America	Prehistoric
Bean, Lima.— Brasil	Ancient
Beet.— Asia, Mediterranean Countries	Ancient
Brazil Nut.— Amazon Valley	Still wild

Buckwheat.—N. Asia	Modern	
Butternut.—E. United States	Recent	
Cabbage, Kale, etc.—Europe	Prehistoric	
Cacao (Source of "Chocolate")—Tropical America	Prehistoric	
Carrot.—Europe	Ancient	
Celery.—Mediterranean Countries	Ancient	
Cherry.—Asia	Ancient	
Chestnut.—S. Europe, N. Africa	Ancient	
Coconut.—Colombia, S. America	Prehistoric	
Corn, Maize.—Tropical America	Ancient	
Cucumber.—India	Prehistoric	
Currant.—America, Asia	Modern	
Date.—S. W. Asia, N. Africa	Prehistoric	
Egg Plant.—India	Prehistoric	
Fig.—Mediterranean Countries	Prehistoric	
Filbert.—Europe, Asia, N. Africa	Ancient	
Fox-grape.—N. E. United States	Recent	
Grape.—W. Asia, Mediterranean Countries	Prehistoric	
Hickorynut.—Mississippi Valley, E. United States	Recent	
Lemon.—India	Ancient	
Lettuce.—Mediterranean Count	Ancient	
Muskmelon.—S. Asia, Africa	Ancient	
Mushroom.—N. Temperate Zone	Modern	
Oats.—W. Asia	Ancient	
Olive.—Asia Minor	Prehistoric	
Onion.—Asia	Prehistoric	
Orange.—E. and S. Asia	Ancient	
Parsnip.—Europe	Ancient	
Pea.—Asia	Ancient	
Peach.—China	Prehistoric	
Peanut.—Brazil	Ancient	
Pear.—Europe, S. W. Asia	Prehistoric	
Pecan.—W. Mississippi Valley	Recent	
Pineapple.—Central America and West Indies	Ancient	
Plum.—Persia, Asia Minor	Ancient	
Pumpkin, Gourd, Squash.—N. South America and S. North America	Ancient	
Potato, Sweet.—Central America	Prehistoric	
Potato, White.—S. American Andes	Prehistoric	
Quince.—Persia, Asia Minor	Prehistoric	
Radish.—Asia	Ancient	
Raspberry.—N. Temperate Zone	Modern	
Rice.—S. Asia	Prehistoric	
Rye.—Central Asia	Ancient	
Sago.—Pacific Islands	Modern	
Spinach.—Asia	Ancient	
Strawberry.—American Pacific Coast	Recent	
Sugar Cane.—S. China	Ancient	
Tomato.—Peru	Ancient	
Turnip.—Europe	Prehistoric	
Walnut, ("English").—E. Europe, Temperate Asia	Ancient	
Watermelon.—Tropical Africa	Prehistoric	
Wheat.—Tigro-Euphrates Valley	Prehistoric	

Bibliography of Botany.—Only the most important works are here enumerated.

History.—Green's *Landmarks of Botanical History;* Sach's *History of Botany,* 1530-1860; Green's *History of Botany,* 1860-1900.

Cytology, Histology, Morphology.—In addition to the ordinary text-books consult Strasburger, Noll, Schenck and Karsten's *Textbook of Botany.*

Physiology.—Pfeffer's *Physiology of Plants.*

Pathology.—Ward's *Disease in Plants.*

Ecology.—Clement's *Research Methods in Ecology.*

Phytogeography.—Schimper's *Plant Geography.*

Phylogeny, Taxonomy.—Campbell's *Evolution of Plants.* Engler's *Übersicht uber die Unterabteilungen, Klassen u. s. w. der Embryophyta siphonogama.* and *Erlauterungen zu der Übersicht.* Bessey's *Synposis of Plant Phyla, Phylogeny and Taxonomy of Angiosperms, The Phyletic Idea of Taxonomy.*

Nomenclature. — International Rules of Botanical Nomenclature adopted by the International Botanical Congress of Vienna, 1905.

For the systematic botany of the whole vegetable kingdom consult Engler and Prantl's *Naturlichen Pflanzenfamilien* and Bessey's *Synopsis of Plant Phyla.* For Phyla I, II, III, IV, V, VI, VII consult also De Toni's *Sylloge Algarum,* and Saccardo's *Sylloge Fungorum.*

Phylum VIII., Hedwig's *Species Muscorum.*

Phyla IX., X., XI., Hooker and Baker's *Synopsis Filicum,* Campbell's *Mosses and Ferns.*

Phyla XII., XIII., XIV., consult.

Bentham and Hooker's *Genera Plantarum.*

De Candolla's *Prodromus.*

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Bessey's *Phylogeny and Taxonomy of Angiosperms.*
Engler's *Das Pflanzenreich.*
Gray's *Synoptical Flora of North America.*
Britton and others' *North American Flora*, and various local manuals:
Britton and Brown's *Illustrated Flora of the Northern United States, Canada and the British Possessions.*
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Gray's *New Manual of Botany.*
Small's *Flora of the Southeastern United States.*
Coulter and Nelson's *New Manual of the Botany of the Central Rocky Mountains.*
Piper's *Flora of Washington.*
Brewer, Watson and Gray's *Botany of California.*
Among current botanical periodicals should be mentioned the following:
American.—*Botanical Gazette: Bulletin of the Torrey Botanical Club.*
English.—*Annals of Botany: New Phytologist.*
German.—*Flora: Berichte der Deutschen Botanischen Gesellschaft: Botanische Jahrbucher fur Systematik, Pflanzengeschicte und Pflanzengeographie: Jahrbucher fur Wissenschaftliche Botanik.*
French—*Annals des Sciences Naturelle (Botanique), Journal de Botanique.*

CHEMISTRY is that science which is largely concerned with a study of the different species of matter and of the changes from one species to another. When iron rusts, or when charcoal burns, the products of these chemical changes are species of matter that are different from the original iron or charcoal. The different species or kinds of matter are called *substances.* Granite, and also gunpowder, are mixtures of at least three different substances.

Substances are recognized and identified often by their *physical properties*, such as color, density, boiling point, melting point, and solubility. They can also be recognized by their *chemical properties*, such as combustibility, ease of rusting, or, generally, their *chemical reactions* or behavior toward other substances chosen to test them with.

Pure Substances.—In studying the different kinds of matter (different substances), such as iron, charcoal, salt, sugar, or niter, it is necessary to first prepare them in a pure state. To do this the chemist uses various processes. In *filtration* the insoluble solid matter is retained by a piece of unsized filter-paper, while the liquid passes through the paper and is collected as the *filtrate.* Instead of filter paper, unglazed earthenware may be used to filter drinking water. The pores in this are so small (in Pasteur filters) that even the minute microbes, some of which cause disease, cannot pass through.

In *distillation* a liquid, by raising its temperature, is converted into gas and is so separated from any substances that accompany it which are less *volatile, i. e.*, less easily gasified. In this way, for example, pure drinking water may be obtained on board ship from sea water, which contains difficultly volatile salts, including common salt, dissolved in it. The gaseous water (steam) is *condensed* to water again by passage through a cooled tube. It should be noticed that the changes from water into steam and *vice versa* are classed as *physical changes*, because analysis shows that steam and water consist of the same substance differing only in state, steam being in the gaseous state, water in the liquid, and ice in the solid state.

Sublimation refers to the distillation of solids. Sal-ammoniac, benzoic acid, etc., are purified by sublimation. *Lixiviation* and *leaching* refer to the dissolving out of a soluble substance from its admixture with an insoluble substance.

Physical Properties.—The substance having been obtained in a pure state, a study may be made of its properties. Purity is extremely important; and chemists and physicists alike have in the past often wasted years of their lives in studying substances that were seriously impure and that could not, therefore, be expected to yield constant results.

Solubility.—Among physical properties, *solubility* is one of the most important to the chemist. Liquids dissolve solids, other liquids, and also gases. If common salt be added to water, it dissolves, and, after stirring, the solution is said to be homogeneous because all samples, wherever taken, prove to be identical. Water is here the *solvent* and salt the *solute.* If more and more salt be added by degrees, the temperature remaining constant, a stage is finally reached at which the solution will take up no more salt. The solution is then said to be *saturated*, at that temperature, with common salt.

Its *concentration* may be stated in any one of three ways: (1) Weight of salt contained in such a weight of the solvent; (2) weight of salt contained in such a weight of the solution; (3) weight of salt contained in such a volume of the solution. When the temperature is raised it is found that the solution can take up more salt. Tables of solubilities state the concentration of the saturated solution at a series of different temperatures. It is by making use of their differences in solubility that intimate mixtures of different solids can be separated into their components; for instance, radium bromide is separated from barium bromide by repeated *fractional crystallization.*

Most, but not all, solids are more soluble at higher temperatures than at lower. All substances seem to be slightly soluble in water, although in some cases the saturated solution is an exceedingly dilute one.

That gases dissolve in water is known to every one who has examined *soda-water*, which contains the gas carbon dioxide in solution. If the gas is under pressure, the weight of it that the solvent will dissolve is proportional to the pressure (Henry's law). Since soda-water is *aerated* at several atmospheres' pressure, a portion of the gas tends to escape when the pressure is released. Gases are less soluble the higher the temperature, and can often, though not always, be completely removed by boiling the solvent. By ten minutes' boiling, for example, the gases dissolved from the air by ordinary water may be removed and the water thus rendered flat or insipid to the taste.

Molecular Hypothesis.—In studying the physical properties of substances there is a hypothesis as to the structure of matter—the kinetic-molecular hypothesis—that has proved particularly illuminative. On this hypothesis, each substance is supposed to be built up of minute particles of its own material called *molecules*, all alike and each incapable of finer subdivision if the substance is to remain the same. In the gaseous state of the substance the molecules are at distances apart that are great in comparison with their own diameters, and are moving about in straight lines with great speed, each occasionally colliding with some other molecule or with the walls of the vessel. The miniature bombardment of the walls of the vessel by myriads of molecules is the cause of the pressure of the gas on the walls.

Boyle's Law.—In agreement with this conception is the well-known fact that if a gas be compressed to $\frac{1}{n}$ times its original volume, then its pressure is increased n-fold. For, plainly, the molecules, and therefore their impacts, will now be n-times as many as before. It is also a well-known fact of experiment that the pressure of an inclosed volume of gas varies directly as its absolute temperature, *i. e.*, its temperature measured from the absolute zero, which is −273°C. This is accounted for by considering that the speed of motion of the molecules is increased as the temperature rises, and that the impacts of the molecules are therefore stronger. It is indeed strange that gases should all be precisely alike in conforming to these two laws, for in the case of solids and of liquids the behavior toward pressure and toward change of temperature is different for each substance. Gases must, therefore, all have something in common which liquids and solids have not.

It seems certain that all gases contain, at like temperature and pressure, the same number of molecules in equal volumes. Since this is so, by weighing equal volumes of different gases the relative weights of their molecules can at once be found. The *molecular weights*, compared with the weight of a molecule of oxygen taken as 32, of gases, or of gasifyable substances, are determined in this way.

Vapor Pressure.—In the case of liquids, the crowding together of the molecules is much closer than in gases. If a gas be at a temperature lower than its *critical temperature*, however, it may always be compressed into a liquid. From the surface of a liquid, supposed to be placed, for example, in an empty closed vessel, some of the molecules are constantly escaping into the upper part of the vessel, where they behave like gas molecules, giving rise to a (gaseous) pressure there, known as the *vapor pressure* of the liquid. Some of these are constantly returning to the liquid, in the course of their wanderings, but their places are taken by newcomers from the liquid. The vapor pressure, therefore, remains constant at any temperature. If the temperature is raised, this vapor pressure increases. For this reason, water in such a vessel, if raised sufficiently in temperature, might finally "burst its boiler."

Chemical Analysis.—The chemical properties of pure substances may be studied by testing by experiments their behavior, under different conditions, both alone and toward other substances. In particular it may be discovered, for example, that red lead can be made to furnish the metal lead and the gas oxygen. The processes of finding out what substances or mixtures of substances are made up of are called chemical analyses.

Qualitative Analysis concerns itself with the kinds of matter present, and *quantitative analysis* with the proportions by weight or by volume in which they are present. It has been found that all substances are made up from only about eighty-two different kinds of matter, called *elements*, combined in different ways. Thus sugar, alcohol, acetic acid, cotton and starch, although apparently so different, each contains only the three elements, carbon, hydrogen, and oxygen in different proportions. All compounds containing only oxygen in combination with one other element are called oxides, as calcium oxide (quicklime), lead oxide (litharge). Those compounds containing chlorine in combination with one other element are chlorides, as sodium chloride (common salt), etc. In general, compounds with the termination *ide* contain only the elements named. Those whose names end in *ite* contain, besides, oxygen, as sodium chlorite; those ending

in *ate* more oxygen still, as sodium chlorate, while sodium *per*chlorate contains still more oxygen than sodium chlorate. The majority of the elements are metallic elements (metals), while only about fourteen are nonmetallic elements (carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, chlorine, silicon, etc.).

Quantitative Analysis has brought out many of the most remarkable facts of chemistry that were entirely missed by the chemists of antiquity and of the middle ages. It is found, by weighing, that no matter can be destroyed, although one compound may be changed into another. This principle is called the *conservation of matter*. A candle appears to burn to nothing merely because its products of combustion happen to be invisible. If it be allowed to burn in a large closed vessel, there is just as much carbon in the vessel after as before the burning, although it is now in the form of a gas (carbon dioxide) instead of combined as a solid compound with hydrogen.

Quantitative analysis of different samples of the same pure substance brings out the fact that the composition of every pure substance is invariably the same, or, in other words, that the elements combine in definite proportions by weight to form each particular compound. This observed regularity is known as the *law of definite proportions*. By analysis of different compounds made of the same elements, A and B, it is found, further, that the weights of B, which, in the different compounds, are united with the same weight of A, are related to each other in the ratio of small integers. This could not have been anticipated, and, when found, calls for explanation. The accepted explanation is most concrete in terms of the atomic theory.

The Atomic Theory supposes that the molecules of every compound are built up of units, called atoms, of the elements that are present, and that all the atoms of any one element are identical in material and weight. Thus, water consists of molecules each of which contains two atoms of the element hydrogen combined with one atom of the element oxygen.

Symbols are given each element to stand for the weight of its atom compared to the weight of an atom of oxygen, which is taken as 16 (for arbitrary reasons of convenience). The formula for a molecule of water is thus H_2O, signifying that one atomic weight of oxygen (16 parts by weight) is combined with two atomic weights ($2\times1=2$ parts by weight) of hydrogen. The formula for hydrogen peroxide is H_2O_2.

It will be seen upon reflection that this atomic hypothesis accounts perfectly for the experimentally found law of multiple proportions referred to above, as well as for the observed fact (*law of combining weights*) that the proportions by weight in which elements combine to form compounds can always be expressed perfectly by (usually) small integral multiples of particular numbers, one number belonging to each element.

Combustion.—A Christmas candle will burn less than ten seconds in half a pint of air. A kerosene lamp with a good Rochester burner will burn not more than four minutes in an empty flour barrel if tightly covered. The burning of the wax or the oil consumes a portion of the oxygen which constitutes one-fifth of the air, and they cease to burn when one-quarter of the oxygen, or one-twentieth of the air, is used up. Air which contains not more than 15 per cent oxygen will extinguish a fire; it will also extinguish life. Hence a lantern is lowered into old wells to determine whether it would be safe for a man to descend into them. The air which comes from one's lungs is very nearly like that left in the barrel after the lamp had extinguished itself in it. A bottleful of air from the lungs will extinguish a candle flame.

Formation of Compounds.—Fuels in burning unite with the oxygen of the air, forming new compounds. For example, when we burn in an ordinary furnace fifteen tons of coal, the furnace consumes also about thirty-two tons of oxygen from the air, and pours out into the air about forty-four tons of carbon dioxide gas, leaving behind about three tons of ashes. These figures, although not exact, are intended to convey two ideas—first, that combustion is a union of oxygen with fuels; and, second, that the process neither destroys nor creates matter, but merely changes combinations of matter. The oxygen is quite as much fuel as the coal.

In the case of the coal, the kerosene or the candle, water vapor is produced as a product of combustion along with the carbon dioxide. This water vapor is noticed when a cool chimney is first put upon a kerosene lamp.

Fuels and Foods.—Our foods correspond to fuels and we take in also oxygen as a food, or fuel. By a process analogous to combustion we cause oxygen to unite with these foods, producing water vapor, carbon dioxide, and heat for our bodies.

When a bottle of pure oxygen is placed over a burning candle the candle of course burns brighter and longer than it would in a bottle of air, but goes out before all the oxygen is exhausted. The contents of the bottle will now act as a fire extinguisher, although it contains as much oxygen as ever. Part of the oxygen is now bound in chemical union with carbon from the candle, and the oxygen which is free does not constitute a sufficiently large portion of the whole to support combustion.

Rust.—As might be expected, many things burn vigorously in pure oxygen which burn but slowly or not at all in the air, since the air is greatly diluted oxygen. A thin strip of iron may be burned with great vigor in pure oxygen. The black substance which will be found on the bottom of the bottle after the close of this experiment is analogous iron rust. It weighs considerably more than the iron which was burned and the increase in weight represents the oxygen which was burned. Combustion and rusting differ only in the rapidity of the action. Combustion is rapid rusting, and rusting is slow combustion. Both are called oxidation and the products are called oxides. The oxidation of our foods in our bodies is slow—more like rusting than combustion. We cover iron with various things to prevent the oxygen of the air from rusting it. It is covered with tin in the tinware of the kitchen, with zinc in the case of "galvanized" iron, with nickel, with porcelain, with paint, with grease, with vaseline, etc.

Extinguishing Fires.—In fighting a fire at its start, the one thing to do is to make the fire smother itself. An ordinary living room does not contain oxygen enough to burn up five pounds of wood. If the doors and windows are closed perfectly tight, a fire burning in a pile of dry kindlings in such a room will smolder for a time and finally go out precisely as does the candle burning in a bottle.

Most fire extinguishers are devices for producing carbon dioxide gas. With this they smother small fires by pouring into the atmosphere around them enough of the gas to reduce the proportion of oxygen below 15 per cent.

Streams of water, when thrown in sufficient quantity, as by fire engines, extinguish large fires both by cooling the fuel and by diluting the air with steam until the proportion of oxygen falls below 15 per cent.

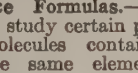
Atomic Weight. — The choice of atomic weights is a matter of some little complexity. The atomic weight of an element is defined to be the smallest of the weights of the element found in the molecular weights of all its volatile compounds. To pick out the correct atomic weight for the element chlorine, for instance, the molecular weights of all the volatile compounds of chlorine must first be found. Next, to find out what part of the molecular weight of each compound is due to chlorine, each of the compounds must be analyzed. Thus a series of numbers is arrived at which might read as follows: 71, 106.5, 71, 35.5, 142, 35.5, 71, etc. From this it is seen that the smallest weight of chlorine occurring in any of these compounds is, on the scale used, 35.5. Since no compound is found to contain in its molecular weight a smaller weight of chlorine than this, 35.5 is adopted as the molecular weight of chlorine. It should be noted that the formula for the gas chlorine is Cl_2, because its molecular weight is found by experiment to be 71, and must therefore contain two atomic weights of chlorine.

The case is more difficult when we have to deal with an element that forms few volatile compounds. In such cases, we are aided by a regularity, or law, first observed by the French chemists Dulong and Petit in 1819, that the numerical product of the atomic weight of an element by its specific heat is usually close to 6.3. When in doubt between several plausible values for the atomic weight of an element, we may, therefore, settle the question by determining its specific heat and then selecting for atomic weight that value which will yield a product near to 6.3 when multiplied by the specific heat observed.

Valence.—If one examines the formulas for a number of different chlorides, as $NaCl$, $MgCl_2$, $AlCl_3$, CCl_4, PCl_5, it is evident that the atoms of sodium, magnesium, etc., seem to differ in their power of holding chlorine atoms. Sodium, as also chlorine, is said to have a valence one, magnesium two, aluminium three, carbon four, and phosphorus five. The valence of oxygen is two, and the formulas for the oxides corresponding to the above chlorides are Na_2O, MgO, Al_2O_3, CO_2, P_2O_5. Thus two atoms of aluminium with their total of six valence "bonds" are found united with three atoms of oxygen, which also have, in all, six valence bonds. Many elements can function, under different conditions, with two or even more valences; thus iron in one series of compounds is dyad or bivalent, as in $FeCl_2$, FeO, etc.; and in another series triad or trivalent, as in $FeCl_3$, Fe_2O_3, etc. Phosphorus is triad in PCl_3, but pentad in PCl_5.

Graphic Formulas.—There are often good reasons for assigning certain arrangements of the atoms within the molecule. This

arrangement is expressed graphically in formulas such as Ba(O–O) basium peroxidate and Pb(O)₂ lead dioxide; or



acetic acid, the simple formula for which is $C_2H_4O_2$.

Space Formulas.—Pasteur was the first to study certain pairs of substances whose molecules contain atoms of precisely the same elements arranged precisely similarly, but with only this difference, that the molecules of the two "enantiomorphous" substances are related to each other as a right-hand glove is to a left-hand glove, or as an object is to its mirror-image. Such molecular arrangements can be imitated accurately by models in space of three dimensions.

Reactions—Chemical reactions are represented by means of equations. Thus, the fact that 56 parts of iron will unite with 32 parts of sulphur to produce 88 parts of ferrous sulphide is written $Fe+S—\ FeS$. Again, the equation $4Al+3O_2—\ 2Al_2O_3$ indicates, if the atomic weights be known, the respective weights of aluminium and of oxygen that react to form a certain weight of aluminium oxide. This is a case of *simple combination*.

A more complex reaction, which takes place in solution, is shown by the equation $AgNO_3+NaCl—\ AgCl+NaNO_3$, where we find the four "radicals" Ag, NO_3, Na and Cl exchanging partners. Such a change is called a *double decomposition*. A group of atoms such as NO_3 that remain together throughout a series of reactions is called a *compound radical*.

Radicals are classified into *positive* and *negative* radicals. In the above example, Ag and Na are each positive, while Cl and NO_3 are negative radicals. A compound containing both kinds of radicals is a *salt*—for example, silver nitrate, silver chloride, sodium nitrate, sodium chloride.

Those salts that have hydrogen for their positive radical are called acids, and their solutions have a sour taste and turn the blue coloring matter litmus red. Those salts that have the group OH for their negative radical are bases, and their solutions have a soapy taste and feel, and turn red litmus blue; example, sodium hydroxide. When an acid is mixed with a base in solution, the radicals H and OH combine to form water HOH, and the remaining positive and negative radicals, on uniting, constitute a salt. If the resulting solution has no action on litmus, the acid and base have "neutralized" each other.

Salts may also be formed in the dry way by the union of an "acidic oxide" such as carbonic anhydride with a "basic oxide" such as calcium oxide, $CO_2+CaO—\ CaCO_3$. The oxides of the nonmetals are acidic, while the lower oxides of the metals are basic. The higher oxides of the metals, *i. e.*, those with more oxygen, are frequently acidic. An acidic oxide yields an acid when it combines with water, while a basic oxide yields a base.

Besides involving changes from one form of matter to another, all chemical reactions are accompanied by some energy change. Heat, light, mechanical or electrical energy may be produced or consumed. The corresponding branches of chemistry that deal with such energy changes are thermochemistry, electrochemistry, photochemistry, etc.

Thermochemistry.—(I.) If the parts taken be grams, the above mentioned reaction between aluminium and oxygen gives rise to 760,400 calories of heat. This is expressed by the thermochemical equation $4Al+3O_2—\ 2Al_2O_3+760{,}400$ cal. This particular reaction has been chosen as an example because of its technical importance. Few other metals in combining with oxygen produce nearly so much heat as aluminium. Thus, for the burning of iron the thermochemical equation is $4Fe+3O_2—\ 2Fe_2O_3+388{,}800$ cal. Now if aluminium filings are mixed with iron oxide and the mixture ignited, the aluminium deprives the iron of its oxygen as shown by the equation $2Al+Fe_2O_3—\ Al_2O_3+2Fe+185{,}300$ cal., and the amount of heat liberated is the difference between the heat supplied by the combination of aluminium with oxygen and that consumed in the decomposition of the iron oxide, *viz.*, $(760{,}400—388{,}800)\div 2=185{,}800$. Since the materials are in close admixture, the reaction proceeds rapidly, and, as no volatile products are formed, no heat is thus carried away. A very high temperature is produced and may be utilized for welding rails, etc. (Goldschmidt process).

(II.) It is sometimes necessary, on the other hand, to produce a very high temperature before a chemical action will take place. In addition to the ordinary types of furnaces, electric furnaces have latterly been used for this purpose, their exceedingly high temperatures rendering possible the manufacture on a commercial scale of calcium carbide, carborundum, silicon, "electrical steel," artificial graphite, etc., thus giving rise to many industries which were not dreamed of before the advent of this type of furnace.

Electrochemistry.—A study of chemical reactions in their relations to electrical energy has developed enormously within the last twenty years.

(I.) Many chemical reactions may be so conducted as to furnish a supply of electricity. Such reactions are allowed to take place in primary batteries, *e. g.*, in the Daniell or Leclanché cells. In a secondary cell, such as a lead accumulator, a chemical action is caused to take place by putting in electrical energy from the dynamo. When this reaction is complete, the cell is "charged"; and whenever the reaction is allowed to reverse itself, electricity will be given out.

(II.) There are many reactions which can be made to occur by the use of electrical energy. For example, salts, whether fused or in solution, may be decomposed by electrolysis. Thus gold, silver, nickel, copper, etc., may be deposited from solution of their salts (*cf.* gold, etc., plating, electrotyping, etc.). Solution of common salt may yield on electrolysis sodium hydroxide, chlorine, sodium hypochlorite and sodium chlorate, all valuable products. Copper is refined electrolytically. The metals sodium, potassium, magnesium, calcium, aluminium, etc., are produced commercially by electrolysis of their molten compounds.

Electrical energy may also be used to produce electric discharges in which such actions as the making of ozone, nitrogen peroxide (and hence nitric acid) may be caused to take place. The latter application may prove of vast importance in the near future, when the world's supply of Chili saltpeter ($NaNO_3$), upon which, as a nitrogenous manure, the wheat supply in part depends, is exhausted.

Photochemistry finds its chief application in the field of photography. The efficiency of various mixtures of the earths ceria and thoria in incandescent gas mantles, or of titanium carbide as a substitute for the carbons of arc-lamps, are really questions of physics, but have obviously a close connection with chemistry.

Physical Chemistry includes, besides the three branches just referred to that deal with the energy changes accompanying chemical reactions, the study of many other topics that are closely related to physics. This side of chemistry has developed in a quite phenomenal degree since the year 1887, in which the ionic theory was first propounded.

Ionic Theory.—According to the ionic theory, when salts are dissolved in water they are largely split up into their radicals, which are then present in the solution carrying electric charges. These charged radicals are called ions. Thus, the ions furnished by common salt in solution are Na˙ and Cl', where the positive and negative charges on the ions are indicated by a ˙ and a ' respectively.

In a solution containing 58 grams of common salt per liter, 68 per cent of the molecules of sodium chloride are considered to be ionized, while the remaining 32 per cent remain in the form of unbroken molecules. It must be remembered that the ion Cl' is not by any means the same substance as the gas chlorine, for, though it is made of the same kind of matter, its energy content is very different. The ions in a solution of sodium sulphate (Na_2SO_4) are Na˙, Na˙, and SO_4".

In alcoholic solution, salts are not so highly ionized as in water; that is, the proportion of un-ionized (or undissociated) molecules is larger. In solution in other liquids, salts are often scarcely ionized at all, and it is found that such solutions do not conduct electricity as aqueous solutions of the same salts do.

The mechanism of the (electrolytic) conductivity of a solution of a salt, acid, or base in water consists, on the ionic hypothesis, in a bodily attracting of the positive ions in the solution by the negatively charged pole, and of the negative ions by the positive pole immersed in the solution. The positive and negative ions, therefore, move or travel toward the electrodes or poles, and finally give up their charges there. In this way electricity is transported through the solution.

In terms of the ionic theory, an acid owes its acid properties to the presence of hydrogen-ion in its solution, while a base owes its basic properties to the presence of hydroxide-ion (OH'). The strongest acids and bases are those that under like circumstances yield the highest concentration of H˙ and OH' respectively.

Subdivisions of Chemistry.—In its treatment of the various forms of matter, chemistry divides itself into the two great branches of inorganic and organic chemistry.

Organic Chemistry.—The latter is so-called because it originally dealt with the substances that are found in the organic vegetable and animal kingdoms. Practically most of these substances contain carbon, so that organic chemistry is nowadays the chemistry of the carbon compounds. As the number of known organic compounds is well over 100,000, the subject is a large one, with a very voluminous literature, increasing year by year in yearly as well as in total volume.

Carbon.—The valence of carbon in most of its compounds is uniformly 4, a regularity which simplifies matters con-

siderably at the outset. Carbon atoms are found to have the faculty of linking themselves together to form chains and rings. In this faculty carbon is exceptional among the elements, and for this reason no other element approaches carbon in the multitude of its compounds, so as to merit the treatment of its compound as a separate branch of chemistry. The attaching of carbon atoms to each other does not utilize all four of the available valences, and the unoccupied valences are therefore able to attach to the molecule such other elements as hydrogen, oxygen, nitrogen, etc.

It is found that the same grouping of elements recurs as part of a complex molecule; and all substances that possess the same group somewhere in their molecule are fortunately found to show the same reactions in virtue of the presence of that group. Thus, all the compounds containing the group $-CH_2OH$ are classed as primary alcohols; those with the group $-CHO$ are aldehydes; those with $-COOH$ are acids;

$$-\overset{O}{\overset{\|}{C}}-$$

those with the group attached to carbon atoms on both sides, are ketones; and so on. The fact that all primary alcohols, all aldehydes, acids, etc., behave chemically more or less alike makes it possible to bring order out of the chaos of organic compounds, since the typical groupings of atoms are comparatively few in number.

Hydrocarbons.— Many important organic compounds contain only the elements carbon and hydrogen. These are called the *hydrocarbons*, and include marsh gas (CH_4), acetylene (C_2H_2), benzene (C_6H_6) and the components of rock oil, which is a mixture of many hydrocarbons.

Carbohydrates.—Another set of organic compounds contains only the three elements carbon, hydrogen and oxygen, the latter two in the same proportion as in water, *viz.*, two atoms of hydrogen to one of oxygen. These are the *carbohydrates*, and include grape and fruit sugars ($C_6H_{12}O_6$), cane, malt and milk sugars ($C_{12}H_{22}O_{11}$), the starches and cellulose $[(C_6H_{10}O_5)_n]$, which last is the structural material of the vegetable world. The fats and oils, common alcohol, glycerine, and acetic, citric and tartaric acids contain only carbon, hydrogen and oxygen.

When to these elements is added nitrogen as a possible constituent of organic substances, the list becomes a very varied one, including nitroglycerine, nitrocellulose or guncotton, aniline and a horde of dyes, and most of the alkaloids—substances of very powerful physiological action that occur in plants. Adding also sulphur, the vastly important proteins are included, some of which (the nucleoproteins) may contain also phosphorus. Other than water, fats and mineral constituents, proteins constitute the building material of the animal body, and are necessary in the diet of animals.

Inorganic Chemistry, deals with over eighty different elements and their compounds, including those of the mineral world. Its extent is in part indicated in the subjoined table of *Chemical Elements*.

The selection and grouping together of the facts and principles of chemistry that bear on some particular topic gives rise to such divisions as "physiological chemistry," "agricultural chemistry," "biochemistry," "immunochemistry," etc. Such titles are, for the most part, self-explanatory.

CHEMICAL ELEMENTS

Tabulation of facts concerning all the known elements.

At. wt., atomic weight; S. G., specific gravity; M. P., melting point; B. P., boiling point; C. T., critical temperature.

Name, With Certain Data	Occurrence and Preparation	Properties	Chief Compounds and Uses
Aluminium. Symbol Al. At. wt. 27.1. Valence III. S. G. 2.6. M. P. 658°.	Occ.—cryolite AlF_3, 3NaF; bauxite, impure $Al(OH)_3$; in feldspars, micas and clay; emery, ruby, sapphire (Al_2O_3). Prep., com'l, by electrolysis of Al_2O_3, from bauxite, dissolved in cryolite, water-power usually furnishing the electrical energy.	Silver-white, ductile, malleable at 120°, tensile strength (wrought) 16 tons per sq. in. A better conductor of electricity, weight for weight, than copper. Molten metal not mobile enough to make castings. It turns badly in the lathe. Acted upon by dil. hydrochloric acid, slowly by sulphuric, but not by nitric or the acids occurring in foods. Soluble in alkaline hydroxides. The tarnishing action of moist air soon comes to an end as the tarnish acts as an *adherent* protective coating.	Used for cooking utensils, boat-building, military accouterments and small articles requiring lightness and strength; for electric leads. The powdered metal is used as a body for paint; and its mixture with ferric oxide, called thermite, is used for producing very high temperatures (up to 3700°C.) for welding rails, etc. Many metals are reduced from their oxides by means of Al, hence its use in casting steel. Aluminium bronze (10% Al), rolled, has tensile strength of 40 tons per sq. in. Its sulphate forms alums, *e. g.*, $KAl(SO_4)_2$, $12H_2O$, common alum.
Antimony. Symbol Sb. At. wt. 120.2. Valence III and V. S. G. 6.7. M. P. 630.7°. B. P. red heat.	Occ.—free, and as stibnite (Sb_2S_3). Prep.—roasting stibnite gives Sb_2O_4, which is then reduced by heating with carbon.	White, brittle, crystalline metal. Its alloys expand on solidification, and therefore give very sharp castings, *e.g.*, for type. It does not tarnish, but may be burned in air, and unites directly with the halogens.	The metal is a constituent of the alloys type metal, Britannia metal and Babbitt metal (used for bearings). Its oxide (Sb_2O_3) is both basic and acidic. The trichloride, butter of antimony ($SbCl_3$), is easily hydrolyzed. Tartar emetic ($SbOKC_4H_4O_6$) is used in medicine and in dyeing.
Argon. Symbol A. At. wt. 39.86. Valence nil. Density 39.9 (oxygen =32). B. P. —186°. M. P. —190°.	Present in the air 0.94% by volume. To isolate, air is freed from CO_2 by soda-lime, water by P_2O_5, oxygen by red-hot copper, nitrogen by magnesium and calcium. From the residual mixture argon is obtained by fractional distillation.	Is a monatomic gas and is identified by its characteristic spectrum seen by examining the light emitted when the gas is placed in a vacuum tube at low pressure and sparked. More soluble in water than nitrogen, 100 vols. water dissolving 4 vols. argon under ordinary conditions.	Forms no compounds, hence its name—does no work.
Arsenic. Symbol As. At. wt. 74.96. Valence III and V. S. G. 5.7. B. P. 450° (sublimes) M. P. 480° (under pressure).	Occ.—free, as arsenical pyrites (FeSAs), as orpiment (As_2S_3) and as realgar (As_2S_2). Prep.—by heating arsenical pyrites, FeSAs — FeS+As.	A steel-gray, dully-metallic and crystalline element classed as a metalloid because intermediate between metals and nonmetals. Its vapor has a density corresponding to As_4 at 644°, and to As_2 at 1700°. It burns in air and unites directly with the halogens, sulphur and with many metals.	Used for hardening lead for shot. All its compounds are poisonous. White arsenic (As_2O_3) is partly basic, forming a chloride and partly acidic, forming arsenites. Scheele's green ($CuHAsO_3$) is a pigment dangerous in wallpapers. Traces of arsenic are detected by Marsh's test, in which the intensely poisonous arsine (AsH_3) is formed.
Barium. Symbol Ba. At. wt. 137.37. Valence II. S. G. 3.6. M. P. red heat.	Occ.—as barytes or heavy-spar ($BaSO_4$), and as witherite ($BaCO_3$). Prep.—by electrolysis of the fused chloride.	A silver-white, lustrous, malleable metal harder than lead. Like calcium, it acts slowly on water to give barium hydroxide and hydrogen. The vapors of its compounds impart a green color to the Bunsen flame.	The peroxide (BaO_2) is used in the manufacture of oxygen and of hydrogen peroxide. The nitrate and chlorate is pyrotechny to give green fires. The sulphate as the body for a permanent white paint and for filling glazed paper. All soluble compounds are poisonous.
Bismuth. Symbol Bi. At. wt. 208.0. Valence III (and V). S. G. 9.9. M. P. 266.5°. B. P. ca. 1200°.	Occ.—free and as trioxide (Bi_2O_3) and trisulphide (Bi_2S_3). Prep.—the ore is roasted and then heated with charcoal and metallic iron (to remove traces of sulphur).	An exceedingly brittle, crystalline shining metal, white with a tinge of pink. Bismuth expands on solidification. It does not tarnish, but can be burnt in air. Dissolves in oxygen acids.	Used for making fusible alloys, *e.g.*, Wood's metal, M.P. 60.5°, which are used in plugs of fire sprinklers and boiler safety valves, and for taking casts. The oxynitrate is used in medicine and as a cosmetic.
Boron. Symbol B. At. wt. 11.0. Valence III. S.G. (amorph.) 2.4; (cryst.) 2.5. B.P. 3500° (sublimes)	Occ.—as boric acid (H_3BO_3), borax ($Na_2B_4O_7,10H_2O$), colemanite ($Ca_2B_6O_{11},5H_2O$). Prep.—amorphous boron by reducing B_2O_3 with Mg. Impure cryst. boron by reducing B_2O_3 with excess of Al.	Amorphous boron is a greenish black powder that burns in air at 700°, forming B_2O_3 and also BN. It is oxidized, by hot conc. sulphuric or nitric acids, to boric acid.	The compounds are analogous to those of silicon. Borax is used as a flux, and, in solution, as a mild alkali on account of its hydrolysis. Boric acid is used as a weak antiseptic and preservative.

CHEMICAL ELEMENTS—Continued

Name, With Certain Data	Occurrence and Preparation	Properties	Chief Compounds and Uses
Bromine. Symbol Br. At. wt. 79.92. Valence I. S. G. 3.2. B. P. 59°. M. P. —7.3°.	Occ.—in seawater as alkali bromide, and in the upper layers of salt deposits as sodium and magnesium bromide. Prep.—by treatment of the brines with sulphuric acid and manganese dioxide, or else with chlorine.	A dark red liquid, smelling like chlorine, whose vapor irritates eyes, throat and nose. Dissolves in thirty parts of water (bromine water). Combines directly with most other elements, but less vigorously than chlorine.	Potassium bromide is used in medicine, silver bromide in photography. Bromine is used in course of the preparation of organic dyes.
Cadmium. Symbol Cd. At. wt. 112.40. Valence II. S. G. 8.6. M. P. 321.7. B. P. 770°.	Occ.—in association with the zinc ores, as carbonate and sulphide. Prep.—in the distillation of impure zinc, the cadmium comes over in the first portions.	A silver-white metal, more ductile and malleable than zinc. It burns in air, and is attacked by dilute acids.	All the compounds are poisonous, and little ionized. The sulphide (CdS) is the basis of "cadmium yellow." The iodide is used in medicine.
Cæsium. Symbol Cs. At. wt. 132.81. Valence I. S. G. 2.4. M. P. 26.3°. B. P. 670°.	Occ.—in certain micas, and in the ashes of certain plants. Prep.—by heating the hydroxide (CsOH) with magnesium.	A white silvery metal resembling potassium. It is one of the most active of metals, and decomposes water violently.	The compounds are characterized by giving, especially, two bright lines in the blue of the spectrum (*cæsius* sky-blue).
Calcium. Symbol Ca. At. wt. 40.09. Valence II. S. G. 1.54. M. P. 760°.	Occ.—as carbonate (Iceland spar, calcite, aragonite, marble, chalk, limestone), sulphate (gypsum), phosphate (apatite), fluoride (fluor spar), and as complex silicates in great variety (feldspars, pyroxenes, amphiboles, etc.). Prep.—by electrolysis of the fused chloride.	A white crystalline metal, harder than lead, that can be cut, drawn, rolled and tunned. It attacks water, and burns in the air at a red heat, forming the oxide (CaO) and the nitride (Ca_3N_2). It unites with hydrogen to CaH_2, whose action on water is a source of hydrogen for balloons.	Calcium oxide (quicklime) is used for mortar and to remove hair from hides. The hydroxide [$Ca(OH)_2$] mixed with sand forms mortar; its solution is limewater. Plaster of paris, a less hydrated sulphate, takes up water on setting to form $CaSO_4,2H_2O$. The phosphates are fertilizers. Bleaching powder is CaClOCl and calcium carbide is CaC_2. Common glass contains silicates of calcium and sodium.
Carbon. Symbol C. At. wt. 12.00. Valence IV. S. G. diamond 3.5; graphite 2.3; amorphous 1.9 M. P.—not realized.	Occ.—as diamond and graphite, in the free state; in combination with hydrogen as petroleum, with oxygen as carbon dioxide in the air, with these and other elements as coal, and in plant and animal tissues; and as many carbonates. Prep.—by dry distillation of wood or coal, yielding charcoal and coke respectively.	Diamond is crystalline and the hardest of minerals, the dark-colored "bort" being used for cutting and grinding. Graphite has a black metallic luster, is crystalline and may be scratched by the finger-nail. Charcoal is amorphous, and possesses the power of absorbing gases and also coloring matters. All three forms burn in oxygen to produce carbon dioxide.	The carbon compounds form the subject of "Organic Chemistry." Carbon dioxide results from the burning of coal, coke, wood, oil or illuminating gas, from fermentation and decay, which are slow burnings, and is exhaled in the breath. Carbon monoxide, arising from recently-stoked fires, is an exceedingly poisonous gas.
Cerium. Symbol Ce. At. wt. 140.25. Valence III, IV (and VI). S. G 7.0; M. P. 623°.	Occ.—as silicate in cerite, along with Nd, Pr and La; also in monazite sand. Prep.—by electrolysis of the fused chloride.	A metal with the color and luster of iron, like tin in hardness, and very ductile and malleable. Burns in air more easily and brightly than magnesium.	Welsbach incandescent gas mantles contain one per cent of cerium dioxide CeO_2.
Chlorine. Symbol Cl. At. wt. 35.46. Valence I (and VII). S. G. (liquid) 1.3. M. P. —102°. B. P. —33.6°. C. T. +146°.	Occ.—in seawater as chlorides of the alkalis and alkaline earths, and as like compounds in salt deposits. Prep.—by electrolysis of alkali chloride, fused or in solution; or by the action of manganese dioxide on hydrochloric acid.	A greenish-yellow gas of characteristic odor, with a violent action on the respiratory tract. Unites directly with all elements save oxygen, nitrogen and the argon family. Displaces bromine and iodine from bromides and iodides, and substitutes hydrogen in organic compounds.	The gas is used in extracting gold and in preparing bleaching and disinfecting agents. In presence of water it bleaches many coloring matters. Forms chlorides (as NaCl, HCl, $CaCl_2$), hypochlorites [as solution of $Ca(OCl)_2$], chlorates (as $KClO_3$, used for matches and in pyrotechny), and perchlorates (as $KClO_4$).
Chromium. Symbol Cr. At. wt. 52.0. Valence II, III and VI. S. G. 6.9. M. P. 1515°.	Occ.—as chromite [$Fe(CrO_2)_2$]. Prep.—by reducing Cr_2O_3 with aluminium filings.	A steel-gray, lustrous, brittle and very hard metal. At high temperatures it burns in air to green Cr_2O_3. It is attacked by dilute sulphuric or hydrochloric acid, but not by nitric acid.	The alloy ferrochromium is used in steelmaking. Chrome green, the pigment, is Cr_2O_3. Chrome yellow is $PbCrO_4$. Bichromates (as $K_2Cr_2O_7$) are used in photoprocesses, tanning and dyeing and as oxidizing agents, *e. g.*, in batteries.
Cobalt. Symbol Co. At. wt. 58.97. Valence II and III. S. G. 8.5. M. P. 1500°.	Occ.—as smaltite ($CoAs_2$) and cobaltite CoAsS. Prep.—by igniting the oxide in hydrogen.	A white magnetic malleable metal, less tenacious than iron. By exposure it turns pinkish. It is less active chemically than iron.	Its intensely blue silicates are used in coloring porcelain and constitute the pigment smalt.
Columbium (Niobium) Symbol Cb. At. wt. 93.5. Valence I, II, IV and V. S. G. 12.7; M. P. 1950°	Occ.—in the mineral columbite. Prep.—by reduction of CbO_2 by paraffin.	A light-gray malleable and ductile metal, as hard as wrought iron, which is not affected by acids, even by aqua regia.	The hydride (CbH) burns in air. The compounds occur with those of tantalum, which they closely resemble.
Copper. Symbol Cu. At. wt. 63.57. Valence I and II. S. G. 8.9. M. P. 1084.1. B. P. 2100°.	Occ.—free, as cuprite (Cu_2O), copper glance (Cu_2S), chalcopyrite (Cu_2S,Fe_2S_3), malachite [$CuCO_3,Cu(OH)_2$]. Prep.—after removal of iron and sulphur, the oxide is reduced by heating with carbon. It is refined electrolytically.	A red, lustrous, very ductile and malleable metal of tensile strength 14 tons per sq. in., second only to silver in electrical conductivity. In ordinary air it gradually becomes coated with basic carbonate. In absence of air, nitric acid alone among the dilute acids attacks it, but in presence of air even the acids found in foodstuffs can dissolve it.	The metal is used for coins, electroplating, electric leads, roofing, cooking vessels and for making alloys, such as brass, bell and gun metals, German silver and the bronzes. The soluble compounds are poisonous, and are therefore used as germicides in agriculture. Blue vitriol is $CuSO_4,5H_2O$; the basic acetate is verdigris.
Dysprosium. Symbol Dy. At. wt. 162.5. Valence III.	Occ.—in monazite, gadolinite, etc. Prep.—not yet isolated.	The oxide dysprosia, along with three other rare earths, constitutes erbia.	The salts are green or yellow in color and show characteristic absorption bands.
Erbium. Symbol Er. At. wt. 167.4. Valence III.	Occ.—same as for dysprosium. Prep.—not yet isolated pure.	Crude erbia has been separated into erbia, holmia, thulia, and dysprosia.	The salts are rose-colored, and show characteristic absorption spectra.
Europium. Symbol Eu. At. wt. 152.0. Valence III.	Occ.—in monazite and other rare minerals. Prep.—not yet isolated.	This element so closely resembles samarium that the analytical separation of the two is difficult.	The salts are pinkish and show a faint absorption spectrum.
Fluorine. Symbol F. At. wt. 19.0. Valence I. S. G. (liquid) 1.14 at —187°. M. P. —223°. B. P. —187°.	Occ.—as cryolite ($AlF_3,3NaF$), fluor spar (CaF_2) and very widely elsewhere in small quantities. Prep.—by electrolysis of dry hydrogen fluoride at —23°.	A pale yellowish-green gas that unites with every element excepting oxygen and the argon family. It rapidly displaces oxygen from water or chlorine from hydrogen chloride.	Hydrogen fluoride is used for etching glass and in silicate analysis. Silver fluoride is soluble and calcium fluoride insoluble, in contrast with the other halides of these metals.
Gadolinium. Symbol Gd. At. wt. 157.3. Valence III.	Occ.—in gadolinite and samarskite. Prep.—not yet isolated.	This element closely resembles terbium in its compounds.	The salts are colorless and show no absorption bands.

CHEMICAL ELEMENTS—Continued

Name With Certain Data	Occurrence and Preparation	Properties	Chief Compounds and Uses
Gallium. Symbol Ga. At. wt. 69.9. Valence III. S.G. 5.9. M.P. 30.1°.	Occ.—in zinc blende and in bauxite. Prep.—by electrolysis of a suitable solution of its salts.	A bluish-white tough metal that may be cut with a knife. Like aluminium, it is soluble in hydrochloric acid and in caustic alkali, but not in nitric acid.	It forms two chlorides ($GaCl_2$ and $GaCl_3$) which yield spark spectra very characteristic of gallium.
Germanium. Symbol Ge. At. wt. 72.5. Valence II and IV. S.G. 5.5. M.P. 900°.	Occ.—in the rare mineral argyrodite. Prep.—by the reduction of the dioxide ($Ge\ O_2$) by carbon.	A grayish-white, brittle, lustrous metal, insoluble in hydrochloric acid. It combines directly with the halogens.	The close relation of this element to carbon and silicon is shown in the compound germanium chloroform ($GeHCl_3$).
Glucinum (or Beryllium). Symbol Gl. At. wt. 9.1. Valence II. S.G.1.8. M.P. below 960°.	Occ.—in beryl [$Al_2Gl_2(SiO_3)_6$]. Prep.—by electrolysis of the fused double fluoride $GlF_2,2KF$.	A hard white metal that tarnishes when heated in air, and is soluble in dilute acids when powdered.	Its hydroxide [$Gl(OH)_2$] is feebly acidic as well as basic, thus resembling the hydroxide of zinc. Emerald is beryl colored green by chromium.
Gold. Symbol Au. At. wt. 197.2. Valence I. and III. S. G. 19.32. M. P. 1062.4°.	Occ.—chiefly free, but also as telluride; many specimens of iron pyrites are auriferous. Prep.—from gold-bearing sands by washing away the lighter material, and dissolving the gold from the residue by mercury, which is subsequently separated from the gold by distillation. Quartz ores are pulverized in stamping mills, and the powder is then carried by water over amalgamated copper plates on which the gold collects.	A soft bright-yellow metal, easily scratched by the knife, an excellent conductor of heat and of electricity. The most ductile and the most malleable of all the metals. Chemically, gold is rather inert, and is not attacked by the oxygen of the air, by hydrogen sulphide, nor, indeed, by any single one of the common acids. It is attacked by fused alkalis, yielding aurates, and by aqua regia, yielding chlorauric acid ($HAuCl_4$).	Pure gold is called 24-carat gold. American, French and German gold coins are 21.6 carat, while British sovereigns are 22 carat, the balance in all these cases being copper. Jewelry is made in 18, 14, 9, etc., carat gold, the addition of copper increasing the hardness and rigidity. Sodium chlorаurate ($NaAuCl_4$) is used for "toning" in photography, while potassium auricyanide [$KAu(CN)_4$] is used in electro-gilding.
Helium. Symbol He. At. wt. 3.99. Valence 0. S. G. (liquid) 0.15. B. P. —268.7°.	Occ.—in air to the extent of 1 to 2 volumes per million; also occluded in certain minerals. Prep.—neon and helium are boiled off crude argon, and the neon solidified by cooling.	The lightest gas after hydrogen, transparent, odorless and colorless, very inert, forming no compounds with other elements.	It is one of the decomposition products of certain other (radio-active) elements.
Hydrogen. Symbol H. At. wt. 1.008. Valence I. S. G. (liquid) 0.07. M. P. —259°. B. P. —252.5°.	Occ.—in air to the extent of 1 vol. per 20,000 vols. air; combined, in water (11.19% by wt.) natural gas, petroleum and all animal and vegetable bodies. Prep.—by treating zinc with hydrochloric or sulphuric acid; by electrolysis of water.	The lightest gas, transparent, odorless and colorless, soluble in water (2 vols. in 100 vols. water under everyday conditions), in platinum, in palladium (502 vols. in 1 of pd). Burns in air and in chlorine, and unites with many of the other elements.	Its two oxides are water (H_2O) and hydrogen peroxide (H_2O_2), the latter of which is used in solution as a bleaching agent. Every acid contains hydrogen as an essential constituent. Its compounds with carbon and other elements number over 100,000. Hydrogen gas is used for the oxyhydrogen flame and for filling balloons.
Indium. Symbol In. At. wt. 114.8. Valence III and I. S. G. 7.4. M. P. 176°.	Occ.—in zinc blende (ZnS). Prep.—electrolytically from solutions of its salts.	A white metal, malleable and softer than lead.	Its compounds color the nonluminous gas flame blue and show a characteristic blue line in the spectrum.
Iodine. Symbol I. At. wt. 126.92. Valence I, V and VII. S. G. 4.95. M. P. 114°. B. P. 184°.	Occ.—in the ocean, in certain seaweeds, and in Chili saltpeter, always in the combined state. Prep.—from iodides by displacement of their iodine by chlorine.	A dark gray brittle solid with a metallic luster. Its vapor is violet, as are its solutions in chloroform and in carbon bisulphide. It requires over 5,000 parts of water for its solution. Combines directly with many elements, but is much less active than chlorine and bromine.	Its tincture is used in medicine as a counter-irritant. Potassium iodide (KI) and iodoform (CHI_3) likewise find application in medicine. The alkyl iodides (*e. g.*, $C_2\ H_5I$) are much used in synthetic organic chemistry.
Iridium. Symbol Ir. At. wt. 193.1. Valence III and IV. S. G. 22.42. M. P. 1950°.	Occ.—along with platinum. Prep.—by a complex series of operations from platinum ores.	A white metal, brittle when cold, and very hard. It is attacked by fused alkalies, but not by aqua regia.	It is used for pointing gold pens. Its alloy with 9 parts of platinum is used for standard meter bars on account of its inalterability.
Iron. Symbol Fe. At. wt. 55.85. Valence II and III. S. G. 7.86; pig, 7.03 to 7.73. M. P. 1804°. wrought 1600°. steel 1375°. gray pig 1275°. white pig 1075°.	Occ.—as magnetic oxide (Fe_3O_4), hematite (Fe_2O_3), limonite ($2Fe_2O_3,3H_2O$), siderite (Fe_2CO_3), which are important ores; iron pyrites (FeS_2); in rocks as complex silicates, and in plants and animals. Prep.—pig iron is prepared in the blast furnace y reduction of the ore by means of carbon monoxide in presence of a suitable flux. From pig iron, wrought iron is obtained by puddling, and steel by the Bessemer, Siemens-Martin or other process.	A white, malleable, ductile, magnetic metal, unchanged in dry air or air-free water, but rusting in moist air. Easily attacked by dilute acids, but not by fused alkalies. Cast iron contains 2 to 5% of carbon and other impurities, and is hard and brittle. Wrought iron contains less than 0.2% of carbon, and is softer and tougher, with a tensile strength of 22 to 25 tons per sq. in. Steel contains from 0.2 to 1.5% of carbon, is permanently magnetic, may be tempered, and possesses tensile strength up to 100 tons per sq. in.	The metal is used as a structural material, for rails, machinery, tools, etc. Jeweler's rouge and Venetian red consist of the oxide (Fe_2O_3). Rust is chiefly the hydrated oxide (FeO,OH). Hammer scale and lodestone have the composition Fe_3O_4. Ferric chloride ($FeCl_3$), ferrous iodide (FeI_2) and other iron compounds are used in medicine. Green vitriol ($FeSO_4,7H_2O$) is used in making ink, and in dyeing. Potassium ferrocyanide [$K_4Fe(CN)_6$] is used for making Prussian blue, potassium cyanide, etc.
Krypton. Symbol Kr. At. wt. 82.9. Valence 0. M. P. —169° B. P. —152°.	Occ.—in minute quantity in the air. Prep.—from crude argon by fractional distillation.	An inert, colorless, odorless gas, resembling, but denser than, argon.	It forms no compounds, and is identified by its characteristic spectrum.
Lanthanum. Symbol La. At. wt. 13[illegible].0. Valence II and V. S. G. 6.15.	Occ.—as lanthanite [$La_2(CO_3)_3,8H_2O$]. Prep.—by electrolysis of fused $LaCl_3$.	An iron-gray metal tarnishing in air to steel-blue; malleable and ductile. Attacked slowly even by cold water.	When heated in air it forms oxide (La_2O_3) and nitride (LaN).
Lead. Symbol Pb. At. wt. 207.10. Valence II, IV. S. G. 11.4. M. P. 326°.	Occ.—as galena (PbS), and in silver ores. Prep.—by calcination of partially roasted galena. Purification is effected by Parkes process.	A soft gray metal, malleable, but of low tensile strength. In presence of air, water acts on lead to produce the hydroxide, which, being slightly soluble, may cause lead poisoning if present in water supplies. When heated in air it is oxidized to litharge (PbO), and, under suitable conditions, to minium (Pb_3O_4).	The metal is used for water pipes, roofs and gutters and storage batteries. For shot it is alloyed with 0.4% of arsenic. Typemetal contains 20% of antimony. Babbitt metal, for bearings, contains over 70% of lead. Solder and pewter are alloys of lead and tin. The basic carbonate [$Pb(OH)_2,2PbCO_3$], "white lead," is the basis of most oil paints.

CHEMICAL ELEMENTS—Continued

Name, With Certain Data	Occurrence and Preparation	Properties	Chief Compounds and Uses
Lithium. Symbol Li. At. wt. 6.94. Valence I. S. G. 0.53. M. P. 186°. B. P. above 1400°.	Occ.—as a mixed fluoride with aluminium in amblygonite. Prep.—by electrolysis of the fused chloride.	A silver-white metal, softer than lead, that tarnishes quickly in air, and is easily acted upon by water. When heated, it unites vigorously with nitrogen.	The carbonate [$Li_2(CO_3)$] is used in medicine as a solvent for uric acid, lithium urate being soluble. The lithium salts give a carmine flame coloration.
Lutecium. Symbol Lu. At. wt. 174.0.	Occ.—in euxenite. Prep.—it has not been isolated.		Its compounds resemble those of ytterbium.
Magnesium. Symbol Mg. At. wt. 24.32. Valence II. S. G. 1.75. M. P. 633°. B. P. 1100°.	Occ.—as magnesite ($MgCO_3$), dolomite ($MgCO_3,CaCO_3$), carnallite ($MgCl_2$, KCl, $6H_2O$) and in very many complex silicates. Prep.—by electrolysis of dried, fused carnallite.	A silver-white metal, ductile when hot. It tarnishes in air, and acts slowly upon water, rapidly on steam. Burns in air to the oxide MgO, emitting a very bright light used in photography. It unites directly with nitrogen.	The sulphate ($MgSO_4,7N_2O$)is known as epsom salts and is used in medicine, as are the oxide (magnesia), the carbonates and citrate. Magnalium is a light, hard alloy with aluminium.
Manganese. Symbol Mn. At. wt. 54.93. Valence II, III, IV, VI, VII. S. G. 8.0. M. P. ca. 1300°.	Occ.—as pyrolusite (MnO_2), beaunite (Mn_2O_3), hausmannite (Mn_3O_4) and manganese spar ($MnCO_3$). Prep.—by heating Mn_3O_4 with aluminium filings.	A steel-gray, hard, brittle metal with a pinkish tinge. It rusts in moist air and is attacked by dilute acids.	Ferromanganese and spiegeleisen are alloys with iron, used in steel making. With copper it forms the hard, tough manganese bronzes, with tensile strength up to 30 tons per sq. in. Impure sodium permanganate ($NaMnO_4$) is used in disinfecting as Condy's fluid.
Mercury. Symbol Hg. At. wt. 200.0. Valence I and II. S. G. 13.6. M. P.—39.5°. B. P. 356.95°.	Occ.—free and as cinnabar (HgS). Prep.—by roasting cinnabar $HgS+O_2$——$Hg+SO_2$.	A silver-white mobile liquid with a vapor pressure at 0° of 0.0002 mm. It tarnishes but slowly in air and is attacked only by dilute nitric among the dilute acids. The vapor is monatomic.	It is used for filling thermometers and barometers. Its alloys are called amalgams, some of which are used in dentistry. Calomel (HgCl) is administered internally in medicine; corrosive sublimate ($HgCl_2$) forms a solution with very powerful germicidal properties.
Molybdenum. Symbol Mo. At. wt. 96.0. Valence III, IV, V, (VI. S. G. 9.0. M. P. 2110°.	Occ.—as molybdenite (MoS_2) and wulfenite ($PbMoO_4$). Prep.—by reducing the oxides with aluminium powder.	A white metal, as malleable as iron, that will not scratch glass. Insoluble in hydrochloric or dilute sulphuric acid.	The ferromolybdenum alloys are used in the manufacture of special steels.
Neodymium. Symbol Nd. At. wt. 144.3. Valence III and IV. S. G. 6.9. M. P. 840°.	Occ.—with cerium and lanthanum. Prep.—by electrolysis of the fused chloride.	A yellowish metal, tarnishing in air.	The salts are rose-violet in color, and their solutions show characteristic absorption spectra.
Neon. Symbol Ne. At. wt. 20.2. Valence 0. B. P. ca. —243°.	Occ.—in minute quantity in the atmosphere. Prep.—neon and helium are boiled out of crude argon, and the neon separated from helium by cooling with liquid hydrogen.	A colorless, transparent, odorless, inert gas, resembling argon.	It forms no compounds, and is recognised by its characteristic spectrum.
Nickel. Symbol Ni. At. wt. 58.68. Valence II and III. S. G. 8.9. M. P. ca. 1485°.	Occ.—as nicollite (NiAs) and nickel glance (NiAsS). Prep.—by igniting the oxalate in hydrogen.	A white, very hard, lustrous metal, malleable, ductile and tenacious. It rusts but slowly in air, and is attacked easily by only nitric acid.	The metal furnishes a protective coating when plated on iron. German silver is an alloy of nickel, copper and zinc. Nickel steel is used for armor plates. Manganin, containing nickel, copper and manganese, is used for electrical resistances.
Nitrogen. Symbol N. At. wt. 14.01. Valence III and V. M. P. —214°. B. P. —194°.	Occ.—free nitrogen forms about four-fifths of air by volume. As Bengal saltpeter (KNO_3), Chili saltpeter ($NaNO_3$); and as an essential constituent of vegetable and animal protoplasm. Prep.—by heating ammonium nitrite, by oxidation of ammonia, etc.	A colorless, odorless, transparent gas, rather inactive chemically. At ordinary temperature and pressure, 100 volumes of water dissolve 1.5 volumes of nitrogen. It unites directly with strongly heated boron, lithium, calcium and magnesium.	Nitrous oxide (N_2O), or laughing gas, is used, by dentists. Nitric acid (HNO_3) has many applications in technical chemistry. Ammonia (NH_3) is a very soluble gas. Ammonium sulphate [$(NH_4)_2SO_4$] and Chili saltpeter are used as nitrogenous manures. Nitrogen is a constituent of the anilinedyes, the proteins and many other important classes of organic substances.
Osmium. Symbol Os. At. wt. 190.9. Valence II, III, IV, VI, VIII. S. G. 22.477. M. P. ca. 2400°.	Occ.—along with platinum. Prep.—by reducing OsO_4.	A gray metal, harder than glass, the heaviest of known bodies.	Its alloy with iridium is used in tipping gold pens. Osmium tetroxide (OsO_4) is used as a microscopic stain for fat.
Oxygen. Symbol O. At. wt. 16.00. Valence II. S. G. (liquid at b.p.) 1.13. M. P. —227°. B. P. —182.5°.	Occ.—free oxygen forms about one-fifth of air by volume. Water contains 88.88% of oxygen. The rocks of the earth's crust contain about 45% in combination, chiefly as silicates. Prep.—in the laboratory, by heating potassium chlorate ($KClO_3$). Commercially, from the air.	A colorless, odorless, tasteless, transparent gas, slightly heavier than air. At ordinary temperature and pressure, 100 volumes of water dissolve 3 volumes of oxygen. It is very active chemically, combining directly with all but a few of the other elements to form oxides. Sulphur, phosphorus, etc., burn much more vigorously in oxygen than in air. Liquid oxygen is magnetic.	The gas is sold compressed in mild steel cylinders, and is used for the oxyhydrogen blowpipe and in medicine, besides for chemical purposes. It is necessary to support animal respiration and to sustain ordinary combustion. It enters as a constituent into all oxides, most salts and many organic compounds.
Palladium. Symbol Pd. At. wt. 106.7. Valence II and IV. S. G. 11.9. M. P. ca. 1535°.	Occ.—along with platinum, and with gold in Brazil. Prep.—by a complex series of processes from platinum ores.	A silvery, malleable and ductile metal, related to platinum, unlike which, however, it is attacked by nitric acid. Under suitable conditions it can take up over 900 volumes of hydrogen.	Since it does not tarnish, it is used for coating silver goods, and by dentists as a substitute for gold.
Phosphorus. Symbol P. At. wt. 31.04. Valence III and V. S. G. white, 1.82. red, 2.25. M. P. white, 44°. B. P. 269°.	Occ.—as phosphates, such as apatite [$Ca_5F(PO_4)_3$]; in bones, teeth, brain and seeds of plants. Prep.—by reduction of calcium phosphate by carbon in the electric furnace in presence of a suitable flux.	Phosphorus exists in two allotropic modifications: white phosphorus is waxy in consistency, soluble in carbon bisulphide, evil smelling and poisonous; red phosphorus is a solid, insoluble in carbon bisulphide, odorless and not poisonous. White phosphorus has a low ignition temperature, hence its former use in matches.	Red phosphorus is used in the manufacture of matches, as also is the compound P_4S_3. In the form of superphosphate of lime [$Ca_2H_4(PO_4)_2$] phosphorus is an important artificial manure. The chlorides (PCl_3 and PCl_5) are much used in organic chemistry.
Platinum. Symbol Pt. At. wt. 195.2. Valence II and IV. S. G. 21.48. M. P. 1753°.	Occ.—free, alloyed with the platinum metals, as nuggets in alluvial sands in the Urals, California, etc. Prep.—it is freed from the metals with which it is alloyed by a complex series of processes.	A silvery, tenacious, ductile and malleable metal, unaltered in moist air and unattacked by any single common acid. Aqua regia, fused alkalies, alkali nitrates and cyanides attack it, however. Platinum "sponge" and "black" are finely divided forms.	On account of its resistance to acids, platinum is much used for chemical vessels. Since platinum has a coefficient of expansion very close to that of glass, platinum wires can be fused through glass without danger of breakage on cooling. The salts are used in photography.

CHEMICAL ELEMENTS—Continued

Name, With Certain Data	Occurrence and Preparation	Properties	Chief Compounds and Uses
Potassium. Symbol K. At. wt. 39.10. Valence I. S. G. 0.86. M. P. 62.5°. B. P. 667°.	Occ.—as sylvite (KCl), carnallite (KCl, $MgCl_2,6H_2O$); in plant and animal ashes, and in many complex silicates. Prep.—by reduction or by electrolysis of fused potassium hydroxide (KOH).	A silver-white lustrous metal, as soft as wax, tarnishing instantly in moist air. Chemically it is a very active metal, decomposing water in the cold and uniting violently with the halogens, sulphur and oxygen.	An alloy with sodium is used in filling high-temperature thermometers. Bengal saltpeter is the nitrate and is used in pyrotechny, for gunpowder and as a preservative. The iodide (KI) is used in medicine. The chlorate, like the nitrate, is used as a source of oxygen in pyrotechny and for match heads. Caustic potash (KOH) has many chemical applications. The cyanide (KCN) is used in gold extraction.
Praseodymium. Symbol Pr. At. wt. 140.6. Valence III and IV. S. G. 6.47. M. P. 940°.	Occ.—with cerium and lanthanum. Prep.—by electrolysis of the fused chloride.	A yellowish metal, remaining untarnished in air.	The salts are leek-green in color, and their solutions have characteristic absorption spectra.
Radium. Symbol Ra. At. wt. 226.4. Valence II.	Occ.—in minute quantity in pitchblende and other uranium minerals. Prep.—the metal has recently been isolated; the bromide is separated from the barium bromide prepared from pitchblende by fractional crystallization.	In all of its compounds, the metal has the power of emitting certain radiations. These can pass through matter that is opaque to light, render air a conductor, affect a photographic plate and cause a zinc-sulphide screen to fluoresce visibly.	The rays from radium compounds (such as $RaBr_2$, $RaCl_2$, $RaCO_3$) act destructively on living tissues and on bacteria. One gram of radium in any of its compounds gives off about 100 calories of heat per hour.
Rhodium. Symbol Rh. At. wt. 102.9. Valence II, III, and IV. S. G. 12.1. M. P. above 2000°.	Occ.—in the ores of platinum. Prep.—by a complex series of processes from platinum ores.	A silvery, malleable and ductile metal, not tarnishing in air and not attacked by aqua regia.	The red chloride ($RhCl_3$) is formed by the action of chlorine upon the metal.
Rubidium. Symbol Rb. At. wt. 85.45. Valence I, III, and V. S. G. 1.52. M. P. 38.5°. B. P. 696°.	Occ.—the salts are associated with salts of potassium. Prep.—similar to that of potassium.	A silver-white metal resembling potassium, like which it attacks water vigorously.	The compounds show characteristic flame-spectra, and were recognized as those of a new element spectroscopically by Bunsen.
Ruthenium. Symbol Ru. At. wt. 101.7. Valence III, IV, VI, VII, and VIII. S. G. 12.1. M. P. above 2000°.	Occ.—in the ores of platinum. Prep.—by a complex series of processes from platinum ores.	A hard, white, brittle metal, oxidized when heated in air, scarcely attacked by aqua regia.	The following oxides are known: Ru_2O_3, RuO_2, RuO_4, as well as salts corresponding to RuO_3 and Ru_2O_7.
Samarium. Symbol Sa. At. wt. 150.4. Valence II and III. S. G. ca. 7.7. M. P. 1300 to 1400°.	Occ.—in the mineral samarskite. Prep.—by electrolysis of the chloride.	A whitish-gray metal, tarnishing in air.	The salts are topaz-yellow in color, and are similar to those of lanthanum.
Scandium. Symbol Sc. At. wt. 44.1. Valence III.	Occ.—in the minerals euxenite and gadolinite. Prep.—the metal has not been isolated.	The existence of this element, whose oxide was discovered in 1879, was predicted by Mendeléeff in 1869.	The chloride ($ScCl_3$) shows a characteristic spark spectrum.
Selenium. Symbol Se. At. wt. 79.2. Valence II, IV. and VI. S. G. amorphous 4.27. monoclinic 4.47. hexagonal 4.8. M. P. amorphous 50°. monoclinic 170 to 180°. hexagonal 217°. B. P. 690°.	Occ.—free in some specimens of sulphur, and in combination with lead, iron and other metals, as in pyrites. Prep.—(amorphous) by reducing selenious acid (H_2SiO_3) by sulphur dioxide.	Three varieties are known: (1) red amorphous, soluble in carbon bisulphide, from which it is d posited as (2) red translucent monoclinic crystals, soluble in carbon bisulphide, (3) blue-gray metallic selenium, insoluble in carbon bisulphide. This last form conducts electricity many times better when exposed to light, and the better the brighter the light.	Selenium cells are used as indicators of intensity of illumination. The compounds strongly resemble those of sulphur. Hydrogen selenide is an evil-smelling inflammable gas. Selenic acid (H_2SeO_4) is a more powerful oxidizer than sulphuric acid, and dissolves gold.
Silicon. Symbol Si. At. wt. 28.3. Valence IV. S. G. amorphous 2.0. crystalline 24.9. M. P. 1200°. B. P. ca. 3500°.	Occ.—silicon dioxide (SiO_2) occurs as flint, quartz, quartz sand, etc. The igneous rocks are composed largely of silicates, and this element constitutes over 25% of the earth's crust. Prep.—by reducing sand with coke in the electric furnace.	Amorphous silicon is a brown powder that burns when heated in air. Crystalline silicon forms black needles. It is less active than the amorphous variety and is attacked only slowly by a mixture of hydrofluoric and nitric acids. It unites with fluorine, however, at ordinary temperatures.	The "pigs" of silicon made at Niagara are used in steel-making. The ornamental varieties of quartz find uses as gemstones, as do several natural silicates. Silicon carbide, "carborundum" (SiC), is used as an abrasive. Sodium silicate solution is "waterglass," used to protect sandstone and to preserve eggs. Common glass is a mixture of sodium and calcium silicates.
Silver Symbol Ag. At. wt. 107.88. Valence I. S. G. 10.53. M. P. 960°. B. P. 2050°.	Occ.—native, as sulphide (Ag_2S) often associated with galena; chloride (AgCl), etc. Prep.—from lead by the Pattinson or the Parkes process; from the ores by the Mexican and other processes.	A white, highly lustrous, tough, very ductile and malleable metal, the best conductor of heat and electricity known. Liquid silver dissolves oxygen. It is unaffected by the oxygen of moist air, and its tarnishing is due to the action of hydrogen sulphide. It dissolves in dilute nitric and in concentrated hot sulphuric acid.	It is employed for articles of use and of ornament and for coinage. U. S. sterling silver contains 90% silver with 10% copper. Lunar caustic is silver nitrate. This salt and the halides of silver are extensively used in photography. For electroplating, a bath of potassium argenticyanide [$KAg(CN)_2$] is used.
Sodium. Symbol Na. At. wt. 23.00. Valence I. S. G. 0.97. M. P. 95.6°. B. P. 742°.	Occ.—in the sea as chloride (NaCl); in salt deposits as chloride, borate, nitrate; in many complex silicates in rocks. Prep.—by electrolysis of fused sodium hydroxide (NaOH).	A silver-white metal, as soft as wax, that may be welded at ordinary temperature. Like potassium it is very active, uniting directly with many other elements, and attacking water vigorously in the cold.	The metal is used in the manufacture of several chemicals. Sodium chloride (NaCl) is a necessity of life to most animals; and is used in the manufacture of hydrochloric acid, chlorine and sodium compounds. Sodium carbonate ($NaCO_3$, $10H_2O$) or washing soda, and sodium hydroxide (NaOH) are used for cleaning, and in the manufacture of soap and chemicals. Baking soda is sodium bicarbonate ($NaHCO_3$). The sulphate (Na_2SO_4, $10H_2O$) is known as Glauber's salt; the thiosulphate, by photographers, as "hypo."
Strontium. Symbol Sr. At. wt. 87.63. Valence II. S. G. 2.55. M. P. ca. 800°.	Occ.—as strontianite ($SrCO_3$) and celestine ($SrSO_4$). Prep.—by electrolysis of the fused chloride.	A white metal, softer than calcium and harder than sodium, tarnishing to a yellow tint. Like calcium, it is active enough to attack water vigorously in the cold.	The nitrate and chlorate are used in pyrotechny for red fire. All volatile compounds color the Bunsen flame red.

CHEMICAL ELEMENTS—Continued

Name, With Certain Data	Occurrence and Preparation	Properties	Chief Compounds and Uses
Sulphur. Symbol S. At. wt. 32.07. Valence II, IV and VI. S. G. rhombic 2.06. monoclinic 1.96. M. P. rhombic 112.4°. monoclinic 119°. B. P. 444.9°.	Occ.—native, in combination with most metals as sulphides, and with some metals as sulphates. Prep.—by melting the free sulphur away from the rocky matrix, and subsequent purification by distillation.	Natural sulphur is rhombic in crystalline form, yellow, brittle, of vitreous luster, and a poor conductor of heat and electricity. This and the monoclinic variety are soluble in carbon bisulphide, while amorphous sulphur is not. When heated, sulphur unites directly with most of the other elements.	Sulphur is used to prepare sulphur dioxide (SO_2), which is used in making sulphuric acid and sulphites, and for bleaching; also for vulcanizing rubber and in the manufacture of black gunpowder, fireworks and matches. Sulphuric acid (H_2SO_4) is to chemical industry what iron is to engineering.
Tantalum. Symbol Ta. At. wt. 181.0. Valence II, IV and V. S. G. 16.6 M. P. bet. 2250° and 2300°.	Occ.—in tantalite and many other rare minerals. Prep.—by the action of sodium on sodium tantalofluoride (Na_2TaF_7).	A hard silver-white metal, ductile and malleable when hot, of very high tensile strength. The hot metal can absorb 740 volumes of hydrogen. It is not attacked by aqua regia.	The metal is used for filaments for electric lamps, which possess twice the efficiency of the carbon filament lamp.
Tellurium. Symbol Te. At. wt. 127.5. Valence II, IV and VI. S. G. cryst. 6.3. M. P. cryst. 455°. B. P. 1400°.	Occ.—free and as tellurides. Prep.—by reducing tellurious acid (H_2TeO_3) by means of sulphur dioxide.	The crystalline variety is white, has metallic luster, and conducts heat and electricity. The precipitated variety is black and of lower density. The element is related to sulphur but is more metallic in character.	The compounds find few applications. Telluric acid (H_6TeO_6) has basic as well as acid characters, in keeping with the position of the element between metals and nonmetals.
Terbium. Symbol Tb. At. wt. 159.2. Valence III.	Occ.—in gadolinite, samarskite, and other rare minerals. Prep.—the metal has not been prepared.		The salts show no absorption spectrum.
Thallium. Symbol Tl. At. wt. 204.0. Valence I and II. S. G. 11.8. M. P. 303.	Occ.—in crookesite, and in small quantities in many samples of iron pyrites. Prep.—it is precipitated by zinc from a solution obtained by suitable treatment of the flue dust from sulphuric acid works.	A bluish-white lead-like metal, rather soft, malleable, but of low tensile strength. It decomposes water rapidly at red heat, and dissolves in dilute acids.	It forms two sets of salts, the thallous (*e. g.*, TlCl) and the thallic (*e. g.*, $TlCl_3$). All the compounds show a characteristic green line in the spectrum.
Thorium. Symbol Th. At. wt. 232.0. Valence IV. S. G. 11.0.	Occ.—in monazite sand. Prep.—by reducing potassium thorium chloride with sodium, or by electrolysis of the chloride in a mixture of fused potassium and sodium chlorides.	A metal with the color of nickel, that can be burnt in air. Hydrochloric acid attacks it but slowly.	The nitrate $[Th(NO_3)_4.6H_2O]$ is used in making Welsbach incandescent mantles, which consist of 99% of ThO_2. All the compounds are radio-active.
Thulium. Symbol Tm. At. wt. 168.5. Valence III. M. P. 1700°.	Occ.—in gadolinite and other yttrium minerals.		The salts are of a pale bluish color which is destroyed very easily by minute quantities of erbium.
Tin. Symbol Sn. At. wt. 119.0. Valence II and IV. S. G. 7.3. M. P. 232°. B. P. ca. 1600°.	Occ.—as cassiterite (SnO_2). Prep.—after roasting, the ore is reduced by heating with carbon.	A silver-white, rather soft, very malleable and ductile metal, practically unchanged in air. When heated, it may be burned in air. Dilute nitric acid is the only dilute acid that attacks it rapidly. When kept long at temperatures below zero C., ordinary tin changes to a brittle gray powdery modification. This form is the stable one below 20°.	Large quantities of tin are used in the tinning of iron for tinplate. It is a constituent of the alloys Britannia metal, pewter, solder, bronze, etc. Tin forms two sets of salts, stannous (*e. g.*, $SnCl_2$) and stannic (*e. g.*, $SnCl_4$). "Pink salt" $[(NH_4)_2SnCl_6]$ is used in dyeing. "Mosaic gold" is SnS_2.
Titanium. Symbol Ti. At. wt. 48.1. Valence II, III and IV. S. G. 4.5. M. P. below 1850°.	Occ.—as rutile (TiO_2) and in titanic iron ore ($FeTiO_3$). Prep.—by reducing the chloride ($TiCl_4$) by means of sodium.	A hard, brittle metal, resembling polished steel in appearance, that may be forged at a low red heat. It dissolves in dilute sulphuric acid, and decomposes steam at 800°. It unites easily with nitrogen.	The element is very widely disseminated, though in small quantity. It is contained in the ashes of all plants.
Tungsten. Symbol W. At. wt. 184.0. Valence II, IV, V and VI. S. G. 19.3. M. P. ca. 2800°.	Occ.—as wolfram ($FeWO_4$) and as scheelite ($CaWO_4$). Prep.—by reducing tungstic acid (H_2WO_4) by carbon at a high temperature.	A hard, brittle, gray metal, attacked by chlorine only at 250°, although it can be caused to burn in air. It is slowly acted upon by dilute acids and even by water.	The metal is used for the filaments of incandescent electric lamps, giving an efficiency of 1.3 watts per candle power. Tungsten steel has 5% W. Sodium tungstates are used as mordants in dyeing.
Uranium. Symbol U. At. wt. 238.5. Valence III, IV, V and VIII. S. G. 18.7. M. P. ca. 1500°.	Occ.—as pitchblende, which contains U_3O_8. Prep.—by reducing the oxides with aluminium.	A white lustrous metal, tarnishing in air and attacking water slowly in the cold. It combines directly with many of the other elements.	All the compounds of uranium are radio-active in proportion to their uranium content. Glass to which uranium compounds have been added shows a greenish-yellow fluorescence.
Vanadium. Symbol V. At. wt. 51.06. Valence II, III, IV and V. S. G. 5.5.	Occ.—in a few rather rare minerals. Prep.—by reduction of the dichloride (VCl_2) in hydrogen.	A silver-white lustrous metal harder than quartz. It does not tarnish nor attack water at ordinary temperatures, but can be burnt in oxygen.	Vanadium added to steel in even small quantity (0.2%) increases the tenacity and elastic limit without reducing the ductility.
Xenon. Symbol Xe. At. wt. 130.2. Valence 0. B. P. 109°.	Occ.—in minute quantity in the air, less than one volume in 100 million. Prep.—by fractionation of liquid argon.	A transparent, colorless and odorless gas, very inert like its congener argon. It is the densest of the argon family.	It forms no compounds.
Ytterbium. (Neoytterbium). Symbol Yb. At. wt. 172.0. Valence III.	Occ.—in gadolinite, euxenite and other rare minerals. Prep.—the metal has not been isolated.		The compounds show a characteristic spark spectrum.
Yttrium. Symbol Y. At. wt. 89.0. Valence III.	Occ.—in gadolinite, euxenite and other rare minerals. Prep.—by electrolysis of sodium yttrium chloride.	A gray lustrous metal.	The chloride yields a characteristic, though complex, spectrum.
Zinc. Symbol Zn. At. wt. 65.37. Valence II. S. G. 6.9 to 7.2. M. P. 418.2°. B. P. 920°.	Occ.—as zinc blende (ZnS), calamine ($ZnCO_3$), zincite (ZnO), etc. Prep.—after roasting, the ore is reduced by coal, the metal distilling off.	A bluish-white, lustrous, brittle metal, that is malleable and ductile at 120°. It tarnishes in moist air, attacking water slowly in the cold and rapidly when heated in steam. It dissolves in dilute acids and in sodium hydroxide solution.	Sheet zinc is used for roofs and gutters. Iron is galvanized by dipping it in molten zinc, and so protected from rusting. Zinc is used for galvanic batteries and, alloyed with copper, to make brass. The salts are used in medicine; the chloride and sulphate yield antiseptic solutions.
Zirconium. Symbol Zr. At. wt. 90.6. Valence IV. S. G. 4.1.	Occ.—as zircon ($ZrSiO_4$). Prep.—by reducing the oxide (ZrO_2) with carbon in the electric furnace.	A hard gray metal, remaining bright in air and only slowly oxidized at a white heat. It is dissolved by aqua regia and by caustic potash solution.	The oxide is contained in some incandescent gas mantles.

THE CHEMISTRY OF FOODS.—Food is anything which, taken into the alimentary canal, furnishes heat and energy to the system, repairs waste and builds tissue.

The common idea of food is confined to solid or semisolid foods having the above properties. Liquid foods are usually spoken of as drinks or beverages. Condimental substances, such as salt, pepper, spices, etc., are generally segregated from the ordinary classification of foods. There is a legal definition of foods found in the act of Congress of June 30, 1906, which is as follows:

"The term 'food,' as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound." This comprehensive definition will be followed in this article.

Kinds of Foods.—According to their predominant characteristics for nutritive purposes, foods are recognized as of the following kinds:

Nitrogenous.—Food material containing nitrogen as a distinctive element. The common name *proteid* or *protein* is applied to this class of foods. Most of the true proteid foods also contain sulphur as an essential ingredient. Examples of characteristic proteid foods are found in lean meat, white of egg, gliadin of wheat, hordein of barley, zein of maize, etc. Among the liquid foods, milk contains casein, which is a most important ingredient, and albumen, a proteid food soluble in cold water. Other forms of protein are insoluble in cold water but are soluble in salt solutions, alcohol, etc. By means of these various solvents proteid matter can be separated into different classes. Proteid food is often described as a tissue builder, but this is not a strictly correct classification. Only certain tissues of the body, such as the muscle, the nerve and the brain, are composed largely of proteid. Tissues such as fat and bone are composed largely of other substances.

Starch and Sugar.—Carbohydrates form by far the largest bulk of human foods. They are typically represented by starch and sugar. There are many carbohydrates in foods, however, which are more or less useful but not important as regards quantity or digestibility. The so-called woody tissues and fiber in foods are composed of carbohydrates, but these are of more importance for the nourishment of domesticated animals than for man. For practical purposes the term *carbohydrates* applied to human foods embraces only starch and sugar. These substances in a pure state are characterized by being free of both nitrogen and sulphur, which are, as above stated, the most distinctive constituents of proteid. They consist solely of carbon, oxygen and hydrogen, the oxygen and hydrogen existing in the proportions to form water.

Kinds of Sugars.—Sugars are of various kinds, the most important for human nourishment being the substance known as cane sugar, which has the composition of $C_{12}H_{22}O_{11}$. Sugar is an abundant product of almost every plant. It is stored especially, however, in some certain plants in such a manner as to become available for extraction. The principal sugar producing plants are the sugar cane, sugar beet, the maple, and the sugar palm. Practically all the sugar of commerce comes from the sugar cane and the sugar beet. The amounts made from other sources are insignificant. In addition to cane sugar there are other varieties of sugar derived from starch. Among these perhaps the most important for dietetic purposes is maltose. Maltose is a sugar derived from starch in the process of the sprouting of the grains containing starch, or by acting upon starch by sprouted barley (malt). The starch of cereal grains is largely converted into maltose by the ferments of the malt. Starch is also converted into sugar by the ferments of the digestive organism. The saliva begins this conversion and it is completed in the intestinal tract, especially in the small intestine. Starch is also converted into sugar by the action of a dilute acid at a high temperature, and the sugar thus formed is known as dextrose. Glucose, cane sugar, maltose and dextrose are all valuable foods, furnishing particularly heat and energy. Starch, as such, is not available for nutritive purposes, being insoluble and incapable of assimilation. There are many other forms of sugar or sugar-forming substances found in plants, among them levulose, the companion of dextrose, found as levulon particularly in the dahlia, artichoke and certain cacti. When cane sugar is eaten or when it is treated with a dilute acid it is converted into a mixture of equal parts of dextrose and levulose. Honey is sugar exuded by the blossoms of plants and collected and stored by bees, and consists chiefly of cane sugar which has been converted as described above by nature or the bees and hence is a mixture of approximately equal parts of dextrose and levulose.

Glycerides.—Fats are also important foods, furnishing weight for weight a larger quantity of heat and energy than any other food product. Fats exist in various forms. When they are solid or semisolid at ordinary temperatures they are called fats; when they are liquid at ordinary temperatures they are called oils. Among the fats some of the most important for food purposes are butter, lard and tallow; among the oils, olive, cotton-seed, peanut and sesame. The fats are chemically known as glycerides, being a compound produced by the union of a fat acid and glycerine. In the fresh, pure state they contain but little free acid, but on standing for a long time larger quantities of free acid are found. The rancidity of the fat, however, does not depend solely upon its quantity of free acid, but upon other conditions due probably to bacterial or enzymic action. Warmth and light tend to render fats and oils rancid, while keeping them cool and in the dark tends to preserve them from rancidity.

Minerals.—The fourth class of foods are those of a mineral character, namely, foods which are essentially composed of mineral substances. Among the most important of the mineral foods in the nutrition of man are phosphorus and lime. These two bodies go to make up the greater part of bone tissue and are found as essential ingredients in many parts of the body. Phosphorus and lime are not usually found in any concentrated form in food products, but are distributed in small quantities in nearly all foods. The phosphorus which nourishes the body is ingested usually in an organic combination and not as phosphoric acid. Certain food products, as, for instance, cereals and eggs, are particularly rich in organic phosphorus. Lime is found in nearly all food products and especially in cereals and water.

Mineral substances other than phosphorus and lime are also useful to some extent in nutrition, as, for instance, iron, potash, and soda, the latter being valuable more for their incidental properties than because of their occurrence in the tissues of the body. In other words, it may be said that the blood in order to perform its functions must have a certain saline content, without which its circulation and the carrying of food to all parts of the body would be impossible. These saline materials, although not entering into the tissues of the body, must be regarded as essential parts of our food.

Condimentals.—Condiments are useful more for their effect on palatability than for purposes of pure nutrition. Palatability, however, has important relations to digestion, and hence condiments are properly classed as foods. Most condimental substances have some nutritive properties, containing as they do more or less starch, sugar, proteid and fats. Vinegar, of which the most important ingredient is acetic acid, furnishes a certain degree of heat and energy, inasmuch as all the acetic acid is burned in the body, the products being water and carbon dioxide. Salt does not enter into the tissues of the body but affords hydrochloric acid, which is essential to digestion. On the other hand, wood smoke, a valuable condiment, does not have any food value.

Manner in Which Food Performs Its Functions.—All food products ingested in the alimentary canal, if not already in a condition suitable for digestion, are prepared by previous mastication. The importance of the mastication of the food is shown by two facts: (1) The food in order to be digested must be properly subdivided; (2) the mixing of saliva with starchy foods is an important adjunct to digestion. In so far as meat foods are concerned, the admixture of saliva is perhaps of no importance in digestion, and the need of complete mastication is not so evident. The chief functions of food have been noted in the original definition. All foods taken into the body, with the possible exception of water and wood smoke, undergo profound modifications. The process of digestion is essentially a chemical one, and consists in the thorough destruction of the ingested forms of matter and the building up of entirely new combinations. Attention may be called, for instance, to the fact that the fat of the human body does not consist of any particles of the fat ingested in the food, but is a substance which is generated by combinations of particles of matter in the processes of digestion and assimilation. The tissues of the body, under a selective influence which is not fully understood, cull out from the current of circulating blood those particular particles of matter which go to build them up and reject those which are of no use.

Metabolism.—The building of tissue, especially in the growing animal, is one of the chief functions of foods. When an animal has reached maturity it remains in practically the same condition for a number of years. In this condition the building of new tissues ceases and nature is satisfied with restoring those which are destroyed and excreted. This process of repairing waste keeps the adult body in a state of equilibrium for a given time, but as old age comes on the repair does not keep pace with the waste and the natural decadence of age ensues. The sum of changes which food undergoes from its entry into the body until excreta are voided is called metabolism.

Foods as Fuel.—The next most important function of the food is to furnish heat

and energy. The human body is a pure machine and its functions depend upon a supply of heat and energy just as much as a boiler or an engine. Foods furnish heat in varying quantities as already indicated. Starch and sugar furnish about 4,000 units of heat per unit of weight; proteid matter, if completely burned, furnishes about 5,500 units of heat per unit of weight; fats, when completely burned, furnish about 9,300 units of heat per unit of weight. In point of fact, however, proteid matter is not completely burned in the body, and a considerable amount of nitrogen is excreted without being reduced to the last state of oxidation. Hence, proteid matter does not furnish any more heat during the process of digestion and assimilation than an equal amount of carbohydrates, so that the heat value of a proteid, in so far as the human machine is concerned, is practically the same as that of a sugar or a starch, while the value of a particle of fat is two and a quarter times greater than that of either a proteid or a carbohydrate.

The Calorimeter.—A simple method of calculation is pursued in measuring heat value. A particle of food is inclosed in a strong steel vessel, called a *bomb*, and into this vessel oxygen is pumped under high pressure. The apparatus is so arranged that by means of platinum wire, or other appropriate device, the food substance may be ignited in the atmosphere of oxygen and burned completely into final forms of oxidation, producing water, carbon dioxide, nitric, phosphoric and sulphuric acids, according to the relative quantities of the various constituents present. Before igniting the particle of food, the whole apparatus is set in a measured quantity of water at a known temperature and the rise of temperature attained is carefully noted by a standard thermometer. This apparatus is called a calorimeter. In this manner the accurate data which have been mentioned are obtained.

The Body a Furnace.—An exactly similar process goes on in the human organism, though slowly, and experiments have shown that the data obtained by the calorimeter are entirely comparable with those obtained in the organism. This has been proved by inclosing a human being in a tight compartment by means of which all the heat and all the products of combustion which are produced in his organism are measured. This experiment shows how complete a machine the human organism is.

COMPARATIVE VALUES OF FOOD IN CALORIES PER POUND

Barley, pearled	1650	Beans, kidney, canned	480	Lamb, leg	1130
Buckwheat flour	1620	Beans, string, canned	95	Lamb, shoulder	1265
Corn meal	1645	Corn, canned	455	Mutton, leg	900
Hominy, dry	1650	Peas, green, canned	255	Mutton, loin	1575
Macaroni, etc.	1665	Pumpkin, canned	150	Mutton, shoulder	975
Oats, rolled	1850	Squash, canned	235	Pork, ham	1520
Rice	1630	Tomatoes, canned	105	Pork, salt	3555
Wheat (average)	1710	Beans, dried	1605	Pork, bacon, smoked	2685
Entire wheat flour	1675	Beans, lima, canned	1625	Pork, loin chops	1340
Graham flour	1670	Buttermilk	165	Pork, tenderloin	900
Patent flour	1650	Cheese, cheddar	2145	Chicken, broiler	295
Brown bread	1050	Cheese, cottage	510	Fowls	775
Crackers	1910	Cheese, cream	910	Goose	1505
Graham	1955	Hens' eggs	635	Turkey	1075
Oatmeal	1970	Lentils	1620	Bass, fresh	255
Saltines	2005	Milk, condensed	780	Catfish	915
Cake (not fruit)	1675	Milk, skimmed	170	Cod and Haddock	220
Cookies	1910	Milk, whole	325	Halibut	470
Corn	1205	Nuts, almond	1660	Herring, mackerel	375
Doughnuts	2000	Nuts, Brazil	1655	Perch	275
Apple pie	1270	Nuts, butternuts	430	Pickerel	190
Cream pie	1515	Nuts, chestnuts	945	Pike, gray	135
Custard pie	830	Nuts, cocoanut	1413	Salmon	660
Lemon pie	1190	Nuts, filberts	1575	Sturgeon	350
Mince pie	1335	Nuts, hickory	1265	Trout, brook	230
Raisin pie	1410	Nuts, peanuts	1935	White fish	325
Rye and graham	1180	Nuts, pecans	1846	Cod, canned	315
White	1215	Nuts, walnuts	885	Haddock, smoked	510
Whole wheat	1140	Apples, fresh	220	Halibut, smoked	950
Zwieback	1970	Bananas, fresh	300	Herring, smoked	750
Asparagus, fresh	105	Blackberries, fresh	270	Mackerel, salt	730
Beans:		Cherries, fresh	345	Salmon, canned	915
Butter, green	370	Figs, fresh	380	Sturgeon, dried	870
Lima, fresh	225	Grapes, fresh	335	Sardines	950
String	180	Lemons, fresh	140	Tuna	575
Beets, fresh	170	Oranges, fresh	170	Clams, lobsters	140
Cabbage	125	Peaches, fresh	155	Crabs in shell	195
Carrots, fresh	160	Pears, fresh	260	Oysters in shell	45
Cauliflower	140	Plums, fresh	370	Solid	230
Celery	90	Prunes	335	Clams, Canned	275
Corn, green	180	Strawberries, fresh	175	Crabs "	370
Cucumbers	70	Raspberries, red	255	Lobster "	145
Greens, beet	245	Raspberries, black	310	Oysters "	335
Dandelion	285	Apples, dried	1350	Shrimp "	520
Lettuce	75	Apricots, dried	1275	Miscellaneous:	
Onions	205	Figs, dried	1475	Gelatin	1705
Parsnips	240	Pears, dried	1635	Butter	3605
Peas, green	255	Prunes dried	1190	Lard, refined	4220
Potatoes	310	Raspberries, dried	1705	Cottolene	4220
Sweet	460	Beef, corn	1271	Oleomargarine	3525
Pumpkin	60	Beef, flank	1185	Chocolate	2860
Radishes	95	Beef, porterhouse	1110	Cocoa	2320
Spinach, fresh	110	Beef, round	890	Honey	1520
Squash	105	Beef, ribs	1110	Starch, corn	1675
Tomatoes, fresh	105	Beef, rump	1065	Tapioca	1650
Turnips	125	Beef, sirloin	985	Sugar, brown	1765
Asparagus, canned	85	Veal, breast	745	Sugar, maple	1540
Beans, baked, canned	600	Veal, cutlets	695	Sugar, granulated	1860
Beans, lime, canned	360	Veal, leg	625		

Balanced Ration.—Experience has shown that man eats from choice certain quantities of the kinds of food mentioned, and in a certain definite proportion. While the dietaries of different nations differ, it may be stated that men in the same ranks of life, having practically the same means of obtaining subsistence, live in a uniform manner the world over. It is possible, therefore, by experience and study to determine the normal diet of man. The total quantity of food which a man eats is usually determined by the heat units mentioned and known as *calories*. The average man eats an amount of food which produces a quantity of heat recognized by the expression *three thousand calories*. That is, if the food which the average man eats were burned, it would raise a unit volume of water from zero to a temperature of three thousand degrees. As water could not bear such a temperature, however, a better expression is that the food of an average man per day would raise the temperature of three thousand unit weights of water one degree.

A study of these data show that not only is the human organism a machine but it is the most economical machine known. This is true of the animal organism in general and not of the human system in particular.

A balanced ration may be regarded as that quantity of food which will furnish three thousand units of heat, and so distributed among the various kinds of foods as to secure the proper proportions of protein, carbohydrates, minerals, condiments, and fats. This quantity of food, if deprived entirely of its water, represents about one per cent of the weight of the individual eating it. In other words, a man weighing 150 pounds in ordinary circumstances, and at light physical employment, eats one per cent of his weight of dry food a day, that is, one and a half pounds of dry food. As the ordinary foods used, however, contain about three times as much water as they do of dry substance, the total weight of food, including water, used by the average man of 150 pounds, is from four to five pounds per day.

Average Distribution of the Dry Food.—Assuming that the average man eats one and a half pounds of dry food per day, experience has shown that this is distributed in about the following proportions:

Proteid	0.25 lb.
Fat	0.2 lb.
Carbohydrates	1.0 lb.
Mineral matter, etc	0.05 of a lb.

The above data are to be considered only as approximate expressions in round numbers of the general distribution of the diet of an ordinary person.

Adulteration of Food.—Adulteration of food has been largely practiced for the purpose of commercial gain. In so far as nutrition and palatability are concerned, and from the common point of view of the consumer, there is no possible excuse for adulteration of any kind. The sole purpose of the practice of adulteration is to secure unearned profit for the manufacturer and dealer. Adulteration of food is practiced in various ways, the most common of which are as follows:

(a) *The abstraction of some valuable ingredient.* This is illustrated in the skimming of milk and the sale of the product as a whole milk.

(b) *The addition of some agent which dilutes or weakens the product.* This is shown in the addition of water to milk;

of chicory to coffee; of ground shells to pepper and other spices, etc.

(c) *The concealing of inferiority of a product.* This is done chiefly by coloring or bleaching, as for instance, the use of color in a distilled vinegar to make it appear like cider vinegar; the addition of an artificial flavor to an extract to make it resemble the genuine article; the bleaching of flour to make it look like high-grade patent flour, etc.

(d) *The addition of a substance to a food product which may render it injurious to health.* This is practiced chiefly for the purpose of preserving foods, though some of the coloring matters employed are undoubtedly injurious to health, such as sulphate of copper and many coal-tar dyes. Many authorities on hygiene are of the opinion that any kind of a preservative drug added to a food product is injurious. The reason for this belief is that a preservative only acts by destroying or paralyzing germ life and a preservative is only effective when enough of it is added to secure this effect. It is a very common opinion among experts, especially those charged with the protection of the public health, that all such practices are objectionable. On the other hand, there are experts, also eminent in their professions, who maintain that the use of preservatives is not deleterious. All nations that have food laws have either forbidden or restricted the use of these preservative materials, and this shows that the feeling of the community is decidedly opposed to them. When it is further considered that every kind of food which is suitable for human consumption may be perfectly preserved in some unobjectionable way without the use of preservatives, it is evident that their employment is wholly unnecessary and, therefore, always objectionable.

Misbranding of Food Products.—Almost as objectionable as adulteration is the practice of misbranding. As in the case of adulteration, this is done solely to secure undeserved profits on the part of the manufacturer or dealer. From the consumer's point of view there can be no excuse offered for the misbranding of foods. This misbranding takes various forms of which the following are some examples:

(a) *Misbranding* as to the state or country in which the food is produced, as, for instance, representing a domestic wine as of foreign manufacture, either by name or other device.

(b) *The giving of a false or fictitious name of manufacturer.* This is a very common practice among those who make different grades of products. Their own names are placed on the high grades and the names of fictitious firms on the low grades.

(c) *The calling of adulterated food by the name of the real article.* This is probably the most common form of misbranding, and is illustrated in the sale of milk which has been skimmed and watered as milk; a buckwheat flour which has been mixed with other materials as buckwheat flour, and maple sirup mixed with other sweets as maple sirup.

(d) *The misrepresentation of the qualities of a food product is another form of misbranding.* It is not uncommon to see advertisements calling attention to "superior qualities" which the article does not possess, such as "the most wholesome," "best made," "entire substitute for," etc. A most dangerous practice, and one which threatens health and often life, is found in the claims made for certain varieties of infants' and invalids' food. Another very common form of misbranding is where long stored foods are advertised as fresh—a form of misbranding which is now receiving attention in all the countries of the world, and regulations are being made looking to the minimizing of this evil. Infants' and invalids' foods of all others, should be pure, wholesome and free from misbranding and adulteration.

ENTOMOLOGY.—The branch of zoölogy which treats of the insects. The true insects are those animals of the division *Arthropoda* or *Articulata* distinguished from the other classes of the division by the fact that the three divisions of the body—the head, thorax, and abdomen—are always distinct from one another.

There are never more than three pairs of legs in the perfect insect, and these are all borne upon the thorax. The wings are expansions of the sides of the second and third sections of the thorax, and are attached by slender tubes called *nervures*. In the beetles the anterior pair of wings becomes hardened so as to form protective cases for the posterior membranous wings, and are called in this condition *elytra* or *wing-cases*. The head is composed of several segments amalgamated together, and carries a pair of feelers or *antennae*, a pair of eyes, usually compound, and the appendages of the mouth. The thorax is composed of three segments, also amalgamated, but generally pretty easily recognized.

The organs of the mouth take collectively two typical forms, the masticatory and the suctorial, the former exemplified by the beetles, the latter by the butterflies, in which the mouth is purely for suction.

Generally the young are very different from the full-grown insect, and pass through a *metamorphosis* before attaining the mature stage. When the metamorphosis is complete it exhibits three stages—that of the larva, caterpillar, or grub, that of the pupa or chrysalis, and that of the imago or perfect winged insect.

Classification.—Insects have been divided into three sections — *Ametabola*, *Hemimetabola*, and *Holometabola*, according as they undergo no metamorphosis, an incomplete one, or a complete one.

Ametabola.—The young of the Ametabola differ from the adult only in size. They are all destitute of wings; the eyes are simple and sometimes wanting. This section is divided into three orders—*Anoplura* (lice), *Mallophaga* (bird-lice), and *Thysanura* (springtails).

Hemimetabloa undergo an incomplete metamorphosis, the larva differing from the inago chiefly in the absence of wings and in size. The pupa is usually active, or if quiescent capable of movement. The section Hemimetabola comprises the orders *Hemipetra* (cicades, bugs, plant-lice, etc.), *Orthopetra* (cockroaches, crickets, grasshoppers, locusts, earwigs, etc.), and *Neuropetra* (dragon-flies, May flies, white ants, etc.).

In the Holometabola the metamorphosis is complete, the larva, pupa, and imago differing greatly from one another in external appearance and habits. The larva is wormlike and the pupa quiescent. The Holometabola comprises the orders *Aphaniptera* (fleas), *Diptera* (gnats, botflies, gadflies, mosquitos, house flies, etc.), *Lepidoptera* (butterflies and moths), *Hymenoptera* (bees, wasps, and ants), *Strepsiptera* (stylops, minute and parasites), and *Coleoptera* (lady-birds, glow-worms, cockchafers, weevils, and all of the beetle tribe). (See Dictionary of Animals.)

ETHNOLOGY.—Anthropology is that science which studies man. Taken in its most comprehensive significance it includes so great and such diversified material that it is necessary to subdivide it. Four main divisions are usually recognized—somatology, ethnology, ethnography, culture history. Somatology, sometimes called physical anthropology, considers man as a living organizm, in himself and in his relations to other animal forms. It involves, anatomy, physiology, psychology. Ethnology and ethnography deal with races; the former is a philosophical, the latter a descriptive science. The difference between them is the same as that between geology and geography.

Place Among Sciences.—Ethnology is based on somatology; it defines the different races of mankind; it studies the great questions of origin, variation and distribution. Ethnography describes the different populations of mankind; it aims to give a definite picture of the life and culture of each and every division of the human race; it deals little in theories, much in facts. Culture history studies the development of culture from lowest savagery to highest civilization; it is constructed from the facts supplied by ethnography.

The Scope and Field of ethnology may be briefly indicated. The philosophical study of the human race involves investigation of the origin of mankind; it attempts to reconstruct the primitive type of man; it aims to locate man's first home; it defines the definite types and varieties of the human species; it seeks to follow the movements of mankind from its first home, and to present the facts of the present distribution of human varieties.

Origin of Man.—The theory of evolution is as follows: Man is commonly recognized as no exception to the general rule. He is a part of animate creation, and is related by genuine ties of blood with other animals. His closest relatives are the various species of anthropoid apes living to-day in Africa, in southeastern Asia, and the adjacent islands. There are four types which so much resemble man as to deserve the name of anthropoid apes—the gorilla, chimpanzee, orang-utan, and gibbon. The gorilla and chimpanzee live in tropical Africa; the orang-utan and the gibbon live in the islands southeast from Asia, and in the neighboring portions of the continent. The gorilla is the largest of the four types, the different gibbons the smallest; all resemble man, but perhaps the nearest approach is in the chimpanzee and the orang-utan. Neither Darwin nor his followers have claimed that man is descended from any of the living types of anthropoids; they and he alike have descended from a common ancestor; they are collateral relatives.

Unity of Mankind.—The old question of monogenism is no longer one of serious importance. Monogenism is the doctrine that all men have descended from a single stock; that all are of one blood. The counterproposition that the different races of man have absolutely different origins, that they are different in blood, that all men are not brothers, is called polygenism.

In the early days of ethnology the battle between these two views was bitter. Naturalists held the fixity of plant and animal species. It was recognized that within the range of a single species there might be

variation, and varieties of species were recognized and clearly defined. But the idea that a species itself was temporary, and that one might go over to another through modification and by selection, was not recognized.

The question, then, was whether man formed a single species with several varieties or whether there were several human species. Certain criteria of species had been determined. The two of most significance were these:

(1) *Between the different individuals of a species the resemblance must be great and the variation limited.*

(2) *There must be fertility between varieties.*

The scientific consideration as to whether man is of *one* or of *several* species clearly belongs to the naturalist (the biologist). As regards degree of resemblance it is certain that the different human races present less striking differences than those within the range of pigeons and domestic dogs. Whether the different races of mankind really breed well together and give rise to fertile offspring was much discussed, but, on the whole, may be assumed. Mose of the old students, then, decided that mankind formed a single species with a number of varieties.

To-day, however, the old question has little meaning. Biology no longer holds to fixity of species. All existing forms of life are believed to have been derived from previously existing forms through variation and selection. Under evolutionistic teaching, all types of man will eventually trace back to some single form, however different may be the present types of race. The question whether we shall speak of one or several species depends only at what point we choose to pass the plane which cuts across the twigs diverging from the parent branch. On the whole, the evolutionist of to-day chooses to assume a single species of mankind, but if he does so, he believes that variation early took place within the species and recognizes that the fundamental race types are old and have undergone comparatively little change in recent times.

Original Type of Man.—Various attempts have been made to reconstruct the primitive type of man. Years ago, de Quatrefages, on the basis of individual peculiarities occurring within the limits of all human races, peculiarities which he believed might be considered reversive, suggested that the first men were probably yellow of skin, red-haired, and green-eyed. While his view has been rarely accepted *in toto* it has perhaps some elements of truth. It is possible to make a guss as to the structure of the earliest human occupants of western Europe, where various remains have been found in ancient deposits. Each fragment of human skeleton that has been found in glacial gravels or in cave-earth has given rise to bitter controversy. The number of pieces which have stood the test of critical examination and are unquestionably old is small. Among the most interesting of these remains are the skull-cap of Neanderthal and the skulls of Spy. Within a few years past, several discoveries of extraordinary importance have been made, and the list of authentic ancient pieces is double what it was a few years since. Rutot has recently summarized the whole discussion and we present a table based upon his evidence.

Table of Ancient Human Remains from European Quaternary

Drawn from Rutot; abbreviated.

European Quarternary Division	Nature of Piece and Locality	Type
Mindelian Glaciation.	Jaw-bone *Mauer.*	Neanderthaloid.
	Skeleton. *Galley Hill.*	Transition (doubtful authenticity).
Interglacial.		?
Rissian Glaciation.	Skull. *Denise.*	Transition?
Interglacial.	Skeleton. *Tilbury.*	Neanderthaloid.
	Skull. *Bury St. Edmunds.*	
	Skeleton. *Moustier.*	Neanderthal.
	Skeleton (fem.) "	Transition.
	Skeleton. *La Perassie.*	Neanderthal.
	Skeleton. *Chapelle-aux-Saints.*	Neanderthal.
	Skeleton. *Combe-Capelle.*	Transition.
	Skeletons. *Spy.*	Neanderthal.
	Skeleton. *Duruthy.*	Cro-Magnon.
	Skeletons. *Mentone.*	Negroid.
	Remains. *Hastière.*	Transition.
	Remains. *Crapina.*	Neanderthaloid.
	Jaw-bone. *Grotto des Fées.*	Transition?
	Jaw-bone. *Malarnaud.*	Transition?
	Jaw-bone. *La Naulette.*	Neanderthal.
	Skull-cap. *Neanderthal.*	Neanderthal.
	Skeletons. *Cro-Magnon.*	Cro-Magnon.
	Skeletons. *Mentone.*	Cro-Magnon.
	Skeleton. *Brünn.*	Transition.
	Skull. *Brünn-Rotenberg.*	Transition.
	Skeletons. *Predmost.*	Transition?
	Remains. *Trou Magrite.*	?
Wurmian Glaciation	Jaw-bones. *Goyet.*	Cro-Magnon?
	Skeleton. *Laugerie-Basse.*	Cro-Magnon.
	Skeleton. *Chancelade.*	Cro-Magnon.
	Skeleton. *Duruthy.*	Cro-Magnon.
	Skulls. *Placard.*	Cro-Magnon.
	Skeletons. *Solutre.*	Cro-Magnon.
	Skeleton. *Grotto des Hoteaux.*	Cro-Magnon.
	Skulls, and bones *Furfoos.*	Furfoos.
	Remains. *Schweizersbild.*	Pygmy.

It is still too early to attempt a complete restoration of early man from these fragments. We may, however, say that even at that early time there were already variations. The type of Neanderthal presents many interesting points of resemblance to the anthropoid apes and suggests a being of low intelligence. At the same time, however, there existed forms with a far higher development.

Man's First Home.—It is possible that the discussion as to man's first home has been tinged by a survival of religious bias. The Garden of Eden of the Jewish scriptures was located in southwestern Asia. Most writers have, when they discussed the matter from the point of view of science, looked for man's home in the Asiatic continent. De Quatrefages claimed that it was natural to locate the place of man's appearance where his three great races—yellow, black and white—came into contact; where the different types of language also met. For him, the first home of man was in southern Asia, and from there migration started. Later writers looked farther south. Keane, for instance, believes that man originated on a land mass now disappeared, the old Indo-African continent, the existence of which has been proved by recent geological studies.

A hint as to the place of man's appearance comes from studying the range, past and present, of the anthropoid apes. We have already stated that the living species of anthropoids are confined to Africa and the Asiatic islands. It is probable that no forms strikingly resembling man have existed very far outside of the extreme range of living species. The much discussed and interesting "missing link" of Dubois, *Pithecanthropus erectus*, lives in Java. It may be fairly assumed that the place of man's origination was somewhere within the anthropoid range thus suggested. It may also be quite safely claimed that a species like man, little adapted by nature to withstand a rigorous climate, originated in a region of mild temperature.

Migrations.—From the center of his original appearance man early started on migrations, which have been continued until, to-day, it may practically be said that he has penetrated every land area upon the globe. This is a fact without parallel. No other mammalian species can compare with man in its travels. The only approximation is the dog, which, as his friend and companion, has accompanied man upon his wanderings. It is legitimate study for the ethnologist to investigate the lines of migration, but a most difficult task. The present distribution of mankind, however, is a far more simple matter. The ethnological map of the world has been constructed with a fair degree of accuracy.

Races of Man.—How many and what are the races of mankind? Authors differ greatly in their answers. At first sight this wide divergence of opinion between authors seems a serious matter; one feels as if the whole subject were in uncertainty and doubt; he is inclined to ask whether ethnology is actually a science. Huxley recognized two races; some other writers carried the number up to nearly forty. Cuvier, and French ethnologists generally, recognized three great races.

Blumenbach, who has profoundly influenced the general public and whose classification is that usually found in geographies and school text-books, defined five—Ethiopian, Mongolian, Malay, American, and Caucasian. His terminology has largely affected subsequent workers, even when they differed from him in their schemes.

The present tendency, as exemplified in three or four recent writers of repute, is toward the recognition of four main races. Thus Keane recognizes *Homo ethiopicus*, *Homo mongolicus*, *Homo americanus*, *Homo caucasicus*.

While this diversity between authors is to some degree a matter of regret, it need cause no serious distrust. The object of classification is convenience in study and the bringing together of things which are

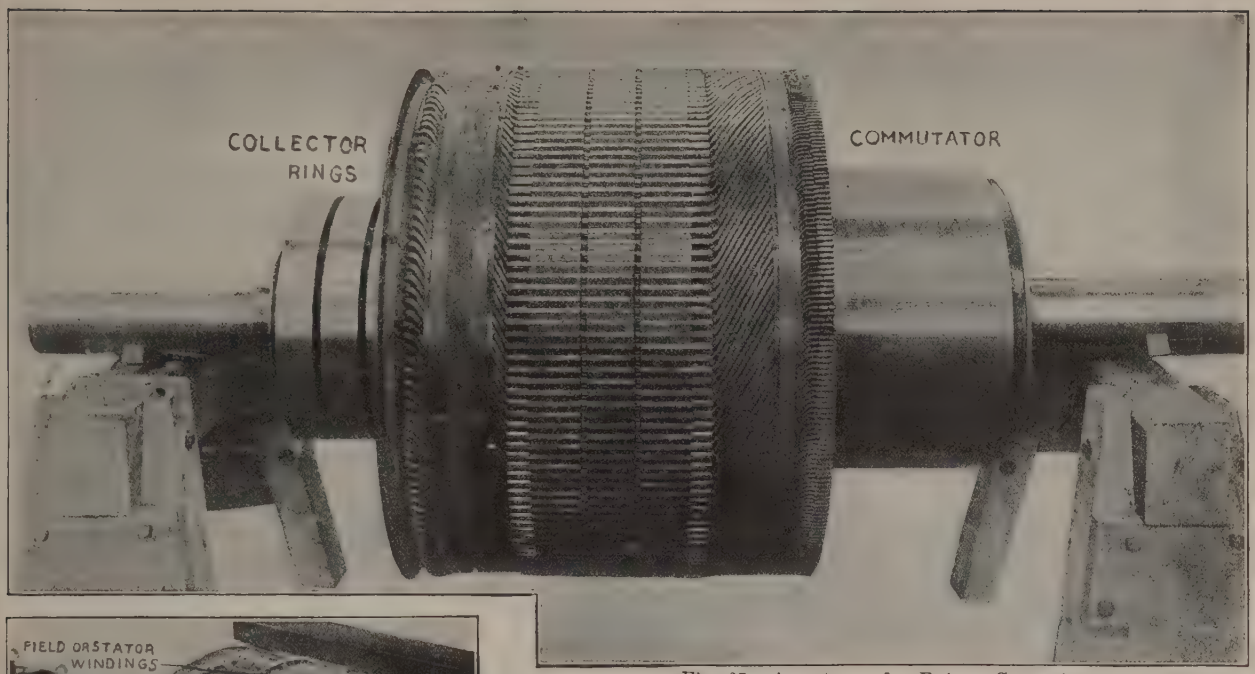


Fig. 37. Armature of a Rotary Converter

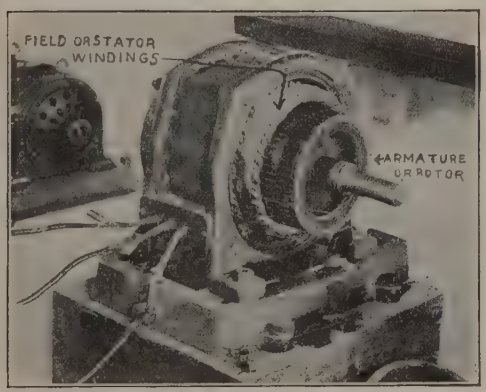


Fig. 34. Three-Phase Induction Motor

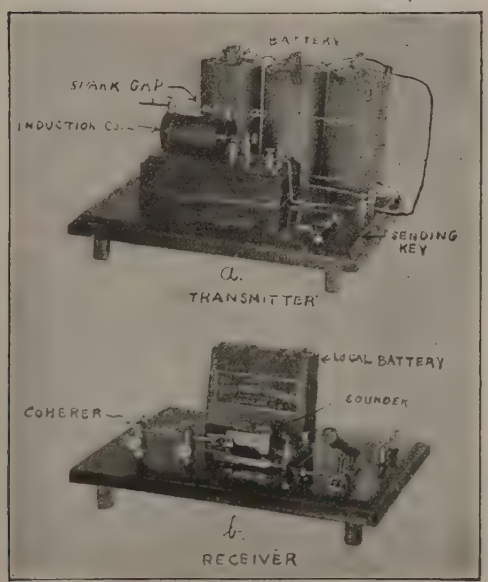


Fig. 41. Wireless Telegraph Apparatus

Fig. 42. A Radiograph

alike. When we compare the different ethnological schemes with one another, we usually find that they meet both these ends with fair success. All bring together groups which are alike, and but rarely do natural relationships of peoples seem to be disjointed.

We shall recognize the same differences that Keane does, but shall apply to them the terms Ethiopic, Mongolic, American, and Caucasic races.

Characters of Race.—Topinard attempted to define the race types of the world. His study was the most careful and precise undertaken to that time. He based his types of races absolutely upon physical characters and made five features fundamental. These were the stature, head form, nose, hair, and color.

Stature.—In stature, man ranges from the tall Patagonian, with an average of six feet or more, to the pygmies of central Africa and the Negrito of the Asiatic archipelago. Among all races there is a sex difference in stature, and, in general, it may be said that the female will average one-sixteenth less than the male. In stating that any race or people is of a given stature it is meant that the average of stature in adult males is to be understood. The average stature of mankind is perhaps 1.65 meters.

The term *pygmy* is applied to the populations of smallest stature and the French writers have agreed to call all populations *pygmy* where the average stature of adult males does not exceed 1,500 millimeters. Sir William Flower set the limit for pygmy stature in English measure at 5 feet, which is practically the same thing. The ethnologist divides people on the basis of stature into tall tribes (1,700 mm. and up) medium (1,600 to 1,699 mm.) and short (below 1,600 mm.).

The Head Form is difficult to define in words. To convey it to the mind, certain measures are taken and a numerical statement made. The two most important head measures are the length and breadth. Actual length and actual breadth, however, have but little value, and it is common to compare the two, expressing the ratio between them in what is known as an index.

Two head indices are commonly employed, one of which expresses the relation between the length and breadth of the skull and the other the relation of length and breadth upon the living subject. To the former the name cranial index is given; to the latter that of cephalic index. These indices are found by the same method, which is to divide the breadth by the length and drop the decimal point. Thus, if a skull measured eight inches in length and six inches in breadth, the cranial index would be 75. If,on a living head, the length were seven and one half inches and the breadth five inches, the cephalic index would be 66⅔. There are no normal skulls with an index so low as 50 or so high as 100; *i. e*, there are no normal skulls which are twice as long as they are broad, or which are as broad as they are long.

The indices are constantly employed in the defining of human races. The actual range as found in the averages of races is 69.4 to 88.7. Special terms are used to indicate the head form. Thus brachycephalic (85.3 and up), mesocephalic (85.2 to 77), dolichocephalic (below 77). The Armenians are for the most part brachycephalic with an index of 85.6; the Eskimo are dolichocephalic (76.8).

Nose.—The form of nose is one of the best distinguishing characters of race. Here again, an index is calculated from two measurements—height and breadth. The nasal index is found by dividing the breadth of the nose by the height and dropping the decimal point. The range is from 60.4 to 107.9. A nose as wide as it was high would have a nasal index of 100; one which was half as broad as high an index of 50. Individuals with an index of 100 or more are not uncommon among negroes.

On the whole, the white peoples of Caucasic race have the narrowest and most prominent of noses. Three terms are used in connection with the nasal index—leptorrhinian (below 70), mesorrhinian (70 to 84.9), platyrrhinian (85 and up). The northern type of European is leptorrhinian, the Negrito of the Philippines is platyrrhinian,

Hair is one of the most distinctive marks of race. Huxley made it fundamental in his classification, and recognized two main divisions of mankind—the straight haired and the woolly haired. Various points should be observed regarding it. As regards its general form, hair may be straight, wavy, curly, crinkly or woolly. In cross section, it may be circular, oval or elliptical, or flattened. White peoples, generally, have hair oval or elliptical in cross section; yellow peoples have hair with circular cross section; and blacks have distinctly flattened hair.

Hair differs racially in diameter, texture, abundance, distribution and angle of emergence. There are marked differences between races in the matter of calvity (baldness) and canity (graying). There are notable differences also in distribution and in the quantity and development of face hair. In color, race differences of hair lead to the employment of the terms black, brown, medium, light and blond. Red hair is found exceptionally among all races, but is typical of some sub-types. There are actually two types of red hair, one of which is blond, the other a variety of black.

Skin Color.—The color of the skin varies with race. Its differences are so striking that they have attracted universal attention and in many attempts at classification the color basis is fundamental. It is difficult to suggest a serviceable series of color terms. There are no actual black populations and no truly white ones. For a careful discrimination, color scales are necessary, and ethnologists quite generally use a series of fixed color samples which they match with the skin of the subjects studied. The best known chromatic scale for use in race study is that of Broca, where some thirty-four shades are discriminated. In ordinary practice a list of half a dozen terms is employed.

Four Great Races.—The four great races may be characterized as follows:

Ethiopic.—Color, from brown to almost black; generally dolichocephalic; forehead, frequently retreating with heavy arches over the orbits; prognathic—*i. e.*, the lower part of the face notably projecting; the cheek bones do not project notably forward and anteriorly; the nose is broad and flattened, platyrrhinian; the eyes are large and prominent and lustrous, dark brown or black in color; the hair is black, frizzly or woolly, and presents a flattened cross section; the stature is above the average of mankind at 5 feet 10 inches. The pygmy populations differ from the normal Ethiopic type in stature, in head form,tending toward brachycephaly, and in hair color, frequently a reddish brown.

Mongolic.—Color, a lighter or darker yellow; brachycephalic; the forehead fairly developed and without conspicuous orbital arches; the general impression given by the face is flatness and broadness with prominent forward development of the cheek bones; the nose is generally small and mesorrhine; the eyes black, with narrow almond-shaped opening, which appears to be oblique on account of a fold of skin at the inner edge; hair black, lank, coarse, circular in cross section; stature below the average at 5 feet 4 inches.

American.—Color, brown with a reddish or yellowish tinge; mesaticephalic; large, coarse features; forehead well developed and usually slight prognathism; cheek bones are prominent; nose mesorrhine, prominent, large, often aquiline; eyes small, round, straight, sunken, black; hair, black, lank coarse, long, round; the face is usually beardless and there is little body hair; stature above the average at 5 feet 8 inches.

Caucasic.—Color, ranging from white to almost black and presenting in white peoples distinctly fair and dark varieties; both types of head form occur, combined with both fair and dark colors; the face usually harmonizes in its form with the head form; prognathism rare; cheek bones not projecting; leptorrhine; eyes straight, rather large, and varying in color from light gray or blue to dark brown or black; hair, wavy, oval or elliptical in cross section, varying from flaxen to black; beard usually developed and body hair abundant; stature variable from tall to average.

The Ethiopic Race may be divided into continental and island divisions. The continental blacks occupy Africa from the Sahara desert southward. The insular group is found in Melanesia and it is customary to add the native population of Australia to this race. Both on the continent and in the islands, two sharply contrasted types are found—the large negroes and the small, or pygmy, populations.

Pygmies.—The pygmies present the typical hair, features and general characters of the race, but in the average of adult males fall below 5 feet in stature. In central Africa they occur in little groups scattered over a wide area in the midst of large black peoples. They have practically no agriculture and depend on the chase for food, representing the culture stage of savagery. Their hair is frequently of a reddish or grayish brown. They are not to be considered a dwarfed or degenerate population, but a well-developed and active people of a type among the oldest known.

A curious condition of commensalism usually exists between these little people and their large neighbors. The populations among whom they live are settled agricultural peoples, living in large and well-built villages. The pygmy settlements are usually at the edges of these towns, and a constant trade exists between the two groups; the little people bring fresh meat, ivory, honey and other natural products and receive in trade field products, cloth, and iron.

To the little blacks of the island world, of whom those living in the Philippines

are typical, the name "Negrito" is usually applied. They present the same physical peculiarities, stage of culture, and mode of living. They live in practically the same relations with the neighboring Malays that the pygmies do with their large neighbors.

Bushmen.—It is customary to group the Bushmen of southern Africa with the pygmies. They present some interesting points of difference. Their skin has a distinct yellowish tinge; they live in little wandering groups, taking refuge in caves and rock-shelters; they are hunters, but there is no distinct commensalism between them and their Bantu neighbors; they delight to mark their cavern walls with crude but lively representations of the animals they pursue. These peculiarities, to a less degree, mark the pygmies of central Africa. They are also found in the Hottentots, neighbors of the Bushmen, usually considered to be the result of intermarriage between them and the Bantu of the region.

Negroes.—The large continental blacks have reached the stage of barbarism in culture, and live in good towns, depend upon the product of the fields (cultivated by women), or, especially toward the south, upon herds of cattle. Two great divisions are recognized—the true negro of the Soudan district and the Bantu populations farther south.

In the true negro the characteristics of the race already mentioned are carried to their fullest development; blackness, coarseness of features, flatness of nose, prognathism with accompanying thickness of lips, and dolichocephaly are emphasized in them. The Bantu present a fine, chocolate brown tint, more regular and, to the eye, pleasing features; prognathism is rarely pronounced and the head is by no means markedly dolichocephalic.

Melanesians.—In the islands, the large blacks include the Papuans of New Guinea and the Melanesians of Fiji, New Caledonia, the Solomons and other island groups. Their life is interesting and has been the subject of much study. Dark colored, woolly haired, dolichocephalic, platyrrhine and of good stature, they are actually comparable with the big blacks of Africa.

The Mongolic Race is the most populous of the divisions of mankind. There is reason to believe that of the great races it perhaps nearest approaches the primitive stock of humanity. It is vigorous, hardy, and expansive. Its primitive home is the great continent of Asia, which is still chiefly occupied by it. The race presents two chief divisions to which Keane gives the names Mongolo-Tatar and Tibeto-Indo-Chinese.

The Mongolo-Tatar is the northern in position. It has spread from Asia across northern Europe and occupies to-day the north of Russia and a considerable area in Scandinavia. To it belong the great wandering hordes of Siberia—Mongols, Kalmucks, Buriats, Tungus, Yakuts and the like; to it also belongs the great Finno-Tatar group—with Tatars, Turki, and Ugrians. To this belong the Finns, Magyars and Bulgarians. In the far north are the Samoyeds and Lapps, the latter a people of small stature, who raise reindeer in the north of Sweden and Norway. To the great Mongolo-Tatar mass also belong the Koreans and the Japanese, relatives in blood and language. The Koreans are relatively pure Mongols, the Japanese much mixed with other elements, as we shall later see.

The Tibeto-Indo-Chinese division includes the Tibetans, the Chinese proper and the great mass of people in Indo-China and southeastern Asia, such as the Siamese, Burmese and the people of Anam. They are sedentary peoples, depending upon agriculture, with towns and cities, a dense population with distinctive culture, a true civilization. Linguistically, the southern group differs profoundly from the Mongolo-Tatar. Chinese and Japanese represent totally different types of language.

Eskimo.—Besides the two great divisions mentioned, the Mongolic race includes two interesting extra-continental groups—the Eskimo and the Oceanic Mongols, or Malays. Taxonomically, the Eskimo present a difficult problem. In color, face, features, stature—in fact, in the whole general impression—they are clearly Mongolic. But they are at the same time dolichocephalic; the Eskimo skull is one of the most sharply marked; it is long and narrow, has square jaws and ridged vault to the degree that, viewed directly from in front, it gives a distinct pentagonal outline.

The Eskimo occupy the whole arctic coast of North America from south and western Greenland to the western end of Alaska and overlap into eastern Asia. Throughout this enormous range of thousands of miles they present remarkable uniformity in type, language, and mode of life. The area occupied is chiefly American, not Asian; and the bulk of Eskimo population is found in the new world.

Malays.—The Oceanic Mongols, or Malays, occupy the islands of Malaysia, the Malay peninsula and a part of the great island of Madagascar off the east coast of Africa. Blumenbach considered the Malay one of the fundamental populations of mankind. It presents a fairly well-marked type, which, however, may be included in the Mongolic. The Malays and the Malayan peoples (for the word "Malay" proper is used chiefly in ethnology for those in the peninsula) are good seamen.

The American Race.—Keane refuses to recognize the Malays as distinct, but insists upon separating the American type from the Mongolic. For him they are an offshoot, but one of ancient date, which has had ample chance to develop peculiar characters in the American area. Contrasted with the other great races it presents a notable degree of physical uniformity. Writers have often said: "When you have seen one American Indian you have seen all"; "The American Indian presents the same type from the cold waters of the Arctic to the cold waters of Cape Horn."

This uniformity is striking but not absolute. Careful study shows tall and short tribes of American Indians, from the Patagonians, who are perhaps the giants of mankind, to Otomi, who almost touch the limit of pygmy height. There are long headed and short headed tribes, light and dark—from almost black to almost white; there are tribes with large faces and coarse features, like the Sioux, and tribes with soft and mild faces and delicate features, like the Chinantecs.

The American Indians present a notable uniformity in culture and it may be said that as a whole they are in barbarism. They represent every degree of barbaric culture from the lowest to the highest, and it may almost be said that not a single tribe of the many hundreds of American Indians represents either savagery or civilization. The rudest Athabaskans of British America had reached lower barbarism and the Aztecs and Mayas of Mexico fall just short of civilization. While writers usually have claimed a single origin for the American peoples, it seems more reasonable to assume that immigrants have come by many routes from many regions. Within the new environment the fragments of old populations have approximated to each other until we have the present condition of relative uniformity.

The Caucasic Race.—The continent of Europe is chiefly occupied by people of Caucasic race. Light whites and dark whites are readily distinguished. No section of the world has presented more serious problems to the ethnologist and no race is more difficult of satisfactory discussion than the Caucasic.

So far as Europe is concerned, Ripley recognizes three races: the northern, which is fair, tall, dolichocephalic; the Alpine, which is short, dark, and broad headed; the southern or Mediterranean, which is short, dark and long headed. This classification is attractive for its simplicity. It seems indeed to be too simple, and with its acceptance, points of importance are lost from sight and real distinctions fail to be recognized. Deniker recognizes ten types of European whites speaking Aryan tongues, which he groups under six races and four sub-races. His characterization of these types is as follows:

I. Northern.—Very lofty stature (1.73m.); dolichocephalic (76-79); fair; wavy hair, sometimes reddish; light eyes, usually blue; ruddy white skin; long face; prominent, straight nose; *e. g.*, Swedes.

A. *Sub-Northern.* Tall; mesocephalic; fair; straight hair; angular face; turned-up nose. *e. g.*, Letto-Lithuanians.

II. Eastern.—Short (1.63 m.); moderately round-headed (82-83); fair; straight light-yellow or flaxen hair; square-cut face; eyes blue or gray; nose frequently turned up; *e. g.*, Russians.

A. *Vistulian.*—Very short; mesocephalic; fair; *e. g.*, some Poles.

III. Ibero-Insular.—Short (1.61 - 1.62 m.); dolichocephalic (73-76); dark; hair black, often curly; very dark eyes; tawny skin; straight or turned-up nose; *e. g.*, Spaniards.

IV. Western, or **Cevenole.** — Short (1.63-1.64 m.); very rounded skull (85-87); dark; brown or black hair; light or dark brown eyes; rounded face; thick-set figure; *e. g.*, central French.

V. Littoral, or **Atlanto-Mediterranean.**—Tall (1.66 m.); moderately dolichocephalic or mesocephalic (79-80); dark; hair and eyes very dark colored. Always near the Mediterranean coast.

A. *Northwestern.*—Tall; sub-dolichocephalic; chesnut hair, often brown; *e. g.*, Welsh.,

VI. Adriatic, or **Dinaric.**—Tall (1.68 - 1.72 m.); brachycephalic (85-86); dark; brown or black wavy hair; dark eyes; straight eyebrows; elongated face; delicate, straight or aquiline nose; slightly tawny skin; *e. g.*, Montenegrins.

A. *Sub-Adriatic.*—Less tall (1.66 m.); less brachycephalic (82-85); lighter hair and eyes; *e. g.*, Luxemburgers.

These are all truly European types, speaking related languages.

Non-Aryan Whites.—There are however other Caucasic peoples; thus, in the region of the Caucasus itself, a district of extraordinary mixture and ethnic confusion, are many interesting peoples. It is from this district of Georgians and Circassians that the name applied to th whole great race was drawn. The Basques of the Pyrennean district, divided politically into French and Spanish Basques, are white men, Caucasian, European, but not included in Deniker's types, being unrelated in language to the races of Aryan Europeans.

The whole of north Africa is occupied by peoples who are neither Ethiopic nor Mongolic, and who, though dark in skin for the most part, are regularly classed in the Caucasic race. Although, in their entirety, the general name Hamitic is given to them, some of them have been profoundly

influenced by Semitic peoples and languages.

Many fine types occur within this area, which, of course, includes the Egyptians, past and present, the Libyans and the Berbers. While these peoples are for the most part dark, some remarkable groups of notably blond types occur among them. That these blond types are ancient is clearly shown by the wall-paintings of old Egypt, where the Libyan is regularly represented as blond. To the Caucasic race belongs also the brunette populations, ancient and modern, who speak the pure and typical Semitic languages—Hebrews, the modern Arabs and their neighbors. With them, we enter Asia.

Asiatic Caucasians.—In Asia, also, are Caucasic peoples, some of them speaking Aryan languages, in Persia, Afghanistan, and parts of India. Caucasic elements in Asia date far back, and there is good evidence of their existence and influence even in that section of the great continent which is occupied by Mongolo-Tatar populations.

The Ainu of Yeso and Saghalien are a Caucasic people. They are the remnant of the aboriginal population of Japan. Perhaps they occupied the entire archipelago before the coming of the Japanese from the continent by way of Korea. They are dirty white in color, have abundant wavy hair, elliptical in cross section, horizontal, large expressive eyes, almost European features, abundant body hair and heavy beards. They are mild in disposition and in culture are almost in savagery. Their language differs notably from Japanese in structure and lexicon.

In India are the Todas, whom Keane considers Caucasic. In face, features, hair and heavy beards, in yielding character, they present considerable analogy to the Ainu. They are, however, cattle raisers, and their whole life is wrapped up in the care of their animals. There are in other parts of Asia scattered fragments of populations which one and another writer have suggested are Caucasic and it is not impossible that continuous populations of inoffensive and weak Caucasic type once occupied the whole of eastern Asia and that they have been broken and separated by the flood of Mongolics coming from the west. The present tendency is to recognize the existence of Caucasic people in the island world.

Indonesians.—The term "Indonesian" is much used for certain people of Malaysia who do not present the true ("Malay") Mongolic type. It is assumed by those who use the term that these Indonesians are in large part Caucasic, modified by Malay or other island blood. The Polynesians, too, are largely claimed at present as Caucasic. These peoples present a handsome, attractive type; of good stature, well built, with faces of regular features, they are beautiful, by our standards.

Geographical Distribution.—In general, each continent has a distinct type of mankind. Asia has its Mongolic type; Europe and northern Africa its Caucasic type; south Africa its Ethiopic type; and the double continent of America its American type. Even Australia has a definite race type. While this is true, there has been so much of movement, interpenetration, and admixture that the population of no great land area is now uniform.

European Peoples.—Europe, with northern Africa, is the true home of the Caucasic race, but contains Mongolic peoples as well. In the accompanying table of European peoples by countries the main or fundamental population is given in one column, the more important secondary elements in another.

Asiatic Peoples.—Asia is the continental home of the Mongolic race, which still forms the greater part of its population, but a large Caucasic element has been present since ancient times and there is local mixture of Ethiopic blood. Deniker recognizes eleven physical types, which have intermingled to produce the Asiatic peoples of to-day. Five of them are peculiar to Asia—Dravidian, Assyroid, Indo-Afghan, Ainu, Mongolian; six occur elsewhere — Negrito, Indonesian, Arab, Ugrian, Turkish and Eskimo. Six of these are Caucasic—Dravidian, Assyroid, Indo-Afghan, Ainu, Indonesian, Arab; four are Mongolic—Mongolian (Tibeto-Indo-Chinese), Ugrian (Mongolo-Tatar), Turkish (Mongolo-Tatar), Eskimo; one is Ethiopic—Negrito.

Dravidian applies to the brown aboriginals of southern India, who are short of stature, dolichocephalic and with curly or wavy hair. Peschel made of them a great race type. Their position among races has been disputed, but in our four-race classification they must be called Caucasic.

Assyroid is so called because the type is common in the wall sculptures of old Assyria. It is well characterized, with tawny-white skin, narrow hooked nose with thick lips, brachycephalic, hair wavy or curly. It is the Armenian type and the oft-mentioned "Jewish" type is fundamentally Assyroid. In our scheme it is Asiatic Caucasic. So, too, is Indo-Afghan, the type of the invading conquerors of part of India. It has clear brown skin, black wavy hair, narrow straight or convex nose, dolichocephaly, tall stature.

The Arab, typical Semite — though the word Semitic is properly linguistic, not ethnic—is dark, with black wavy hair, dark eyes, long elliptical face, dolichocephalic head, aquiline nose, prominent occiput.

Jew.—This term should be used in only a religious sense; in so far as it has ethnic application it is fundamentally Assyroid or Arab or both; but it is everywhere mixed and approximates the people of the surrounding populations. Jews, of course, exist the world over. The Jews heretofore world-wanderers, are gathering in Palestine to form a Jewish nation.

African Peoples.—To draw up similar tables of the population of other continents would be more difficult and less satisfactory. The population of Africa falls into two well-marked divisions. Northern Africa to the Sudan must be ethnically joined to Europe. Brinton emphasized this fact by making one continent of the two land masses, to which he gave the name Eurafrica. Its population is Caucasic, though many of its peoples are dark of skin. In features, head-shape, hair nose, they are clearly related to European peoples. Among them are Berbers, Libyans, Egyptians, Nubians, Abyssinians, Collectively these north-African peoples are called Hamitic but they have been

Table of Peoples of European Countries

Country	Chief or Foundation Peoples	Subordinate or Local
Austria.	Northern.	Western. In south, Adriatic.
Belgium.	Northern (Flemish). Western (Walloon).	Northwestern.
British Isles.	Northern, Subnorthern.	Northwestern; in Wales and Ireland.
Bulgaria.	Bulgars. (Mong.—Turko-Finn.)	Mixed with Slav elements.
Denmark.	Northern.	Along coast, Western.
France.	Western or Cevenole, in highlands.	Northwestern, in northern lowlands. Littoral in south. Adriatic. Ibero-Insular.
Germany.	Northern, in lowlands.	Sub-Adriatic. Western.
Greece.	Diversified and uncertain.	
Italy.	Adriatic in north. Ibero-Insular in south.	Littoral. Western.
Montenegro.	Adriatic.	
Netherlands.	Northern. Subnorthern.	
Norway.	Northern. Lapps, etc., (Mong.) in north.	Sub-Northern and Northwestern, along coasts.
Portugal.	Ibero-Insular.	Northwestern.
Roumania.	Turki (Mong.). Western elements.	
Russia.	(Cauc.) Northern. Sub-Northern. Eastern. (Mong.) Lapps. Finns, Samoyeds.	Vistulian (Poles). Adriatic.
Servia.	Adriatic.	
Spain.	Ibero-Insular.	Western, north coast; Littoral, south coast.
Sweden.	Northern. Lapps and Finns (Mong.)	Sub-Northern and Northwestern along coasts.
Switzerland.	Cevenole, or Western.	Adriatic. Sub-Adriatic.
Turkey.	Turki (Mong.).	

Table of Peoples of Asiatic Countries

Country	Chief or Subordinate Peoples	Subordinate or Local
Afghanistan.	Indo-Afghan (Cauc. of Aryan speech).	Assyroid (Cauc.).
Arabia.	Arabs. Syrians (Cauc.—Semites).	
Baluchistan.	Baluchi (Cauc.—Indo-Afghan)	Arab. (Cauc.—Semitic). Negroid.
Burma.	Burmese.	(See Indo-China).
China.	Chinese. (Mong.—T.-I.-C.).	Lolos, Mantse. (perhaps Cauc.). Other fragments of aboriginal peoples.
India.	In north, Mongolic.	In Punjab-Deccan; brachycephal Cauc.?
	Ganges and Indus valleys, Aryo-Dravidians.	Ceylon; Veddahs, aborigines (Cauc.?).
	In south; Dravidians.	
Indo-China.	Cambodians. Annamese. Burmese. Thai. (Shans. Laotians. Siamese.)	(Aboriginal "Indonesians" mixed with incoming Mongolic peoples.) Negrito.
Japan.	Japanese (Mong.—K.-J.).	Ainu (Cauc.). Much Malay influence.
Korea.	Koreans (Mong.—K.-J.).	Trace of Caucasic elements.
Persia.	Persians (Cauc. of Aryan speech).	Semites (Cauc.). Turki (Mong.—M.-T.).
Siam.	Siamese (Mong.—T.-I.-C.).	(See Indo-China).
Siberia.	Mongols, Tungus, Tatars, Yakuts, etc.	
Tibet.	Tibetans (Mong.—T.-I.-C.).	
Turkey.	Turki (Mong.—M.-T.).	Assyroid (Cauc.).

strongly influenced by Arab (Semitic) hordes which have swept over the area.

On the southern border there is much mixture with negro blood. To the rest of Africa, Brinton applies the name Aust-Africa. It is divided between true negroes in the north and the Bantu peoples of central and south Africa. Bantu is a linguistic term, and the division between the two masses of population is primarily linguistic. But there are physical differences also. Scattered amid the big blacks of central Africa are the pygmy groups, and in the Kalihari desert region of the south live Bushmen.

American Peoples.—The great double continent, America, was occupied solely by the American race, except along the northern coast, where Eskimo live. American Indians have never been seriously classified upon the basis of physical types, due to the uniformity already mentioned.

Language is the basis generally employed in dividing the race into study groups. There are hundreds of languages spoken among them, and even language families, or independent stocks, number scores. Powell recognized fifty-eight linguistic families in North America north of Mexico. Brinton divides the double continent into five geographical regions—North Pacific, North Atlantic, Isthmian, South Pacific, South Atlantic. North Pacific, North Atlantic and Isthmian make up North America; the other two regions constitute South America.

While this division is geographical, Brinton emphasizes the fact that these regions are really culture areas as well. In such an article as this further detail would but confuse by introducing a multitude of tribal names.

Oceanic Peoples.—The Island World is not a unit ethnologically. It includes four well-marked, clearly characterized, areas—Malaysia, Melanesia, Australasia and Polynesia.

Australasia.—These may be separated into the Australian and the Tasmanian types. The latter seems more primitive and approaches, perhaps, the Melanesian. The Australians are fundamentally blacks, Ethiopic, but have been influenced by Dravidian or other elements until they have lost the woolly hair. With chocolate brown skin, broad nose, dolichocephaly, and medium stature they present a fairly uniform type, which some authors class among the great races.

Melanesia includes New Guinea or Papua and a number of groups of smaller islands. The true Papuan shows a fairly distinct type, but he is usually included with the rest under the general term Melanesian, which includes all the large Oceanic negroes, Ethiopic in race.

Malaysia extends from Madagascar to Melanesia, thus lying west of the two areas just considered. It includes the great islands of Sumatra, Java and Borneo; also Celebes, the Philippines, and many smaller islands; Formosa, ethnically, is Malayan. Malays form the chief population, but Melanesians have had local influence, and negritos, little blacks, occur at many points.

The most interesting portion of Malaysia is the Philippine archipelago. Its ethnology is complicated. After making the first serious study of it, Blumentritt suggested the following theoretical explanation: Four populations occur—(1) the aboriginal Negritos; (2) a great list of tribes representing an early Malayan immigration, tribes like the Igorot, Ifugao, etc.; (3) a second Malayan immigration of people much further advanced in culture, represented by the civilized "Cristiano" populations, which form the bulk of the Philippine peoples to-day, Tagals, Visayans, Ilocano, etc.; (4) a third Malayan immigration, Mohammedans, the "Moros" of Mindanao and the Sulu islands. This immigration was just well under way when the Spaniards appeared in the sixteenth century and checked it. It seems to have been a northward streaming of Malayans from the Philippines and Formosa that carried Malay blood and influence into Japan. The Japanese are not pure Mongols, but owe much to Malays.

Polynesia is singularly uniform in population. There are local mixtures, of course, where the area touches Melanesia.

The recent streaming out of white men into all parts of the world has had a remarkable influence on race vitality and characteristics. To-day in America and Australia, in Polynesia, and even in Africa, the original populations are disappearing or subordinated.

OUTLINES OF GEOLOGY.—Geology is the science which treats of the development of the earth.

Departments or Phases.—**Astronomic or Cosmic Geology** treats of the influence that the sun, moon, and other heavenly bodies have upon the earth.

Chemical Geology is that branch of dynamic geology in which are discussed the chemicals and chemical processes active in the creation or modification of earth conditions.

Crystallography is that branch of mineralogy which is concerned with the investigation and recognition of the regular geometrical forms that many minerals assume when free to do so at the time of their formation.

Dynamic or Philosophic Geology is a discussion of the agencies and forces involved in the development of the earth.

Economic Geology is that branch of geology which treats of the occurrence, the distribution, and the laws governing the formation of the economically important earth constituents.

Geognosy is a study of the form and constituents of the earth, and of the structure or arrangement of the earth's components.

Geotectonic or Structural Geology is that branch of geognosy in which the structural arrangement of the constituents of the earth is discussed.

Glacial Geology is that branch of physiography which treats of the modifications of the earth's surface produced by masses of ice.

Historical Geology is a presentation of the sequence of events in the history of the earth and its inhabitants.

Lithology is that branch of geognosy which is concerned with the study of rocks without the aid of the compound microscope.

Mineralogy is that branch of geognosy which treats of the nature, appearance, occurrence, and value of minerals.

Mining Geology is that branch of geognosy in which are discussed the principles applicable to the solution of mining problems.

Palaeontology is that branch of historical geology which deals with extinct or fossil fauna (animals) and flora (plants).

Petrology is that branch of geognosy which is concerned with the study of thin sections of rocks by means of the compound microscope.

Physiography, or Physical Geography, is that branch of dynamic geology which treats of the surface configuration of the earth, the forces which modify this, and the changes which thus result.

Stratigraphical Geology is that branch of geognosy in which stratification and the features found in, or connected with, stratified rocks are discussed.

Geological Agencies or Forces.—All features of the external form and accessible internal structure of the earth are due to the action of either air, water, or heat produced by pressure or chemical activity, and these are known, respectively, as the atmospheric, aqueous, and igneous geological agencies. These three great agencies have been active throughout geological time, their effects in past ages being essentially similar to those they now produce.

THE ATMOSPHERE AS A GEOLOGICAL AGENT

The work and functions of the atmosphere are suggested by the following outline:

I. Acts as a protective thermal blanket for the earth.

II. Sustains life.

III. Chemical work.
- Through evaporation, precipitates substances from solution in water.
- Oxidizes surface materials. } Tend to disintegrate surface and form soils.
- Forms carbonates from surface materials. } Tend to disintegrate surface and form soils.
- Forms hydrates from surface materials. } Tend to disintegrate surface and form soils.
- Unusual vapors and gases, often the products of volcanic activity, attack and change the nature of surface materials.

IV. Mechanical work.
- Wind removes loose surface material.
- Wind generates water waves and currents.
- Wind uproots trees and thus breaks up the soil.
- Wind transports seeds and small organisms.
- Wind transports and deposits sand as dunes.
- Wind transports and deposits fine material as loess.
- Wind aids in holding dust in suspension in the atmosphere, thus affecting the temperature and aiding condensation.

V. Thermal work.
- Changing temperatures tend to rupture rocks as a result of sudden contraction and expansion. } Form soils.
- Freezing of water in cracks involves expansion and tends to rupture rocks. } Form soils.

VI. Electrical work.
- Rocks may be ruptured by lightning, thus hastening their disintegration and aiding the formation of soils.
- Rocks may be fused by lightning and their mechanical or chemical disintegration be thus retarded.

VII. Is a medium for the evaporation and precipitation of water, forming clouds, fog, rain, snow, hail, and cloudbursts.

WATER AS A GEOLOGICAL AGENT

The work of water, outside of its influence upon the condition of the atmosphere, may be thus outlined:

I. Moving surface water

Mechanical work
- Erosion. Cuts all types of valleys and tends to remove, ultimately, all hills and mountains, thus reducing the inequalities on the earth's surface.
- Transportation. Eroded fragments are carried great or small distances, depending upon their size and the velocity of the current.
- Deposition. Flood-plain deposits and deltas of rivers are formed when a decrease in the velocity of the current causes the deposition of transported fragments, which are usually well rounded.

Chemical work
- Solution. Dissolves soluble portions of rocks.

WATER AS A GEOLOGICAL AGENT—Continued

II. Standing water.	**Mechanical work.**	EROSION. Waves and currents cut into shores and tend to enlarge the area of lakes and seas. TRANSPORTATION. Fragments derived from erosion by waves and currents are carried in suspension by currents. DEPOSITION. Transported fragments are deposited, mostly near shore, forming sedimentary or stratified deposits.
	Chemical work.	SOLUTION. Soluble portions of shore are dissolved. PRECAPITATION. Soluble substances derived from tributary streams or the shore are deposited by evaporation or by the interaction of one on another, forming deposits of rock-salt, gypsum, limestone, borax, alkaline carbonates, etc.
III. Underground water.	**Mechanical work.**	EROSION. Unimportant, but may form caves. TRANSPORTATION. Relatively unimportant. DEPOSITION. Relatively unimportant.
	Chemical work.	SOLUTION. Soluble materials with which the water comes in contact are dissolved, forming caves, particularly in limestone, and making "mineral water." PRECAPITATION. Substances in solution are deposited due to relief of pressure, lowering of temperature, or chemical interaction, forming mineral veins and spring deposits, partially or wholly filling cavities encountered, or acting as a cement for loose earth material.
IV. Ice Mechanical work.		EROSION. Alpine or valley glaciers partially shape amphitheatres or cirques, where snow accumulates and hardens into ice. They also form U-shaped valleys leading downward therefrom, and included rock fragments groove or "glaciate" the bedrock beneath. Great continental glaciers strip off the mantle of softened, altered waste or soil, as well as some of the solid rock below, which is also grooved or glaciated by included rock fragments. TRANSPORTATION. Material that falls upon a glacier is carried on the surface, either in the middle (medial moraine) or along the sides (lateral moraine), or works its way down into the ice and forms a part of the englacial drift, while that eroded beneath the glacier is dragged along in the bottom of the ice or between the glacier and the solid rock below (ground moraine). All the material transported by a glacier is apt to be unaltered and rather angular, although the edges of the fragments that form the ground moraine may be somewhat rounded, and they may be glaciated on one or more faces. DEPOSITION. The melting of a glacier causes the deposition of the material in or on the ice, that which accumulates at the end forming a terminal moraine, while that along the sides forms lateral moraines. Medial moraines are apt to be washed away by the melting ice. Beneath continental glaciers, the ground moraine is often heaped into low, smoothly rounded hills, called drumlins, while overloaded, subglacial streams, flowing in cracks in, or tunnels beneath, the ice, deposit long, winding, steep-sided ridges called eskers. The rounded hills or hummocks in terminal moraines are called kames.

HEAT AS A GEOLOGICAL AGENT

The internal heat of the earth is conducted slowly outward to the surface through the cool outward portion, and is also carried rapidly upward through the medium of ascending molten material. The effects of such transference of heat from one position to another may be thus outlined:

I. Effects of the gradual outward conduction of heat, and consequent differential expansion and contraction of different portions of the so-called "crust."
- a. Formation of mountains accompanied by folding of the materials involved.
- b. Changes in the character (metamorphism) of the earth materials involved in such movements.
- c. Production of cracks or fissures with or without the slipping of one side relative to the other.
- d. Occurrence of earthquakes as a result of such fracturing or slipping.
- e. Elevation or depression of considerable areas.

II. Effects of ascending molten material, and the consequent differential expansion and contraction of different portions of the crust.
- a and b. Same as c and d above.
- c. Elevation or depression of relatively small areas.

III. Effects of ascending molten material and the consequent displacement of solid material in the crust.
- a and b. Same as c and d under I in first column.
- c. Elevation of small to large areas depending upon the size of the intrusion.

IV. Effects of ascending molten material resulting from the cooling of the molten material itself.
- a. Formation of igneous rocks.
- b. Changes in the composition, texture, or hardness (metamorpnism) of the solid rocks with which the molten material comes in contact.

V. Additional effects of ascending molten material resulting from its extrusion upon, or intrusion close to, the surface.
- a. Explosive volcanic eruptions and the formation of volcanoes.
- b. Opening of fissures and the quiet extrusion of extensive surface lava which flows therefrom.
- —— Formation of hot springs and geysers. (The heat involved in these phenomena may be either the product of chemical activity or of radiation from hot igneous rocks near the surface of the earth.)

MINERALOGY.—The science which treats of the properties of mineral substances, and teaches us to characterize, distinguish, and class them according to their properties. Geology, or geognosy, was formerly included in the science of mineralogy, but this term has more recently become restricted to the study of the individual minerals, their aggregation into rocks and their relations to each other forming an important section of the science of geology. The science of mineralogy, however, is not confined to the study of the external characters of mineral substances, their chemical composition being equally important.

Classification.—Minerals may be described and classified either in accordance with their chemical composition, their crystallographic forms, or their physical properties of hardness, fracture, color, luster, etc., or a combination of all, and thus various systems of classification have been adopted. Most minerals crystallize in definite forms, and this form is one of the chief characteristics of many mineral species. There are not a few, however, which are not distinctly crystalline, but are earthy or occur in masses; the latter exhibiting important varieties of structure, as *laminated*, *fibrous*, *granular*, *reniform*, *botryoidal*, etc. Other distinctive characteristics are *color*, which, however, varies even in the same mineral; *luster*, the character of the light reflected from the surface, and described as *adamantine*, *vitreous*, *nacreous*, *greasy*, *silky*, etc.; *fracture*, or the character of the freshly-broken surface; *streak*, or the appearance and color of a furrow made in the mineral by a hard-tempered knife or file; and *hardness*, which is now determined by what is called Moh's scale.

In this scale certain minerals are represented by numbers from 1 to 10, *viz.*—

(1) *Talc*, common laminated light-green variety.

(2) *Gypsum*, a crystallized variety; (2.5) *mica*.

(3) *Calcite*, transparent variety.

(4) *Fluor spar*, crystalline variety.

(5) *Apatite*, transparent variety. (5.5) *scapolite*, crystalline variety.

(6) *Potash feldspar*, white cleavable variety.

(7) *Quartz*, transparent.

(8) *Topaz*, transparent.

(9) *Corundum*.

(10) *Diamond*.

To determine the hardness of a mineral, it is ascertained by experiment which of these it will scratch and which will scratch it; thus if a mineral will scratch fluor spar but not apatite, while the latter will scratch it, its hardness is between 4 and 5. Diaphaneity, refraction, polarization, electric properties, etc., are all distinguishing marks.

Precious Stones are those which, because of their beauty, hardness, and rarity, are prized for use in ornamentation, especially in jewelry. The diamond, ruby, sapphire, and emerald are the only stones which are, strictly speaking, entitled to be called "precious" in this sense; but the opal, on account of its beauty, is often classed with the precious stones; as is also the pearl, which is really not a stone, but a secretion of a shellfish.

Agate.—A semipellucid, uncrystallized variety of quartz, presenting various tints in the same specimen. Its colors are delicately arranged in stripes or bands, or blended in clouds.

Alexandrite.—A variety of chrysoberyl found in the mica slate of the Ural mountains. It is of a rich garnet color by artificial light, by daylight of a dark moss green. It is the only stone that so changes. The finest specimens of alexandrite are nearly as valuable as diamonds.

Almandine.—A common maroon-red variety of garnet.

Amethyst.—A variety of crystallized quartz, of a purple or bluish-violet color, of different shades. It is much used as a jeweler's stone. The lighter colored ones come from Brazil, the deep purple ones from Siberia. In value they are about the same as the garnet.

Aquamarine.—A transparent, sea-green variety of beryl, used as a gem.

Aventurine.—A variety of translucent quartz spangled throughout with scales of yellow mica.

Beryl.—A very hard mineral of much beauty when transparent. It comes in hexagonal prisms, commonly of a green or bluish-green color, but also yellow, pink, and white. It is a silicate of aluminium and glucinum. Beryls are very rich in colors. Their value is about four dollars per carat.

Cameo.—A figure cut in stone or shell that is composed of different colored layers. The value depends on the artistic merit of the engraved figure.

Bloodstone.—A green siliceous stone sprinkled with red jasper, whence the name.

Carbuncle.—A beautiful gem of a deep red color (with a mixture of scarlet), found in the East Indies. When held up to the sun it loses its deep tinge, and becomes of the color of a burning coal. The carbuncle of the ancients is believed to have been a garnet. The name is now given also to the ruby, sapphire, and the red spinel. The ordinary carbuncle is a garnet cut *en cabochon*, and is worth about one dollar a carat.

Carnelian.—A variety of chalcedony, of a clear, deep red, flesh-red, or reddish-white color. It is moderately hard, capable of a good polish, and often used for seals. It is now used but little.

Cat's-eye.—A variety of quartz or chalcedony exhibiting opalescent reflections from within, like the eye of a cat. The name is given to other gems affording like effects, especially the chrysoberyl. A fine specimen about three-eighths of an inch across would be worth from two to three hundred dollars.

Chalcedony.—A cryptocrystalline, translucent variety of quartz, having usually a whitish color, and a luster nearly like wax.

Chrysolite.—A mineral, composed of silica, magnesia, and iron, of a yellow to green color. It is little used.

Chrysoprase.—An appel-green variety of chalcedony. Its color is due to nickel contained in its composition.

Dendrite.—A stone or mineral in which are branching figures, resembling shrubs or trees, produced by a foreign mineral, usually by an oxide of manganese, as in the moss agate.

Diamond.—A precious stone or gem excelling in brilliancy and beautiful play of prismatic colors, and remarkable for extreme hardness. It is found in many hues—green, rose, straw, yellow, etc.—but the straw-colored ones are the most common. The diamond is a native carbon occurring in isometric crystals, often octahedrons, with rounded edges. It is the hardest substance known. Diamonds are said to be of the *first* water when very transparent, and of the *second* and *third* water as the transparency decreases.

Diopside.—A crystallized variety of pyroxene (a silicate of lime and magnesia), of a clear, grayish-green color; also called *mussite.*

Emerald.—A precious stone of a rich green color; it is the most valuable variety of beryl. (See beryl.)

Epidote.—A mineral, commonly of a yellowish-green color, occurring granular, massive, columnar, and in crystals. It is a silicate of alumina, lime, and oxide of iron, or manganese.

Essonite.—Cinnamon stone. A variety of garnet. It is not much used.

Fire opal.—(See opal.)

Fluorite.—Calcium fluoride, a mineral of many different colors, white, yellow, purple, red, etc., often very beautiful. When crystallized it is commonly in cubes with perfect octahedral cleavage. Some varieties are used for ornamental vessels. Also called *fluor spar*, or simply *fluor.* The colored varieties are often called *false ruby, false emerald, false topaz, false sapphire,* and *false amethyst.* For jewelry purposes the chief value of the stone is the expense of cutting and mounting.

Flint.—A massive, somewhat impure variety of quartz, in color usually of a gray to brown or nearly black, breaking with a conchoidal fracture and a sharp edge. (See quartz.)

Fluor spar.—Same as fluorite.

Garnet.—A mineral having many varieties, differing in color and in their constituents, but with the same general chemical formula. The commonest color is red; the luster is vitreous, or glassy; and the hardness is greater than that of quartz, about half as hard as the diamond.

The common crystal forms are the dodecahedron and trapezohedron. Besides the red varieties there are also white, green, yellow, brown, and black ones.

The garnet is a silicate with various bases, such as alumina-lime (grossularite essonite or cinnamon stone), alumina-magnesia (pyrope), alumina-manganese (spessartite), and chromium-lime (ouvarovite, color emerald green). The transparent red varieties are used as gems The garnet was the carbuncle of the ancients. Garnet is a very common mineral in gneiss and mica slate.

The finest specimens of red garnets come from Arizona and a single carat stone is worth about two dollars. A green variety that comes from Russia is worth about half as much as the diamond.

Golden beryl.—(See beryl.)

Heliotrope or *bloodstone.*—A green siliceous stone sprinkled with jasper, as if with blood, whence the name.

Hematite.—An important ore of iron, the sesquioxide, so called because of its red color when in the form of powder. It occurs in splendent rhombohedral crystals, and in massive and earthy forms, the last being called red ocher. It is now seldom used in jewelry.

Hyacinth.—A red variety of zircon, sometimes used as a gem. It resembles closely a dark Spanish topaz, and is worth a little more than the garnet.

Idiocrase.—A mineral occurring in tetragonal crystals and also massive, of a brown to green color, rarely sulphur yellow or blue. It is a silicate of alumina and lime, with some iron and magnesia. It is common at Mt. Vesuvius. It is little used.

Indicolite.—A variety of tourmaline of an indigo-blue color.

Iolite.—A silicate of alumina, iron, and magnesia, having a bright blue color and a vitreous or glassy luster. It is remarkable for its dichroism, and is also called *dichroite.*

Jacinth.—Same as hyacinth.

Jade.—A stone commonly of a pale to dark green color, but sometimes whitish. It is hard and very tough, capable of a fine polish, and is used for ornamental purposes and for implements, especially in eastern countries and among many primitive peoples.

Jasper.—An opaque, impure variety of quartz, of red, yellow, and other dull colors, breaking with a smooth surface. (See quartz.)

Kyanite.—A mineral occurring in thin-bladed crystals and crystalline aggregates, of a sky-blue color. It is a silicate of aluminium. It is little used for jewelry.

Labradorite.—A kind of feldspar, commonly showing a beautiful play of bluish-gray colors, and, hence, much used for ornamental purposes. The finest specimens come from Labrador.

Lapis-lazuli or *lazuli.*—A mineral of a fine azure-blue color, usually occurring in small rounded masses. It is essentially a silicate of alumina, lime, and soda, with some sodium sulphide. It is often marked by yellow spots or veins of sulphide of iron, and is much valued for ornamental work.

Moonstone.—A nearly pellucid variety of feldspar, showing pearly or opaline reflections from within. The best specimens come from Ceylon. Their value is not much more than the expense of cutting.

Nephrite.—A hard, compact mineral, of a dark green color, formerly worn as remedy for diseases of the kidneys, whence its name *kidney stone.*

Obsidian.—A kind of glass produced by volcanoes. It is usually of a black color and opaque, except in thin splinters.

Olivine.—A common name of the yellowish-green mineral chrysolite, especially of the variety occurring in eruptive rocks. (See chrysolite.)

Onyx.—Chalcedony in parallel layers of different shades of color. It is used for making cameos, the figure being cut in one layer with the next layer as a background (see cameo). It is stained black and used to make a mourning jewelry.

Opal.—A mineral consisting, like quartz, of silica, but inferior to quartz in hardness and specific gravity. The precious opal shows a peculiar play of colors of delicate tints and it is highly esteemed as a gem. One kind, with a varied play of colors in a reddish ground, is called *harlequin opal.* The *fire opal* (which comes from Mexico) has colors like the red and yellow of flame. This is not the cheap variety commonly called Mexican opal. A spherical opal about three-eighths of an inch in diameter, or an oval flat opal about half an inch long, would be worth about sixty dollars. A Mexican opal of the same size would be worth about fifteen dollars.

Pearl.—A shelly concretion, usually rounded, having a brilliant luster, with varying tints, formed in the mantle, or between the mantle and shell, of certain bivalve mollusks (especially in the pearl oysters and river mussels) and sometimes in certain univalves. Its substance is the same as nacre or mother-of-pearl. Pearls which are round, or nearly round, and of fine luster, are highly prized as jewels. They are sold by carat grains instead of carats.

Pyrope.—A variety of garnet of a poppy-red or blood-red color, frequently with a tint of orange. It is used as a gem.

Rhodonite.—Manganese spar, or silicate of manganese, a mineral occurring crystallized and in rose-red masses. It is almost entirely used for ornamental purposes, in slabs, blocks, etc.

Rock crystal or *mountain crystal.*—Any transparent crystal of quartz, particularly of limpid or colorless quartz. A sphere of rock crystal of absolutely perfect clearness, about five inches in diameter, is worth at least twenty thousand dollars.

Rose quartz.—A variety of quartz which is pinkish red.

Rubellite.—A variety of tourmaline varying in color from a pale rose-red to a deep ruby, and containing lithium. It is a little more valuable than the garnet.

Ruby.—A precious stone of a carmine-red color, sometimes verging to violet, or intermediate between carmine and hyacinth red. It is a crystallized variety of corundum. The ruby from Siam is of a dark color and is called oxblood ruby. It has about the same value as the diamond. The ruby from Burma, called the pigeon-blood ruby, is of a lighter color and several times more valuable than the oxblood ruby. A fine pigeon-blood ruby of two carats would be worth upward of six thousand dollars.

Rutile.—A mineral, usually of a reddish-brown color and brilliant, metallic, adamantine luster, occurring in tetragonal crystals.

Sapphire.—A variety of native corundum or aluminium sesquioxide. As the name of a gem the term is restricted to the transparent varieties of blue, pink, yellow, and other colors. The best specimens of the blue variety are nearly as valuable as the diamond. The sapphire is next to the diamond in hardness.

Sard.—A variety of carnelian, of a reddish-yellow or brownish color.

Sardonyx.—A variety of onyx consisting of sard and white chalcedony in alternate layers. (See onyx.)

Spinel.—A mineral occurring in octahedrons of great hardness and various colors, as red, green, blue, brown, and black, the red variety being the gem *spinel ruby.* It consists essentially of aluminium magnesium, but commonly contains iron and sometimes also chromium. The fine specimens of spinel ruby are worth rather more than half as much as the diamond.

Sunstone.—Aventurine feldspar; aventurine.

Topaz.—A mineral occurring in rhombic prisms, generally yellowish and pellucid, also colorless, and of greenish, bluish, or brownish shades. It sometimes occurs massive and opaque. It is fluosilicate of aluminium, and is used as a gem. It is but little more valuable than the garnet, except occasional unusually fine specimens.

Tourmaline.—A mineral occurring in three-sided prisms. Black tourmaline is the most common variety, but there are also other varieties, as the blue (*indicolite*), red (*rubellite*); also green, brown, and white. The red and green varieties, when transparent, are valued as jewels. The finest ones come from Maine, and are worth four or five times as much as garnets.

Turquoise.—A hydrous phosphate of alumina containing a little copper. It has a blue, or bluish-green color, and usually occurs in kidney-shaped masses with a nodular surface like that of a bunch of grapes. The fine specimens are worth nearly half as much as diamonds.

Unio-pearl.—A single large pearl.

Uralian emerald.—A precious stone of a rich green color, a variety of beryl.

Verd antique.—A mottled-green, serpentine marble. Also a green porphyry, which is called *oriental verd antique.*

Zircon.—A mineral occurring in tetragonal crystals, usually of a brown or gray color. It consists of silicon and zirconium, and is harder than the garnet. The transparent varieties are used as gems. The red variety is called *Hyacinth;* a colorless, pale yellow, or smoky-brown variety from Ceylon is called *jargon.*

ORNITHOLOGY.— The science which teaches the natural history and arrangement of birds; or, to use the definition of Cuvier, of vertebrated oviparous animals, with a double circulation and respiration, organized for flight.

Classification.—Many systems for the classification of birds have been proposed. A common division is into seven orders, to which an eighth, the *Saururae* of Huxley, is often added, to include the extinct archæopteryx. These orders are:

Order I.—Raptores or *Accipitres.* Birds of prey, as eagles, vultures, hawks, and owls. Beak strong and curved, sharp at the edges. Feet adapted for seizing and destroying other animals. Claws sharp, much hooked, and retractile. Hind toe on the same level with the others. Wings well developed.

Order II.—Insessores, *Passeres,* or perching birds, by far the most numerous order. It includes all the singing birds, and indeed, excluding the birds of prey, most birds which live habitually among trees. Feet formed for grasping and perching, claws moderately curved and not retractile. Hind toe on the same level as the rest. This order is usually divided into four *tribes* or suborders—*Conirostres* (cone-billed); *Dentirostres* (tooth-billed); *Tenuirostres* (slender-billed); *Fissirostres* (cleft-billed).

Order III.—Scansores or *Zygodactyli.* Climbing birds, as the parrots, wood-peckers, cuckoos, toucans, etc. Feet formed for climbing, two of the toes directed forward and two backward; powers of flight not in general great; bill variously shaped.

Order IV.—Rasores or *Gallinae.* Domestic fowls, pheasants, pigeons, etc. Legs large and strong. Feet with the hind toe situated above the heel, suited for scratching. Bill short, thick, and arched above.

Order V.—Cursores or *Struthionidae.* Running birds, as the ostrich, emu, cassowary, etc. Wings rudimentary and quite useless for flight; legs long and strong; hind toe wanting or merely rudimentary; breastbone without a ridge or keel.

Order VI.—Grallatores or *Grallae.* Waders, as the cranes, herons, snipes, sandpipers, etc. Legs long, bare of feathers from above the knee; toes often half-webbed. Bill in general long and slender.

Order VII.—Natatores or *Palmipedes.* Swimmers; web-footed birds, as ducks, geese, gulls, etc. Feet formed for swimming, in general webbed, that is, the toes connected by a membrane. Hind toe elevated above the plane of the others. Bill various, mostly flattened. (See Dictionary of Animals).

PHYSICS, or Natural Philosophy, is the science, or rather group of sciences, relating to the phenomena of the material world, or of the laws and properties of matter; more restrictedly it treats of the properties of bodies as bodies, and of the phenomena produced by the action of the various forces on matter in the mass. Its chief branches are *mechanics, heat, light, sound, electricity* and *magnetism.*

Electricity is the name given to the unknown cause of certain effects of very various kinds which are found to be closely connected one with another. They include two distinct kinds of attraction and repulsion—*electrostatic* and *electrodynamic* —the magnetization of iron, the deflection of magnetic needles, the production of heat and light in certain circumstances, the separation of certain chemical compounds into their constituents, and spasmodic actions on the nervous and muscular systems of animals.

The name is derived from the Greek *electron* (amber), the fact that amber when rubbed attracts light particles, such as small pieces of paper, having been known to the ancient Greeks. Friction was the only artificial source of electricity employed until Galvani, near the close of the eighteenth century, accidentally obtained it by the contact of two metals with the limbs of a frog; and Volta, developed Galvani's discovery and invented the first galvanic or voltaic battery. Electricity produced by friction is called *frictional electricity;* that produced by chemical action on metals *voltaic electricity.*

Conductors and Nonconductors.—All substances which, like amber, can be made to show electrical attraction by rubbing them, are called nonconductors. They include glass, sulphur, shellac, resin, silk, flannel, etc. Bodies which are not susceptible of excitation by friction are called conductors.

Electricity can be excited by the friction of a conductor against a nonconductor, and is, in fact, so excited in the ordinary electrical machine, in which glass rubs against an amalgam spread on a cushion. A metallic rod furnished with a glass handle can be electrified by rubbing it with flannel, the glass preventing the electricity from being conducted away through the hand. Substances thus electrified exhibit two opposite kinds of electricity, known respectively as *positive* and *negative.* Bodies charged with the same kind of electricity repel each other; those charged with opposite kinds attract each other. An instrument for indicating the presence of electricity is called an *electroscope.*

Electric Conduction.—All solid and liquid substances allow electricity to pass through them to some extent, but the differences of degrees are enormous. The best conductors are the metals, especially gold, silver, and copper. Perfectly pure copper conducts about seven times as well as iron. Substances which have excessively small conducting power are not called conductors, but *insulators,* so that a good insulator is another name for an excessively bad conductor.

Among the best insulators may be mentioned glass, paraffin (the wax, not the oil), ebonite, shellac, mica, india-rubber, and gutta-percha.

The word *resistance* is used in the opposite sense to conducting power; a good insulator is said to have high resistance, and a good conductor to have low resistance.

Electrostatics is that branch of the general science of electricity which treats of the repulsions between like and the attractions between unlike kinds of electricity. The fundamental law of electrostatics is that if *e* and *e* denote two quantities of electricity collected in two spaces very small in comparison with the distance between them, the mutual force which they exert upon each other is directly as the product *ee,* and inversely as the square of the distance. If the two quantities *ee* are both positive, or both negative, the force is a repulsion; but if one is positive and the other negative, it is an attraction.

Electric Discharge.—The rapid escape of electricity from a charged body is an electric discharge. When the discharge takes place through a conductor it is called *continuous,* and when it takes place through a nonconductor (for example, through air) it is called a *disruptive discharge.* The name "electric discharge" is especially applied to cases in which the escaping electricity produces luminosity.

Three kinds of such discharge have been distinguished—the *spark,* the *brush,* and the *glow.* The spark is accompanied by a sound which varies from a faint crack to a loud bang. In nature it is seen on the largest scale in the case of lighting, which is a discharge of atmospheric electricity.

The *brush* discharge is only faintly luminous. It occurs especially at sharp

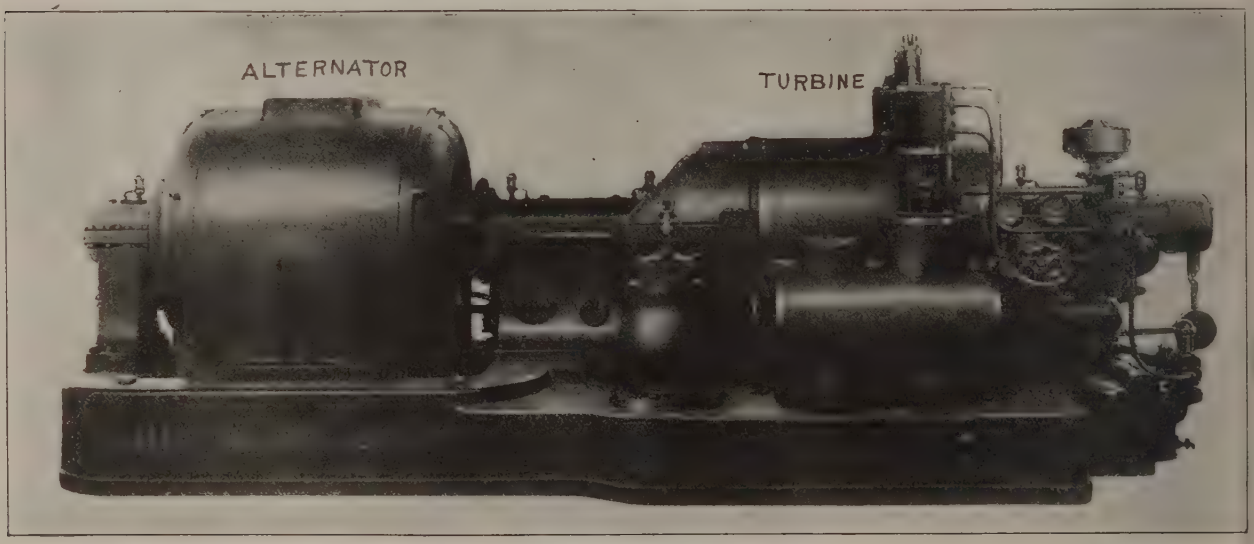


Fig. 26. Large Modern Three-Phase Alternator

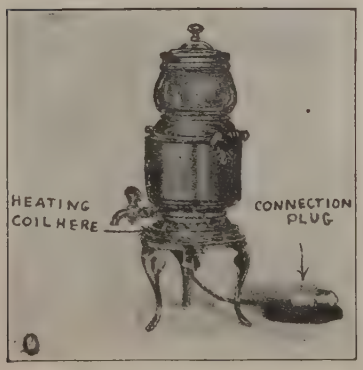


Fig. 40. Electric Cooking Utensil.

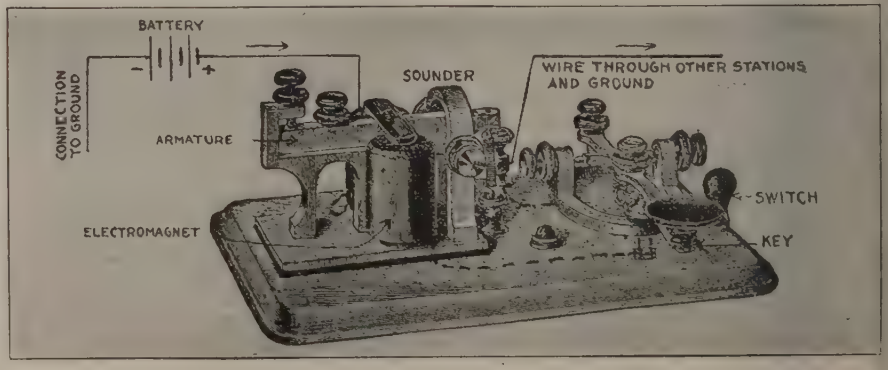


Fig. 30. Telegraph Set and Line

points and edges of highly-charged bodies. It is barely visible by daylight, and its appearance in the dark is that of a luminous halo. It projects only a small distance into the air surrounding the body from which the charge is escaping.

The *glow* discharge simply renders the surface of the body luminous, and does not extend into the air at all. In some modern electric apparatus beautiful effects of electric discharge are shown.

Electric Currents.—What is known as an electric current is a peculiar condition of a wire or other conductor of electricity, in virtue of which it deflects magnetic needles in its neighborhood, magnetizes a piece of soft iron around which it is coiled, has its own temperature raised, and exhibits various other effects. What is conventionally called the direction of the current is the direction in which the positive electricity may be regarded as flowing. The "strength" of a current denotes the quantity of electricity that passes through the wire in the unit of time.

Instruments for measuring the strengths of currents by chemical decomposition are called *voltmeters*, and instruments for measuring them by the deflection of magnetic needles are called *galvanometers*. The currents by which telegraphs are worked are usually obtained from galvanic batteries; but the far stronger currents required for other purposes are usually produced by machines called *dynamos* driven by steam or water power. The currents in such machines are due to magnetic-electric induction.

Electro-Dynamics is that branch of electrical science which treats of the attractions and repulsions exhibited between wires or other conductors through which currents are passing. If two wires are parallel, they will attract each other when currents are passing the same way through them both, and will repel each other when the currents are opposite. If the wires are inclined to each other at any angle, there is not only an attraction or repulsion, but a still more marked tendency to rotation, which is not satisfied till the wires have become parallel and the currents flow in the same direction through them both. When there are only two straight wires these forces are feeble and require delicate apparatus for their exhibition; but by employing coils of wire the forces are multiplied, and an instrument constructed on this principle called the *electro-dynamometer* has been much employed for the measurement of currents. The whole science of electro-dynamics is due to Ampere, who discovered its main facts, and reduced them by ingenious experiments, combined with very abstruse reasoning, to a single mathematical formula which includes them all.

Velocity of Electricity.—Daily experience with the electric telegraph shows that electric action is propagated with great rapidity. Electricity has not a definite velocity like light or sound. It is rather comparable to waves on water, which travel with very various speeds according to their length and the depth of the water. The highest speed ever observed in the transmission of electric effects was that obtained by Wheatstone, at the rate of 230,000 miles per second, a velocity greater than that of light, which is between 185,000 and 186,000 miles per second.

The Electric Transmission of Power is the transmission of power to a distance by electricity, effected by employing the source of power to drive the *dynamo*, which generates an electric current. This current is conveyed by a copper conductor insulated from the earth to the distant station, where it passes through a machine called an *electro-motor*, one part of which (called the *armature*) is thereby made to revolve, and imparts its motion to the machinery which is to be driven.

This is the simplest arrangement, and is that which is commonly employed when the original currents are not of such high tension as to be dangerous to life in the case of accidental shocks. When the original currents are alternating they are made to generate induced currents by means of an instrument called a *transformer*, which is similar in principle to an ordinary Ruhmkorff coil, with the important difference that the primary wire is long and thin, and the secondary wire short and thick.

These methods of transmission and transformation are employed not only for giving out mechanical power, but also for electric lighting.

Distribution of Electricity means the supplying of strong currents of electricity from central stations where they are generated, to houses, streets lamps, etc., in their vicinity. The central station contains a few powerful dynamo machines, driven usually by steam-power. The positive and negative terminals of the dynamo are put in connection with the positive and negative main conductors which are to supply the district, and from these mains smaller conductors branch off to the houses or lamps. In some systems of distribution, instead of the two main conductors being one positive and the other negative, each is positive and negative alternately, the reversals taking place some hundreds of times per second. The currents are then said to be *alternating*. When such reversals do not take place, the currents are said to be *direct*.

Sources of Electric Energy.—The chief sources of energy in practical use are coal, petroleum, wood, water at a height, and wind. Of these coal is by far the most important; water power comes perhaps next in importance; while the power of the wind is as yet almost undeveloped.

Applied Electricity.—The principal applications of electric energy are the lighting of streets and houses, the driving of machinery, the propelling of trains, street-cars, carriages, and boats, the heating of rooms, the heating of electric forges and furnaces, electro-chemical processes, various signaling operations, etc.

The Dynamo.—The dynamo is the most effective means for generating electricity. It costs about fifty times less to produce electricity by it than by batteries. It consists of nothing else than iron and copper wire, and when generating electricity some portion of the machine must be in rapid rotation.

The following characteristics of arrangement are to be noted:

(1) An outer iron ring which remains stationary. Portions of this are wound with many turns of insulated copper wire. Its purpose is to furnish a strong magnetic field, and it is generally, though not always, called *"the field."*

(2) An inner mass of iron, arranged for rapid rotation. Portions of this also are wound with insulated copper wire. This is called *the armature*, while the other is called the field.

(3) A commutator, if the machine is to send out a *continuous current*. This consists of the ends of the conductors in the moving armature arranged in a circle so that the two line conductors may be brought in contact with them, each serially, by brushes rubbing over them as the armature rotates. If the machine has no commutator, it must send out an *alternating* current.

Before the days of the dynamo, electricity although well known was of little use. The dynamo has made practicable the following: (1) Electric lighting and heating. (2) Electric traction. (3) Electric motors for the manifold applications of power. (4) A large number of chemical industries which depend upon large electric currents for producing chemical changes; such, for example, as extracting aluminium from clay. (5) Storage batteries. (6) Electric welding. (7) The dynamo is rapidly displacing batteries for telephoning, telegraphing, operating clocks, bells, etc.

Mechanics.—Is that branch of physics which treats of forces and their applications. The tendency of force acting upon matter is to produce motion, but two such tendencies may oppose one another, as the direction of the motions which they seek to produce may differ. When two do not completely counteract one another, it is possible that three or four or any number of forces—so many of them acting in one general direction and so many in another, so many for instance trying to produce motion eastward, and so many motion westward—may produce no motion whatever. From the application of any number of forces there may be rest produced, and it is quite evident that there may be motion.

Mechanics treat these two cases, embracing in its sphere the theory, as well as practice, of motion and equilibrium, both with and without the aid of machinery. The theory of mechanics properly comprehends (1) dynamics; (2) the motion of projectiles; (3) the theory of simple machines, or the mechanical forces; (4) the theory of compound machines, and their maximum effects; (5) the doctrine of the center of gravity; (6) the doctrine of the center of oscillation, gyration, etc.; (7) the collision of bodies; (8) the theory of rotation; (9) the theory of torsion; (10) the strength of materials; (11) and lastly, the equilibrium of arches and domes.

The elementary machines, or mechanical powers, properly speaking, are six in number, and may be thus enumerated —the *lever*, the *wheel* and *axle*, the *pulley*, the *inclined plane*, the *wedge*, and the *screw*.

Applied Mechanics is the practical application of the laws of matter and motion to the construction of machinery, etc.

Heat.—Heat is sometimes called invisible light. It is conceived to be an ether vibration of a little longer wave length than light. When these waves strike against any substance they cause its molecules to vibrate rapidly, and as a result the substance expands, and sometimes melts, or perhaps evaporates, or, under the influence of the waves, it may undergo chemical change, either resolving itself into simpler substances or uniting with other substances to make more complex ones. These molecular motions may stimulate motions among the molecules of other substances at a distance through the intervention of ether waves. These ether waves impinging upon our bodies give us the sensation of heat.

Absorption.—Substances whose molecules most readily respond to the heat vibrations of the ether are called good

absorbers of heat. The barefoot boy walking about a field has plenty of evidence that although the sun may shine alike on all substances, some of them get much hotter than others. The New York subway is much of it built underneath the streets with a comparatively thin roof of concrete over it. This concrete is a particularly good absorber of the sun's radiation and keeps the subway hot as a garret in summer.

Applied Heat.—Heating a stove oven is a good deal like lighting it. The walls of the oven send heat rays to the bread. If two loaves of bread set side by side in the oven each is in the shadow of the other and must be turned around occasionally to bake uniformly. The oven would bake quite as well without air as with it. Like light rays, heat rays pass better through a vacuum than through air. The most economical way of heating a house is by radiators, although this method is objectionable on the score of ventilation. Proper ventilation necessitates a wasteful method of heating our dwellings and public buildings.

Air is a particularly poor absorber, carrier, and radiator of heat. In our common thought we have given it far too much credit in the distribution of heat. When the walls, furniture, etc., of a room get warm, we may displace all the warm air in it by cold air—even freezing cold air—without its perceptibly affecting the thermometer.

Conductors.—There are no very good conductors of heat. With very great loss we do conduct electricity several miles by copper wires, but there is nothing which will conduct heat as many inches. The mystery is that copper wires should conduct or give direction to electric waves at all.

Ice must absorb a very large amount of heat radiation before it can change to water, hence its usefulness in the ice box. Vast volumes of air may pass through the ice box without melting the ice, since air has so little capacity for heat radiation. Salt strangely assists ice in absorbing heat rays; hence ice which cannot freeze the cream alone, may, if mixed with salt, absorb the heat radiation from the cream quickly—changing itself to brine and reducing the temperature of the cream many degrees below freezing.

Water in changing to vapor absorbs a large quantity of heat radiation, hence boiling water in the double boiler may prevent the hottest flame from raising the temperature in the inner boiler above 212 degrees.

Temperature.—Changes of temperature are best measured by the expansion and contraction of a column of mercury in a glass tube. An arbitrary scale is attached to this. Freezing temperature is in this country indicated by 32 degrees. The temperature of boiling is 212 degrees. The temperature of the inner portion of the human body is 98 degrees The proper temperature of a living room is about 64 degrees to 68 degrees. It seems to be necessary to our welfare that the internal heat of our bodies should be about 30 degrees above our surroundings when we are not exercising. Chemical action within raises the temperature and evaporation of moisture from the skin reduces the temperature. The balance is kept very constant amid a great variety of surroundings.

Volatile liquids, such as alcohol and gasoline, feel cold because they absorb our heat in changing their state from liquid to gas. In the fall of the year, when the nights begin to be cold, paper tied over plants may keep them from freezing. Just as a paper shade may be put over a lamp to cut off its rays of light, so paper over the plant cuts off the heat radiation from the plant and prevents its getting cold enough to freeze.

Light.—It is now a quite universally accepted theory that light is a wave motion in the ether which pervades all space. A microscopic examination of the interior of the eye shows that, like the ear, it is adapted to respond to wave motions of extreme rapidity. The highest tone which the human ear is capable of responding to is produced by about forty thousand air waves per second coming in upon it, but the human eye responds to nothing short of four hundred trillion ether waves per second.

Color. — As sound has tones of various pitch, so light has various colors. The sensation which we get from the tone called middle C on the piano is produced by 256 air waves each 4 feet long beating upon the ear each second. 512 air waves each 2 feet long (that is, twice the number each half as long) beating upon the ear each second will give the sensation of the tone called C, one octave above middle C.

Red.—So the eye is stimulated to the sensation of *red* by having 400 trillion ether waves each [about $\frac{3}{100,000}$ of an inch in length borne in upon it each second, while twice that number of ether waves per second each of half the length will give the eye the sensation of violet at the other end of the spectrum. The sensation of heat is produced by ether waves longer than the red, and ether waves shorter than the violet produce chemical change, such as tanning the skin, fading our garments, fogging the photographic plate, making the green material in plants, etc.

Reflection.—Light waves are reflected from all objects in the same manner that sound waves are, or indeed as water waves are. All objects which we see are either themselves stirring up waves in the ether or are reflecting ether waves which have been sent out from other sources. When six amperes of electricity are sent through a piece of number 24 iron wire, the wire sends forth in great abundance those ether waves which we call heat, but no light waves. Seven amperes of the electric current will cause it to send forth those ether waves which will affect the eye with red light and we call it red hot. Eight amperes will cause it to send forth violet ether waves, which, mingled with the red, will produce white light, and we say the iron wire is white hot.

Refraction.—Light waves pass through glass much more readily than heat waves do. Hence a glass screen before an open fire allows one to see the fire without having his face scorched. Glass, however, offers some resistance to the passage of light waves and hence when these waves strike upon a disk of glass which is thicker at the center than at the edges (such a piece of glass is called a lens), the waves are retarded at the center and the outer portions of the waves are turned inward so that they are concentrated at a point, or focus, on the other side of the lens. This bending of the waves is called *refraction*.

A large size lens, sometimes called a burning glass, serves in this way to concentrate the sun's light and heat waves to an intensely bright and hot point which may cause wood or paper to burn. The red light waves being akin to heat waves are retarded more than violet waves in passing through glass.

Spectrum. — Thus in passing white light, which is a combination of all colors, through a glass prism, the red waves are turned from their course more than any of the other colors and the violet is refracted least.

Prismatic Colors.—The colors thus shown are usually said to be seven—red, orange, yellow, green, blue, indigo, violet; although in reality there is an enormous, if not an infinite, number of perfectly distinct colors in light. The seven colors are frequently called the primary colors, and other tints and shades are producible by mixing them; but in a stricter sense the primary colors are three in number, namely, red, green, and violet (or blue). These three colors or kinds of light cannot be resolved into any other.

In the scientific sense of the word white and black are not considered colors, a white body reflecting, and a black body absorbing, all the rays of light without separating them, whereas the colors proper are due to separation of the rays of light by partial absorption and reflection or by refraction. If a body absorbs every other kind of light and reflects or transmits red light only, it will appear of a red color; if it absorbs every kind except blue rays, it will appear blue; and so on. If more than one kind of light be transmitted or reflected, the object will appear of a color compounded of these different rays of light.

In Painting, the term color is applied to that combination or modification of tints which produces a particular and desired effect. The colors of the spectrum have to be distinguished from colors used in reference to *pigments*.

Primary Colors.—The pigments red, blue, and yellow, regarded in the arts as the primary colors, produce effects, when mixed, very different from those produced by admixture of the corresponding spectrum colors. These three pigment colors form other colors thus; Red and yellow make orange, yellow and blue make green, and red and blue make purple; but red, blue, and yellow cannot be produced by any combination of the other colors.

Local Colors are those which are natural to a particular object in a picture, and by which it is distinguished from other objects.

Neutral Colors are those in which the hue is broken by partaking of the reflected colors of the objects which surround them.

Positive Colors are those which are unbroken by such accidents as affect neutral objects.

Complementary Colors are colors which together make white; thus any of the primary colors is complementary to the other two.

Subjective or *Accidental Colors* are the imaginary complementary colors seen after fixing the eye for a short time on a bright-colored object, and then turning it suddenly to a white or light-colored surface.

In Heraldry, the colors used are generally red, blue, black, green, and purple; which are called gules, azure, sable, vert or sinople, and purpure. Tenne or tawny, and sanguine or blood-color, sometimes occur, but they are not common. Yellow and white, again, are not colors in the heraldic sense, but metals; they are called or and argent, and are always represented by gold and silver. It is a fundamental and invariable rule in blazon not to put color upon color, or metal upon metal; thus, if the field be of a metal, the bearing must be of color, and *vice versa*.

Radio Telephony.—Radio communication, or wireless, is simply a matter of flashing intelligence through space without wires, cables, or other conductors between sender and receiver. A transmitter generates and propagates the radio waves that serve as a vehicle for the message causing delicate electrical disturbances in the distant receiver, in perfect harmony with the frequency, or wave length, of the transmitter. If we break these radio waves into long and short impulses with interspersed spaces, we have radio telegraphy; and if we permit the waves to flow continuously from transmitter to receiver, but mould or modulate them so that they carry an impress of the latent sound values of speech or music, we have radio telephony. In both cases, the basic principles are the same, although the technique is necessarily different.

The brilliant Italian youth, Guglielmo Marconi, invented the spark transmitter, sending the dots and dashes of the Morse Code through ether.

In 1900, however, an English physicist, W. Duddell, demonstrated that an ordinary electric arc could be made to generate high-frequency energy, and that it actually sang in response to this phenomenon. Accordingly, the device which he evolved was called the Duddell Musical Arc. Following this discovery, the possibilities of the electric arc as a generator of continuous waves needed either for radio telephony or radio telegraphy, became apparent to experimenters in all parts of the world. It was Vladmir Poulsen, a Danish engineer, who actually harnessed the singing arc to a radio transmitting circuit and a microphone, thus producing the first wireless telephone. By 1904, Poulsen was transmitting the human voice over considerable distances. Many other systems, utilizing this method, speedily appeared. But the electric arc, with its carbon rods and sputtering flame was untrustworthy. There was no suitable means of coupling the sensitive carbon microphone, such as we use in connection with our telephones, with the powerful wireless transmitter.

Nor was this all. For years the wireless telephone labored under an unlucky star. Instead of being permitted to develop in the research laboratory, it was taken out into the world and exploited by unscrupulous stock promoters. Members of the oily-tongued gentry there were who claimed that the wireless telephone would soon displace the conventional wire telephone, and that in no time at all, everyone would be carrying about a portable wireless telephone which would permit ready communication with any other person. And all this without paying so much as one cent for a telephone bill! Yet it was all too apparent, to those who actually knew, that the wireless telephone of that time was little more than a toy of the laboratory.

There came in due course that marvelous device, the vacuum-tube, which is virtually the foundation upon which radio, and its kindred arts, rest. It was in 1907 that Dr. Lee DeForest introduced the third element, or grid—that tiny lattice work between the flowing filament and the cylindrical plate of the original Flemming valve or two-element vacuum-tube. Almost overnight, the electrical fraternity found itself in possession of a mechanism of untold possibilities. Here was a generator capable of producing current of any desired frequency; here was an electrical relay, or repeater, which could control a powerful current with a very weak one; here was a magnifier, or amplifier, that might build up sounds to an astounding degree.

While the exploiters of the early wireless telephone were vainly striving to displace the time-honored wire telephone, that instrument was struggling with the problem of extending the scope of its service over a greater area. Due to the lack of better repeater facilities, a span of some 1,200 miles, from New York City to Council Bluffs, Iowa, was the physical limit of its long-distance service. The attenuated currents in the long telephone lines had to be reinforced at frequent intervals, and in those days of Pupin repeaters, the limit had been reached.

In the vacuum-tube, the telephone engineers saw the ideal repeater which they had been seeking these many years. Indeed, in 1915, with the aid of the vacuum-tube amplifier, a trans-continental telephone line was inaugurated between New York City and San Francisco. Sensing the possibilities of the vacuum-tube in really practical wireless telephony, these engineers undertook a series of experiments between Arlington, Virginia, and the Eiffel Tower in Paris. Success crowned their efforts. More than this, the human voice was projected to Pearl Harbor, in Hawaii, a distance of more than 7,000 miles! Thus, the possibilities of the vacuum-tube in wireless telephony were established. Only the necessary engineering and technical refinements were now lacking.

Then came the World War. The imperative need of a rapid means of flashing the reports of aerial observers back to their batteries, led to the rapid development of the radio telephone. It has truly been said that, as a result of the imperative demands of modern warfare, the radio art achieved ten years of progress in about as many months. In consequence of this, the radio telephone emerged from the War a thoroughly modernized and refined form of communication.

In the months that followed the War, various amateurs and experimenters throughout the country engaged in radio telephony work. For the most part, however, they were primarily interested in the technique itself, even though they did transmit phonographic music and, on occasion, the efforts of amateur talent, in return for the interest of far-flung listeners who reported back to them concerning the success of the transmissions. Although up to this time the idea had been to develop wireless telephony as a means of private, individual, point-to-point communication, many listeners participated enthusiastically in these demonstrations. Then, too, at this juncture, a radio telephone link, as part of the usual telephone system, was established between Long Beach, California, and Avalon, on Catalina Island, for the purpose of replacing the costly and troublesome submarine cable. It was immediately apparent, however, that the radio telephone carried no guarantee of privacy, and so the long-cherished idea of a radio link was speedily abandoned. Nevertheless, it must be remembered that today the radio telephone has found its niche in the trans-atlantic telephone service, and, in this field, it is without rival.

Frank Conrad, an engineer of the Westinghouse Electric and Manufacturing Company of East Pittsburgh, Pa., was one of the first to experiment with a wireless telephone transmitter installed in a garage in the rear of his home. Each evening he sent out crude programs, featuring phonograph records in addition to the usual voice transmission. His impromptu concerts covered a wide range and were enthusiastically received by the mere handful of persons equipped with broadcast receivers whose main function, heretofore, had been the interception of the dot-dash messages of radio telegraph traffic.

The popularity of these radio telephone programs was such that Conrad's audience grew by leaps and bounds. Soon some of his friends suggested that he take his transmitter over to the Westinghouse plant and start a bonafide broadcasting station. There was started the first regular broadcast service.

A limited but thoroughly astonished public received the news of Harding's triumph out of the air on the night of November 2nd, 1920, there was born that station which has become internationally famous as "KDKA, the Pioneer Broadcasting Station of the World."

The growth of broadcasting was little short of phenomenal. In 1921, the Westinghouse organization opened a second experimental broadcasting station at Newark, N. J. A small shack, erected on the roof of a factory for the purpose of housing a 500-watt transmitter, became the cradle of that station which, today, is known to millions of Americans as WJZ. A dis-used cloak-room, measuring a scant thirty by fifteen feet, was furnished with a nondescript collection of chairs and tables, a rented piano, and a phonograph. This was the forerunner of WJZ's present luxuriously appointed group of studios located in the National Broadcasting Company Building at 711 Fifth Avenue in New York City.

About a year later, or in July of 1922, the American Telephone and Telegraph Company, desirous of studying the possibilities of broadcasting as a means of mass communication, just as it had previously studied those of radio telephony as a means of point-to-point communication, established WEAF in New York City, inaugurating the first of a ceaseless stream of programs which have since made that station a really national institution.

Following in the footsteps of these three pioneers, broadcasting stations sprang up in all sections of the land. Without rhyme or reason, newspapers, manufacturing organizations, retail houses, universities, municipalities, State governments, and even private individuals clamored for their place in the ether. There seemed to be no limit to the number of those who felt themselves divinely called to assume the mantle of broadcaster. At one time, the Western Electric Company, as one of the leading producers of radio telephone transmitting apparatus in the United States, found itself in receipt of more than 700 applications for transmitting equipment.

As one broadcasting station after another took its place on the air, one family after another joined the ever-growing radio audience through the installation of a broadcast receiver. A definite cycle of development soon became established, with the broadcaster sending out programs, and the audience expressing its interest and support by equipping its individual homes with receiving apparatus. Thus broadcasters begot listeners, and listeners, in turn, begot broadcasters, in a never-ending circle. By August of 1924, there were no fewer than 1,105 licensed broadcasting stations in the United States, and the radio audience had assumed fantastic proportions in point of numbers.

With broadcasters still operating on a primarily experimental basis, with an alarming scarcity of good program material in the smaller centers, with the radio audience growing more discriminating with each passing day, and with the financial requirements of broadcasting increased to almost prohibitive figures, it was all too clear that something not only had to be done, but that it had to be done immediately.

It was at this point that the three organizations most interested in the future of broadcasting, the General Electric Company, the Westinghouse Electric and Manufacturing Company, and the Radio Corporation of America, decided to take a bold step. With their commercial interests at stake, and with a sincere sense of their obligation to a public which had invested literally millions of dollars in radio equipment on the assumption that broadcasting was a permanent institution, these three great concerns united in the formation of the National Broadcasting Company in September, 1926. It was in order to meet the two obvious necessities of advanced broadcasting that this company was formed. These were: First, adequate financial strength, with ultimate independence as the goal; and second, ample program material, suitably co-ordinated and presented.

The problem of financing elaborate broadcasting programs, has been solved by using these for advertising.

Today, the sponsored program is virtually the foundation upon which the institution of broadcasting rests, and it is a perpetual guarantee that the programs of the future will never lack for interest. The radio advertisers are fully aware of the fact that they can be assured of an audience only in the event that their programs are intrinsically worth while, and surely they are not going to fly in the face of Providence by destroying their best medium of good-will through inferior presentations.

CHART OF COLOR HARMONIES

In Decoration, Dress and Ornamentations

	Blue	Brown	Cream	Green	Gray	Helio	Lavender	Maroon	Myrtle	Navy	Nile	Olive	Orange	Purple	Red	Salmon	Sky Blue	Tan	Wine	Yellow
Blue	..	Good	Good	Strong	Good	Bad	Bad	Fair	Fair	Weak	Bad	Fair	Strong	Weak	Fair	Fair	Weak	Good	Fair	Strong
Brown	Good	..	Good	Fair	Fair	Strong	Strong	Weak	Good	Good	Fair	Good	Weak	Strong	Weak	Weak	Good	Bad	Weak	Bad
Cream	Good	Good	..	Good	Weak	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Weak	Good	Weak
Green	Strong	Fair	Good	..	Good	Bad	Bad	Fair	Weak	Fair	Weak	Weak	Fair	Strong	Strong	Strong	Bad	Fair	Fair	Bad
Gray	Good	Fair	Weak	Good	..	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Bad	Good	Fair
Helio	Bad	Strong	Good	Bad	Good	..	Weak	Bad	Bad	Bad	Bad	Bad	Bad	Weak	Bad	Bad	Weak	Good	Bad	Strong
Lavender	Bad	Strong	Good	Bad	Good	Weak	..	Bad	Bad	Bad	Fair	Bad	Bad	Weak	Bad	Bad	Bad	Good	Bad	Bad
Maroon	Fair	Weak	Good	Fair	Good	Bad	Bad	..	Fair	Fair	Bad	Fair	Bad	Bad	Weak	Bad	Bad	Fair	Weak	Strong
Myrtle	Fair	Good	Good	Weak	Good	Bad	Bad	Fair	..	Good	Bad	Weak	Strong	Strong	Fair	Strong	Bad	Good	Fair	Bad
Navy	Weak	Good	Good	Fair	Good	Bad	Bad	Fair	Good	..	Bad	Good	Strong	Weak	Fair	Strong	Good	Good	Good	Strong
Nile	Bad	Fair	Good	Weak	Good	Bad	Fair	Bad	Bad	Bad	..	Weak	Bad	Bad	Bad	Fair	Weak	Fair	Bad	Bad
Olive	Fair	Good	Good	Weak	Good	Bad	Bad	Fair	Weak	Good	Weak	..	Strong	Bad	Bad	Bad	Bad	Weak	Weak	Bad
Orange	Strong	Weak	Good	Fair	Good	Bad	Bad	Bad	Strong	Strong	Bad	Strong	..	Strong	Weak	Weak	Bad	Fair	Bad	Bad
Purple	Weak	Strong	Good	Strong	Good	Weak	Weak	Bad	Strong	Weak	Bad	Bad	Strong	..	Weak	Bad	Bad	Good	Weak	Strong
Red	Fair	Weak	Good	Strong	Good	Bad	Bad	Weak	Fair	Fair	Bad	Bad	Weak	Weak	..	Weak	Bad	Good	Weak	Strong
Salmon	Fair	Weak	Good	Strong	Good	Bad	Bad	Bad	Strong	Strong	Fair	Bad	Weak	Bad	Weak	..	Fair	Good	Bad	Bad
Sky Blue	Fair	Good	Good	Bad	Good	Weak	Bad	Bad	Bad	Good	Weak	Bad	Bad	Bad	Bad	Fair	..	Good	Bad	Fair
Tan	Good	Bad	Weak	Fair	Bad	Good	Good	Fair	Good	Good	Fair	Weak	Fair	Good	Good	Good	Good	..	Good	Weak
Wine	Fair	Weak	Good	Fair	Good	Bad	Bad	Weak	Fair	Good	Bad	Weak	Bad	Weak	Weak	Bad	Bad	Good	..	Strong
Yellow	Strong	Bad	Weak	Bad	Fair	Strong	Bad	Strong	Bad	Strong	Bad	Bad	Bad	Strong	Strong	Bad	Fair	Weak	Strong	..

Sound and Musical Instruments.—The most noticeable thing about instruments for producing sound is that they are all devices for causing the air to vibrate, and the most interesting thing about the inner ear is that it is evidently a mechanism for receiving and responding to air vibrations. If no air intervenes between the ear and the sounding body no sound can be heard. This is shown to be true by operating an alarm clock or an electric bell in a closed vessel from which the air has been exhausted.

Intensity.—Most instruments for producing sound have some sort of device for reënforcing or intensifying the sound. The jewsharp is a simple reed, or steel spring fastened to a convenient handle. When this reed is made to vibrate, by plucking it with a finger, it emits a faint sound. This sound is intensified by holding it between the lips before the cavity of one's mouth.

Pitch. — Close attention will reveal the fact that the shorter reeds vibrate faster, and hence the pitch of a tone is related to the rapidity of the vibrations which produce it. The short tuning forks vibrate faster than the long forks and produce tones of higher pitch. These tones are heard only faintly until they are reënforced. This may be done by holding the fork, while it is vibrating, before the mouth of a suitable sized bottle, or by pressing the stem of the fork upon a table, or, better, upon a thin wooden box of certain dimensions which will act, like the body of a violin, as a resonator.

One type of music box has a steel comb with teeth of various length. A cylinder with teeth revolves so as to pluck the various teeth of the comb and produce sounds of various pitch.

Reeds. — The harmonica has brass reeds of various length. The mouth of the operator both causes the reeds to vibrate by forcing streams of air over them and furnishes a cavity which reënforces the sound. The mouth moves from right to left to bring into operation the reeds of different length. An accordion is an harmonica with bellows attached to be worked by the hands. This leaves the mouth of the player free to sing to the accompaniment of his instrument if he chooses. Keys are provided by means of which the player may direct streams of air to whichever of the reeds he chooses. A reed or cabinet organ, is the next step in the evolution of this instrument. In this the bellows are worked by the feet, leaving the hands more free to play the keys.

Strings.—The harp has strings to produce air waves, long strings to vibrate more slowly and produce the low tones and short strings to vibrate faster and produce the high tones. The high-toned strings are likewise thinner and tighter than those which produce the low tones. It is generally true of all stringed instruments that high tones are produced by *short, thin, tight* strings, while those which produce the lower tones are relatively *longer, thicker and looser.*

A piano is like a harp with a "sounding board" attached. This sounding board acts like the body of a violin to intensify the sound. The player upon a harp causes the strings to vibrate by plucking them with his fingers, while the strings of a piano are made to vibrate by hammers which the player operates by means of the keys.

Violins, violas, guitars, mandolins, banjos, violoncellos, and bass viols, etc., all have thin and tight strings for the high tones and thick, loose strings for the low tones, but the player changes the length, and hence the pitch, of each by fingering it. Some strings are wound with wire to make them thicker and heavier and hence vibrate more slowly.

Tones.—When a player puts his finger at the middle point of the string it vibrates in two separate sections, each section vibrating twice as fast as before and the pitch of its tone is raised one octave. By skillful manipulation a string may be made to vibrate in halves, in thirds, in quarters, in fifths, and in sixths, and the vibrations of these various sections will be two, three, four, five, and six times as rapid as those of the whole string. The most curious fact is that a string may vibrate in all these ways at once.

Classes of Tones.—The tone produced by the string vibrating as a whole is called its fundamental and the tones produced by its various segments are called overtones. The most pleasing sounds are those in which the greatest number of overtones abound. The most famous players are those who are most skilled in producing overtones and the most highly valued instruments are those most capable of yielding rich combinations of overtones.

An interesting relationship exists between a series of overtones and their fundamental. If we take, for example, a string whose length, tension and thickness are such that when it vibrates as a whole it gives the tone designated as C,—the middle C of the piano—produced by 256 vibrations per second, the relationship of its overtone is shown by the following table:

Fundamental C, in the middle of the piano 256 vibrations per second.

1st overtone, C, 1 octave above C (2×256) = 512 vibrations per second.

2d overtone, G, 1½ octaves above C (3×256) = 768 vibrations per second.

3d overtone, C, 2 octaves above C (4×256) = 1,024 vibrations per second.

4th overtone, E, 2¼ octaves above C (5×256) = 1,280 vibrations per second.

5th overtone, C, 2½ octaves above C (6×256) = 1,536 vibrations per second.

Wind Instruments.—The so-called wind instruments, such as the pipe organ, the various horns, etc., are devices for producing air waves without the intervention of reeds or strings. A strong wind blowing across the top of a chimney causes the column of air within to vibrate until the chimney roars. In like manner the column of air in an organ pipe is made to vibrate by a stream of air blowing, not through the pipe but across one end of the column. The flutist blows, not into his flute but across one end of it.

Relation of Pitch to Length of Pipe.—A two-foot open pipe produces middle C, the tone of 256 vibrations per second. A similar pipe one foot long produces C′,, one octave above middle C. While one four feet long produces C,, an octave below middle C. This is true whether the pipes are straight, as in the case of most organ pipes, or curled up as in the case of most horns. A French horn with eight feet of pipe coiled up will produce C,,, two octaves below middle C. The trombone has sliding joints for changing the length of the tube and thus giving a variety of tones. The flute has holes along its sides which have the effect of changing the length of the air waves, and hence the tones produced. The cornet has three extra loops of pipe, each of which may be added to the whole length of tube by pressing down a key.

This would account for a few extra tones, but how can a pipe with only three keys produce, say, thirty tones? The answer is that these instruments are the most marvelous devices for bringing out overtones. The player, by slightly changing the shape of his lips and varying slightly the wind pressure may make the air column in the instrument vibrate as a whole or in halves, or thirds, or fourths, or fifths or sixths. The scale for a French horn eight feet long whose fundamental is C,, is shown in the following table (read from the bottom upward):

	0	2	1	3	2 and 3	1 and 3	1, 2 and 3
384 vibrations per second	G						
		F†					
			F				
320 vibrations per second	E			E			
		D†			D†		
			D			D	
					C†		C†
256 vibrations per second	C				C		
		B,				B,	
			A†,				A†,
				A,,			
					G†,		
192 vibrations per second	G,					G,	
		F†,					F†,
			F,				
				E,			
					D†,		
						D,	
							C†,
128 vibrations per second	C,						
		B,,					
			A†,,				
				A,,			
					G†,,		
						G	
							F†
64 vibrations per second	C,,						
		B,,,					
			A†,,,				
				A,,,			
					G†,,,	G	
							F†,,,

† Sharp.

The column headed 0 shows the fundamental and overtones which may be produced when none of the keys are pressed. The second column shows the series of tones which may be produced when the second key is pressed. This lengthens the tube sufficiently to depress each note in the series half a tone. The next column shows the series produced when the first key is pressed. The next the series obtained by using the third key, and the remaining columns by combinations of the second and third, first and third, and finally the first, second and third keys.

It will be noticed from this table that the player upon a horn with only three keys is able to produce every tone and half-tone in something over two octaves and that he has two different ways of getting nine of these tones.

Conversational Tones.—The tones which men use most frequently in conversation fall within an octave of C,—128 vibrations; while the tones most frequently heard in female conversation are near to middle C—256 vibrations.

One might sing by waving his hand in the air if he could wave it fast enough. He might fill a large hall with his music by waving his hand at the mouth of a suitable sized bottle as resonator. He might even fill the hall with people if he could wave his hand skillfully enough to produce a rich combination of overtones.

Speed of Sounds.—All sounds, whether high or low, loud or soft, travel at the same rate of speed through the air, else the music of the band would not sound well in the distance. One may see a steamship blow its whistle two miles distant and count ten seconds before hearing its sound. The sound waves travel a mile in five seconds, or 720 miles an hour. In rifle practice one, standing near the target, may hear the bullet hit the target before he hears the discharge of the gun, and frequently he hears the same sound waves several seconds later reflected back to him from the distant hills in echo.

Terrific explosions upon the sun send light waves to us through the ether in eight minutes, but there is no air to bring the sound tones. If there were air and if the sound could come to us without loss it would require fifteen years for the journey.

Range of Tones.—The range of the tones of a piano is usually from 26⅔ vibrations per second to 4,096 vibrations per second. Between these limits are all the tones which may be called musical. Many persons who hear perfectly well tones within the range of the piano are totally deaf to a tone one octave above the highest tone on the piano, and all persons are incapable of hearing sounds whose pitch is higher than three octaves above the piano. It requires other apparatus than the human ear to detect them.

ZOÖLOGY is that half of biology, or the science which treats of life and living things, that deals with animals. It is impossible to frame a definition of *animal*, for although we can distinguish between a cow and a cabbage, the simpler forms of animals grade into the plants. Indeed, there are forms which at one period of their life would be classed with the animals, at another with the plants.

Animals may be studied from many standpoints and there have thus arisen different subdivisions of zoölogy, each of which has its own name. Thus *anatomy* deals with the gross structure, *histology* with the minute anatomy, *embryology* or *ontogeny* with the development from the egg, *physiology* with the way in which the parts perform their functions. The term zoölogy is usually restricted to the recent animals, the fossils forming the province of paleontology. or, better, paleozoölogy.

The classification of animals, or taxonomy, is based upon structure and development (morphology), the attempt being made to arrange the species into groups of different grades so as to show their actual relationships which are the results of their lines of descent (phylogeny). Then there is the subject of geographical distribution, while the special study of several groups has been dignified by special names, like ornithology (birds), ichthyology (fishes), entomology (insects), and malacology (mollusks).

Classification.—The animal kingdom is divided into groups of different values, the series beginning with phyla and ending with species or varieties, the relative rank of these being:

Phylum, divided into classes.
Class, divided into orders.
Order, divided into families.
Family, divided into genera.
Genus, divided into species.
Species, represented by individuals.

There are besides, intermediate grades like super and sub families, suborders, legions, etc. Each of these divisions has its name in Latin form, those of the orders frequently ending in *oidea*, those

of families in *idae*. These groups are not readily defined. We say that a species consists of those individuals which are very closely alike and which will interbreed, while the genus is based on more general characters.

Each animal has a double name, in Latin form, the first word representing the genus, the second the species. Thus all cat-like animals are included in the genus *Felis*, while the species name indicates the kind of cat. Thus the lion is *Felis leo*; the tiger, *Felis tigris*; the wildcat, *Felis catus* and the domestic cat is *Felis domesticus*. These names enable naturalists in all countries to understand exactly what form is meant, and to a certain extent they indicate the relationships of the animals.

All animals are divided, at first, into two great groups of subkingdoms, the *Protozoa*, in which the whole animal consists of but a single cell, and the *Metazoa*, in which the body is composed of multitudes of cells.

Protozoa.—As the *Protozoa* are single-celled animals they are all small, only a few being visible to the naked eye. All of the functions of life are carried on by the one cell, and hence these animals have great interest for the student, as they show the simplest kind of organization and also the great variety of shapes possible in a single cell, for thousands of these forms have been described. Most of the *Protozoa* reproduce by dividing into two, but there are some in which the body breaks up into great numbers of small particles or *spores*, each of which is capable of growing into an animal like the parent.

Porifera.—The sponges, the lowest of the *Metazoa*, bear this name because the surface of the animal is covered with numerous pores. These are the openings to canals by which water and food pass into numbers of small sacs which act as stomachs and from which one or more larger canals carry the water and the waste to the exterior. The familiar bath sponge is only the skeleton from which the flesh has been washed away, but it is always possible in this to recognize the outgoing canals. The best of the commercial sponges come from the Mediterranean, those of Florida and the West Indies being of a coarser character.

Coelenterata.—This phylum consists of the hydroids, jellyfishes, sea anemones and corals, in all of which the cells of the body are arranged in two layers, one forming the external skin, the other the lining of the digestive tract. There is but a single opening into the body and this serves as both mouth and vent. There is but a single cavity inside the body and this is at once digestive and circulatory.

The Hydrozoa have an interesting life history. There is one stage in which the animals are fixed to some submerged object, and by a process of budding they develop into large colonies of individuals connected together by a common stalk. Each individual has tentacles armed with nettle cells around the mouth, by means of which it kills its prey. The digestive cavity is continued through the stalk, connecting all of the individuals. At certain places, varying with the species, other buds are formed. These resemble a bell in shape and have a mouth at the end of the tongue. Each of these bells soon separates from the parent and swims away as an independent animal.

The description above applies to the subclass *Hydroidea;* in the *Siphonophora* we have colonies of jellyfish, connected by a hollow stem, and the fixed stage is absent. Most of the *Hydrozoa* are small, the individuals of the colony usually measuring but a fraction of an inch in length, while the medusæ are rarely an inch across.

The Scyphozoa, also include fixed and free forms. The fixed forms, called *Actinozoa*, are cylindrical animals, attached by one end and bearing a circle of tentacles around the mouth at the other. Internally there is but a single cavity, but this is divided by radial partitions into a series of chambers, thus greatly increasing the digestive surface.

The *sea anemones*, which are usually brightly colored, form no hard parts, and each individual is usually distinct.

In the *corals* there are some forms which are solitary, but usually the coral individuals reproduce by partial division, so that large colonies (sometimes several feet across) may occur. In these the base and usually the sides of each animal secrete a skeleton of carbonate of lime, the secretions of the adjacent individuals joining, so that large masses of coral result. In most of the species this skeleton is porous, but in the precious corals (occurring mostly in the Mediterranean and in Japan) it is dense and takes a high polish. Its color ranges from white to deep red.

The scyphozoan jellyfishes may attain a distance across of six feet, with tentacles a hundred feet in length. All pass through a fixed stage, like a sea anemone, which becomes cut across, each portion forming a jellyfish.

The Ctenophora are distantly related to the other jellyfish. Most of them are spherical and all have eight rows of swimming organs, arranged like the meridians on a globe. Each row consists of plates of vibratile hairs, each plate roughly resembling a comb, whence the name *Ctenophores*, which means comb-bearers. These forms are very voracious, holding the prey by means of numerous adhesive bodies which replace the nettle cells of the other *Cœlenterates*.

The Platodes (flatworms) have elongate flattened bodies, and with the exception of the *Nemertines*, have but a single opening (mouth) to the alimentary canal, which is the only eavity in the body. (In a few of the *Turbellarians* and in all of the *Cestodes* there is no digestive cavity.)

The Turbellaria are small forms occurring in both fresh and salt water, only a few being semiparasites on other animals. The *Trematoda* on the other hand are all parasites, some living on the outside, others in the interior of other animals, sometimes causing severe disturbances and even death. Some of the internal parasites have strange life-histories, the immature stages being passed in the bodies of mollusks, the adults occurring in the organs of vertebrates. The life history is best known of the liver fluke of the sheep, which killed a million and a half of sheep in England in a single year. Other species may attack man, especially in warm climates.

The Cestoda, commonly called tapeworms, are all internal parasites, and this method of life in the intestine of other animals has resulted in a complete loss of the digestive canal, nourishment being absorbed through the surface of the body. Usually these animals pass through two different hosts, the common tapeworms of man passing the immature stages in the pig or cow; less common is one which lives a part of its life in fishes. The immature stages of these are taken with uncooked flesh into the human stomach, where they are set free and then they attach themselves to the lining of the intestines and gradually grow into the adult, becoming divided into a series of joints, each of which is composed almost exclusively of reproductive organs.

The Nemertini are nonparasitic forms occurring in salt and fresh water. They differ from the other *Platodes* in having a vent to the digestive tract. They have little interest except for the student.

The Rotatoria (rotifers or wheel animalcules) are microscopic animals occurring in the water, in which a circle of cilia around the mouth is in constant vibration, giving the impression of a wheel in rapid rotation.

The Coelhelmonthes include worms in which there is a well-developed body cavity surrounding the digestive tract, which always has both mouth and vent.

The Nematoda (round or thread worms) are cylindrical and have no jointing of the body. Some live in moist earth or in the water, but the great majority are parasites in man and other animals, some of them causing severe disturbances or even death. The human parasites longest known are the stomach and pin worms (*Ascaris*). Much more serious is the *Trichina*, not over a sixth of an inch in length, which man obtains from raw pork and which is frequently fatal when occurring in large numbers. Another *Nematode* is *Ankylostomam*, the so-called lazy worm which occurs in the Southern states, while many less known forms attack man in the tropics. All of these, as well as the *Trematodes* and *Cestodes* obtain entrance to the body with food or water; hence the rule should be not to eat flesh (*e. g.*, ham) in the uncooked condition. Salads are also a frequent source of infection.

The Annelida are worms in which the body is divided into a series of rings or segments, one or more of the anterior rings being differentiated into a head, usually bearing eyes and other sense organs. It also contains the mouth, which may be provided with jaws. Among these *Annelids* are the earthworms, of great use in working over the soil, and a number of small forms living in fresh water. But the great majority of the *Annelids* live in the sea, some of them brilliantly colored. The earthworms have no appendages, but many of the marine species have a pair of fleshy appendages which serve as oars on each segment of the body. None of the *Annelids* are parasitic and none have much economic importance.

The Polyzoa (*Bryozoa*) are minute colonial forms whose relationship to the other *Cœlhelmonthes* can only be recognized by careful study. Only a few live in fresh water, the great majority being marine.

Echinoderma.—The members of the phylum *Echinoderma* also have a large body cavity. They derive their name (which means spiny skin) from the fact that the skin contains numerous calcareous plates, an dusually these plates bear numerous spines which protect the animal. There is a complete alimentary canal, with mouth and vent, and the other parts of the body are arranged on the plan of five, radiating from the axis

connecting mouth and vent. Around the mouth is a ring canal filled with fluid, which gives off branches to each of the radii of the body, and connected with these radial canals are peculiar structures, the tube feet, used in locomotion. All of the *Echinoderma* are marine.

Asteroidea (or starfish) have a central disk, with the mouth on the lower side, and radiating from this, like the spokes of a wheel, are the arms with the tube feet on the lower surface. Starfish feed largely on mollusks and prove great enemies to oyster beds. They have great powers of regeneration and lost arms are rapidly replaced.

The Ophiuroidea (brittle or serpent stars) differ from the other starfish in the more slender arms and in the sharper line between arms and disk.

Crinoidea (or sea lilies) have both arms and disk and are attached to the sea bottom by a stalk arising from the disk on the side opposite the mouth. Thus they live with the mouth uppermost, the branched arms forming a funnel, conveying food to the mouth. There are only a few species of *Crinoids* living, but their skeletons are very abundant in the older rocks, where there also occur two related groups, the *Cystoidea* and *Blastoidea*, now extinct.

The Echinoidea include the sea urchins. These are usually spherical, with the parts arranged as if the arms of a starfish had been folded up over the back, the rays being still distinguishable, each bearing its row of tube feet. The body wall is very strong and the spines are moveable, aiding in locomotion. Several species are eaten in Europe. Other species, like the sand dollars, are flattened, and still others are heart shaped, with a marked bilaterality.

The Holothuroidea include the sea cucumbers, which may be compared to a sea urchin, long drawn out between mouth and vent, so that the body is cylindrical. Spines are rare. In the eastern seas some species are taken, dried, and, under the name of trepand, are sent to China, where they are used as a basis for soups.

The Mollusca derive their name from the fact that the body is soft, a matter of little importance. The clams, oysters, snails and squids forming the group have the body cavity greatly reduced; they lack a segmentation to the body; on the lower surface is a projecting part, the foot, while on either side is a fleshy lobe called the mantle, which usually has the power of secreting a shell. This shell, in some forms belonging to several groups, has such a structure that it has an iridescent appearance, and is called mother of pearl. Such mollusks have also the power of forming true pearls, but the majority of pears come from the pearl oyster of tropical seas.

The Amphineura include the *Chitons* of the seashore, in which the foot is a broad, creeping disk, while the shell consists of eight overlapping plates on the back.

The Acephala have a bivalve shell, the two halves being right and left. Just inside the mantle are two pairs of leaf-like gills, while the foot is a muscular organ projecting from the ventral surface and is used in boring, creeping, and in a few even for leaping. Here belong several forms of economic importance, including the shipworm or *Teredo* (which does great damage to submerged wood), and the oysters, clams, scallops and mussels which serve for food. Of the scallops the part eaten is the muscle which closes the two halves of the shell. There are two edible clams on our eastern coast. The oyster is found to-day in the Gulf of St. Lawrence and from Cape Cod south, but not in the intermediate region. The fresh-water mussels (*Unios*) have a pearly shell, and large numbers (65,000 tons a year) are used in the Mississippi valley in the manufacture of pearl buttons.

The Scaphopoda (or tooth shells) are shaped like an elephant's tusk. All are marine and none is of any economic importance.

The Gasteropoda have a broad creeping foot on the lower surface and a single shell, usually coiled in a spiral. (In a few the shell has been lost.) There is usually a single gill; a few have two; while in the land snails the gills have been lost, their place being taken by a so-called lung. Few of the group have any economic value. A few are eaten; some of the land snails destroy vegetation and some of the marine species eat oysters and other shellfish. Some shells are used for cameo engraving and one of the cowries passes as money in some parts of Africa. In a few species there are glands, the secretions of which become red or purple on exposure to the air. The celebrated Tyrian purple of the ancients was derived from one of the *Gasteropods*. The *Heteropods* and *Oteropods*, often given as distinct groups, are really aberrant *Gasteropods*.

The Cephalopoda have a circle of eight or ten (in *Nautilus* about a hundred) tentacles, usually bearing suckers, around the mouth. They have a saccular mantle and either a single external shell or a rudimentary one concealed within the body. The cuttle bone fed to cage birds is the internal shell of the form known as the cuttlefish. Another feature common to the group is the ink sac which secretes the ink, a colored fluid used in clouding the water when the animals wish to escape from some enemy. This ink of one species forms the pigment sepia. All of the *Cephalopoda* are marine. In the seas of Newfoundland and Japan there are immense species, one measuring twenty feet in length, with tentacles thirty-five feet long. Chambered shells, belonging to extinct species (*Ammonites*, *Goniatites*, *Orthoceras*, etc.), are common in the rocks.

Arthropoda.—The members of this phylum differ from the *Annelida* chiefly in the reduced body cavity, the differentiation of the segments into regions (usually head, thorax and abdomen), and in having jointed appendages, specialized for sensory purposes, for eating, for locomotion and for reproductive and protective purposes. All have the segmented body and the presence of compound eyes is common.

The Crustacea are mostly aquatic, breathing by means of gills attached to some of the appendages. Usually the head and thorax are united in a cephalothorax, but the abdomen is distinct and two pairs of appendages are in front of the mouth. Here belong the barnacles (*Cirripedia*) of our shores, the minute *Copepoda* which occur in such enormous numbers in fresh water and in the sea as to be an important food supply for fishes; and the *Decapoda*. This last division, characterized by having five pairs of walking feet, contains the lobster and crabs, important elements in our food supply.

The Acerata have only six pairs of appendages attached to the cephalothorax. The class includes the horseshoe crabs of the ocean and the spiders and scorpions of the land. The scorpions of the warmer climates have a poison sting at the end of the abdomen which is rarely if ever fatal to man. The spiders are celebrated for their spinning powers, the silk coming out of two or three pairs of glands at the end of the abdomen, each species spinning its peculiar type of web. The first pair of appendages of the spiders contain the poison glands. Allied to the spiders are the mites, common on plants, and the ticks, which are a pest in warm climates.

The Malacopoda include a few tropical animals (*Peripatus*) which are interesting to naturalists from their primitive structure, as they show many resemblances to *Annelida*.

The Insecta breathe by air tubes (tracheæ) which open on the sides of the body and ramify the interior. They have a head with four pairs of appendages, only one pair, the antennæ or feelers, being in front of the mouth, the others being subservient to eating. These latter, the mouth-parts, may be adapted for biting or they may be arranged to form a tube suited for piercing and sucking, as in the case of the mosquito. The *Insecta* include the *Hexapoda* and the *Chilopoda*. (See *Entomology*.)

The Chordata, the highest phylum of the animal kingdom, include animals of very different appearance, but all of them, in either the young or the adult, have the following features: There is an early axial skeleton, the notochord, lying between the digestive canal and the central nervous system, there are gill slits extending from the pharynx to the exterior, and the central nervous system is confined to one side of the alimentary canal. There are four great divisions of subphyla—*Leptocardii*, *Tunicata*, *Enteropneusti*, and *Vertebrata*.

The Leptocardii include a few fish-like forms (*Amphioxus*) in the sea in which the notochord is the only skeleton, even a skull being absent. They are of great interest to naturalists from their simple structure.

The Tunicata are also marine. In the young stages they are tadpole shaped, but when they become adult, they are saccular attached forms, commonly called sea squirts, from the way in which they eject water from the two openings in the body wall. In some the animals reproduce by budding, so that colonies of many individuals result.

The Enteropneusti are worm-like forms with no interest except for the zoölogist.

The Vertebrata have a backbone composed of vetebræ formed around the notochord; the brain is inclosed in a skull, and has five regions, and usually there are two pairs of appendages. In the lowest vertebrates, the *Cyclostomes* (lampreys and hagfish), there are no jaws nor paired fins. All other vetebrates have true jaws and hence are called *Gnathostomes*.

The Pisces (or fishes) are aquatic, breathing throughout life by gills. Their appendages are fins and they have a two-chambered heart. Here belong the sharks (*Elasmobranchs*) the *Ganoids* or garpikes and sturgeon, the bony fishes or *Teleosts*, including all of the common fishes, and the lung fishes (*Dipnoi*), in which besides gills, lungs are developed.

The Amphibia include the salamanders, newts, frogs and toads. These breathe by means of the gills in the young stages, while in the adult they have lungs and usually the gills are absorbed. Except the *Cæcilians*, they have legs in the place

of fins. All live on the earth or in fresh water, not a single species occurring in the sea.

The Cyclostomes, fishes and *Amphibians* are grouped together as *Ichthyopsida* (fish-like), as they breathe by gills for at least a part of their lives. The remaining groups of vertebrates are included under the head of *Amniota* from the fact that they have a peculiar envelope, the amnion, which appears in the development.

The Sauropsida include the reptiles and the birds which agree in having scales on the whole body or upon the legs (birds) and in a number of peculiarities of the skeleton. The *Reptilia*, besides the scales, have a heart with three chambers (one partially divided in the crocodiles) and are cold blooded, or, better, have a blood of the same temperature as the surroundings. Of recent forms there are the groups of turtles (*Chelonia*), snakes (*Ophidia*), lizards (*Lacertilia*), and crocodiles and alligators (*Crocodilia*). In geologic time there were several other groups, some including enormous animals (*Dinosaurs*) and some that were capable of flight (*Pterodactyls*). The birds or *Aves* are marked off from all other animals by the feathers. All of them lay eggs and all have a four-chambered heart and the blood is always of the same temperature (warm blood), no matter what the surroundings. About twelve thousand different species of birds are known, nine hundred in North America.

The Mammalia are as sharply marked off by the presence of hair and by the presence of milk glands, by the secretion of which the young are nourished. They also have a four-chambered heart and blood of a constant temperature. The lowest group (*Monotremata*), occurring only in the Australian region, lay eggs, but all other mammals bring forth living young.

The *Marsupials*, represented in America by the opossums, in Australia by the kangaroos, wombat, and a number of other forms, have a pouch (marsupium) on the ventral surface in which the young are carried for some time after birth.

Placentalia.—All other mammals have a peculiar structure in their early development, known as the placenta, and hence they are grouped as the *Placentalia*. There are twelve orders of these.

(1) The *Edentates*, in which the teeth are poorly developed or are lacking and the toes are clawed. Here belong the ant-eaters, sloths, etc.

(2) *The Insectivora* are small animals (shrews, moles, hedgehogs) which largely feed upon insects.

(3) The *Chiroptera* (or bats) have the fingers greatly elongated and connected by membrane, the whole forming a wing. Most species are insect feeders, but some are fruit eaters in the tropics of the old world.

(4) The *Rodentia* (or gnawers) have two or four chisel-like teeth in each jaw, and clawed feet. Here belong the rats, mice, squirrels, beaver, porcupines, rabbits and hares.

(5) The *Ungulata* have hoofs on the tips of the toes and are herbivorous. They are subdivided accordingly as the feet have an odd or an even number of toes. To the odd-toed group belong the tapirs, rhinoceroses and horses. The even-toed group includes the hippopotamus, pigs and camels, as well as a large number of species grouped as *Ruminants* because they chew the cud. The giraffes, deer, elk, cattle, buffalo, sheep, goats, and antelopes belong here. As will readily be seen, the *Ungulata* is the most important group of mammals from the standpoint of human interest.

(6) The *Proboscidia* includes the elephants, of which two species are now alive. In these the nose is drawn out into the well-known trunk and the upper incisors grow into the familiar tusks. In former times the group was larger, including the mammoths and mastodons, much like the elephants, and the dinotherium, in which the tusks were in the lower jaw.

(7) The *Hyracoidea* include a few species from the old world, one of which is supposed to be the coney of the bible.

(8) The *Sirenia* are aquatic mammals with the fore limbs fin-like and the hinder ones lacking. The manatee and the dugong represent the group.

(9) The whales, or *Cetacea* externally resemble the *Sirenians*, but they are separated by several anatomical points. The whales are the most aquatic of all mammals and have almost entirely lost the hair, one species having only a scanty mustache in the young stage. The tail is flattened into a caudal fin which differs from that of any fish in being horizontal.

There are two great groups of *Cetacea*, the one having teeth, the other lacking them. To the toothed group belong the dolphins, blackfish, sperm whales and the narwhal. The sperm whales have an enormous mass of a peculiar fat (spermaceti) on the upper side of the head; the narwhal has a single tooth drawn out into a long twisted spine projecting from the front of the head. The toothless whales have a peculiar series of horny plates developed from the roof of the mouth. These form a strainer by means of which the animals are able to strain the minute life on which they feed from the water. This is the whalebone so important in woman's apparel.

(10) The *Carnivora* are the flesh eaters which prey on all other mammals. They have clawed feet and teeth adapted to a diet of flesh. Most of the species are terrestrial, and here may be mentioned the hyænas, raccoon, mink and weasel, ermine, otters, dogs, foxes, bears, and all of the cat tribe. Some of the *Carnivores* have taken to the water and have become almost as aquatic as the whales. These are the seals, sea lions and walruses. As will be seen, the group of *Carnivores* is possibly the most important source of furs, the *Rodentia* only approaching it.

(11) The *Prosimiæ* (or lemurs) include, a few species of monkey-like animals from Madagascar and India.

THE PRINCIPAL GROUPS OF THE ANIMAL KINGDOM

Protozoa.—One-celled animals of microscopic size.		Rhizopoda. Flagellata. Ciliata. Sporozoa.	**Metazoa.**—Cont.	**Arthropoda.**—Jointed animals with distinct feet and hard external skeleton.	Crustacea.—Trilobitæ, trilobites (fossil). Phyllopoda, fairy shrimp. Copepoda. Ostracoda. Cirripedia, barnacles. Malacostraca, crabs, lobsters, shrimp, beach fleas, sowbugs.
Metazoa.—Many-celled animals.	**Porifera.**—Sponges.	Calcispongiæ. Silicispongiæ.			Acerata.—Gigantostraca, horseshoe crabs. Arachnida, spiders, scorpions, mites.
	Coelenterata.—Corals, jellyfish, etc.	Hydrozoa.—Hydroidea, hydroids, jellyfish. Siphonophora, tubular jellyfish. Scyphozoa.—Actinozoa, sea anemones, corals. Scyphomedusæ, larger jellyfish. Ctenophora.—Comb-bearing jellyfish.			Malacopoda.—Peripatus. Insecta.—Chilopoda, centipedes. Hexapoda, true insects. Apterygota, bristle tails, spring tails. Pseudoneuroptera, white ants, dragon flies. Orthoptera, locusts, grasshoppers, roaches. Neuroptera, May flies, dobsons. Coleoptera, beetles. Hymenoptera, bees, wasps, ants, sawflies. Diptera, true flies. Lepidoptera, butterflies, moths. Diplopoda, thousand legs.
	Platodes.—Flatworms.	Turbellaria.—Nonparasitic. Trematoda.—Flukeworms, etc. Cestoda.—Tapeworms. Nemertini.			
	Rotatoria. **Coelhelmonthes.**—Worms with body cavity.	Rotifera.—Wheel animalcules. Nematoda.—Round worms. Annelida.—Jointed worms, earthworms, etc. Polyzoa.—Moss animals. Brachiopoda.—Lamp shells.	**Chordata.**	**Leptocardii.**—Lancelets. **Tunicata**—Seasquirts, sea peaches etc. **Enteropneusta.**—Whale's tongue, "worm" vertebrate, backboned animals.	
	Echinoderma.—Starfish, sea urchins, etc.	Asteroidea.—Starfish. Ophiuroidea.—Brittle stars. Crinoidea.—Sea lilies. Echinoidea.—Sea urchins. Holothuroidea.—Sea cucumbers.		**Ichthyopsida.**	Cyclostomata.—Lampreys, hagfish. Pisces.—Fishes. Elasmobranchii, sharks, skates. Ganoids, sturgeon, garpike. Teleostei, ordinary fishes. Dipnoi, lung fishes. Amphibia.—Urodela, newts, salamanders. Anura, frogs, toads.
	Mollusca.—Mollusks, usually with a calcareous shell.	Amphineura.—Chitons. Acephala, bivave mollusks, clams, oysters. Scaphopoda.—Tooth shells. Gasteropoda.—Univalve mollusks, snails. Cephalopoda.—Squid, cuttlefish.		**Amniota**	Sauropsida.—Reptilia, snakes, lizards, turtles, alligators. Aves, birds.
			Mammalia.	Mammals.	

ANIMALS

1 Gorilla.
2 Ruffled Lemur.
3 Vampire.
4 Walrus.
5 Colugo.
6 Reindeer.
7 Stoat.
8 Pea Weevil.
9 Polar Bear.
10 Squirrel.
11 Hare.
12 Anteater.
13 Badger.
14 Beetle.
15 Indian Elephant.
16 Agouti.
17 Lemming.
18 Wildcat.
19 Dormouse.
20 Tiger.
21 Hedgehog.
22 Mandrill.
23 Armadillo.
24 Lizard.
25 Apple Weevil.
26 Peccary.
27 Hyrax or Daman.
28 Snake.
29 Lion.

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DICTIONARY OF ANIMALS

Aard-vark.—The *Orycteropus capensis*, an insectivorous animal which partakes of the nature both of the ant-eater and the armadillo; agreeing with the former in its general habits, but, although entirely destitute of scaly armor, more resembling the latter as to its anatomical structure. It measures about five feet to the end of the tail; its skin is thick, coarse, and covered with stiff hair; limbs short, thick, and very muscular. This animal is very common in South Africa, and has received its popular name from its habit of burrowing (which its taper head and powerful claws are admirably adapted for), as well as from its fancied resemblance to a small pig.

Aard-wolf.—The *Proteles lalandii*, a singular carnivorous animal. It forms the connecting link between three genera widely separated from each other, having externally the appearance and bone-structure of the hyæna united to the head and feet of the fox, with the intestines of the civet. Its size is about that of a full-grown fox, which it resembles in both its habits and manners, being nocturnal, and constructing a subterraneous abode.

Abou-hannes.—An African bird, considered by some naturalists to be identical with the ancient ibis. Although solitary in its habits, it is sometimes seen in small bands of from six to ten, and is capable of a lofty and powerful flight.

Acanthurus (or surgeon-fish), chiefly distinguished by the sharp and lancet-like spines with which it is armed on each side of the tail. They abound in the tropical seas, where they are generally seen in large shoals of two or three hundred each, swimming with great strength, and feeding principally on different kinds of seaweed. The genus contains a large number of species, many of which are extremely beautiful, both in form and color.

Adder.—A viper (*Pelias berus*), widely distributed throughout Europe, the only British venomous snake. It attains a length of over two feet, is brown, with a black zigzag line down the back, feeds chiefly upon mice, and is viviparous. Its bite rarely proves fatal, unless to very weak persons and children. In the United States the term is applied to some poisonous snakes without rattles, as the moccasin, or "water-adder," and the copperhead, or "red adder," and also to the harmless hognose, which resembles in appearance and assumes the defensive attitude of a viper when it is disturbed.

Agouara (or crab-eater).—A carnivorous animal, allied to the raccoons, a native of South America. It equals in size an ordinary fox, to which it bears a slight external resemblance. It derives its name of crab-eater from its habit of feeding on all kinds of crustacea and mollusks, whether marine or terrestrial.

Agouti.—A South American animal belonging to the *Rodentia*. The agoutis live for the most part upon the surface of the ground, not climbing nor digging to any depth; and they commonly sit upon their haunches, when at rest, holding their food between their forepaws, in the manner of squirrels. By eating the roots of the sugar-cane, they are often the cause of great injury to the planters.

Albatross.—A genus of birds of the family *Procellaridæ*. The species are the largest of all aquatic birds, the wings, when extended, measuring sometimes fifteen feet, and weight often exceeding twenty pounds. Its plumage is white, with some black bands on the wings and back. It has a strong, hard, long beak, of a pale-yellow color; the feet, flesh-colored, are short and webbed, and the wings are long, strong, and narrow. It preys on the wing, and is very voracious. Many are continually met with in the Southern ocean, and are also seen in immense flocks about Behring strait in the early part of summer, attracted thither by the vast shoals of fish whose migrations they follow. Their powers of flight are prodigious.

Alligator.—A genus of very formidable and ferocious reptiles, found in the tropical regions of America, and closely resembling the crocodile. They differ from the true crocodiles in having a shorter and flatter head, cavities or pits in the upper jaw, into which the long canine teeth of the under jaw fit, and feet much less webbed. Their habits are less perfectly aquatic. The largest grows to the length of seventeen or eighteen feet. The female lays her eggs in the sand, to be hatched by the heat of the sun.

Alpaca.—The *Peruvian sheep*, a variety of the guanaco or llama. It inhabits the more elevated parts of the mountain ranges, living almost on the border of perpetual snow. The Peruvians keep vast flocks of them for the sake of the silky luster and fineness of their wool, which furnishes material for the best of fabrics.

Anaconda.—The popular name of two of the largest species of the serpent tribe, *viz.*, a Ceylonese species of the genus *Python tigris*, said to have been met with thirty-three feet long; and *Eunectes murinus*, a native of tropical America, allied to the boa-constrictor, and the largest of the serpent tribe, attaining the length of forty feet. They frequent swamps and rivers, are destitute of poison fangs, and kill their victims by constriction.

Anas.—A genus of birds of the subfamily *Anatinæ*, distinguished by a bill broad, depressed, larger than the head, and a pointed tail. The common wild duck or mallard, *Anas boschas* is the original stock of our tame or domesticated duck. The flesh of the wild duck is highly esteemed as an article of food. The widgeon (*Mareca penelope*), a species of the same genus, is a migratory bird, bred in the morasses of the north, which they quit on the approach of winter, spreading themselves along the shores, and over the marshes and lakes in various parts of the United States. They are easily domesticated in places where there is plenty of water, and are much admired for their beauty and sprightliness.

Anchovy.—The *Engraulis encrasicolus*, a well-known small fish of the herring family, abounding in many parts of the Mediterranean, particularly on the coasts of Italy, Greece, Spain, and France. It is about four inches long, of a bluish-brown color on the back, and silvery-white on the belly. They were known to the ancients, and were used both by the Greeks and Romans as a pickle or sauce under the name of *garum*.

Angora goat.—The *Capra angorensis* is by far the most important of all the varieties of the goat, and is a native of Angora, a small district of Asia Minor, remarkable for producing not only this peculiar race of goats, but also sheep, cats, rabbits, etc., with hair of uncommon fineness. The goat of Angora is generally of a beautiful milk-white color, short-legged, with black, spreading, spirally-twisted horns, and pendulous ears. Its chief and distinguishing excellence, however, is the wool, which covers the whole body in long pendent spiral ringlets; and it is from the hair of this animal that the finest camlets are made. To the same genus belongs the cashmere goat, so highly prized for its fleece; it is descended from the goat of Tibet, which pastures on the Himalayas. It is smaller than the common domestic goat, and has long, fine, silky wool. These goats are now acclimatized in the United States, both pure and crossed with the native goat. Far from deteriorating by the transfer, as had been predicted, it is found that in some parts of the country even the unmixed breed of the imported goats has shown evident signs of improvement resulting from the change.

Ant.—The common name of hymenopterous (or membranous-winged) insects of various genera, of the family *Formicidæ*, found in most temperate and tropical regions. They are small but powerful insects, and have long been noted for their remarkable intelligence and interesting habits. They live in communities regulated by definite laws, each member of the society bearing a well-defined and separate part in the work of the colony. Each community consists of males; of females much larger than the males; and of barren females, otherwise called neuters, workers, or nurses. The neuters are wingless, and the males and females only acquire wings for their "nuptial flight," after which the males perish, and the few females which escape the pursuit of their numerous enemies divest themselves of their wings, and either return to established nests, or become the foundresses of new colonies. The neuters perform all the labors of the ant-hill or abode of the community; they excavate the galleries, procure food, and feed the larvæ or young ants, which are destitute of organs of motion. In fine weather they carefully convey them to the surface for the benefit of the sun's heat, and as attentively carry them to a place of safety either when bad weather is threatened or the ant-hill is disturbed. In like manner they watch over the safety of the nymphs, or pupæ, about to acquire their perfect growth. Some communities possess a special type of neuters, known as "soldiers," from the duties that specially fall upon them, and from their powerful biting jaws. There is a very considerable variety in the materials, size, and form of ant-hills, or nests, according to the peculiar nature or instinct of the species. Some ants live on animal food, very quickly picking quite clean the skeleton of any dead animal they may light on. Others live on saccharine matter, being very fond of the sweet substance, called honey-dew, which exudes from the bodies of aphides, or plant lice. These they sometimes keep in their nests, and sometimes tend on the plants where they feed; sometimes they even superintend their breeding. By stroking the aphides with their antennæ they cause them to emit the sweet fluid, which the ants then greedily sip up. Various other insects are looked after by ants in a similar manner, or are found in their nests. It has been observed that some species, like the red ant (*Formica sanguinea*), resort to violence to obtain working ants of other species for their own use, plundering the nests of suitable kinds of their larvæ and pupæ, which they carry off to their own nests to be carefully reared and kept as slaves. In temperate countries male and female ants survive, at most, till autumn, or to the commencement of cool weather, though a very large proportion of them cease to exist long prior to that time. The neuters pass the winter in a state of torpor, and of course require no food. The only time when they require food is during the season of activity, when they have a vast number of young to feed. Some species have stings as weapons, others only their powerful mandibles, or an acrid and pungent fluid (formic acid) which they can emit.

Ant-eater.—A genus of the family *Armadillo*, order *Edentata*. The ant-eaters have no grinders, have the body covered with rather long hair, an elongated slender head, with very long exsertile tongue, and walk on the sides of their feet with the claws incurved. The great ant-eater, *Myrmecophaga jubata*, is a native of Brazil and Guiana, and is much the largest of all the ant-eaters. It is covered with long, coarse, shaggy hair, and has a remarkably large tail, with which, when at repose, it can wrap itself up so as to be effectually protected from heat or rain. It is a powerful animal, and specimens often occur which measure more than eight feet in length from the extremity of the nose to the end of the tail. It lives exclusively on ants, and procures these insects in abundance by tearing open their hills with its hooked claws, and then drawing its long tongue, which is covered with glutinous saliva, over the swarms which flock from all quarters to defend their dwelling.

Antelope.—A division of the large family *Cavicornia*, or hollow-horned ruminants, and of graceful and symmetrical proportions; of a restless and timid disposition; extremely watchful, of great vivacity, and remarkably swift and agile. Externally, they very much resemble deer, from which, however, they are to be distinguished by various points of structure, such as the horns, which in the deer are solid and branched, and by the absence of front teeth in the upper jaw. Generally speaking, antelopes are gregarious, and unite in large flocks or herds. Africa may be considered the head-quarters of the antelope. The species are numerous, and include the springbok, hartbeest, gnu, eland, and gazelle, among others. There are two European antelopes, the chamois, which inhabits the Alps, and the saiga from eastern Russia.

Ape.—The name of a quadrumanous family of mammalian animals, *Simiadæ*, which embraces the most highly developed forms of the monkeys. They are all of them inhabitants of the old world. The nostrils are divided by a narrow septum; they possess opposite thumbs on their fore and hind feet; the callosities on the rumps are generally naked. Some of the species only are furnished with cheek-pouches. The species are divided into two groups—1. The tailless, or apes, comprising the chimpanzee, the gorilla and the orang-outang; 2. The tailed monkeys, including all the true monkeys of the old world.

Ant-lion.—The larva of a neuropterous insect (*Myrmeleon formicarius*), which in its perfect state greatly resembles a dragon-fly; curious on account of its ingenious method of catching the insects—chiefly ants—on which it feeds. It digs a funnel-shaped hole in the driest and finest sand it can find, and when the pit is deep enough, and the sides are quite smooth and sloping, it buries itself at the bottom with only its formidable mandibles projecting, and waits till some luckless insect stumbles over the edge, when it is immediately seized, its juices sucked, and the dead body jerked out. It inhabits southern Europe.

Argonaut.—A molluscous animal of the genus *Argonauta*, belonging to the two-gilled cuttle-fishes, distinguished by the females possessing a single-chambered external shell not organically connected with the body of the animal. The males have no shell and are of much smaller size than the females. The shell is fragile, translucent, and boat-like in shape; it serves as the receptacle of the ova or eggs of the female, which sits in it with the respiratory tube or "funnel" turned toward the carina or "keel." This famed mollusk swims only by ejecting water from its funnel, and it can crawl in a reversed position, carrying its shell over its back like a snail. The argonaut, or *paper-nautilus*, must be carefully distinguished from the *pearly-nautilus* or nautilus proper

Argus pheasant (*Argus giganteus*).—A large, beautiful, and very singular species of pheasant, found native in the southeast of Asia, more especially in Sumatra and some of the other islands. The males measure from five to six feet from the tip of the beak to the extremity of the tail, which has two greatly elongated central feathers. The plumage is exceedingly beautiful, the secondary quills of the wings, which are longer than the primary feathers, being each adorned with a series of ocellated or eye-like spots of brilliant metallic hues. The general body plumage is brown.

Armadillo (genus *Dasypus*).—A mammal peculiar to South America, consisting of various species, belonging to a family intermediate between the sloths and ant-eaters. They are covered with a hard bony shell, divided into belts, composed of small separate plates like a coat of mail, flexible everywhere except on the forehead, shoulders, and haunches, where it is not movable. The belts are connected by a membrane, which enables the animal to roll itself up like a hedgehog. These animals burrow in the earth, where they lie during the daytime, seldom going abroad except at night. They are of different sizes: the largest, *Dasypus gigas*, being three feet in length without the tail, and the smallest only ten inches. They subsist chiefly on fruits and roots, sometimes on insects and flesh. They are inoffensive, and their flesh is esteemed good food.

Asp (*Naja*, or *Vipera, haje*).—A species of viper found in Egypt, resembling the *cobra da capello*, or spectacle-serpent, of the East Indies, and having

a very venomous bite. When approached or disturbed it elevates its head and body, swells out its neck, and appears to stand erect to attack the aggressor. Hence the ancient Egyptians believed that the asps were guardians of the spots they inhabited, and the figure of this reptile was adopted as an emblem of the protecting genius of the world. The balancing motions made by it in the endeavor to maintain the erect attitude have led to the employment of the asp as a dancing serpent by the African jugglers.

Ass (*Equus asinus*).—A species of the horse genus, supposed by Darwin to have sprung from the wild variety (*Asinus tæniopus*) found in Abyssinia; by some writers to be a descendant of the *onager*, or wild ass, inhabiting the mountainous desert of Tartary, etc.; and by others to have descended from the kiang of southwestern Asia. Both in color and size the ass is exceedingly variable, ranging from dark gray and reddish brown to white, and from the size of a Newfoundland dog in northern India to that of a good-sized horse. In the southwestern countries of Asia and in Egypt, in some districts of southern Europe, as in Spain, and in Kentucky and Peru, great attention has been paid to selection and interbreeding, with a result no less remarkable than in the case of the horse. Thus in Syria there appear to be four distinct breeds—a light and graceful animal used by ladies, an Arab breed reserved for the saddle, an ass of heavier build in use for plowing and draft purposes, and the large Damascus breed.

The *mule* is a hybrid between the horse and the ass, differing in size, strength, and beauty, according to the predominance of its parental species; those between a male ass and a mare being far superior to the progeny of a she-ass with a horse. In mountainous countries mules are highly serviceable; no beast of burden being either so sure-footed, or so capable of enduring fatigue; but in beauty of form they fall far short of that noble quadruped, the horse; the mule having a large, clumsy head, long erect ears, a short mane, and a thin tail.

Auk.—A name of certain swimming birds (family *Alcidæ*), including the great auk, the little auk, the puffin, etc. The genus *Alca*, or auks proper, contains only two species, the great auk (*Alca impennis*), and the razor-bill (*Alca torda*). The great auk or gair-fowl, a bird about three feet in length, is now extinct.

Avoset.—A bird about the size of a lapwing, of the snipe family. The bill is long, slender, elastic, and bent upward toward the tip, the legs long, the feet webbed, and the plumage variegated with black and white. The bird feeds on worms and other small animals, which it scoops up from the mud of the marshes and fens that it frequents. It is found in Europe, Asia, Africa, and America; but the American species is slightly different from the others.

Axolotl (*Amblystoma maculatum*). — A curious Mexican amphibian, not unlike a newt, from eight to ten inches in length, with gills formed of three long ramified or branchlike processes floating on each side of the neck. It reproduces by laying eggs, and was for some time regarded as a perfect animal with permanent gills. It is said, however, that they frequently lose their gills like the other members of the genus. The axolotl is esteemed a luxury by the Mexicans. There are a number of species in North America.

Baboon.—A common name applied to a division of old-world quadrumana (apes and monkeys), comprehending the genera *Cynocephalus* and *Papio*. They have elongated abrupt muzzles like a dog, strong tusks or canine teeth, usually short tails, cheek-pouches, small deep eyes with large eyebrows, and naked callosities on the buttock. Their hind and fore feet are well proportioned, so that they run easily on all fours, but they do not maintain themselves in an upright posture with facility. They are generally of the size of a moderately large dog, but the largest, the mandrill, is, when erect, nearly of the height of a man. They are almost all African, ugly, sullen, fierce, lascivious, and gregarious, defending themselves by throwing stones, dirt, etc. They live on fruits and roots, eggs and insects. They include the chacma, drill, common baboon, and mandrill. The chacma, or pig-tailed baboon, (*Cynocephalus porcarius*) is found in considerable numbers in parts of South Africa. The common baboon (*C. babouin*) inhabits a large part of Africa farther to the north. It is of a brownish-yellow color, while the chacma is grayish black, or in parts black. The hamadryas (*C. hamadryas*) of Abyssinia is characterized by long hair, forming a sort of shoulder cape. The black baboon (*C. niger*) is found in Celebes.

Babyroussa.—A species of wild hog (*Sus* or *Porcus babyrussa*), a native of the Indian archipelago. From the outside of the upper jaw spring two teeth twelve inches long, curving upward and backward like horns, and almost touching the forehead. The tusks of the lower jaw also appear externally, though they are not so long as those of the upper jaw. Along the back are some weak bristles, and on the rest of the body only a sort of wool. These animals live in herds, feed on herbage, are sometimes tamed, and their flesh is well flavored.

Badger.—A quadruped of which there are several species, comprising the genus *Taxidea*, family *Mustelidæ*. It is generally regarded as a solitary, stupid animal, that seeks refuge in the most sequestered places, and shuns the light of day. It has very short legs and a broad flat body; the head is long and pointed, the eyes small, and the tail remarkably short. Its prevailing color is a kind of mottled gray; the face is white, and along each side of the head runs a long pyramidal band of black, including the eyes and ears. With its powerful claws it constructs a deep and commodious burrow. It lives chiefly on roots, fruits, insects, and frogs. It is about 2½ feet long. The flesh of the badger is reckoned a delicacy, and may be cured into hams and bacon.

Barbary ape.—A species of ape, or tailless monkey, with greenish-brown hair, of the size of a large cat, remarkable for docility; also called the *magot*. It is common in Barbary and other parts of Africa, and some used to live formerly on Gibraltar rock, being the only European monkey, though probably not indigenous. It has been the "showman's ape" from time immemorial.

Barbets.—A family of climbing birds with a thick, conical beak, having tufts of bristles at its base. Their wings are short and their flight somewhat heavy. They have been divided into three subgenera—the barbicans, inhabiting India and Africa, and feeding chiefly on fruit; the barbets proper, found in Africa and America, and nearly related to the wookpeckers; and the puff-birds, inhabiting America, and feeding on insects.

Barnacle.—The name of a family of marine crustaceous animals, order *Cirripedia*. They are enveloped by a mantle and shell, composed of five principal valves and several smaller pieces, joined together by a membrane attached to their circumference; and they are furnished with a long, flexible, fleshy stalk or peduncle, provided with muscles, by which they attach themselves to ship's bottoms, submerged timber, etc. They feed on small marine animals, brought within their reach by the water and secured by their tentacula. Some of the larger species are edible.

Basilisk.—The animal now recognized by that name is a reptile, family *Iguanidæ*, of a very singular shape, being distinguished by a long and broad wing-like process or expansion along the back and upper part of the tail, and furnished at certain distances with interval radii analogous to those in the wings of the *draco*, or flying lizard. This process is capable of being either dilated or contracted at the pleasure of the animal; and the occiput, or hind part of the head, is elevated into a very conspicuous pointed hood or hollow crest. Notwithstanding its formidable appearance, however, the basilisk is a perfectly harmless reptile, residing principally among trees, where it feeds on insects, etc. The general color of this animal is a pale cinereous brown, slightly varied on the back and sides with different shades of brown and blue, and silvery-white on the belly. It is possessed of great activity, and from its peculiar structure can adapt itself to the watery element without inconvenience. It is most common in the tropical parts of South America.

Bass.—A genus of fishes, distinguished by scaly opercula terminating in two spines, and by a rough tongue. The striped bass is a salt-water fish which keeps near the land, ascending fresh-water streams in the spring to breed. It is from one to four feet long, brown above, silvery beneath, and is very common on the coast of New England. Some specimens weigh seventy-five pounds each. It readily bites at the hook, and is taken in large quantities with the seine.

Bat.—One of the group of wing-handed, flying mammals having the fore-limb peculiarly modified so as to serve for flight, and constituting the order *Cheiroptera*. Bats are animals of the twilight and darkness, and are common in temperate and warm regions, but are most numerous and largest in the tropics. All European bats are small, and have a mouse-like skin. The body of the largest British species, (*Vespertilio noctuula,*) is smaller than that of a mouse, but its wings stretch about fifteen inches. During the day it remains in caverns, in the crevices of ruins, hollow trees, and such-like lurking-places, and flits out at evening in search of food, which consists of insects. Several species of the same genus are common in North America. Many bats are remarkable for having a singular nasal cutaneous appendage, bearing in some cases a fancied resemblance to a horseshoe. Two of these horseshoe bats occur in Britain. Bats may be conveniently divided into two sections—the insectivorous or carnivorous, comprising all European and most African and American species; and the fruit-eating, belonging to tropical Asia and Australia, with several African forms. An Australian fruit-eating bat, commonly known as the kalong or flying-fox, is the largest of all the bats; it does much mischief in orchards. At least two species of South America bats are known to suck the blood of other mammals, and hence are called "vampire-bats." The best known is the *Desmodus rufus* of Brazil, Chili, etc. As winter approaches, in cold climates bats seek shelter in caverns, vaults, ruinous and deserted buildings, and similar retreats, where they cling together in large clusters, hanging head downward by the feet, and remain in a torpid condition until the returning spring recalls them to active exertions.

Batrachia (from the Gr. *batrachos*, a frog). — An order of amphibious animals which includes the frogs and toads; it is also designated by the name of *Anoura*, or "tailless" amphibians. In the batrachia, the adult is destitute of gills and tail, and the two pairs of limbs are always present; there are no ribs, and the skin is soft; the mouth is sometimes without teeth, but the upper jaw is usually provided with teeth, and, more rarely, both jaws; the hind-limbs usually have the toes webbed for swimming, and are much larger than the fore-limbs. In the adult batrachia the breathing is carried on by means of lungs; but, as there are no movable ribs, the process of breathing is somewhat peculiar—in fact, it is one of swallowing, and it is possible to suffocate a frog simply by holding its mouth open. The moist and delicate skin, however, also performs an important part in respiration. The young, or larvæ, of frogs and toads are familiarly known as "tadpoles." The eggs are deposited in masses in water, and the young, when hatched, are fishlike in form, with a broad, rounded head and a compressed tail. There are at first two sets of gills, one external and the other internal; but the outer ones disappear very shortly after birth, and the inner ones are subsequently replaced by lungs. The hind-limbs first make their appearance, and are followed by the fore-limbs; and as the limbs become fully developed the tail gradually disappears. In both the common frog and the toad the tongue is fixed to the front of the mouth, while it is free behind, so that it can be protruded for some distance from the mouth. The tree frogs have the toes of all the feet furnished with terminal suckers, by the help of which they climb with ease; they are mostly found in America, but one species is European. The Surinam toads (found in Surinam and also in Brazil) rarely have teeth, and the mouth is destitute of a tongue.

Beagle.—A small hound or hunting-dog formerly much used in coursing hares, and more remarkable for perseverance than speed. Beagles were formerly distinguished as the *rough* and the *smooth*. The rough wire-haired or *terrier* beagle is now seldom met with, though it was a hardy and altogether a vermin-loving breed, and very strongly formed. The North England beagle is a nimble and vigorous hound.

Bear.—The name of several large plantigrade carnivorous mammals of the genus *Ursus*. The teeth are forty-two in number, as in the dog, but there is no carnassial or sectorial tooth, and the molars have a more tubercular character than in other carnivores. The eyes have a nictitating membrane, the nose is prominent and mobile, and the tail very short. The true bears are about ten in number, natives chiefly of Europe, Asia, and North America. They generally lie dormant in their den during the winter months. The brown or black bear of Europe is the *Ursus arctos*. It is a native of almost all the northern parts of Europe and Asia, and was at one time common in the British islands. It feeds on fruits, roots, honey, ants, and, in case of need, on mammals. It sometimes reaches the length of seven feet, the largest specimens being found farthest to the north. It lives solitarily. The American black bear is the *Ursus americanus*, with black shining hair, and rarely above five feet in length. It is a great climber, is less dangerous than the brown bear, and is hunted for its fur and flesh. It is very amusing in captivity. The grizzly bear (*Ursus ferox* or *horribilis*) is an inhabitant of the Rocky mountains; it is a ferocious animal, sometimes nine feet in length, and has a bulky and unwieldy form, but is nevertheless capable of great rapidity of motion. The extinct cave bear (*Ursus spelæus*) seems to have been closely akin to the grizzly. The Siberian bear (*Ursus collaris*) is perhaps a variety of the brown bear. The polar or white bear (*Ursus maritimus*) is characterized by its flat head and comparatively long neck.

Beaver.—A quadruped of the order *Rodentia*, or gnawers, the only species of its genus. It is very widely distributed, being found in the northern parts of Europe, Asia, and America, nowadays most abundantly in the northern and thinly peopled parts of North America, dwelling in communities on the banks of rivers and lakes. At one time immense numbers of these animals were killed for their fur, which was largely used in making hats.

Bee.—A well known family of insects, belonging to the order *Hymenoptera*, an order which also includes the wasps, ants, and gall-flies. Man appears from the very earliest ages to have known the value of bees, and to have taken advantage of their produce. The bible makes mention of honey-bees, and the Latin poet Vergil has celebrated them in the fourth book of his *Georgics*, where he has summed up all that the ancients knew about them. During the greater part of the year the population of our hives is composed exclusively of two sorts of individuals, namely, the female or mother bee, called also the *queen bee*, and the working bees or neuters, which are, properly speaking, females imperfectly developed. A third kind of individuals, the males, called also *drones*, are generally not met with except from May to July. The working bees constitute essentially the bee community; they are recognized by their small size, reddish-brown color, and, above all, by the palettes and brushes with which the hing legs are furnished. The three pairs of legs, which are inserted in the thorax, or chest, of the bee, are its tool. The two hind legs are longer

than the other pairs, and present on the exterior a triangular depression, resembling a *palette*, which is surrounded by stiff hairs, forming the borders of a sort of basket in which the insect deposits the pollen of flowers. To each of these hind legs is jointed a square expanded piece, which might be termed the ankle, smooth on the exterior, but having hairs on its interior surface which has caused it to be named the *brush*, and which is employed in collecting the pollen. The other tools of the working bee consist of a pair of movable mandibles, which close the mouth on its two sides, and of a trunk, or proboscis, which may be considered as a sort of tongue; this latter organ has a hairy surface, to which the honey of flowers adheres, whence it is conveyed to the mouth, and from it to the stomach, to be subsequently disgorged. The males, or drones, are larger and more hairy than the working bees; they emit a buzzing sound, have no palettes, and no sting. The female, or queen, has a longer body than the workers, and the wings shorter in proportion. The only part she has to play is that of laying eggs, and so she has no palettes or brushes. Only one queen lives in each hive, of which she is perfect sovereign, all the workers submissively obeying her. The number of males is scarcely one-tenth that of the working bees, and they live only about three months. The wax of which the cells of the honeycomb are constructed is supposed to be secreted by an organ situated in the abdomen, or belly, of the bee; but, in addition to wax, another substance, much resembling it, but not identical, called *propolis*, is elaborated from the juices of certain plants, and employed to line the inner surface of the hive. The cells are hexagonal in shape, that is, having six equal sides—the most economical form as regards space—and are of two kinds, namely, store-cells, which are filled with honey, as a reserve store of food, and cradle-cells, in which the eggs are deposited. At a certain time of the year the queen leaves the hive, accompanied by the drones, and takes what is called her "nuptial flight" through the air. About forty-eight hours after her return to the hive she begins laying her eggs, at the rate of about two hundred a day. The eggs which are destined to develop into workers are first laid, then those which are to produce males, and lastly those which give birth to females. The eggs are not long in being hatched, and the *larvæ*, or caterpillars, which emerge from them are tended by the workers, and fed by them on a peculiar paste, which is apparently a preparation of pollen. In five or six days the larvæ pass into the condition of *pupa*, or chrysalis, and in about seven or eight days after this the perfect insect is hatched.

Beetle.—A name often used as synonymous with the term *Coleoptera*, but restricted by others to include all those insects that have their wings protected by hard cases or sheaths, called elytra. Beetles vary in size from a mere point to the bulk of a man's fist, the largest, the elephant beetle of South America, being four inches long. The so-called "black beetles" of kitchens and cellars are not properly beetles at all, but cockroaches, and of the order *Orthoptera*.

Bird-catching spider.—A name applied to gigantic spiders of the genera *Mygale* and *Epeira*, more especially to the *Mygale avicularia*, a native of Surinam and elsewhere, which preys upon insects and small birds, which it hunts for and pounces on. It is about two inches long, very hairy, and almost black; its feet when spread out occupy a surface of nearly a foot in diameter.

Bird of paradise.—The name for members of a family of birds of splendid plumage allied to the crows, inhabiting New Guinea and the adjacent islands. The family includes eleven or twelve genera and a number of species, some of them remarkably beautiful. The largest species is over two feet in length. The king bird of paradise (*Paradisea regia*) is possibly the most beautiful species, but is rare. It has a magnificent plume of feathers, of a delicate yellow color, coming up from under the wings, and falling over the back like a jet of water. The feathers of the *Paradisea major* and *Paradisea minor* are those chiefly worn in plumes. These splendid ornaments are confined to the male bird.

Bison.—The name applied to two species of ox. One of these, the European bison, or aurochs, (*Bos bison* or *Bison europæus*), is now nearly extinct, being found only in the forests of Lithuania and the Caucasus. The other, or American bison, improperly termed buffalo (*Bison americanus*), is found only in the region lying north and south between the Great Slave lake and the Yellowstone river, and is rapidly becoming extinct in the wild state, though formerly to be met with in immense herds. The two species closely resemble each other, the American bison, however, being for the most part smaller, and with shorter and weaker hind-quarters. The bison is remarkable for the great hump or projection over its fore-shoulders, at which point the adult male is almost six feet in height; and for the long, shaggy rust-colored hair over the head, neck, and forepart of the body. In summer, from the shoulders backward, the surface is covered with a very short fine hair, smooth and soft as velvet. The tail is short and tufted at the end. The American bison used to be much hunted for sport as well as for its flesh and skin. Its flesh is rather coarser grained than that of the domestic ox, but was considered by hunters and travelers as superior in tenderness and flavor. The hump is highly celebrated for its richness and delicacy. Their skins, especially that of the cow, dressed in the Indian fashion, with the hair on, make admirable defenses against the cold, and are known as *buffalo robes;* the wool has been manufactured into hats, and a coarse cloth. The American bison has been found to breed readily with the common ox, the issue being fertile among themselves.

Bittern.—The name of several grallatorial birds, family *Ardeidæ* or herons, genus *Botaurus*. There are two British species, the common bittern (*Botaurus stellaris*) and the little bittern (*Botaurus minutus*), a native of the south, and only a summer visitor to Britain. Both, however, are becoming rare from the reclamation of the marshy grounds that form their favorite haunt. The common bittern is about twenty-eight inches in length, about forty-four in extent of wing; general color, dull yellowish-brown, with spots and bars of black or dark brown; feathers on the breast long and loose; tail short; bill about four inches long. It is remarkable for its curious booming or bellowing cry, from which come the provincial names of *miredrum* and *butter-bump*, etc. The eggs (greenish-brown) are four or five in number. The little bittern is not more than fifteen inches in length. The American bittern (*Botaurus lentiginosus*) has some resemblance to the common European bittern, but is smaller.

Blackbird (*Turdus merula*), called also the *merle*, a well-known species of thrush, common in Britain and throughout Europe. It is larger than the common thrush, its length being about eleven inches. The color of the male is a uniform deep black, the bill being an orange-yellow; the female is of a brown color, with blackish-brown bill. The nest is usually in a thick bush, and is built of grass, roots, twigs, etc., strengthened with clay. The eggs, generally four or five in number, are of a greenish-blue, spotted with various shades of brown. The song is rich, mellow, and flute-like, but of no great variety or compass. Its food is insects, worms, snails, fruits, etc. The blackbirds, or crow-blackbirds, of America are quite different from the European blackbird, and are more nearly allied to the starlings and crows. The red-winged blackbird (*Argelaius phœniceus*), belonging to the starling family, is a familiar American bird that congregates in great flocks.

Bloodhound.—A variety of dog with long, smooth and pendulous ears, remarkable for the acuteness of its smell, and employed to recover game or prey which has escaped wounded from the hunter, tracing the lost animal by the blood it has spilled; whence the name of the dog. There are several varieties of this animal, as the English, the Cuban, and the African bloodhounds. In former times bloodhounds were not only trained to the pursuit of game, but also to the chase of man. In America they used to be employed in hunting fugitive slaves.

Bluebird.—A small dentirostral, insessorial bird, the *Erythaca*, or *Sialis wilsonii*, very common in the United States. The upper part of the body is blue, and the throat and breast of a dirty red. It makes its nest in the hole of a tree or in the box that is so commonly provided for its use by the friendly farmer. The bluebird is the harbinger of spring to the Americans; its song is cheerful, continuing with little interruption from March to October, but is most frequently heard in the serene days of the spring. It is also called *blue robin* or *blue redbreast*, and is regarded with the same sort of sentiments as the robin of Europe.

Bluefish (*Temnodon* or *Pomatomus saltator*).—A fish common on the eastern coasts of America, allied to the mackerel, but larger, growing to the length of three feet or more, and much esteemed for the table. It is very destructive to other fishes. It is also called horse-mackerel, greenfish, skip-jack, etc.

Boa.—A genus of serpents, family *Boidæ*, having the jaws so constructed that these animals can dilate the mouth sufficiently to swallow bodies thicker than themselves. They are also distinguished by having a hook on each side of the vent; the tail prehensile; the body compressed and largest in the middle, and with small scales, at least on the posterior part of the head. The genus includes some of the largest species of serpents, reptiles endowed with immense muscular power. They seize sheep, deer, etc., and crush them in their folds, after which they swallow the animal whole. The boas are peculiar to the hot parts of South America. The *boa constrictor* is not one of the largest members of the genus, rarely exceeding twenty feet in length; but the name boa or boa constrictor is often given popularly to any of the large serpents of similar habits, and so as to include the pythons of the old world and the anaconda and other large serpents of America.

Bony pike (or garfish).—A remarkable genus of fishes inhabiting North American lakes and rivers, and one of the few living forms that now represent the order of ganoid fishes so largely developed in previous geological epochs. The body is covered with smooth enameled scales, so hard that it is impossible to pierce them with a spear. The common garfish attains a length of five feet, and is easily distinguished by the great length of its jaws.

Bower birds.—Certain birds of Australia and New Guinea which have the habit of building bowers. These are constructed on the ground, usually in some retired part of the forest under overhanging branches, and are decorated with feathers, shells, stones, bones, etc. The bowers are not nests but are resorts, and are especially used at the mating season.

Buffalo.—A name of certain wild cattle of the warmer parts of the old world, living in marshy places. Some of them have been domesticated and are used much as oxen with us. The name was transferred by the early explorers to the bison of North America, a very different kind of animal. When first discovered America had the buffalo as far east as Ohio, while farther west they occurred in enormous herds. With the opening of the transcontinental railroads these herds were quickly killed off, so that now there are only a few protected herds. The attempt has been made, with some success, of crossing them with domestic cattle.

Bugs.—A name loosely applied to any insect, but rightly belonging to insects of the order *Hemiptera*, which have sucking mouthparts and the wings partly hardened, partly membranous. Most of them feed on the juices of plants which they suck by means of the beak, but a few prey upon other animals, the bedbug attacking man. Most of the group are pests, like the squash bug, the plant lice and the scale insects, but a few are of value, like the lac insects and the cochineal, the one furnishing the shellac, the other the carmine.

Bulldog.—A variety of the common dog, remarkable for its short, broad muzzle, and the projection of its lower jaw, which causes the lower front teeth to protrude beyond the upper. The head is massive and broad; the lips are thick and pendulous; the ears pendent at the extremity; the neck robust and short; the body long and stout; and the legs short and thick. The bulldog is a slow-motioned, ferocious animal, better suited for savage combat than for any purpose requiring activity and intelligence. For this reason he is often employed as a watchdog. It was formerly used—as its name implies—for the barbarous sport of bull-baiting. The *bull terrier* was originally from a cross between the bulldog and the terrier. It is smaller than the bulldog, lively, docile, and very courageous.

Bullfrog.—The largest species of frog. It occurs through a large part of the United States and has its name from the loud croak which somewhat resembles the low roar of a bull. It is a dusky brown above, yellowish-green beneath, and is spotted with black.

Bullhead.—A common name for several species of fish. In the United States the name is given to some species of catfish or horned pout; in England to a smaller fish, allied to our miller's thumb, but belonging to a different group from the catfish.

Bustards.—Birds of the order *Grallæ*, restricted to the old world, and somewhat closely related to the snipe and plovers. The great bustard, about the size of a turkey, is the largest bird in Europe, and ranges east to Tartary. The little bustard is common in southern Europe. Other species occur in Asia, Africa and Australia. They are vegetable feeders and all are strong runners, and though they are slow to take wing, they fly well.

Butterflies.—A group of insects with broad wings belonging to the order of *Lepidoptera*, which is easily distinguished from the moths by their habit of flying in the daytime and by having the antennæ or feelers at the end of the head ending in a club, and never tapering or feathered. Like many other insects these hatch from the egg with a shape like a worm, the larva or caterpillar. This eats mostly vegetable matter, grows rapidly, molts its skin several times, and at last changes into a resting stage, the pupa or chrysalis, which usually passes the winter. Then the chrysalis case splits down the back and from the opening the butterfly comes out, to lead a short life, in which it lays the eggs which are to go through the same history. There are several thousand species of butterflies known, the majority being inhabitants of the tropics.

Buzzard.—A name applied to several diurnal birds of prey closely resembling the hawks, our common hen hawk being a buzzard. These birds feed on mice, moles, small birds, insects, etc., and on the whole are a benefit to the agriculturist. The common buzzard is spread over the whole of Europe and America. The carrion buzzards feed on decaying animal matter, the bee buzzards or honey buzzards of the old world feed on honey and on the larvæ of bees and wasps.

Camel.—The family of camels includes a few forms of animals that chew the cud but are without horns. In the warmer parts of the old world are two species which have been domesticated by man and serve as beasts of burden. One, the dromedary, has a single hump of fat, etc., upon the back; the Bactrian camel has two humps. There is much exaggeration in the common accounts of their endurance and of their ability to go for a long time without water. Their hair is used in weaving cloth. In Peru and adjacent parts of South America are four members of the family, two of

which, the llama and the alpaca, have been domesticated.

Camelopard.—See giraffe.

Cameo shells.—Certain snail shells from the sea, in which the shell consists of a white and a brown layer which makes these of value for cameos. The manufacture of these is mostly carried on in Genoa and Naples.

Canary.—One of the finches, originally coming from the Canary islands, but domesticated for three hundred years. From their powers of song they are favorites with many, and the best songsters bring high prices. While the usual color in cage birds is canary yellow, the wild birds are a dull green.

Canvasback duck.—An American duck, breeding in the far north and shot in numbers on its migrations. In the Chesapeake they feed on the roots of the *Vallisneria* (wild celery), a marsh plant which gives the flesh a peculiar flavor, and makes these the most esteemed of game birds.

Cardinal bird.—One of the finches, also known as the redbird. It is a native of North America and is a good singer. Its common name is due to the bright red plumage.

Carp.—A group of fishes without spines in the fins. The true carp originated in China and was introduced into Europe three hundred years ago, and much later into America. It has little value as a food supply, aside from the fact that it is readily reared in confinement. The carp has numerous varieties, among them the familiar gold and silver fishes. Less known in America are the leather carp, in which the scales have been lost, and the mirror carp, with only a single row of very large scales on either side of the body.

Carpet beetle.—A small beetle of inconspicuous colors which originally fed upon flowers, but which has taken to animal food, and especially to woolen goods. It is the larva which does the damage.

Catbird.—A well-known species of American thrush, which, during the summer, is found throughout the Middle and New England states. The plumage is a deep slate color above and lighter below, and it is about nine inches in length. In habit it is lively, familiar, and unsuspicious; the song is largely imitative of those of other birds, but it also has the cat-like note which gives it its common name. During the winter it inhabits the extreme south of the United States, and is found also in Mexico and Central America.

Cats.—A large family of animals, including the lion, tiger, panther, leopard, lynx, puma, and a number of other forms, among them our domestic pussy. All have retractile claws, cutting molar teeth and elongate pupils to the eyes. The common cat is probably a native of Egypt. Certain it is that it was domesticated there and that it was an object of worship and was frequently mummied. It was not known to the ancient Greeks and Romans, its place as a destroyer of rats and mice being taken by domesticated martens. The domestic cats are cleanly animals, more attached to places than to persons, and like many domesticated animals, are very variable in color. Besides the ordinary kinds, there are common the tailless Manx cats (coming from the Crimea as well as from the island of Man) and the Angora or Persian cats, with long silky fur. The coon cats are merely a race of the latter. The original of the domestic cat was probably marked with black bar on a ground of tawny and white, these colors rendering them inconspicuous among the grasses and shrubbery where they ranged.

Centipedes.—A group of jointed animals belonging to the order of *Myriapods*, characterized by having numerous segments to the body, each with a pair of walking feet. The head is very like that of an insect, but the remaining segments of the body are not divided into regions. The legs of the first segment behind the head contain a poison gland, and its secretion is forced into the wound made by the sharp tip of the leg. Most of the species are small, but in the tropics are species ten inches in length. The bite of these larger forms causes considerable pain, but authenticated cases of death following the bite are at least rare.

Cephalopods.—A group of mollusks in which the mouth is surrounded by a number of arms, each usually bearing a number of suckers, well developed eyes, a sack enveloping the body, and a shell which may be either external or internal. The group includes the squid, cuttlefish, pearly nautilus and many other forms without common names.

Chameleon.—A genus of lizards, natives of parts of Asia, Africa, and the south of Europe. The best-known species has a naked body six or seven inches long, with a prehensile tail of about five inches, and feet suitable for grasping branches. The skin contains small grains of a bluish-gray color in the shade, but in the light of the sun all parts of the body become of a grayish-brown or tawny color. It possesses the curious faculty of changing its color, either in accordance with its environment, or with its temper when disturbed, the change being due to the presence of clear or pigment-bearing contractile cells placed at various depths in the skin, their contractions and dilations being under the influence of the nervous system. Other lizards have the same power of changing color and the name has been also applied to them. Their power of fasting and habit of inflating themselves gave rise to the fable that they lived on air, but they are in reality insectivorous, taking their prey by rapid movements of a long viscid tongue. In general habit they are dull and torpid.

Chamois.—A species of goat-like antelope inhabiting high inaccessible mountains in Europe and western Asia. Its horns, which are about six or seven inches long, are round, almost smooth, perpendicular and straight until near the tip, where they suddenly terminate in a hook directed backward and downward. Its hair is brown in winter, brown fawn color in summer, and grayish in spring. The head is pale yellow with a black band from the nose to the ears and surrounding the eyes; the tail is black. Its agility, the nature of its haunts, and its powers of smell, render its pursuit an exceedingly difficult and hazardous occupation.

Chimpanzee.—The native Guinea name of a large West and Central African ape belonging to the anthropoid or man-like monkeys, and to the same genus as the gorilla. When full grown it is sometimes about five feet high, with black hair, and is not so large and powerful as the gorilla. It walks erect better than most of the apes. It feeds on fruits, often robs the gardens of the natives, and constructs a sort of nest among the branches. It is common in menageries, where it shows much intelligence and docility.

Chinchilla.—A small animal, about nine inches long, occurring on the west slope of the Andes, and hunted for its beautiful fur. The chinchillas are near relatives of the guinea pigs.

Clams.—Bivalve mollusks which form a considerable element in the food supply. The name is loosely used. On our Atlantic coast it is applied to the quahog, with a heavy shell capable of closing completely, and to the long clam, with lighter shell. The latter buries itself in the sand, sending two long tubes up to the surface, and through these it obtains the food and water necessary for its existence.

Cochineal.—A bug allied to the plant lice, which feeds upon the cactuses in Mexico, and which, when dried and treated with alum, and the extract is dried, gives the brilliant red dye, carmine.

Cockroaches.—Insects of the order *Orthoptera*, some small, others two inches long, which feed upon decaying vegetable matter. Several species have taken up their abode with man, and prove most unwelcome boarders. Many methods have been advocated for their extermination, but none is very satisfactory except the killing of every individual seen, and a continuation of this for months.

Codfish.—A species of marine fishes with barbels about the mouth and with three fins upon the back and all fins without spines. This is probably the most important food fish and is taken in enormous numbers on the coasts of Europe and of eastern North America. It occurs in the northern Pacific as well. It feeds upon other fishes as well as on shellfish, and large specimens weigh over one hundred pounds. Allied to the cod are the haddock, pollack, hake and cusk.

Condor.—A South American bird, one of the largest of the vultures. It resembles the common vultures, differing from them mainly in the large cartilaginous caruncle which surmounts its beak, and in the large size of its oval and longitudinal nostrils. Despite stories of its gigantic proportions, Humboldt met with no specimens whose wings exceeded nine feet in expanse, though it has been known to expand to fourteen feet. It is found in the Andes chain, frequenting regions from 10,000 to 15,000 feet above the level of the sea. They only descend to the plains under stress of hunger, when they attack sheep, goats, deer, and bullocks. They prefer carrion, however.

Coney.—A small animal mentioned in the bible and supposed to be the *Hyrax* of science. Its home is around the eastern end of the Mediterranean, extending down into Africa. The animal is without near relatives.

Coral.—The limy skeleton of certain low animals allied to the sea anemones and grouped by zoölogists as *Cœlenterates*. The coral is secreted by the outer surface of the body and usually shows something of the radiate structure of the animal. As the animals usually form colonies of hundreds of thousands of individuals, the coral may show little cups in which each individual was seated. When the animals die these coral masses are left behind, and so abundant are they in the tropics that coral reefs and islands are formed by them. The precious coral of the Mediterranean and of Japan is very solid and takes a high polish. The price is dependent upon the color and size of the pieces, the pale pink commanding the highest price. Purchasers should be on the lookout for counterfeits, made of marble, and for dyed coral.

Crab.—The common name of a large number of *Crustaceans* in which the abdomen is small and folded under the anterior part of the body—the cephalothorax. Over two thousand species are known, differing greatly in size, shape, and in other respects. The great majority are marine, but there are a few which spend their entire life on land, only going to the water once a year to lay their eggs. The largest is the great spider crab of Japan, whose legs may stretch out a dozen feet. Like all crustaceans, the crabs molt their shell at intervals, and after the molt, their skin is soft. One species on the Atlantic coast is taken at this time in great numbers and forms the favorite soft-shell crab of the table. The hermit crabs have the abdomen soft, and to protect this vulnerable part, they insert it in the shell of some dead snail, and carry this about with them wherever they go.

Crane.—A genus of birds belonging to the order *Grallæ*, remarkable for their long migrations, in which they usually fly in large flocks led by a single leader, the whole assemblage assuming a V form, and the leadership is continually changed. The common crane breeds in the north of Europe and in Siberia, and migrates southward at the approach of winter. It attains nearly five feet in height; with the exception of the neck, which is black, the body is of a uniform ashy-gray; it has a graceful carriage. It frequents large plains and marshes, and feeds on fish, reptiles, frogs, mollusks, worms, insects, and even small mammals. At the breeding season the birds pair for reproduction and rearing the young. The games and dances in which they indulge are interesting. They form groups in various fashions, advance toward one another, make a kind of salutation, and adopt the strangest postures. Two species occur in America, the whooping crane being noticeable for the convolutions of the trachea within the breast bone.

Crayfish.—The common name of the small crustaceans of fresh water which resemble the lobsters in appearance. They usually live in burrows in the banks or bottoms of streams and feed on decaying animal matter. In Europe they form a considerable element in the food supply and are bred in ponds. A large number of species occur in the United States, and in the larger markets they are always to be found.

Crocodile.—A genus, family, and order comprising the largest living reptiles. The characters of the order *Crocodilia* are as follows: The skin is covered with square, bony plates; the tail is long and compressed. The feet are short, and there are five toes on each fore-foot, and four on each hind-foot, the latter more or less webbed. The jaws are long and their gape enormous. The nostrils are at the extremity of the snout, and capable of being closed to prevent ingress of water. The heart is four-chambered. The families now existing are the alligators, crocodiles, and gavials. The alligators are all new world forms. The gavial proper is confined to the East Indies. The crocodile of the Nile is the best-known member of the order; another species is met with in southern Asia, and a third in tropical America. The crocodile is formidable from its great size and strength. It is exclusively carnivorous, and always prefers its food in a state of putrefaction. In Egypt it is no longer found except in the upper or more southern parts. It grows sometimes to a length of thirty feet, and apparently lives to a vast age.

Crow.—The family, widely diffused over the world, includes the common crow, the raven, the fish-crow, the rook, the jay and the magpie. The common crow of North America is remarkable for its gregarious and predatory habits, as well as for its intelligence and cunning. They pair in March; the old repair their nests, the young frame new ones; but they are such thieves that while the one is fetching materials the other must keep watch to prevent the rising fabric from being plundered by their neighbors. As soon as the nest is finished and the eggs produced (five, bluish-green, with dark blotches), the male takes upon himself the care of providing for his mate, which he continues during the whole period of incubation. They frequent the same rookeries for years, but allow no intruders into their community. They feed chiefly on worms and the larvæ of insects; they also eat grain and seeds, whence they have sometimes been supposed injurious to the farmer; but they amply repay him for what they take by destroying the vermin in his fields.

Crustacea.—One of the great groups of animals with external skeleton and jointed feet, including the lobster, crab, barnacle, shrimp, etc. They are characterized by having two pairs of feelers (antennæ) in front of the mouth, by breathing by gills attached to some of the legs, and a ladder-like nervous system. As they have a hard, unyielding external skeleton, they can only increase in size by shedding the external skin at irregular intervals. Several thousand species are known.

Cuttlefish.—One of the mollusks belonging to the class of *Cephalopods*, in which there are ten arms around the mouth. The internal shell is calcified and is used as a supply of lime for cage birds. They have also an ink bag, the secretion of which furnishes the pigment sepia. Cuttlefish are an important article of food in southern Europe.

Deer.—A group of ruminant quadrupeds constituting the family *Cervidæ*, animals of graceful form, combining much compactness and strength with slenderness of limb and fleetness. They use their horns for weapons of defense and offense; but in general they trust to flight for their safety. They have a long neck, a small head, which they carry high, large ears, and large, full eyes. Many have scent glands, usually beneath the eyes, which serve as sexual attractions. Deer are distinguished from all other ruminants by their branching horns (antlers), which in most species exist in the male only; they are solid, fall off annually, and are renewed with increase of size.

and number of branches, according to the kind, until the animal has reached old age. Deer are found in almost all parts of the globe except Australia and the south of Africa, their place in the latter region being supplied by antelopes; the greater number inhabit the warmer temperate countries, and they are chiefly found in wide plains and hills of moderate height. The flesh (venison) of most kinds of deer is highly esteemed for the table, and they have long been regarded as among the noblest objects of the chase. Only one species, the reindeer, can be said to have been fully domesticated.

Dodo.—A large flightless pigeon formerly living in the Mascarene islands in the Indian Ocean. It was larger than a turkey and was killed off by man, the last individual disappearing before 1700.

Dog.—An animal well known for its attachment to mankind, and remarkable for the almost infinite varieties, as to size, form, color, and quality of the hair, which domestication has brought about. It belongs to the order of carnivorous mammals, and to that section distinguished as *digitigrade*. The genus *Canis* includes, besides the dog, the jackal and the wolf. It is a question of considerable interest what was the parent stock of the dog. Some are of the opinion that the breed is derived from the wolf; others that it is a domesticated jackal; all agree that no trace of it is to be found in a primitive state of nature. That there are wild dogs, we know. The dhole of India and the dingo of Australia are examples which exist in a state of complete independence, and throw no light upon the question. The dog will live on cooked vegetable matter, but prefers animal food. In drinking, it laps with the tongue. It never perspires, but the nose is naked and moist, and, when hot, the tongue hangs out of the mouth. The female goes with young sixty-three days, and usually has about six or eight at a litter. The young are blind at birth, and do not acquire their sight until the tenth day. The dog attains its full growth at the expiration of the second year, it is old at fifteen, and seldom lives beyond twenty years.

Dormouse.—Small animals, in some respects intermediate between the squirrels and the true mice. They live in the trees of Europe, but in their hibernations they become so torpid that "he sleeps like a dormouse" is proverbial.

Doves.—A name for several of the more familiar pigeons, like the mourning doves of the United States and the turtle doves of the old world.

Dragon fly.—One of the insects of the order *Pseudoneuroptera*, which has an elongate body and long and slender wings. They lay their eggs in the water, where the young are hatched and feed upon all kinds of aquatic insects. The adults are of great value in destroying mosquitoes.

Duckbill.—A peculiar mammal of Australia, living in the streams, and feeding, like a duck, on the matter contained in the ooze at the bottom. In accordance with these habits the toothless jaws are prolonged into a duck-like beak and the feet are webbed. The animal has many other peculiarities of structure, among them the presence of but a single opening (as in reptiles and birds) for the digestive and urogenital organs. It also does not bring forth living young, like all other mammals, but it lays eggs. It is about a foot in length.

Ducks.—A group of swimming birds, too well known to need description. Most of the species are migratory and some, like the mallard and the shoveller duck, are found in both the old and the new worlds. Among the interesting forms are the eiders, well-known from their soft down. They are found in the colder parts of both continents. The Labrador duck was formerly very abundant, but is now probably extinct. Specimens are far rarer in museums than of the great auk. The wood duck is possibly the most beautiful species.

Eagle.—A genus of birds belonging to the order *Accipitres*, and to the same family as the falcons and the hawks. They are found in all parts of the globe. The size varies according to the species, but all attain imposing dimensions. The golden eagle measures about three feet nine inches in height, and the spread of its wings is nearly ten feet. The eagle soars at great heights, and its sense of vision is very acute. It builds its nests in the clefts of inaccessible rocks, and lays generally two or three eggs; the period of incubation is thirty days. Besides the golden eagle, there are other species, such as the American eagle, whitetailed eagle, the tawny eagle, the booted eagle, and numerous smaller species in tropical regions.

Earthworms.—A group of burrowing worms, found in the earth in almost all parts of the world. They are without eyes or well developed appendages. They live on the organic matter in the soil, and to obtain this they swallow the earth through which they mine, and cast the refuse on the surface. This makes them of great value to the agriculturist, as they work over and loosen the soil. In the winter they burrow down beneath the frost, and the large numbers frequently seen after a storm is not due to their having descended with the rain, but to their having been drowned out of their holes.

Echinoderms.—A great group of animals with a radiate structure, and with a spiny skin. They are all marine. The class includes the starfish, sea urchins, sea lilies, and some other less commonly known forms.

Edentates.—A group of mammals in which the teeth are not always lacking, as the name would imply, but in which they are imperfectly developed. The group is largely American and includes the armadillos, sloths and ant-eaters.

Eels.—Fishes of very elongate form, living in the sea. There are several species belonging in very different groups. The lamprey eels have no true jaws, no limbs, and a large number of gill openings. They ascend the rivers in the spring to deposit their eggs, while the true eels descend from the rivers in the fall to the sea for the purposes of reproduction.

Elephant.—A genus of mammals, the only living representatives of the order *Proboscidæ*, or animals with a trunk or proboscis. They are exclusively confined to the tropical regions of the old world, in the forests of which they live in herds. Only two existing species are known, the Asiatic elephant and the African elephant. In both species the two upper incisors, or front teeth, are enormously developed, constituting long tusks. The lower incisors are absent, and there are no other teeth in the jaws except the large molars, or grinders, of which two are usually in use at one time on each side of each jaw. The molars are very large and are composed of a number of transverse plates of enamel, united together by dentine. The nose is prolonged into a cylindrical trunk, movable in every direction, highly sensitive, and terminating in a finger-like, prehensile lobe. The nostrils are placed at the extremity of this proboscis. The feet are furnished with five toes, but these are only indicated externally by the divisions of the hoof; and the sole of the foot is formed of a thick pad of integument. The Indian elephant is the only species which is domesticated; and, as it will scarcely ever breed in captivity, the demand for it is supplied entirely by the capture of adult wild individuals. The Indian elephant has a concave forehead and small ears, while the African elephant has a convex forehead, and large ears. The African elephant is chiefly hunted for the sake of its ivory, and there is reason to believe that the pursuit will ultimately end in its extinction. The elephants are vegetable feeders, living almost entirely on the foliage of shrubs and trees, which they strip off by means of the prehensile trunk. As the tusks prevent the animal from drinking in the ordinary manner, the water is sucked up by the trunk, which is then inserted in the mouth, into which it empties its contents. Many species of fossil elephants are known, the most familiar of which are the mammoth and mastodons.

Falcon.—A name of various birds of prey, members of the family *Falconidæ*. The falcons proper, for strength, symmetry, and powers of flight, are the most perfectly developed of the feathered race. They are distinguished by having the beak curved from the base, hooked at the point, the upper mandible with a notch or tooth on its cutting edge on either side, wings long and powerful, the second feather rather the longest, legs short and strong. Most prominent of the falcons are the peregrine falcon and the gyrfalcon. These were the principal birds used in falconry during the middle ages, not only in Europe but through the east. At one time the sport was only allowed to the nobility. Falcons were carefully trained, and at a hawking party the birds were loosed and they immediately set upon any other game that might be in sight. The pleasure was in watching the falcon getting the better of birds, sometimes many times their size.

Fishes.—The lowest class of vertebrate or backboned animals. They are adapted for an aquatic life, their shape being such as to permit easy and rapid progress through the water. They breathe by gills placed on the walls of slits in the sides of the neck, and their appendages (fins) are such as to make efficient paddles. There are usually one or more fins in the middle line of the back and one or two in a corresponding position beneath the tail (anal fins); while the tip of the tail is terminated by a caudal fin, the chief organ of swimming. The caudal fin presents three different types. In the diphycercal fin the backbone is straight at the tip, and the lobes of the caudal fin are equally disposed on its two sides. In the heterocercal tail the backbone is turned upward at the tip, this making one lobe, while a smaller second lobe is developed on its under side. This is the type of tail in the sharks. The homocercal tail has the same bent backbone as the last, but the two lobes are equal. Most fishes have the latter type. All of the fins are supported by a skeleton of rays, either horny or spinous in character. There are but two chambers to the heart, and the occurrence of a swim bladder, an organ for regulating or recognition of the depth of the water in which the fish is, is very frequent. There are several great groups of fishes, distinguished by the presence of a cartilage or a bony skeleton, by having the gill slits free or under a gill cover, by characters of the skull, presence or absence of air bladder, and by peculiarities of the digestive tract and nervous system.

Flamingo.—A genus of web-footed birds, in some respects intermediate between the storks and the ducks, their long legs and necks giving them a resemblance to the former, while their webbed feet connect them with the latter. There are nine species of true flamingoes. Their food appears to be mollusca, spawn, grass, water plants, insects, etc. They breed in companies in mudflats or inundated marshes, raising up the mud into a small hillock, which is concave at the top so as to form a nest. In this hollow the female lays her eggs and hatches them by sitting on them with her legs doubled up under her. The young, which never exceed three in number, do not fly till they have nearly attained their full growth, though they can run very swiftly and swim with ease almost immediately after hatching. The common American species is deep red with black quills. It is peculiar to tropical America, migrating in summer to the Southern, and rarely to the Middle states.

Flea.—A group of wingless insects, mostly parasites on other animals. They have a hard skin, covered with spines so arranged that they can easily work themselves through the hair, legs admirably adapted for jumping, and the mouthparts fitted for piercing and sucking. The fleas breed in the cracks in a floor or some similar place where there is dirt, and when they are mature they attack animals. The irritation and annoyance of their bites are sufficient to make them a nuisance, but now it is known that they are an important agency in the transmission of certain diseases, bubonic plague being communicated to man by their bites.

Flatfishes.—A group of fishes, including the halibut, sole, turbot, flounder, etc., in which the extremely flattened body has undergone a strange modification, both of the eyes of the adult being on the same side of the head. In correlation with this the fishes live on the bottom of the ocean, with the eyed side uppermost, waiting for their prey. The lower, eyeless, side is white, the other colored similarly to the bottom.

Flies.—A term applied to various insects of different groups, but strictly belonging to the two-winged insects, the *Diptera* of science. Besides the number of wings, the group is distinguished by having a metamorphosis, and by its sucking mouthparts. There are some thirty or forty thousand species of flies known, while no other order has so many individuals as this. Some species are closely connected with man, and of these the common house fly is especially noticeable. This lays its eggs in manure or other refuse, these hatching out, passing through all their stages and emerging as perfect insects in a few days. Their uncleanly habits make the house flies most efficient agents in the carriage of different diseases, especially typhoid fever and others which attack the digestive tract. Flies are therefore not merely a nuisance to be deplored but a positive danger to mankind. Among other flies are the carrion flies, black flies, the gnats and the mosquitoes, all troublesome to man, while others attack various plants.

Flounder.—One group of flatfishes of moderate size, common near the shore. They are held in moderate esteem as food fishes.

Flying-fish.—A name common to various fishes which have the power of sustaining themselves for a time in the air by means of their large pectoral fins. Generally, however, the name is limited to the species of the genus *Exocætus*, which belongs to the family *Scomberesocidæ* (mackerel-pikes). These can pass through the air to a considerable distance, sometimes as much as 200 yards, to escape from the attacks of other fishes, especially the dolphin. They are most common beween the tropics.

Flying-squirrel.—A genus of rodents, family *Sciuridæ* (squirrels), which, by means of the skin of the flank, extending between the fore and hind legs, can support themselves for a moment in the air, as with a parachute, thus making great leaps. The American flying-squirrel lives in the northern parts of North America.

Fox.—Carnivorous animals, of which there are several species, belonging to the same family as the dog. It is characterized by its sharp muzzle, and long bushy tail; as well as by its cunning, which has passed into a proverb. The pupil of the eye is elongated, and not circular as in the dog, and the ears are triangular and pointed. A very powerful scent is emitted from glands near the root of the tail; this odor is so fetid that even other animals avoid its locality. The common fox is an inhabitant of most parts of Europe and America, and extends also into Northern Asia. Its senses are extremely acute. It usually remains concealed during the day in a burrow, and ventures abroad chiefly at night, in search of food. Birds, rabbits, or hares constitute its usual prey, but, when pressed by necessity, it will have recourse to other food, and it has a predilection for certain kinds of fruit, such as grapes. To poultry it is destructive. Though slightly made, the fox has great muscular vigor, and bites with much severity. Even when taken at a very early age, it is never properly domesticated; and adults, when placed in confinement, show great ferocity, and rarely die. Its power of endurance and its great speed, as well as the cunning which dictates various expedients for escape, makes the chase of this animal exciting. Among its expedients for

escape is that of feigning death, which is done also by several other animals. Numerous other species of fox exist in the old and new worlds, of which the most important are the arctic, or blue fox, and the American, or red fox. The arctic fox is remarkable for changing its color with the season, being brown or bluish in summer, and white in winter; the soles of its feet are hairy. The red fox, found throughout North America, is very variable in color and marking, and varieties of it are known by different names. The skins of all the species are valuable.

Frog.—A common name for any species of the amphibian genus *Rana*, characterized by a smooth skin, a large ear spot (tympanum), webbed hind feet, and pointed toes. The genus is almost cosmopolitan. The adults lay their eggs in long strings in the water, and from them are hatched out larvæ (the tadpoles) which are fish-like in having a broad, swimming tail and gills on the sides of the neck. The tadpoles feed upon small aquatic plants which they scrape off from sticks and stones with their horny jaws. As they increase in size, the legs grow out and the tail is absorbed. In the growth of the legs, the anterior pair is first formed, but as this pair is at first under the skin, it is usually thought that the hind pair is first formed. With the growth of legs and the loss of tail the gills disappear and the lungs come into use, but most species always remain in close proximity to water throughout their lives. The adults live on animal food—insects, mollusks, small fishes, etc.—and do not hesitate to eat their own species. They do much good in keeping down certain species of insects; they also furnish an article of diet in their hind legs. Frogs are also an important animal for physiological investigations, because of the great vitality of their tissues.

Gallflies.—Insects of several orders, but chiefly of the *Hymenoptera*, which have a boring apparatus at the end of the body, with which they make holes in plants and deposit their eggs. This stimulates the plants to form enlarged structures, the galls, in which the eggs hatch into larvæ which feed on the tissues of the plants. These galls may occur on stems or leaves, and each species of insect and plant forms galls peculiar to the species. Prominent among these are the nut-galls, once used extensively in the manufacture of ink.

Gasteropoda.—A large group of mollusks, including, among others, the forms commonly known as snails. They creep on a broad fleshy portion known as the foot, have a head in front, with one or two pairs of tentacles, and with the mouth beneath. On the back is the shell (some species have none), which is usually coiled in a spiral, though sometimes it is a simple cone. These shells have a great variety of shapes and colors. The snails have a peculiar ribbon just inside the mouth which is armed with numerous minute teeth. With these the snails rasp their food, while some of them bore through the shells of clams, etc., on which they feed.

Gavials.—Alligator-like animals occurring in the rivers of Asia. They have a long head, much narrower than that of the alligator and crocodile. In habits they are all much alike.

Gazelle.—An animal belonging to the antelope family; of very graceful shape, and rather smaller than the chamois. The color is fawn or dun on the back, separated from the white belly by a brown or blackish band. The horns, stronger in the male than in the female, are in the shape of a lyre. The eyes are beautiful and soft in expression, and its movements are elegant and light. It inhabits the large plains and the Saharan region of northern Africa, as well as Arabia and Syria, living in numerous herds. When taken young, the gazelle, though naturally wild and timid, is readily domesticated.

Gila monster.—A large lizard, found in New Mexico and Arizona, colored black and yellow, and remarkable as the only poisonous lizard, though not dangerously so. It reaches a length of three feet.

Giraffe.—The tallest mammal, often called the *camelopard*, because the skin is spotted like the leopard, while the neck resembles that of the camel. It inhabits various parts of Africa, and, together with the recently discovered okapia, form an entire family, belonging to the class *Ungulata*, or hoofed animals. The height ranges from fifteen to twenty feet, the greater part of which is the enormous length of the neck, which, nevertheless, has only the usual number of seven vertebræ, as in the whole class of mammals. The giraffe has an unusually long cylindrical tongue, which is prehensile, and is used for stripping the leaves off the trees on which it feeds.

Goat.—A genus of ruminant quadrupeds closely allied to the sheep, although the common domestic goat and sheep are of widely different appearance. The uses of the goat are numerous. The flesh, especially that of the kid, or young goat, is much used as food, though rather poor in quality. The milk is very rich and nutritious, more easy of digestion than that of the cow, and is often useful to consumptive patients. Some goats yield as much as four quarts of milk daily, although the average quantity is more nearly two. The skin is dressed as leather for many uses, particularly for gloves and the finer kinds of shoes. The horns are used for making knife-handles, etc., and the fat is said to be superior to that of the ox for candles. Goats are found wild in mountainous countries; scrambling among rocks and bushes, are extremely sure-footed, and display great strength and agility in leaping. The Rocky mountain goat is an animal of the antelope family. Its size is about that of an ordinary sheep, and its general appearance is not unlike that of a sheep of the merino breed, its long, straight hair hanging down in an abundant white fleece.

Goose.—A genus of web-footed birds, having the bill not longer than the head, the upper mandible slightly hooked at the tip; the legs farther forward than in ducks, and so better adapted for walking; the neck of moderate length, with sixteen vertebræ, a character which distinguishes them from swans. In general, geese spend more of their time on land than any other of the *Anatidæ*, feeding on grass and other herbage, berries, seeds, and other vegetable food. Although large birds, and of bulky form, they have great powers of flight. They strike with their wings in fighting, and there is a hard callous knob or tubercle at the bend of the wing, which in some species becomes a spur. The domestic goose is regarded as deriving its origin from the common wild goose, but all the species seem capable of domestication. The graylag goose is almost three feet in length from the tip of the bill to the extremity of the short tail. Its extent of wing is about five feet. The weight of the largest birds is about ten pounds. The color of the plumage is gray, varying in some parts to grayish-brown; the rump and belly white, the tail grayish-brown and white; the bill is orange, the nail at the tip of the upper mandible white. The young are darker than the adults.

Gorilla.—The largest of the man-like apes from tropical West Africa. It reaches a height of five feet eight inches, and the arms are proportionately shorter than in any other ape. They are very strong, but usually they retire before man. They can climb, but are far less arboreal than their relatives, the orang and the chimpanzee. The gorilla was known to the ancients, but was brought to the knowledge of the modern world by the American missionary, Dr. Savage.

Grouse.—A general term for a number of birds allied to the quail, and, more distantly, to the pheasants. Among them are the ptarmigan of the northern parts of America, which exhibit an interesting example of sympathetic coloration, as they turn white in winter, like many other northern animals. Another grouse is the prairie chicken, once so abundant on our western prairies and plains, but now protected almost everywhere. In the east it has been exterminated everywhere except on the island of Martha's Vineyard. A third example is the partridge of the north, the pheasant of the south.

Guinea pig or **cavy.**—A small animal belonging to rodents. It is indigenous to South America, and has been introduced into Europe and America, where it is domesticated as a pet. It possesses a very low degree of intelligence; in its natural home it is gregarious, and is usually found living on dry lands covered with low brushwood. The color is variegated, and the tail is rudimentary. It is extremely prolific, and begins to breed at the age of ten months, producing several broods in a year; each litter usually consists of about eight. The popular name is very inappropriate; the animal does not come from Guinea, nor is it a pig.

Gulls.—Large web-footed birds, common about large bodies of water in the northern hemisphere. Their colors are usually white below with the upper parts varying from a light gray to a black. All are much alike in their habits, noisy and quarrelsome, searching the water for any possible scrap of food, and often following ships for days. They breed on uninhabited islands. The closely allied terns are usually smaller and have a forked instead of a square or even pointed tail. Both are strong fliers but the terns are the most graceful.

Haddock.—One of the most important of the food fishes, closely related to the cod, but distinguished by a notched tail and a white line along the side. In habits the two are much alike, being voracious, eating anything edible, but largely clams and the like, a fact indicated in the German name for shellfish given them.

Halibut.—A member of the group of flatfishes, remarkable in having the eyes on the same side of the head and of swimming, not in a vertical position, like other fishes, but on the side, with the eyes uppermost. The very young flatfishes are normal, but when less than half an inch long they turn on the side and at the same time the eye begins its migration which ends by both eyes being on the same side, the twisting even distorting the bones of the skull. The average weight of the halibut is about 120 pounds; the largest known weighed 720 pounds. The flesh is white and most excellent.

Hawks.—A common name of several small raptorial birds, allied to the eagles, but with no one common distinctive character, for the name is applied loosely to buzzards, ospreys and several other forms.

Hedgehog.—A European animal, like a porcupine in having the body covered with sharp spines, but differing much in structure and in food. The hedgehog feeds upon insects, lives in holes in the ground, and, when disturbed, rolls into a ball with the spines sticking out in every direction, and forming a most excellent defense.

Herring.—A small soft-finned fish spread over the whole North Atlantic, of great economic importance. It occurs in large schools, swimming through the sea with open mouths, scooping up the minute life for food. Immense numbers are taken both here and abroad, the annual catch for Europe and America being estimated at a billion and a half pounds. The young are also taken in vast quantities and are preserved as American sardines. With us most of the adults are smoked and dried.

Hippopotamus.—A genus of animals nearly allied to the pigs, hogs, and peccaries, and belonging to the order *Ungulata*. The group is represented by only one living species, the *Hippopotamus amphibius* of Africa. It is enormously bulky and unwieldy, attaining a height of five and a length of twelve feet. The feet are massive, and are terminated by four hoofed toes; the skin is very thick. The hippopotamus feeds upon vegetable substances, such as grasses and shrubs; it dives and swims with great facility.

Hornet.—A common name of the paper-making wasps or yellow jackets, well-known for their stings.

Horse.—An ungulate or hoofed mammal. The horse proper is characterized by the tail with long hairs from its base; the long and flowing mane; a bare callosity on the inner surface of the hind as well as of the fore legs; and by the head and ears being smaller and the limbs longer than in the ass and other related species. The native country of the horse seems to have been central Asia. It became early domesticated in Egypt. It is mentioned throughout the bible. The Greeks and Romans had some covering to secure their horses' hoofs from injury. In the ninth century, horses were only shod in time of frost. Shoeing was introduced into England by William I., 1066. It is believed that the original breed of horses is extinct, and that the half-wild herds existing in many places have descended from animals once in captivity. Thus, when the horse was first introduced by the Spaniards in 1537, at Buenos Ayres, there were no wild horses in America. But individuals escaping ran wild, and, by 1580, their descendants had spread over the continent as far as the Straits of Magellan. More fossil horses have been found in the new than in the old world. The horse may have descended from a striped ancestor, stripes still sometimes remaining, especially in duns and mouse-duns. His age is ascertained by examining first which teeth are developed, and then to what extent they have been worn away by use. Like other domestic animals the horse has run into various breeds. The most celebrated is the Arab horse. Great attention is given in America to the breeding of horses, and American horses have won races both in England and on the Continent.

Humming birds.—A group of small birds, of great delicacy of body and wonderfully brilliant plumage, which are entirely restricted to America. Some four hundred species are known, only three or four entering the United States, one ranging north to Canada. Their common name is due to the humming noise which they make when hovering over a flower. Aside from their beauty there is little else attractive about them. They have little intellect and are exceedingly quarrelsome.

Hyena.—A genus of carnivorous animals, containing three species, from Asia and Africa. These animals are covered with coarse bristly hair, short over the greater portion of the body, but forming a mane along the ridge of the neck. The hind legs are shorter than the fore, giving the body a slope from the withers to the haunches. In size they are somewhat larger than a shepherd's dog. The cheek muscles are greatly developed, and the large grinding teeth have great conical crowns, giving to them the power of smashing the thigh-bones of animals the size of a horse. As carrion feeders they are useful scavengers. All the species are nocturnal in their habits.

Jaguar.—A carnivorous mammal belonging to the cat family. It is rather larger than the leopard, but more elegant in form and in beauty of its skin, the ground color of which is pale brownish-yellow, variegated on the upper parts with streaks and irregular oblong spots of black. This animal is one of the most formidable beasts of prey found in America, being extremely fierce. It extends from the southern regions of the United States, through Mexico, Central America, and Brazil, as far south as Paraguay. Wooded banks of rivers are its favorite haunts, and it is said to frequent the reedy margins of lakes, seeming to have great predilection for water. It preys chiefly upon the water-hog, and is said to catch fish; but occasionally it kills horses and cattle, and even men. The jaguar is a noisy animal, roaring much at night, especially on the approach of bad weather.

Jellyfish.—A common name for numbers of marine animals belonging to the group called by naturalists *Cœlenterates*. All agree in having a more or less bell or umbrella shaped body, with a proboscis hanging down in the place of the handle of the umbrella or the tongue of the bell. The mouth is at the end of the handle and leads into a stomach which divides and sends out branches, like the ribs of the umbrella, to the margin. The

common name is due to its gelatinous consistency. Most of the species start in life as buds from attached animals, which later separate and henceforth lead a free existence, swimming by opening and closing the bell. The jellyfish are the sexual animals, producing the eggs from which the fixed stages arise. None of the jellyfish has any practical value; they have nettling organs which are used for defense and to kill their prey. In some they are strong enough to cause severe irritation to man. A general name for the group is *Medusæ*; while the fixed stages are called polyps.

Kangaroo.—A family of pouch-bearing or marsupial animals. They are the most highly developed members of the order, and occur in Australia, taking the place of deer and cattle. The family comprises over fifty species, and of these the great kangaroo may be taken as a type. This species was formerly plentiful over the plains, but it is now retiring before the colonist. The fore-limbs are small; the hind-limbs very large and thick; the head small, with rather long ears, and a long, dusky-brown muzzle; the body long, with the fur shortish but thick, and of a gray-brown tint. In height it is as tall or taller than a man. The female carries her young in a pouch on the underside of the belly. When moving quickly the hind-limbs alone are brought into action; and by means of these the animal bounds along in great leaps of from ten to fifteen feet, the body being carried in a nearly horizontal position, and the tail extended to balance it. The fore-limbs are chiefly used in handling, and with these the females lift their young, and place them in the pouch. The kangaroos are vegetable feeders.

Lamprey eels.—Eel-shaped animals of a very low position, mostly living in the sea, but going to fresh water to lay their eggs. The large sea lamprey is nearly three feet long. It has no lower jaw, but its mouth is permanently open and is lined with horny teeth by which the animal fastens itself to other fishes, on the blood and mucus of which it lives. There is a single nostril and seven gill openings on the side of the neck. They are used as food in some places. Allied are the hag-fishes, which become true parasites, entering the body of a fish through the gills and completely devouring the flesh in a single night. The hag-fishes are not common on our east coast; they are more abundant in Europe and California.

Lark.—The common name of birds comprising the genus *Alauda* and *Stremella*. The skylark of Europe, the most harmonious of this musical tribe, commences its song early in the spring, continues it during the whole summer, and is one of those few birds that sing while on the wing. When it first rises from the earth, its notes are feeble and interrupted; as it ascends, however, they gradually swell to their full tone, and long after it is lost to the sight it still continues to charm the ear with its melody. It mounts almost perpendicularly, but descends in an oblique direction, unless threatened with danger, when it drops like a stone. The meadow-lark of North America, about ten inches long, somewhat resembles the skylark in its habits, but its song is not so sweet.

Leeches.—A group of flattened worms found almost entirely in fresh water, though in Asia there are species which live on the land or in trees. At the anterior end is a sucker, and there is a second at the hinder end. The anterior sucker surrounds the mouth, and this, in some species has radiating from it three jaws, each like half of a buzz saw. With these they cut the skin of higher animals, sucking their blood through the wound. Half a century ago leeches were extensively used by physicians in the attempt to relieve certain diseases, but it has since been found out that the system needs strengthening, not weakening, and the use of leeches has ceased.

Leopard.—The *Felis pardus* differs from the panther by having small spots thickly set, while the panther's spots are large and open. The species is a native both of Africa and Asia. The body of this fierce and rapacious animal is about four feet long. It can take surprising leaps, swim, crawl, and ascend trees.

Lion.—The largest and most majestic of carnivorous quadrupeds. It is, when mature, of a nearly uniform tawny or yellowish color, paler on the under parts, the young alone exhibiting markings like those common in the *Felinæ*; the male has, usually, a great shaggy and flowing mane, and the tail, when it pretty long, terminates in a tuft of hair. The whole frame is extremely muscular, and the foreparts, in particular, are remarkably powerful, giving, with the large head, bright eye and copious mane, a noble appearance to the animal, which, with its strength, has led to its being called the king of beasts. A lion of the largest size measures about eight feet from the nose to the tail, and the tail about four feet. The lioness is smaller, has no mane, and is of a lighter color on the under parts. The strength of the lion is such that he can carry off a heifer as a cat carries a rat. The lion is chiefly an inhabitant of Africa, although it is found also in Asia, particularly in certain parts of Arabia, Persia, and India. It was anciently much more common in Asia, and was found in some parts of Europe—Macedonia and Thrace, according to Herodotus and other authors. The lion is an inhabitant of open plains in which the shelter of occasional bushes and thickets may be found. It is easily tamed, at least when taken young and when abundantly supplied with food. Lions were made to contribute to the sports of the ancient Romans; a combat of lions was an attractive spectacle, and numbers were imported into Rome, for the amphitheater.

Lizards.—A group of four-footed reptiles occurring in warmer climates, and especially abundant in the tropics. The body is covered with scales on both back and belly, while the head is covered with larger plates, called scutes. This is important when the question comes up regarding a few legless forms, which look like snakes, the presence of scales beneath, instead of broad scutes, showing at a glance their proper position. Most of the lizards are insect eaters and thus do much good. Only a single one, the Gila monster, is poisonous. Some of the larger tropical species are used as food. Some of the species have a great capacity for changing the color to correspond to the surroundings. This is most marked in the chameleons of Africa, and exists to a less extent in some of our American species which are popularly called by the same name. The change of color is due to the enlargement or contraction of small colored bodies in the skin. Among the interesting lizards are the horned toads of our southwest, the glass snakes, footless lizards whose tails are very brittle and break off at slight provocation, and then grow again; the frilled lizard of the East, which has a wondrous collar which he raises when alarmed; and the geckoes of southern Europe, which crawl about on the ceilings of the rooms, uttering the cry which gives them their name.

Llama.—An animal of Peru, allied to the camels in structure and serving as the native beast of burden, as does the camel in the old world. It is about the size of the common deer, with a long neck. It is capable of carrying about one hundred and fifty pounds. Allied is the alpaca, which is kept for the hair, used as a textile material and greatly in vogue some forty years ago. When the hair was first sent to England no one would touch it on account of the difficulty of working it satisfactorily. Titus Salt solved the problem, winning a fortune and the knighthood. Llamas and alpacas defend themselves by spitting, and biting, and many a visitor to zoological gardens has received a missile from the mouth of one of these beasts. Llamas and alpacas are only known in a state of domestication; wild relatives are the vicuna and the guanaco of Peru. Possibly the tame forms have descended from these.

Lobster.—The most important crustacean, one species occurring on our east coast, another on the coast of northern Europe. The body is divided into two regions, the anterior bearing, besides the parts used in taking food, a pair of large pincers and four pairs of walking feet. At the front of the head are two pairs of feelers, which are sensory, and a pair of eyes on the ends of short stalks. The lobsters are fond of decaying fish and are among the scavengers of the sea. They are caught in large traps, called lobster pots, made out of lath and baited with decaying fish. The number taken is enormous, and overfishing has greatly reduced the numbers in the sea, so that almost everywhere laws have been passed to protect them. The annual catch on the New England coast is estimated at about thirty million pounds, the average weight of a lobster being between two and three pounds. Farther south on our east coast, in California and the Mediterranean a different animal is called lobster.

Macaw.—A genus of beautiful birds of the parrot tribe, distinguished by having their cheeks destitute of feathers, and their tail-feathers long. They are natives of tropical South America. The largest and most splendid is the great scarlet or red-and-blue macaw. The great green macaw and the blue-and-yellow macaw are somewhat smaller.

Mackerel.—An important food fish occurring in the North Atlantic and characterized by the slender shape, the series of little finlets on the tail and the deeply notched caudal or tail fin. It is taken both by hooks and by seines. Some are eaten in the fresh condition and some are salted. Formerly it was very abundant on the eastern coasts of the North Atlantic states, but recently it has been comparatively scarce, possibly the result of overfishing. It goes in large schools. Allied is the Spanish mackerel of our southern waters and the large horse mackerel, which is not very abundant with us, but which is more common in the Mediterranean, where it is called the tunny. Large individuals may weigh over half a ton. It is used extensively as food, the chief fisheries being around Sicily.

Magpie.—A bird belonging to the crow family. There are several species, two of which belong to America. The common European magpie is about eighteen inches in length; the plumage is black and white, the black glossed with green and purple; the tail is stout, and the tail is very long. The magpies continue in pairs through all the year, and prey on a variety of food, chiefly animal. They are determined robbers of other birds' nests, destroying the eggs and young birds. In captivity they are celebrated for their cunning instincts, their power of imitating words, and their propensity to purloin and secrete glittering articles.

Mammals.—One of the great groups of vertebrates, including the forms commonly called animals. The term animal really has a much wider meaning and includes all living forms that are not plants. Thus corals, snails, clams, insects, fishes and the like are just as much animals as are the mammals. A mammal is readily recognized by the hair (which occurs nowhere else), the warm blood, by bringing forth the young alive and nourishing them with milk secreted by the mother. To the statement that they have living young and do not lay eggs the only exceptions are three small forms found in Australian regions. These form a group called monotremes. Next above them are the marsupials, in which the young are very immature when born. Therefore they are taken into a pouch on the ventral side of the mother, where they remain until able to shift for themselves. To this group belong our opossum; all of the others, including the kangaroos, wombat, sugar squirrel, etc., belong to Australia and the adjacent islands. Next are the insect eaters or insectivores, including our moles and shrews; then come the rodents or gnawers (squirrels, rats, mice, porcupines, rabbits, beaver, etc.), in which the front teeth are fitted for gnawing. The ungulates are the hoofed animals and are subdivided according as the number of toes are odd (horse, ass, tapirs, rhinoceros) and the even-toed group (cattle, sheep, deer, antelope, camels, etc.). The elephants come next, at present restricted to Asia and Africa, but formerly spread over Europe and America in the species known as the mammoth and the allied mastodon. Another group is the bats, the only flying mammals, which have a wing of skin supported on the extremely elongated fingers. All of our species feed on insects, but in South America there is one which is said to suck blood (vampire) and in Asia there are bats which eat fruit. Whales form an additional group, wonderfully adapted for aquatic life, as also are the sirenians (manatee and dugong). The carnivores are the flesh eaters, with teeth adapted to cutting flesh and cracking bones. Here are the bear, weasels, otter, mongoose, dogs, foxes, wolves, and the long line of cats, while the seals and sea lions form an aberrant aquatic side branch. Lastly come the primates, the group including the monkeys, apes and man.

Manatee.—The sea-cow, a gregarious aquatic mammal of the genus *Manatus*, order *Sirenia*, found on the coasts of Florida and tropical America. They generally frequent the mouths of rivers and estuaries, and feed on algæ, such littoral vegetations as they can reach at high tide. Their anterior limbs or swimming paws are furnished with nails by means of which they drag themselves along the shore. They are large, awkward, whale-like animals, attaining a length of eight to ten feet as a rule, but sometimes growing to twenty feet. The skin is grayish-brown, sparsely covered with hairs. Their flesh is excellent, and they furnish a soft, clear oil which does not become rancid. An ally with similar habits is the dugong of Australia.

Mandrill.—A species of baboon distinguished by the short or rudimentary tail, by the elongated, dog-like muzzle, and by the presence of buttock callosities which are generally brightly colored. It has cheek protuberances colored with stripes of brilliant red and blue. The mandrills inhabit western Africa, where they associate in large troops. Full-grown males measure about five feet; they are exceedingly strong and muscular, and fierce in disposition.

Mice.—Small mammals of the group of rodents, belonging to the same genus (*Mus*) as the rats. Our common house mouse is an immigrant from Europe. Its habits are well known. There are some interesting varieties, among them the white or albino mice, which are interesting as pets, since they are less apt to bite than the wild stock. The Japanese dancing mice have the queer habit of turning around every few seconds. The field mice are different species.

Moccasin.—A poisonous snake of the warmer United States, related to the rattlesnake, but lacking the rattles characteristic of the latter. It is more aquatic than its relative the copperhead, frequenting streams and marshy places in search of frogs and other animals on which it feeds. Its bite is dangerous.

Mocking bird.—A genus of the family *Turdidæ*, or thrushes, exclusively American in its distribution, but ranging widely over the continent. These birds are remarkable for their power of song. The best known species is *Mimus polyglottus*, which has marvelous power of voice, and is able to imitate almost any species of animals, as well as noises produced artificially. Its own song is loud, full, and exceedingly varied. In plumage it is decidedly somber, being of a general ashy-gray hue, paler beneath; its sweet and varied notes, and its faculty of imitation, render it a prime favorite.

Mongoose.—One of the small carnivorous mammals of India, noted as a destroyer of snakes and accordingly encouraged. It does not hesitate to attack the most venomous serpents, killing them by agility and having no protection against their poison except its hair and ability to dodge the blows. An

excellent description of their habits is given in Kipling's *Riki-tiki-tavi*. Some years ago mongoose were introduced into Jamaica to rid the island of snakes. The result is an additional evidence of the danger of interfering with nature. The animals killed off most of the snakes and then turned to birds, including the common fowls. Bird and snakes being thus reduced the insects have had it all their own way, and now something is desired to rid the island of the mongoose. The mongoose and its near relative, the ichneumon of northern Africa, are gray and a little larger than a rat. All make interesting pets.

Monkeys.—A common name for certain members of the mammalian group of primates, but no scientific definition is possible, for the term is used with very different meanings. All of the American monkeys are true monkeys, but in the old world there is no line between ape, baboon, gibbon, macaque and monkey. Most of the American species (the marmosets excepted) have one more molar tooth on each side of each jaw than does man, but the forms of the eastern continent are like man in that respect, as they are in having nails rather than claws on at least some of the fingers and toes. Many of the new world species have prehensile tails, but this never occurs in the others, the tail exhibiting a tendency to be reduced, at last disappearing in the man-like apes. Then the American apes have the nostrils widely separated and opening sidewise, while in the others they open in front and downward as in man. Monkeys are extremely interesting because of their caricature of man. Some make most interesting pets, and others are disagreeable, in looks temper and habits. Most of them are vegetarians for most of their diet, but they are fond of eggs and young birds, as well as insects. None stray far out of the tropics and only one enters Europe at Gibraltar.

Mosquitoes.—A group of two-winged (dipterous) insects, distantly related to the common house fly. The animals usually lay their eggs in water; from them hatch out the larvæ, which, from their motion in the water, are commonly called wrigglers. When fully grown, the wrigglers come to the surface, the skin splits down the back, and the perfect insect emerges. As adults they live on blood, which they suck from punctures which they make by the proboscis. In order to stimulate the flow of blood they inject a little of their poisonous saliva into the wound. This causes the itching which was formerly thought to be the worst effect of their bite. Within the past few years it has been found that mosquitoes are the means of inoculating man with malaria, yellow fever and possibly other diseases. They get the germs from some one affected with the disease, and, after a few days, are able to pass them along with the saliva. This discovery has led to warfare against the mosquito and to preventing the attacks by means of screens. Not all species are able to spread these diseases. Thus only *Anopheles* can convey malaria, mosquitoes, which raise the hind end of the body when they bite. In the same way yellow fever is conveyed by *Stegomyia*. The commonest mosquitoes, species of *Culex*, are not known to convey disease. The best ways of eradicating these pests are the emptying of all possible breeding places, and when that is not possible, by covering the top of the water with kerosene.

Moths.—The common name of certain insects belonging to the *Lepidoptera*. Like all *Lepidoptera* they have scaly wings, the fore wings larger than the hind, and a sucking tube on the lower side of the head. They differ from the others of the group, the butterflies, in that the antennæ or feelers on the front of the head never end in a club, but, whether feathered or not, they taper to a point. When at rest they carry the wings horizontally instead of folded over the back, and with few exceptions they fly at night. Only a very few feed on anything except vegetable matter. The larvæ of the clothes moth eat woolens, silk and other animal matter. With the vegetable food of the larvae, the caterpillars, the group does great damage, the worst pests with us being some of the species that have been recently imported, like the gypsy moth, the brown tail, and the leopard moth. Our older forms, like the codling moth and the army worm, and the various measuring worms, are of far less importance. On the other hand, only a few are of any actual value, among them the silkworm, which more than repays its depredations on the mulberry trees by the silk which it spins from glands near the mouth.

Mule.—See *Ass*.

Mouse.—The name given to certain species of small mammals, belonging to the order *rodentia*, or gnawing animals. The *common house mouse* is too familiar to need any description; the *harvest mouse* is the smallest and at the same time one of the prettiest of mammals. The *long-tailed field mouse* frequents fields and gardens. The *dormouse* belongs to another family. *myoxidæ*, of the same order.

Musk-deer.—A genus of deer of the family *Moschidæ*, distinct from the family *Cervidæ*, or true deers. Their habitat is Asia, though one species is found on the west coast of Africa. The typical species is found in the elevated table-lands of central Asia, particularly Tibet. These animals attain the size of a young roe-deer, and the upper jaw bears prominent canine teeth. The males alone yield the musk, which is secreted by an abdominal gland of about the size of a hen's egg. The Tibet musk is most in repute, that known as Russian or Siberian being inferior in quality. Besides its familiar use as a scent, musk is employed medicinally as an antispasmodic. There are six or seven other species of moschus, two of which are very diminutive, and lack the musk gland.

Musk-ox.—An animal closely related to the sheep and only remotely to the ox. Its body is covered with tufted hair, brownish in color and of great length. The hair about the neck and shoulders is so thick as to give the animal a humped appearance. The musk-ox is active and agile. The horns, broad at the base and covering the forehead and crown, curve downward between the eye and the ear, and then upward and slightly backward. The horns of the female are smaller than those of the male. The ears are short, the head large and broad, the muzzle blunt. The average male will weigh about four hundred pounds. The food consists of grass, lichens, etc. The musk-ox inhabits the arctic regions of America north of the sixtieth degree of latitude. The flesh is pleasant to the taste, though it smells strongly of musk, the odor of which is also diffused from the living animal.

Nightingale.—A genus of birds belonging to the order *Passeres*, of which there are two species, very similar in plumage, inhabiting Europe and North Africa. One of these is a summer visitant to the southern and eastern counties of England arriving about the middle of April. The plumage of this delightful songster is of a somber hue, being on the upper surface of a reddish brown, redder on the head and rump; the tail a lighter tint; the throat, lower part of the breast, and abdomen, grayish-white; the lower neck and sides pale grayish-brown. The favorite haunts of this bird are copses and hedgerows, and its food consists of insects. The nest is composed of dry leaves, lined with grass, roots, and hair. The eggs are four or five in number, and of a uniform olive-brown, tinged with grayish-blue.

Nutria.—Another name of the coypu, a South American animal about the size of the beaver, and, like it, furnishing a fine fur; yet it is first cousin to the porcupines. It is semiaquatic, swimming well with its webbed feet.

Octopus.—A genus of mollusks with a rounded body, and a small head bearing a pair of well-developed eyes, the mouth surrounded by eight long arms, each arm bearing numbers of suckers by which the animals hold their prey. Inside the mouth are a pair of jaws, shaped much like those of a parrot. Most of the species are small, possibly averaging a weight of five pounds, but on the Pacific coast (Alaska) some can spread nearly twenty-eight feet. The octopus is eaten extensively in the Mediterranean countries. The stories of large octopi attacking man are very doubtful.

Okapia.—A recently discovered mammal, allied to the giraffe. It is found in the forests of the Kongo (Africa). The head is fawn color, the body dark brown and the legs striped with black and white. The first individual discovered had no horns, but others since found have small horns in both sexes.

Opossum.—A family of mammals, belonging to the order of pouch-bearers, which range throughout the wooded districts of America, from the Middle states to the La Plata river of South America. One species is found from Florida to the Hudson river, and west to the Missouri. They are rat-like in form, the largest species about the size of the common cat; they have a long tail, which is almost destitute of hair, and is very useful from its prehensile nature, enabling the animal not only to hang by it, but also to climb and descend trees. They are sly and live chiefly in trees, lying up in the daytime, and at night roaming in search of their food, which consists of insects, small reptiles, birds' eggs, etc.

Orang-outang.—The Malay name (it means man-of-the-woods) for a large man-like ape found in Borneo and Sumatra. It never reaches a height much over four feet, but the arms of one four feet two inches spread seven feet nine inches, and when erect the hands nearly touched the ground. The orang lives almost entirely in trees. It never jumps, but progresses through the forest by swinging itself from limb to limb. The skin is dark brown and the scanty hair black. The young are more like the human being than is the adult. As the age increases the jaws protrude more and more and the disproportionate length of the arms increases.

Orioles.—A family of birds which inhabit the old world, while one species, the golden oriole, is a summer visitant to central Europe. The male of this species has a brilliant yellow body and black wings and tail. The female is a greenish hue, streaked with dusky lines. It is about the size of the common thrush. The name oriole is also applied to several American birds, of which the Baltimore oriole, a bird ranging from Canada to Mexico, is a well-known example. It has the head, throat, wings, and upper back black; the lower back and all the under parts bright orange, deepening into vermilion on the breast.

Ostriches.—A family of birds inhabiting the southern hemisphere, the true ostrich occurring in Africa, the rhea living in South America, and the emu in Australia. All are flightless birds, and as the wing muscles are reduced there is no keel on the breastbone. The African ostrich has but two toes, the others three. The rheas and the emus may be dismissed with mere mention, the rheas furnishing the feathers used in feather dusters. The African ostriches furnish the well-known plumes and are bred for the purpose, the export of feathers from Africa amounting to over five million dollars a year. There are now ostrich farms in South America and California. The eggs are laid in the sand and in nature are incubated by the heat of the sun. The plumes are cut (not pulled out) once a year.

Otters.—Carnivorous mammals related to the bear, which furnish valuable furs, the skins of the sea otters of the Pacific coast being the most valuable. All are fond of the water, the sea otter spending most of its time in the sea.

Owls.—The popular name of a group of nocturnal birds of prey. This order is a sharply-defined one. The head is extremely large; the eyes huge and directed forward; the bill short and stout; the apertures of the ears very large; the legs feathered: the toes four in number, the outer one capable of being directed backward. The plumage is remarkably soft, the feathers of the face forming disks around the eyes. The owls are cosmopolitan, ranging over the whole globe. They feed on small mammals, birds, fishes, and insects, swallowing the hair, bones, feathers, and scales, which they afterward disgorge in the shape of pellets. They nest on the ground, among rocks, in hollow trees, and in buildings, while some resort to the old nests of other birds. They lay from two to five roundish white eggs.

Oyster.—A familiar shellfish, possibly the most valuable of all of the mollusks. There are various species in all parts of the world, but the best is the American species, which now occurs from Cape Cod to the Gulf of Mexico. Formerly it extended to the coast of Maine, and even now there are scattered beds in the Gulf of St. Lawrence. The oyster grows in shallow water, fastening its shell to some rock or shell, and in this way large beds are formed. They are also planted; that is, the young are taken and placed in favorable situations for rapid growth. The great enemies of the beds are the "drill," a small snail that bores holes through the shell in order to obtain the flesh, and the starfish, which destroy large numbers. The oyster contains but comparatively little nourishment, though eaten extensively. The European oyster is smaller than ours and has a coppery taste. Our species have the sexes separate, in the European species they are united in the same individual. Allied to the true oysters are the pearl oysters, especially abundant around Ceylon. These have the interior of the shell lined with mother-of-pearl, and when foreign particles get between body and shell they are covered with the same substance, thus forming the pearls used for adornment. These oysters are obtained by diving; the animal matter is allowed to rot, leaving the pearls behind. The shell is also of value, furnishing material for knife handles, buttons, etc., though most of our pearl buttons are now made from the shells of fresh-water mussels from the Mississippi valley.

Pangolins.—A group of ant-eaters from Asia and Africa in which the body is covered with small scales arranged somewhat like those of a pine cone. Some of them are partially arboreal and are aided in climbing by a prehensile tail.

Panther.—Another name for the leopard, a carnivorous animal measuring about six feet and a half from nose to tail, which is itself about three feet long. The manner it seizes its prey, lurking near the sides of woods, etc., and darting forward with a sudden spring, resembles that of the tiger. The puma, or cougar, is sometimes called the American panther.

Parrot.—The name applied in a general sense to all the members of the order *Psittaci*, which comprises the parrots proper, the cockatoos, paroquets, macaws, lories, nestors, etc. The true parrots have the upper mandible toothed, and longer than high, and a short, rounded tail. These birds combine with the beauty of their plumage a nature of great docility, and have the faculty of imitating the human voice in a degree not possessed by other birds. They are found chiefly in Africa, from whence we get the gray parrot, the best talker. South America, which is particularly rich in species, furnishes the well-known green parrot; and North America is the home of a single species, the Carolina parrot. The parrots are forest birds, and are adepts at climbing, using for that purpose both the feet and the bill. Their food consists of seeds and fruits.

Partridge.—A European member of the grouse family, from which the name has been transferred to the quail in the Southern states, the ruffed grouse farther north.

Peafowl.—Members of the group of pheasants, coming from Asia, but now domesticated on account of the brilliant tail feathers of the male in all parts of the world, the female having a smaller tail and more inconspicuous colors.

Peccary.—A genus of quadrupeds, allied to swine, confined to America. In general form they

resemble small pigs. The best-known species are the collared peccary and the white-lipped peccary. The former occurs abundantly in South America, and also extends into North America, living generally in small flocks, which do not hesitate to attack with their tusks any one who meddles with them. Their food consists of maize, potatoes, sugar-cane, and similar materials; and cultivated fields suffer much from their raids. The flesh is savory, and less fat than pigs' flesh. The peccary possesses a glandular sack, situated in the loins, which secretes a strongly-smelling fluid. This must be cut away immediately on killing a peccary, to avoid contaminating the flesh.

Pelicans. — Fish-eating swimming birds of the warmer regions, with a large pouch of skin between the halves of the lower jaw. In fishing they swim, striking the surface of the water with the wings, scooping the fish into the pouch, and later retiring to the shore to devour them. There are two species in the Gulf states, one white, the other brown in color.

Penguin.—The name of birds which form the order *Impennes*. Their wings are very small and hard; are covered with small stiff feathers of a bristly nature, and are absolutely useless for flight; the birds swim well, using both their webbed feet and their wings. There are about eighteen species, entirely confined to the Southern Ocean and the antarctic regions, where they represent the auks and divers of the northern seas. During the breeding season they resort to rocky islands in immense numbers, and stand erect with their eggs under them. Their food consists chiefly of fish.

Perch.—The common name for several species of fish in both fresh and salt water, all of which are characterized by having spines in the fins and hard scales. The name properly belongs to the fresh-water species, which are of some value as food.

Petrels.—A species of birds related to the albatrosses and varying in size from Mother Cary's chickens, six inches long, to the fulmars, three feet in length. All of them live on the high seas, and many of them will follow a ship for days for the scraps thrown overboard. At night they follow close behind the stern of the vessel.

Pigeons.—A group of birds, including some three hundred species, distributed in nearly all parts of the world, all of which are so much alike that no one is in any doubt about the membership of any form in the group. Most of the domesticated varieties, with their great differences in form, differences which in other groups would be considered as distinct species or even genera, are derived from the rock dove. Among the interesting species are the passenger pigeon, which eighty years ago formed immense flocks over the whole of the eastern part of our country, but which are now nearly or quite extinct. The mountain witch of Jamaica is one of the most beautiful of birds. The largest member of the group was the dodo of islands in the Indian ocean, which became extinct before 1700, partly because it lacked the power of flight. It was somewhat larger than a turkey, with the same external appearance but with a head and a part of the legs, like those preserved in the museum at Oxford.

Polecat.—A name common to several species of the weasel family. The common polecat is found in Europe. It is about seventeen inches long, the tail six inches. The color is dark brown. It is nocturnal, sleeping during the day and searching for its prey at night. It is destructive to poultry, rabbits, and game, so that in Britain it is being rapidly exterminated. It has glands secreting a fetid liquor, somewhat like that of the American skunk, which it ejects when irritated or alarmed. Its fur, which is imported in large quantities, is known as fitch. Its hairs form superior artists' brushes.

Porcupines.—A group of large rodents characterized by having some of the hairs modified into large spines or quills. These ordinarily lie flat, but when disturbed the animal rolls itself into a ball, when all of the quills with their sharp points stand outward, forming a very efficient defense. The quills come out very easily but there is no truth in the statement that the animals have any power to shoot them. Our American species has quills about three inches in length. It feeds upon the bark of trees, which it climbs with great ease, and it may do great damage. The species found in southern Europe and northern Africa lives in holes in the ground and has quills a foot in length and as large in diameter as a lead pencil.

Porgy.—A food fish on the eastern coast from Cape Cod south, known also as scup. It should not be confounded with the pogy or menhaden, one of the herrings, which is taken extensively for oil.

Porpoise.—A very small whale belonging to the group of dolphins, usually some four or five feet in length. It is usually blackish above, lighter or even white beneath. It feeds on fish, and schools of porpoises are often seen following shoals of small fishes. Like all of the whales the porpoises are compelled to come to the surface to breathe. They are one of the common sights on an ocean voyage.

Prairie dog.—Small rodent animals of the squirrel family, found on the plains east of the Rocky mountains. They resemble their allies, the marmots, in appearance, and have well-developed claws on all the toes of the fore-feet; shallow cheek-pouches. The best known species is about one foot in length, and has a tail of about four inches. On the upper surface it is reddish-brown variegated with gray. These animals live together in great societies on those portions of the prairies where the buffalo grass grows luxuriantly. Here they excavate burrows in the ground in contiguity to each other, and, when the little creatures are out, quite a busy scene is presented. The name is given on account of a resemblance between its cry and the bark of a small dog.

Puma (or cougar).—A carnivorous animal peculiar to America, where it ranks next to the jaguar in importance as a destructive or dangerous creature. It is known as the American lion, but it is considerably less in size, and lacks a name. Its length is about fifty inches, exclusive of a tail of twenty-six inches; its height is about two feet. The range is extensive, though it is less abundant in North than in South America, where it haunts a variety of situations, equally at home in dense forests, open plains, and the Andes to at least 10,000 feet. It is cowardly, and is not regarded with fear by man. Unlike most of the larger cats it is remarkably silent.

Python.—A genus and family of serpents allied to the family of boas. They are not venomous, but kill their prey by compression. The pythons belong exclusively to the old world, and are of enormous size, sometimes attaining a length of thirty feet. A rudimentary pelvis and traces of hinder limbs exist, terminating externally in a hooked claw. The head exceeds the neck in thickness, and the mouth is extremely large. Aided by their prehensile tails, the pythons suspend themselves from the branches of trees and lie in wait near water for animals which come to drink.

Quail.—A common name of different species of grouse.

Raccoon.—A small family of plantigrade carnivorous mammals, bear-like in appearance and of small size. The raccoons are peculiar to America, where they range from British Columbia and Canada to Paraguay. The common raccoon is a pretty animal, about the size of a cat, but much stouter; it has a long brown or grizzled coat, a ringed and bushy tail, and a turned-up nose. Its legs are short, and are armed with strong claws, useful for digging or climbing. In its attitudes it is somewhat monkey-like, and usually sits upon its haunches when feeding, holding its food in its forepaws. It has a curious habit of washing articles given to it, and of soaking food in water before eating it. Its skin is valued as a fur.

Rats.—The common name of a group of rodents which have accompanied man over the earth. Formerly we were troubled by the black rat, but about two hundred years ago the much fiercer gray rat (also called Norway rat) appeared in eastern Europe from Asia, and has since overrun a large part of the earth, practically exterminating the black rat. White rats are albino varieties of the black rat. The damage done to human possessions has always been so great as to warrant all sorts of measures for their extermination, but more recently the indictment against them has been more severe, as it is found that they are important means of distributing disease, especially the bubonic plague, which is apparently the same as the black death that made such ravages during the middle ages.

Rattlesnakes.—A genus of poisonous snakes of America in which, when the skin is shed each year, a portion of the old skin remains, in a dry condition, attached to the end of the tail, this forming the rattle. When excited the snake vibrates the end of the tail rapidly and the dried rings of skin make the noise. Usually the approximate age of the snake may be known by counting the rings of the rattle, one for each year and one for the button; but this is not always true. The poison is injected by means of the poison fangs, two long teeth in the upper jaw, which are tubular; the poison gland is in the roof of the mouth.

Redbreast.—A bird of the family *Sylviadæ*, familiarly known in the British islands and throughout most of Europe. It is generally designated as the "robin redbreast," or more briefly "a robin." Its length is about five and three-fourths inches, but it is of a rounder and fuller form than many of the *Sylviadæ*, the slenderness of its legs rather strikingly contrasting with the form of the body. The wings are rather short. The tail is scarcely forked. The general color is olive-brown, and the reddish orange-breast is a conspicuous characteristic, particularly of the male. The name robin is improperly given in the United States to a species of thrush.

Reptiles.—A great group of vertebrates, including lizards, snakes, tortoises, crocodiles and a large number of extinct species, some of bizarre shapes and enormous size. Reptiles are characterized by having a scaly skin, breathing by lungs, never by gills, and by having blood which is about the temperature of the surroundings, commonly called cold blood. There are several other peculiarities in internal structure, some of which may be mentioned. Thus the heart has three chambers, the third not being completely divided except in the alligators. There are two aortic arches carrying the blood back from the heart. The skull articulates to the vertebral column by a single rounded knob (condyle). All produce eggs, but some of the snakes retain them in the body until they are hatched. Reptiles and birds resemble each other in several points, so that they are united in a group of *Sauropsida* (reptile-like). Snakes and lizards are closely related, both having the scales merely horny plates on the outside of the skin; they have a movable bone inserted between the lower jaw and the skull. In the crocodiles and turtles this *quadrate* bone is present but immovable. The turtles have the body inclosed in a bony case, the upper half being formed of the ribs united to the skin, the lower of plates developed in the skin. In the crocodiles the scales are strengthened by the formation of bone beneath the horny portions. Most reptiles have teeth, but all of the turtles lack them, the jaws being covered with horny sheaths. Some of the snakes and a single lizard (the Gila monster) are poisonous, the poison glands being developed in the mouth.

Rhinoceros.—The name of a family of mammals, represented by nine living species, characteristic of Africa south of the Sahara, India, Borneo, and Java. They have large unwieldy bodies; short thick legs, terminating in large pads, with hoof-bearing toes; large elongated heads, with a long horn or horns springing from the snout in existing forms; small eyes and ears, and short tails. Their hide is extremely thick. Five species belong to Africa, all possessing two horns. Of these, the white rhinoceros is the largest, attaining to a length of over twelve feet and a height of nearly six feet; but the black rhinoceros is best known. The Asiatic species are four; the hide has much the appearance of armor plates. They are smaller and two of the species possess double horns, and two a single one. The Indian rhinoceros, a one-horned species, is the one usually seen in menageries in this country. It leads a tranquil, indolent life, wallowing on the marshy borders of lakes and rivers. Owing to the keenness of its smell and hearing, the rhinoceros cannot be easily attacked; but, when brought to bay, it charges with great fury and impetuosity.

Sable.—A carnivorous mammal, nearly allied to the common marten and pine marten, found chiefly in Siberia and Kamchatka, and hunted for its fur. Its length, exclusive of the tail, is about eighteen inches. Its fur, which is extremely lustrous, and hence of the very highest value, is generally brown, grayish-yellow on the throat, and with small grayish-yellow spots scattered on the sides of the neck. It is densest during winter, and owing to the mode of attachment of the hairs to the skin it may be pressed or smoothed in any direction. Two other species of sable are enumerated, the Japanese sable and a North American species. The Tartar sable is the name given to a species of the weasel genus found in northern Russia and Siberia, and the pekan of North America is sometimes known as the Hudson bay sable. The skins of all these varieties are frequently dyed and otherwise manipulated to imitate the true Russian sable. Sable hair is also used in the manufacture of artist's pencils. Sable fur has been of great value from early times.

Salamanders.—A group of amphibians which have four legs and a well developed tail. Like all of the amphibia, they breathe when young by means of gills, some retaining them through life. They may be distinguished from lizards, with which they are often confused, by the smooth skin, in which there are never any scales. Most of the species lay eggs, usually in the water. From these the gilled young hatch out. They are carnivorous or insectivorous. In the adult stage, some are aquatic, but more live on the earth burrowing beneath the soil or under stones, seeking their prey at night. None are poisonous, except that they have glands in the skin which secrete an acrid juice. Our largest species is the mud puppy (*Necturus*) of the Mississippi basin; the largest living species is the giant salamander of Japan, three feet in length.

Salmon.—A well-known fish, forming the type of the family *Salmonidæ*. The salmon inhabits both salt and fresh waters, and ranks among the food-fishes. It generally attains a length of from three to four feet, and an average weight of from twelve to thirty pounds, but these limits are frequently exceeded. The adult fish is a steel-blue on the back and head, becoming lighter on the sides and belly. It usually continues in the shallows of its native stream for two years after hatching, and during this period it attains a length of eight inches. When the season of its migration arrives, the fins have become darker and the fish has assumed a silvery hue. It is now known as a *smolt* or *salmon fry*. The smolts now congregate into shoals and proceed seaward. On reaching the estuary they remain in its brackish water for a short time and then make for the open sea. Leaving its native river as a fish weighing, it may be, not more than two ounces, the smolt, after three months' absence, may return to fresh water as a *grilse*, weighing four or five pounds. In the grilse stage, the fish is capable of depositing eggs. After spawning in the fresh water the grilse again seeks the sea in the autumn, and when its second stay in the ocean is over it returns after a few

months' absence as the adult salmon, weighing from eight to ten pounds. The salmon returns as a rule to the river in which it passed its earlier existence. The fertility of the fish is enormous. Salmon are caught by the rod, and by means of nets, the fishings being regulated by law. There are important fisheries in some European and North American rivers. In Europe the fish is found between the latitudes of 45 and 75 degrees, in North America in corresponding latitudes. The flesh when fresh is of a bright orange color, and is of highest flavor when taken from the sea-feeding fish. In the waters of northwestern America are several salmon belonging to a distinct genus, including the quinnat or king-salmon, blue-back salmon or redfish, silver salmon, dog salmon, and humpback salmon. The quinnat has an average weight of twenty-two pounds, but sometimes reaches 100 pounds. Both it and the blue-back salmon are caught in immense numbers in the Columbia, Sacramento, and Frazer river (especially in spring), and are preserved by canning.

Sand dollar.—A flattened sea urchin on the Atlantic coast. On the upper surface are five petals recalling those of a flower, and the whole body is covered with small spines. These contain a dark brown or purple color, and the fishermen grind them up to make an indelible ink.

Scale insects.—A group of hemipterous insects (bugs) in which the body takes the shape of a scale. All are parasites on other vegetation. They have a slender proboscis with which they bore into the skin or bark, and remain there the rest of their life, sucking the juices of the plant. They do great damage, some, like the recently introduced San Jose scale, attacking all sorts of fruit trees, and killing them in a short time. The scale insects are among the most difficult to combat, and can only be got rid of by sprays and by gases. They are distributed by the feet of birds.

Scorpions.—Spider-like animals in warmer countries. They have four pairs of legs and a pair of large pincers, as well as a small pair on the anterior half of the body, while the hinder portion consists of at first a broad region, followed by a narrower one, the whole terminated with a sting, with which a poison gland is connected. The animal strikes by bending the end of this tail over the back. Its sting is very painful, but rarely if ever is it fatal. Scorpions occur as far north as Nebraska, but are more common in the tropics. They bring forth living young and care for their brood for a while.

Sea anemones.—Marine animals related to the corals, common beneath tides and lower on all coasts. They are cylindrical animals, with a mouth surrounded by tentacles at one end. Inside there is a single cavity which serves as a stomach and whose branches run to all parts of the body, thus distributing the food like a blood vessel. The colors, especially in the tropics, are variable, and often gorgeous.

Sea cucumbers.—Marine animals, sort of second cousins to the sea urchins and rather more distantly related to the starfish. As the name indicates, they are shaped like a cucumber, and hundreds of little feet on the side heighten the resemblance, as they recall the spines on the vegetable. Inside they have a coiled intestine, usually filled with mud and the contained vegetable and other debris. With us no use is made of the animals, but they are taken in great numbers in the South Seas, and sent to China, where, as *trepang*, they form an ingredient in soups.

Seals.—A family of aquatic carnivores, in which the legs have become modified into flippers, of little use in progressing on land, but, with the tapering body, are well adapted for life in the water. All species are carnivorous, and they make great havoc in schools of fishes. Most of the species have no external ears. To this group belong the common harbor seal of the east coast, which is extensively hunted farther north for the skins, which are used for leather. On the Pacific coast are the eared seals, one of which is the gigantic sea lion, familiar near San Francisco. Another is the fur seal of Alaska. This breeds on one of the Aleutian islands and has been very carefully preserved, but lately has been sadly reduced by piratical pelagic sealing. When removed, the skin has none of the soft appearance so familiar. It has to have all of the long hairs plucked out, leaving the under wool. In order to protect its herds, the United States government absolutely forbids the importation of sealskins or articles made from them.

Sea urchins.—Radiated animals which are usually shaped like a flattened sphere. They have a mouth, surrounded by five chisel-shaped jaws at one pole, while the whole outer surface is covered with slender movable spines. Between the spines are numbers of slender, flexible, tubular feet, which pull the body along, while the spines act more like true feet. The animals feed mostly on seaweeds. They have no economic value with us, but in Europe the eggs of some species are eaten, forming part of the *frutti di mare* of every Italian seaport.

Shad.—A migratory fish of great food value which ascends all of the rivers of the eastern coast every spring to lay its eggs. It is closely related to the herring, but is much larger, and were it not so full of bones it would stand very near the head of food fishes.

Sharks.—A group of very simple fishes, which have only a cartilage skeleton, no bone being developed anywhere in them. They have the gill openings on the side of the neck separate, and in all of the common species the mouth is on the lower side of the head instead of at the tip, as in ordinary fishes. The tail has unequal lobes, the upper lobe being much the largest. There are always four paired fins and one or more on the back. The sizes of the sharks varies from the smaller dogfish, about two feet long, to the great basking shark, some forty feet in length. Most of the species are very voracious, but the tales of man-eating are often exaggerated, although occasionally they may occur. Some of the largest species feed exclusively on shellfish. The flesh of several species is good to eat, but they are mostly neglected in America. The livers are very rich in oil, which commands a good price for use in dressing leather. In some species the skin has small spines and was formerly used (it was called shagreen) instead of sandpaper. Skin with larger plates is sometimes used in the manufacture of pocketbooks, etc.

Sheep.—The common name of the genus *Ovis*, belonging to the hollow-horned ruminant family. Naturalists are by no means agreed as to what was the original breed of this invaluable animal, which is in modern farming almost equally important for furnishing the farm with a dressing of manure, and the community at large with mutton, clothing and other necessaries of life. The leading fact in the geographical history of this genus is that it occurs both in the new and the old world, whereas the goat tribe are naturally unknown in America. It is usually regarded by naturalists as being not only specifically, but generically, distinguished from the goat tribe; but some authorities, on the other hand, are inclined to believe that the generic separation is founded chiefly on characters which have arisen from the influential power of man. In a state of nature, the sheep is scarcely less active or energetic than the goat; its dimensions are greater, its muscular strength at least equal both in force and duration. It is also an Alpine animal, and among its native fastnesses bounds from rock to rock with almost inconceivable swiftness and agility. The four unsubdued races of sheep are as follows; The musmon; the bearded sheep of Africa; the argali, or wild sheep of Asia; and the Rocky mountain sheep of the United States. The latter is larger than the largest varieties of domestic breeds. The horns of the male are of great dimensions, arising a short way above the eyes, and occupying almost the entire space between the ears, but without touching each other at their bases. The hair in this species resembles that of a deer, and is short, dry, and flexible in its autumn growth; but becomes coarse, dry, and brittle as the winter advances. The most important breed of sheep as regards the texture of the wool is the merino, in modern times brought to the greatest perfection in Spain, though their originals probably formed the flocks of the patriarchs thousands of years ago, and have been the stock of all the fine-wooled sheep. They readily form cross breeds, called demimerinos, which have been brought to great perfection in France, whence, as well as from Spain, they have been imported into the United States.

Shipworm.—Not a worm at all but a mollusk, allied to the clams, which has a wormlike body and which lives in timber in the sea. The animal burrows in the wood, nobody knows how, frequently riddling it, and thus doing great damage to piles and to wooden ships.

Shrimp.—The common name of a large number of small crustaceans allied to the lobster, most of them inhabitants of the sea. In many countries they form an important part of the diet, but with us they are little used with the exception of one or two southern species which are used as a basis for shrimp salad. Shrimps are very abundant off our coast and could be made an important fishery.

Silkworm.—A term applied to the larvæ, or caterpillars, of several species of moths. The common silkworm moth, the most important, is a native of China, where it has been cultivated from a remote period. The caterpillar (*silkworm*) is yellowish-gray, and when full-grown is about three inches in length, with a horn-like projection on the last joint of the body. It feeds upon the white mulberry. The *silk* is produced in a pair of glands on the floor of the body which contain a gelatinous substance, and become much enlarged at the time when the animal is about to spin. These silk-glands unite at the mouth to form a common duct termed the *spinneret*, and through this tube the semifluid substance is ejected, and on coming in contact with the air hardens into the fiber so largely used in commerce. The caterpillar employs the silk in constructing a cocoon in which it assumes the pupa state. The pupa is usually killed by plunging the cocoon into hot water, because the natural exit of the moth is injurious to the silk. After the pupa is killed the silk is reeled from the cocoon and sent to the market as raw silk. The color of the silk varies from a bright orange to almost white. In Europe some moths produce one, others two generations annually. A valued variety is the novi race of Italy, which spins a large white oval cocoon. The Japanese have several varieties, including an oak-feeding silk-moth, producing a green cocoon, the silk of which is much used for embroidery. There are also different kinds in China and India.

Skates.—A group of fishes, closely related to the sharks, but having the body flattened from above downward, and with the anterior fins so united to the side of the head and the body that it has a rhomboid appearance and the tail seems like an inconsiderable appendage. The mouth and the gill openings are on the under surface. The animals are bottom feeders, living on clams and mussels, buried in the mud. In Europe some of the smaller species are used as food, but in America only by some of the immigrants. One of the species has the front of the head prolonged as a long snout, the sides armed with teeth, giving it the name of the sawfish. Another has a large electric battery on either side of the head, capable of giving very strong shocks. This is called the torpedo. The largest is the manta of the West Indies, which may measure twelve or fifteen feet across.

Skunk.—A carnivorous mammal, usually marked with black and white in a striking manner. It is nocturnal, feeding on whatever it may find, and is especially fond of poultry. It is defended by the secretion of a gland near the vent, which it can eject at will. It is said that this offensive fluid can be destroyed with ammonia.

Sloth.—A large mammal belonging to the edentates or animals with imperfect teeth. It is arboreal, living, back downward, hanging by its strong claws from the limbs of trees. It feeds upon the leaves, and its slow motions are said to give it its common name. It occurs in the forests of tropical America.

Snails.—A common name used for mollusks with two limitations. In the first sense it includes any mollusk with a coiled shell. In the narrower meaning it includes only those forms which occur on land and especially those embraced in the group of helices. These land-dwelling forms have a slight shell, into which the whole body can be retracted. They feed exclusively on vegetation, which they rasp by means of a long ribbon, just inside the mouth, the surface of which is covered with thousands of minute teeth, so that the whole is a flexible file. The animal creeps about on a broad sole, and has four tentacles on the head, one pair of them bearing the simple eyes at the tip. Snails do considerable damage where they are numerous. One species is eaten by many in Europe, especially in France and Italy. Over ten thousand species are known.

Snakes.—A group of limbless reptiles, occurring in almost all parts of the world except the arctic regions. They have a rounded body, scaled above but with broader plates or scutes on the lower surface. The mouth is very distensible, and the jaws are armed with teeth pointing backward, which are of great assistance in forcing large animals down the throat. Most of the species are so colored that they are inconspicuous in their natural surroundings, but most of the poisonous species have no such protection. The largest of the snakes are the pythons of India and Africa. The most poisonous species are the fer de lance of the West Indies and the karet of India. One group is entirely aquatic, living in the middle of the Indian and the tropical Pacific Oceans, and bringing forth its young alive. These are also poisonous, and have a flattened tail for swimming.

Sparrow.—A well-known bird of the finch family which inhabits Europe, and was introduced into North America with the absurd idea that it would leave its former grain-eating habits and turn to cankerworms. It has become everywhere an unmitigated pest. Certain buntings are called sparrows in America.

Sparrow-hawk.—The common name of several hawks of different parts of the world. The American sparrow-hawk is the smallest of our falcons. It often preys on the chickens in poultry-yards.

Spiders.—A group of animals with jointed bodies and legs, the bodies divided into two regions, the anterior of these bearing four pairs of legs and two smaller pairs of appendages. The most anterior of these are the poison claws. They have a poison gland in the base, while the end of the claw tapers to a point, serving as a hypodermic syringe. The front of the head has from six to eight simple eyes. The hinder half of the body, the abdomen, is without appendages, save for two or three pairs of very small projections, the spinnerets. Each of these has numbers of openings at the tip through which a fluid is forced at will. This hardens immediately it comes in contact with the air and furnishes the silk of which the web is woven. Fine as it is, this silk is really a cable, being made of numbers of finer threads, one for each opening in the spinnerets. Spiders breathe by means of sacks—so-called lungs—on the lower side of the abdomen. They use the silk for making webs, for cocoons for the eggs, nests, and in some cases for parachutes for flying. Each species makes its own type of web. Our common house spider is the same as that of Europe; the largest species we see is the one found occasionally in banana bunches. The tarantula has the greatest reputation from the unfounded belief

that its bite causes madness which can be cured only by music. So far as is known there is only one species which can cause serious effects by biting man, and even these cases are not sufficiently authenticated.

Squid.—A mollusk nearly related to the cuttle-fish. It has a barrel-shaped body, with a head in front bearing ten pairs of tapering tentacles, each with numerous suckers. On the side of the head is a well-developed eye. Squid live largely on small fishes which they catch with the tentacles, biting them with a pair of parrot-like jaws. They are largely used as bait in fishing, and to a limited extent as food. The average length is a foot or two, but in the seas around Newfoundland and Japan giants are occasionally found with bodies a dozen feet in length and tentacles adding thirty feet to this. These were comparatively abundant about 1875, but none has been reported for years.

Squirrels.—A group of rodents, too well known to need description. They are abundant in all of the northern hemisphere, living in trees and feeding largely on nuts, etc. There are several species in the United States, the fur of the larger kinds having considerable value. Nearly related are the ground squirrels or chipmunks, and the flying squirrels, which really do not fly but glide by means of a parachute of skin extending between the legs of each side.

Stork.—A family of birds, chiefly confined to the old world. The true storks number six species, ranging over Europe, Asia, and Africa, and found also in South America. They resemble the herons, but are more robust, and have larger bills, shorter toes, with a nonserrated claw on the middle toe. They inhabit the vicinity of marshes and rivers, where they find food, consisting of frogs, lizards, fishes, and even young birds. They are migratory, arriving at their breeding haunts in the early spring and departing again in the autumn. The white stork is common in Europe, constructing a large nest, most frequently on the chimney of a cottage.

Swallow.—Any one of 125 species of birds belonging to the family *Hirundinidæ* characterized by the very wide gape of the mouth, to which the common name may allude. All are noted for their graceful flight. They feed almost exclusively on insects and hence are very valuable. Among our common swallows are the purple martin, the cliff swallow, the barn swallow and the sand martin. The so-called chimney swallow is, strictly, not a swallow but a swift.

Swans.—Swimming birds, closely related to the ducks and geese, with long and slender neck, bill about as long as the head, and with a soft cere. Nine species are known, one coming from Chili, the black swan from Australia, and the others from the northern hemisphere. We have two white species, the whistling and the trumpeter swans, but the tame species are all of European origin. Once swans were bred for the table, now solely as ornament.

Tapirs.—A genus of hoofed animals with an odd number of toes on the hind feet. All are tropical, some living in Asia, others in America. All are bulky beasts, recalling somewhat the swine in appearance. They have the snout prolonged into a flexible proboscis with the nostrils at the tip. Their flesh is said to be good.

Thrush.—Any singing bird belonging to the family *Turdidæ*. They are represented with us by the wood thrush, Wilson's thrush, our common robin and several others. The wood thrush is the best singer of our species; the European song thrush is much like our wood thrush but is larger.

Ticks.—A group of semiparasitic animals nearly related to the spiders. The young attach themselves to some higher animal, and then begin to burrow the head under the skin in order to suck the blood. Man and domestic animals are affected by them, and one species is now known to convey the Texas fever to cattle.

Tiger.—The largest and most dangerous of the *Felidæ*; exceeding the lion slightly in size, and far surpassing him in destructiveness. It is purely Asiatic in its habitat, but is not by any means confined to the hot plains of India, though there it reaches its highest development, both of size and coloration. The full-grown male Indian tiger is from nine to twelve, and the tigress from eight to ten feet from the nose to the tip of the tail. The ground color is rufous or tawny yellow, white on the ventral surface, with vertical black stripes or elongated ovals and brindlings. Though possessed of immense strength and ferocity the tiger rarely attacks armed men, unless provoked, but often carries off women and children. When pressed by hunger or enfeebled by age and incapable of dealing with larger prey, like buffaloes, the tiger prowls around villages, and, having once tasted human flesh, becomes a confirmed man eater. In a government report it is stated that "one tigress caused the desertion of thirteen villages, and 250 square miles of country were thrown out of cultivation." The jaguar is sometimes called the American tiger.

Toads.—The common name of any amphibian without a tail, no teeth and a warty skin. They are common in most parts of the world, there being few in the Australian region. They are mostly nocturnal, and, as they feed on insects, they are among the best friends of man and deserve encouragement. The warts are caused by glands in the skin which secrete an acrid fluid, the chief means of defense, as few animals will touch them. It is scarcely necessary to say that they are perfectly harmless to man, and that they cannot cause warts.

Trout.—A common name for several fishes with soft rayed fins and a small fin without rays on the back, behind the large fin. They have very small scales. All are excellent eating and all are regarded as game fish. Our brook trout is typical. This thrives in the coldest and clearest streams, laying its eggs in December or January. Other species in North America are the lake trout and the salmon trout in the east and the rainbow and the Dolly Varden trout in the west. Europe has its own trout. All of the species belong to the northern hemisphere, but they have been introduced into Australia and New Zealand.

Turkey.—A large scratching bird, a native of America, from Canada to Central America. It is chiefly known now in domestication, but is still found wild in some parts of the United States. The tame birds differ some in appearance from the birds in a state of nature. The name was given under the misapprehension that they came from Turkey.

Turkey buzzard.—A large vulture, common in the southern half of our country. It feeds on carrion and thus makes an important scavenger and is protected in some states. It is remarkable for its sustained sailing flight.

Turtles.—The common name of the reptiles known as *Testudinata* or *Chelonia*. They are remarkable for having the body inclosed in a hard case, composed above of the enlarged ribs, below of several large bony plates. In some the head and legs can be retracted inside this shell. Over the outside of the case are horny plates, which, in the hawkbill turtle are of value, as they afford the tortoise shell used for combs, etc. Turtles never have teeth, the edges of the jaws being covered with horny material. Most of the species are carnivorous. Some are terrestrial, some occur in fresh water, and some in the sea. The largest species are the marine leather-backs of the tropics, which occasionally drift north to New England, and the giant species occurring on the Galapagos islands, off the west coast of South America, and on some islands in the Indian Ocean. The marine green turtles are favorites with epicures, as are the terrapins of our east coast. Most species are inoffensive, but our soft-shelled turtles and snapping turtles are savage animals.

Vertebrates.—One of the great groups of the animal kingdom. The vertebrates have a back bone, or vertebral column, which protects the spinal cord, and terminates in front in the skull containing the brain. The alimentary canal lies entirely below this central skeleton, and the organs of respiration are always connected with this, being either gills in openings passing from the throat to the exterior, or lungs connected with the throat by a windpipe. The heart is always below the digestive tract, usually beneath the throat, but in the higher forms it is carried back into the chest. Some lack legs or their equivalent fins, but most have two pairs of these structures, and the aquatic species have also fins in the middle line of the back and belly. All reproduce exclusively by eggs, there being no cases of division or budding, so common in the lower divisions of the animal kingdom.

Walrus.—A marine carnivorous mammal, closely related to seals and sea lions, with enormous downturned tusks, or canine teeth, projecting from the upper jaw, which sometimes reach a length of sixteen inches beyond the sockets. Walruses have a thick clumsy body, deepest at the shoulders, and their feet are adapted for swimming. They reach a length of twelve feet or more and a weight of 2,200 pounds. There are two species, one in the Atlantic and one in the Pacific. The Atlantic form is found on the coast of Labrador and Hudson bay, but formerly extended farther south. They feed largely on clams and other mollusks which they dig from the sea bottom with their tusks. They are hunted for their hides and oil.

Wasps.—A group of insects with two pairs of wings, the hinder part the smaller, and a well developed sting, with a poison gland connected, at the hinder end of the body. It is not easy to frame a definition in common words that will separate them from the ants and the bees. Some are solitary, some form colonies in which the individuals work together for the common good. Among the first are the digger wasps, which excavate holes in the soil, or in wood, which they store with insects that they have paralyzed with the sting, and then lay their eggs in the mass, so that the young, on hatching out will have abundant food. Other solitary forms are the mud daubers, which build nests for the eggs by sticking mud to beams in barns and in other similar places. The social wasps make a nest in common, sometimes in the earth, but the well-known yellow jackets or hornets make paper nests from bits of decaying wood which they chew into a real paper pulp. In the colonies the males die at the approach of winter, but the females live to form a new colony in the spring.

Weasel.—The name of a number of small carnivorous mammals related to the sable, mink, and skunk. They have a remarkably slender, round body with a long neck, which gives the animal the appearance of having the fore legs set back too far. The legs are very short. The common weasel, found both in the old and the new worlds, reaches a length of eight or ten inches; it is light reddish-brown and whitish below, and in northern districts becomes whitish in winter. It feeds on mice, moles, and rats, following them into their holes, and even rabbits fall a prey to it. It rarely visits hen-yards. The stoat, or ermine, likewise inhabits Europe, Asia, and America. It is eight to eleven inches long. In summer its color is mahogany brown, with a black tip to the tail. In winter it changes in northern regions to a pure white except the tip of the tail which, remains black.

Weevils.—A group of beetles in which the head is prolonged into a snout with the jaws at the end. With this they bore into plants of all kinds to lay the eggs, the grub hatching out feeding upon the substance. Hence they are considerable pests. Over 400 species have been described from the United States. Farmers often apply the name to other injurious insects, some of which are not even beetles.

Whale.—The popular name of the larger cetaceans, particularly of all those belonging to the families *Balaenoidæ* and *Physeteridæ* or *Catodontidæ*. In the *Balaenoideæ* the head is of enormous size, but is entirely destitute of teeth, instead of which the palate is furnished with an apparatus of *baleen*, or whalebone, for the purpose of straining out of the water the small crustaceans, which form the food of these whales. The fibrous structure of baleen, or whalebone, its elasticity, and its heaviness, are well known. The plates of it in the mouth of a whale are very numerous, several hundreds on each side of the mouth, and they are very closely placed together, so that the mouth is filled with them. The head of whales usually occupies from a third to a fourth of the whole length. The lower surface of the true skin extends into a thick layer of blubber, an open network of fibers, in which fat is held. The blubber is from one foot to two feet in thickness, the whole mass in a large whale sometimes weighing more than thirty tons. The most important species is that known as the right whale or Greenland whale. It inhabits the seas of the northern parts of the world, and abounds chiefly in the arctic regions. It attains a size of sixty or seventy feet in length. It was formerly supposed that the Greenland whale was an inhabitant of the southern as well as the northern parts of the world; but the southern or cape whale is now regarded as a distinct species, the head being smaller in proportion than that of its northern congener, and the color a uniform black. The main physical characteristics of the whale are its distorted jaws, with upward directed nostrils, its great bulk, and rudimentary limbs. The huge bulk of the creature is driven forward by the flexible caudal fin, and while the body is rigid in front it exhibits great mobility behind. The blowholes are placed on the top of the head, and the animal can only respire when these are above water. The larger whales travel at the rate of about four miles an hour, but when pursuing their prey or goaded by pain they rush through the water at a much greater pace. They are aided in this by the broad and powerful tail, which is their chief organ of locomotion. Instead of being vertical, as in the fishes, this is horizontal, and the larger species can command immense driving power. The tail is also used as an offensive and defensive weapon. The smooth, shining skin is immediately underlaid by a thick coating of blubber, the great object of the whalers. This is at once dense and elastic, and while it preserves the animal heat it also serves to reduce the mighty bulk of the whale and to bring it nearer to the specific gravity of the element in which it spends its existence. It might be thought that the whale, with its vast bulk, would need sea creatures of a high organization to nourish it; but this is not so. Its chief food consists of minute mollusks, and with these its immense pasture-grounds in the north seas abound.

Whip-poor-will.—A bird widely known on account of its oft-repeated cry of *whip-poor-will*. It is not often seen, although abundant in damp woods of the eastern United States. It usually rests on the ground during the day and is active at early nightfall, sending forth its cry, and also coursing low over the grass in search of insects. It is about ten inches long and of plain colors, being grayish, much variegated with black and buff. Its bill is very broad, its mouth large and provided with a tuft of long bristles. It builds no nest, but deposits its eggs on leaves or a slight depression in the ground. To the same family belong the chuck-will's-widow and the night-hawk.

White ants.—A group of insects which are not at all related to the true ants, but which are so called because they live in colonies like the true ants. So the name termites is better for them. In the colonies there are different kinds of individuals. Only the king and queen (male and female) are winged, and these have only to do with the perpetuation of the species. Then there are the workers and the soldiers, whose duties are indicated by their names. The white ants feed upon wood, burrowing holes in every direction through it and never, if they can help it, coming into the

daylight. In the tropics they are very destructive and they will frequently riddle a house without their ravages being suspected. They are more rare in cooler climates, but they extend into New England. Some of the tropical species build immense nests of clay and chewed wood, ten or fifteen feet high and twice that across.

Wolf.—The name applied to several species of carnivorous animals, belonging to the dog family. The common wolf is about five feet in length including the tail, which is twenty inches, and about thirty-two inches in height at the shoulders. The muzzle much resembles that of a sheep-dog; the ears are upright and pointed, and the eyes are set obliquely. The coat is subject to variation in tint, depending much upon the country the animal inhabits. Perhaps the most usual tint is a yellowish-gray, but it is sometimes almost black. In Europe the animal is still found in Lapland, Norway, Sweden, Russia, Poland, Hungary, and some districts of Germany, France, Italy, Spain, and Greece. In Britain, the last wolf was slain in 1680, but in Ireland the species lingered until 1710. The wolf of India is considered a distinct species, and has a dingy reddish-white fur. The North American wolf has a wide range, extending from Greenland to Mexico, and is closely similar to the European race.

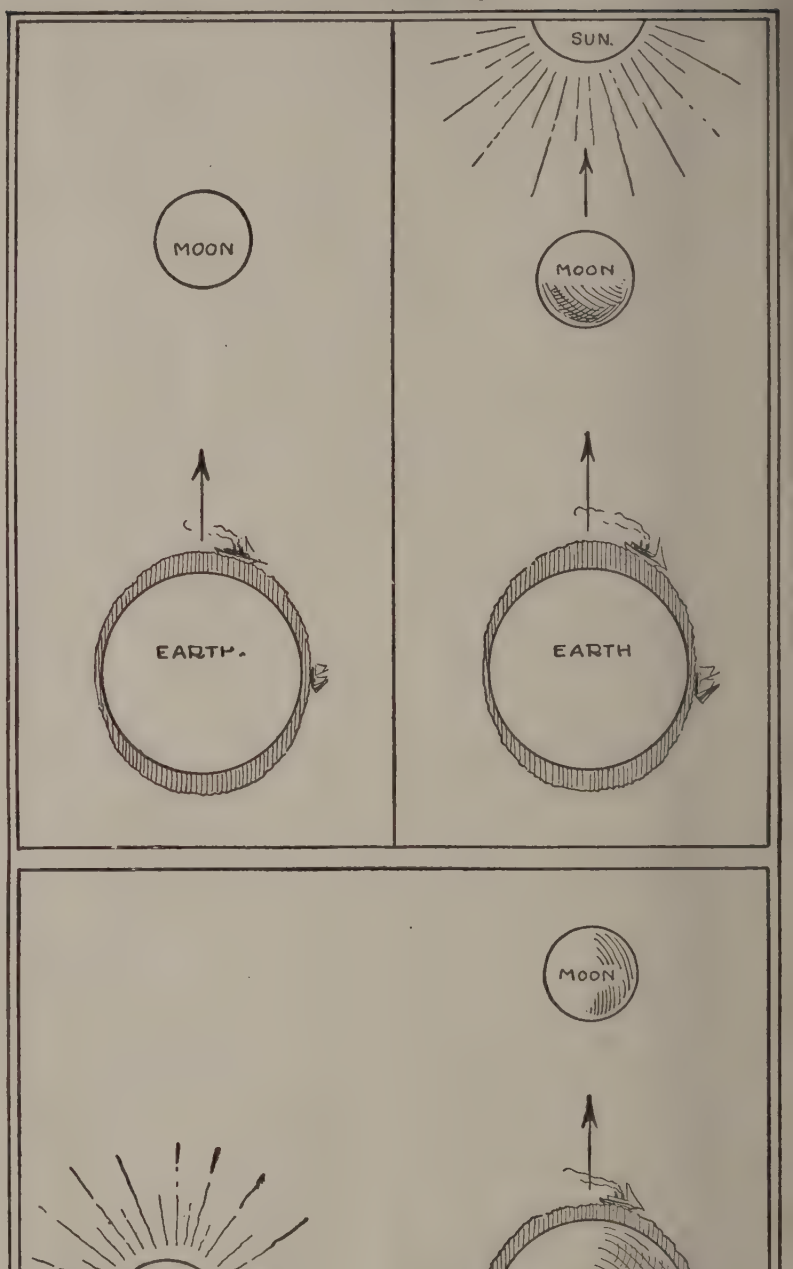
Woodcock.—A famous game bird belonging to the snipe family, and found in northern parts of both the old and new worlds. The American woodcock is about eleven inches long, variegated in black, brown, gray, and rusty colors. The bill is very long and flexible at the end. It is thrust into the soft ground, in search of earthworms, and the presence of woodcocks can often be detected by a cluster of these holes. The European bird is larger.

Woodpecker.—The common name of any of three hundred birds which have climbing feet, stiff tail feathers and which bore into trees for grubs on which they feed, though some of them are fond of fruit and other vegetable food. Most of the species have barbed and pointed tongues with which they spear the larvæ, but in some the tongue is smeared with a sticky substance, secreted by glands in the throat. There are no woodpeckers in Australia or Madagascar, but they occur in all other parts of the world.

Wren.—A genus of birds having a slender, slightly curved, and pointed bill; the wings very short and rounded; the tail short, and carried erect, the legs slender, and rather long. Their plumage is generally dull. They live on or near the ground, seeking for insects and worms among low brushes, and in other similar situations. The European wren is next to the smallest bird in Europe; it is more abundant in the north than in the central and southern parts. It frequents gardens, hedges, and thickets. The North American species of wren are numerous. The house wren is larger than the European wren, and is abundant in the eastern parts of the United States. It often builds its nest near houses, and in boxes prepared for it. The song is very sweet. The male is a very bold, pugnacious bird, readily attacking birds far larger than itself, as the bluebird and swallows.

Zebra.—A name sometimes given to all the striped *Equidæ*, natives of South Africa; but also, in a more restricted use, designating a single species, *Equus zebra*. All resemble more the ass than the horse. The zebra is about twelve hands high at the shoulder. It is light and graceful, with slender limbs; the ground color creamy; the head, neck, body, and legs striped with black; closely related are Burchell's zebra and the quagga, differing in the distribution of the stripes. Zebras are practically untamable, though they have been driven in harness.

TIDES



The magnetism of the moon draws the water of the oceans in a heap on the sides of the earth nearest and farthest away from the moon. As the moon changes its position in relation to the earth, these two great heaps of water move around the earth, causing a depression of the water at the other places. Where the water is heaped, we have high tide; where depressed, low tide. The magnetism of the sun is much less because it is so much farther from the earth. There are two high tides and two low tides each day, alternating about every six hours.

BOOK XII

GOVERNMENT AND LAW

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Modern Government in Contrast with Government of Former Times.—Until quite recently government was regarded as a mystery and beyond the understanding of ordinary mortals. In fact, it is so regarded in many countries of our modern world in which new ideas have been slow to enter. No doubt this idea of government had its origin in the desire of monarchs to inspire their subjects with loyalty and obedience. Now, however, that notion of the governing power has changed in all countries which are democratic, consequently, people are rapidly coming to regard their political organizations as servants of the people. In this way it has come about in the United States, that government is simply a certain number of citizens set aside in each village, township, county, city and state and in the nation and empowered by the voters to undertake certain tasks for the people. Of course, it must be admitted that this ideal is not fully carried out in practice, but it is wonderful progress that we now regard government as an agency to care for the needs of the people rather than an agency acting for the benefit of a king or a ruling oligarchy.

Why Do We Need Government.—Primitive man did not have much government, for his needs were so simple that he could satisfy most of them by his own individual efforts. As the number of the people and the complexity of their needs increased government was instituted to control that which they could not well provide for themselves. At first the king undertook to care for these needs but because of his failure to do his work well he has been overthrown and the rule of the people set up. It would be impossible for the individual family of today to produce its own food; provide its own shelter; protect itself from criminals and disease; educate its own members; carry its own products to the consumers, and bring its needs to the family fireside. Today we are very largely dependent upon one another for freedom, health, and safety, as well as for the necessaries of life. In his relation to the government, the individual who lives in a modern democracy, bears a two-fold relationship. He has duties to perform, and in return for this he obtains protection and help in the performance of his regular activities.

Functions of Government.—According to ex-President Wilson, as stated in his excellent work, "The State," there are eight essential functions of government.

(1) To keep order and provide for the protection of persons and property from violence and robbery.

(2) To fix the legal relations between man and wife and between parents and children.

(3) To regulate the holding, transmission and interchange of property, and the determination of its liabilities for debt or for crime.

(4) To fix contract rights between individuals.

(5) To define crime and provide for the punishment of criminals.

(6) To provide for the administration of justice in civil causes.

(7) To determine the political duties, privileges and relations of citizens.

(8) To regulate the dealings of the State with foreign powers, to preserve the State from external danger, and to advance its international interests.

There are very few people who object when government performs the above duties. However, there is much dispute when the government attempts to push its authority further. When the public authority begins to regulate commerce and labor, as it often does; to provide for internal improvements; regulate postal and telegraphy systems; own or control public utilities such as telegraph and telephone systems, railroads, power and gas plants; to establish rules for the control and development of education; to care for the poor and incapable; and to set up sumptuary laws, such as "prohibition," we find the public divided into three rather distinct groups. One favors the policy of governmental interference with these activities; another opposes them, and the third is more or less indifferent to them until it has been won over to support them by one or the other of the more active groups.

The ever shifting control of the government in democratic countries from one political party to another is to be accounted for by the fact that either the advocates or opponents of further extending political authority have for the time being persuaded the "indifferent" that their policy is correct. Politicial activity of today operates something as follows: An active minority believes that it would be advantageous for the government to exercise more control over commerce, labor, education or any of the optional functions of government. This aggressive group begins to win supporters for its course by public speeches, by printing its convictions in the newspapers and magazines. In the course of time an election is held and this group scores a victory. In the meantime the opposition has set its forces to work. It started its work soon after the advocates launched their campaign, but due to the fact that opposition is often slow to develop, the measure of the active advocates is carried. However, this defeated group, (if there is much at stake) becomes the aggressor and continues its campaign, sometimes quietly and at other times loudly, fully expecting to win at the next election. The victors, fully confident that they have won, fail to continue the defense or do not defend well enough so that at the next election the policies of the group that had won at the earlier election are fully or partially repudiated by the voters. Thus the struggle continues until "in the course of human events" sufficient scientific knowledge is evolved to establish a new political principle or to show that what has been advocated is of no political value.

The Need for the Study of Government.—In as much as political policies and their administration in our republic fall in the last analysis upon the "will of the people," it greatly behooves all well meaning and earnest citizens to make a careful study of the science of government. Every citizen should make it his business to know as fully as possible what his government is, and what it should become.

In a long and costly struggle with kings and nobles our forefathers have won for us the right to control our own political affairs. That victory is now ours and we are enjoying its benefits. Some one has said that the big political battle of the last several centuries was the struggle for the right to vote, and that the biggest political problem of today is to learn how to vote intelligently.

GOVERNMENT OF THE UNITED STATES

The Colonial Period.—In its fundamental aspects, American government, originated in the actual experience of the English colonists, gained by generation after generation in managing their own political affairs. When the colonies were established, the English authorities had no thought of setting up new governments. In origin each and every one of the English colonies was either a grant of privilege to an individual—like Pennsylvania to William Penn, or to a corporation like Virginia or Massachusetts Bay. However, due to the fact that those who settled in the colonies were brave, venturesome individuals, not desirous of asking favors of royalty, and the fact that they were three thousand miles from the seat of the central government, which was more or less indifferent to their interests, self-government quickly found roots in the soil of America.

When the American Revolution occurred there was very little that was fundamentally new in the way of political institutions. The Revolutionists of Rhode Island and Connecticut, where the governors, councillors, and judges were not appointed by the Crown, but created solely by the colony, found their colonial systems of government, based on seventeenth-century charters, so well suited to their needs and ideals that they made no alterations in them other than casting off their allegiance to the King of Great Britain. The royal charter granted to Connecticut by Charles II. in 1662 remained the constitution of that state until 1818, and the charter of Rhode Island, granted in 1663, remained in force until 1842. In all of the states after the Revolution, the distribution of representation, the suffrage, the qualifications for holding office and the legislative, executive and judicial institutions were continued without many radical alterations.

On the eve of the Revolution, the Thirteen Colonies had forms of government which presented striking similarity. Each had a governor, an assembly and a judicial system, and the Common Law of

England, as far as it was applicable and had not been changed by legislation, was binding in all of them.

In eight of the colonies—Massachusetts, New Hampshire, New York, New Jersey, Virginia, North Carolina, South Carolina, and Georgia, the governor was appointed by the king and recognized as the king's personal deputy. But, on the other hand, he was the highest executive official in the colony, and as such was charged with the preservation of peace and the advancement of the welfare of the colonists.

The Governor, as the chief executive, supervised the enforcement of the laws and appointed, usually with the advice of his council, the important civil officers. He could, except in Massachusetts, remove any of the council and other officials for cause and direct them in their work. By virtue of his position as chancellor, he was head of the highest court in the colony, which handled appeals from lower courts and exercised important original jurisdiction in many matters. He also granted pardons and reprieves. He was commander-in-chief of the colonial forces, appointed the military officers of high rank, levied troops for defense of the colony and enforced martial law when that was necessary owing to war, invasion or rebellion. Since he was the king's ecclesiastical representative, he exercised considerable ecclesiastical authority also.

The royal governor, also enjoyed extensive powers in connection with the colonial legislature. In all of the eight colonies of this type except Massachusetts, he nominated the council, which composed the upper house of the legislature. He summoned, adjourned and dissolved the assembly; he placed before it projects of law desired by the home government and exercised the right to veto all laws which he considered objectionable.

It must be remembered, however, that the royal governor was by no means an unlimited sovereign in his province, for he was bound by his instructions from the British government and by restraints which the assembly imposed through its power of controlling grants of money. Furthermore, complaints against his actions often were taken to the Board of Trade or the king in council across the sea.

In Massachusetts the governors which were appointed by the king, had their powers somewhat restricted by the colonial charter. The governor could adjourn, prorogue or even dissolve the assembly, but he could not appoint the members of the upper house, and all civil officers were appointed by him with the consent of the council. In other important respects the governor of Massachusetts enjoyed practically the same power as the other royal governors.

In Rhode Island and Connecticut the governor was elected annually by a general assembly composed of the governor, assistants and representatives chosen by the voters in each "city, town or place." In these colonies the governor did not stand out as a separate and distinct official. His duties were performed only in cooperation with the assembly and council.

The executive authority in the proprietary colonies of Maryland, Pennsylvania and Delaware differed vastly from that of the other colonies. The proprietary colony was a vast estate, carved out of the royal domain and granted by the Crown to a proprietor. When the proprietor was in the colony he had the right to assume control of the executive authority there and when he was absent he vested it in a lieutenant-governor, who served in the capacity of agent for the real owner of the estate. The power of the governor in these colonies was less limited than any of the others, but toward the end of the colonial era there was a gradual decline of his power, due to the rise of power of the assembly to control appropriations.

All of the colonies had two branches of the legislature except Pennsylvania, which had only one. In Massachusetts, Connecticut and Rhode Island the upper house was elected by the assembly; in the proprietary colonies the proprietor or his representative selected the councillors; in the other colonies, the upper house, or council was chosen by the king acting through the royal governor, who usually made the selection himself.

The council enjoyed the right to discuss and vote on all laws and with the governor enjoyed executive and judicial functions. It advised the governor on many important matters and in conjunction with him it formed the biggest judicial tribunal in the colony.

In every colony there was an assembly of representatives chosen by popular vote, but, contrary to common impressions, there was nothing like universal manhood suffrage. In every colony there were restrictions on the suffrage. These restrictions were either property or religious qualifications, or both.

The colonial assemblies from an early period of colonial history maintained that they possessed entire and exclusive authority to regulate their domestic concerns. In the matter of taxation they stoutly asserted their exclusive rights not only in formal declarations but also in actual resistance to the royal and proprietary governors. In addition to general legislative power, the assemblies, usually exercised a large control over the executive department through their power to withhold the salaries of the officials.

The lowest colonial courts were those of justices of the peace, who were generally appointed by the governor, or in some instances elected by local freeholders. In civil cases these justices had jurisdiction over cases involving small amounts; in criminal matters they were allowed to try only the pettiest offences against the law. In Massachusetts and a few other colonies the practice of uniting all of the justices of the country in a general court was followed; this court not only exercised criminal jurisdiction but supervised roads, bridges and similar affairs.

Above the justices of the peace there usually were the county courts whose judges were appointed by the governor, except in New Jersey where they were elected. In most colonies the county court had criminal jurisdiction over all except capital cases, but in Massachusetts, criminal matters were taken care of by the regular sessions of the justices of the peace. The county courts also had civil jurisdiction in cases involving certain amounts that were specified by law in each colony.

A high court was set up in each colony to decide weighty matters and appeals from the lower courts. In the royal colonies the governor, acting as chancellor, and his council generally composed this tribunal. In Massachusetts it consisted of a chief justice and four associates, appointed by the governor and council. In Pennsylvania the Supreme Court was composed of a chief justice and three associates, chosen by the governor.

Of course, appeals always lay from the highest court in the colony to the king in council and this power was frequently exercised just as certain cases are appealed to the Supreme Court of the United States at the present time.

2. Important Steps Toward Union.—(a) From 1643 to 1684 Massachusetts Bay, New Plymouth, Connecticut and New Haven colonies formed the New England Federation to strengthen their defense against the Indians, Dutch and French, representatives being sent from each. After that in time of need intercolonial conferences were held from time to time.

(b) In 1754 a congress of twenty-five members from seven colonies met at Albany to arrange a treaty with the Iroquois Indians and to consider other common interests. The Congress adopted Franklin's plan for a permanent federation, but it was rejected by all the colonies.

(c) In 1765, in consequence of the passage of the Stamp act in Great Britain, at the instance of the Massachusetts house of representatives nine colonies sent representatives to the Stamp act congress at New York, which issued a declaration that the rights of natural born English subjects belonged to the colonists, and framed petitions to the English government for relief.

(d) Further acts of England, especially the Townshend act, led to the formation of *committees of correspondence* among the colonists, who thus fostered unity of sentiment against England and for their common interests.

(e) *The First Continental Congress* was called by Massachusetts in 1774 when the English government passed the acts providing for the coercion of that colony. All the colonies except Georgia sent delegates to Philadelphia, who drafted the Declaration of Rights of the colonies, adopted articles of association, advised resistance and provided in case of need for the meeting, May 1775, of the Second Continental Congress.

(f) *The Second Continental Congress.*— This met, delegates from all the colonies being present. In the meantime, England had passed other measures of coercion and in attempting to sieze the war supplies of the colonists had brought on the battle of Lexington. It therefore became necessary for the Congress to make provisions for continuing resistance. In fact, it became a governing body and with adjournments from time to time, until May 1, 1781, it directed the War of the Revolution, and really organized and managed a new state. It issued the Declaration of Independence, recommended the colonies to provide for themselves state governments, instituted relations with foreign countries and did other needed work.

(g) *The Confederation.* — When the American colonies declared their independence of Great Britain they also appointed a congressional committee, composed of one delegate from each state, to draw up a form of Union for all the new states. The articles of Union, thus drawn up, were discussed for more than a year and were

adopted by Congress in 1777. However, they were not ratified by all the states until 1781.

This confederation provided for a league of friendship among the several states, each of which claimed to retain "its sovereignty, freedom, and independence." The new government consisted of a congress of from two to seven delegates from each state, but each state had just one vote.

Congress under the articles had control of making war or treaties, creating an army and navy, regulating the value of coin, arranging treaties with the Indians and settling disputes of the states regarding land claims.

In practice Congress was unable to set up a stable government due to the fact that: (1) no important law could be passed without the consent of nine states: (2) the failure of Congress to provide revenue for expenses: (3) the inability to regulate interstate and foreign commerce (4) the lack of effective authority to enforce laws: (5) the impossibility of remedying these defects because no amendment could be passed except by unanimous action of the States: (6) it had no power to tax: (7) because the government did not act upon individuals.

(h) A meeting of commissioners from Maryland and Virginia in 1785 to discuss a commercial dispute led Virginia to call a meeting of delegates of all the states at Annapolis in 1786 to consider commercial relations. Representatives of only five states came, but among them were several far-sighted statesmen, and before adjourning they adopted a resolution offered by Alexander Hamilton calling a convention to amend the Articles of Confederation.

(i) This *Constitutional Convention* met at Philadelphia May 25, 1787. Representatives of all the states except Rhode Island were present, among them the most noted and ablest men of the time. Different plans were proposed, important compromises, especially to settle controversies between large and small states and those concerning slavery, were made and at length the Constitution was adopted and signed, September 17, 1787.

(j) It was then submitted to Congress and by it sent to the states to be ratified. On June 21, 1788, New Hampshire, the last of the nine states whose ratification was needed, adopted it. The last state, Rhode Island, ratified it May 29, 1790. Congress provided an act by which it went into operation in 1789.

(k) *Amendments.*—To satisfy the wishes of several of the states, a Declaration of Rights was provided in the first ten amendments, which were ratified by the state legislatures soon after the adoption of the Constitution. Amendments XI. and XII. were passed to settle practical difficulties in administration, while Amendments XIII. XIV. and XV. were passed to clinch the results of the Civil War on the question of slavery.

THE FEDERAL GOVERNMENT. — I. Congress; General Powers.—The Congress, which has been created under the Constitution as the law-making body, consists of the senate and the house of representatives and has several general powers granted it: To pass laws, to judge the elections and qualifications of its own members, to determine its own rules of procedure, to lay and collect taxes, duties, imports and excises, to pay the debts and provide for the common defense and general welfare, to borrow money on the credit of the United States, to regulate commerce with foreign nations and among the several states and with the Indian tribes, to coin money and provide for certain substitutes for coin, and make provisions for controlling the value and purity of both, to fix standards of weights and measures, to establish uniform rules of naturalization, and uniform laws of bankrupcty, to establish and maintain a postal system with all needed equipment for efficient service, to make provision for the encouragement of inventors and authors by patent and copyright laws, to define and punish piracies and felonies committed on the high seas and offenses against the law of nations, to declare war and make full provision for carrying on war by land and sea by regular army and navy or by militia, and to exercise exclusive jurisdiction over all districts that are acquired for the use of the federal government in its civil or military capacities. Besides these special powers, the right to make all regulations necessary to carry these into effect is granted and by decisions of the Supreme Court has been fully established.

Scarcely less important than the powers granted to Congress are the restrictions placed upon the government. It shall not suspend the writ of *habeas corpus* except in cases of rebellion or invasion if the public safety requires it; shall not pass bills of attainder or *ex post facto* laws. No money shall be drawn from the treasury, but in consequence of appropriations made by law, and regular accounts thereof shall be published; no titles of nobility shall be granted by the United States, and presents and titles from foreign governments or rulers are forbidden to office holders without the consent of the Congress.

These prohibitions are all in the interest of the people as against possible encroachments by the government.

To give needed unity of action in matters of national import the several states are forbidden to enter into any relations with foreign states and are restricted closely in their actions regarding money, the law of contracts and some other important matters. Especially rigid are the provisions forbidding state interference with interstate or international commerce and relations with foreign powers

Sessions of Congress begin the first Monday in December. In the years following a congressional election the term ends on March 3d; in other years it extends until it decides to adjourn, usually early in the summer. The President may call special sessions.

Bills are introduced by private members, referred to committees, appointed by the speaker of the house and elected in the senate, that consider and amend at will and report with such recommendations as they see fit. The committees often suppress bills, and their report has great weight in determining the action of Congress.

The Senate.—(a) Consists of two members from each state, elected by the people at large, each senator to have one vote, which he is to cast independently.

(b) The term is six years, the senators being divided into three classes so that one-third retire every two years, securing thus a continuing body. In case of a vacancy the place may be filled by appointment by the executive of the state until the state legislature meets, when it elects a senator.

(c) A senator must be thirty years of age, have been nine years a citizen of the United States and an inhabitant of the state from which he is chosen.

(d) Senators receive a salary of $10,000 a year, mileage of 20 cents a mile each way from their homes to attend sessions, stationery, $1,800 a year for clerk hire, and certain uses of rooms and secretaries of committees.

(e) The Senate, over which the Vice President is the regular presiding officer, chooses a President *pro tempore* to act in the absence of the Vice President, acts as a court for the trial of impeachment cases, a two-thirds vote of the members present being required for conviction. When the President of the United States is impeached the Chief Justice of the United States Supreme Court presides.

(f) The Senate must approve the appointment of the higher officials made by the President and must approve by a two-thirds vote treaties negotiated by him with foreign powers, if they are to go into effect.

The House of Representatives.—(a) Consists of 435 members, chosen by the voters of districts in the several states, made up as nearly as practicable in proportion to the number of inhabitants.

(b) For a period of two years.

(c) A representative must be 25 years of age, have been seven years a citizen of the United States and a resident of the state from which he is chosen. By custom the representative is usually a resident of his district, but this is not necessary; and sometimes, especially in the large cities, a representative resides beyond the boundaries of his district.

(d) The salary, mileage and emoluments of representatives are the same as those of senators, except that senators from their smaller numbers have a more liberal use of rooms.

(e) The house of representatives elects its speaker, judges the elections and qualifications of its members, makes its own rules of procedure and has the sole right of impeachment of executive and judicial officials before the senate sitting as a court of impeachment. Bills for raising revenue must originate in the house of representatives; but, as the senate has an unlimited right of amendment, the privilege is of little value.

Both representatives and senators are frequently consulted by the President and other executive officers in making appointments to office. Moreover, committees of either house, if duly authorized, may, during times when Congress is not in session, make investigations at home or abroad in connection with legislative measures. In such cases, while expenses are paid, no additional salary is given to members.

II. The Executive.—The chief executive is the *President* (a) chosen for a period of four years (b) by an electoral college, elected by the voters of the several states, usually on a general ticket, so that all electors from a state are generally from the same political party; the electors are in some states chosen by congressional districts. (c) The President must be 35 years of age and a natural born citizen of the United States. (d) His salary is $75,000 a year. In addition, Congress has for some years voted $25,000 for traveling expenses. He is given also secretaries, his residence (the White House), which is fur-

nished at public expense, stables, vehicles, and other minor emoluments necessary for his position and work. (e) The President is commander-in-chief of the army and navy and of the militia when in actual military service of the United States; he grants reprieves and pardons; he makes treaties with the concurrence of two-thirds of the Senate; he nominates and by and with the advice and consent of the Senate appoints ambassadors and other foreign representatives, judges of the federal courts, and other high officials, some others being appointed by him alone or by heads of departments; he makes reports and recommendations to the Congress concerning the state of the nation and legislative action; he calls special sessions of Congress, receives ambassadors and public ministers of foreign powers; and takes care that the laws are faithfully executed. The President approves bills passed by the Congress, or, in event of disapproval, returns them to the branch in which they originated. In case of such veto they must be repassed by a two-thirds vote of both houses to become effective. If he does not disapprove them within ten days (Sundays excepted) they become laws unless by adjournment in the meantime the Congress prevents their return, in which case they fail.

The Vice President has the same qualifications and is chosen for the same term and in like manner as the President. Unless the President dies or is removed or incapacitated, his sole duty is to preside over the Senate. In case of the vacation of the President's office, he succeeds. If the Vice President dies, the members of the cabinet succeed in the order of the establishment of the departments, beginning with the Secretaries of State and the Treasury. Salary, $15,000.

The Cabinet consists of the Secretaries of State, Treasury, War, Attorney-General, Postmaster-General, Secretary of the Navy, Secretary of the Interior, Secretary of Agriculture, Secretary of Commerce and Labor. They are (a) appointed by the President, confirmed by the Senate and (b) serve really at the pleasure of the President, usually for his term unless their resignation is sooner brought about. (c) Their salary is $15,000 a year, and while their office expenses are covered, their personal emoluments are only incidental to the official work. (d) The members of the cabinet are the official advisers of the President in both administration work and political policy. In administrative matters each member exercises much discretion in the management of his department and usually really controls the selection of his subordinates who are not under civil service regulations. In matters of policy and making important decisions, his personal judgment is of prime importance. Routine business is frequently managed by subordinates whose tenure of office is practically during good behavior and efficiency.

The Civil Service is made up of (a) those officials appointed without competitive examination—generally higher officers, those whose services are personal or confidential in their nature, like private secretaries, unskilled laborers, or temporary employes, as employes of special commissions; and of (b) the classified service, the members of which are appointed after a competitive examination. Such appointees are apportioned among the states in proportion to population so far as possible, and the positions are permanent during efficiency. The President may extend by order the classified service, which now includes some 200,000. Examinations are held regularly twice a year at various places throughout the country, as designated by the civil service commission, a board of three members appointed by the President to administer this law, free from the influence of partisan politics.

III. **The Judiciary** consists of the Supreme Court of the United States and such inferior courts as Congress may establish. All United States judges are appointed by the President, to hold their office during good behavior. Their salaries shall not be reduced during their term of office

1. The Supreme Court consists of the chief justice, whose salary is $20,500, and of eight associate justices with a salary of $20,000 each.

2. Nine circuit courts of appeal have been established which consist of three judges each. Eligible to sit in this court are the Supreme Court justice assigned to the circuit, the circuit judges (of which there are two to four in each circuit), and the district judges within the circuit. The salaries are $12,500.

3. The territory of the United States has been divided into some 83 judicial districts, none of them crossing state lines. There are 132 district judges, performing the duties in these districts.
The salaries are $10,000.

A judge who is 70 years of age and has served ten years may retire on full pay for life.

4. The United States courts have (also appointed by the President) district attorneys and marshals to prepare and prosecute cases in behalf of the government and to execute processes and other orders of the courts.

5. The jurisdiction of the federal courts pertains to matters concerning the federal government, such as the post office, coinage laws, etc., and to cases which might involve the states in disputes with one another or with foreign countries.

6. Besides the courts mentioned for the disposal of controversies, there has been established (a) the court of claims, before which come claims of various kinds (excepting pensions) against the United States, and (b) the customs court, which settles controversies arising in connection with the collection of our customs duties.

The States. 1. The original thirteen states, at the suggestion of the Continental Congress, each in its own way and time adopted a state constitution. It is customary of late years for the Congress to pass an act admitting a state under prescribed conditions of boundaries, population, etc., with the provision that it shall frame and adopt a constitution satisfactory to the Congress. These are all modeled in part after the Constitution of the United States and of the older states. Of late years there is a tendency to make them longer and to include in the constitution subjects usually left to the legislature.

2. (a) All the states have legislatures consisting of two houses. The members of the larger, or lower, house are elected from districts and meet in six states annually; in the others the legislature meets only biennially. Members of the upper house are usually chosen for a period of two or more years. (b) Salaries are paid to all but vary from annual salaries to a per diem for days actually served. In several states the sessions are limited in time to sixty or ninety days. (c) In most of the states there are restrictions upon the powers of the legislatures, such as prohibitions of special legislation, and limiting the borrowing power of cities. Provisions against corrupt lobbying, blackmail and other abuses are common. In the main, the laws that touch most closely our daily life, those regarding contracts, crimes, marriage and divorce, inheritance, etc., are left to the states. Of late there is a movement in some of the states toward direct legislation by the people under the initiative and referendum.

3. The executive department of the state consists of a governor, lieutenant-governor, secretary of state, auditor or controller, treasurer, attorney-general and others needed to carry out the laws. The terms and compensation vary in the different states. The most important difference between the state and federal executive departments is that in the states the other officers are elected and not appointed by the governor, so that there is not the unity of action that comes from an appointive cabinet.

4. The judiciary department consists of a supreme court, and sometimes a court of appeals, and of such subordinate courts as the size of the state and the nature of its business and customs have made suitable. There are great similarities throughout the country. The judges are usually elected and for terms of two to fourteen years.

5. The county, town and city governments are all under the control of the state, but the forms vary widely, usually there being a tendency, as regards the rural districts especially, to follow models of some of the older states as indicated in the brief historical introduction. Each local subdivision has, of course, some body with minor legislative or ordinance powers, an executive and a judiciary.

Territories and Dependencies.—The territories and the insular dependencies of Hawaii, Porto Rico and the Philippine islands are under governments established by Congress and approved by the President and subject to change by regular legislative procedure.

All have governors and administrative and judicial officers appointed by the President. To them Congress has given a legislative body to make new laws under the powers granted In Porto Rico and the Philippines the members of the upper house are appointed by the President and consist in part of the administrative officers mentioned. The lower house is elective. In event of a deadlock the revenue and appropriation laws of the preceding year continue in force. No new laws can be made without the assent of both houses. There seems to be an inclination to increase the powers of self-government of the territories and insular possessions as rapidly as the people, hitherto not accustomed to self-rule, shall show themselves fit to take it.

In all cases Congress retains under the constitution the right to modify to any extent the method of governing these territories and possessions.

SPEAKERS OF THE HOUSE OF REPRESENTATIVES

Congress	Years	Name	State	Born	Died
1	1789–91	F. A. Muhlenburg	Pa....	1750	1801
2	1791–93	J. Trumbull.....	Conn.	1740	1809
3	1793–95	F. A. Muhlenburg	Pa....	1750	1801
4–5	1795–99	J. Dayton.....	N. J. .	1760	1824
6	1799–1801	Theo. Sedgwick	Mass..	1746	1813
7–9	1801–07	Nathaniel Macon	N. C..	1757	1837
10–11	1807–11	J. B. Varnum....	Mass..	1750	1821
12–13	1811–14	Henry Clay.....	Ky....	1777	1852
13	1814–15	Langdon Cheves	S. C...	1776	1857
14–16	1815–20	Henry Clay.....	Ky....	1777	1852
16	1820–21	John W. Taylor.	N. Y..	1784	1854
17	1821–23	P. P. Barbour...	Va....	1783	1841
18	1823–25	Henry Clay.....	Ky....	1777	1852

SPEAKERS OF THE HOUSE OF REPRESENTATIVES—Continued

Congress	Year	Name	State	Born	Died
19	1825–27	John W. Taylor	N. Y.	1784	1854
20–23	1827–34	A. Stevenson	Va.	1784	1857
23	1834–35	John Bell	Tenn.	1797	1869
24–25	1835–39	James K. Polk	Tenn.	1795	1849
26	1839–41	R. M. T. Hunter	Va.	1809	1887
27	1841–43	John White	Ky.	1805	1845
28	1843–45	John W. Jones	Va.	1805	1848
29	1845–47	John W. Davis	Ind.	1799	1850
30	1847–49	R. C. Winthrop	Mass.	1809	1894
31	1849–51	Howell Cobb	Ga.	1815	1868
32–33	1851–55	Linn Boyd	Ky.	1800	1859
34	1855–57	N. P. Banks	Mass.	1816	1894
35	1857–59	James L. Orr	S. C.	1822	1873
36	1859–61	Wm. Pennington	N. J.	1796	1862
37	1861–63	Galusha A. Grow	Pa.	1823	1907
38–40	1863–69	Schuyler Colfax	Ind.	1823	1885
41–43	1869–75	James G. Blaine	Me.	1830	1893
44	1875–76	Michael C. Kerr	Ind.	1827	1876
44–46	1876–81	S. J. Randall	Pa.	1828	1890
47	1881–83	Joseph W. Keifer	Ohio.	1836	
48–50	1883–89	John G. Carlisle	Ky.	1835	1910
51	1889–91	Thomas B. Reed	Me.	1839	1902
52–53	1891–95	Charles F. Crisp	Ga.	1845	1896
54–55	1895–99	Thomas B. Reed	Me.	1839	1902
56–57	1899–1903	D. B. Henderson	Ia.	1840	1906
58–61	1903–1911	J. G. Cannon	Ill.	1836	1926
62–65	1911–1919	Champ Clark	Mo.	1850	1921
66–68	1919–1925	F. Gillet	Mass.	1851	
69–70	1925–	N. Longworth	Ohio.	1869	

JUSTICES OF THE U. S. SUPREME COURT

NAME	Service: Term	Service: Yrs.	Born	Died
John Jay, N. Y.	1789–1795	6	1745	1829
John Rutledge, S. C.	1789–1791	2	1739	1800
William Cushing, Mass.	1789–1810	21	1733	1810
James Wilson, Pa.	1789–1798	9	1742	1798
John Blair, Va.	1789–1796	7	1732	1800
Robert H. Harrison, Md.	1789–1790	1	1745	1790
James Iredell, N. C.	1790–1799	9	1751	1799
Thomas Johnson, Md.	1791–1793	2	1732	1819
William Paterson, N. J.	1793–1806	13	1745	1806
John Rutledge, S. C.	1795–1795		1739	1800
Samuel Chase, Md.	1796–1811	15	1741	1811
Oliver Ellsworth, Conn.	1796–1800	4	1745	1807
Bushrod Washington, Va.	1798–1829	31	1762	1829
Alfred Moore, N. C.	1799–1804	5	1755	1810
John Marshall, Va.	1801–1835	34	1755	1835
William Johnson, S. C.	1804–1834	30	1771	1834
Brock, Livingston, N. Y.	1806–1823	17	1757	1823
Thomas Todd, Ky.	1807–1826	19	1765	1826
Joseph Story, Mass.	1811–1845	34	1779	1845
Gabriel Duval, Md.	1811–1836	25	1752	1844
Smith Thompson, N. Y.	1823–1843	20	1767	1843
Robert Trimble, Ky.	1826–1828	2	1777	1828
John McLean, Ohio.	1829–1861	32	1785	1861
Henry Baldwin, Pa.	1830–1844	14	1779	1844
James M. Wayne, Ga.	1835–1867	32	1790	1867
Roger B. Taney, Md.	1836–1864	28	1777	1864
Philip P. Barbour, Va.	1836–1841	5	1783	1841
John Catron, Tenn.	1837–1865	28	1786	1865
John McKinley, Ala.	1837–1852	15	1780	1852
Peter V. Daniel, Va.	1841–1860	19	1785	1860
Samuel Nelson, N. Y.	1845–1872	27	1792	1873
Levi Woodbury, N. H.	1845–1851	6	1789	1851
Robert C. Grier, Pa.	1846–1870	23	1794	1870
Benj. R. Curtis, Mass.	1851–1857	6	1809	1874
John A. Campbell, Ala.	1853–1861	8	1811	1889
Nathan Clifford, Me.	1858–1881	23	1803	1881
Noah H. Swayne, Ohio.	1861–1881	20	1804	1884
Samuel F. Miller, Iowa.	1862–1890	28	1816	1890
David Davis, Ill.	1862–1877	15	1815	1886
Stephen J. Field, Cal.	1863–1897	34	1816	1899
Salmon P. Chase, Ohio.	1864–1873	9	1808	1873
William Strong, Pa.	1870–1880	10	1808	1895
Joseph P. Bradley, N. J.	1870–1892	22	1813	1892
Ward Hunt, N. Y.	1872–1882	10	1811	1886
Morrison R. Waite, Ohio.	1874–1888	14	1816	1888
John M. Harlan, Ky.	1877–1911	34	1833	1911
William B. Woods, Ga.	1880–1887	7	1824	1887
Stanley Matthews, Ohio.	1881–1889	8	1824	1889
Horace Gray, Mass.	1881–1902	21	1828	1902
Samuel Blatchford, N. Y.	1882–1893	11	1820	1893
Lucius Q. C. Lamar, Miss.	1888–1893	5	1825	1893
Melville W. Fuller, Ill.	1888–1910	22	1833	1910
David J. Brewer, Kan.	1889–1910	21	1837	1910
Henry B. Brown, Mich.	1890–1906	20	1836	1913
George Shiras, Jr., Pa.	1892–1903	18	1832	1924
Howell E. Jackson, Tenn.	1893–1895	2	1832	1895
Edward D. White, La.	1910–1921	11	1845	1921
Rufus W. Peckham, N. Y.	1895–1909	14	1838	1909
Joseph McKenna, Cal.	1898–1925	27	1843	
Oliver W. Holmes, Mass.	1902–		1841	
William R. Day, Ohio.	1903–1923	20	1849	1923
William H. Moody, Mass.	1906–1910	4	1853	1917
Horace H. Lurton, Tenn.	1909–1914	5	1844	1914
Charles E. Hughes, N. Y.	1910–1916	6	1862	
Willis Van Devanter, Wyo.	1911–		1859	
Jos. R. Lamar, Ga.	1911–1916	6	1857	1916
Mahlon Pitney, N. J.	1912–1922	10	1858	1924
James C. McReynolds, N. Y.	1914–		1862	
Louis D. Brandeis, Mass.	1916–		1856	
John H. Clarke, Ohio.	1916–1922	6	1857	
William H. Taft, Conn.	1921–1930	9	1857	
George Sutherland, Utah.	1922–		1862	
Pierce Butler, Minn.	1922–		1866	
Edward Sanford, Tenn.	1923–		1865	
Harlan F. Stone.	1925–		1872	

The Government and the Indians.—The relations of the Indians with the United States government are controlled and directed by the secretary of the interior through the commissioner of Indian affairs There are about 6,000 government employees in the Indian service, of whom about 2,000 are Indians. In twenty-six states about 200 bonded superintendents of Indian schools discharge the duties of supervision and administration which formerly devolved upon the Indian agents. Almost the entire Indian service is now under the civil service regulations. In 1924 citizenship was conferred on all noncitizen Indians in the United States.

Indian Population.—The number of Indians enrolled as in relations with the federal government has not materially decreased for the last hundred years. In the United States proper, exclusive of Alaska, 340,917 Indians are officially reported in 1922. But "fullblood" Indians are outnumbered by the "mixed bloods" in many tribes, individuals with only one-sixteenth or one thirty-second of Indian blood, and with no distinguishing Indian features or traits, standing on the rolls as "Indians." Thus 101,469 "Indians" are on the tribal lists of the "Five Civilized Tribes" (Cherokees, Chickasaws, Choctaws, Creeks and Seminoles) in Oklahoma (old "Indian Territory") and of these, only 24,705 are fullbloods, while 50,775 are mixed-bloods, and 25,989 are intermarried whites and negroes —all enrolled as "Indians."

Indian Legislation.—Upon the whole the last thirty years has shown in its general trend and at its critical points, a determination upon the part of congress and the executive to treat the Indians with that consideration for their rights and their best interests which ought to mark the relations of a kind and just guardian to his ward.

Education.—It has built up for the Indian children a great system of schools with valuable features of industrial training. Appropriations by the United States government for Indian schools began with $20,000 in 1877, and have increased steadily to $11,021,910 for 1922. The average attendance of Indian children in Indian schools in 1877 was 3,598; while for 1909 the average attendance was 25,568. These figures do not include the five civilized tribes which have had a more or less efficient system of tribal schools of their own. The government boarding-schools for Indian children, in which 20,000 Indian children in 1909 were clothed, fed and taught by the government, are 82 in number on reservations, and 27 off Indian reservations.

Industrial Schools.—Such schools as that at Carlisle, Pennsylvania, and Haskell Institute at Lawrence, Kansas, have led the way in industrial training along lines and by methods which are being introduced into the "white" public schools of many states.

The Outing System inaugurated by Captain Richard H. Pratt at Carlisle, Pa., has placed hundreds of Indian boys and girls one by one in carefully selected farmer's homes, where for months or years such children have learned the ways of civilized Christian homes, and have been brought into touch with civilized life as they could never have been in schools on the reservations.

Day and Mission Schools.—One hundred and ninety-four Government day schools for Indians in 1909 gave instruction to 6,286 Indian school children. Christian mission schools not under contract with the government furnished instruction to 3,684 Indian children; and Mission boarding schools at which the government contracts to pay from tribal funds for the board and teaching of Indian children enrolled 1,050 pupils.

Reduced Area of Reservations.—As the pressure of increasing population has made it unreasonable to leave unoccupied the vast area of land which was included in the Western Indian reservations, Indian reservations have been reduced in size. Sometimes great sections have been bought by congress from Indian tribes at a nominal price, the proceeds held for the Indians in trust. When an Indian tribe is "allotted," and a homestead has been secured to each member of the tribe, frequently the rest of the reservation has been sold for the benefit of the Indians. In 1909 the unallotted area of all the Indian reservations (in about twenty states) was 48,477,796 acres (about 75,000 square miles). On July 1, 1909, there were $38,537,679.42 in the United States treasury of "Tribal funds held in trust by the government in lieu of investment" and annual interest, at either 3 per cent, 4 per cent, or in some instances 5 per cent, paid on certain of these funds amounts to $1,892,179.35 annually.

The New Policy.—The recognition of the family, not the tribe, as the social unit, and the responsibility of the individual to the law, underlie the wise policy of allotting homesteads to families, and giving an individual holding of land to each Indian. The steady improvement of the Indian in habits of industry, and in responsibility to law, has followed. It is believed by wise friends of the Indian that his personality should now be further strengthened by breaking up tribal funds into individual holdings upon the books of the United States treasury; that each Indian should be credited with his own proportionate share, such share to be administered for him by the government only so long as he is incapable of caring for it himself, principal and interest to be paid to each man and woman as rapidly as ability to care for property is demonstrated by the individual Indian.

Present Conditions—The amount of rations and clothing bought by the government for Indians is rapidly decreasing; school accommodations are now provided for five-sixths or seven-eights of the Indian children of school age; and the number of Indians under forty years old who are not now self-supporting is rapidly decreasing. No Indian tribe is now in "abject savagery." On the scale from savagery to civilization, the different tribes are scattered at irregular intervals through barbarism and Navajo semi-civilization (as the 30,000 Navajo, shepherds, with blanket-weaving and artistic silver work, with increasing agriculture,) the Sioux, cattle-raisers and rude farmers, the Pincus and Pueblos, for many generations peaceful agriculturists farming by irrigation;—to the leading families of the five civilized tribes, some of whose sons are now the third generation of college-bred men.

PRESIDENTIAL ELECTIONS AND INAUGURATIONS

Year	Presidential Candidates	State	Party	Vote			Vice-Pres. Candidates		Facts Concerning Inauguration	Age at Inaug
				Total	Electoral	Popular	Name	State		
1789	**George Washington**	Va.	.....	73	69	.....	*John Adams*	Mass.	I. **George Washington** was inaugurated President of the United States on a portico in front of the Senate chamber, Thursday, April 30, 1789, in the Federal building, facing Broad Street, in New York. The oath of office was administered by Robt. R. Livingston, chancellor of the state of New York, who exclaimed when the oath was taken, "Long live George Washington, President of the United States."	57
	John Adams	Mass.	.....	...	34	.....				
	John Jay	N. Y.	.....	...	9	.....				
	R. H. Harrison	Md.	.....	...	6	.....				
	John Rutledge	S. C.	.....	...	6	.....				
	John Hancock	Mass.	.....	...	4	.....				
	George Clinton	N. Y.	.....	...	3	.....				
	Samuel Huntington	Conn.	.....	...	2	.....				
	John Milton	Ga.	.....	...	2	.....				
	James Armstrong	Ga.	.....	...	1	.....				
	Benjamin Lincoln	Mass.	.....	...	1	.....				
	Edward Telfair	Ga.	.....	...	1	.....				
	§Vacancies	.....	.....	...	4	.....				
1792	**George Washington**	Va.	Fed.	135	132	.....	*John Adams*	Mass.	II. **George Washington,** for a second term, in the Senate chamber, Monday, March 4, 1793, in the Old Federal hall, in Philadelphia. Oath of office administered by William Cushing of Massachusetts.	
	John Adams	Mass.	Fed.	...	77	.....				
	George Clinton	N. Y.	Rep.‡	...	50	.....				
	Thomas Jefferson	Va.	.....	...	4	.....				
	Aaron Burr	N. Y.	.....	...	1	.....				
	§Vacancies	.....	.....	...	3	.....				
1796	**John Adams**	Mass.	Fed.	138	71	.....	*Thomas Jefferson*	Va.	III. **John Adams,** in the chamber of the House of Representatives, Congress hall, Saturday, March 4, 1797, in Philadelphia. Oath of office administered by Oliver Ellsworth, chief justice of the United States.	61
	Thomas Jefferson	Va.	Rep.	...	68	.....				
	Thomas Pinckney	S. C.	Fed.	...	59	.....				
	Aaron Burr	N. Y.	Rep.	...	30	.....				
	Samuel Adams	Mass.	Rep.	...	15	.....				
	Oliver Ellsworth	Conn.	Ind.	...	11	.....				
	George Clinton	N. Y.	Rep.	...	7	.....				
	John Jay	N. Y.	Fed.	...	5	.....				
	James Iredell	N. C.	Fed.	...	3	.....				
	George Washington	Va.	Fed.	...	2	.....				
	John Henry	Md.	Fed.	...	2	.....				
	S. Johnson	N. C.	Fed.	...	2	.....				
	C. C. Pinckney	S. C.	Fed.	...	1	.....				
1800	**Thomas Jefferson**	Va.	Rep.	138	73	.....	*Aaron Burr*	N. Y.	IV. **Thomas Jefferson,** in the Senate chamber of the Capitol, Wednesday, March 4, 1801, in the city of Washington. Oath of office administered by John Marshall, chief justice of the United States.	57
	Aaron Burr	N. Y.	Rep.	...	73	.....				
	John Adams	Mass.	Fed.	...	65	.....				
	C. C. Pinckney	S. C.	Fed.	...	64	.....				
	John Jay	N. Y.	Fed.	...	1	.....				
1804	**Thomas Jefferson**	Va.	Rep.	176	162	.....	*George Clinton*	N. Y.	V. **Thomas Jefferson,** for a second term, in Senate chamber, Washington, Monday, Mar. 4, 1805, by Chief Justice John Marshall.	
	C. C. Pinckney	S. C.	Fed.	...	14	.....	Rufus King	N. Y.		
	James Madison	Va.	Rep.	176	122	.....	*George Clinton*	N. Y.	VI. **James Madison,** in the chamber of the House of Representatives, Washington, Saturday, March 4, 1809. Oath of office administered by Chief Justice John Marshall.	58
1808	C. C. Pinckney	S. C.	Fed.	...	47	.....	Rufus King	N. Y.		
	George Clinton	N. Y.	Rep.	...	6	.....	John Langdon	N. H.		
							James Madison	Va.		
	§Vacancy	.....	.....	...	1	.....	James Monroe	Va.		
1812	**James Madison**	Va.	Rep.	218	128	.....	*Elbridge Gerry*	Mass.	VII. **James Madison,** for a second term, Thursday, March 4, 1813. Oath was administered by Chief Justice Marshall.	
	De Witt Clinton	N. Y.	Fed.	...	89	.....	Jared Ingersoll	Pa.		
1816	**James Monroe**	Va.	Rep.	221	183	.....	*D. D. Tompkins*	N. Y.	VIII. **James Monroe,** Tuesday, March 4, 1817. Oath administered by Chief Justice John Marshall, on a platform erected for the purpose, in front of the eastern portico of the Capitol at Washington.	59
	Rufus King	N. Y.	Fed.	...	34	.....	John E. Howard	Md.		
							James Ross	Pa.		
	§Vacancies	.....	.....	...	4	.....	John Marshall	Va.		
1820	**James Monroe**	Va.	Rep.	235	231	.....	Robert G. Harper	Md.	IX. **James Monroe,** for a second term, in the House of Representatives, Monday, March 5, 1821. Here the 4th of March came on Sunday, and he took the oath of office in the hall of the House of Representatives at 12 o'clock on Monday next, March 5, 1821. Oath administered by Chief Justice Marshall.	
	John Q. Adams	Mass.	Rep.	...	1	.....	*D. D. Tompkins*	N. Y.		
							Richard Stockton	N. J.		
							Daniel Rodney	Del.		
							Robert G. Harper	Md.		
							Richard Rush	Pa.		
1824	**John Q. Adams**	Mass.	Rep.	261	84†	108,740	*John C. Calhoun*	S. C.	X. **John Quincy Adams,** in the hall of the House of Representatives, Friday, March 4, 1825. Oath of office administered by Chief Justice Marshall.	58
	Andrew Jackson	Tenn.	Dem.	..	99†	153,544	Nathan Sanford	N. Y.		
	Henry Clay	Ky.	Rep.	...	37	47,136	Nathaniel Macon	N. C.		
	W. H. Crawford	Ga.	Rep.	...	46	46,618	Andrew Jackson	Tenn.		
							Martin Van Buren	N. Y.		
1828	**Andrew Jackson**	Tenn.	Dem.	261	178	647,286	Henry Clay	Ky.	XI. **Andrew Jackson,** on the eastern portico of the Capitol, Wednesday, March 4, 1829. Oath administered by Chief Justice Marshall.	62
	John Q. Adams	Mass.	Nat. Rep.	...	83	508,064	*John C. Calhoun*	S. C.		
							Richard Rush	Pa.		
							William Smith	S. C.		
1832	**Andrew Jackson**	Tenn.	Dem.	288	219	687,502	*Martin Van Buren*	N. Y.	XII. **Andrew Jackson,** for a second term, in the hall of the House of Representatives, Monday, March 4, 1833. Oath administered by Chief Justice Marshall.	
	Henry Clay	Ky.	Nat. Rep.	...	49	530,189	John Sergeant	Pa.		
	John Floyd	Ga.	Ind.	...	11	.....	Henry Lee	Mass.		
	William Wirt	Md.	Anti-M.	...	7	.....	Amos Ellmaker	Pa.		
	Vacancies	.....	.....	...	2	.....	William Wilkins	Pa.		
1836	**Martin Van Buren**	N. Y.	Dem.	294	170	762,678	*R. M. Johnson*	Ky.	XIII. **Martin Van Buren,** on the eastern portico of the Capitol, Saturday, March 4, 1837. Oath administered by Chief Justice Taney.	55
	Wm. H. Harrison	Ohio	Whig	...	73		Francis Granger	N. Y		
	Hugh L. White	Tenn.	Whig	...	26	735,651	John Tyler	Va.		
	Daniel Webster	Mass.	Whig	...	14		William Smith	Ala.		
	W. P. Mangum	N. C.	Whig	...	11	.....				
1840	**Wm. H. Harrison**	Ohio	Whig	294	234	1,275,016	*John Tyler*	Va.	XIV. **William Henry Harrison,** on the eastern portico of the Capitol, Thursday, March 4, 1841. Oath administered by Chief Justice Taney.	68
	Martin Van Buren	N. Y.	Dem.	...	60	1,129,102	R. M. Johnson	Ky.		
	James G. Birney	N. Y.	Lib.	...	...	7,069	L. W. Tazewell	Va.		
							James K. Polk	Tenn.		
							Thomas Earle	Pa.	**John Tyler,** inaugurated 12 noon, Tues., April 6, 1841, at Brown's Indian Queen hotel, Washington. Oath administered by Judge Cranch.	51
1844	**James K. Polk**	Tenn.	Dem.	275	170	1,337,243	*George M. Dallas*	Pa.	XV. **James Knox Polk,** on the eastern portico of the Capitol, Tuesday, March 4, 1845. Oath administered by Chief Justice Taney.	50
	Henry Clay	Ky.	Whig	...	105	1,299,062	T. Frelinghuysen	N. J.		
	James G. Birney	N. Y.	Lib.	...	...	62,300	Thomas Morris	Ohio		
1848	**Zachary Taylor**	La.	Whig	290	163	1,360,099	*Millard Fillmore*	N. Y.	XVI. **Zachary Taylor,** on the eastern portico of the Capitol, Monday, March 5, 1849. Here for the second time March 4th came on Sunday. Oath administered by Chief Justice Taney.	65
	Lewis Cass	Mich.	Dem.	...	127	1,220,544	Wm. O. Butler	Ky.		
	Martin Van Buren	N. Y	F. S.	...	...	291,263	Chas. F. Adams	Mass.		
									Millard Fillmore, in the hall of the House of Representatives, 12 noon, Wednesday, July 10, 1850. Oath administered by Judge William Cranch.	
1852	**Franklin Pierce**	N. H.	Dem.	296	254	1,601,274	*William R. King*	Ala.	XVII. **Franklin Pierce,** on the eastern portico of the Capitol, Friday, March 4, 1853. Oath administered by Chief Justice Taney.	49
	Winfield Scott	N. J.	Whig	...	42	1,386,580	Wm. A. Graham	N. C.		
	John P. Hale	N. H.	Fed. D.	...	...	155,825	George W. Julian	Ind.		
	Daniel Webster	Mass.	Whig	.	.	1,670				

‡Prior to 1804 each elector was entitled to vote for two candidates for President. The candidate receiving the greatest number of votes was declared elected while the candidate receiving the next highest vote was declared Vice-President. †As there was no election the choice was decided by the House of Representatives. *It is claimed that the first Republican party was the progenitor of the present Democratic party. §Electoral votes not cast.

PRESIDENTIAL ELECTIONS AND INAUGURATIONS—Continued

Year	Presidential Candidates	State	Party	Vote			Vice-Pres. Candidates		Facts Concerning Inauguration	Age at Inaug.
				Total	Electoral	Popular	Name	State		
1856	**James Buchanan**	Pa.	Dem.	296	174	1,838,169	*J. C. Breckenridge*	Ky.	XVIII. **James Buchanan,** on the eastern portico of the Capitol, Wednesday, March 4, 1857. Oath administered by Chief Justice Taney.	66
	John C. Fremont	Cal.	Rep.	...	114	1,341,264	Wm. L. Dayton	N. J.		
	Millard Fillmore	N. Y.	Amer.	...	8	874,534	A. J. Donelson	Tenn.		
1860	**Abraham Lincoln**	Ill.	Rep.	303	180	1,866,452	*Hannibal Hamlin*	Me.	XIX. **Abraham Lincoln,** on the eastern portico of the Capitol, Monday, March 4, 1861. Oath administered by Chief Justice Taney.	52
	J. C. Breckenridge	Ky.	Dem.	...	72	847,953	Joseph Lane	Ind.		
	Stephen A. Douglas	Ill.	Union D.	...	39	1,375,157	H. V. Johnson	Ga.		
	John Bell	Tenn.	Amer.	...	12	590,631	Edward Everett	Mass.		
1864	**Abraham Lincoln**	Ill.	Rep.	314	212	2,213,665	*Andrew Johnson*	Tenn.	XX. **Abraham Lincoln,** for a second term, on the eastern portico of the Capitol, Saturday, March 4, 1865. Oath administered by Chief Justice Chase.	
	Geo. B. McClellan	N. J.	Dem.	...	21	1,802,237	G. H. Pendleton	Ohio		
1868	**Ulysses S. Grant**	Ill.	Rep.	317	214	3,012,833	*Schuyler Colfax*	Ind.		
	Horatio Seymour	N. Y.	Dem.	...	80	2,703,249	F. P. Blair, Jr.	Mo.		
1872	**Ulysses S. Grant**	Ill.	Rep.	366	286	3,597,132	*Henry Wilson*	Mass.	**Andrew Johnson,** in his rooms at the Kirkwood House, Washington, D. C., 10 a. m., Saturday, April 15, 1865. Oath administered by Chief Justice Chase.	57
	Horace Greeley	N. Y.	D. & L.	...	†	2,834,125	B. Gratz Brown	Mo.		
	Charles O'Conor	N. Y.	Dem.	...	...	29,489	John Q. Adams	Mass.		
	James Black	Pa.	Temp.	...	...	5,608	John Russell	Mich.		
	Thos. A. Hendricks	Ind.	Dem.	...	42	.....	Geo. W. Julian	Ind.		
	B. Gratz Brown	Mo.	Dem.	...	18	.....	A. H. Colquitt	Ga.		
	Charles J. Jenkins	Ga.	Dem.	...	2	.....	J. M. Palmer	Ill.	XXI. **Ulysses Simpson Grant,** on the eastern portico of the Capitol, Thursday, March 4, 1869. Oath of office administered by Chief Justice Chase.	47
	David Davis	Ill.	Ind.	...	1	.....	T. E. Bramlette	Ky.		
	Not counted	.....	.....	...	17	.....	W. S. Grosbeck	Ohio		
							W. B. Machen	Ky.		
							N. P. Banks	Mass.		
1876	**Ruth'd B. Hayes**	Ohio	Rep.	369	185	4,036,298	*Wm. A. Wheeler*	N. Y.	XXII. **Ulysses Simpson Grant,** for a second term, on the eastern portico of the Capitol, Tuesday, March 4, 1873. Oath administered by Chief Justice Chase.	
	Samuel J. Tilden	N. Y.	Dem.	...	184	4,300,590	T. A. Hendricks	Ind.		
	Peter Cooper	N. Y.	Grb.	...	...	81,737	Samuel F. Cary	Ohio		
	Green Clay Smith	Ky.	Pro.	...	...	9,522	G. T. Stewart	Ohio		
	James B. Walker	Ill.	Amer.	...	...	2,636	D. Kirkpatrick	N. Y.		
1880	**James A. Garfield**	Ohio	Rep.	369	214	4,454,416	*Chester A. Arthur*	N. Y.	XXIII. **Rutherford Birchard Hayes,** privately in the White House, at 7:05 p. m., Saturday, March 3, 1877. Oath administered by Chief Justice Waite. Here again Sunday came March 4th, and the oath of office was publicly taken March 5, 1877.	54
	Win'd S. Hancock	Pa.	Dem.	...	155	4,444,952	Wm. H. English	Ind.		
	James B. Weaver	Iowa	Grb.	...	...	308,578	B. J. Chambers	Tex.		
	Neal Dow	Me.	Pro.	...	...	10,305	H. A. Thompson	Ohio		
	John W. Phelps	Vt.	Amer.	...	...	707	S. C. Pomeroy	Kan.		
1884	**Grover Cleveland**	N. Y.	Dem.	401	219	4,874,986	*T. A. Hendricks*	Ind.	XXIV. **James Abram Garfield,** on eastern portico of the Capitol, Friday, March 4, 1881. Oath administered by Chief Justice Waite.	49
	James G. Blaine	Me.	Rep.	...	182	4,851,981	John A. Logan	Ill.		
	John P. St. John	Kan.	Pro.	...	...	150,369	William Daniel	Md.		
	Benjamin F. Butler	Mass.	People's	...	...	175,370	A. M. West	Miss.		
	P. D. Wigginton	Cal.	Amer.	...	...	.....	.....	.....		
1888	**Benjamin Harrison**	Ind.	Rep.	401	233	5,439,853	*Levi P. Morton*	N. Y.	**Chester Alan Arthur,** at his residence, N. Y., 2 a. m., Tu., Sept. 20, 1881, oath administered by Jno. R. Brady, justice of the N. Y. supreme court. Oath repeated at the Capitol, September 22, 1881; administered by Chief Justice Waite.	51
	Grover Cleveland	N. Y.	Dem.	...	168	5,549,309	A. G. Thurman	Ohio		
	Clinton B. Fisk	N. J.	Pro.	...	...	249,506	John A. Brooks	Mo.		
	Alson J. Streeter	Ill.	U. L.	...	...	146,935	C. E. Cunningham	Ark.		
	R. H. Cowdry	Ill.	N'd L.	...	...	2,808	W. H. Wakefield	Kan.		
	James L. Curtis	N. Y.	Amer.	...	...	1,591	James B. Greer	Tenn.		
1892	**Grover Cleveland**	N. Y.	Dem.	444	277	5,554,437	*A. E. Stevenson*	Ill.	XXV. **Grover Cleveland,** on the eastern portico of the Capitol, Wednesday, March 4, 1885. Oath administered by Chief Justice Waite.	47
	Benjamin Harrison	Ind.	Rep.	...	145	5,175,287	Whitelaw Reid	N. Y.		
	James B. Weaver	Iowa	People's	...	22	1,041,028	James G. Field	Va.		
	John Bidwell	Cal.	Pro.	...	...	264,133	James R. Cranfill	Texas		
	Simon Wing	Mass.	S. L.	...	...	21,164	C. H. Matchett	N. Y.		
1896	**William McKinley**	Ohio	Rep.	447	271	7,102,272	*Garret A. Hobart*	N. J.	XXVI. **Benjamin Harrison,** on eastern portico of the Capitol, Monday, March 4, 1889. Oath administered by Chief Justice Fuller.	55
	William J. Bryan	Neb.	Dem.	}	176	6,273,624	{Arthur Sewall	Me.		
	William J. Bryan	Neb.	People's	}			{Th. E. Watson	Iowa		
	John M. Palmer	Ill.	Nat.Dem.	...	...	133,148	Sim. B. Buckner	Ky.		
	Joshua Levering	Md.	Pro.	...	...	132,007	Hale Johnson	Ill.		
	Chas. H. Matchett	N. Y.	So. L.	...	...	36,274	Matthew McGuire	N. J.	XXVII. **Grover Cleveland,** on eastern portico of the Capitol, Saturday, March 4, 1893. Oath administered by Chief Justice Fuller.	55
	Chas. E. Bentley	Neb.	Nat.	...	...	13,969	J. H. Southgate	N. C.		
1900	**William McKinley**	Ohio	Rep.	447	292	7,219,101	*Theo. Roosevelt*	N. Y.		
	William J. Bryan	Neb.	Dem. & P.	...	155	6,357,054	A. E. Stevenson	Ill.	XXVIII. **William McKinley,** on the eastern portico of the Capitol, Thursday, March 4, 1897. Oath administered by Chief Justice Fuller.	54
	James G. Woolley	Ill.	Pro.	...	...	208,187	Henry B. Metcalf	R. I.		
	Eugene V. Debs	Ind.	S. D.	...	...	.....	Job Harriman	Cal.		
	Wharton Barker	Pa.	M. R. P.	...	...	51,585	Ignatius Donnelly	Minn.		
	Jos. F. Malloney	Mass.	S. L.	...	...	99,613	Val. Remmel	Pa.		
	Seth H. Ellis	Ohio	U. R.	...	...	33,413	Sam. T. Nicholson	Pa.		
	J. F. R. Leonard	Iowa	U. C.	...	...	1,059	John G. Woolley	Ill.	XXIX. **William McKinley,** for a second term, on the eastern portico of the Capitol, Monday, March 4, 1901. Oath administered by Chief Justice Fuller.	
1904	**Theodore Roosevelt**	N. Y.	Rep.	476	336	7,623,486	*Chas. W. Fairbanks*	Ind.		
	Alton B. Parker	N. Y.	Dem.	...	140	5,077,971	Henry G. Davis	W. Va.	**Theodore Roosevelt,** at residence of Ansley Wilcox, Buffalo, N. Y., September 14, 1901, at 3:32 p. m. Oath administered by Judge John R. Hazel, of the United States district court.	42
	Eugene V. Debs	Ind.	Soc.	...	...	402,283	Benjamin Hanford	N. Y.		
	Silas C. Swallow	Pa.	Pro.	...	...	258,536	George W. Carroll	Texas		
	Thomas E. Watson	Ga.	People's	...	...	117,183	Thomas H. Tibbles	Neb.		
	Charles H. Corrigan	N. Y.	Soc. L.	...	...	31,249	William W. Cox	Ill.		
1908	**William H. Taft**	Ohio	Rep.	483	321	7,637,676	*James S. Sherman*	N. Y.	XXX. **Theodore Roosevelt,** on the eastern portico of the Capitol, Saturday, March 4, 1905. Oath administered by Chief Justice Melville W. Fuller.	
	William J. Bryan	Neb.	Dem.	...	162	6,393,182	John W. Kern	Ind.		
	Eugene V. Debs	Ind.	Soc.	...	...	420,393	Benjamin Hanford	N. Y.		
	Eugene W. Chafin	Ill.	Pro.	...	...	241,252	Aaron S. Watkins	.....		
	Thomas L. Hisgen	Mass.	Ind. L.	...	...	83,183	Jno. Tem. Graves	Ga.		
	Thomas E. Watson	Ga.	People's	...	...	33,871	Samuel Williams	Ind.		
	August Gilhaus	N. Y.	Soc. L.	...	...	15,421	Donald L. Munso	Va.		
1912	**Woodrow Wilson**	N. J.	Dem.	531	435	6,282,542	*Thos. R. Marshall*	Ind.	XXXI. **William Howard Taft,** in the chamber of the House of Representatives, Washington, March 4, 1909. Oath administered by Chief Justice Fuller.	51
	Theodore Roosevelt	N. Y.	Prog.	...	88	4,114,585	Hiram Johnson	Cal.		
	William H. Taft	Ohio	Rep.	...	8	3,480,479	*James S. Sherman	N. Y.		
							Nicholas M. Butler	N. Y.		
	Eugene V. Debs	Ind.	Soc.	...	...	820,606	Emil Seidel	Wis.	XXXII. **Woodrow Wilson,** on eastern portico of the Capitol, March 4, 1913. Oath administered by Chief Justice Edward D. White.	56
	Eugene W. Chafin	Ill.	Pro.	...	...	181,762	Aaron S. Watkins	Ky.		
	Arthur E. Reimer	.....	Soc. L.	...	...	28,641	August Gillhaus	N. Y.		
1916	**Woodrow Wilson**	N. J.	Dem.	531	276	a8,577,613	*Thos. R. Marshall*	Ind.		
	Chas. E. Hughes	N. Y.	Rep.	.....	255	a8,164,410	Chas. W. Fairbanks	Ind.	XXXIII. **Woodrow Wilson,** on eastern portico of the Capitol, March 4, 1917. Oath administered by Chief Justice Edward D. White.	
	Allan L. Benson	N. Y.	Soc.	.....	.....	.....	Geo. R. Kirkpatrick	N. J.		
	J. Frank Hanley	Ind.	Pro.	.....	.....	.....	Dr. Ira Landrith	Tenn.		
	Arthur E. Reimer	Me.	Soc. L.	.....	.....	.....	Caleb Harrison	.....		
	Wm. Sulzer	N. Y.	Amer.	.....	.....	.....	I. G. Pallard	Ind.		
1920	**Warren G. Harding**	Ohio	Rep.	531	404	16,152,200	*Calvin Coolidge*	Mass.	XXXIV. **Warren Gamaliel Harding,** on the eastern portico of the Capitol, March 4, 1921. Oath administered by Chief Justice Edward D. White.	55
	James M. Cox	Ohio	Dem.	.....	127	9,147,353	Franklin D. Roosevelt	N. Y.		
	P. P. Christensen	Ohio	F. L.	.....		265,411	Max S. Hayes	Ohio		
	Aaron B. Watkins	N. Y.	Pro.	.....		189,408	D. Leigh Calvin	N. Y.	**Calvin Coolidge,** at home of his father, John C. Coolidge, Plymouth Vt., August 2, 1923. Oath administered by his father.	51
	Eugene V. Debs	Ind	Soc.	.....		919,799	Seymour Stedman	Ill.		
1924	**Calvin Coolidge**	Mass.	Rep.	531	382	15,718,789	*Chas. G. Dawes*	Ill.	XXXV. **Calvin Coolidge,** on Plaza of the Capitol, March 4, 1925. Oath administered by Chief Justice, Ex-President, Wm. H. Taft.	
	John W. Davis	W. Va	Dem.	.....	136	8,378,962	Chas. W. Bryan	Neb.		
	Robt. M. LaFollette	Wis.	Prog. and F. L.	...	13	4,822,319	Burton K. Wheeler	Mont.		
1928	**Herbert C. Hoover**	Cal.	Rep.	531	444	21,943,328	*Chas. Curtis*	Kan.	XXXVI. **Herbert C. Hoover,** on eastern portico of the Capitol, March 4, 1929. Oath administered by Chief Justice Wm. H. Taft	54
	Alfred E. Smith	N. Y.	Dem.	...	87	15,430,718	Jos. T. Robinson	Ark.		

aEstimated. *Died Oct. 30, 1912, just prior to the election Nov. 5. †Owing to the death of Horace Greeley the Democratic electors scattered their vote.

TABLE I—PERSONAL FACTS RELATING TO

No.		Presidents	Born		Parents		Paternal Ancestry	Father's Business
			Date	Birthplace	Father	Mother		
1	1–2	**George Washington**	Fri., Feb. 22, 1732	Bridges Creek near Fredericksburg, Va.	Augustine	Mary Ball	English	Planter
2	3	**John Adams**	Wed., Oct. 30, 1735	Quincy, Mass.	John	Susanna Boylston	English	Farmer
3	4–5	**Thomas Jefferson**	Tues., April 13, 1743	Shadwell, Va.	Peter	Jane Randolph	Welsh	Planter
4	6–7	**James Madison**	Fri., Mar. 16, 1751	Port Conway, Va.	James	Nellie Conway	English	Planter
5	8–9	**James Monroe**	Fri., April 28, 1758	Westmoreland Co., Va.	Spence	Elizabeth Jones	Scotch	Planter
6	10	**John Quincy Adams**	Sat., July 11, 1767	Quincy, Mass.	John	Abigail Smith	English	Lawyer
7	11–12	**Andrew Jackson**	Sun., Mar. 15, 1767	Waxhaw Settlement, N. C.	Andrew	Elizabeth Hutchinson	Scotch-Irish	Farmer
8	13	**Martin Van Buren**	Thurs., Dec. 5, 1782	Kinderhook, N. Y.	Abraham	Mary Hoes	Dutch	Farmer
9	14	**William Henry Harrison**	Tues., Feb. 9, 1773	Berkeley, Va.	Benjamin	Elizabeth Bassett	English	Statesman
10	14	**John Tyler**	Mon., Mar. 29, 1790	Charles City Co., Va.	John	Mary Armistead	English	Jurist
11	15	**James Knox Polk**	Mon., Nov. 2, 1795	Mecklenburg Co., N. C.	Samuel	Jane Knox	Scotch-Irish	Farmer
12	16	**Zachary Taylor**	Tues., Nov. 24, 1784	Orange Co., Va.	Richard	Sarah Strother	Scotch-Irish	
13	16	**Millard Fillmore**	Tues., Jan. 7, 1800	Summer Hill, N. Y.	Nathaniel	Phebe Millard	English	Farmer
14	17	**Franklin Pierce**	Fri., Nov. 23, 1804	Hillsborough, N. H.	Benjamin	Anna Kendrick	English	Farmer
15	18	**James Buchanan**	Sat., April 23, 1791	Stony Batter, Pa.	James	Elizabeth Speer	Scotch-Irish	Merchant
16	19–20	**Abraham Lincoln**	Sun., Feb. 12, 1809	Nolin Creek, Ky.	Thomas	Nancy Hanks	English	Farmer
17	20	**Andrew Johnson**	Thurs., Dec. 29, 1808	Raleigh, N. C.	Jacob	Mary McDonough	English	Sexton
18	21–22	**Ulysses Simpson Grant**	Sat., April 27, 1822	Point Pleasant, Ohio	Jesse Root	Harriet Simpson	Scotch	Farmer
19	23	**Rutherford Birchard Hayes**	Fri., Oct. 4, 1822	Delaware, Ohio	Rutherford	Sophia Birchard	Scotch	Merchant
20	24	**James Abram Garfield**	Sat., Nov. 19, 1831	Bedford, Ohio	Abram	Eliza Ballou	English	Farmer
21	24	**Chester Allan Arthur**	Tues., Oct. 5, 1830	Fairfield, Vt.	William	Malvina Stone	Scotch-Irish	Clergyman
22	25	**Grover Cleveland**	Sat., Mar. 18, 1837	Caldwell, N. J.	Rich'd Falley	Anne Neale	English	Clergyman
23	26	**Benjamin Harrison**	Tues., Aug. 20, 1833	North Bend, Ohio	John Scott	Elizabeth Findlay Irwin	English	Farmer
24	27	**Grover Cleveland**	Sat., Mar. 18, 1837	Caldwell, N. J.	Rich'd Falley	Anne Neale	English	Clergyman
25	28–29	**William McKinley**	Sun., Jan. 29, 1843	Niles, Ohio	William	Nancy Allison	Scotch-Irish	Iron Mnfr.
26	29–30	**Theodore Roosevelt**	Wed., Oct. 27, 1858	28 E. 20th St., New York City	Theodore	Martha Bullock	Dutch	Merchant
27	31	**William Howard Taft**	Tues., Sept. 15, 1857	Cincinnati, Ohio	Alphonso	Louise M. Torrey	English	Lawyer
28	32–33	**Woodrow Wilson**	Sun., Dec. 28, 1856	Staunton, Va.	Jos. Ruggles	Janet Woodrow	Irish-English	Clergyman
29	34	**Warren Gamaliel Harding**	Thurs., Nov. 2, 1865	Blooming Grove, Ohio	George Tyron	Phele E. Dickerson	English	Doctor
30	34–35	**Calvin Coolidge**	Thurs., July 4, 1872	Plymouth, Vt.	John Calvin	Victoria Moor	English	Farmer
31	36	**Herbert Clark Hoover**	Mon., Aug. 10, 1874	West Branch, Iowa	Jesse Clark	Huldah Randall	Swiss	Blacksmith

TABLE II—PERSONAL FACTS RELATING TO

Name	Residence when Elected	Term of Office		Subsequent Career	Died	Cause of Death
		From	To			
Washington	Mt. Vernon, Va.	Apr. 30, 1789	Mar. 4, 1797	Agricultural pursuits; appointed commander-in-chief (1798) because of threatened war with France.	1799	Acute laryngitis.
Adams	Quincy, Mass.	Mar. 4, 1797	Mar. 4, 1801	Member of the Massachusetts Constitutional Convention of 1820.	1826	Natural decline.
Jefferson	Monticello, Va.	Mar. 4, 1801	Mar. 4, 1809	Retired to his plantation at Monticello, Va.; devoted much time to the University of Virginia.	1826	Chronic diarrhœa.
Madison	Montpelier, Va.	Mar. 4, 1809	Mar. 4, 1817	Retired to Montpelier, Va.; contributed large service to University of Virginia; served in the Virginia Constitutional Convention, 1829.	1836	Natural decline.
Monroe	Oakhill, Va.	Mar. 4, 1817	Mar. 4, 1825	Retired to private life in Virginia; served as a member of the Virginia Constitutional Convention in 1830.	1831	Natural decline.
J. Q. Adams	Quincy, Mass.	Mar. 4, 1825	Mar. 4, 1829	Was returned to Washington as a member of the House of Representatives; served from 1830 to his death.	1848	Paralysis.
Jackson	Hermitage, Tenn.	Mar. 4, 1829	Mar. 4, 1837	Retired to the "Hermitage," near Nashville, Tenn.; Always took a deep interest in public affairs.	1845	Dropsy.
Van Buren	Kinderhook, N. Y.	Mar. 4, 1837	Mar. 4, 1841	Was renominated in 1840, 1844, and 1848 for the presidency.	1862	Asthma.
W. H. Harrison	North Bend, Ohio	Mar. 4, 1841	Apr. 4, 1841	Died in office.	1841	Pleurisy fever.
Tyler	Williamsburg, Va.	Apr. 6, 1841	Mar. 4, 1845	Retired to his estate in Virginia; presided at the peace convention held in Washington in 1861.	1862	Bilious attacks with bronchitis.
Polk	Nashville, Tenn.	Mar. 4, 1845	Mar. 4, 1849	Died within three months.	1849	Chronic diarrhœa.
Taylor	Baton Rouge, La.	Mar. 4, 1849	July 10, 1850	Died in office.	1850	Cholera morbus and typhoid fever.
Fillmore	Buffalo, N. Y.	July 10, 1850	Mar. 4, 1853	Was candidate for president in 1852 and in 1856; spent his remaining years at Buffalo, N. Y.	1874	Paralysis.
Pierce	Concord, N. H.	Mar. 4, 1853	Mar. 4, 1857	Traveled in Europe; retired to Concord, N. H.	1869	Dropsy and inflammation of stomach.
Buchanan	Wheatland, Pa.	Mar. 4, 1857	Mar. 4, 1861	Retired to Lancaster, Pa. Devoted himself to writing defense of his administration.	1868	Rheumatic gout.
Lincoln	Springfield, Ill.	Mar. 4, 1861	Apri. 15, 1865	Died in office.	1865	Assassinated by Booth.
Johnson	Greenville, Tenn.	Apr. 15, 1865	Mar. 4, 1869	Retired to home in Greenville, Tenn.; chosen United States senator in 1875.	1875	Paralysis
Grant	Washington, D. C.	Mar. 4, 1869	Mar. 4, 1877	Made tour of the world and retired to private life in New York.	1885	Cancer of the tongue.
Hayes	Fremont, Ohio	Mar. 4, 1877	Mar. 4, 1881	Was president of the Board of Freedmen, and president of the National Prison association.	1893	Neuralgia of heart.
Garfield	Mentor, Ohio	Mar. 4, 1881	Sep. 20, 1881	Died in office.	1881	Assassinated by Guiteau.
Arthur	New York City	Sep. 20, 1881	Mar. 4, 1885	Died the year following his retirement.	1886	Bright's disease.
Cleveland	Buffalo, N. Y.	Mar. 4, 1885	Mar. 4, 1889	Retired to New York to practice law; at the end of second term, retired to Princeton, N. J.	1908	Heart failure.
B. Harrison	Indianapolis, Ind.	Mar. 4, 1889	Mar. 4, 1893	Professor of International law at Leland Stanford University, California; afterward practiced law.	1901	Pneumonia.
McKinley	Canton, Ohio	Mar. 4, 1897	Sep. 14, 1901	Died in office.	1901	Assassinated by Czolgosz.
Roosevelt	Oyster Bay, N. Y.	Sep. 14, 1901	Mar. 4, 1909	In March, 1909, headed a scientific expedition to Africa, organized in the interest of the Smithsonian institution; resumed literary work and politics.	1919	Embolism.
Taft	Cincinnati, Ohio	Mar. 4, 1909	Mar. 4, 1913	Chief Justice of U. S. Supreme Court.		
Wilson	Princeton, N. J.	Mar. 4, 1913	Mar. 4, 1921	Lawyer and Writer.	1924	Paralysis.
Harding	Marion, Ohio	Mar. 4, 1921	Aug. 2, 1923	Died in office.	1923	Embolism.
Coolidge	Boston, Mass.	Aug. 2, 1923	Mar. 4, 1929	Writer.		
Hoover	Stanford Univ., Cal.	Mar. 4, 1929				

THE PRESIDENTS OF THE UNITED STATES

Educational Advantage	Early Vocation	Profession	Religious Connections	Married	Wife's Name	Children		Name
						Boys	Girls	
Common School	Surveyor	Planter	Episcopalian	1759	Martha (Dandridge) Custis (1732-1802), widow with two children.	0	0	**Washington**
Harvard College, 1755	Teacher	Lawyer	Unitarian		Abigail Smith (1744-1818).	3	2	**Adams**
College of William and Mary, 1762	Lawyer	Lawyer	Liberal	1764 1772	Martha (Wayles) Skelton (1748-1782), widow of Bathurst Skelton.	0	6	**Jefferson**
Princeton College, 1771	Lawyer	Lawyer	Episcopalian		Dolly (Payne) Todd (1772-1849), widow.	0	0	**Madison**
Entered College, William and Mary	Lawyer	Politician	Episcopalian	1794	Eliza Kortwright (1768-1830).	0	2	**Monroe**
Harvard College, 1787	Lawyer	Lawyer	Unitarian	1786	Louisa Catherine Johnson (1775-1852).	3	1	**Adams, J. Q.**
Self Taught	Lawyer	Lawyer	Presbyterian	1797 1791	Rachel Donelson Robards (1767-1828), divorced wife of Captain Robards.	0	0	**Jackson**
Academy	Lawyer	Lawyer	Reformed Dutch	1844	Hannah Hoes (1783-1819).	4	0	**Van Buren**
Entered Hampden-Sidney College	Medicine	Army	Episcopalian	1807	Anna Symmes (1775-1864).	6	4	**Harrison**
College, William and Mary, 1806	Lawyer	Lawyer	Episcopalian	1795 1813	First, to Letitia Christian (1790-1842); second, to Julia Gardiner (1820-1889).	3 4	4 2	**Tyler**
University of North Carolina	Lawyer	Lawyer	Presbyterian	1844	Sarah Childress (1803-1891).	0	0	**Polk**
Common School	Soldier	Army	Episcopalian	1824	Margaret Smith (1788-1852).	1	3	**Taylor**
Public School	Tailor	Lawyer	Unitarian	1810 1826 1858	First, Abigail Powers (1798-1853); second, Caroline Carmichael McIntosh (1813-1881), a widow.	1 0	1 0	**Fillmore**
Bowdoin College, 1824	Lawyer	Lawyer	Episcopalian	1834	Jane Means Appleton (1806-1863).	3	0	**Pierce**
Dickinson College, 1809	Lawyer	Lawyer	Presbyterian	....	Unmarried.	..	..	**Buchanan**
Self Taught	Farmer	Lawyer	Liberal	1842	Mary Todd (1818-1882).	4	0	**Lincoln**
Self Taught	Tailor	Politician	Liberal	1827	Eliza McCardle (1810-1876).	3	2	**Johnson**
West Point Military Academy, 1843	Tanner	Army	Methodist	1848	Julia Dent (1826-1902).	3	1	**Grant**
Kenyon College, Ohio, 1842	Lawyer	Lawyer	Methodist	1852	Lucy Ware Webb (1831-1889).	7	1	**Hayes**
Williams College, 1856	Teacher	Lawyer	Disciples	1858	Lucretia Rudolph (1832——).	4	1	**Garfield**
Union College, 1848	Teacher	Lawyer	Episcopalian	1859	Ellen Lewis Herndon (1837-1880).	1	1	**Arthur**
Common School	Teacher	Lawyer	Presbyterian	1886	Frances Folsom (1864——).	2	3	**Cleveland**
Miami University, Ohio, 1851	Lawyer	Lawyer	Presbyterian	1853 1896	First Caroline Scott (1832-1892); second, Mary (Lord) Dimmick (1858——).	1 0	1 1	**Harrison**
Common School	Teacher	Lawyer	Presbyterian	1886	Frances Folsom (1864——).	2	3	**Cleveland**
Entered Allegheny College	Lawyer	Lawyer	Methodist	1871	Ida Saxton (1844-1907).	0	2	**McKinley**
Harvard, 1880	Publicist	Publicist	Reformed Dutch	1883 1886	First, Alice Lee (1861-1884); second, Edith Kermit Carow (1861——).	0 4	1 1	**Roosevelt**
Yale, 1878	Lawyer	Lawyer	Unitarian	1886	Helen Herron (1861——).	2	1	**Taft**
Princeton, 1879	Lawyer	Educator	Presbyterian	1885 1915	First, Ellen Louise Axson (Died 1914); second, Edith Bolling Galt.	0 ..	3 ..	**Wilson**
Iberia	Editor	Journalist	Baptist	1891	Florence Kling (Died 1924).	..	..	**Harding**
Amherst, 1895	Lawyer	Lawyer	Congregationalist	1905	Grace A. Goodhue.	2	0	**Coolidge**
Stanford, 1895	Engineer	Engineer	Quaker	1899	Lou Henry.	2	0	**Hoover**

THE PRESIDENTS OF THE UNITED STATES

Age at Death	Place of Death	Place of Burial	Writings of the Presidents	Presidential Sobriquets	Name
67	Mt. Vernon, Va.	Mt. Vernon, Va.	*Maxims; Transcripts of Revolutionary Correspondence).*	*Father of his Country; American Fabius.*	**Washington**
90	Quincy, Mass.	Unitarian church, Quincy, Mass.	*Essay on Canon and Feudal Law; Defense of the American Constitution.*	*Colossus of Independence; Son of Liberty.*	**Adams**
83	Monticello, Va.	Monticello, Albemarle Co., Va.	*A Summary View of the Rights of America; The Declaration of Independence; Act for Freedom of Religion.*	*Sage of Monticello; Long Tom.*	**Jefferson**
85	Montpelier, Va.	Montpelier, Hanover Co., Va.	*Reports of Debates During the Congress of the Confederation and Federal Congress; Essays.*	*Father of the Constitution.*	**Madison**
73	New York City.	Hollywood cemetery, Richmond, Va.	*A View of the Conduct of the Executive; The People; The Sovereign.*	*Last Cocked Hat.*	**Monroe**
80	Hall of Congress, Washington, D. C.	Unitarian church, Quincy, Mass.	*Poems of Religion and Society; Lectures on Rhetoric and Oratory; Criticisms of Paine's "Rights of Man;" Defense of Washington's Policy of Neutrality.*	*Old Man Eloquent.*	**Adams, J. Q.**
78	Hermitage, near Nashville, Tenn.	Hermitage, near Nashville, Tenn.		*Old Hickory; Cæsar of the White House.*	**Jackson**
79	Kinderhook, N. Y.	Village cemetery, Kinderhook, N. Y.	*Inquiry Into the Origin and Causes of Political Parties in the United States.*	*Little Magician; Wizard of Kinderhook.*	**Van Buren**
68	White House, Washington, D. C.	North Bend, Ohio.	*A Discourse on the Aborigines of the Valley of the Ohio.*	*Tippecanoe.*	**Harrison**
72	Ballard House, Richmond, Va.	Hollywood, Richmond, Va.		*Young Hickory.*	**Tyler**
53	Nashville, Tenn.	Nashville, Tenn.		Also *Young Hickory.*	**Polk**
65	White House, Washington, D. C.	Near Louisville, Ky. (Springfield).		*Rough and Ready; Old Buena Vista.*	**Taylor**
74	Buffalo, N. Y.	Forest Lawn, Buffalo, N. Y.		*The American Louis Philippe.*	**Fillmore**
64	Concord, N. H.	Minot cemetery, Concord, N. H.		*Purse.*	**Pierce**
77	Lancaster, Pa.	Woodward Hill cemetery, Lancaster, Pa.	*Résumé of My Administration.*	*Old Public Functionary; Bachelor President.*	**Buchanan**
56	Washington, D. C.	Oak Ridge cemetery, Springfield, Ill.	*Orations.*	*Honest Old Abe; Rail-splitter; Great Emancipator.*	**Lincoln**
66	Greenville, Tenn.	Greenville, Tenn.	*Speeches*	*Sir Veto.*	**Johnson**
63	Mount McGregor, N. Y.	Riverside, New York City.	*Shiloh; Vicksburg; Chattanooga; The Wilderness; The Personal Memoirs of U. S. Grant.*	*Unconditional Surrender; Old Three Stars.*	**Grant**
71	Fremont, Ohio.	Fremont, Ohio.		*President de Facto.*	**Hayes**
49	Elberon, Long Branch, N. J.	Lake View cemetery, Cleveland, Ohio.	*Discovery and Ownership of the Northwestern Territory; Garfield's Words.*	*The Martyr President; The Dark Horse.*	**Garfield**
56	New York, N. Y.	Rural cemetery, Albany, N. Y.		*Our Chet; America's First Gentleman.*	**Arthur**
71	Princeton, N. J.	Princeton, N. J.	*Writings and Speeches.*	*Man of Destiny; The Claimant.*	**Cleveland**
67	Indianapolis, Ind.	Crown Hill cemetery, Indianapolis, Ind.	*Speeches; This Country of Ours; Views of an Ex-President.*	*Son of His Grandfather; Hoosier President.*	**Harrison**
58	Buffalo, N. Y.	Cemetery, Canton, Ohio.	*Speeches.*	*Prosperity's Advance Agent Bonaparte of Politics.*	**McKinley**
60	Sagmore Hill, Oyster Bay, N. Y.	Private cemetery at Sagmore Hill, N. Y.	*The Naval War of 1812; Essays on Practical Politics; The Winning of the West; Hero Tales From American History; American Ideals; Life of Oliver Cromwell; African Game Trails.*	*Teddy; The Rough Rider; T. R.; Our Strenuous President.*	**Roosevelt**
67	Washington, D. C.	Washington, D. C.		*The Globe Trotter; The Judicial President.*	**Taft**
			Congressional Government; The State; A History of the American People.	*The Scholar in Politics.*	**Wilson**
57	San Francisco, Calif.	Marion, Ohio.	*Have Faith in Massachusetts; The Price of Freedom.*		**Harding** **Coolidge**
			Principles of Mining; American Individualism.		**Hoover**

FAMOUS STATESMEN

SHEPPARD-TOWNER MATERNITY ACT

The Sheppard-Towner Act "for the promotion of the welfare and hygiene of maternity and infancy and for other purposes," passed by the senate by a vote of 63 to 7, and by the house by a vote of 279 to 39, was signed by the President and became a law on Nov. 23, 1921.

The act provided for the current fiscal year (1922) $10,000 for each state accepting the provisions of the act, and an additional sum of $1,000,000. Of this additional amount, not more than $50,000 was to be used for Federal administration, and the remainder was to be apportioned to the states and granted, if matched dollar for dollar by state apportions, $5,000 to each State, the remainder to be apportioned on the basis of population.

After the fiscal year 1921-1922 the authorized annual expenditure is $5,000 unmatched to each state and to be matched dollar for dollar, an additional $5,000, plus a prorated amount of the remaining $710,000 of the additional $1,000,000, after a maximum of $50,000 has been deducted for Federal administration.

The Federal board was changed from a Board Advisory to the Children's Bureau to the Federal Board of Maternity and Infant Hygiene, composed of the chief of the Children's Bureau, the Surgeon General of the U. S. Public Health Service and the Commissioner of Education. The board is given authority to approve or disapprove the plans submitted by the state and to withhold further certification of the Federal funds to a state if the money is not properly expended.

Local administration in the states is in the Child Hygiene or Child Welfare Division of the State agency of health, or, where such a division does not exist, the agency designated by the state.

The board has laid down no plan of work which a State must follow, nor has it made approval of plans contingent on complying with certain conditions, each plan being considered on its merits.

The bill was the direct outgrowth of the series of investigations on maternal and infant morality made by the Federal Children's Bureau during the nine years of its existence. These investigations, besides dealing with the social, economic, industrial and civic conditions surrounding mothers and infants, reveal a morbidity and a mortality which, authorities agree are to a great extent preventable.

In 1915 the infant mortality rate in the United States birth registration area was 100 per thousand births and the maternal mortality rate 6.1. In 1920 the infant mortality rate had fallen to 85.8, but the maternal death rate was 8. The total number of maternal deaths in the death registration area in 1920 was 16,776.

The States that are not in the birth registration area are: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Idaho, Illinois, Iowa, Louisiana, Missouri, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Tennessee, Texas and West Virginia.

Up to date 42 states have accepted the terms of the act—all except Maine, Massachusetts, Rhode Island, New York, Louisiana, and Washington. Twelve of these acceptances (New Hampshire, Delaware, New Jersey, Maryland, Virginia, South Carolina, Georgia, Kentucky, Mississippi, Minnesota, Oregon and New Mexico) are by state legislatures and the remaining 30 by governors pending the next regular session of the legislature.

PARLIAMENTARY LAW and practice consist of those rules, precedents, and usages which are generally accepted as the most convenient and practicable for the government of proceedings in deliberative assemblies or organizations. Most of the essential rules now accepted had their origin in the English parliament, although some of them have been changed to adapt them to the needs of our legislative bodies. The rules and usages of Congress have great weight as correct parliamentary law in the United States generally, but the legislature of each state has a code of its own containing the general rules, and special ones not commonly accepted.

Besides the common parliamentary law, which is recognized by deliberative bodies in general, each body may make rules for its own government. When there are no special rules to the contrary the body is controlled by the principles of common parliamentary practice, and these principles govern if there are no rules enacted by the body itself.

Uses.—Parliamentary law is needed in deliberative bodies in order that there may be a mu'ual understanding as to what may be done, that the rights of the body and of its individual members may be protected, and that business may be transacted with expedition and also deliberation.

A gathering does not become a deliberative body until it is duly organized. This implies officers and members. The number of the former may vary according to circumstances. There must be one to preside over the deliberations. Then there should be a clerk or secretary to keep a record of the transactions.

Parliamentary practice presumes that, ordinarily, matters for discussion and decision emanate from some member or members of the meeting, and that the discussing and deciding is done by the membership.

Organization.—Temporary.—At the time appointed, or a few moments later, some one steps forward and requests the meeting to come to order, and, having secured attention, he either makes a motion that a certain person, giving his name, act as chairman, or asks the assembly to nominate a chairman. And he puts motions or nominations to vote, until some one is elected to preside. The chairman then takes his place, and the organization is completed by the nomination and election of a secretary, and any other necessary officers.

Convention of Delegates.—In the case of a convention of delegates, a temporary organization is first made by electing a chairman and secretary *pro tem.* Then a committee on credentials is chosen, to ascertain who are duly authorized to take part in the deliberations and the voting. This committee next reports the names of those who are found to have proper credentials, also doubtful or contested cases, with recommendations. No one without proper credentials is allowed to vote on the report of the committee, or on any question until he is duly accepted as a delegate. The organization of the convention is finished by the nomination and election of permanent officers.

After a meeting is duly organized, it is customary for some member to state briefly the object of the meeting, and business may be introduced at once, or the time may be occupied by addresses. A committee is sometimes appointed to prepare resolutions, while addresses are being given to fill up the time, and they report as soon as possible or they may be given more time, and bring in their resolutions after a recess, or at a subsequent meeting.

Permanent.—In organizing a permanent society a temporary organization is first effected, after which the chairman calls upon some person who is taking a leading part in getting up the society to state the object of the proposed organization. A motion or resolution favoring the organization is next in order, and, if carried, a committee is appointed to draft a constitution or by-laws or both. The constitution should contain five articles at least, *viz.*: 1. Name and object of the society. 2. Qualifications of members. 3. Officers, their election and duties. 4. Meetings of the society. 5. How to amend the constitution.

At the second meeting the constitution is adopted, and after all have signed the constitution who wish to become members, by-laws are adopted if desired, and a committee is appointed to nominate permanent officers, to be elected at this or an adjourned meeting. Each officer as elected takes the place of the temporary one, and when all are elected the organization is completed.

Nominations and Elections.—Generally the most prudent and expeditious way of making nominations is to place the matter in the hands of a committee created for the purpose, who, after due consideration, make the nominations and tender their report to the assembly, after which a motion is made and seconded to adopt the report of the committee. Then the names of the nominees are again read with a pause after each, to give opportunity for amendments. Any member who is not satisfied with a nomination may move to substitute another name, and if this motion receives a second and is carried the substituted name takes the place of the regular nominee.

The vo e, if by acclamation, may be taken upon each name before passing to the next, but the more common way is to vote upon the names as a whole, after the entire list has been considered.

Sometimes the chairman is authorized by the assembly to make the nominations, and in this case the names are treated the same as if brought in by a committee.

Another way of nominating is as follows: Some member obtains the floor and says, "*I nominate Mr. A.*" In the same way another member nominates Mr. B. and another Mr. C, and so on, When a number of candidates have thus been nominated, some member moves that the nominations close, and if this motion is seconded and carried the chairman then takes the vote upon the names, in the order in which the nominations were made, and continues until one is elected. If there is more than one office to be filled, the same process must be gone through with in each individual case.

If the election is to be by ballot, and the names are on the ballots, each voter may cast his ballot as it is, or he may cross off names and write others in their places. If blank slips are used, each voter writes on his slip the names of the nominees, or substitutes other names according to his choice. A majority of all the votes cast is necessary to a choice. In case the office or offices are not filled at the first ballot, the voting must be continued until the necessary officers are elected.

Officers and Their Duties.—Chairman, President, or Moderator.—The presiding officer is generally known by one of these titles. He should always be addressed by his title, and in referring to himself he should always use his official title, thus: "*It is the opinion of the chair,*" etc.

It is his duty to take the chair and call the meeting to order at the proper time, to announce in its order each item of business, to state all proper questions, to put them to vote, and to declare the result of the vote, to see that the rules of debate are not violated, to preserve order, to state points of order or course of proceeding, by request, or when he finds it necessary to do so, to receive all messages and other communications and announce them to the assembly, to act for the assembly in signing all papers, etc.

He may sit while stating a question, but he should rise to put a question to vote, or to speak to a question of order.

Vice-President.—The vice-president acts in place of the president in his absence.

Clerk or Secretary.—The recording officer, whether called clerk or secretary, keeps a correct record of the proceedings, or the *minutes*, and reads them at the next meeting. In the absence of the chairman (if there is no vice-president present), it is his duty to call the meeting to order, and to occupy the chair while the assembly proceeds to elect a chairman *pro tem.*, to read papers to be acted upon when requested to do so, to call the roll of the assembly when necessary, to hand to the chairman of every committee appointed a list of the persons on the committee, and a statement of the matter committed to them, to make out in order and hand to the chairman before each meeting, the items of business for the meeting, to have at each meeting a list of all committees, to have the custody of all papers and documents, to sign his name to the minutes, and to authenticate by his signature alone, or in connection with that of the chairman, all the acts, orders, and proceedings of the assembly. In some assemblies the secretary also acts as treasurer.

Treasurer.—The treasurer has charge of the funds of the society, and pays them out by order of the assembly, signed by the secretary. His annual report should give the amount in the treasury at the beginning of the year, the amount received, the amount paid out, and the balance on hand. This report should be examined by an auditor or by an auditing committee, and compared with the itemized accounts kept by the treasurer, and the receipts he has received for payments made, and if found correct it should be approved by a vote of the society.

Committees.—A committee for deliberation or investigation should be large, and should represent all classes and localities. A committee for action should be small, and should consist of those only who are in favor of the proposed action.

A committee may be nominated and elected, or the chairman may be authorized by the constitution or by-laws, or by a vote of the assembly, to appoint a committee or committees. The constitution or by-laws may also prescribe the number of members of which each committee shall be composed, or the number may be included in the motion if the appointment is ordered by the assembly.

Sometimes the assembly proposes different numbers, and in this case the number is decided by vote; the vote being taken first on the highest number proposed, and then upon the next, and so on until a vote is carried deciding the number.

A *select* committee is a committee appointed for a particular occasion. A *standing* committee is one appointed beforehand, for all matters that may arise of the same nature.

The person first named on a committee calls the members together, and presides all through, or until the committee elects another chairman; which is seldom done. In the absence of the first member, the next in order who is present acts as chairman. The committee chooses one of its own number to act as secretary. It conducts its proceedings in the same manner as business is conducted in the assembly.

A committee must be assembled to do business and a quorum must be present.

A paper referred to a committee must not be altered, or rejected by them. The committee may present amendments written on another sheet, or they may recommend a substitution, or make any recommendation they see fit. The report of the committee is signed by all the members, or by the chairman alone, and he makes the report to the assembly unless another has been chosen to tender it. Only that which has been agreed to by the majority can be incorporated in the report, but the minority may also tender a report if they choose. The minority report may be

substituted for the report of the committee, by a vote of the assembly. When the committee has tendered its report in full and the report has been accepted, the committee is thereby discharged, but it may be revived by having the report or some part of it referred back to it.

Committees may *adjourn* from time to time until their work is completed, then the motion is to *rise*, which motion means the same as to adjourn, and is subject to the same rules.

Committee of the Whole.—The object of resolving the assembly into the "committee of the whole," is to permit of less formality in the consideration of a subject than is allowed under ordinary circumstances, and the motion is, *"That the assembly do now resolve itself into a committee of the whole, to consider,"* etc., specifying the subject. If carried, the presiding officer at once calls another member to the chair, and takes his place as a member of the committee. The only motions in order are "to amend," "to adopt," and "to rise and report." Before going into the "committee of the whole," the assembly may pass an order limiting debate, which order cannot be changed in the committee.

The chairman having resumed his seat, the member who presided in the committee rises and informs the chairman that he is ready to report. The report may then be received, or the time fixed when it shall be received.

The clerk keeps the minutes of the proceedings of the committee, if there is not an assistant clerk to keep them, but the only record he makes in the minutes of the assembly is the report as received from the committee. If at any time the committee becomes disorderly, the presiding officer may resume the chair and declare the committee dissolved.

The quorum of the committee of the whole is the same as that of the assembly.

Informal Action.—Instead of going into a committee of the whole, the assembly may consider a question informally, with the same freedom and the same restrictions as in the committee of the whole. In this case the chairman retains his seat and there is no motion to rise and report. The chairman brings the subject that has thus been considered before the assembly, and it is treated as if reported by a committee.

Any motion except "to amend" or "to adopt," puts an end to the informal action. A temporary memorandum is kept the same as in the committee of the whole, and the clerk enters the chairman's report only in the minutes.

Quorum.—A quorum of an assembly, or of a committee or a board, is such a number as is competent to transact business; and unless the number is prescribed by the constitution or by-laws, or by an order of the assembly, it consists of a majority of the members. The number may be fixed at much less than a majority. When a quorum is not present the only action that can be taken is to adjourn.

Order of Business.—In the absence of special rules upon the subject, the regular order of business is as follows:

1. Reading the minutes of the previous meeting. 2. Reports of standing committees (boards of managers, trustees, etc., come under this head). 3. Reports of select committees. 4. Unfinished business. 5. New business.

To take business up out of its order requires a suspension of the rules, but a better way, sometimes, is to lay on the table business as it comes up, and thus reach a question that it is desirable to consider first.

Introduction of Business.—New business must be introduced when there is no question before the assembly. It may be brought in in the form of a resolution or recommendation, or in the form of a simple motion. The member rises, addresses the chairman by his title, and after being recognized by a bow or having his name announced, he reads his resolution or recommendation and moves its adoption; or he makes a simple motion as suggested above. In either case another member seconds the motion.

Amendments and all other questions are introduced in the same way as new business. The table of motions shows when each motion is in order, and how the question may be treated.

The mover of a motion may modify it, or withdraw it altogether before it is stated by the chair, but after it is stated he can do neither without the consent of the assembly. If a mover modifies his motion, the one who seconded it may withdraw his support.

Mere routine business may be transacted without the formality of a motion, if no one objects.

Resolutions, Recommendations, and Motions.—**Common Forms.**—*Resolved*, That fifty dollars of the funds of this society be appropriated to defray the expenses of its delegates at the general convention.

We recommend, That a committee of three be appointed by the chair to draft resolutions, or to make recommendations, respecting the establishment of a branch office in San Francisco.

(First member) "Mr. Chairman:

"I move that the resolutions be adopted."

(Second member) "Mr. Chairman, I second the motion."

A resolution or recommendation may have a preamble or preambles worded about as follows:

Whereas, It is desirable to procure only the best of material for our new building; and,

Whereas, We deem it necessary to send a man to personally superintend its selection; therefore,

Resolved, That etc., or *We recommend*, That etc.

The Motion.—The basis of business—the point for discussion and decision—is called the *motion*.

A motion is a formally-worded proposition presented in a deliberative body for its consideration, and for its decision by vote.

A member having something to which he desires the meeting to agree makes a motion to that effect.

Before making his motion he must obtain the floor. To do this in an organized meeting, he rises and, addressing the chairman, says *"Mr. President"* (or whatever the title may be), and then waits for recognition. The chairman hearing the voice and seeing the member who has risen, *recognizes* him by pronouncing his name, *"Mr. ——,"* or *"The gentleman* (or *member*) *from——,"* mentioning the locality he represents.

No member has a right to make a motion, discuss a question, or address a meeting until he has thus addressed and has thus been recognized by the chairman. Then he *has the floor*.

Having obtained the floor, the member says, *"Mr. President"* (or whatever the title may be), *"I move——thus and so."*

Now it is necessary for another member to indicate his desire to have the proposition considered. This is called seconding the motion. To do this the second member must arise and secure recognition as in the former case, and then say, *"Mr. President, I second the motion."*

Stating the Question.—The presiding officer then says, *"It has been moved and seconded that——,"* and reads the resolution, or hands it to the secretary to be read by him. After stating or reading the motion, the president says, *"The question is on the adoption of the resolution or motion just read,"* or he may say, *"You have heard the motion. Have you any remarks to make?"* or, *"Remarks are in order,"* or use some equivalent expression. This is called "stating the question."

After the chairman has thus stated the question the subject is open to discussion, but not before.

In routine work the chairman may often put a question without waiting even for a formal motion. This can be done only with common or universal consent, and should be used only in regard to minor matters. Then this method saves time, and does no injustice.

After a motion has been made and seconded and the question has been stated by the chair, the members may enter upon its discussion.

Debate.—In order to debate a question the member must secure the floor in the same manner he would secure it for the purpose of offering a motion. The ordinary rule is for the presiding officer to give the floor to the member whose voice he first hears. When two or more address the chair at the same time, the chair must decide who is entitled to the floor. In such a case the member upon whose motion the subject was brought before the body, or who presents the report, if he has not already spoken to the question, has the prior claim and should be recognized, even if another addressed the chair before him. A member who has not spoken has priority over those who have.

Points of Order.—It is the privilege of any member to call attention to a breach of order in debate, by obtaining the floor and saying, *"I rise to a point of order."* The chairman then says *"Please state your point of order."* When the point is stated, the chairman decides whether it is well taken or not, this decision being subject to appeal. When a question of order is raised, the speaker should at once take his seat and await the decision. Then if the decision is in his favor he may proceed, but if against him, and any one objects to his speaking further, he cannot continue without permission from the assembly.

Limiting Debate.—It is the custom of bodies to limit the time of a speech and the number of times a member may speak to the same question.

The common parliamentary law is not to allow a member to speak more than once to the same question until all who desire have spoken.

If a member offers to speak a second time, and no one signifies a desire to occupy the floor, and there is no objection, the chair may permit the member to proceed. Otherwise, to obtain the privilege of speaking a second time, the question must be put to vote for the decision of the meeting.

An order limiting or closing debate can be adopted, so that, at the time specified, all discussion upon it shall cease. As a body can limit the time of a speaker, it can also *extend his time*. The meeting can also *extend the time of the debate*.

In the discussion the speakers must confine themselves to the question before the body, and avoid personalities or other improprieties.

The maker of a motion may vote against, but cannot speak against, his motion.

Putting the Question.—If no one rises to speak, or the chairman thinks the debate has ended, he asks, *"Are you ready for the question?"* If then no one rises to debate it, he proceeds to put the question to vote.

In putting the question, as it is termed, the ordinary form will be something like the following: The chair will say, *"The question is on the adoption of the motion, or resolution, which you have just heard read; as many as are in favor of its adoption will say aye."* The ayes having voted, he will then say, *"As many as are of a contrary opinion will say no,"* or *"All opposed will say no."* The chair, judging the comparative vote, will announce the result, stating that the motion is carried or lost, as the case may be. If he thinks the ayes are in the majority he says, *"The ayes appear to have it."* Then pausing, to see if any one expresses doubt, and none being raised, he says, *"The ayes have it, and the motion is agreed to (is carried, or prevails)"* or *vice versa*, if he thinks the noes have it.

Form of Voting.—This varies. Sometimes it is by voice, sometimes by show of hands, sometimes by counting hands, or a rising vote by counting members as they stand, by tellers who count the members as they pass between them, by yeas and nays, and by ballot.

Where a hand-vote is customary the chair may say, *"Those in favor of the motion or resolution will hold up the right hand,"* and *"Those opposed will manifest it by the same sign."* Excepting in a few cases a majority vote determines a question.

Discussion can be renewed even after the voting has begun, and up to the final taking of both sides.

Division.—Sometimes a motion may consist of more than one distinct idea, and therefore would be divisible into two or more distinct propositions, and it might be that some would favor one part and not another, and, consequently, would desire to vote on the parts separately. In such a case a member can move that the question be *divided*, and specify in his motion how it is to be divided. If the motion for a *division of the question* prevails then each part will be put to vote as though it were a separate motion, and one part may be carried and another lost.

When the chairman announces the result of a vote any member may express a doubt as to the accuracy of the decision by rising and saying, *"Mr. President, I call for a division of the house."* If a member thus calls for *"division"* the presiding officer shall say, *"A division is called for; those in favor of the motion will rise and stand until counted."* After they are counted and the number announced, he shall say, *"Those opposed will rise;"* and they will be counted and the number announced.

The chair or the clerk, or both, may count. After the announcement of the result a member may press the doubt further by calling for a count by tellers, and even after that has been taken there may be a demand for the yeas and nays.

Yeas and Nays.—The object of calling the *yeas* and *nays* is usually to place the names of the members on record so that it will be known how each man voted. At other times it is used as a dilatory motion, and is made for the purpose of consuming time. In Congress one-fifth of the members present can order the vote to be taken by *yeas* and *nays*. In some bodies it is ordered on the call of a single member. Societies should have a rule stating what small minority may order the *yeas* and *nays*. In any meeting a majority vote can order the *yeas* and *nays*. When the yeas and nays have been ordered, the presiding officer will put the question in a form similar to the following: *"As many as are in favor of the adoption of the resolution will, when their names are called, answer yea, (or yes); those opposed will answer nay, (or no). The secretary (or clerk) will call the roll."*

The roll is then called, and each member, as his name is called, rises and answers *yes* or *no*, (or *yea* or *nay*), which answer is noted by the clerk. When the roll-call is ended the clerk reads the names of those who voted in the affirmative, and afterward those who voted in the negative. Errors may then be corrected. The clerk then gives the number voting on each side to the chair, who announces the result.

The Ballot.—Sometimes a vote is by ballot. It is common and most equitable in the election of officers.

The chairman appoints at least two tellers, who distribute slips of paper upon which the members write their votes. The tellers collect and count the votes and report the result to the chairman, who announces it to the meeting. In counting ballots all blanks are ignored. In case of an election the chair will say: *"The whole number of votes cast is——; the number necessary for a choice is——; Mr. A. received——; Mr. B.——; Mr. C.——. Mr. A., having received the requisite number, is therefore elected."*

Tie Vote.—When there is a tie vote the motion fails. The chairman, if a member of the meeting or, authorized by constitutional law, however, has the casting or deciding vote in such a case, and, if he gives it for the affirmative, the motion prevails. He may even vote with the minority when his vote will make a tie, and thus defeat a measure, and he may vote in any case where his vote would change the result. Thus where a two-thirds vote is necessary, and his vote given to the minority would prevent the adoption of the question, the presiding officer can so cast his vote.

Classes of Motions.—Motions are differently classified according to their nature and purpose.

First.—The principal motion or main question by which the subject is brought before the body.

Second.—Those which bear upon the main question. These are called subsidiary motions, and are as follows: 1. To postpone indefinitely. 2. To amend. 3. To refer (commit or recommit). 4. To postpone to a certain day or time. 5. The previous question. 6. To lay on the table.

Third.—Incidental questions, so called because they are occasioned in a casual way during the consideration of other questions. From their very nature they must be decided before the questions which give rise to them. They cover: 1. Suspension of the rules. 2. Withdrawal of a motion. 3. Reading of papers. 4. Objection to the consideration of a question. 5. Questions of order (including appeals from the decision of the chair).

Fourth.—Privileged questions. They are so called because of their pressing importance and their need of immediate attention; therefore they may interrupt other proceedings. They are: 1. Calls for the orders of the day. 2. Questions of privilege. 3. The motion to adjourn. 4. The motion to fix the time to which to adjourn.

Order of Precedence.—The motions below numbered 1 to 9 take precedence over all others in the order given, and any one of them, except to amend or substitute, is in order while a motion of a lower rank is pending.

Letters refer to rules following.

Closing a meeting.	
1. To fix time to which to adjourn	B
2. To adjourn (in committees, to rise), or to take a recess, without limitation	A E F
Concerning Orders, Rules, etc.	
3. For the orders of the day	A E H N
To make subject a special order	M
To amend the rules	M
To suspend the rules	A E F M
To take up a question out of its proper order	A E
To take from the table	A E G
Questions touching priority of business	A
4. To lay upon the table	A E G
To bring up a question the second time.	
To reconsider debatable question	D E F I
To reconsider undebatable question	A E F I
Questions of privilege.	
Asking leave to continue speaking after indecorum	A
Appeal from chair's decision touching indecorum	A E H L
Appeal from chair's decision generally	E H L
Question upon reading of papers	A E
Withdrawal of a motion	A E
Suppressing or extending debate.	
5. For the previous question.	A E M
To limit, or close, debate	A M
To extend limits of debate	A
Deferring action.	
6. To postpone to a fixed time	C
To refer to committee.	
7. To commit (or recommit)	D
Modifying or amending.	
8. To amend or to substitute, or to divide the question	K
Suppressing the question.	
Objection to consideration of question	A H M N
9. To postpone indefinitely	D E

Rule A.—Undebatable, but remarks may be tacitly allowed.

Rule B.—Undebatable if another question is before the assembly.

Rule C.—Limited debate allowed on propriety of postponement only.

Rule D.—Opens the main question to debate. Motions not so marked do not allow of reference to main question.

Rule E.—Cannot be amended. Motion to adjourn can be amended when there is no other business before the house.

Rule F.—Cannot be reconsidered.

Rule G.—An affirmative vote cannot be reconsidered.

Rule H.—In order when another has the floor.

Rule I.—A motion to reconsider may be moved and entered when another has the floor, but the business then before the house may not be set aside. This motion can only be entertained when made by one who voted originally with the prevailing side. When called up it takes precedence of all others which may come up, excepting only motions relating to adjournment.

Rule K.—A motion to amend an amendment cannot be amended.

Rule L.—When an appeal from the chair's decision results in a tie vote, the chair is sustained.

Rule M.—Requires a two-thirds vote unless special rules have been enacted.

Rule N.—Does not require to be seconded.

General Rules.—No motion is open for discussion until it has been stated by the chair.

The maker of a motion cannot modify it or withdraw it after it has been stated by the chair, except by general consent.

Only one reconsideration of a question is permitted.

A motion to adjourn, to lay on the table, or to take from the table, cannot be renewed unless some other motion has been made in the interval.

On motion to strike out the words, *"Shall the words stand as part of the motion?"* unless a majority sustains the words, they are struck out.

On motion for previous question, the form to be observed is, *"Shall the main question be now put?"* This, if carried, ends debate.

On an appeal from the chair's decision, *"Shall the decision be sustained as the ruling of the house?"* the chair is generally sustained.

On motion for orders of the day, *"Will the house now proceed to the order of the day?"* This, if carried, supersedes intervening motions.

When an objection is raised to considering questions, *"Shall the question be considered?"* objections may be made by any member before debate has commenced, but not subsequently.

Legal Holidays.—In the United States.

January 1. *New Year's Day:* In all the states (including the District of Columbia), and in all the territories and colonial possessions.

January 8. *Anniversary of the Battle of New Orleans:* In Louisiana.

January 19. *Lee's Birthday:* In Florida, Georgia, North Carolina, South Carolina, Virginia, Alabama, and Arkansas.

February. *Mardi-Gras:* In Alabama and the parish of Orleans, Louisiana.

February 12. *Lincoln's Birthday:* In Colorado, Connecticut, Delaware, Illinois, Kansas, Minnesota, Nevada, New Jersey, New York, North Dakota, Pennsylvania, Washington, and Wyoming.

February 22. *Washington's Birthday:* In all the states (including the District of Columbia) except Mississippi. It is observed, however, in the public schools of the latter state.

March 2. *Anniversary of Texan Independence:* In Texas.

April. In Oregon, the forty-fifth day preceding general state election, primary nominating election held. Every day on which an election is held throughout Oregon is a legal holiday.

Good Friday: In Alabama, Connecticut, Delaware, Florida, Louisiana, Maryland, Minnesota, New Jersey, Pennsylvania, Tennessee.

April 19. *Patriots' Day:* In Maine and Massachusetts.

April 21. *Anniversary of the Battle of San Jacinto:* In Texas.

April 26. *Confederate Memorial Day:* In Alabama, Florida, Georgia, and Mississippi.

May 10. *Confederate Memorial Day.* In North Carolina and South Carolina.

May (second Friday) *Confederate Day.* In Tennessee.

May 20. *Anniversary of the signing of the Mecklenburg Declaration of Independence.* In North Carolina.

May (last Friday). *Pioneers' Day.* In Montana, observed in public schools.

May 30. *Decoration Day.* In all the states and territories (and District of Columbia) except Alabama, Florida, Georgia, Idaho, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Louisiana. In Virginia, known as "Confederate Memorial Day," as also in certain other Southern states.

June 3. *Jefferson Davis Birthday.* In Florida, Georgia, Alabama, Mississippi, Tennessee, Texas, and South Carolina. In Louisiana, known as "Confederate Memorial Day." In Virginia, in public schools.

June (first Monday), even years. General state election in Oregon.

July 4. *Independence Day.* In all the states, District of Columbia, and territories.

July 24. *Pioneers' Day.* In Utah.

August 16. *Bennington Battle Day.* In Vermont.

September (first Monday). *Labor Day.* In all the states and territories (and District of Columbia), except North Dakota. In Louisiana, observed in Orleans parish. In Wyoming, by proclamation of the governor.

September (first Tuesday). *Primary Election Day.* In Wisconsin.

September 9. *Admission Day.* In California.

September 12. *"Old Defenders' Day."* In Baltimore, Md.

October 12. *Columbus Day.* Every state and territory except Alaska, Arkansas, District of Columbia, Florida, Georgia, Hawaii, Iowa, Maine, Minnesota, Mississippi, North Carolina, Oklahoma, Philippines, South Carolina, South Dakota, Tennessee, Utah, Virginia, Wisconsin, and Wyoming. (In Kansas it is not a holiday as to Courts or Notes.)

October 31. *Admission Day.* In Nevada.

November 1. *All Saints' Day.* In Louisiana.

November. General Election Day. In Arizona, California, Colorado, Delaware, Florida, Idaho, Illinois (in Chicago, Springfield and East St. Louis only), Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio (from 5:30 a. m. to 9. a. m. only), Oklahoma, Oregon (vote for presidential elections only), Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, West Virginia, Washington, Wisconsin, and Wyoming, in the years when elections are held therein.

November 11. *Armistice Day.*

November. *Thanksgiving Day* (last Thursday in November). Is observed in all the states, and in the District of Columbia, though in some states it is not a statutory holiday.

December 25. *Christmas Day.* In all the states, District of Columbia and territories.

Sundays and fast days are legal holidays in all the states which designate them as such.

There are no statutory holidays in Mississippi, but by common consent the Fourth of July, Thanksgiving, and Christmas are observed. In New Mexico, Washington's Birthday, Decoration Day, Labor Day, Flag-Day (June 14), and Arbor Day are holidays when so designated by the governor. In South Carolina, Thursday of Fair week is a legal holiday.

Arbor Day is a legal holiday in Arizona, Maine, Maryland, New Mexico, Wisconsin, and Wyoming, the day being set by the governor; in Texas, February 22; Nebraska, April 22; Utah, April 15th; Rhode Island, second Friday in May; Montana, second Tuesday in May; Georgia, first Friday in December; Colorado (school holiday only), third Friday in April; in Oklahoma, the Friday following the second Monday in March; in Arkansas, first Saturday in March.

Old English Holidays.—These holidays, with their names, had their origin in mediaeval England when the state religion was that of the Church of Rome, and they are still observed generally or in some parts of England, Scotland, and Ireland.

January 6. *Twelfth Day*, or *Twelfth-tide*, sometimes called Old Christmas Day, the same as Epiphany. The previous evening is *Twelfth Night*, with which many social rites have long been connected.

February 2. *Candlemas.* Festival of the Purification of the Virgin. Consecration of the lighted candles to be used in the church during the year.

February 14. *Old Candlemas.* St. Valentine's Day.

March 25. *Lady Day.* Annunciation of the Virgin. April 6 is old Lady Day.

June 24. *Midsummer Day.* Feast of the Nativity of John the Baptist. July 7 is old Midsummer Day.

July 15. *St. Swithin's Day.* There was an old superstition that if rain fell on this day it would continue forty days.

August 1. *Lammas Day.* Originally in England the festival of the wheat harvest. In the Church the festival of St. Peter's miraculous deliverance from prison. Old Lammas Day is August 13.

September 29. *Michaelmas.* Feast of St. Michael, the Archangel. Old Michaelmas is October 11.

November 1. *All hallowmas.* Allhallows or All Saints' Day. The previous evening is All hallowe'en, observed by home gatherings and old-time festive rites.

November 2. *All Souls' Day.* Day of prayer for the souls of the dead.

November 11. *Martinmas.* Feast of St. Martin. Old Martinmas is November 23.

December 28. *Childermas.* Holy Innocents' Day.

Lady Day, Midsummer Day, Michaelmas, and Christmas are quarter (rent) days in England, and Whitsunday, Martinmas, Candlemas, and Lammas Day, in Scotland.

Shrove Tuesday, the day before Ash Wednesday, and Maundy Thursday, the day before Good Friday, are observed by the Church. Mothering Sunday is Mid-Lent in which the old rural custom obtains of visiting one's parents and making them presents.

GOVERNMENT OF CANADA. — The government of the Dominion of Canada (which comprises all of British North America except Newfoundland) is carried on by means of a *federal government* and a *federal parliament*, which deal with all affairs of the Dominion as distinguished from merely provincial affairs, the latter being dealt with by provincial district governments of each province, district or territory.

Source of Governmental Powers.—All constitutional power and authority of both the federal and provincial and district governments and legislatures, are derived from the imperial Parliament of Great Britain; and the principal act by which the government of the dominion and the various provinces, districts and territories is regulated, is known as the British North America Act of 1867. Canada, like the United States, has in effect a written constitution, but it is supplemented by certain unwritten conventions which are derived from the constitutional law of the United Kingdom. Although the imperial Parliament of Great Britain is the supreme legislative body for the whole empire, yet it has delegated the powers of self government to the Dominion and ceases to legislate for it except so far as it may be requested so to do.

Limitations of Power.—Although the imperial Parliament has supreme power and jurisdiction over the whole empire and its acts cannot be brought in question or their validity contested in any court of law, the statutes passed by the Canadian Parliament, whether federal or provincial, must not exceed the legislative limits which the imperial Parliament has laid down, or they may be judicially declared to be *ultra vires* of the legislature which has assumed to pass them.

EXECUTIVE DEPARTMENT

The Sovereign.—The executive power of the whole British empire is by law vested in a single person—the Sovereign. The crown is by common law and constitutional custom, hereditary, and yet in the formal act of Recognition still preserved in the coronation ceremony, the assent of the people is theoretically necessary. The right of inheritance may, and has been, changed by the imperial Parliament, and subject to such change continues hereditary. The heir of the preceding Sovereign is the rightful successor, and as in common law descents, the preference of males to females, and the right of progeniture are strictly adhered to. Besides being heir to the preceding Sovereign, the successor must also be a Protestant.

How the Sovereign Acts.—In the exercise of executive power the Sovereign acts upon the advice of the ministers of the crown who are strictly accountable to Parliament for all public acts of the Sovereign. Through Canada and all parts of the British empire all writs run in the sovereign's name and all crimes are charged to be "against the King's peace, his crown and dignity."

Term of Office.—The Sovereign's term of office is during life, but in case of personal incapacity for the official duties of the office, by reason of infancy or other cause, a Regent may be appointed by Parliament.

Powers and Duties of the Sovereign.—It is difficult within a short compass to specify all the duties of the Sovereign, but among the more important are the following:

Commander-in-chief of Army and Navy.

Communicates with Parliament verbally or by message.

Chooses ministers of imperial government.

Approves or disapproves of acts of Parliament.

Makes treaties with advice of his imperial ministers.

Power to declare war and make peace.

Appoints public officers with advice and consent of his imperial ministers.

Commissions public officers.

Grants reprieves and pardons for crimes.

Confers honors, peerages, baronetcies, knighthoods, etc.

Has supreme judicial authority in all causes and matters in his dominions, such judicial authority being exercised on the judicial committee of his council.

The Governor-General of Canada

How Chosen.—The Governor-general is the Sovereign representative in Canada, and is appointed by the Sovereign with the advice of the imperial ministers.

Term of Office.—The term for which the Governor-general is appointed is usually five years, but the time may be extended or shortened by the Sovereign.

Eligibility.—The person to be chosen must be a British subject, and is usually selected from the ranks of the statesmen of Great Britain.

Salary.—The salary of the Governor-general is fixed by a statute of the Dominion Parliament at £10,000, and is paid out of the Dominion exchequer.

Powers and Duties.—Is the representative of the Sovereign in Canada and acts for him.

Communicates with Canadian Parliament, verbally or by message.

Chooses ministers of Canadian government, who are able to command a majority vote of the Canadian House of Commons.

In Sovereign's name approves or disapproves of acts of Canadian Parliament.

May reserve acts of Dominion Parliament for consideration of the Sovereign.

May, with advice of Canadian ministers, disallow Acts of provincial legislatures.

Appoints public officers of Dominion of Canada with advice of Canadian ministers.

Commissions public officers of Dominion.

Exercises Sovereign's prerogative of granting reprieves or pardons for crimes committed in Canada.

The Cabinet constitutes a kind of executive committee both of Parliament and the Privy Council. Its powers and duties are not defined by any statute or written law, but rest on conventions which have become part of the constitutional law of England and of the various parts of the empire to which the powers of self government have been delegated. It differs from the cabinet of the president of the United States in that it is considered essential that all of its members shall be also members of one or other of the Houses of Parliament, where they shall be able to explain and defend all their acts and proceedings. The cabinet of the dominion originates all legislation which it thinks to be necessary or expedient, and the defeat of any government measure of importance in the House of Commons, generally necessitates a resignation of the ministry, as no longer able to command the confidence of Parliament.

Salaries.—The salary of the Prime Minister is fixed by statue at $12,000 per annum. The salary of each of the other ministers is $7,000 per annum.

The Privy Council of Canada.—This is a body distinct from the cabinet. The statute law provides for the establishment of a Privy Council of the Sovereign in Canada to aid and advise in the government of Canada, the members of which are to be chosen and summoned by the Governor-general. No salary is attached to the office of Privy Councillor.

The Executive Departments.—The various Executive Departments of the Canadian government are under the control of ministers who are appointed to office by the Governor-general by commission under the great seal of Canada, and hold office during the pleasure of the Crown. The following are the Cabinet portfolios and their respective Executive Departments:

The Prime Minister, President of the Privy Council of Canada

The Ministers of Trade and Commerce, Department of Trade and Commerce

The Secretary of State, Department of Public Printing and Stationery, Department of Secretary of State

The Minister of Justice, Department of Justice

The Minister of Marine and Fisheries, Department of Marine and Fisheries

The Minister of Militia and Defense, Department of Militia and Defense

The Post Master General, Post Office Department

The Minister of Agriculture, Department of Agriculture

The Minister of Public Works, Department of Public Works

The Minister of Finance and Receiver General, Department of Finance

The Minister of Railways and Canals, Department of Railways and Canals

The Minister of the Interior and Superintendent of Indian Affairs, Department of Indian Affairs, Department of Interior

The Minister of Customs, Department of Customs

The Minister of Inland Revenue, Department of Inland Revenue

The Minister of Labor, Department of Labor

LEGISLATIVE DEPARTMENT

Parliament of Canada.—The Parliament of Canada is composed of the Sovereign, the Senate and the House of Commons. It is the prerogative of the Sovereign to summon meetings of Parliament and to prorogue or dissolve it. It is also the prerogative of the Sovereign to approve or disapprove of all bills which have been agreed to by both Houses. The Sovereign takes no part in debate. An annual session of Parliament must be held.

The Senate.

Number of Members.—87.

How Appointed.—By the Governor-general on the advice of Canadian Ministers.

Term of Office.—Life, but office may be forfeited.

Eligibility.—Thirty years of age or upward; national born or naturalized subject of the Sovereign; owner of $4,000 realty; resident of Province he represents; and in Province of Quebec his property qualification must be situated in the electoral district he represents.

Salary.—Fixed by statute at $2,500 and traveling expenses; speaker, $4,000.

Powers of Senate.

(a) Appoints its officers other than Speaker.

(b) Has power to approve, reject, or amend bills passed by the House of Commons.

(c) Cannot originate or alter bills passed by the House of Commons for raising revenue.

The House of Commons.

Number of Members.—221, elected by popular vote for electoral districts. Readjusted decennially.

Speaker.—Elected by House subject to approval of Governor-general.

Salary.—$2,500 and traveling expenses; Speaker, $4,000.

Term of Office.—Duration of Parliament, but may resign or be expelled for crime.

Duration.—Until dissolved by Governor-general, but not to exceed five years.

Powers. (a) Originates all bills for raising revenue.

(b) May approve, reject or amend bills passed by the Senate.

Legislation.—All laws must receive the assent of the Governor-general, the Senate and the House of Commons.

Legislative powers of Dominion Parliament are limited to federal matters.

JUDICIAL DEPARTMENT

Judges of Dominion Courts.

Supreme Court.—Consists of a Chief Justice and five other Judges.

How Appointed.—By the Governor-general with the advice of the Canadian ministers.

Term of Office.—Life and good behavior, but may resign after 20 years service on full pay.

Jurisdiction.—Appellate court to hear appeals from courts of last resort in various Provinces of the Dominion. Has original jurisdiction in certain constitutional matters.

Salary.—Chief Justice, $10,000; other Judges, $9,000.

Exechequer Court.—Consists of one judge.

How Appointed.—By the Governor-general with the advice of the Canadian ministers.

Term of Office.—Life and good behavior, but may resign.

Salary.—$8,000.

Jurisdiction.—Claims against the crown; federal railways; patents; trade marks; copyrights; admiralty.

GOVERNORS-GENERAL OF CANADA

Governor-General	Lineage	Term of Office	Birth	Death
The Right Hon. Viscount Monck, G.C.M.G.	Charles Monck, British statesman, made a peer of the United Kingdom in 1866	1867–1869	1819	1894
The Right Hon. Lord Lisgar, G. C. M. G.	Baron Lisgar, a British politician (Sir John Young)	1869–1872	1807	1876
The Right Hon. the Earl of Dufferin, K. P., K. C. B., G. C. M. G.	Was created Marquis of Dufferin in 1888 (Frederick Temple Hamilton Blackwood)	1872–1878	1826	1902
The Right Hon. the Marquis of Lorne, K.T., G. C. M. G., P. C., etc.	Eldest son of the eighth Duke of Argyll (John George Henry Douglas Sutherland Campbell)	1878–1883	1845	....
The Most Hon. the Marquis of Lansdowne, G. C. M. G.	Fifth Marquis of Lansdowne (Petty-FitzMaurice Henry Charles Keith)	1883–1888	1845	....
The Right Hon. Lord Stanley of Preston, G. C. B.	Sixteenth Earl of Derby (Frederick Arthur Stanley)	1888–1893	1841	1908
The Right Hon. the Earl of Aberdeen, K.T., G. C. M. G.	Seventh Earl of Aberdeen (John Campbell Hamilton Gordon)	1893–1898	1847	....
The Right Hon. the Earl of Minto, G.C.M.G.	Fourth Earl of Minto (Gilbert John Elliot-Murray Kynynmound)	1898–1904	1845	....
The Right Hon. the Earl Grey, G. C. M. G.	Fourth Earl Grey (Albert Henry George)	1904–1911	1851	....
H. R. H. the Duke of Connaught	Third son of Queen Victoria	1911–1916	1850	....
Duke of Devonshire		1916–1921	1868	....
General Lord Byng	(Hero of Vimy Ridge). Seventh son of Earl of Stafford	1921–1926	1862	....
Right Hon. Viscount Willingdon, G. C. S. I., G. C. M. G., G. C. I. E., G. B. E.		1926–	...	....

PREMIERS OF CANADA

Name	Service		Born	Died
	Term	Years		
Rt. Hon. Sir John A. Macdonald	1867–1873	6	1815	1891
Hon. Alexander Mackenzie	1873–1878	5	1822	1892
Rt. Hon. Sir John A. Macdonald	1878–1891	3	(see above)	(see above)
Hon. Sir J. J. C. Abbott	1891–1892	1	1821	1893
Rt. Hon. Sir J. S. D. Thompson	1892–1894	2	1844	1894
Hon. Sir Mackenzie Bowell	1894–1896	2	1823	....
Hon. Sir Charles Tupper Bart	1896–(Jan. 15 to July 8)	..	1821	....
Rt. Hon. Sir Wilfrid Laurier	1896–1911	13	1841	....
Rt. Hon. Robert Laird Borden	1911–1920	..	1854	....
Rt. Hon. Arthur Meighan	1920–1921	..	1874	....
Rt. Hon. Mackenzie King	1921–	..	1874	....

LAW may be defined as the system of rules established by organized society, performance of which it enforces or breach of which it punishes. It is the coercive character of its rules that distinguishes law from custom.

Its History.—Law has a natural course of development among uncivilized people; and what are at first merely customary usages or arbitrary decrees of a despotic ruler, intended only for a single case, become fixed as rules of law. In early law certain universal tendencies may be observed. Thus, such law is always formal. That is, the tests by which the validity of acts is judged are based on an arbitrary formality rather than upon the essential justice or reasonableness of the act. Procedure and proof are similarly formal. Such tests as ordeal or combat are held to determine the righteousness of a litigant's cause.

Five Systems.—In the history of the modern world five great systems of law have grown up: The Chinese, the Hindoo, the Mohammedan, the Roman, and the English. Of these the two last named are peculiar in having spread far beyond the countries in which they had their origin, and these two systems at the present day mainly dominate the civilized world.

Roman Law was partially diffused over the countries which the Romans conquered, and later was either tacitly or expressly adopted by most of the European countries. It now prevails over all southeastern Europe as well as in Germany, Belgium and Holland, and to a large degree its principles have been adopted in the Scandinavian and the Slavonic countries. The settlers of Central and Southern America carried their law with them and the Roman Law prevails throughout the countries there, as it also does in most of the East and West Indies.

A few portions of the British Empire and of the United States also have inherited the Roman law which, however, tends in such places with lapse of time to take on some admixture of the English common law. Scotland, parts of Africa, Ceylon, Quebec, Louisiana and the Philippine Islands come under this description.

The English Common Law has been spread by English colonists almost everywhere that the English language is spoken. Great Britain (with the exception of Scotland), Australia, New Zealand, British America (excepting the Province of Quebec), India, parts of Africa, numerous smaller British colonies, the United States, the Hawaiian Islands, all are dominated by the English system of jurisprudence, though in India native law as well as English law is enforced.

Our whole system of law is based on the English *common law*. This originated in local customary rules enforced in different communities in England from which was gradually evolved a common law for the whole kingdom. The earliest important influence in this direction was given by the establishment, in the reign of Henry II., of the Kings Courts, which had jurisdiction over the whole kingdom and travelled on a circuit through the several shires. These courts gradually superseded petty local tribunals. In the reigns of Edward I. and Edward III. parliamentary enactments strengthened the tendency to uniformity already begun and the foundations of the modern laws of real property were laid. Soon afterwards the equity jurisdiction of the chancellor became recognized, by means of which extensive modifications have been evolved in modern English law. In the reign of Henry VIII. and shortly thereafter the destruction of the Papal power in England prevented the further development of civil law principles through the medium of the canon law and the church. In other countries of Europe the canon law had been one of the means by which Roman or civil law had been extended. The great body of commercial law, which is so important to-day, has grown up almost wholly since the beginning of the eighteenth century.

When the English colonists settled in the United States they carried with them the system of law to which they had been accustomed and the revolution, though it severed the political union between the United States and England, did not change the system of law, so that except as subsequent statutes or decisions of American courts may have led to a different result English precedents still have weight in American courts.

Foundations of American Law.—The sources of American law are two: *statutes* and *decisions* of the courts. It is an important rule of the English common law that a previous decision of a court on similar facts creates a *precedent* binding the same court, or other courts of equal or lower rank, to render the same decision. It is due to this binding effect of precedent

that definite rules of law gradually were evolved by the courts without the aid of legislative enactment. The rules thus established must be sought in the published decisions of the courts.

Legislative Enactment is another very important source of law. But even when legislatures pass statutes, courts have the power of deciding what they mean, and thus even in regard to statutory law the governing rules often cannot be clearly known until courts have decided cases involving the construction of the statutes.

Classification.—Law may be divided into *public* and *private* law. Public law involves rights and duties between the state, or one acting by its authority, and a private individual, while private law involves the relative rights and duties of private persons.

Public Law comprises (a) International law, (b) Constitutional law, (c) Administrative law, (d) Criminal law.

International Law consists of rules governing the conduct of states toward one another, and the conduct of citizens of one state toward another state. In disputes between nations no court exists to which the parties may come and obtain a decree which will be forcibly carried out under the direction of the court; but the rules of international law are recognized by the courts of individual nations as binding when, as not infrequently happens, such rules affect the rights of the individuals.

Constitutional Law defines the manner in which the government is carried on, and the limits of the powers of the state as against the individual. In the United States not only the general government has a written constitution, but each state likewise has such a constitution. Each of these constitutions establishes the method of government and also contains grants and limitations of power to the several departments of the state. The Federal Constitution gives certain powers to the national government and denies certain powers to the individual states. Except in so far as powers are granted expressly or by necessary implication to the national government they are retained by the states. Both in Federal and State Constitutions the individual is protected in certain fundamental rights. Laws passed in violation of a constitution and within its jurisdiction are void, and whenever they are involved will be so treated by the courts.

Administrative Law relates to the rules by which government is administered by officers other than judges. Numerous rules affecting rights and duties are applied in this way: the collection of revenue; the promotion of health by boards established for the purpose; the supervision of banks, insurance companies, and other corporations; the management of public lands, are but a few of the activities which are carried on by administrative officers and in the exercise of these functions their rulings have a quasi-judicial character.

Criminal Law is the most familiar branch of public law. It consists of prohibitive rules to which penalties are attached. Criminal law, like civil law, grew up in England mainly by the decisions of courts creating a *common* law as distinguished from *statute* law. At the present time, however, criminal law has been more completely reduced to statutory form by legislative enactment than the civil law. Within the limits of the constitution the Congress of the United States has power to declare acts criminal and punish them as such, but there is no unwritten federal criminal law and the punishment of crimes is for the most part retained by the several states.

Legal Rights.—The rights enforced by private law may be divided into (a) Rights *in rem*; (b) Rights *in personam*. The former class of rights impose correlative duties on all the world, while the latter class impose correlative rights only on specified persons. The ownership of property affords an instance of a right *in rem*. The owner has a right to the property and everyone else in the world is under a duty to refrain from interfering with it.

Property is classed in the law as either *real* or *personal*. Real property consists of land, houses and other structures attached to the land and interests in such property. All other property, whether of tangible form or consisting of intangible rights, is personal.

Certain fundamental personal rights also may be classed as rights *in rem* since all the rest of the world is under a duty to each individual to refrain from interfering with these rights. Such interference constitutes what is called a *tort*, and, as such, gives a right of action for damages to the injured person and will frequently also constitute a crime and render the offender liable to prosecution by the state. Personal rights, such as are here alluded to, are the right to life, the right to freedom from bodily indignity either by assault or imprisonment; the right within certain limits to freedom from defamation either by written or spoken statements; the right of an innocent person to freedom from malicious prosecution for a crime, the right not to be injuriously misled by wilfully deceptive statements.

Recently Developed Rights.—The development of the boycott has given rise to questions not yet fully settled as to the right of individuals to freedom from such concerted attempts to cause damage—purely negative though a boycott may be. Similarly, the invasion of the privacy of individuals has given rise to questions of how far it is legal to publish by way of advertisement, or otherwise, pictures of individuals without their consent; and in other ways invade a reasonable privacy. The keen competition of modern business has also caused another new right to be recognized clearly, that of freedom from unfair competition. The simulation of the product of a manufacturer whether by the adoption of a deceptively similar name or by the use of deceptively similar packages, or otherwise, is illegal even though no trade-mark is infringed and no actual misstatement made.

Rights in Personam may be divided into (a) family rights; (b) contractual rights; (c) obligations imposed by law.

Family Rights and duties of husband and wife, and of parent and child are created by the existence of those family relations and are confined to persons bearing that relation to each other.

Contractual Rights and duties are created by the voluntary entering into an agreement of a sort which the law regards as binding. Agreements under the common law might be made binding either by attaching a seal to a writing containing the agreement or by an agreed consideration being paid by the promisee to the promisor.

Most of the ordinary transactions of business life involve applications of the law of contracts. The greater part of the law of agency, partnership, insurance, sales, negotiable paper and banking consists of specialized contractual law.

Certain other rights are given to specific individuals and duties imposed on other specific individuals irrespective of agreement or status by virtue of special statutes or for reasons of justice. The remedy or right of action allowed by law for breach of any legal duty may be classed under this head. When a right *in rem* is violated by a particular individual the owner of the right *in rem* then acquires, besides his original right against all the world, a special right *in personam* against the wrongdoer.

Thus, an owner of land acquires a right *in personam* against a trespasser for the recovery of damages suffered by the trespass. So a right *in personam* may change its character when the right has been violated. The right of a servant to employment under a contract becomes a right of action for damages if the employer wrongfully discharges the servant. Both rights against the master are rights *in personam*, but the right of action arising on breach of the contract is different from the right to employment which existed under the contract when unbroken.

Legal Remedies.—Closely connected with the subject of legal rights and duties is the subject of *legal remedies* for their enforcement. The rules defining the rights and duties of persons has been called the *substantive* law, that defining the remedies and the procedure and proof, the *adjective* law. *Adjective Law* may be divided into the law of *procedure* and of *proof* or *evidence*. *Procedure* in turn may be divided into *civil* procedure and *criminal* procedure; and civil procedure into procedure *at law* and *in equity*.

Civil Procedure.—The fundamental steps of civil procedure at law are the beginning of the action by a writ or notice to the defendant, *pleading*, trial and judgment.

Pleading consists first of a statement of the plaintiff's case variously styled a declaration or complaint. This is followed by a plea or answer of the defendant denying some or all of the facts alleged in the plaintiff's statement, or alleging further facts, or both. The answer is sometimes followed by other pleadings. The ultimate result of the pleading is that each party has set forth the facts on which he relies and these facts have either been admitted or denied by the other party. If essential facts are denied it is necessary to try the disputed question by means of *proof*.

But not only questions of *fact* but also questions of *law* might be involved in a dispute. The parties might agree as to the facts and dispute only as to whether on those facts the plaintiff had a right of action. Or the defendant might dispute both the truth of the facts alleged by the plaintiff and also assert that even though the facts were as the plaintiff alleged, still the plaintiff would have no cause of action. Questions of law are decided by a judge, and, in accordance with his decision on questions of law and a jury's verdict on questions of facts, final judgment is given by the court for the plaintiff or defendant, whichever is entitled to it. In the United States at the present day many questions of fact are decided by judges without the aid of juries, but owing to the provisions of state constitutions, this is generally impossible except by the parties' waiving their right to trial by jury.

Procedure in Equity differs from procedure at law in various respects. The plaintiff's pleading is called a *bill* or *petition* and is fuller than is usual in a declaration at law. The defendant's answer is also fuller as to facts charged in the bill. There is no jury; questions of fact as well as law being determined by the judge.

The most fundamental difference between *equity* and *law*, however, is in regard to the character of the final order of the court. When judgment is rendered at law in favor of the plaintiff an execution for an amount of the judgment is put in the hands of a sheriff, who endeavors to satisfy the execution by seizure of the defendant's goods. The decree of the court of equity, however, is directly against the person of the defendant, ordering him on pain of imprisonment, to do what the court directs. A court of law can only give a money judgment, a court of equity can effectively order a defendant to do many things besides the payment of money; and not only are affirmative orders possible, but negative orders or injunctions are possible, and constitute one of the most important branches of equity jurisdiction.

In many states of America the procedure at law and in equity is now made identical, and even in states where this is not so, the same court generally has jurisdiction of both actions at law and suits in equity. In any event, however, the distinction between equitable relief and legal relief is still necessarily observed.

Criminal Procedure is in the main like civil procedure at law; the chief difference relating to the beginning of the proceedings. A person may be charged with crime by *complaint* made by any citizen to a magistrate who, if satisfied that there is reasonable cause for the complaint, and if he has jurisdiction to try cases of the sort, may proceed with the trial of the accused or otherwise may hold the accused for trial in the proper court.

Another method of beginning a criminal prosecution is by *information* filed by a prosecuting officer, but the commonest method is by *indictment* found *by grand jury* on a case presented to it by the prosecuting officer. The accused may then be arrested and held for trial either by confining him or by admitting him to bail. Those who give bail are regarded as private keepers of a prisoner and are bound to produce him when called upon to do so.

Greater particularity is required in the criminal pleading of the indictment than is necessary in civil actions. The defendant makes no other answer or plea than either guilty or not guilty. The latter plea compels the government to prove everything essential to make out the guilt of the accused of the crime charged.

In civil cases it is sufficient for one alleging facts in his pleading to prove them by a mere preponderance of evidence; but in criminal trials the government must prove the prisoner's guilt beyond a reasonable doubt in order to convict him.

Trials, both civil and criminal, are ordinarily conducted by a single judge, but appellate courts are established to revise the rulings of law made by trial judges if these rulings are questioned. When the trial judge makes a ruling of law the party aggrieved by his decision may reserve the right to question the correctness of the ruling in an appellate court, which generally consists of from three to seven judges sitting together. If the ruling at the trial is held to be incorrect by the appellate court, a new trial is ordered.

Evidence.—A very important branch of the adjective law is that relating to evidence. It is an obvious rule of logic as well as of law that no testimony is admissible which is not *relevant* to the facts in dispute; but not all evidence which is relevant is admissible. Indeed the law of evidence has been defined as consisting of rules excluding various kinds of logically relevant testimony; the most important of these rules is that which excludes *hearsay* evidence.

Of vital importance also is that which excludes *oral* evidence of the contents of a *written document* when the written document is obtainable and which makes a written contract between parties a conclusive statement of their agreement. The rules of evidence grew up as an accompaniment of the jury system and to a large extent are designed to avoid the misleading of a tribunal composed of twelve men unlearned in the law and perhaps of no great education. The commonest kind of legal errors carried from trial courts to appellate courts consists of erroneous rulings admitting or excluding proffered testimony.

Contracts.—A contract is an agreement between two or more persons, enforceable at law, whereby rights are acquired by one party to acts or forbearances on the part of the other party. The two fundamental ideas of contract are agreement and legal obligation.

Classification.—Contracts are classified in various ways. There are *express* and *implied* contracts; *formal* and *informal* contracts; *executed* and *executory* contracts; *valid* and *voidable* contracts.

Express and Implied Contracts.—An express contract is one created by oral or written words. An implied contract is one inferred from the acts of the parties.

Formal and Informal Contracts.—Formal contracts are those whose validity depends upon their form. They are of two kinds—contracts of *record* and contracts under *seal*. At common law the seal consisted of an impression on wax or a wafer attached to the instrument. By statute, however, a mere scroll has the same effect as a common-law seal. All contracts which are not of record or under seal are *informal*.

Executed and Executory Contracts.—An executed contract is one which has been fully performed by both parties, while an executory contract is one in which something remains to be done. A contract may be executed on one side and executory on the other.

Valid and *Voidable Contracts.*—A valid contract is one which is enforceable at law against both parties. A voidable contract is one which may be avoided at the option of one of the parties.

Essentials of a True Contract.—All true contracts contain the following essentials: (1) competent parties; (2) a valuable consideration; (3) a real agreement; (4) a lawful object. Some contracts also must comply with certain forms prescribed by law.

Incompetent Parties.—Certain persons are more or less incompetent to make a valid contract. They consist of the following six classes: (1) infants; (2) insane persons; (3) drunkards; (4) married women; (5) aliens; (6) corporations.

Infants. At common law, all persons under twenty-one years of age are infants. In a few states, however, by statute, females are of age at eighteen.

Married Women.—At *common law* a married women's contracts were void. Courts of equity, however, from an early day, have protected her *separate estate* and recognized her *contracts* relative thereto. This estate included all property both real and personal, which was settled upon her to her sole and separate use. The legal title to it had to be in some other person, who might be her husband, who held it in trust for her.

The Married Woman's Acts, which are in force in every state of the Union, have greatly enlarged the rights and powers of married women. Generally speaking, they provide that property owned by a woman at the time of her marriage, and all subsequent acquired by her by gift, grant, bequest or devise, shall be her separate estate free from the debts of her husband, and that she shall have power to make contracts with reference to such estate. In a few of the states these modern statutes go further and gave her the right to make contracts in general and to engage in trade the same as a *feme sole*.

Corporations are artificial beings. They are invisible and intangible and exist only in contemplation of law. They must act, therefore, through the instrumentality of agents. They may make contracts, provided they act within the scope of their charters. Contracts which are foreign to their charters are *ultra vires*.

Consideration.—A promise is not legally binding unless supported by a valuable consideration. (A good consideration, such as blood relationship, will support a conveyance, but not a contract.) A promise, therefore, to make a gift is not enforceable. If, however, the object of the donation has been delivered to the donee the gift is irrevocable.

Promise Under Seal.—A promise under seal, at the old common law, was conclusively presumed to be supported by a valuable consideration. In this country, however, the presumption is disputable.

What Constitutes a Valuable Consideration.—A consideration is a valuable one in the eye of the law if it consists of some benefit, interest, or right accruing to the promisor, or some detriment, forbearance or responsibility suffered or undertaken by the promisee. It is not essential, however, that there be a real benefit to the promisor, or a real detriment to the promisee. The mere waiver of a legal right is sufficient. Thus, it has been held that a promise by an uncle that he would pay his nephew $5,000 if during his minority he would refrain from using intoxicating liquor and tobacco, and would not swear or play cards for money, is legally enforceable. In such case, the restriction upon the nephew's lawful freedom is a sufficient consideration for the uncle's promise.

A promise to perform an *impossible* thing is not a valuable consideration. Nor is a promise to do what the promisor is already bound to do. Marriage is a valuable consideration and so is a promise to marry.

Inadequacy of Consideration.—Mere inadequacy of the consideration is no defense to an action on a contract. It may be used with other testimony, however, as evidence of fraud, undue influence or duress.

A Real Agreement.—To create a contract there must be an offer and an acceptance. The minds of the parties must meet. In other words, the acceptance must be unconditional and conform to the terms of the offer. The offerer may prescribe the time and place of the acceptance and the mode of making it.

Revocation of Offer.—An offer may be revoked at any time before acceptance. It may become revoked by mere lapse of time. The death or insanity of either party before acceptance revokes it.

An Offer by Mail or Telegraph.—An offer by mail does not take effect until received, but an acceptance by mail, provided it is properly addressed and stamped, takes effect when posted. The fact that it is lost in the mails is immaterial. The offeror, however, may make the actual receipt of the acceptance a condition precedent to a contract. Similar rules govern relative to offer and acceptance by telegraph.

A Lawful Object.—The object of the agreement must be a lawful one. An agreement to do an act which is prohibited by positive law, or which is against public policy, is illegal and void.

Wagering Contracts.—In this country wagering contracts are quite generally prohibited by statute. At common law, however, they were enforceable. They include transactions on the board of trade, called futures, whereby the parties do not contemplate a delivery of the goods sold, but merely payment of the difference between the contract price and the market price at the time of delivery.

Sunday Contracts.—Sunday contracts, as a rule, are also prohibited by statute. At common law, however, they, like wagering contracts, were enforceable. The statutes of the various states vary considerably, but all exempt from their operation contracts founded upon works of charity or necessity. Under these statutes, promissory notes, bonds, deeds and mortgages delivered on Sunday are void, although signed on a secular day. But those delivered on a secular day are enforceable although signed on Sunday. This is owing to the fact that the instrument takes effect upon delivery.

Usury Statutes.—Usury statutes obtain in nearly all of the states. Usury is interest contracted for or paid in excess of the legal rate. The purpose of the usury statutes is to protect debtors from overreaching creditors. They vary in the different states. Some make the entire contract void. Others make the interest void. While still others merely make the excess above the legal rate void. They apply to loans, but not to sales. Hence they are not applicable where bills or notes are discounted by a third party. Nor, by the law merchant, do they apply where a banker in loaning money deducts in advance the highest rate of interest allowable. To constitute usury there must be a corrupt intent, but devices to cover this intent are carefully scrutinized by the courts.

Contracts in Restraint of Trade are against public policy and void. The chief reason is they tend to create monopolies. A person may, however, restrain himself from carrying on a business or profession within reasonable limitations as to territorial limits. And when he does this no limitation is essential as to time.

Contracts in Restraint of Marriage.—Contracts which unduly restrain a person from marrying are against policy and void. Thus, a contract never to marry, or not to marry any one but a certain person to whom the promisor is not already engaged, is void. But a contract not to marry until of age is valid. And, ordinarily, a contract not to marry without the consent of the promisor's parents is valid.

Cornering the Market.—Combinations whose purpose is to corner the market are against the public policy and void. This is because they tend to create monopolies and thereby unduly enhance prices. Similarly, where a buyer at a public sale is fraudulently influenced by fictitious bids to pay an abnormally high price he may rescind the contract.

Contracts Against Public Justice or the Public Service.—Agreements which tend injuriously to affect public justice or the public service are against public policy and void. Thus, a contract whereby a party agrees unduly to interfere officially in a law suit that does not concern him; or to pay a public officer a fee for an official act; or unduly to influence an election to a public office, are void.

Contracts Which Must be in Writing.—In some jurisdictions in this country a writing is now essential in one or more of the following cases: (1) contract of insurance; (2) acknowledgment of a debt which is barred by the statute of limitations; (3) acceptance of an order for the payment of money; (4) ratification by a minor after reaching his majority.

The Statute of Frauds.—In every state in this country there exists what is known as the Statute of Frauds. This statute contains two sections—the 4th and the 17th—of great importance in the law of contracts, especially the former.

The 4th Section of the Statute of Frauds.—The 4th section of the English statute provides that no action shall be brought (1) whereby to charge any executor or administrator upon any special promise to answer in damages out of his own estate; or (2) to charge the defendant upon any special promise to answer for the debt, default or miscarriage of another; or (3) to charge any person upon any agreement made upon consideration of marriage; or (4) upon any contract or sale of lands, tenements or hereditaments, or any interest in or concerning them; or (5) upon any agreement that is not to be performed within the space of one year from the making thereof, unless the agreement upon which such action shall be brought, or some memorandum or note thereof, shall be in writing, and signed by the party to be charged therewith, or some other person thereunto by him lawfully authorized. Failure to comply with the requirement of this section of the statute does not render the contract void, but renders it unenforceable by excluding oral testimony of it.

The 17th Section of the Statute of Frauds.—The 17th section provides that no contract for the sale of any goods, wares or merchandise, for the price of 10 £ sterling, or upward, shall be allowed to be good, except (1) the buyer shall accept part of the goods so sold and actually receive the same; or (2) give something in earnest to bind the bargain, or in part payment; or, that some note or memorandum in writing of the said bargain be made and signed by the parties to be charged by such contract, or their agents, thereunto lawfully authorized.

Contracts for Work, Labor and Materials Excluded.—This section does not apply to contracts for work, labor and materials. As to just what constitutes such a contract, however, the courts do not agree. In most of the states it is held that a contract for a chattel to be made is not one for work, labor and materials, provided the chattel is one which the vendor ordinarily makes and sells in the regular course of his business.

Minimum Value.—In most of the states the minimum value of the goods to which this section of the statute applies is fixed at $50. In a few, however, it is more, and in a few others less. And in at least two the amount is not limited.

In a few states, including Illinois, this section of the statute has been repealed.

Reality of Consent.—The mutual consent of the parties must be real. The causes which sometimes render it unreal are the following: (1) mistake; (2) misrepresentation; (3) fraud; (4) undue influence; (5) duress.

Mistake.—The kind of mistake which is meant in this connection is mistake of intention and not mistake of expression. The former avoids the contract, but the latter does not. Where the parties are mistaken as to the existence of the subject-matter the mistake, of course, avoids the contract.

Misrepresentation, as distinguished from fraud, is an innocent misstatement or nondisclosure of a fact. As a rule, it has no effect upon a contract. There are, however, some exceptions to this rule. These consist of contracts *uberrimae fidei*. From their nature one party relies upon the other party for knowledge of certain facts and that other party in consequence is bound to exercise the utmost good faith.

They include insurance contracts, and those made between parties occupying a fiduciary relation, such as guardian and ward, trustee and *cestu ique trust*, attorney and client, principal and agent, etc. In this class of cases a material misrepresentation, although innocently made, renders the contract voidable and entitles the injured party to equitable relief.

Fraud is a misrepresentation of a material fact, present or past, made with knowledge of its falsity or in reckless disregard whether it is true or false, with intent to deceive, and which does deceive the other party, to his injury.

Ordinarily, to constitute fraud there must be a *misrepresentation* as distinguished from a mere *concealment*. There are, however, some exceptions to this rule. Where the deceiving party is in duty bound to make a disclosure, or where he takes steps to prevent a disclosure, or where the concealment renders that which is stated false, the nondisclosure amounts to fraud. The effect of fraud upon a contract is to make it voidable at the option of the injured party.

Undue Influence.—Undue influence is akin to fraud. It consists in the taking by one of the parties to the contract of an unfair advantage over the other party, who either reposes confidence in him, or possesses a weak intellect, or is in distress. Like fraud, its effect upon a contract is to render it voidable.

Duress is actual or threatened violence or imprisonment which reasonably causes another to enter into a contract. It may be by one of the parties to the contract or by his agent. And it may be against, or of, either the other party to the contract, or his or her spouse or other near relative. It may consist of the threatened destruction of property, or, under oppressive circumstances, of the illegal detention of property. As in the case of fraud or undue influence, its effect is to render the contract voidable.

Rules of Interpretation.—The ultimate purpose of rules of interpretation of contracts is to ascertain the intention of the parties. To accomplish this the following rules are applied by the courts:

When the contract is in writing the writing itself is the best evidence of it. This rule does not apply, however, where the writing is a mere memorandum of the contract, or where the purpose in introducing oral testimony is to show fraud, illegality, mistake of expression, usage or custom, or a condition precedent. Nor does it apply to subsequent oral agreements. Nor to oral testimony whose purpose is to explain the meaning of terms. Again, where a proper foundation has been laid for the introduction of secondary evidence, oral testimony of the written contract is admissible.

When the instrument is partly written and partly printed and the written and the printed parts conflict, the former must control.

Ordinarily, words are to be given their plain, common meaning. If, however, the context or surrounding circumstances show that the parties intended to use them in a peculiar or technical sense they must be given that special meaning.

When doubt exists as to the meaning of a word or clause it is to be construed most strongly against the party using it.

When words or clauses are repugnant, those which are opposed to the manifest intention of the parties are to be rejected.

Subsequent acts of the parties may have a controlling influence in determining their intention. In no case, however, will they be allowed to defeat the plain import of the words.

The various parts of the instrument must be construed together. When there are several contemporaneous agreements relating to the same transaction they must be construed in the light of one another. And when one or more other papers are directly referred to in the instrument as constituting an inducement to the contract, they are entitled to consideration.

Modes of Discharging a Contract.—Contracts are discharged in the following ways: (1) by agreement; (2) by performance; (3) by impossibility of performance; (4) by breach; (5) by operation of law.

Discharge by Agreement.—The parties may agree that their contract shall no longer bind them. Such an agreement is called a waiver, cancellation or rescission. Express words of rescission are not essential. Thus, where the parties make a new contract, which is inconsistent with the old one the latter is discharged. In such case if a third party is substituted for one of the original parties with the consent of all three, the new agreement is called a novation.

Discharge by Performance.—Strict and full performance of a contract discharges it. Ordinarily, a reasonable time is allowed within which to perform a contract. When, however, time is of the essence of the contract, failure to perform within the time agreed constitutes a breach. Mercantile contracts, especially, belong to this class.

Performance may consist in payment of money or negotiable paper. In the latter case the performance may be absolute or conditional. Ordinarily, a presumption arises that the payee is entitled to sue on the original contract if the paper be not paid when due.

Tender, or an offer to perform, may constitute a release. Thus, when a party offers to render services, or deliver goods, or do some other act which he is bound to perform, and the tender is refused, he is usually released. It is to be observed, however, that when the obligation is the payment of money, a tender of the sum due does not discharge the debt. Usually, however, it stops the accrual of interest, and also puts the burden of costs on the creditor in case he sues to recover the debt. Moreover, if any security for the debt exists, it discharges it.

Discharge by Impossibility of Performance.—When the agreement shows on its face physical or legal impossibility of performance there is no contract. And the same is true when the subject-matter of the agreement has ceased to exist at the time the agreement is entered into.

Ordinarily, however, when the impossibility of performance arises subsequently to the formation of the contract it does not discharge it. The chief exceptions to this rule are as follows: (1) when the contract is one for personal services and death or incapacitating illness intervenes; (2) when the continued existence of some specific thing is essential to the performance and it ceases to exist through no fault of either party; (3) when the impossibility is created by law.

Discharge by Breach.—Breach of the contract by one of the parties always gives the other party a right of action for damages, and sometimes discharges the contract. When one party renounces the contract the other party may treat it as discharged and sue at once for the breach. When the promises are independent of each other, failure of performance by one party does not operate to discharge the other; but when the promises are conditional upon each other, it does. Independent promises are absolute, divisible or subsidiary. Conditional promises are precedent, concurrent or subsequent.

Discharge by Operation of Law.—Contracts are discharged by operation of law in the following ways: (1) merger; (2) alteration; (3) bankruptcy proceedings.

Merger is where a higher security swallows up or extinguishes a lower one. This cannot occur unless the securities are of unequal grade, and the subject-matter and the parties the same. A contract under seal will merge a simple contract, and a judgment will merge a contract under seal. But a written contract not under seal will not merge an oral one because they are of equal grade. Each is merely a simple contract.

Alteration of a contract discharges it, provided the alteration is material and made intentionally by one of the parties to it, or his agent, without the consent of the other party.

Bankruptcy releases a party from all his liabilities provable under the bankruptcy proceedings. The decree of the court constitutes the order of discharge.

Negotiable Instruments.—Negotiable paper should possess the following characteristics: (1) it must be in writing and signed; (2) it must contain an unconditional order or promise to pay a certain sum of money; (3) it must be payable to order or bearer; (4) it must be payable at a determinable time; (5) if a bill of exchange it must indicate the drawer.

Bills of Exchange.—A bill of exchange is an unconditional written order by one person upon another, directing him to pay a third party, or to his order or to bearer, a sum of money therein stated.

Bills of exchange are of two kinds: (1) foreign; (2) domestic. A foreign bill of exchange is a bill drawn in one state or country and payable in another state or country. A domestic or inland bill of exchange is a bill which is payable in the state or country in which it is drawn.

Parties to a Bill of Exchange.—The necessary parties to a bill of exchange are the drawer, the drawee and the payee. There may be, in addition, indorsers and indorsees. After the drawer accepts the bill he is called the acceptor. In accepting the bill he thereby becomes the principal debtor and the drawer becomes a guarantor of payment instead of a guarantor of acceptance.

Presentment for Acceptance Not Always Essential.—Unless the drawer has directed that presentment be made for acceptance it is not essential in the case of bills payable on demand, or on a certain date, to present them for acceptance. It is customary to do so, however, as to those payable at a specified time. Those payable a certain number of days after sight or demand must be presented for acceptance within a reasonable time.

Privilege of the Drawee.—The drawee is entitled not only to inspect the bill, but also to retain it twenty-four hours. This is to enable him to investigate the drawer's account before deciding whether he will accept the bill or not.

An acceptance which differs from the tenor of the bill may be refused by the holder; but if he accepts it he is bound by it.

Promissory Notes.—A negotiable promissory note is an unconditional written promise by one person to pay another person, or to his order or to bearer, at a determinable time, a sum in money. The *liability* of the maker, unlike that of the drawer of a bill of exchange, is primary and direct.

Transfer of Bills and Notes—A bill or note payable to bearer, or payable to order and indorsed in blank, is transferable thereafter by mere delivery. The transferor in such case impliedly warrants the genuineness of the signatures and the body of the instrument. He also impliedly warrants the capacity of the parties to make a contract and his title to the instrument.

When the instrument is indorsed in full, as, for example, "Pay to the order of John Brown," any further transfer will require the indorsement of the indorsee. Without such indorsement the equitable title would pass, but not the legal title.

Indorser's Liability.—An indorser of a bill or note not only impliedly warrants all that a transferor by mere delivery impliedly warrants, but also, in the case of an unaccepted bill payable at a certain future time, that it will be accepted unconditionally by the drawee when duly presented for acceptance; and in the case of a promissory note or an accepted bill payable at a certain future time, that it will be paid at maturity if duly presented for payment, or, if payable on demand, that it will be paid within a reasonable time after demand of payment is made. And furthermore, that in case of dishonor, either by non-acceptance or non-payment, after due demand, he will pay the obligation upon receiving due notice of the dishonor.

Where there are two or more indorsers they are liable *prima facie* in the order in which their names appear on the instrument.

Place for Indorsement.—The proper place for an indorsement is across the back of the instrument. It may, however, be elsewhere, even upon a separate paper. In such case the separate paper is called an allonge. It may contain several indorsements.

A Restrictive Indorsement is one which restrains further indorsement of the bill or note. Title is vested in the indorsee as a trustee or agent. Thus, "Pay to John Brown for my use"; "Pay to John Doe for my account"; are restrictive indorsements.

An Indorsement with Waiver is an indorsement which waives demand, notice or protest, or more than one of them. When in the body of the instrument it binds all the parties, but when it is above the signature of but one indorser he is the only person bound by it.

Protesting a bill or note consists in taking the necessary formal steps by a notary public to establish and certify to its dishonor. It is essential that the same notary take all the steps required and that the certificate of protest be based upon his acts.

Notice of Dishonor of a bill or note may be oral. Ordinarily, however, it is in writing. It should contain statements showing: (1) a sufficient description of the instrument dishonored; (2) that it was presented for acceptance or payment; (3) that acceptance or payment was refused; (4) that it has been protested, if this has been done; (5) that the holder looks to the party notified for payment.

Checks.—A check is an order on a bank or banker, payable on demand without grace, drawn by a depositor.

Relation between Bank, Depositor and Checkholder.—The fund on deposit belongs to the bank rather than to the depositors. The bank is the depositors' debtor. For this reason a checkholder, as a rule, may not sue the bank. If, however, the check has been previously certified by an authorized officer of the bank, he may do so. In such case the bank is the checkholder's debtor. Moreover, where the holder of the check procures the certification the drawer and the indorsers are released.

Presentment of Check.—A check should be presented within a reasonable time. What constitutes a reasonable time depends upon the circumstances of the particular case. Five days' delay has been held sufficient to render the check stale. On the other hand, a month's delay has been held insufficient to do so. A stale or overdue check admits equitable defenses against the holder.

Payment of Checks.—When a check, properly drawn, is presented for payment and there are sufficient funds on deposit to meet it, the bank is bound to pay it. A refusal to do so would render it liable to the depositor for damages.

When Fund is Attached.—When the fund of a depositor is attached the bank, as a rule, may not pay his checks. In those states, however, in which a check operates as an equitable assignment *pro tanto* of the fund upon which it is drawn, the bank may pay checks drawn before the attachment.

Forged Checks.—When a bank pays a check whose signature is forged it must bear the loss. And when it pays a raised check it also must bear the loss, unless the drawer's negligence in filling up the blanks facilitated the forgery.

Certificates of Deposit are negotiable the same as promissory notes, and the rules which apply to indorsers generally apply to this class of paper.

Bona Fide Holders of negotiable paper are persons who take it in good faith, without notice of equities in general, in the usual course of business, for a valuable consideration, before maturity.

As a rule, a *bona fide* purchaser of negotiable paper takes it free from all equities. (a) Negotiable paper is endowed with the capacity for transfer, and it is not the purpose of the law that, when passing from hand to hand, its origin shall be scrutinized at the peril of non-payment. Otherwise its valuable quality is impaired or lost. The requirement is that the transfer shall indicate a purchase with honest intent and belief that the paper is the evidence of an honest indebtedness. The confiding purchaser is not condemned, but the purchaser who is shown not to have bestowed an honest, credible confidence. To constitute notice of an infirmity in the instrument or defect in the title of the person negotiating the same, the person to whom it is negotiated must have had actual knowledge of the infirmity or defect or knowledge of such facts that his action in taking the instrument amounted to bad faith.

Agency.—An *agent* is one who represents and acts for another. A *principal* is one who is represented by and acts through another. *Agency* is the relation which exists between such persons.

Creation of the Agency Relation.—The relation of agency may be created by *agreement* or by *operation of law.*

By agreement it may be by appointment or by ratification. Ratification is the adoption of the act of an unauthorized agent. To create the agency relation by ratification the following conditions must exist: (1) the doer of the act must profess to do it on behalf of an existing principal; (2) the approval of the act must be given with full knowledge of all the facts; (3) the act must be approved as a whole. It may not be approved in part and repudiated in part.

Creation by Operation of Law.—As a rule, the agency relation is created by agreement of the parties. There are, however, two important exceptions to this rule: (1) agency by *estoppel*; (2) agency by *necessity.* In these cases there is no assent of the parties. The relation is created by operation of law.

In the case of *agency by estoppel* the principal by his act estops himself from disputing the agency. As said by an eminent judge, "Where one has so acted, as from his conduct to lead another to believe he has appointed some one to act on that belief, then, unless he interposes, he will, in general, be estopped from disputing the agency, though in fact no agency really existed."

A good example of *agency by necessity* is that which arises where a husband improperly fails to furnish his wife necessaries. In this case, as said by Chief Justice Holmes, "it (the law) creates a compulsory agency."

Classification of Agents.—Agents are classified as to the *scope of their authority* and also as to the *nature of their duties.*

As to scope of authority, agents are either general or special. A general agent is one who is appointed to do acts of a class, and a special agent is one appointed to do an individual act.

As to the nature of their duties, agents are either professional or non-professional. The former include brokers, factors, or commission merchants, auctioneers and attorneys-at-law.

Capacity of the Parties.—Any person who has legal capacity to act in his own right may act through an agent. And any person who has sufficient natural capacity to perform the act delegated to him may be an agent.

Appointment of Agents.—Ordinarily, an agent may be appointed orally. In some cases, however, by statute, a writing is essential. At common law, to empower an agent to bind his principal by an instrument under seal the agent's authority must be under seal. At present, however, this rule is subject to the following exceptions: (1) where the instrument is sealed in the presence of the principal, by his authority; (2) where the instrument does not require a seal.

Duties and Liabilities of Agents—An agent must be loyal to his trust and obey instructions. He must not engage in enterprises antagonistic to the interest of his principal nor reap secret benefits at the expense of his principal. He must exercise due care and skill and keep regular accounts of his transactions connected with the agency. If he exceeds his authority as agent he is liable to the third party. And in all cases he is liable to third parties injured by his torts, where they are not guilty of contributory negligence.

Rights of Agents—An agent is entitled to the compensation agreed upon, or to reasonable compensation where no sum is fixed by agreement. If the term is fixed, and he is wrongfully discharged he may recover the *actual* value of the services rendered, or has the option of treating the contract as recinded and recovering the actual value of the services rendered, or of treating the contract as subsisting and recovering damages for the breach. If he should decide to do the latter, he should wait until the end of the term.

Duties and Liabilities of Principal.—It is the duty of the principal to give instructions to his agent as to the duties he is to perform, to furnish him with proper appliances, etc., and to remunerate him according to the terms of the contract. The acts of the agent, within the scope of the agency, are the acts of the principal, and he is liable for them.

Termination of the Agency Relation.—The agency relation may be terminated as follows: (1) by act of the parties; (2) by expiration of the term; (3) by operation of law.

By Act of the Parties.—The parties may terminate the relation at any time, by mutual agreement. Moreover, as a rule, either party can renounce the agency at any time. In doing so, however, he exercises a power rather than a right and is liable in damages for breach of his contract. The only exception to this rule is where the agent's authority is coupled with a proprietary interest in the subject-matter of the agency. In such case the principal cannot renounce the agency.

By Expiration of the Term.—When the agency is created for a definite period it expires at the end of the term.

By Operation of Law.—The chief causes by which the agency relation may be terminated by operation of law are the following: death, insanity, bankruptcy, war and marriage. There are certain types of agency, such as a power coupled with an interest, which are not even terminated by the death of the agent so interested.

Corporations.—A business corporation, from a strictly legal point of view, is an artificial person created by law, invisible, intangible, and existing separate and distinct from its members. Practically, however, it is an association of natural persons endowed with power by the legislature to carry on business enterprises in many respects as an individual.

How Created.—In this country they are created by the legislature, and as a rule under general statutes. Under these statutes the charter of the corporation consists of the certificate of incorporation, the articles of association, and the statutory provisions.

Its Attributes and Powers.—As a legal entity, a business corporation has capacity: (1) to enjoy a potential immortality; (2) to enter into contracts; (3) to take, hold and transfer property; (4) to sue and be sued like a natural person; (5) to make contracts with its own members, and sue and be sued by them; (6) to have and use a common seal; (7) to enjoy grants of

privileges and immunities; (8) to make by-laws; (9) to commit torts, and even certain crimes for which it may be indicted and fined; (10) in the absence of statutes or special circumstances, to be solely liable for its obligations.

Management of Corporations.—The power behind the throne in the case of a corporation is the stockholders. They choose a board of directors, and this board is entrusted by the stockholders with the direct management of the business. The details of management are entrusted by the board of directors to a president, secretary and treasurer, chosen by the board.

Powers of the Majority.—The chief powers of the majority, with respect to the stockholders, are as follows: (1) to choose directors; (2) to make by-laws; (3) to make important changes in the business within the scope of the charter.

Voting Power.—Under modern statutes each stockholder is entitled to one vote for each share of stock owned, and he is permitted to cumulate them as he chooses. He may also vote by proxy.

Powers of Directors.—The board of directors has a wide discretion in the management of the business. It has sole power to declare dividends and to fix the time and place of payment. As a rule, the majority of the directors constitute a quorum. The board has authority to select agents of the corporation, but not to decide upon important changes in the company's business, nor to determine whether the business shall be wound up or not.

Liability of Shareholders.—As a rule, the shareholders whose subscriptions are fully paid are not liable to the creditors of the corporation. But where they participate in the wrongful diversion of the capital of the corporation to the injury of its creditors they are liable to them.

Modes of Dissolving a Corporation.—A corporation may be dissolved in any one of the following ways: (1) by expiration of its charter; (2) by surrender of its charter with the consent of the state; (3) by legislative enactment, provided it is constitutional; (4) by judicial proceedings for the purpose of forfeiture owing to misuser or nonuser of its franchises.

Partnerships.—A partnership is an unincorporated association of two or more competent persons who have agreed to unite their property, labor and skill, or some of them, in carrying on a lawful business as principals for their joint profit.

Requisites of a Partnership.—The requisites of a partnership are as follows: (1) two or more competent persons; (2) a voluntary, unincorporated association; (3) based upon contract; (4) a lawful business; (5) carried on by the partners as principals; (6) for pecuniary gain.

An oral contract of partnership is valid even to deal in real estate providing the property was owned by the members beforehand.

Classification of Partnership.—Partnerships are sometimes classified as *ordinary* partnerships, *limit* partnerships and *joint-stock companies*.

Ordinary Partnerships.—Ordinary partnerships are divided into *general* and *special* partnerships.

A general partnership is one for carrying on a general kind of business or several kinds of business. A special partnership is one created to accomplish a single adventure.

Limited Partnerships.—A limited partnership is one having one or more general partners whose liability for the firm debts is not limited, and one or more special partners whose liability is limited. In organizing this kind of partnership the provisions of the statute must be carefully followed.

Joint-stock Companies are partnerships with a capital stock divided into transferable shares. In the absence of statutory provisions they are governed by the articles of association, the by-laws, and the general principles of partnership.

Classification of Partners.—Partners are designated according to the relation that exists between them and the firm, or between them and third persons. Thus, depending upon such relation, they are called ostensible, active, secret, dormant, nominal, general, special, incoming, retiring, or liquidative.

Powers of Partners.—As a general rule, each partner, for the purposes of the partnership business, is an agent of the firm and of his co-partners. The extent of the agency depends upon the nature of the business. In a trading firm a partner has implied power to buy and sell goods, execute commercial paper, borrow money, pledge or mortgage firm personalty, collect debts due the firm, lease premises, hire property, appoint agents, etc. He has no implied power, however, to submit controverted partnership matters to arbitration, or make a general assignment for the benefit of creditors.

In the case of a non-trading firm the implied powers of a partner are more limited. Thus, he has no implied power to bind the firm by making, accepting or indorsing commercial paper. Such paper, therefore, is not enforceable even in the hands of a *bona fide* purchaser.

Rights of Partners.—Each partner, in the absence of an agreement to the contrary, has an equal right to share in the management of the business of the firm. And each has the right to have firm property applied to the payment of firm debts.

Duties of Parties.—The partnership relation is one of great confidence and trust. For this reason the law requires that partners exercise toward one another the highest integrity and good faith. In the absence of agreement, a partner must not engage in transactions antagonistic to the firm's business, or take secret profits at the expense of the firm. He must conform to the partnership agreement, keep accounts, exercise care and skill, and consult with his co-partners upon all proper occasions.

Liability of Partners.—Partnership obligations arising from *contract* are joint, while those arising from *tort* are joint and several. Each member of the firm is personally liable, however, for all the firm debts. But a partner who is compelled to pay firm debts out of his separate estate is entitled to contribution from his co-partners.

Partnership Property.—The property of the firm may be both real and personal. The legal title of the firm personalty may be held in the firm name. It is otherwise, however, as to the firm realty. This is owing to the fact that the firm is not a separate legal entity. The deed should run to all of the partners in trust for the firm. It may be held by any one, however, for the use of the firm.

Nature of a Partner's Interest in the Firm Property.—The interest of a partner in the the firm property is a peculiar one. It is simply his share in the surplus after the debts are paid. And this is all the buyer gets where his interest is sold by a separate creditor under a writ of execution.

Actions in Law and Equity.—Since the firm is not a separate legal entity, a partner cannot sue his firm at law. Nor can the firm sue him. Moreover, a partner cannot sue, as a rule, his co-partner at law. He may do so, however, as to transactions wholly distinct from the partnership business; and also as to matters arising prior or subsequent to the partnership, and which, though connected with it, are not partnership transactions. Thus, a partner may sue his co-partner at law for breach of his agreement to enter into the partnership relation, to furnish capital, pay debts, indemnify him for expenses paid, or reimburse him for capital advanced.

Dissolution of the Firm.—The partnership relation may be terminated either (1) by act of the parties, or (2) by operation of law.

By act of the parties it may be by original agreement or by subsequent act; and by original agreement it may be by lapse of time or by the accomplishment of the object.

By operation of law it may be by death, insanity, marriage, bankruptcy, or war between the countries of the partners. The circumstances under which each of these causes will effect a dissolution of the partnership relation are similar to those under which each of them will terminate the agency relation.

A court of equity may decree the dissolution of a partnership for any of the following causes: (1) fraud in creating the partnership; (2) insanity of a partner; (3) gross misconduct of a partner; (4) hopelessness of success.

Notice of Dissolution Required.—When the partnership is dissolved by act of parties notice of the dissolution must be given, not only to those who have had dealings with the firm, but also to the public generally. The former must have *actual* notice, but as regards the latter a general notice in a newspaper of general circulation in the neighborhood, for a reasonable period, is sufficient.

Effect of Dissolution.—When the partnership is dissolved by the death of a partner the legal title to all the firm personalty vests at once in the surviving partners, who hold it in trust for the firm. Moreover, the right of disposing of all the partnership assets, real as well as personal, vests in them. Firm creditors may proceed at law against the surviving partners, or in equity against the estate of the deceased partner. They may pursue the latter course irrespective of the extent of the firm assets.

After dissolution, the partners may perform acts with the view of closing up the business, but not with the view of creating new obligations.

Sale of Personal Property is the transfer of its general ownership for a price in money.

In the case of a barter or exchange one chattel is transferred for another; and in the case of a bailment there is a transfer of the possession of a chattel but not of the title.

What is frequently called an executory sale is merely an agreement to sell.

Formalities of a Sale.—A contract of sale requires no formalities unless it is within the provisions of the Statute of Frauds (which see). It may be oral or in writing; the price may be paid at once or on a future day; possession of the goods may be given the buyer immediately or retained for a time by the seller.

When Title Passes.—When the title passes is governed by the intention of the parties. Where they do not express their intention

it is to be inferred from their acts and the surrounding circumstances. If the goods are ready for immediate delivery the law presumes that title passes at once. If they are not, the law presumes that title is not to pass until they are put in a deliverable condition. If the sale is on approval the law presumes that title does not pass until the buyer has tried and approved them. In the case of a "sale or return" it passes to the buyer at once with the right to pass it back to the seller within the time agreed, or within a reasonable time when no time is fixed, if he chooses to do so. Where the goods are shipped C.O.D. the title passes to the buyer upon delivery to the carrier, but the buyer is not entitled to possession of them until he pays the price.

Duties of the Seller.—The duties of the seller are three-fold. He must furnish the thing agreed upon, transfer title to the buyer, and give him possession of it.

Warranties.—A warranty is an assurance of some fact coupled with an engagement, express or implied, to make the assurance good or pay for the deficiency. Ordinarily the seller impliedly warrants that he is the owner of the subject-matter of the sale and that it is free from incumbrance. When the goods are sold by sample, he impliedly warrants that they shall conform to the sample; and when sold by description, that they shall conform to the description. When sold by a manufacturer, he impliedly warrants that they are free from latent defects which might have been guarded against by the exercise of reasonable care. And when sold for a particular purpose, he impliedly warrants their fitness for that purpose.

Breach of Warranty gives the buyer a right of action for damages, whereas a breach of a condition usually entitles him to rescind the contract. He is entitled to recover the difference between the value of the goods as they are and what it would have been had the goods been as warranted.

Stoppage in Transitu.—The seller may stop the goods while in transit, provided they are not paid for and the buyer is insolvent. He may do this, as a rule, even where the buyer has resold them to a third party. The exception to this rule is where the bill of lading is given to the buyer and turned over by him to the subvendee who pays the price without notice or knowledge that his vendor has not paid for them.

Remedies of the Buyer.—When the buyer has paid for the goods and the seller refuses to deliver them the buyer is entitled to recover the market value of the goods at the time and place of delivery, together with interest. If he has not paid for the goods he is entitled to recover the difference between the contract price and the market price at the time and place of delivery, provided the latter price is greater than the former, together with interest.

Real Property is land and whatever is permanently fixed to land, together with certain incorporeal rights annexed thereto or issuing therefrom.

Classification of Estates.—Estates in real property are classified with respect to: (1) quantity of interest; (2) time of enjoyment; (3) number and connection of tenants; (4) manner of enjoyment.

Quantity of Interest—With respect to quantity of interest estates in real property are of two kinds: (1) freehold; (2) less than freehold.

Freehold Estates are of three kinds: (1) fee-simple; (2) fee-tail; (3) for life.

Life estates are either for the life of the tenant or for the life of another person. Those for the life of the tenant include (1) dower estate: (2) estate by the curtesy; (3) homestead estate.

Estates Less Than Freehold are also of three kinds: (1) for years; (2) at will; (3) by sufferance.

Time of Enjoyment.—With respect to time of enjoyment estates in real property are of two kinds: (1) in possession; (2) in expectancy.

Estates in expectancy are of two kinds: (1) remainders; (2) reversions.

Remainders are subdivided into (1) vested; (2) contingent.

Number and Connection of Tenants.—With respect to the number and connection of the tenants estates in real property are of four kinds: (1) in severalty; (2) in joint tenancy; (3) in common; (4) by entirety.

Manner of Enjoyment.—With respect to manner of enjoyment estates are of two kinds: (1) absolute; (2) conditional.

Definition of Estates.

In Fee-Simple.—This is the highest estate known to the law. It is an estate of inheritance, free from any condition and of indefinite duration.

In Fee-Tail.—This is an estate of inheritance which is descendable only to particular heirs of the grantee and not to his heirs in general. It had its origin in the desire of owners of great estates to keep them intact to particular families by restricting the power of alienation. In this country it is looked upon with such disfavor that where it is recognized at all the restraint upon free alienation is limited by statute so that the immediate grantee gets a life estate and the second taker the remainder in fee.

For Life.—An estate for life may be created by the parties themselves or by operation of law. An estate for life usually endures during the life or lives for which it is created.

For Years.—An estate for years is a mere chattel interest although created for a thousand years. It may be limited to commence presently or at some future time. It does not descend to the heir, but vests in the executor or administrator of the deceased in the same manner as other chattels.

At Will.—This is an estate which the tenant holds at the pleasure of the lessor. Statutes almost invariably require a notice to quit, and the practical effect of these statutes is to convert estates at will into tenancies from year to year or from month to month.

By Sufferance.—A tenant by sufferance is one who holds over after his term expires and is allowed by the owner to continue in possession. At common law he was not liable for rent beyond the term agreed, but modern statutes frequently make him liable for double rent.

In Remainder.—This is an estate which is limited to commence at a future time on the termination of a precedent estate created at the same time. It is either *vested* or *contingent*. A vested remainder is one in which there is an immediate fixed right of future enjoyment. A contingent remainder is one in which the right of enjoyment does not accrue until the happening of some uncertain event which may never happen.

In Reversion.—This is the residue of an estate left in the grantor, or his heirs commencing in possession upon the determination of a particular estate granted. It is subject to the same incidents as an estate in remainder. Practically the only difference between these two estates is that a *remainder* is always created by act of the parties and a *revision* always by operation of law.

In Severalty.—This is an estate held by one person in his own right. Most legal estates in real property belong to this class.

In Joint Tenancy.—A joint tenancy is an estate in which the grantees have the same interest, created at the same time, by the same conveyance, and held by them by the same undivided possession. The most important incident of this estate is the right of survivorship.

In Common.—At common law this estate is created when two or more persons acquire their interests by separate and distinct titles. The only unity between them is that of possession. In a joint tenancy there are the additional unities of title, time and interest. That is, the several tenants must obtain their title from the same source, at the same time, and acquire the same interest. Whereas tenants in common may acquire their title from different sources, at different times, and acquire different interests.

By Entirety.—This estate is created when a conveyance is made to husband and wife and the conveyance is silent as to the manner in which they shall hold. They are not joint tenants, nor are they tenants in common. Neither party can dispose of his or her interest without the assent of the other, and upon the death of either the estate survives to the other.

Absolute Estate.—An absolute estate is one which is free from restriction.

Upon Condition.—An estate upon condition is one which is commenced, enlarged or defeated upon the happening or performance of some condition.

Upon a Conditional Limitation.—This is an estate which is restricted by some condition, and which terminates by operation of law upon the happening of the event by which its limitation is measured.

Equitable Estate.—An equitable estate is a right or interest in real property not recognized at common law, but recognized and made available by courts of chancery. The three kinds of equitable estates are users, powers and trusts.

Title.—This is the means whereby the owner of realty has the just possession of his property. In other words, it represents the right or authority for the enjoyment of his land. Title to property is classified both as to *origin* and *nature*. As to origin it is original or derivative. As to nature it is legal or equitable.

Modes of Acquiring Title.—Original title to property is acquired in the following four ways: (1) occupancy; (2) discovery; (3) conquest; (4) cession.

Derivative Title is acquired in the following two ways: (1) descent; (2) purchase.

Title by *descent* accrues through consanguinity, affinity or adoption. Title by *purchase* is acquired by act of the parties or by operation of law. It is acquired by act of the parties either by public or private grant or by devise. Public grant is by patent or legislative grant. Private grant is by deed or by dedication.

Deed.—A deed is an instrument, written or printed, or partly written and partly printed, on paper or parchment, by which an estate is conveyed, of not less than a freehold, in lands, tenements and hereditaments.

Parties to a Deed.—The two parties to a deed are the grantor and the grantee.

If the grantor is married his wife also should sign the deed. This is essential to convey her dower interest. And where the land conveyed is a homestead it is also essential in order to transfer her homestead right.

If the grantor is a corporation the deed should contain the corporate name at the beginning and be signed by its president or other officer authorized so to do.

The Description of the Premises.—The premises should be accurately and minutely described. Reference should be made to prior deeds by which title was acquired by the grantor. If the land is described by metes and bounds, and also by specifying the number of acres, and the two descriptions differ, the former will govern.

Covenants in a Deed.—A quit-claim deed merely transfers all the right, title and interest in the land that the grantor has. A warranty deed, in addition to this, contains certain personal undertakings called covenants. These covenants warrant that the grantor is lawfully seised of the premises in fee-simple; that the premises are free from all incumbrances; that the grantor has good right to sell the same to the grantee, and that he will and that his heirs, executors and administrators shall, warrant and defend the same to the grantee, his heirs, and assigns forever, against the lawful claims of all persons whatsoever.

Execution of a Deed.—A deed is executed by the grantor and grantee signing it and annexing thereto their seals. At common law the sealing of the deed was the most important act in its execution. In some states, by statute, sealing is not essential. In some states two witnesses are essential, in some one, and in others none. In order that the deed may be recorded it must also be acknowledged.

Delivery of a Deed.—To pass the title to the property the deed must be delivered. And the delivery must be voluntary.

A delivery of the deed by the grantor to a third party to hold until the grantee has performed certain conditions, or until a certain time has transpired, does not pass the title. Such a delivery is called a delivery in escrow.

Recording a Deed.—Recording a deed is not essential to pass title to the grantee. To protect himself, however, the grantee should have the deed recorded at once. To do so gives constructive notice to the world that the title to the land is in him.

Wills.—Title to real estate may be acquired by devise or will in all the States of the Union. To render a person competent to transfer title by this means he must be of full age and of sound mind. Moreover, he must act voluntarily.

In most of the states a will must be in writing, signed by the testator, or by some person in his presence, and by his direction, and attested by witnesses, who must subscribe their names thereto in the *presence* of the testator. The form of wording a will is immaterial as long as its intent is clear.

Witnesses.—Most of the states require two witnesses, except in Connecticut (3), Maine (3), Massachusetts (3), New Hampshire (3), South Carolina (3), Vermont (3).

Males and females are competent to make wills at 18 years in the following states: California, Connecticut, Hawaiian Islands, Idaho, Montana, Nevada, North Dakota, Oklahoma, South Dakota, Utah; and in the following states only females at 18 years: Colorado, District of Columbia, Illinois, Maryland, Missouri, Washington, Wisconsin.

In the following states persons of 18 years may dispose of personal property only: Alabama, Arkansas, Missouri, Oregon, Rhode Island, Virginia, West Virginia; in Georgia any one over 14 years and in Louisiana any one over 16 years is competent to make a will. In Colorado persons of 17 years, and in New York males of 18 and females of 16 years may dispose of personalty.

COMMERCIAL LAW IN THE VARIOUS STATES

States and Territories	Interest Laws: Legal Rate Per Cent	Interest Laws: Allowed by Contract Per Cent	Interest Laws: Penalty for Usury	Days of Grace	Statutes of Limitation: Judgments Years	Statutes of Limitation: Notes Years	Statutes of Limitation: Open Accounts Years	Arrest for Debt	Exemption Laws: Personal Property Exempt	Exemption Laws: Homestead Exempt	Jurisdiction of Justices of the Peace
Alaska	8	8	Double amount of interest collected	0	20	6	3	Yes	....	....	....
Alabama	8	8	Forfeit interest	3	20	6	3	No	$1,000	$2,000	$100
Arizona	6	Any	Forfeit interest	0	5	4	3	No	500	2,500	300
Arkansas	6	10	Forfeit principal and interest	3	10	5	3	No	500	2,500	300
California	7	12	$25 to $300	0	5	4	4	No	....	5,000	300
Colorado	8	12	Loss of Excess of Interest not to exceed $300.00 if paid	0	20	6	6	No	....	2,000	300
Connecticut	6	6	Fine or imprisonment or both	0	0	6	6	No	....	1,000	100
Delaware	6	6	Principal	0	10	6	3	No	200	....	200
District of Col.	6	8	Forfeit interest	0	12	3	3	No	300	....	300
Florida	8	10	Forfeit interest	0	20	5	3	No	1,000	160 Acres	100
Georgia	7	8	Forfeit excess of interest	0	6	5	4	No	300	1,000	100
Idaho	7	10	Forfeit interest	0	6	5	4	No	....	5,000	300
Illinois	5	7	Forfeit interest	0	7	..	5	No	400	1,000	200
Indiana	6	8	Excess interest forfeited	0	20	10	5	No	600	or 600	200
Iowa	6	8	Forfeit interest	0	20	10	5	No	200	or 40 Acres	100
Kansas	6	10	Loss of excess of interest	0	5	5	3	No	....	160 Acres	300
Kentucky	6	6	Forfeit excess of interest	5	15	15	2	No	250	1,000	100
Louisiana	5	8	Forfeit interest	0	10	5	3	No	....	Total, 2,000	100
Maine	6	12	No provision except on Loans	0	20	20	6	No		500	20
Maryland	6	6	Forfeit excess of interest	0	12	3	3	No	100	....	100
Massachusetts	6	Any	No provision except on Loans of less than $1,000	0	6	6	6	Yes	....	800	1,000
Michigan	5	7	Forfeit interest	0	10	6	6	No	500	1,500	300
Minnesota	6	10	Forfeit principal and interest	0	10	6	6	No	200	80 Acres	100
Mississippi	6	8	Forfeit interest	3	7	6	3	No	....	2,000	200
Missouri	6	8	Loss of excess interest	0	10	10	5	No	300	1,500 (min.)	250
Montana	8	10	Double amount of interest	0	10	8	5	No	....	2,500	300
Nebraska	7	10	Forfeit interest	0	5	5	4	No	500	or 2,000	200
Nevada	7	7	Forfeit excess of interest	0	6	6	4	No	....	5,000	300
N. Hampshire	6	6	Forfeit three times excess	0	20	6	6	No	....	500	13⅓
New Jersey	6	6	Forfeit interest and costs	0	20	6	6	No	200	1,000	200
New Mexico	10	12	Forfeit of twice the amount of interest	3	7	6	4	No	500	1,000	100
New York	6	6	Forfeit of principal and interest; misdemeanor	0	20	6	6	No	250	1,000	200
North Carolina	6	6	Forfeit double amount of interest if paid	0	10	3	3	No	500	1,000	200
North Dakota	6	10	Forfeit excess interest	0	10	6	6	No	1,500	5,000	200
Ohio	6	8	Forfeit interest over 8%	0	2	15	6	No	100	1,000	300
Oklahoma	6	10	Forfeit double amount of interest	0	5	5	3	No	....	5,000	200
Oregon	6	10	Forfeit principal and interest	3	10	6	6	No	....	1,500	250
Pennsylvania	6	6	Forfeit excess of interest	0	5	6	6	No	300	....	500
Rhode Island	6	Any	Loss principal and interest (Special Provisions)	0	20	6	6	Yes	300	....	....
South Carolina	7	8	Forfeit interest	3	10	6	6	No	500	1,000	100
South Dakota	7	12	Misdemeanor	3	20	6	6	No	750	5,000	100
Tennessee	6	6	Forfeit of excess interest	0	10	6	6	No	....	1,000	500
Texas	6	10	Forfeit double amount of interest	3	10	4	2	No	500	5,000	200
Utah	8	12	No provision	0	8	6	4	No		2,000	300
Vermont	6	6	Forfeit double amount of interest	0	6	6	6	No	200	500	200
Virginia	6	6	Forfeit interest	0	20	5	3	No	....	2,000	100
Washington	6	12	Forfeit of double accrued interest and costs	0	6	6	3	No	1,500	2,000	100
West Virginia	6	6	Forfeit excess interest	0	10	10	5	No	200	1,000	300
Wisconsin	6	10	Forfeit treble amount of usurious interest paid	0	20	6	6	No	200	5,000	200
Wyoming	8	12	Forfeit interest	3	10	10	8	Yes	500	1,500	200

NOTE.—In many of the states it is impossible to place a fixed amount on personal property exempt. In the table above these states have no amount given in the personal property column.

LABOR LAW AND LEGISLATION—The Labor Contract.—The relation of employer and employee arises from contracts concerning labor, the right to make such contracts being a property right in which both parties are interested, and in which they are protected by constitutional guaranties. Special rules of common law govern such contracts, embodying the results of numerous decisions of the courts. An employer is presumed to employ his workmen lawfully, to compensate them fairly, and to have due regard for their health and safety. The workman is presumed to be reasonably competent, to be ready to obey reasonable orders, and to use ordinary care in the performance of his work. As a result largely of modern industrial conditions, the inequality between employers and employees as regards the making of contracts has become so conspicuous that statutes have been enacted regulating in various ways the conditions of employment, and in so far taking the matter out of the hands of the immediate parties to the contract. These regulations, as well as the rules of common law, form a part of every labor contract to which they are applicable. Subject thereto, adults of competent mental capacity may contract freely, and be held mutually to the standards indicated.

Enforcement. — There is not, generally speaking, any specific performance of a labor contract enforceable at law, and either party may terminate such a contract at any time, for any reason or without reason, being liable only in damages for the breach of a contract for a fixed term. A statute of Colorado attempts an exception to this rule by forbidding the discharge of a workman between the ages of eighteen and sixty solely on account of age, but such a law is doubtless without value.

Breach. — A few states have enacted laws for the punishment of the breach of labor contracts as for a crime, where on the strength of such contracts advances of money or supplies have been procured and the contract is then fraudulently broken. The states having laws of this class are Alabama, Arkansas, Florida, Georgia, Louisiana, Michigan, Minnesota, New Mexico, North Dakota and South Carolina. The laws of most of these states look mainly to agricultural employment, though in Michigan, Minnesota and North Dakota they seem to have reference mainly to the fraudulent procurement of money advances for transportation to the place of employment. A special class of employees is embraced in laws which provide a penalty for the abandonment of locomotives or trains at other than terminal or division points, while more general laws of New York and Washington prohibit any abandonment of employment that would knowingly jeopardize life or limb, or expose valuable property to destruction.

Notice of Termination. — If the employer contracts with his employees for a notice of their purpose to leave service, he may be required by statute to give corresponding notice, under like forfeiture, of his intention to discharge. Laws to this effect are found in Maine, Massachusetts, New Jersey, Pennsylvania, Rhode Island and Wisconsin.

Clearance Cards. — The giving of a recommendation or clearance card at the termination of employment is not obligatory on the employer, even though a new employer may demand such certificate before employing an applicant for service. A few states have enacted laws directing such cards to be furnished, but such laws are of at least doubtful validity. The states having them are Florida, Indiana, Missouri, Montana, Ohio and Texas. The courts of Georgia and Kansas have declared such laws unconstitutional, while a Texas court of appeals upheld the law of that state.

Interference with Contracts.—Third parties interfering with a contract of employment, unjustifiably inducing the breach thereof by either employer or employee, are liable to the injured person in damages, even though the contract was terminable at will by either of the parties to it. There must be knowledge of the contract, and a mere attempt without damage will support no action. Knowingly interfering with a contract for service by hiring or enticing away an employee is made a penal offense in Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee. The attempt entails the same penalty as the performance in Alabama and Georgia. There is a federal statute making it an offense to procure workmen in government arsenals or armories to leave their employment during the term of their contract, or to retain such a workman after notice of such contract. Other forms of interference will be noted under the heading of strikes.

The giving of discounts or bonuses to employees who make purchases for the employers, or giving gratuities to employees, to influence them in regard to their employers' business, is against the law in Connecticut, Iowa, Massachusetts, Michigan, Nebraska, New Jersey, New York, Rhode Island, South Carolina, Virginia, Washington and Wisconsin. A like law in Indiana is restricted to employees of railroad companies. The Washington statute prohibits the tipping of employees of public houses or public service corporations. Asking or accepting gratuities is also forbidden by the above statutes.

Civil and Political Rights of Employees.—Voting.—Most states of the Union provide a penalty for employers interfering with or seeking to coerce employees in the exercise of their rights as voters, either by posting notices or printing them on pay envelopes, or threatening dismissal, reduction of wages, or the closing of the plant in case of the success of any designated candidate or party. The law of Minnesota protects employees in the exercise of any natural right or any right or privilege of citizenship. The Wyoming statute mentions the candidacy of employees, while in Colorado no employer, foreman or manager of a railroad, mining or manufacturing work carried on in the precinct, may act as judge, clerk or watcher at the polls in any election. Many of these laws direct the allowance of time to vote without loss of wages.

Freedom as Traders, etc.—Freedom of workmen in the selection of their places of trade is the object of laws of Colorado, Florida, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Nevada, New Jersey, New Mexico, Ohio, Oregon, Tennessee, Texas, Utah, Washington and West Virginia. Free choice of boarding or lodging houses is provided for in the laws of Massachusetts, Montana, Nevada, Oregon and Utah, while in Michigan the same protection is extended to employees in the choice of life or accident insurance, and in Tennessee to the choice of the family physician, and the withholding of any part of an employee wages to pay a company doctor without the full consent of such employee is forbidden.

Principles of Wages. — The matter of wages is primarily one for determination by contract, as regards the rate, and the time, place, and medium of payment. At common law the court will, in the absence of a specified rate, order the payment of such a sum as the services rendered are shown to be reasonably worth; if the contract is entire, payment can be demanded only on the completion of the work; if separable, at such times as are shown to be reasonable, or at times fixed by the custom of the community or the trade. No wages can be recovered for service rendered in violation of law; as for work on Sunday, when Sunday labor is prohibited; or for services as an engineer when the workman is without the license required by law; or for work in excess of eight hours when the statute restricts the time to eight hours.

Payee. — The payee will usually be the workman or his personal representative, though statutes of Albama, Arizona, Georgia, Mississippi, New Jersey and Pennsylvania authorize the payment of wage debts not in excess of a specified sum directly to the heirs of a deceased employee. Payments to one demanding from the employer the wages of a workman on the claim that the latter is indebted to the claimant can be made only after all legal formalities are complied with, or the employer will be liable to the employee regardless of the payment made to the claimant. In every state there are statutes reserving to workmen (in many only to those having dependents) a certain amount or percentage of their wages, which is not subject to garnishment while in the hands of the employer. In a number of states assigning claims or taking or sending them outside the state in order to avoid the exception laws in favor of wage earners is forbidden.

Recovery. — Another law that is found in practically every jurisdiction, and in the federal statutes, is one that makes a debt for wages for labor a preferred claim in the settlement of the estate of a deceased or insolvent employer. Mechanics' liens are likewise universally granted by statute. Where the enforcement of such liens is not convenient, as in the case of public works or railroad construction work, contractors are in a number of states required to give bond for the payment of wages due their workmen; or failure to pay wages out of current receipts may be penalized.

Wage suitors are favored by the laws of some states, as by allowing a successful claimant of wages an attorney's fee (a law as to the constitutionality of which the courts differ); by prohibiting a stay of execution on a judgment for a wage debt; by declaring no property exempt from execution under such a judgment; or by placing wage suits at the head of the trial docket.

Assignments.—Assignments of future earnings are restricted in the interests of the workman, and especially of his family. Such laws have been upheld, though they undoubtedly restrict the freedom of con-

tract. The law may require that the assignment shall be recorded, or that the employer shall be notified of the assignment or shall accept or consent to the same, or that the wife or husband of a married person making an assignment shall join therein; discounts or interest rates may also be limited. Except for the laws that merely require recording, these statutes are of recent enactment. States having laws embodying these provisions in whole or in part are Colorado, Delaware ,Indiana, Iowa, Louisiana, Maryland, Massachusetts, Minnesota, New Jersey, New York, Pennsylvania, Rhode Island, Tennessee, Washington, Wisconsin and Wyoming. Assignments to secure loans or future advances are declared void in Georgia and Massachusetts; and a law of Indiana declaring all assignments of future earnings void has been held valid.

Rates—Rates of wages on public works are fixed by statute in a few states, either at the current rate in use for work of the sort that is to be done, or at an amount named in the law. The states having such laws are California, Delaware, Indiana, Maryland, Nebraska, Nevada, New York and Oklahoma. A Virginia statute orders a reasonable amount to be paid as salvage in the case of wrecked goods, and provides for arbitrators where the laborer and the owner of the goods do not agree, but there is no nearer approach than this to the direct determination of wages in private undertakings. Indirectly the matter is regulated by forbidding deductions by way of fines for imperfect work (Massachusetts), or "for any reason" (Indiana). The same object is in view where, when coal mining is paid for by weight, the law forbids the screening of coal before weighing, or directs that all coal mined shall be weighed. Alabama, Arkansas, Colorado, Iowa, Kansas, Missouri, Ohio, Oklahoma, Pennsylvania, Washington, West Virginia and Wyoming have laws of this sort.

Time of Payment. — Statutes regulating the time of the payment of wages have been held constitutional, though not uniformly. These laws may be of general application, or restricted to classes of employment, or to corporations, or they may apply only where the number of employees exceeds a given minimum. The following states have laws directing employers to pay wages monthly: Arizona, Colorado (railroads), Missouri (railroads), Tennessee (mining, manufacturing, railroad construction), Virginia (mining, manufacturing). In the following, semi-monthly or bi-weekly payments are prescribed: Arkansas (corporations), Colorado (corporations except railroads), Indiana (mining and manufacturing), Iowa (coal mines), Kentucky (mining), Maine (corporations), Maryland (mining, manufacturing, transportation), Missouri (mining, manufacturing), New Jersey, New York (railroads), Oklahoma (mining, manufacturing), Pennsylvania, West Virginia (mining, manufacturing), Wyoming (coal mining). The following have a weekly pay day: Connecticut (corporations), Kansas (except railroad and farm corporations), Massachusetts, New Hampshire, New York (except railroads), Rhode Island, Vermont. In Wisconsin a weekly or bi-weekly pay day is prescribed unless there is a written contract.

A few states direct that wages due discharged employees shall be paid them without waiting for the regular pay day. These are Arizona, Arkansas, Colorado, Massachusetts, Oregon, and South Carolina.

The place of payment is restricted by the law of a single state, California, which forbids the payment of wages in any place where liquor is sold.

Payment in Scrip, etc. — The medium of payment is the subject of a number of laws which either prohibit the use of scrip, tokens or store orders, as in Colorado, Maryland, Montana, New Jersey and New York; or require that if issued they shall be redeemable in money, as in Arizona, Arkansas, Georgia, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Nevada, New Mexico, Oklahoma, Oregon, South Carolina, Tennessee, Vermont, Virginia, West Virginia and Wisconsin. The North Carolina statute on this subject directs that scrip or tokens shall be redeemable at face value and transferable, but this is held not to require orders for merchandise to be redeemed in money. So a statute of Kentucky directing wages to be paid in lawful money does not preclude the issue of orders for merchandise between pay days, nor require such orders to be redeemed in cash. A Pennsylvania statute levies a twenty per cent tax on all scrip not redeemed within thirty days after its issue. Courts rule diversely as to the validity of statutes forbidding the use of scrip, but the Supreme Court has upheld a law requiring its redemption in money at face value.

Company stores, or the "truck system" of wage payment, may also be prohibited, as in Colorado, Maryland and Pennsylvania; or their operations may be regulated by forbidding the charging of a higher cost to employees than to others, or of a higher rate than is charged by other stores, as by the laws of Connecticut, Indiana, New Jersey, Ohio and Virginia.

Hours of Labor — In General. — The length of a day's work for adult males is in general a matter of contract with which the law can interfere only on the ground that the public welfare requires its statutory regulation. A number of states have laws declaring the number of hours that constitute a day's work generally, but as these laws do not interfere with contracts for longer service, they are of no practical effect.

Public Works. — On public works it is competent for the state to declare the length of time workmen may labor, even though they are employed by contractors, since the state has the right to fix the terms on which work may be done for it, or on which persons may deal with it. A number of states and the federal government have laws or provisions in their constitutions fixing the hours of labor, mainly prescribing eight as the limit. The states are California, Colorado, Delaware (city of Wilmington), District of Columbia, Idaho, Indiana, Kansas, Kentucky, Maryland (city of Baltimore), Massachusetts, Minnesota, Montana, Nebraska (cities of the second class), Nevada, New York, Oklahoma, Oregon, Pennsylvania, Utah, Washington, West Virginia, Wisconsin, and Wyoming. All these laws provide for the eight-hour day except Massachusetts, where nine hours is the limit unless municipalities by special vote adopt the eight-hour day. Other states have laws relating to highways only, but these apply less to the employment of labor than to the working out of taxes.

Railroads.—Considerations of public safety validate laws limiting the hours of labor of employees on railroads. The federal statute makes sixteen hours out of any twenty-four the maximum work time of employees engaged in the movement of interstate trains or trains in the District of Columbia, and nine hours the maximum for train dispatchers and telegraph or telephone operators whose employment affects the movement of such trains. The periods fixed by state laws vary, but obviously where interstate traffic is affected no labor in excess of that allowed by the federal statute will be permitted. The courts differ as to whether the prescription by state law of a shorter work day is valid. The maximum hours of service in any twenty-four hour period permitted in the movement of trains are twenty-four in Michigan, eighteen in Nebraska, sixteen in Arizona, Arkansas, Colorado, Indiana, Iowa, Kansas, Minnesota, Missouri, Montana, New York, North Carolina, North Dakota, South Dakota, Texas, Washington and Wisconsin; fifteen in Ohio, fourteen in Oregon, and thirteen in Flordia and Georgia. Train dispatchers and telegraph operators and operators of block signals have the same hours in several of the above states, but are limited to eight hours service per day in Arkansas, Connecticut, Maryland, Nevada, New York, North Carolina, Texas, West Virginia and Wisconsin. In a number of states a period of rest after service is prescribed, the hours to be consecutive. These are fixed at ten in Colorado, Georgia, Iowa and Oregon, and in Texas if there have been sixteen hours of continuous service; at nine in Arizona, and at eight in Arkansas, Florida, Indiana, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, New York, North Dakota, Ohio, South Dakota, Texas (if there has been an aggregate of sixteen hours of service in any twenty-four hour period), Washington, and by the federal statute.

Street Railways.—The hours of labor on street railways are regulated by statute in several states, as follows: twelve in California, Maryland, New Jersey, Pennsylvania and South Carolina; and ten in Louisiana, Massachusetts, New York, Rhode Island and Washington. In New Jersey and New York the service must be rendered during consecutive hours, and in Massachusetts and Rhode Island within twelve consecutive hours. This law has also been said to provide for public safety and is supported on that ground.

Mines, Smelters, etc. — The hours of labor in underground mines, smelters and reduction works are restricted to eight per day in Arizona, California, Colorado, Idaho, Missouri, Montana, Nevada, Oklahoma, Oregon, Utah, Washington and Wyoming. The Nevada statute applies also to work in open cut mines and in plaster and cement mills. A New York law regulates the hours of labor of workmen in compressed air, the limit ranging from eight hours in twenty-four where the pressure does not exceed 28 lbs. to the square inch, to two hours out of twenty-four, divided by an interval of four hours where the pressure exceeds 46 lbs. but does not exceed 50 lbs. No employment is permitted under a pressure in excess of 50 lbs.

Sundry Employments.—The hours of labor of drug clerks are limited to ten per day and 60 per week in California,

and to 70 hours in one week and 136 hours in two weeks in New York. A New Jersey statute also limits the hours of labor of employees in bakeries to 60 per week. In Arizona work in laundries is restricted to eight hours per day; while nine hours is a day's work for telephone operators in Montana.

Eight-Hour Day. — The following summary presents the present result of the movement for the eight-hour day. It is adopted for employment on public works in nineteen states, the District of Columbia and for the federal government; by Delaware and Maryland for their chief cities; and by Massachusetts for municipalities adopting it in accordance with state law; for work in mines in twelve states, in smelters and reduction works in nine states, and for train dispatchers and telegraph operators in nine states.

Women and Children.—Age and Working Time of Children.—A majority of the states have laws regulating the employment of children, fixing the minimum age of employment, the maximum hours of labor per day, restricting or forbidding employment in certain occupations, and providing particularly for the safety and sanitation of their working places. Some states include adult females in their laws governing some of these details, while in others the laws as to the two classes are separate. The power of the state to regulate the employment of children is unquestioned.

The table (See Page 977) shows for children the age below which employment in industry is unlawful, the age to which the indicated protection in the matter of the length of the working day applies, the daily hours of labor permitted, and the restrictions as to night work, if any. The restrictions set forth in the table mentioned are relaxed in a number of states where the child has a widowed mother, invalid parents, or is dependent on its own efforts for support. Relaxation of the law on one or more of these grounds is found in the states of Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Kentucky, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Rhode Island, South Carolina, Texas, Virginia and Washington.

Hazardous or Injurious Employments. —Danger to life, limb or health, and exposure to immoral or otherwise injurious influences, are reasons for forbidding the employment of children in certain occupations. Thus employment in mines is the subject of special laws in some states, though it is more commonly included with other industrial employment. The cleaning of moving machinery or work with or about designated forms or classes of dangerous machinery or in certain hazardous employments is forbidden by several states, as follows: below the age of 21, Louisiana (cleaning moving machinery only); 18, Michigan, Pennsylvania; 16, Illinois, Indiana (18 for females), Iowa, Kentucky, Minnesota, Missouri, Nebraska, New Jersey, New York, North Dakota, Ohio, Oklahoma, Rhode Island, Wisconsin; 14, Massachusetts. Employments injurious to morals, including acrobatic and mendicant occupations are forbidden up to 18 in Michigan (21 for females), Minnesota, New Jersey and Washington; to 16 in California, Idaho, Iowa, Kentucky, Maine, Montana, Nebraska, New York and Rhode Island; to 15 in Delaware, Indiana (18 for mendicant employment), Louisiana, Massachusetts, Pennsylvania (18 for mendicancy); to 14 in Colorado, District of Columbia, Florida, Illinois, Kansas, Maryland, Missouri, New Hampshire, Ohio, Oklahoma, Virginia, Wisconsin and Wyoming; and to 12 in Connecticut and Georgia. A few states regulate street trades, as the sale of newspapers, shoe blacking and messenger service, by special laws; employment in bar rooms is similarly restricted in some states, though in many this is classed with occupations dangerous to morals.

Hours of Labor of Women. — While women have equal rights with men as to the making of contracts and suffrage, their physical structure and a regard to the welfare of the race warrant limitations as to their employment which would not be, valid as to adult males. Thus their hours of labor are limited by several states, and laws of this sort are constitutional. The limit of employment is 9 hours per day in Pennsylvania; 11 hours in South Carolina; 10 in Connecticut, Illinois, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, Oregon, Rhode Island, Virginia and Washington; 9 hours and 40 minutes in New Hampshire and 9 hours in New York. Women cannot be employed more than 9 hours per day or 54 hours per week in New York. In some of these states the total number of hours per week allowed is less than six times the maximum per day, while in a few only the weekly maximum is named. This results in the following limitations: 54 hours per week in Pennsylvania, South Carolina and Tennessee; 58 hours in Connecticut, Maine and Minnesota; 56 hours in Massachusetts and Rhode Island; 55 in New Jersey; and 54 hours in Michigan and Missouri. Night work by women is prohibited in New Jersey between 6 p. m. and 7 a. m., Connecticut after 10 p. m., Missouri, between 10 p. m. and 5 a. m., and Indiana, Massachusetts and Nebraska between 10 p. m. and 6 a. m. Night work is prohibited in New York for women between the hours of 10 p. m. and 6 a. m.

Seats.—Female employees are to be supplied with seats and allowed such use of them as their employment will reasonably permit, according to laws of Alabama, California, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Employers' Liability.—At common law the employer is charged with the exercise of a reasonable degree of care for the safety of his workmen, which failing he becomes responsible for the injuries resulting from his neglect. What such degree of care is depends upon the nature of the undertaking, more hazardous ones involving a greater degree and *vice versa*. The measure is generally said to be that degree of care that a reasonably prudent man would take to protect himself in like circumstances. Tools and appliances must be reasonably safe and suitably adapted to their intended use. The same test applies to the working place, though the employer is held to a stricter accountability for this than for the condition of appliances. At common law, an employer may in general carry on his business in his own way if only the employee is capable of contracting and knows and appreciates the dangers of the situation. He must not use unreasonably dangerous methods or appliances, however, and it has been said that dangerous work should be undertaken only after the adoption of all known reasonable precautions.

Statutes Fixing Standard of Care.—Factory inspection laws, railroad safety appliance laws, mine regulations, and the like, address themselves to the standard of safety to be secured by the employer, and in so far restrict the freedom allowed him by the common law in this respect. When the law fixes such a standard, it is negligence to come short of it, and an employer doing so will generally be liable in damages for the resultant injury, if any. In some states the courts allow the plea of assumed risks in such cases, though the better rule is to the contrary. Maintenance and repair stand on the same footing as the original provision and the Supreme Court has held that the duty of conforming to the provisions of the federal law as to drawheads and automatic couplers on railroad trains is an absolute one, and the exercise of ordinary care is not sufficient to excuse a failure in this regard.

Defenses.—An employer sued for damages for injuries to an employee may offer in defense that the workman assumed the risks of the undertaking, that the injury was the result of the negligence of a fellow-servant, or that, even if the employer was himself negligent, the employee by his own contributory negligence was in such measure responsible for the injury as to relieve the employer from liability therefor. The risks assumed are those arising from the ordinary incidents of employment, of which the workman was aware or which he could have known if he had exercised ordinary care, and existing after the employer has performed his duty as to the exercise of care in behalf of his employees; this includes the risk of injury from the negligent acts of fellow-servants who have been selected with ordinary care, An employee who represents the employer is not a fellow-servant to his subordinates. Where the employee's own negligence contributed to the injury, no attempt will ordinarily be made to apportion fault and make a partial award of damages, but any degree of contributory negligence will vitiate entirely the claim of the injured person.

Statutes Affecting Defenses.—These defenses have been modified or abrogated by numerous statutes, to such an extent that, as was recently said by a justice of the Supreme Court, there is hardly a jurisdiction in which they exist unmodified. Thus a statute of Colorado abrogates entirely the defense of fellow-service; while a number of states have done away with it in its application to railroad employment, to mine labor, or more generally. The British employers' liability law of 1880 is a pattern for laws enacted in several states, specifically charging liability for defects in the condition of ways, works, or machinery; for the negligence of employees exercising superintendence or giving orders; and for the acts of certain employees on railroads. The principal effect of these laws is in changing the rule as to fellow-service. They exist in Alabama, California, Colorado, Idaho, Indiana, Maine, Massachusetts, Michigan, New Jersey, New York, Pennsylvania, and Texas.

The modification or abrogation of the other defenses is sometimes general, but is more frequently connected with statutes prescribing safety appliances, the employer not being allowed to plead these defenses where he fails to conform to the provisions of the statute. Instead of allowing the contributory negligence of the injured employee to bar him entirely from recovery of damages, the federal liability law and a number of state laws embody a doctrine of comparative negligence, by virtue of which there is to be an admeasurement of the negligence of the employer and the contributory negligence of the employee, and where the former is gross in comparison with the latter, damages shall not be entirely withheld, but only reduced proportionally. Such laws are found in Iowa, Mississippi, Nebraska, Nevada, North Dakota, Ohio, South Dakota, Texas, and Wisconsin, and in a modified form in Georgia. All these laws are of very recent enactment, but the principle has been held to be constitutional.

Employees' Waivers.—Employers frequently secure contracts from their employees waiving their rights to damages for injuries due to the former's negligence. Courts construe such contracts diversely, and a number of state statutes and the federal statute above mentioned prohibit them, either generally, or in connection with statutes charging a particular duty. The states having such laws are Alabama, Arkansas, California, Colorado, District of Columbia, Florida, Georgia, Indiana, Iowa, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Texas, Virginia, Wisconsin, and Wyoming. Such laws have been declared constitutional.

Relief and Compensation for Injured Employees.—Employers, either singly or in association, may organize systems of relief available for employees injured in the course of employment. These funds may be supplied entirely by the employer, the benefits being available to all employees or they may be supplied by the employer and employee jointly, only those employees being entitled to benefits who become members of the association and contribute to its funds. The acceptance of benefits is usually made a bar to suits for damages, and the bringing of a suit likewise cuts off the benefits. Agreements that acceptance shall so operate, if made in advance of the receipt of the injury, are commonly construed as only putting the employee to his election, and are valid only to that extent, though a few statutes do not permit the receipt of benefits to go further than to effect a reduction of the amount of the judgment against the employer in proportion to the amount of his contribution to the benefit fund. Such provisions exist in laws of Georgia, Iowa, Michigan, Nebraska, Nevada, New Jersey, New York, North Dakota, South Dakota, and Texas, and in the federal employers' liability law.

A Montana statute requires coal mine operators and employees to maintain a mutual fund from which injured employees are to be paid, the system being designated one of insurance, and requiring the payment of fixed amounts, according to the degree of injury. A similar law of Maryland relates to coal and clay miners in its chief mining counties.

Compensation Systems.—As distinguished from the system of liability, in which the employee must prove the employer to have been at fault, is the method of compensation covering not only accidents caused by the fault of the employer, but also those that are the result merely of the trade risk, frequently called inevitable, the burden of which is, under the liability system, assumed by the party least able to bear it, *i. e.*, the workman. Most industrial countries other than the United States have adopted compensation as the method of dealing with industrial accidents, while the liability system is chiefly in use in this country. Since August 1, 1908, laborers and artisans in the employment of the Government of the United States in manufacturing establishments, forts, arsenals, navy yards, on river and harbor and reclamation work, and on the Isthmian canal are compensated for injuries without reference to the fault of the employer or to the doctrine of fellow-service or of assumption of risks. The negligence or misconduct of the injured person will debar him from benefits, which are the continuation of wages during disability for a period not exceeding one year. The compensation for death is one year's earnings of the deceased employee, payable to his dependents.

A statute of Massachusetts authorizes employers to draft schemes which, when approved by the state board of conciliation and arbitration, may be offered to the employee as a substitute for the liability provisions of the state law, and which, when accepted, shall be binding upon both parties; such schemes must propose a more liberal relief than merely to meet the employer's legal liability. The New York legislature of 1910 enacted laws providing for compensation according to schemes embodied in the laws themselves, one law proposing an elective scheme, applicable to industries generally, and one embodying a compulsory system, applicable to designated dangerous employments. The amount of compensation payable to dependents of a workman dying as the result of injury is determined by the amount of his earnings, but may not exceed three thousand dollars. Incapacity, partial or total, temporary or permanent, is provided for according to its nature and degree and to the earnings of the employee, but may not exceed ten dollars weekly for a term of eight years.

Physical Conditions of Employment.—Factories. — The rule of common law that the employer is to use ordinary care for the safety of his workmen is supplemented or superseded in many states by laws fixing a standard of safety, or prescribing the use of certain protective appliances. Thus fire escapes on factories and other places of employment are required in most jurisdictions of the United States, and in a number the use of doors that open outwardly or of sliding doors is directed. Laws requiring dangerous machinery to be guarded are found in Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Michigan, Minnesota, Missouri, Nevada, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Washington, West Virginia, and Wisconsin. Belt shifters, and a provision of cut-offs and switches for the prompt and safe starting and stopping of machinery are required by the laws of some of the above states. Guards or barriers about elevator shafts, well-holes, and vats of hot liquid or kettles of molten metal may also be prescribed, and the construction of stairways is regulated. The storage and use in workrooms, etc., of inflammable or explosive oils and the like are regulated by statute in Iowa, Maryland, Massachusetts, Missouri, New Jersey, and Pennsylvania.

Sanitation, including heating and lighting, whitewashing or painting, and the sweeping and scrubbing of floors and the washing of walls at fixed periods; and ventilation, calling for a prescribed amount of air space per employee, the installation of fans, hoods, etc., for conducting dust from buffing and polishing wheels, and fumes from vats, etc., giving off injurious or offensive odors and gases, are provided for in several states. Laws covering part or all these points are found in Alabama, Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Iowa, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Oregon, Pennsylvania, South Dakota, Tennessee, Virginia, Washington, West Virginia, and Wisconsin.

A statute of Illinois prohibits the taking of food into workrooms where poisonous dusts or gases may affect it. Water closets and wash rooms, with separate provisions for the sexes, are frequently provided for, as in Alabama, California, Colorado, Connecticut, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Virginia, Washington, West Virginia, and Wisconsin.

Sweat Shops or Tenement Factories are regulated by special laws in Connecticut, Illinois, Indiana, Maryland, Massachusetts, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin. These laws may prescribe the amount of air space, light, ventilation, sanitation, and safety, and in some states require licenses and registration of all workrooms used for such purposes, or lists of all persons to whom work is given out, with their place of residence.

Food Products.—Bakeries, confectionaries, etc., where food products are made or handled, are subjects of specific regulation in some states, partly for the benefit of the workmen employed therein, and partly for the sake of the public health. The states having such laws are California, Connecticut, Illinois, Indiana, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Washington, and Wisconsin.

A number of these laws forbid the use of cellars or basements below a certain level, prohibit sleeping in shop or storage rooms, and forbid the employment of persons affected with tuberculous or other infectious or contagious diseases.

The enforcement of these laws is intrusted in most states having them to officers appointed or elected for the purpose; in a few, however, it is in the hands of the ordinary law-enforcement officers, in which case not much can usually be said as to the efficiency of enforcement. In a few states the inspection of bakeries, confectionaries, etc., is placed in the hands of health officers.

Mines.—The operation of mines is regulated in thirty-one, or practically all the states having mines, and by federal statute for the territories. These laws contain requirements that maps of all workings shall be prepared and filed with an officer of the state, that escape shafts shall be provided, travel ways be timbered and lighted and safety holes or places of refuge from passing cars supplied; and that timbers for the use of men in their working places be provided in suitable lengths and amounts. Blasting, including drilling, tamping, and the firing of shots, may be regulated, as well as the opening and storage of boxes of explosives, the storage of oil, hay, and other inflammables, and the insulation of electric wires. Methods of working, the construction and protection of hoisting shafts and cages, the use of safety lamps, the employment of qualified foremen, fire-bosses, and shot-firers, the daily inspection of dangerous places, and other details are embraced in these laws with greater or less completeness. Except in California, Oregon, and the Territories (which are under the control of federal inspectors) the commonwealths having mining laws have state officials specially charged with their enforcement.

Railroads.—The provision of train brakes subject to the control of the engineer, of safety couplers, grab-irons, and switch signals, the blocking of frogs, the placing of tell-tales or warning strings at the approach to bridges or tunnels, and the height of wires, bridges and tunnel roofs above the track are matters of regulation affecting the railways of many states. A few states also require the block system of operating trains to be used, and some prescribe the candle power of the locomotive headlight.

These points are considered in the laws of Arkansas, Colorado, Connecticut, Delaware, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New York, North Carolina, Ohio, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Texas, Vermont, Virginia, Washington, Wisconsin, and Wyoming, and in federal statutes applicable to interstate commerce. Inspectors to enforce railroad regulations are provided for by the laws of Illinois, Massachusetts, Michigan, Nebraska, Ohio, and Washington.

The construction of caboose cars has been specially legislated on in Illinois, Michigan, Minnesota, Montana, New York, North Dakota, Ohio, Virginia, Washington, and Wisconsin. The laws usually prescribe the length of the car, its equipment with double trucks, platforms with guard rails and steps, and other provisions for the safety and comfort of the train crew. A number of states designate the minimum train crew that may be employed, Arizona, Arkansas, Connecticut, Indiana, Maine, Maryland, Nebraska, Nevada, North Dakota, Ohio, South Carolina, Texas, and Wisconsin having laws of this sort. Shelters over repair tracks are prescribed in Arkansas, Kansas, Oklahoma, and Texas.

Street railway employees are protected by laws requiring the platforms on which motormen stand to be inclosed, either all the year, or during the winter months. Such laws exist in Colorado, Connecticut, District of Columbia, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, West Virginia, and Wisconsin. Power brakes or other adequate brakes are prescribed either for all street cars, or for those of designated types or weight, in California, Connecticut, Iowa, New Hampshire, Ohio, and Wisconsin. In Connecticut, New Jersey, and Oregon, seats are to be furnished drivers or motormen on street railways.

Building Operations.—The erection, destruction, and repair of buildings expose workmen to hazards against which employers are required by law to furnish protection in a number of states. These laws relate to the construction, strength, barricading, and in a few states, to the shielding, of scaffolds; to the laying of permanent or temporary flooring or the placing of secondary scaffolds as the building progresses; to the guarding of hoist-ways or shafts, the construction and operation of hoists and cranes, and the protection of workmen from falling objects. These provisions are more or less fully embodied in laws of California, Connecticut, Illinois, Indiana, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New York, Ohio, Oklahoma, Pennsylvania, and Wisconsin.

Accidents.—Of the thirty-two laws regulating employment in mines, nineteen require accidents to be reported. In twenty-three states and by the federal statute accidents on railroads are directed to be reported; while ten states impose a similar duty on proprietors or managers of factories, stores, etc. Six states, Illinois, Indiana, Kansas, Minnesota, Missouri, and Wisconsin, require accidents to employees generally to be reported to state or local officials. By a number of these laws, official investigations and reports are authorized. Surgical and medical supplies as means of aid to injured employees must, according to statute, be kept available in mines in Alabama, Arkansas, Illinois, Indiana, Maryland, Ohio, Oklahoma, Pennsylvania, Utah, Washington, and Wyoming; in iron foundries in Michigan; and in factories generally in Massachusetts.

Restrictions on Employment.—Either the public welfare or the safety of the workman and his co-employees may warrant a preliminary determination of his fitness to engage in certain kinds of labor. To this end examinations and registration of persons wishing to engage in such occupations may be required. Color blindness of men employed in certain capacities on railroads, and infectious or contagious diseases as well as lack of skill in laborers, are illustrations of disqualifications for service. Laws requiring evidence of qualification, and usually registration as well, are found in a number of states, as follows:

For employees on railroads, in Alabama, Georgia, Indiana, Massachusetts, Ohio, and Texas; for motormen on street railways, in New York and Washington; for steam engineers, either generally or in designated capacities, in Alabama, District of Columbia, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Washington, and by federal statute; for stationary firemen, in Massachusetts, Montana, and New York; elevator operators in Minnesota; mine managers or foreman, fire bosses, etc., in mines, in Alabama, Illinois, Indiana, Iowa, Kentucky, Missouri, Montana, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, and Wyoming; for all miners in Illinois, and for anthracite miners in Pennsylvania; for plumbers in California, Colorado, District of Columbia, Illinois, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Missouri, Nebraska, New Hampshire, New York, Oregon, Pennsylvania, Texas, Virginia, and Wisconsin (such a law was declared unconstitutional in Washington); for electricians in Minnesota (such a law was recently declared unconstitutional in Louisiana); for horseshoers in Colorado, Maryland, Michigan, Minnesota, and Ohio (declared unconstitutional in Illinois, New York, and Washington); for barbers in Colorado, Connecticut, Delaware, Illinois, Maryland, Michigan, Minnesota, Missouri, North Dakota, Oregon, Rhode Island, Utah, Washington, and Wisconsin; moving picture machine operators, Maryland and New York; and chauffeurs, New York.

Alien Labor.—An argument in support of legislation of the kind above noted is that it limits competition, and particularly that of unskilled or unqualified labor. The federal Chinese exclusion acts and the acts forbidding the importation of immigrant laborers under contract are designed directly to limit competition of a sort especially likely to lower rates of wages and the standard of living. The employment of aliens on public works is prohibited, or a preference for citizens expressed, by statutes of California, Idaho, Indiana, Louisiana, Maine, Massachusetts, New Jersey, New Mexico, New York, Pennsylvania, Utah and Wyoming.

Convict Labor.—The same reasons operate to restrict convict labor and to prevent or limit its output and the sale of convict labor products in the open market. Such laws are not directly labor laws, and the effort to regulate the sale of the goods after they once become the subject of commerce, and particularly of interstate commerce, has generally been found to be beyond the power of state legislatures.

Employment Offices conducted by the state, rendering free services to persons seeking employment and to employers wishing to hire employees, are provided for by statutes of Colorado, Connecticut, Illinois, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Ohio, Oklahoma, Rhode Island, West Virginia, and Wisconsin. Central and branch offices are provided for in some of these states, with weekly or otherwise periodical exchanges of lists of applications.

Private Employment Offices are now regulated by statute in a number of states; these statutes may fix the rate of charges, require receipts to be given and open registers to be kept, prohibit the conduct of the business in connection with boarding houses or saloons, require evidence of bona fide vacancies, provide penalties for fraud or for sending females to places of immoral resort, require a license, for which a fee is charged, and otherwise regulate the conduct of the business. Laws of this nature exist in California, Colorado, Connecticut, District of Columbia, Idaho, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Missouri, Montana,

Nevada, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Utah, Virginia, Washington, West Virginia, and Wisconsin. The provision limiting fees was declared unconstitutional in California, as unwarrantably interfering with the freedom of contract.

Bureaus of Labor.—Bureaus or departments of the state government charged with the duty of administering the laws relative to labor, including the inspection of factories and other working places, the collection of labor statistics, the investigation and mediation of labor disputes, and of seeking to further the interests of industrial workers and industry generally, are provided for by statutes of California, Colorado, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, West Virginia and Wisconsin. There is also a federal office charged with such of these duties as are appropriate. Besides the above, these bureaus are in some states charged with the duty of conducting free public employment offices and of enforcing the laws relative to private offices.

Statutes Relating to Labor Organizations. — Labor organizations may incorporate under the general corporation laws of a state applicable to associations of like nature; in a number of states, however, and by federal statute, provision is made by special laws for their incorporation. The states are Iowa, Louisiana, Maryland, Massachusetts, Michigan, Nebraska, New Jersey, New York, Ohio, Pennsylvania, Texas and Wyoming. That labor agreements are not conspiracies is declared by statute in California, Colorado, Maryland, Minnesota, New Jersey, New York, North Dakota, Oklahoma, Pennsylvania, Texas, and West Virginia. Statutes applicable to labor organizations but not restricted to them are found in most states giving to unincorporated associations a right to sue or be sued with reference to their funds, or which determine in general how actions affecting such associations may be brought.

The badges, cards or insignia of labor organizations are protected from unwarranted or fraudulent use by laws of California, Connecticut, Georgia, Massachusetts, Minnesota, New York, Pennsylvania, Rhode Island, Texas, Virginia, and Wisconsin. The union label is protected from imitation or fraudulent or unauthorized use in forty-two states. Maryland, Montana and Nevada have laws directing that public printing shall bear the union label; such laws have generally been held unconstitutional.

Laws prohibiting discrimination against workmen on account of their membership in labor organizations, either by discharging them or by requiring them to agree not to join, have been enacted by the legislatures of several states and by Congress, but wherever a test has been made of this law in the higher courts, it has been declared unconstitutional, and it has been so held by the Supreme Court. Laws of this sort still stand on the statute books of California, Colorado, Connecticut, Idaho, Indiana, Kansas, Massachusetts, Minnesota, Mississippi (for telegraph operators only); Nevada, New Jersey, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, and Wisconsin. Laws addressed to labor organizations and forbidding them to discriminate against members or applicants for membership on account of their belonging to or joining the National Guard are found in New York and Wisconsin.

Labor organizations are specifically exempted from the operation of anti-trust laws in California, Louisiana, Michigan, Montana, Nebraska, and Wisconsin; of insurance laws in Massachusetts; and of laws governing beneficial associations in Kansas. Laws of Maine and New Jersey authorize them to take out collective insurance in behalf of their members, for which insurance companies may also make special rates. The bribery of representatives of labor organizations is specially penalized by a New York statute

Strikes.—Though strikes are legal everywhere under the common law as construed in this country, two states, Pennsylvania and Texas, have laws specifically legalizing them; while in Minnesota it is declared that the fact of engaging in a strike more than one year prior to hiring shall not be made the subject of inquiry in employing workmen. Where employers advertise for workmen while there is a strike in their establishment, the fact must be stated in the advertisement, according to laws of Illinois, Massachusetts, Montana, Oregon, and Tennessee.

Several states have laws to direct the conduct of strikers where the operation of railroads is affected. These laws prohibit the obstruction of the operation of trains, the intimidation of employees on trains, and the abandonment of engines or trains at other than division points or the point of regular schedule destination. These provisions are found partly or in their entirety in laws of Connecticut, Delaware, Illinois, Kansas, Kentucky, Maine, Mississippi, New Jersey, New York, Pennsylvania, and Texas. The Maine statute covers other public service corporations as well as railroads.

Picketing, Boycotts and Black Lists.—Two states, Alabama and Colorado, prohibit picketing. Boycotts are declared unlawful by laws of Alabama, Colorado, Illinois, Indiana, and Texas; while blacklisting is prohibited by statutes of Alabama, Arkansas, Colorado, Connecticut, Florida, Illinois, Indiana, Iowa, Kansas, Minnesota, Mississippi (telegraph operators only); Missouri, Montana, Nevada, North Carolina, North Dakota, Oklahoma, Oregon, Texas, Utah, Virginia, Washington, Wisconsin, and by a federal statute applicable to interstate railway service. Intimidation or other interference with employment is prohibited under penalty in Alabama, Connecticut, Delaware, Georgia, Idaho, Illinois, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, West Virginia, and Wisconsin. Conspiracy against employees is specifically forbidden in Alabama, Florida, Georgia, Kansas, Minnesota, Mississippi, New York, North Dakota, and Washington.

Arbitration of Labor Disputes.—Provision for conciliation or arbitration in cases of disputes between employers and employees through the instrumentality of boards, either existing as permanent state boards or appointed locally for the occasion, exists in a number of states. When special boards are to be appointed it is frequently provided that one member shall be named by the employer, one by the labor union representing the employees, and the third by these two. State or local officials may offer their services as mediators, or may convey information to standing boards as to the existence or threatened occurrence of a strike, whereupon mediation may be attempted or arbitration proposed. Investigations and awards may be made, and the results published; awards may be made a matter of record as of a finding of a court. State boards are provided for by laws of Connecticut, Illinois, Louisiana, Maine, Michigan, Missouri, Oklahoma, and Utah; local boards in Colorado, Kansas, Maryland, Nevada, Pennsylvania, Texas, Washington, and by federal statute; a combination of state and local officials are to form the boards in Idaho and Indiana; while provision is made for state boards, with the alternative that special boards may be appointed to act locally in lieu thereof, in California, Massachusetts, Minnesota, Montana, New York, Ohio, and Wisconsin.

COMPULSORY EDUCATION AND CHILD LABOR LAWS

Statutory provisions relating to compulsory attendance and child labor, prepared by the United States Bureau of Education.

Compulsory Education				Child Labor	
State	Age	Annual Period	Penalty on Parents for Neglect	Age Under Which Specified Employments Are Forbidden	Educational Restrictions on Child Labor
Alabama	8–16	100 days	Not less than $5 nor more than $50 or 30 days imprisonment.	14 years, in any mill, factory, or manufacturing establishment.	No child, 12 to 16, may work in any mill, etc., unless attends school 8 weeks each year employed.
Arizona	*a*8–14	Full term.	$5 to $25		No child under 14 may be employed during school hours.
Arkansas	*dd*8–16	Not less than half the full term. Applies to certain counties.	$10 to $25	12 years, in all cases in manufacturing establishments, except canning industries in vacation; 14, unless to support a parent or self, as specified by law; 14, in mines; females not at all in mines. Applies to certain counties only.	No child, 14 to 18, unable to write, may be employed in a manufacturing establishment unless he has attended school 12 weeks the preceding year.
	*gg*8–14	Not less than one-half full term. Applies to certain other counties.	$5 to $25		

COMPULSORY EDUCATION AND CHILD LABOR LAWS—Continued

Compulsory Education				Child Labor	
State	Age	Annual Period	Penalty on Parents for Neglect	Age Under Which Specified Employments Are Forbidden	Educational Restrictions on Child Labor
California	8–16	Full term	First, not over $10 or 5 days' imprisonment; subsequent, $10 to $50 or 5 to 25 days, or both.	14 years, in any mercantile or manufacturing establishment, workshop, hotel, or as messenger, etc. Children 12 to 15, upon permit, may work if parents incapacitated, or during vacation.	Children who hold permits to work shall be subject to compulsory attendance upon part time classes if between 16 and 18 years of age, and persons under 21 who cannot speak, write or read the English language adequately.
Colorado	*b*8–14	12 weeks of each year—8 of which must be consecutive.	$5 to $25	14 years in any underground works, mine, shelter, mill, or factory. No female may be employed in a coal mine.	Unlawful to employ children under 14 during school hours unless they have complied with the school-attendance law; under 16, unable to read and write, unless attending day or night school.
Connecticut	*c*7-16	Full term	Not exceeding $5 each week of absence.	14 years, in any mechanical, mercantile, or manufacturing establishment.	Children under 14 may not be employed while school is in session. Children 14 to 16 can not leave school to be employed, unless their education is satisfactory to the local or state board.
Delaware	7-14	5 months (may be reduced by districts to 3).	First, not over $2; after, not over $5. On default imprisonment 2 to 5 days.	14 years, in any factory, workshop, or manufacturing establishment, except in canning industry, etc., or to support widowed mother.	No child 14 to 16 may be so employed, unless he has attended day or night school 12 weeks the preceding year.
District of Columbia	8-14	Full term	Not exceeding $20	14 years in any factory, workshop, store, office, hotel, theater, as messenger, etc. Children 12 to 14 may get permit to work in certain cases.	Children under 14 may not do any work for wages during school hours, nor under 16 in preceding employments, unless can read, write, and attended school 130 days preceding year.
Florida	8–14	Not less than 80 days of each year.	Subject to fine.	Children under 15 may not be employed more than 60 days without consent of legal guardian.	
Georgia	8–14	4 months of each year.	$10 first offense, $20 subsequent offenses.	10 years, in or about any manufacturing establishment; 12 years after Jan. 1, 1907, except for support of self or parents in specified cases.	After Jan. 1, 1908, no child under 14 may be employed as in preceding column (with the exception there noted) unless able to write and has attended school 12 weeks the preceding year; under 18, unless so attending school.
Idaho	*d*8-18	Full term	Not over $300 or imprisonment not over 6 months, or both.	14 years, in any mine, factory, workshop, mercantile establishment, laundry, hotel, etc., except over 12 during vacations.	No child under 14 may be employed in any way during school hours.
Illinois	*e*7-16	Full term, to be not less than 6 months.	$5 to $20 and costs, and stand committed until paid.	14 years, in any mercantile institution, factory, office, theater, elevator, etc., or as messenger or driver; 16, in or about any mine. No female may work in or about a mine.	No child 14 to 16 unable to read and write may be employed unless attending an evening school, if there is one. No child under 14 may be employed at any work for wages during the school term.
Indiana	*f*7-16	Full term	$10 to $200; and in discretion of court, imprisonment not exceeding 60 days or both.	Under age of 14 no minor shall be employed or permitted to work in any gainful occupation other than farm labor or domestic service. No female may work in a mine.	Children under 14 may not be employed in any way during school hours. Between 14-18 cannot leave school to be employed unless education is satisfactory to local board.
Iowa	*f*7-14	24 consecutive weeks; first and second class city boards may require full term.	$3 to $20	14 years, in any mine, factory, mill, shop, laundry, packing house, elevator, or store where more than 8 persons are employed.	
Kansas	8-15	Full term *g*	$5 to $25	14 years, in any factory, workshop, theater, packing house, or in or about any mine; 16, in any dangerous, etc., employment.	Under 14 may not be employed in any way during school hours. No minor under 16 may work in a coal mine unless he can read and write and has attended school 3 months in the year.
Kentucky	*h*7-14	8 consecutive weeks; full term in cities of first, second, third, and fourth classes	First, $5 to $20; subsequent, $10 to $50.	14 years, in any mine, workshop, factory, store, office, hotel, as messenger, etc.	Under 14 may not be employed in any way during school term; nor from 14 to 16 in stated occupations unless can read and write, and attended school 100 days preceding year.
Louisiana	7–14	140 days or full session.	$10 or 10 days in prison or both.	14 years, in any manufacturing or mercantile establishment, mine, laundry, carrying messages, etc.	Children under 14 may not be employed in foregoing employments nor in clothing, dressmaking, or millinery establishments unless they have attended school 4 months in preceding year.
Maine	*ee*7-15	Full term	Not exceeding $25, or imprisonment not exceeding 30 days.	14 years, in any manufacturing or mechanical establishment.	Children under 15 shall not be employed in any manufacturing or mechanical establishment, except during vacation, unless they have attended school 16 weeks during preceding year.
Maryland	*j*8-12	Full term	Not exceeding $5	14 years, in mills and factories (except canning establishments), unless self, widowed mother, or invalid father solely dependent upon such employment. 19 counties exempt from law. 14 years, day messenger service; 16 years, night messenger service; 21 years, messenger duty to house of ill repute.	No minor 12 to 16, unable to read and write English, may be employed where there is an evening school unless attending that or another school.

COMPULSORY EDUCATION AND CHILD LABOR LAWS—Continued

Compulsory Education				Child Labor	
State	Age	Annual Period	Penalty on Parents for Neglect	Age Under Which Specified Employments Are Forbidden	Educational Restrictions on Child Labor
Massachusetts	(*k*)	Full term	Not exceeding $20	14 years, in factories, workshops, or mercantile establishments; 21 years, dangerous occupations.	Children under 14 may not be employed at any work for wages during school hours; from 14 to 16 may not be so employed in any factory, workshop, or mercantile establishment if unable to read and write. *l*
Michigan	7-16	Full term	Fine of $5 to $50, or imprisonment 2 to 90 days, or both.	14 years, in any manufacturing or mercantile establishment, workshop, laundry, store, office, hotel, messenger service, etc.	Children 14 to 16 may not be employed unless they have attended school 100 days preceding year, and can read and write and know the elements of arithmetic.
Minnesota	*f*8-16	Full term	Not over $50, or imprisonment not over 30 days.	14 years, in factories, mills, workshops, or mines.	Children under 14 years may not be employed in any service during school term; under school age (16 years), in any occupation during school term unless they have attended school the prescribed period; under 16, unable to read and write English, in any indoor occupation (except in vacation) unless attending day or evening school.
Mississippi				12 years, in any mill, factory, or manufacturing establishment.	
Missouri	*m*8-14	Not less than ¾ of term. Full term in cities of over 500,000.	$10 to $25, or imprisonment 2 to 10 days, or both.	14 years, in any gainful occupation except agriculture and domestic service; 16 years, in dangerous and unwholesome occupation; no females in mines or dramshops	No child between 14 and 16 may be employed unless he has regularly attended school and is able to read and write English.
Montana	*n*8-14	Full term; in no case less than 16 weeks.	$5 to $20	16 years, in mines or underground works.	Children under 14 not to be employed during school sessions unless they have completed the studies required by law; from 14 to 16, if unable to read and write English.
Nebraska	*o*7-15	Two-thirds of school term; in no case less than 12 weeks. Full term in cities.	$5 to $25 (on truant officer).	14 years, in any manufacturing or mercantile establishment, office, hotel, etc.	No child under 14 may be employed in any service during school hours.
Nevada	8-16	Full term	First, not over $10 or imprisonment not over 5 days; subsequent, $10 to $50, or imprisonment 5 to 25 days, or both.		
New Hampshire	*p*8-14	Full term	First, $10; subsequent, $20.	12 years, in any manufacturing establishment.	No child under 14 may be employed during school sessions, nor under 16 if unable to read and write English. No minor unable to read and write English may be employed unless attending day or evening school, if any is held.
New Jersey	*q*7-17	Full term	Punishable as a disorderly person.	14 years, in factories, workshops, mills, or manufacturing establishments, also mines; 15 years until July 4, 1911, 16 years thereafter, in factories, etc., between 6 p. m. and 6 a. m.	Children under 15 must have attended school 12 weeks the preceding year as a condition of employment.
New Mexico	7-14	Full term	$5 to $25, or imprisonment not exceeding 10 days.		
New York	7-16	Full term (not less than 160 days) in districts of over 5,000 population having a superintendent, for children 7-16 *r*; elsewhere, for children 8-16, Oct. 1 to June 1. *r*	First, not over $5 or imprisonment 5 days; subsequent, not over $50 or imprisonment 30 days, or both.	14 years, in factories; if 14 to 16, the child must have attended school 130 days the preceding year, and be able to read and write English, and cipher. Similar provisions apply, in places of over 3,000 population, to work in mercantile establishments, business offices, restaurants, hotels, express or messenger service, except for children over 12 in small places during vacation. For work in or about mines 16 years is the minimum. No female may work in a mine. *s*	Unlawful to employ in any business or service child under 14 during school term; or one 14 to 16 in city of first or second class, unless he has an employment certificate (having certificate and not having completed elementary course, must attend evening or trade school) or one 14 to 16 elsewhere, in any factory, etc., unless has employment certificate, or in any service unless has certificate of school attendance, etc.
North Carolina	*t*8-14	16 weeks	$5 to $25	13 years, in any factory or manufacturing establishment (does not apply to oyster canning and packing); 12 years, in mines employing over 10 men (boys); children 12 to 13 may be employed in factories only as apprentices.	Apprentices 12 to 13 years must have attended school 4 months in preceding 12.
North Dakota	8-15	Full term	$5 to $20 (on school official).	14 years, in mines, factories, workshops, mercantile establishments, etc.	Children under 14 may not be employed in any manner during school term, or those 14 to 16 unless they have attended school 120 days preceding year and know the elementary branches.
Ohio	*u*8-14	Full term; in no case less than 28 weeks.	$5 to $20; on default, imprisonment from 10 to 30 days.	14 years, in any factory, workshop, business office, mercantile establishment, hotel, as messenger, etc.; 18 years, messenger service between 9 p. m. and 6 a. m.	No child between 14 and 16 may be employed in foregoing occupations without a schooling certificate.
Oklahoma	8-16	3 to 6 months. *v*	$10 to $50	16 years, in mines (no girls in mines).	
Oregon	*w*9-14	Full term	$5 to $25 fine, or imprisonment 2 to 10 days, or both.	14 years, in any factory, store, workshop, in or about any mine, or in the telegraph, telephone, or public messenger service.	Foregoing employments forbidden to any child 14 to 16 unless attended school 160 days preceding year and can read English. No child under 14 may be employed in any work for compensation during school hours.

COMPULSORY EDUCATION AND CHILD LABOR LAWS—Continued

State	Compulsory Education: Age	Compulsory Education: Annual Period	Compulsory Education: Penalty on Parents for Neglect	Child Labor: Age Under Which Specified Employments Are Forbidden	Child Labor: Educational Restrictions on Child Labor
Pennsylvania	*x*8–16	Full term; but the school board of each district has power to reduce this to not less than 70 per cent of the term.	First, not exceeding $2; subsequent, not exceeding $5; on default, imprisonment; first, not over 2 days; subsequent, not over 5.	14 years, in any employment, except domestic or farm labor. Girls may not work in or about coal mines.	No child 14 to 16 may be employed unless he can read and write English and has complied with the school laws.
Rhode Island	*y*7–15	Full term	Not exceeding $20	14 years, in any factory, manufacturing or business establishment.	Children under 13 may not be employed except during school vacations.
South Carolina				12 years, in any factory, mine or textile establishment, except that certain self-dependent children may work in the latter.	Children may work in textile establishments in June, July, and August if they have attended school 4 months during the year and can read and write.
South Dakota	*f*8–14	Full term; but districts may reduce it to 16 weeks, 12 consecutive.	$10 to $20 and costs; stand committed till paid.	14 years, in mines	No child 8 to 14 to be employed during school hours unless he has attended school 12 weeks during the year.
Tennessee *z*	8–14	4 months or 80 days consecutively.	First offense, $1 for each day of absence.	14 years, in workshops, factories, or mines.	
Texas				12 years, in mills, factories, manufacturing or other establishments using machinery; 16 years in mines, distilleries, or breweries.	Unlawful to employ children 12 to 14 who can not read and write English, in mills, factories, etc., certain self-depe dent children excepted.
Utah	8–16	20 weeks, 10 consecutive; in cities of the 1st and 2d class 30 weeks, 10 consecutive.	First, not exceeding $10; subsequent, not exceeding $30, with costs.	14 years in mines (constitution of state).	
Vermont	*a*8–15	Full term	$5 to $25	12 years, for any railroad company or in any mill, factory, quarry, or workshop, or carrying messages.	No child under 16 who has not completed the 9-year school course may be employed in any railroad, factory, mine, or quarry work, or in delivering messages, except out of school hours.
Virginia *bb*	8–12	12 weeks	First, $2 to $10; subsequent, $5 to $20.	13 years, after March 1, 1909; 14 after March 1, 1910, in any factory, workshop, mercantile establishment, or mine, except in certain cases of need over 12. *cc*	
Washington	8–16	Full term	Not over $25	14 years (boys), 16 years (girls), at any labor not connected with house or farm work; 16 years in mines (girls not at all).	Children under 15 may not be employed during school hours unless excused by the school superintendent.
West Virginia	8–14	20 weeks	First, $2; subsequent, $5	12 years, in factories, workshops, mercantile or manufacturing establishments; 14 in mines (no girls may work in mines).	No child under 14 shall be so employed during school term if it hinders regular attendance.
Wisconsin *cc*	7–14	Full term in 1st class cities; in 2d class cities not less than 8, elsewhere not less than 6 school months.	$5 to $50 and costs, or imprisonment not over 3 months, or both.	12 years, in any occupation; 14, in factories, workshops, mines; 14 to 16, in any occupation without specified written permit.	Children 12 to 14 may not be employed in any occupation, except during school vacations by specified written permit, in stores, offices, hotels, mercantile establishments, laundries, or public messenger service, where they reside (does not apply to farming or other outdoor work).
Wyoming	*f*7–14	Full term	Not exceeding $25	14 years, in mines; females may not work in mines. (Constitution.)	
United States laws (for territories).				12 years, in the underground workings of any mine.	

a To 16, if unable to read and write English.
b Children 14 to 16 whose labor is necessary to their own or parents' support are excused.
c Not applicable to children over 14 lawfully employed to labor at home or elsewhere.
d Except children over 14 who have completed eighth grade, or have to support themselves or parents, or have other good cause to be exempt.
e Children 14 to 16 necessarily and lawfully employed are exempt.
f Inclusive.
g 8 weeks for children over 14 who can read and write English and are at work to support themselves or others.
h To 16 in cities of first, second, third, and fourth classes; holders of employment certificates excepted.
i The provisions tabulated for Maryland (except in fifth column) are of the act of 1902, whose operation is limited to Baltimore city and Allegany county.
j To 16 unless regularly employed to labor at home or elsewhere.
k To 16 if wandering about public places without lawful occupation, or if unable to read and write.
l Must be able to so read and write as is required to enter the second grade in 1906, third in 1907, and fourth in 1908 and after.
m To 16 years for children not lawfully, regularly, and usefully employed.
n To 16 if unemployed.
o To 16 years in cities.
p To 16 if unable to read and write English.
q Inclusive. Does not apply to children over 15 who have finished grammar-school course and are regularly employed; otherwise must attend grammar, or high, or manual-training school. Children over 14 may be employed in cases of necessity.
r Does not apply to children 14 to 16 lawfully employed.
s Other forbidden employment: under 16, on certain machines in box factories; under 21, night messenger service in certain cities; under 16, in bowling alleys and in places of amusement at night.
t Law does not take effect in any county until voted by the county; does not apply to children over 12 lawfully employed at home or elsewhere.
u To 16 if not legally employed or if unable to pass fifth grade test in required subjects. Children in cities who have not completed eighth grade may be required to attend until they are 16.
v In the discretion of school boards.
w To 16 if unemployed.
x Not applicable to children over 13 who can read and write English and are regularly employed in useful service.
y Not applicable to children over 13 who are lawfully employed.
z The compulsory attendance act applies to 18 counties, in addition to which 13 counties are under special laws.
aa Children over 15 or under 8, when once enrolled, must attend the full term they are enrolled for.
bb Compulsory attendance law optional with the voters of any county, city, or town.
cc Children under 17 may not be sent to immoral resorts.

DICTIONARY OF POLITICAL SCIENCE TERMS

Alien.—One who is "of another country," consequently, a person residing in a country, who is not a natural born citizen, or who has not been naturalized, is an alien in that country. A child born in a country takes the citizenship of his father. In United States a person born out of the jurisdiction of the United States who has not been naturalized is an alien.

Anarchism.—The socialist contends that society needs more government; the anarchist believes that there should be less government. The fundamental principle of anarchism is that if man were left unhampered by the restrictions of government and were properly developed by education, he would develop in such a way that the best interests of every one would be taken care of in an ideal way.

Cabinet.—In carrying on his duties the President is aided by executive officials, ten of whom form an advisory Cabinet, a body not mentioned in the written Constitution. At present, the Cabinet consists of the Secretaries of State, Treasury and War, Attorney-General, Postmaster-General and the Secretaries of the Navy, Interior, Agriculture, Commerce and Labor.

Caucus.—A political caucus is a meeting of members of a political party to determine what stand the party will take toward local, state or national problems. From the above it appears that a caucus may be a meeting of national leaders to determine what person is the most promising individual for President, or a meeting of ward politicians in any city to determine the party policy on any petty issue.

Citizenship.—Often the terms "citizen" and "voter" are confused. A voter is a person who is allowed by law to take part in the government. A citizen is a member of the nation. A citizen of the United States is a member of the large society which we call the United States of America.

In the United States citizenship is defined in the Fourteenth Amendment to the Constitution as: "All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside."

Civil Law.—In civil cases the individual who has been offended brings action before the court. The State has no concern in such cases except to see that justice is done. The subjects upon which suits may be brought are innumerable. Perhaps the most important branch of the law has to do with property—the holding of land and the transfer of title by sale, inheritance or will. Other important considerations are the collection of debt, the rights of public utilities and the rights of corporations.

Commission Government.—A large number of cities in the United States, chiefly of medium size, have sought to remedy the defects in municipal government by a radical change in municipal organization. In place of a council with a mayor, these cities select a body of commissioners, usually five in number, who become the governing body of the city. The commissioners are elected at large and afterwards assigned to different departments of the city's administration. The commission is both a legislative and an administrative body.

Common Law.—Crimes are usually defined by statute; however, when no distinct statutes have been passed, offences in most states may be punished under common law—that is the nature of the offence and penalty are to be ascertained from the practice of the courts in England and America. In this way, law is built up and developed by judicial precedents.

Conservative.—A conservative is one who is fully satisfied with present day conditions. He wishes to conserve the present and has a morbid fear of change, for he has a feeling that any change is apt to bring ruin to our social and political structure.

Criminal Law.—Each state determines just what is crime and in a criminal case, the state is always the prosecutor. Cases may be suggested by the injured person or his friends, but must be tried by a public prosecutor. The usual penalty for crime is a fine or imprisonment, or both; and in most states the death penalty for the most serious crimes.

Economic Interpretation of History.—The theory of the economic interpretation of history rests upon the concept that social progress in general is the result of contending economic interests in society—some favorable, others opposed to change.

Eminent Domain.—The state enjoys and often makes use of the right of eminent domain, by which private real estate may be appropriated for public purposes on payment of a reasonable sum. If an owner of real estate will not accept a price which the government considers reasonable the state submits the matter to a court and lets the court decide what is a suitable price. The right of eminent domain belongs to the states and also to the federal government for federal purposes. The states also allow the local governments to exercise this power for their needs.

Ex-post Facto Law.—For many centuries in England and Continental Europe, people were punished for acts which were not forbidden by law when the act was committed. This caused much injustice. To prevent this in the United States a clause in the Constitution states that no ex-post facto law can be passed either by Congress or the State Legislatures.

Federal Courts.—The Constitution of the United States makes only slight provision for the structure of the federal courts. It merely states that the judicial power of the Federal Government shall be vested in one Supreme Court and in such inferior courts as Congress may from time to time ordain and establish.

All federal judges are nominated by the President and appointed by and with the advice and consent of the Senate. All federal judges hold office during good behavior and, therefore, cannot be removed except by impeachment.

Congress has set up the following courts:

(1) The Supreme Court is composed of nine judges,—a Chief Justice and eight Associate Justices. Six judges must be present at each trial and a majority is necessary for a decision. The salary of the Chief Justice is $15,000 yearly and of the associate justices $14,500. The most important business of this court is questions of Constitutional law brought up from lower federal courts or from state courts.

(2) Immediately under the Supreme Court is a Circuit Court of Appeals in each of the nine circuits into which the United States is divided. In the circuits which have a large amount of business, there are four judges, in the smaller circuits two judges and in the remainder three judges. Each of the Justices of the Supreme Court is allotted to one of the nine circuits.

This Court has the right to review the decisions in the lower District courts and its decision is final in practically all cases, in which no question of Constitutional law is involved. However, the Circuit Court may ask the Supreme Court for instructions on any point of law.

(3) The lowest federal tribunal is the District Court. The whole country is divided into some eighty or ninety districts and in each there are one, two, three or four judges, according to the business to be transacted. The jurisdiction of this court is over all questions of federal law, which can not originate in the Circuit Court of Appeals or in the Supreme Court.

In close relation to the judiciary are the Department of Justice and the United States Attorneys and Marshals. The head of the Department of Justice is the Attorney-General of the United States.

Gerrymander.—In order that the majority party may secure as many members in Congress as possible, resort has been made to a method of creating Congressional districts called "Gerrymandering." This is done by massing the voters of the opposing party in a small number of districts, giving them overwhelming majorities there, while allowing the dominant party to carry the other districts by very small minorities. The same process is often followed in state and municipal politics.

Habeas Corpus.—Any person who thinks that he or another person is unjustly imprisoned may represent the facts to a court, which may then issue a writ of habeas corpus, directing whoever may have in custody the person described in the writ to produce such person in open court (unless charged with treason or felony) and state the reason for his detention.

Under our system whenever there is a conflict between the state and federal authorities the matter is settled by the United States Supreme Court.

Habeas Corpus may be suspended in case of civil war or of foreign war; it was suspended during the Civil War and more than thirty thousand people were arrested on the responsibility of President Lincoln. Many authorities are of the opinion that the writ can be legally suspended only by an Act of Congress.

Impeachment.—A special method of determining the guilt or the innocence of public officers charged with crime is impeachment. The process is distinctly set forth in the federal Constitution. Under it the House of Representatives "impeaches," that is, by a majority vote it presents articles of accusation. The Senate then tries the officer accused by the House.

Impeachment is the process of bringing an official to trial for removal from office and may either succeed or fail at removal. Thus President Andrew Johnson was impeached, but not convicted. This process is employed in the state governments as well as the national government.

Income Tax.—Because of the difficulties of assessing direct taxes and apportioning them among the states, the Constitutional limitation became almost a prohibition. However, in 1913, after a long agitation over the matter, the Sixteenth Amendment to the Constitution was adopted, authorizing Congress to lay taxes upon private

incomes from all sources without reference to any census or enumeration. After the Underwood tariff act was passed in 1913, which materially reduced the federal income, Congress levied a tax on incomes to replenish the national treasury.

Initiative.—The initiative is a system by which a given number of voters may on petition require the legislature to pass a statute of a designated kind and submit it to popular vote, or may actually draw up a bill in detail and demand a vote upon it.

Injunction.—The writ or bill of injunction is an order of court giving orders concerning a matter, and the violation of the order is regarded as contempt of court. Sometimes the injunction takes the form of an order to persons or a corporation to perform certain acts; sometimes the injunction takes the form of a temporary restraining order forbidding a party to alter the existing condition of things in question until the merits of the case may be decided; again it is in the form of a permanent order directing a party not to perform some act, the results of which can not be remedied by any proceeding in law.

Organized labor is opposed to the use of injunctions, because this legal process has been employed so often in labor disputes.

I. W. W.—The I. W. W., or Industrial Workers of the World, is a radical organization of international scope, which has for its object the improvement of the social and economic conditions of labor. This organization adheres to the principle that the end justifies the means. When occasion demands, intimidation, force or even violence may be employed to accomplish an end that the organization has in view. The method of operation of this organization stands out in contrast to those organizations which favor social and political reform through the orderly process of education.

Juries.—A grand jury is composed of a number of citizens ranging from twelve to twenty-three. It holds its sessions either for the purpose of investigating the causes of crimes which have been committed, bringing indictments against those whom jury believes guilty or in order to investigate the conditions of some department of the government.

A petit jury is usually composed of twelve citizens before whom evidence is submitted in a trial and who render a decision, or verdict, on the basis of the evidence presented. The decision or verdict must be unanimous.

Juvenile Courts.—In many of our large cities special courts called Juvenile Courts have been set up for hearing of cases brought against minors. In a Juvenile Court, the child is not treated as a criminal.

The child, with his accuser and sponsors, meet the judge in a rather informal way. The judge has a heart to heart talk with the offender, if the judge thinks the child is guilty. If found guilty, the youthful offender is placed upon probation and an effort is made to care for him in such a way that he will develop into a useful citizen.

Lobbying.—By the lobby is meant those men, and sometimes women, who make it their business to argue with legislators and to solicit their votes. Some of these lobbyists are paid attorneys of corporations; many of them are former members of Congress, who understand the inner workings of the body. The same influence is often exerted in state and municipal legislative bodies.

National Banking System of the United States.—In addition to gold and silver coins, we have in use several kinds of paper money. Some of these, called gold and silver certificates, are paper substitutes for gold and silver, which is too heavy and bulky for ordinary use. Another form of paper money which is being retired as rapidly as possible, consists of United States notes, or greenbacks, which were originally issued during the Civil War.

Much of our paper money at present consists of bank notes issued by banks which have been chartered by the national government. Our present national banking system was established in 1863 for the purpose of creating a market for bonds of the United States in order to secure additional funds to finance the Civil War. National banks are permitted to issue notes on the United States bonds which they have bought and deposited with the Treasurer of the United States. Since these notes are secured by government bonds, which are of unquestioned value, they have excellent stability. However, they lack elasticity, for there is a limit to the volume of bonds which the banks have bought and may buy. In order to provide elasticity, which is necessary when much currency is required to move the crops in the autumn, etc., the Federal Reserve Act was passed in 1913. Under this act all notes issued by individual banks will be gradually retired and by 1935 they will no longer be in circulation.

The Federal Reserve Act provides for a single Federal Reserve Board, consisting of the Secretary of the Treasury, the Controller of the Currency and five other members appointed by the President and Senate for a term of ten years each. This board has supervision of the Federal Reserve Banks and the administration of the Federal Reserve Act.

The United States is now divided into twelve districts, as shown on the map in our Atlas. In each of these divisions there is a Federal Reserve Bank, which may issue notes in large quantities, but these notes are safe-guarded against depreciation by good security. These banks do not do business with the public, but with banks which are members of the Federal Reserve System.

In 1916 a law was passed creating twelve Land Loan Banks, which were placed under a single Federal Board. These banks loan money to associations of farmers at comparatively low rates of interest, to be repaid in installments over a long period of time.

National Nominating Conventions. — Political parties and all of the machinery of the parties are extra-legal political institutions. By that we mean that they are not created by any national or state law. They are not recognized as such by law.

The national conventions of the different parties meet in some conveniently located city of importance usually in June or July. The day and place are decided by the national committee, which consists of one member from each state, elected by the delegates from that state to the national convention, which nominates the candidates for President and Vice-President. In fact, the national committee really manages the convention, because if any state sends two sets of delegates to the same party convention, it decides in advance which delegates are entitled to seats in the convention. In doing this it usually favors its friends.

After the convention has adopted a platform setting forth the principles of the party the roll of the states is called in alphabetical order and nominations are then made. Even when there is no doubt about which Presidential candidate will be selected, the names of favorite sons from different states are often placed in nomination out of respect for them. Usually from five to ten names are placed, each of which is nominated in a laudatory speech, usually followed by prolonged applause. After the nominations have been closed the roll of the states is again called and the chairman of each delegation announces its vote. After the Presidential candidate has been selected the convention proceeds to choose a nominee for Vice-President.

The Republican convention requires only a majority vote of the delegates to elect, while the Democratic requires two-thirds. If no nominee receives the requisite majority on the first ballot the process is repeated until some one secures the proper number of votes.

Naturalization. — Naturalization is the acquirement of citizenship. In the United States an alien can become an American citizen in five years. At any time he may declare his intention of becoming a citizen. He must do this before a federal court. Not less than two years later, nor more than seven years later, if he has resided in this country at least five years altogether, he must go before a federal court or a state court of record, forswear his allegiance to the country of which he was formerly a citizen and prove to the satisfaction of the court that he is of good moral character, not an anarchist and is attached to the constitution. His naturalization includes his wife and minor children. Since 1922 a wife may be naturalized on her own account by fulfilling the usual requirements, provided her husband is eligible to become naturalized.

Political "Boss."—The "boss" in politics is a man who concerns himself very little with policies and very much with the bringing together of a majority which will enable him to keep his friends in office. He has no concern for the service which the government should render to the public. He is interested in government in order to get out of it all that he can for himself and his friends.

Political Parties.—The political forces by which our government is operated are the political parties. In all forms of popular government, wherever men are striving to govern themselves and to realize government by the people, political parties exist. People divide according to their views on public measures. Our parties of today have for their purpose the solving of our national and state problems by putting into operation the principles for which the party stands, which are fundamental for our peace and prosperity. The state and national platforms of each party formulate the principles each party holds toward the political problems of the country.

Presidential Succession.—On the death of the President of the United States he is succeeded by the Vice-President and the Vice-Presidency remains vacant until the next Presidential election. In case of death or disability of the Vice-President the Presidency is filled by a member of the Cabinet in the following order: Secretary of State, Treasury, War, the Attorney General, the Postmaster-General, the Secretary of the Navy, Interior, Agriculture, Commerce and Labor.

Primaries.—At the present time practically all states of the United States provide that nominations for elective officers shall be made, not by conventions of party delegates nor by a caucus of political leaders, but by the voters in direct elections.

A few weeks before an election, on a day set by law, an election is held similar to a regular election. Instead of having a single ballot for all parties, each party has a separate ballot and in some states, separate dates for the primary election. Only those voters are allowed to take part in this election who have affiliated themselves openly with some party. The object of the direct primary is to place more responsibility in selecting public officials in the hands of the voters and less power in the hands of politicians.

Progressive.—A progressive is an individual who believes that the proper solution of political and social problems is to be found by gradually improving present conditions.

Radical.—A radical is one who believes that political development should be made by extreme departure from the present political and social notions. The radical contends that our present political ideals and institutions are the product of an unscientific past and that there should be a complete readjustment in harmony with the latest discoveries of political and social science.

Referendum.—The referendum is the process whereby laws may be enacted or unpopular laws done away with by the direct vote of the people. If a state law has been proposed by initiative and the legislature has neglected to act upon it a referendum vote on it may be taken at the next election. On the other hand, if the legislature has passed a law which is disapproved by many people they can, on petition, temporarily suspend the law and compel the state to submit it to popular vote. The State of Oregon has made the most use of the referendum.

Short Ballot.—Since it is practically impossible for even the most intelligent voter to inform himself on the merits of so many candidates as we now have for public offices, there has been in recent years a strong tendency to simplify the ballot. The short ballot advocates believe that public officials whose duties are entirely administrative should be appointed by some responsible person who can judge the fitness of the applicants for that work better than it can be determined by the average voter. Of course, the public under this system retains indirect control of these administrative officials inasmuch as it elects the person who appoints them.

Single Tax.—It is a well known fact that the value of ground in our large cities increases with astonishing rapidity, not through the effort of the owners, but through the growth of industry and population. In view of this fact Mr. Henry George advocated the idea that a single tax on the unearned increase on land values would be the most equitable form of taxation and would solve many of the economic problems of today. Some authorities on taxation today advocate a single tax on incomes.

Socialism.—Socialism is the political doctrine that advocates the further extension of the authority of the state, until the state owns all means of production and re-shapes human society upon new and better lines for the well being of all the people.

Spoils System and Civil Service Reform.—From the time of President Jackson to President Arthur the whole Civil Service was demoralized every four years by wholesale political removals, and even more recently the federal service has been weakened by unnecessary removals from office. However, since 1871, the President has been authorized to prescribe regulations for the admission of persons into the Civil Service and to ascertain the fitness of each candidate. Under the new system an employee can not be removed except for cause.

The several states in varying degrees have followed the example set by the National Government.

State Courts.—The state courts are the great tribunals of the citizen for the protection of his personal and property rights.

At the bottom of the state judiciary, stand the justices of the peace, who have jurisdiction over civil cases involving very small amounts and over petty offences. In large cities, the police courts handle petty criminal matters and the municipal civil courts take care of minor civil actions.

In most states there are county courts. They have jurisdiction over actions involving considerable sums and usually are appellate courts from the justices of the peace. They usually have jurisdiction over most criminal matters of a serious nature.

Often there is a superior, circuit or district court immediately above the county court, which has unlimited original jurisdiction and may try all cases over which the lower courts have no jurisdiction.

At the head of the judiciary of each state, stands the appellate court of last resort, which ordinarily deals only with appeals on points of law and not of fact. Various names are applied to this court in different states, such as, supreme court, court of appeals, court of errors and appeals, or supreme judicial court.

Suffrage.—Under our Constitutional system, the regulation of the suffrage is left to the states. The federal Constitution avoided the creation of a uniform national suffrage by requiring that voters for Presidential electors and representatives should be the same as those for the most numerous branch of the state legislatures. Under this arrangement every enlargement of the state suffrage was a corresponding extension of national suffrage in that state. Of course, the Nineteenth Amendment to the Constitution grants suffrage to women in every state.

In the states there are three practically universal requirements for voters. The first is residence which provides that a person must be a bona fide resident of the precinct, county and state in which he wishes to cast his vote. The second is an age requirement of twenty-one years. The third requirement is that of citizenship.

All classes on which the right to vote is not directly conferred are debarred from voting. In addition, persons who are insane or incompetent or convicted of crime are denied the right of voting. Some states require all voters to be able to read and write. A few Southern states have adopted "grandfather clauses," to exclude negroes from voting. These states provide that any person who failed to meet the requirements for voting—ability to read or possession of property—should not be excluded, if he or one of his ancestors had voted before 1867.

Tariff.—Alexander Hamilton, as first Secretary of the Treasury of the United States, secured the passage of a tariff for the protection of American industries and brought money into the empty federal treasury. The farming and planting South, except a few of the large towns, presented an almost solid front against the tariff. Here we have the beginning of the tariff controversy, which has lasted to our day. On the one hand, we find the industrial sections favoring a high protective tariff; on the other, the agrarians and producers of raw material are in favor of a low tariff. The Republican party at present champions a high protective tariff, while the Democratic party advocates a tariff primarily for revenue, with slight protection to American business interests.

The Trust.—The popular conception of a trust is a large business organization that has control of some important industry. Legally and historically this is not true.

In 1892, a group of oil interests founded an organization, placing all their stocks in the hands of trustees, among whom was John D. Rockefeller. The trustees, in turn, issued certificates representing the share to which each participant was entitled and took over the management of the entire business. This was the origin of the "trust."

Legally there is no such thing as a "trust" at the present time, for the Supreme Court has declared that a combination that creates monopoly, unless the monopoly is under control of the government, is illegal.

CONSTITUTION OF THE UNITED STATES

The Constitution originally consisted of a Preamble and seven Articles, and in that form was "Done in Convention by the Unanimous Consent of the States present the Seventeenth Day of September in the Year of our Lord one thousand seven hundred and Eighty seven and of the Independence of the United States of America the Twelfth." The Constitution was declared in effect on the first Wednesday in March, 1789. The signers of the original Constitution, by virtue of their membership in Congress, were:

Go. WASHINGTON, *President and deputy from Virginia.* New Hampshire—John Langdon, Nicholas Gilman. Massachusetts—Nathaniel Gorham, Rufus King. Connecticut—Wm. Saml. Johnson, Roger Sherman. New York—Alexander Hamilton. New Jersey—Wil. Livingston, David Brearley, Wm. Patterson, Jona. Dayton. Pennsylvania—B. Franklin, Robt. Morris, Thos. Fitzsimons, James Wilson, Thomas Mifflin, Geo. Clymer, Jared Ingersoll, Gouv. Morris. Delaware—Geo. Read, John Dickinson, Jaco. Broom, Gunning Bedford, jun., Richard Bassett. Maryland—James McHenry, Danl. Carroll, Dan. of St. Thomas, Jenifer. Virginia—John Blair, James Madison, Jr. North Carolina—Wm. Blount, Hu. Williamson, Richd. Dobbs Spaight. South Carolina—J. Rutledge, Charles Pinckney, Charles Cotesworthy Pinckney, Pierce Butler. Georgia—William Few, Abr. Baldwin. Attest: William Jackson, *Secretary.*

The Constitution was ratified by the thirteen original States in the following order:

Delaware, December 7, 1787, unanimously.
Pennsylvania, December 12, 1787, vote 46 to 23.
New Jersey, December 18, 1787, unanimously.
Georgia, January 2, 1788, unanimously.
Connecticut, January 9, 1788, vote 128 to 40.
Massachusetts, February 6, 1788, vote 187 to 168.
Maryland, April 28, 1788, vote 63 to 12.
South Carolina, May 23, 1788, vote 149 to 73.
New Hampshire, June 21, 1788, vote 57 to 46.
Virginia, June 25, 1788, vote 89 to 79.
New York, July 26, 1788, vote 30 to 28.
North Carolina, November 21, 1789, vote 193 to 75
Rhode Island, May 29, 1790, vote 34 to 32.

THE CONSTITUTION

Preamble

We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquility, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish the Constitution for the United States of America.

ARTICLE I.

Section 1—(Legislative powers; in whom vested.)

All legislative powers herein granted shall be vested in a Constitution of the United States, which shall consist of a Senate and House of Representatives.

Section 2—(House of Representatives, how and by whom chosen. Qualifications of a Representative. Representatives and direct taxes, how apportioned. Enumeration. Vacancies to be filled. Power of choosing officers, and of impeachment.)

1. The House of Representatives shall be composed of members chosen every second year by the people of the several States, and the electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State Legislature.

2. No person shall be a Representative who shall not have attained to the age of twenty-five years and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State in which he shall be chosen.

3. Representatives and direct taxes shall be apportioned among the several States which may be included within this Union according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three-fifths of all other persons. The actual

enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of Representatives shall not exceed one for every thirty thousand, but each State shall have at least one Representative; and until such enumeration shall be made, the State of New Hampshire shall be entitled to choose 3; Massachusetts, 8; Rhode Island and Providence Plantations, 1; Connecticut, 5; New York, 6; New Jersey, 4; Pennsylvania, 8; Delaware, 1; Maryland, 6; Virginia, 10; North Carolina, 5; South Carolina, 5, and Georgia 3.*

4. When vacancies happen in the representation from any State, the Executive Authority thereof shall issue writs of election to fill such vacancies.

5. The House of Representatives shall choose their Speaker and other officers, and shall have the sole power of impeachment.

Section 3—(Senators, how and by whom chosen. How classified. State Executive, when to make temporary appointments, in case, etc. Qualifications of a Senator. President of the Senate, his right to vote. President pro tem., and other officers of the Senate, how chosen. Power to try impeachments. When President is tried, Chief Justice to preside. Sentence.)

1. The Senate of the United States shall be composed of two Senators from each State, chosen by the Legislature thereof, for six years; and each Senator shall have one vote.

2. Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the Senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one-third may be chosen every second year; and if vacancies happen by resignation, or otherwise, during the recess of the Legislature of any State, the Executive thereof may make temporary appointment until the next meeting of the Legislature, which shall then fill such vacancies.

3. No person shall be a Senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that State for which he shall be chosen.

4. The Vice-President of the United States shall be President of the Senate, but shall have no vote unless they be equally divided.

5. The Senate shall choose their other officers, and also a President pro tempore, in the absence of the Vice-President, or when he shall exercise the office of President of the United States.

6. The Senate shall have the sole power to try all impeachments. When sitting for that purpose, they shall be on oath or affirmation. When the President of the United States is tried, the Chief Justice shall preside; and no person shall be convicted without the concurrence of two-thirds of the members present.

7. Judgment of cases of impeachment shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honor, trust, or profit under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

Section 4—(Times, etc., of holding elections, how prescribed. One Session in each year.)

1. The times, places, and manner of holding elections for Senators and Representatives shall be prescribed in each State by the Legislature thereof; but the Congress may at any time by law make or alter such regulations, except as to places of choosing Senators.

2. The Congress shall assemble at least once in every year, and such meeting shall be on the first Monday in December, unless they shall by law appoint a different day.

Section 5—(Membership. Quorum. Adjournments. Rules. Power to punish or expel. Journal. Time of adjournments, how limited, etc.)

1. Each House shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members in such manner and under such penalties as each House may provide.

2. Each House may determine the rules of its proceedings, punish its members for disorderly behavior, and with the concurrence of two-thirds expel a member.

3. Each House shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may in their judgment require secrecy; and the yeas and nays of the members of either House on any question shall, at the desire of one-fifth of those present, be entered on the journal.

4. Neither House, during the session of Congress, shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two Houses shall be sitting.

Section 6—(Compensation. Privileges. Disqualification in certain cases.)

1. The Senators and Representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the Treasury of the United States. They shall in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the session of their respective Houses, and in going to and returning from the same; and for any speech or debate in either House they shall not be questioned in any other place.

2. No Senator or Representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States which shall have been created, or the emoluments whereof shall have been increased during such time; and no person holding any office under the United States shall be a member of either House during his continuance in office.

Section 7—(House to originate all revenue bills. Veto. Bill may be passed by two-thirds of each House, notwithstanding, etc. Bill, not returned in ten days, to become a law. Provisions as to orders, concurrent resolutions, etc.)

1. All bills for raising revenue shall originate in the House of Representatives, but the Senate may propose or concur with amendments, as on other bills.

2. Every bill which shall have passed the House of Representatives and the Senate shall, before it becomes a law, be presented to the President of the United States; if he approve, he shall sign it, but if not, he shall return it, with his objections, to that House in which it shall have originated, who shall enter the objections at large on their journal, and proceed to reconsider it. If after such reconsideration two-thirds of that House shall agree to pass the bill, it shall be sent, together with the objections, to the other House by which it shall likewise be reconsidered; and if approved by two-thirds of that House it shall become a law. But in all such cases the votes of both Houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each House respectively. If any bill shall not be returned by the President within ten days (Sundays excepted) after it shall have been presented to him, the same shall be a law in like manner as if he had signed it, unless the Congress by their adjournment prevent its return; in which case it shall not be a law.

3. Every order, resolution, or vote to which the concurrence of the Senate and House of Representatives may be necessary (except on a question of adjournment) shall be presented to the President of the United States; and before the same shall take effect shall be approved by him, or being disapproved by him, shall be repassed by two-thirds of the Senate and the House of Representatives, according to the rules and limitations prescribed in the case of a bill.

Section 8—(Powers of Congress.)

The Congress shall have power:

1. To lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States.

2. To borrow money on the credit of the United States.

3. To regulate commerce with foreign nations, and among the several States, and with the Indian tribes.

4. To establish an uniform rule of naturalization and uniform laws on the subject of bankruptcies throughout the United States.

5. To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures.

6. To provide for the punishment of counterfeiting the securities and current coin of the United States.

7. To establish post-offices and post-roads.

8. To promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries.

9. To constitute tribunals inferior to the Supreme Court.

10. To define and punish piracies and felonies committed on the high seas, and offenses against the law of nations.

11. To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water

12. To raise and support armies, but no appropriation of money to that use shall be for a longer term than two years.

13. To provide and maintain a navy.

14. To make rules for the government and regulation of the land and naval forces.

15. To provide for calling forth the militia to execute the laws of the Union, suppress insurrections, and repel invasions.

16. To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the States respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by Congress.

17. To exercise exclusive legislation in all cases whatsoever over such district

*See Article XIV., Amendments.

(not exceeding ten miles square) as may, by cession of particular States and the acceptance of Congress, become the seat of Government of the United States, and to exercise like authority over all places purchased by the consent of the Legislature of the State in which the same shall be, for the erection of forts, magazines, arsenals, drydocks, and other needful buildings.

18. To make all laws which shall be necessary and proper for carrying into execution the foregoing powers and all other powers vested by this Constitution in the Government of the United States, or in any department or officer thereof.

Section 9—(Provision as to migration or importation of certain persons. Habeas Corpus. Bills of attainder, etc. Taxes, how apportioned. No export duty. No commercial preference. Money, how drawn from treasury, etc. No titular nobility. Officers not to receive presents, etc.)

1. The migration or importation of such persons as any of the States now existing shall think proper to admit shall not be prohibited by the Congress prior to the year one thousand eight hundred and eight, but a tax or duty may be imposed on such importation, not exceeding ten dollars for each person.

2. The privilege of the writ of habeas corpus shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it.

3. No bill of attainder or ex post facto law shall be passed.

4. No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

5. No tax or duty shall be laid on articles exported from any State.

6. No preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another, nor shall vessels bound to or from one State be obliged to enter, clear, or pay duties in another.

7. No money shall be drawn from the Treasury but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

8. No title of nobility shall be granted by the United States. And no person holding any office of profit or trust under them shall, without the consent of the Congress, accept of any present, emolument, office, or title of any kind whatever from any king, prince, or foreign state.

Section 10—(States prohibited from the exercise of certain powers.)

1. No State shall enter into any treaty, alliance, or confederation, grant letters of marque and reprisal, coin money, emit bills of credit, make anything but gold and silver coin a tender in payment of debts, pass any bill of attainder, ex post facto law, or law impairing the obligation of contracts, or grant any title of nobility.

2. No State shall, without the consent of the Congress, lay any impost or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws, and the net produce of all duties and imposts, laid by any State on imports or exports, shall be for the use of the Treasury of the United States; and all such laws shall be subject to the revision and control of the Congress.

3. No State shall, without the consent of Congress, lay any duty of tonnage, keep troops or ships of war in time of peace, enter into agreement or compact with another State, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II.

Section 1—(President; his term of office. Electors of President; number and how appointed. Electors to vote on same day. Qualification of President. On whom his duties devolve in case of his removal, death, etc. President's compensation. His oath of office.)

1. The Executive power shall be vested in a President of the United States of America. He shall hold his office during the term of four years, and, together with the Vice-President, chosen for the same term, be elected as follows:

2. Each State shall appoint, in such manner as the Legislature thereof may direct, a number of electors equal to the whole number of Senators and Representatives to which the State may be entitled in the Congress; but no Senator or Representative or person holding an office of trust or profit under the United States shall be appointed an elector.

3. The electors shall meet in their respective States and vote by ballot for two persons, of whom one at least shall not be an inhabitant of the same State with themselves. And they shall make a list of all the persons voted for, and of, the number of votes for each, which list they shall sign and certify and transmit, sealed, to the seat of the Government of the United States, direct to the President of the Senate. The President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates, and the votes shall then be counted. The person having the greatest number of votes shall be the President, if such number be a majority of the whole number of electors appointed, and if there be more than one who have such a majority, and have an equal number of votes, then the House of Representatives shall immediately choose by ballot one of them for President; and if no person have a majority, then from the five highest on the list the said House shall in like manner choose the President. But in choosing the President, the vote shall be taken by States, the representation from each State having one vote. A quorum, for this purpose, shall consist of a member or members from two-thirds of the States, and a majority of all the States shall be necessary to a choice. In every case, after the choice of the President, the person having the greatest number of vot s of the electors shall be the Vice-President. But if there shall remain two or more who have equal vote, the Senate shall choose from them by ballot the Vice-President.

4. The Congress may determine the time of choosing the electors and the day on which they shall give their votes, which day shall be the same throughout the United States.

5. No person except a natural born citizen, or a citizen of the United States at the time of the adoption of this Constitution, shall be eligible to the office of President; neither shall any person be eligible to that office who shall not have attained to the age of thirty-five years and been fourteen years a resident within the United States.

6. In case of the removal of the President from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the Vice-President, and the Congress may by law provide for the case of removal, death, resignation, or inability, both of the President and Vice-President, declaring what officer shall act accordingly until the disability be removed or a President shall be elected.

7. The President shall, at stated times, receive for his services a compensation which shall neither be increased nor diminished during the period for which he shall have been elected, and he shall not receive within that period any other emolument from the United States, or any of them.

8. Before he enter on the execution of his office he shall take the following oath or affirmation:

"I do solemnly swear (or affirm) that I will faithfully execute the office of President of the United States, and will, to the best of my ability, preserve, protect, and defend the Constitution of the United States."

Section 2—(President to be Commander-in-Chief. He may require opinions of Cabinet officers, etc., may pardon. Treaty-making power. Nomination of certain officers. When President may fill vacancies.)

1. The President shall be Commander-in-Chief of the Army and Navy of the United States, and of the militia of the several States when called into the actual service of the United States; he may require the opinion, in writing, of the principal officer in each of the executive departments upon any subject relating to the duties of their respective offices, and he shall have power to grant reprieves and pardons for offences against the United States except in cases of impeachment.

2. He shall have power, by and with the advice and consent of the Senate, to make treaties, provided two-thirds of the Senators present concur; and he shall nominate and by and with the advice and consent of the Senate shall appoint ambassadors, other public ministers and consuls, judges of the Supreme Court, and all other officers of the United States whose appointments are not herein otherwise provided for, and which shall be established by law; but the Congress may by law vest the appointment of such inferior officers as they think proper in the President alone, in the courts of law, or in the heads of departments.

3. The President shall have power to fill all vacancies that may happen during the recess of the Senate by granting commissions, which shall expire at the end of their next session.

Section 3—(President shall communicate to Congress. He may convene and adjourn Congress, in case of disagreement, etc. Shall receive ambassadors, execute laws, and commission officers.)

He shall from time to time give to the Congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient; he may, on extraordinary occasions, convene both Houses, or either of them, and in case of disagreement between them with respect to the time of adjournment, he may adjourn them to such time as he shall think proper; he shall receive ambassadors and other public ministers; he shall take care that the laws be faithfully executed, and shall commission all the officers of the United States.

Section 4—(All civil offices forfeited for certain crimes.)

The President, Vice-President, and all civil officers of the United States shall be removed from office on impeachment for and conviction of treason, bribery or other high crimes and misdemeanors.

ARTICLE III.

Section 1—(Judicial powers. Tenure. Compensations.)

The judicial power of the United States

shall be vested in one Supreme Court, and in such inferior courts as the Congress may from time to time ordain and establish. The judges, both of the Supreme and inferior courts, shall hold their offices during good behavior, and shall at stated times receive for their services a compensation which shall not be diminished during their continuation in office.

Section 2—(Judicial power; to what cases it extends. Original jurisdiction of Supreme Court. Appellate. Trial by jury, etc. Trial, where.)

1. The judicial power shall extend to all cases in law and equity arising under this Constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more States, between a State and citizens of another State, between citizens of different States, between citizens of the same State claiming lands under grants of different States, and between a State; or the citizens thereof, and foreign states, citizens, or subjects.

2. In all cases affecting ambassadors, other public ministers, and consuls, and those in which a State shall be party, the Supreme Court shall have original jurisdiction. In all the other cases before mentioned the Supreme Court shall have appellate jurisdiction both as to law and fact, with such exceptions and under such regulations as the Congress shall make.

3. The trial of all crimes, except in cases of impeachment, shall be by jury, and such trial shall be held in the State where the said crimes shall have been committed; but when not committed within any State the trial shall be at such place or places as the Congress may by law have directed.

Section 3—(Treason defined. Proof of. Punishment of.)

1. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort. No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or confession in open court.

2. The Congress shall have power to declare the punishment of treason, but no attainder of treason shall work corruption of blood or forfeiture except during the life of the person attained.

ARTICLE IV.

Section 1—(Each State to give credit to the public acts, etc., of every other State.)

Full faith and credit shall be given in each State to the public acts, records, and judicial proceedings of every other State. And the Congress may by general laws prescribe the manner in which such acts, records, and proceedings shall be proved, and the effect thereof.

Section 2—(Privileges of citizens of each State. Fugitives from justice to be delivered up. Persons held to service having escaped, to be delivered up.)

1. The citizens of each State shall be entitled to all privileges and immunities of citizens in the several States.

2. A person charged in any State with treason, felony, or other crime, who shall flee from justice, and be found in another State, shall, on demand of the Executive authority of the State from which he fled, be delivered up, to be removed to the State having jurisdiction of the crime.

3. No person held to service or labor in one State, under the laws thereof, escaping into another shall, in consequence of any law or regulation therein, be discharged from such service or labor, but shall be delivered up on claim of the party to whom such service or labor may be due.

Section 3—(Admission of new States Power of Congress over territory and other property.)

1. New States may be admitted by the Congress into this Union; but no new State shall be formed or erected within the jurisdiction of any other State, nor any State be formed by the junction of two or more States, or parts of States, without the consent of the Legislatures of the States concerned, as well as of the Congress.

2. The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular State.

Section 4—(Republican form of government guaranteed. Each State to be protected.)

The United States shall guarantee to every State in this Union a Republican form of government, and shall protect each of them against invasion, and, on application of the Legislature, or of the Executive (when the Legislature cannot be convened), against domestic violence.

ARTICLE V.

(Constitution; how amended. Proviso.)

The Congress, whenever two-thirds of both Houses shall deem it necessary, shall propose amendments to this Constitution, or, on the application of the Legislature of two-thirds of the several States, shall call a convention for proposing amendments, which in either case, shall be valid to all intents and purposes, as part of this constitution, when ratified by the Legislatures of three-fourths of the several States, or by conventions in three-fourths thereof, as the one or the other mode of ratification may be proposed by the Congress; provided that no amendment which may be prior to the year one thousand eight hundred and eight shall in any manner affect the first and fourth clauses in the Ninth Section of the First Article; and that no State, without its consent, shall be deprived of its equal suffrage in the State.

ARTICLE VI.

(Certain debts, etc., declared valid. Supremacy of Constitution, treaties, and laws of the United States. Oath to support Constitution, by whom taken. No religious test.)

1. All debts contracted and engagements entered into before the adoption of this Constitution shall be as valid against the United States under this Constitution as under the Confederation.

2. This Constitution and the laws of the United States which shall be made in pursuance thereof and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land, and the judges in every State shall be bound thereby, anything in the Constitution or laws of any state to the contrary notwithstanding.

3. The Senators and Representatives before mentioned, and the members of the several State Legislatures, and all executive and judicial officers, both of the United States and of the several States, shall be bound by oath or affirmation to support this Constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII.

(What ratification shall establish Constitution.)

The ratification of the Conventions of nine States shall be sufficient for the establishment of this Constitution between the States so ratifying the same.

AMENDMENTS TO THE CONSTITUTION OF THE UNITED STATES

The following amendments to the Constitution, Articles I. to X. inclusive, were proposed at the First Session of the First Congress, begun and held at the City of New York, on Wednesday, March 4, 1789, and were adopted by the necessary number of States. The original proposal of the ten amendments were preceded by this preamble and resolution:

"The conventions of a number of the States having, at the time of their adopting the Constitution, expressed a desire, in order to prevent misconstruction or abuse of its powers, that further declaratory and restrictive clauses should be added, and as extending the ground of public confidence in the Government will best insure the beneficent ends of its institution.

"*Resolved*, By the Senate and House of Representatives of the United States of America, in Congress assembled, two-thirds of both Houses concurring, that the following articles be proposed to the Legislatures of the several States, as amendments to the Constitution of the United States; all or any of which articles, when ratified by three-fourths of the said Legislatures, to be valid to all intents and purposes, as part of the said Constitution, namely:"

THE TEN ORIGINAL AMENDMENTS.

(They were declared in force December 15, 1791.)

ARTICLE I

Religious Establishment Prohibited. Freedom of Speech, of the Press, and Right to Petition.

Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble and to petition the Government for a redress of grievances.

ARTICLE II.

Right to Keep and Bear Arms.

A well-regulated militia being necessary to the security of a free State, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III.

No Soldier to Be Quartered in Any House, Unless, Etc.

No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war but in a manner to be prescribed by law.

ARTICLE IV.

Right of Search and Seizure Regulated.

The right of the people to be secure in

their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V.

Provisions Concerning Prosecution, Trial and Punishment.—Private Property Not to Be Taken for Public Use, Without Compensation.

No person shall be held to answer for a capital or other infamous crime unless on a presentment or indictment of a Grand Jury, except in cases arising in the land or naval forces, or in the militia, when in actual service, in time of war or public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb; nor shall be compelled in any criminal case to be a witness against himself, nor be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

ARTICLE VI.

Right to Speedy Trial, Witnesses, Etc.

In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State and district wherein the crime shall have been committed, which districts shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

ARTICLE VII.

Right of Trial By Jury.

In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any court of the United States than according to the rules of the common law.

ARTICLE VIII.

Excessive Bail or Fines and Cruel Punishments Prohibited.

Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.

ARTICLE IX.

Rule of Construction of Constitution.

The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X.

Rights of States Under Constitution.

The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people.

The following amendment was proposed to the Legislatures of the several States by the Third Congress on the 5th of March, 1794, and was declared to have been ratified in a message from the President to Congress, dated Jan. 8, 1798.

ARTICLE XI.

Judicial Powers Construed.

The Judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States, by citizens of another State, or by citizens or subjects of any foreign state.

The following amendment was proposed to the Legislatures of the several States by the Eighth Congress on the 12th of December, 1803, and was declared to have been ratified in a proclamation by the Secretary of State, dated September 25, 1804. It was ratified by all the States except Connecticut, Delaware, Massachusetts, and New Hampshire.

ARTICLE XII.

Manner of Choosing President and Vice-President.

The Electors shall meet in their respective States, and vote by ballot for President and Vice-President, one of whom at least shall not be an inhabitant of the same State with themselves; they shall name in their ballots the person voted for as President, and in distinct ballots the person voted for as Vice-President; and they shall make distinct lists of all persons voted for as President, and of all persons voted for as Vice-President, and of the number of votes for each, which list they shall sign and certify, and transmit, sealed, to the seat of the Government of the United States, directed to the President of the Senate; the President of the Senate shall, in the presence of the Senate and House of Representatives, open all the certificates and the votes shall then be counted; the person having the greatest number of votes for President shall be the President, if such number be a majority of the whole number of Electors appointed; and if no person have such majority, then from the persons having the highest number, not exceeding three, on the list of those voted for as President, the House of Representatives shall choose immediately, by ballot, the President. But in choosing the President, the votes shall be taken by States, the representation from each State having one vote; a quorum for this purpose shall consist of a member or members from two-thirds of the States, and a majority of all the States shall be necessary to a choice. And if the House of Representatives shall not choose a President, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the Vice-President shall act as President, as in the case of the death or other constitutional disability of the President. The person having the greatest number of votes as Vice-President shall be the Vice-President if such number be a majority of the whole number of Electors appointed, and if no person have a majority, then from the two highest numbers on the list the Senate shall choose the Vice-President; a quorum for the purpose shall consist of two-thirds of the whole number of Senators, and a majority of the whole number shall be necessary to a choice. But no person constitutionally ineligible to the office of President shall be eligible to that of Vice-President of the United States.

The following amendment was proposed to the Legislatures of the several States by the Thirty-eighth Congress on the 1st of February, 1865, and was declared to have been ratified in a proclamation by the Secretary of State dated December 18, 1865. It was rejected by Delaware and Kentucky; was conditionally ratified by Alabama and Mississippi; and Texas took no action.

ARTICLE XIII.

Slavery Abolished.

1. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

2. Congress shall have power to enforce this article by appropriate legislation.

The following, popularly known as the Reconstruction Amendment, was proposed to the Legislatures of the several States by the Thirty-ninth Congress on the 16th of June, 1866, and was declared to have been ratified in a proclamation by the Secretary of State, dated July 28, 1868. The amendment got the support of 23 Northern States; it was rejected by Delaware, Kentucky, Maryland, and 10 Southern States. California took no action. Subsequently it was ratified by the 10 Southern States.

ARTICLE XIV.

Citizenship Rights Not to Be Abridged.

1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

Apportionment of Representatives in Congress.

2. Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed. But when the right to vote at any election for the choice of Electors for President and Vice-President of the United States, Representatives in Congress, the executive and judicial officers of a State, or the members of the Legislature thereof, is denied to any of the male members of such State, being of twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such State.

Power of Congress to Remove Disabilities of United States Officials for Rebellion.

3. No person shall be a Senator or Representative in Congress, or Elector of President and Vice-President or holding any office, civil or military, under the United States, or under any State, who having previously taken an oath, as a member of Congress, or as an officer of the United States, or as a member of any State Legislature or as an executive or judicial officer of any State, shall have engaged in insurrection or rebellion against the same, or given aid and comfort to the enemies thereof. But Congress may, by a vote of two-thirds of each House, remove such disability.

What Public Debts Are Valid.

4. The validity of the public debt of the United States, authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection and rebellion, shall not be ques-

tioned. But neither the United States nor any State shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

5. The Congress shall have power to enforce by appropriate legislation the provisions of this article.

The following amendment was proposed to the Legislatures of the several States by the Fortieth Congress on the 27th of February, 1869, and was declared to have been ratified in a proclamation by the Secretary of State, dated March 30, 1870. It was not acted on by Tennessee; it was rejected by California, Delaware, Kentucky, Maryland, and Oregon; ratified by the remaining 30 States. New York rescinded its ratification January 5, 1870. New Jersey rejected it in 1870, but ratified it in 1871.

ARTICLE XV.

Equal Rights for White and Colored Citizens.

1. The right of the citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of race, color, or previous condition of servitude.

2. The Congress shall have power to enforce this article by appropriate legislation.

The following amendment was proposed to the Legislatures of the several States, by the Sixty-first Congress on the 12th day of July, 1909, and was declared to have been ratified in a proclamation by the Secretary of State, dated February 25, 1913. The income tax amendment was ratified by all the States except Connecticut, Florida, Pennsylvania, Rhode Island, Utah, and Virginia.

ARTICLE XVI.

Income Taxes Authorized.

The Congress shall have power to lay and collect taxes on incomes, from whatever sources derived, without apportionment among the several States, and without regard to any census or enumeration.

The following amendment was proposed to the Legislatures of the several States by the Sixty-second Congress on the 16th day of May, 1912, and was declared to have been ratified in a proclamation by the Secretary of State, dated May 31, 1913. It got the vote of all the States except Alabama, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Rhode Island, South Carolina, Utah, and Virginia.

ARTICLE XVII.

United States Senators to Be Elected By Direct Popular Vote.

1. The Senate of the United States shall be composed of two Senators from each State, elected by the people thereof, for six years; and each Senator shall have one vote. The electors in each State shall have the qualifications requisite for electors of the most numerous branch of the State Legislatures.

Vacancies in Senatorships, When Governor May Fill by Appointment.

2. When vacancies happen in the representation of any state in the Senate, the Executive authority of such State shall issue writs of election to fill such vacancies: Provided, That the Legislature of any State may empower the Executive thereof to make temporary appointment until the people fill the vacancies by election as the Legislature may direct.

3. This amendment shall not be so construed as to affect the election or term of any Senator chosen before it becomes valid as part of the Constitution.

The following amendment was proposed to the Legislatures of the several States by the Sixty-fifth Congress, December 18, 1917; and on January 29, 1919, the United States Secretary of State proclaimed its adoption by 36 States, and declared it in effect on January 16, 1920.

Early in 1920, the validity of the Eighteenth Amendment was upheld by the Supreme Court of the United States, in suits to void, brought by the States of Rhode Island and New Jersey, and by various brewers and distillers.

ARTICLE XVIII.

Liquor Prohibition Amendment.

1. After one year from the ratification of this article the manufacture, sale, or transportation of intoxicating liquors within, the importation thereof into, or the exportation thereof from the United States and all territory subject to the jurisdiction thereof for beverage purposes is hereby prohibited.

2. The Congress and the several States shall have concurrent power to enforce this article by appropriate legislation.

3. This article shall be inoperative unless it shall have been ratified as an amendment to the Constitution by the Legislatures of the several States, as provided in the Constitution, within seven years from the date of the submission hereof to the States by the Congress.

The following amendment was proposed to the Legislatures of the several States by the Sixty-fifth Congress, having been adopted by the House of Representatives, May 21, 1919, and by the Senate, June 4, 1919. On August 26, 1920, the United States Secretary of State proclaimed it in effect, having been adopted (June 10, 1919-August 18, 1920), by three-quarters of the States. The Tennessee House, August 31, rescinded its ratification, 47 to 24.

ARTICLE XIX.

Giving Nation-Wide Suffrage to Women.

1. The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex.

2. Congress shall have power, by appropriate legislation, to enforce the provisions of this article.

BOOK XIII.

USEFUL MISCELLANY

LEO. L. TULLY, A. M.

Air is the gaseous substance which fills the atmosphere surrounding our planet. It is elastic, and is destitute of taste, color, and smell. It contains by weight, oxygen 23.10 parts, and of nitrogen 76.90; and by volume, of oxygen 20.90, and of nitrogen 79.10; or of 10,000 parts there are in perfectly dry air, of nitrogen 7,912, oxygen 2,080, carbonic acid 4, carbureted hydrogen 4, with a trace of ammonia. But air never is dry; it has always in it a varying amount of watery vapor. When exhaled from the lungs it is saturated with moisture, and contains about 4.35 parts of carbonic acid. The prevalence of this latter gas in abnormal quantity is prejudicial to human life, while air with a high percentage of oxygen in it is healthful and invigorating.

The density of air being fixed at the round number 1,000, it is made the standard with which the specific gravity of other substances is compared. If water be made unity, then the specific gravity of dry air is .0012759. At 62 degrees Fahr. it is 810 times lighter than water, and 11,000 times lighter than mercury. At the surface of the sea the mean pressure is sufficient to balance a column of mercury 30 inches, or one of water 34 feet in height.

The exact height of the atmosphere is unknown. At 2.7 miles above the surface of the earth half its density is gone, and the remainder is again halved for every further rise of 2.7 miles. Some small density would remain at 45 miles high. At 80 miles this would have all but disappeared. But from sundry observations, made at Rio Janeiro and elsewhere, on the twilight arc, M. Liais infers that the extreme limit of the atmosphere is between 198 and 212 miles. In the lower strata of the atmosphere the temperature falls at least a degree for every 352 feet of ascent; hence, even in the tropics, mountains of any considerable elevation are snowcapped. The atmosphere appears to us blue, because absorbing the red and yellow solar rays, it reflects the blue ones. It revolves with the earth, but being extremely mobile, winds are generated in it, so that it is rarely long at rest. The atmosphere always contains free electricity, sometimes positive and sometimes negative.

Almighty Dollar.—In this phrase, coined by Washington Irving, we have a personification of the supposed object of American worship. It is intended as a satire on the mad race for wealth that has at different times and in divers places characterized the American people.

> The almighty dollar, that great object of universal devotion throughout our land, seems to have no genuine devotees in these peculiar villages.—*The Creole Village.*

American Rhine.—The Hudson River, "unrivalled among American rivers for picturesque and magnificent scenery." Though destitute of the numerous architectural remains of bygone ages that crowd with interesting reminiscences the banks of its Old World namesake, the Hundon is equally enriched by Nature, and is not without its share of legendary lore.

Apostles, Fate of.—It is generally believed that only one of Christ's Apostles, John escaped martyrdom.

Matthew is supposed to have been slain with a sword in Ethiopia.

James, son of Zebedee, was beheaded at Jerusalem.

James, the brother of our Lord, was thrown from a pinnacle of the Temple and then beaten to death with a fuller's club.

Philip was hanged up against a pillar at Hieropolis, a city of Phrygia.

Bartholomew was flayed alive at Albanapolis, in Armenia.

Andrew suffered matyrdom on a cross at Patræ, in Achaia.

Thomas was run through the body with a lance at Coromandel, in the East Indies.

Thaddeus was shot to death with arrows.

Simon Zelotes was crucified in Persia.

Peter was crucified, head downward it is said, during the Neronian persecution.

Matthias was first stoned and then beheaded, and Paul was beheaded at Rome by the tyrant Nero.

Judas Iscariot, after the betrayal of our Lord, hung himself.

April Fool's Day.—The origin of the custom of April fooling cannot be traced with any degree of certainty. In the literature of the eighteenth century there are found many references to it, and yet beyond that it is scarcely possible to go. One suggestion is that the custom of playing tricks on the first day of April, was derived from some ancient pagan custom, such as the Huli festival among the Hindus, or the Roman Feast of the Fools. One fact, however, we do know, and that is that the practice prevails in many countries, under various names, which would seem to indicate that it dates away back to the early history of the race. There is a tradition among the Jews that the custom of making fools on the first of April arose from the fact that Noah sent out the dove on the first of the month corresponding to our April, before the water had abated. To perpetuate the memory of the great deliverance of Noah and his family, it was customary on this anniversary to punish persons who had forgotten the remarkable circumstance connected with the date, by sending them on some bootless errand similar to that on which the patriarch sent the luckless bird from the windows of the ark.

Astral Spirits.—The spirits of the stars. According to the mythology of the Persians, Greeks, Jews, etc., each star had its special spirit, which may be termed its soul, or vital principle. Paracelsus maintained that every man had his attendant star, which received him at death, and took charge of him till the great resurrection.

Anatomy and Physiology, Interesting Facts About.—The following facts of human anatomy and physiology have been gathered from a number of authentic sources:

Blood—An adult has ordinarily 28 pounds of blood; at each pulsation of the heart, 10 pounds are sent through the arteries and veins. The pulsations average 120 per minute in infancy, 80 in manhood, and 60 in old age, and are rather more rapid in women than in man.

Temperature of the Human Blood

Good Health	98.6 (Fahrenheit).
Fever	101.3 (Fahrenheit).
Strong Fever (morning)	102.2 (Fahrenheit).
Strong Fever (evening)	104.0 (Fahrenheit).

Brain—According to Bastian and others, the following brain-weights are given of different nationalties:

Scotch	50.0 oz.
Germans	49.6 oz.
English	49.5 oz.
French	47.9 oz.
Zulus	47.5 oz.
Chinese	47.2 oz.
Pawnees	47.1 oz.
Italians	46.9 oz.
Hindus	45.1 oz.
Gypsies	44.8 oz.
Bushmen	44.6 oz.
Esquimaux	43.9 oz.

Capacity of Brain-Case—

Anglo-Saxon	105 cu. in.
German	105 cu. in.
Negro	96 cu. in.
Ancient Egyptian	58 cu. in.
Hottentot	58 cu. in.

The average weight of the human brain, as given by Quain, is 49½ ounces avoirdupois for males, and 44 ounces for females. This general result was obtained by comparing and combining the tables prepared by Sims, Clendinning, Tiedemann, and Reid. The number of male brains weighed was 278, and of female brains, 191. In males, the minimum weight was 34 ounces, and the maximum, 65 ounces. In females, the minimum weight was 31 ounces, and the maximum, 56 ounces. In new-born infants, the brain weighs about 11.65 ounces for the male, and 10 ounces for the female.

In both sexes, the weight of the brain generally increases rapidly up to the seventh year, then more slowly to between 31 and 40 at which time it reaches its maximum point. Beyond that period, there appears a slow but progressive diminution in weight of about one ounce during each subsequent decennial period; thus confirming the opinion that the brain diminishes in advanced life.

Table of Brain Weights.—

Cromwell, aged 59 (not accepted by physiologists)	82.29 oz.
Byron, aged 36 (not accepted by physiologists)	79.00 oz.
Bricklayer, aged 38; fair intelligence, but could neither read nor write (reported by Dr. James Morris)	67.00 oz.
Cuvier, aged 63 (Archives generales de medecine, 1832)	64.33 oz.
Abercrombie, aged 63 (reported by Dr. Adam Hunter)	63.00 oz.
Congenital epileptic idiot (reported by Dr. Tuke)	60.00 oz.
Ruloff, aged 53; above medium stature; executed for murder in 1871; well versed in languages, imagining that he had discovered new and important principles in philology (reported by Dr. George Burr)	59.00 oz.
James Fisk, Jr., killed in New York, in 1872; illiterate, but said to possess great executive ability; notor-	

ious for colossal and unscrupulous financial speculations (reported by by Dr. Marsh)..... 58.00 oz.
Spurzheim (Medico-Chirurgical Review, 1836)..... 55.06 oz.
Adult man; an idiot since two years of age (Wagner)..... 54.95 oz.
Daniel Webster, aged 70 (reported by Dr. John Jeffries)..... 53.50 oz.
Executed criminal, aged 45; medium stature; of less than ordinary intelligence, and uncultivated (Lelut) 53.12 oz.
Dupuytren, aged 58 (Cruveilhier, Husson, and Bouillaud)..... 49.68 oz.
Day-laborer, aged 49 (Wagner)..... 48.85 oz.
Celebrated philologist, aged 54; 5 feet 7 ½ inches tall (Wagner)..... 47.90 oz.
Executed criminal, aged 34; small stature; intelligence developed and cultivated (Lelut)..... 47.79 oz.
Celebrated mineralogist, aged 77; above medium stature (Wagner)... 43.24 oz.
Man, 44 years of age; idiocy very profound; a little below medium stature (Lelut)..... 34.39 oz.

A careful study of the weights given in this table shows the impossibility of applying to individuals an absolute rule that the greatest brain-power is connected with the greatest amount of brain-substance.

Coughing—We cough because the respiratory organs are excited by the presence of some body foreign or unnatural to them. A cough is an effort on the part of the air tubes to free themselves from some source of irritation. And so important are the organs of breathing to the welfare of the body, that the muscles of the chest, back, and abdomen, *unite in the endeavor to get rid of the exciting substance.*

Hair—The number of hairs on an adult's head averages from 129,000 to 150,000.

Hiccough is caused by a spasmodic twitching of the diaphragm, a thin muscular membrane which divides the chest from the abdomen. It generally arises from sympathy with the stomach; and it is highly probable that the muscular twitches and jerks are so many efforts on the part of the diaphragm to *assist the stomach to get rid of some undigested matter.*

Laughter—Laughing is caused by the very opposite influences that produce sighing. The nervous system is highly excited by some external cause. The impression is so intense, and the mind so fixed upon it, that the respiratory process is irregular, and uncontrolled. Persons excited to a fit of laughter generally hold their breath until they can hold it no longer, and then suddenly there is a quick expiration causing eccentric sounds, the mind being too intently fixed upon the cause of excitement *either to moderate the sounds, or to control the breathing.*

Pulse—The beat or shock felt in any artery when slight pressure is made on it, caused by the systole of the heart. At birth the number of beats are about 140, at the end of the first year 120, at the end of the second 110; during middle life between 70 and 80, and in old age usually a little more. It is slower in man than in woman, and is also affected by the position of the body, being about five beats more in the sitting than in the recumbent posture, and 10 more per minute in the standing than in the sitting posture.

Co-relation of Pulse and Temperature—As a general rule the co-relation of pulse and temperature may be stated as follows, namely:—

An increase of temperature of one degree above 98 degrees Fahr. corresponds with an increase of 10 beats of the pulse per minute, as in the following table:—

Temperature of 98° corresponds with a pulse of 60.
Temperature of 99° corresponds with a pulse of 70.
Temperature of 100° corresponds with a pulse of 80.
Temperature of 101° corresponds with a pulse of 90.
Temperature of 102° corresponds with a pulse of 100.
Temperature of 103° corresponds with a pulse of 110.
Temperature of 104° corresponds with a pulse of 120.
Temperature of 105° corresponds with a pulse of 130.
Temperature of 106° corresponds with a pulse of 140.

Respiration—Respiration is the act of inhaling air into the lungs, and again expelling it. The quantity of carbonic acid gas exhaled in 24 hours is as follows:

Person	Age	Ounces Exhaled
Girl	10	9
Boy	10	10
Woman	19	12
Boy	16	16
Man	28	17

Frequency of Respiration.—

Respiration and pulsation in the adult female is usually a trifle faster than in the male, especially during pregnancy.

Two months to two years.....35 per minute
Two to six years.....23 per minute
Six to twelve years.....20 per minute
Twelve to fifteen years.....18 per minute
Fifteen to twenty-one years, 16-18 per minute

Sighing—The action of sighing arises from very similar causes to those of yawning. But in sighing, the nervous depression is caused by *grief;* while in yawning, it is the result of *fatigue.* In sighing, the effect is generally caused by an *expiration*—in yawning by an *inspiration.* The mind, wearied and weakened by sorrow, omits for a few seconds to continue the respiratory process; and then suddenly there comes an involuntary expiration of the breath, causing a faint sound as it passes the organs of the voice.

Sleep is understood to be that state of the body in which *the relation of the brain to some parts of the body is temporarily suspended.*

There are some parts of the body that *never sleep;* such are the heart, the lungs, the organs of circulation, and those parts of the nervous system that direct their operations.

But when sleep overtakes the system, it seems as if the *relations* of those parts under the control of the will were temporarily suspended; as if, for instance, those nerves which move the arms, the legs, the eyes, the tongue, etc., were all at once unfastened, just as the strings of an instrument are relaxed by the turning of a key, or the throwing down of a bridge over which they were stretched.

What is meant by the suspension of the relation of the brain to some parts of the body, may be thus explained. Notice a man when he sits dozing in a chair; at first his head is held up, the brain controlling the muscles of the neck, and keeping the head erect. But drowsiness comes on, the brain begins to withdraw its influence, and the muscles of the neck becoming as it were "unstrung," the head drops down upon the breast. But the sleep is unsound, and disturbed by surrounding noises. The brain is therefore frequently excited to return its influence to the muscles, and draw up the head of the sleeper. He gives a sudden start, every muscle is tightened in an instant, up goes the head, the eyes open, the ears listen, until a feeling of security and composure returns; the sleep again deepens, *the nervous connection is again withdrawn,* and then down drops the head as before.

Sneezing—We sneeze because particles of matter enter the nostrils and excite the nerves of feeling and of smell. In sneezing, as in coughing, the effort is to free the parts affected from the intrusion of some matters of an objectionable nature. And in this case, as in the former one, there is a very general sympathy of other organs with the part affected, and an energetic effort to get rid of the evil.

Snoring is caused by air sweeping through the passages that lead from the mouth through the nostrils, and which, in our waking moments, are capable of certain muscular modifications to adapt them to our breathing. But as in sleeping the nervous control over them is withdrawn, they are left to the action of the air which, in sweeping by them, *sets them in vibration.*

Weight.—The following scale of normal weights for height is given by Banting:

61 in.	120 lbs.	67 ins.	148 lbs.
61 ins.	120 lbs.	67 ins.	148 lbs.
62 ins.	126 lbs.	68 ins.	155 lbs.
63 ins.	133 lbs.	69 ins.	162 lbs.
64 ins.	136 lbs.	70 ins.	169 lbs.
65 ins.	142 lbs.	71 ins.	174 lbs.
66 ins.	145 lbs.	72 ins.	178 lbs.

Chemical Composition of Man.—Huxley's table on the "Chemical composition of man of the average weight of 154 pounds" was for years the standard, but it has recently been superseded by a new one given out by the French Academy of Sciences. The table is appended.

Elements	Pounds	Ounces	Grains
Oxygen	111	8	0
Hydrogen	21	6	0
Carbon	21	0	0
Nitrogen	3	10	0
Phosphorus	1	2	88
Calcium	2	0	0
Sulphur	0	0	219
Chlorine	0	2	47
Sodium (Salt)	0	2	116
Iron	0	0	100
Potassium	0	0	290
Magnesium	0	0	12
Silica	0	0	2

Armies of the World

Country	Army	Reserve Including Militia	Total War Strength
Abyssinia	51,000	400,000	451,000
Algeria	75,000	.....	75,000
Argentine	26,000	759,000	785,300
Australia	3,200	108,000	111,200
Austria	30,000	.....	30,000
Belgian Congo	12,400	.....	450,000
Belgium	113,000	237,000	450,000
Bolivia	7,100	230,000	595,000
Brazil	35,000	560,000	595,000
Canada	3,800	52,000	5,580
Chili	23,782	609,734	633,516
China	1,100,000x	.....	1,100,000
Columbia	6,000	362,700	368,700
Cuba	12,500	300,000	312,500
Czecho-Slavia	147,000	1,524,000	1,671,000
Denmark	26,000	159,000	185,000
Ecuador	6,000	90,000	96,000
Egypt	30,000	.....	30,000
Esthonia	25,000	50,000	75,000
Finland	50,000	140,000	170,000

Armies of the World—Continued

Country	Army	Reserve Including Militia	Total War Strength
France	777,000	4,400,000	5,177,000
Germany	100,000	.....	100,000
Great Britain	182,000	205,000	387,000
Greece	250,000	250,000	500,000
Guatemala	6,200	126,000	132,200
Hayti	2,644	20,000	22,644
Honduras	2,900	43,577	46,477
Hungary	35,000	.....	35,000
India, British	212,000	70,000	282,000
India, China	20,000	.....	20,000
Italy	250,000	2,350,000	2,600,000
Japan	300,000	1,700,000	2,000,000
Jugo-Slavia	140,000	1,100,000	1,240,000
Lithuania	.....	45,000	45,000
Mexico	68,316	833,000	901,316
Morocco	218,000	.....	218,000
Netherlands	30,000	450,000	480,000
New Zealand	1,000	23,000	24,000
Norway	40,000	315,000	345,000
Paraguay	1,900	100,000	101,900
Persia	86,000	.....	86,000
Peru	7,500	99,000	106,500
Poland	290,000	810,000	1,100,000
Portugal	33,000	620,000	653,000
Roumania	165,000	1,100,000	1,265,000
Russia	1,300,000	3,500,000	4,800,000
Salvador	7,500	25,000	32,500
Santo Dom	1,900	25,000	26,900
Spain	217,000	700,000	917,000
Sweden	19,500	550,000	569,500
Switzerland	170,000	135,000	305,000
Turkey	120,000	800,000	920,000
United States	125,000	160,000	285,000
Uruguay	8,500	157,439	165,939
Venezuela	8,000	87,000	95,000

Ashes.—When a tree grows it takes up from the earth, by means of its roots, certain minerals called salts. These salts, which all plants need as much as they do air, become a part of the wood of the tree. When a stick of wood is burned, most of it is turned into gas, and goes off into the air. All that is left is the ashes, which cannot burn, as they are only the salts which the tree took up from the earth when growing. If the ashes be spread over the ground, the salts will go back into the earth again, and this is the reason why wood ashes make good manure for land: the salts which have been taken from it by growing plants are given back to it in the ashes, and help other trees and plants to grow. Some kinds of wood give more ashes when burned than others. Willow wood gives more than twice as much as oak, and about one-fourth more than elm. The bark of all trees makes more ashes than the solid wood. The salts found in ashes are valuable and are much used in the arts.

Astrology.—A term originally applied to the science of the heavenly bodies and their supposed influence over human affairs. At the present day, however, the word is limited in its meaning to the doctrine of the influence of the stars over the destinies of men. Astrology is one of the oldest of superstitions, and has been sedulously cultivated by the Egyptians, Chaldæans, Hindus, Chinese, and Etruscans. The Arabs also pursued the study with great zeal from the seventh to the thirteenth century, and it was in great vogue in Italy and France during the sixteenth century. In England it was cultivated by Bede (673-745) and Roger Bacon (1214-1292). Queen Elizabeth (1558-1603) was a dupe of the astrologer Dee, and Lord Burleigh is said to have calculated the nativity of the "Virgin Queen." Sir William Lilly was frequently consulted by Charles I. (1625-1649). Nostradamus was the great astrologer of the sixteenth century, after which time this pseudo-science failed to attract superior minds. The discoveries of Copernicus, Kepler, and Galileo were death-blows to astrology, which, however, continues to exist even at the present day. Astrological almanacs are still published, and fortune-tellers still drive a thriving trade among the ignorant and superstitious.

Aurora Borealis, or northern lights, the bright clouds of light which are often seen in the northern sky in the night. *Aurora* is a Latin word meaning the light of the dawn or morning, and *borealis*, also Latin, means northern; and the two together mean the northern morning-light, because it often looks like the daybreak in the east. It would be better to call it the polar light, because it is seen at the south pole as well as at the north pole. The aurora is sometimes very beautiful, forming across the sky great arches of light through which flash bright streaks of red, blue, green, purple, and yellow flame. It is supposed to be made by electricity or lightning passing through bodies of air of different thickness. A similar appearance may be produced by sending electric sparks through a glass vessel filled with rarefied air.

Barber's Pole.—The spiral red stripe on a barber's pole is said to symbolize the winding of a ribbon or bandage around the arm of a patient upon whom the barber had operated in the capacity of surgeon. In former times, when the operation of bleeding was extensively practiced, blood-letting formed a part of the duties of a barber.

Bay State, Old.—Massachusetts, whose shores are washed by Cape Cod Bay. Prior to the adoption of the United States Constitution Massachusetts was known as "the Colony of Massachusetts Bay."

When first the pilgrims landed on the Bay State's iron shore.
The word went forth that slavery should one day be no more.—*Lowell.*

Beacon Hill.—A famous locality in Boston, Mass. "The old beacon, shown in all the early plans of the town, and which gave the name to Beacon Hill, was erected in 1634-1635 to alarm the country in case of invasion. It stood near the present State House, the exact spot being the southeast corner of the reservoir formerly standing on Temple Street. It was a tall mast, standing on cross timbers placed upon a stone foundation, supported by braces, and was ascended by treenails driven into it; and, 65 feet from the base, projected a crane of iron, from which an iron skeleton frame was suspended, to receive a barrel of tar or other combustibles.

Bears and Bulls.—Words often used in connection with the purchase and sale of stocks. The "bears" are those who seek to depress the value of stocks and securities, while the "bulls" are those whose interests prompt them to act in the other direction.

Birth Stones.—

January, the jacinth or garnet, symbolizing constancy and fidelity.

February, the amethyst, symbolizing peace of mind and sobriety.

March, the bloodstone or jasper, symbolizing courage and success in dangerous enterprise.

April, the sapphire and diamond, symbolizing repentance and innocence.

May, the emerald, symbolizing success in love.

June, the agate, symbolizing long life and health.

July, the carnelian, symbolizing cure of evils resulting from forgetfulness.

August, the sardonyx or onyx, symbolizing conjugal felicity.

September, the chrysolite, symbolizing preservation from folly, or its cure.

October, the aquamarine, opal, or beryl, symbolizing hope.

November, the topaz, symbolizing fidelity and friendship.

December, the turquoise or ruby, symbolizing brilliant success.

Blarney Stone, The.—Blarney is a village in Ireland, in the County of Cork, about five miles from the far-famed city of that name. It is chiefly celebrated as giving the name to a peculiar kind of eloquence which is said to be characteristic of the light-hearted natives of the Emerald Isle. The old castle at Blarney contains the identical stone, the kissing of which is believed to give the person peculiar skill in speech. It is one of those superstitions which can be traced back until the mind of man runneth not to the contrary.

Blue Laws, The Famous Connecticut.—These laws, enacted by the people of the "Dominion of New Haven," became known as the blue laws because they were printed on blue paper. They were as follows:—

The governor and magistrates convened in general assembly are the supreme power, under God, of the independent dominion. From the determination of the assembly no appeal shall be made.

No one shall be a freeman or have a vote unless he is converted and a member of one of the churches allowed in the dominion.

Each freeman shall swear by the blessed God to bear true allegiance to this dominion and that Jesus is the only king.

No dissenter from the essential worship of this dominion shall be allowed to give a vote for electing of magistrates or any officer.

No food or lodging shall be offered to a heretic.

No one shall cross a river on the Sabbath but authorized clergymen.

No one shall travel, cook victuals, make beds, sweep houses, cut hair, or shave on the Sabbath Day.

No one shall kiss his or her children on the Sabbath or feasting days.

The Sabbath Day shall begin at sunset Saturday.

Whoever wears clothes trimmed with gold, silver, or bone lace above one shilling per yard shall be presented by the grand jurors and the selectmen shall tax the estate £300.

Whoever brings cards or dice into the dominion shall pay a fine of £5.

No one shall eat mince pies, dance, play cards, or play any instrument of music except the drum, trumpet or jewsharp.

No gospel minister shall join people in

marriage. The magistrate may join them, as he may do it with less scandal to Christ's church.

When parents refuse their children convenient marriages, the magistrate shall determine the point.

A man who strikes his wife shall be fined £10.

A woman who strikes her husband shall be punished as the law directs.

No man shall court a maid in person or by letter without obtaining the consent of her parents; £5 penalty for the first offence; £10 for the second, and for the third imprisonment during the pleasure of the court.

Blue Stockings.—The term "blue stocking" originated in England about a century ago. Its invention is traced to the days of Doctor Johnson and was applied then as now to ladies who cultivated learned conversation, and found enjoyment in the discussion of questions which had been monopolized by men. It is said by Dr. John Doran, who, in his work "A Lady of the Last Century," gave an account of Mrs. Montagu and the "blue stockings" of her time, that in 1757 it was quite the thing for ladies to from evening assemblies, when they might participate in talk with literary and ingenious men. One of the best known and most popular members of one of these societies was said to have been a Mr. Stillingfleet, who always wore blue stockings, and when at any time he happened to be absent from these gatherings it was usually remarked that "we can do nothing without blue stockings"; and by degrees the term "blue stockings" was applied to all clubs of the kind described, and eventually to the ladies who attended their meetings.

Books, Sizes of.—The name indicates the number of pages in the sheet, thus: in a folio book, 4 pages or 2 leaves = 1 sheet; a quarto, or 4to, has 8 pages or 4 leaves to a sheet; an octavo, or 8vo, 16 pages or 8 leaves to a sheet. In a 12mo, 24 pages or 12 leaves = one sheet, and the 18mo, 36 pages, or 18 leaves = 1 sheet, and so on. The following are the approximate sizes of books:—

Royal Folio	19	inches ×	12
Demy	18	inches ×	11
Super Imp. Quarto (4to)	15 ½	inches ×	13
Royal 4to	12 ½	inches ×	10
Demy 4to	11 ½	inches ×	8 ½
Crown 4to	11	inches ×	8
Royal Octavo	10 ½	inches ×	6 ½
Medium 8vo	9 ½	inches ×	6
Demy 8vo	9	inches ×	5 ½
Crown 8vo	7 ½	inches ×	4 ½
Foolscap 8vo	7	inches ×	4
12mo	7	inches ×	4
16mo	6 ½	inches ×	4
Square 16mo	4 ½	inches ×	3 ½
Royal 24mo	5 ½	inches ×	3 ¼
Demy 24mo	5	inches ×	2 ¾
Royal 32mo	5	inches ×	3
Post 32mo	4	inches ×	2 ½
Demy 48mo	3 ¾	inches ×	2 ¼

Bride, Throwing Shoe after.—The custom of throwing a shoe after a departing bride and groom originated so far back in the dim and mystical past that the memory of man stretcheth not back to its beginning. It is by some thought to typify an assault, and is a lingering trace of the custom among savage nations of carrying away the bride by violence. Others claim that it has a likeness to a Jewish custom mentioned in the Bible. Thus, in Ruth, when the kinsman of Boaz gave up his claim to the inheritance of Ruth, and to Ruth also, he indicated his assent by plucking off his shoe and giving it to Boaz. Also, we read in Deuteronomy that when the brother of a dead man refused to marry his widow she asserted her independence of him by "loosing his shoe."

Bridge.—A roadway over a stream, a valley, or low ground. A bridge for carrying a canal or water to supply a city is called an *aqueduct* (water leader); one over which a railway passes is sometimes called a viaduct (road leader). The first bridges were made of wood by laying beams from one bank of a stream to the other, or, when these were too wide apart, resting them on posts or stone piers in the middle. The Chinese built bridges at a very early date, but it is supposed that the Romans were the first to construct stone bridges, and some of them, more than 2000 years old, are still in use.

Geographical necessities in a country intersected by large and rapid streams compelled the Romans to give much attention to the building of bridges. A splendid bridge was built by Augustus, near Narnia, on the Flaminian road, about 60 miles from Rome. Some of the arches, as is attested by one which is still standing, had a span of 150 and a height of 100 feet; but the greatest of all Roman bridges was that of Trajan across the Danube. It rested on twenty piers 150 feet in height from their foundation, and 170 feet apart, its width being 60 feet. This bridge was destroyed by the next emperor, Hadrian, who pled for his act the danger that the barbarians might get possession of it.

After the fall of the Roman empire not much was done in the way of bridge-building for some centuries. In the twelfth century the order of the Fréres Pontiers was established, and by them the great bridge of Avigon, since destroyed, was built. It was about 3,000 feet long and rested on 18 arches. A bridge built over the Allier in 1454 had an arch 184 feet in span, almost the greatest reached by any existing stone bridge. The span of the Rialto of Venice is 98½ feet. Perronet's bridge over the Seine, at Neuilly, consists of five arches each of 128 span, with a rise of 32 feet.

As wooden bridges are apt to catch fire, those made of iron and steel are now taking their place on railway lines. Among the most wonderful of these are the wrought iron bridge over the Menai Strait, called the Britannia bridge, and the Conway bridge, both in Great Britain, and the Victoria bridge over the St. Lawrence River at Montreal, Canada. These are all what are called tubular bridges, being made of great iron tubes or pipes, through which railway trains run. The Victoria bridge is a huge square iron tube, two miles long, supported on great stone piers.

Among the most remarkable bridges are those not held up from below, but hung on some kind of ropes or chains, and called therefore suspension bridges (Latin *suspendere*, to hang). The Chinese in very ancient times constructed this kind of bridge of iron chains and the Peruvians made them of bark ropes. Modern suspension bridges are built of large and strong cables, of many small wires twisted together. Among the most celebrated suspension bridges are those of Fribourg, which has a span of 880 feet, of Pesth, over the Danube, with a span of 666 feet, of Menai, by Telford, with a span of 570 feet, and that of Niagara, over the St. Lawrence, constructed by Roebling, with a span of 821 feet.

Bridges are sometimes made so that they can be moved in order to let a vessel pass. These are of various kinds; drawbridges are made to raise and lower; swing bridges to turn round on a pivot; and rolling or sliding bridges, to roll backward and forward on little wheels or rollers. Bridges that are to be used for only a little while, like those built by soldiers to cross rivers in time of war, are sometimes made by fastening many small boats together and laying a floor over them. Casks and rafts have also been used for the same purpose. Military bridges are usually supported by floats called pontoons, made of frames of timber covered with copper, tin, leather, tarred sail-cloth, or india-rubber cloth, or of copper cylinders. The pontoons are laid from bank to bank and securely fastened, and the bridge platform is then placed upon them.

Notable Bridges of the World.

Albany, N. Y.—(over the Hudson). Iron drawbridge; length of draw, 400 feet.

Berne, Switzerland.—Over the river Aar, main span, 367 feet.

Blackwell's Island, N. Y. — Crosses East River, steel cantilever, 7,636 feet long; cost $12,500.000.

Bear Mountain Bridge, crossing Hudson River, north of Peekskill, N. Y. for vehicles. Length 2,258 feet. Span 1,632 feet. Completely built in one year, eight months and two days. Cost $6,000,000. Completed 1924.

Britannia Tubular Bridge, carrying the Chester and Holyhead railway across the Menai straits, consists of two parallel rectangular wrought-iron tubes resting on three piers. There are two central spans of 459 feet, and two shore spans of 230 feet. The central pier is built on the Britannia rock, and its erection was begun 1846. The height of the tube within is 30 feet at the center, diminishing to 23 feet at the shore ends. The bridge has a clear headway above high-water of 103¼ feet. The four tubes of the central spans were floated into position and gradually raised to the required height by hydraulic presses.

Brooklyn Bridge.—A wire cable suspension bridge connecting New York with Brooklyn; designed by John A. Roebling, and built by his son, W. A. Roebling. It has a total length of carriageway, 5989 feet, and including extension, 7580 feet, a central span of 1595½ feet, two side spans of 930 feet each, with a clear headway under the center of the bridge of 135 feet above high water; total height of towers above high-water, 278 feet; there are four suspension cables, composed of 5296 galvanized steel wires, bound together, but not twisted; width of bridge, 85 feet; cost, $17,900,000; bridge begun 1870; opened May, 1883.

Cabin John's Bridge, D. C.—Stone aqueduct with span of 220 feet; constructed, 1857-1864 at which time it was the longest stone arch in the world.

Cairo, Ill.—Over Ohio River; steel, 10,560 feet, embracing 50 spans.

Chicago, Ill.—(1) Halsted Street Bridge over Chicago River; most noted lift bridge built, with towers of steel framework, and a suspended truss span. (2) Michigan Avenue bridge, erected in 1918-20, at a cost of fifteen million dollars. It is the largest general traffic double-deck, two leaf bascule bridge in the world. The bridge is 92 feet wide, 340 feet long and weighs 10,000 tons.

Cincinnati and Covington (over the Ohio).—Built 1867; reconstructed, 1897; length, 2,720 feet; suspension.

Cincinnati Iron Truss Railway Bridge (across the Ohio River).—Planned for a double-track railroad and two roadways and two sidewalks in addition. Total structure one mile in length; the center span 550 feet, and two spans flanking the main channel 490 feet each. Caissons sunk in 1887; completed, 1890.

Cleveland, high level bridge crossing Cuyahoga river, 96 feet above water level. Two deck bridge 81½ feet wide, 2,880 feet long, upper level road way 45 feet wide. Twelve concrete arches central span of steel 174 feet between arches.

Clifton, now known as the Upper Arch (over Niagara River). Length, 1,268 feet. Longest single steel arch span in the world. Blown down 1889, rebuilt in 1898, replacing the Niagara and Clifton suspension.

Clifton Suspension Bridge.—A chain bridge cross-

bridge, which was taken down in July, 1862. It is said to have the longest span of any chain bridge in the world (702 feet), and is 250 feet above high-water. Begun in 1862; opened December, 1864.

Danube (near Stadlan, Austria).—Iron suspension; length, 2520 feet.

Douro Bridge, an arched iron structure near Oporto, Portugal, total length, 1150 feet, span of arch, 520 feet, height from low-water to crown of arch, 198 feet.

Delaware River Bridge (Philadelphia).—533-foot span.

Bridge of the Holy Trinity (at Florence, Italy).—Was built in 1569. It is 322 feet long, constructed of white marble, and stands unrivaled as a work of art.

Forth Bridge.—Over the Firth of Forth, Scotland; cantilever; iron and steel; length, nearly two miles, including approaches. Opened March, 1890; cost $15,800,000.

Frieburg Suspension Bridge.—Over the Sarine valley, Switzerland. 870 foot span; 167 feet above the river; built by N. Chaley, 1833-34.

Garabit Viaduct.—Over the Truyere, in the south of France. The total length is 1849 feet; the main portion, 1469 feet in length, is of steel, and consists of five openings of from 170 to 182 feet, spanned by lattice girders and a trellis parabolic arch with a span of 541 feet, and a clear height above the river of 356 feet. The rail level is 401 feet above the river. (Highest bridge in the world.) Designed by M. Eiffel and built without scaffold. Begun, 1879, completed, 1884.

Harlem River Aqueduct (High Bridge). — Stone; length, 1450 feet; semi-circular arch.

Hells Gate Bridge.—17,808 feet long, crossing East River in New York City from Manhattan to Brooklyn. Longest steel arch in the world. Main span 997½ feet. Cost $15,000,000.

Interstate, a vertical lift bridge crossing the Columbia River at Vancouver, between States of Oregon and Washington. It is 3,531 feet long, 150 feet in height. The main span is 275 feet. Completed 1917.

Karlsbrucke (Charles' Bridge), over the Moldau at Prague. Built by Emperor Charles IV. of Germany, 1384. 1855 feet long. Gate towers at either end, ornamented with groups of statuary. Greatly damaged by flood, September, 1890; since repaired.

Kinzua Viaduct (R. R.).—On Bradford branch of New York, Lake Erie and Western R. R., near Bradford, Pa., iron; height, 301 feet; length, 2050 feet.

Loa Viaduct, a lattice girder iron bridge by which the Antofagasta railway of Bolivia crosses the canyon of Loa at an altitude of 10,000 feet above the sea level. The bridge was put together in nine months under the supervision of Peter and John Fisher, who went from England for the purpose.

London Bridge.—One is said to have existed, 978. A bridge built of wood, 1014, was partly burned in 1136. The old London bridge was the first stone bridge. It was commenced in 1176, and completed in 1209. Its founder, Peter of Colechurch, was buried in the crypt of the chapel erected on the center pier.

New London Bridge, designed by John Rennie, and built by his sons, John and George; total cost $7,291,000; length of central span, 152 feet. The first pile was driven 200 feet to the west of the old bridge, March, 1824; the first stone was laid by the lord mayor, alderman Garratt, June, 1825; opened by William IV. and his Queen, August, 1831.

Louisville, Ky. (Over the Ohio).—Length, 5310 feet.

Luxemburg, Germany.—Stone, containing span of 277 feet; largest single arch stone bridge in the world.

Maintenon Aqueduct.—Stone; length 16,367 feet; semi-circular arch.

Manhattan.—A suspension bridge crossing the East River in New York City, 134 feet above high-water. Length is 6855 feet; main span 1470 feet. Cost $17,000,000. Opened for traffic 1909.

Minneapolis Suspension Bridge.—Completed, 1876; length, with approaches, one mile.

Montpellier Aqueduct.—Stone; length, 3214 feet; semi-circular arch.

Niagara Cantilever.—Steel bridge over the Niagara River; length, 910 feet.

Niagara Suspension.—(Now replaced by steel and known as the Lower Arch.) Total length, about 2220 feet; width of span, 821 feet; height above river, 245 feet.

Niagara Falls Suspension Bridge.—Across the gorge, two miles below the falls. Built by John A. Roebling. Length of span between towers, 800 feet; supported by four wire cables, each containing 3640 No. 9 wires; height of track above the water, 245 feet; carriage-way beneath the track; cost of bridge, $400,000; work begun, 1852; first locomotive crossed, March, 1855.

Philadelphia-Camden.—Suspension, Length 8,126 feet; height 135 feet; span 1,750 feet. Cost $29,000-000. Completed 1926.

Poughkeepsie, N. Y. (Over the Hudson River). — Iron cantilever; length, 6767 feet; opened in 1889.

Queensborough, N. Y.—Iron cantilever, 7636 feet in length; here crosses East River; largest cantilever bridge in the world, bearing traffic; cost over $17,-000,000; has four elevated railroad tracks, two promenades, four trolley tracks. Opened, 1909.

Quebec.—Cantilever bridge at Quebec, Canada. Length, 3,240 feet; height, 150 feet; span, 1,800 feet. Completed 1917, at cost of $9,000,000.

Rockville Bridge.—Near Harrisburg, Pa., is the largest four-track stone railway bridge in the world. Length, 3810 feet. It contains forty-eight 70-foot stone arches and cost $1,000,000.

St. Louis (Across the Mississippi).—Minnesota and North Western R. R.; iron; 1825 feet long, draw span 412 feet long, the latter being one of the largest and heaviest in the world. The width on top, between rails, is 50 feet. The piers rest on the bedrock of the river, 136 feet below high-water mark. Captain James B. Eads was the engineer; cost, $10,000,000.

St. Louis Municipal Bridge.—Simple truss, crossing the Mississippi River at St. Louis, Mo. Length is 17,922 feet, length of main span is 668 feet. Height 65 feet. Opened 1913.

Sukkur Cantilever Bridge, crossing the Rori branch of the Indus at Sukkur, with a single span of 790 feet; opened, June, 1889.

Tay Bridge, the longest girder bridge in the world, crosses the Tay at Dundee, Scotland. The original bridge consisted of 85 spans, some over 90 feet above water level, and has a total of length 10,612 feet. Engineer, Sir Thomas Bouch. Over 20 lives lost during its construction. Work commenced, June, 1871; completed, August, 1877; and opened, May, 1878. Partly destroyed by a gale while a N. British mail-train was passing over it; the train and 75 to 90 passengers disappeared, none escaping. A gap of about 3000 feet was made in the bridge.

Tower Bridge.—Steel and masonry draw-bridge across the Thames. A bascule bridge crossing the Thames below London bridge. It has a central opening of 200 feet between two high towers, connected near the top by a fixed foot-bridge 139½ feet above the river and reached by elevators or stairways in the towers. There are two side spans of 270 feet covered by chain suspension bridges, and between the towers, at a height of 29½ feet above high-water, a double bascule, each leaf 100 feet in length and forming a flat arch when down, at a level with the main bridge. Foundation laid in 1886; opened in 1894. Cost, $7,786,400.

Victoria Bridge over the Thames at Pimlico, London, consists of four very wide wrought-iron arches. Begun, 1859; completed, 1860; and widened, 1865-66.

Victoria Bridge, Montreal, one of the most famous in the world, is nearly two miles in length. Was erected by James Hodges under the superintendence of Robert Stephenson and A. M. Ross, engineers. It is about two miles in length and rests on 24 piers, the height being 60 feet above summer level of the river; cost, $3,000,000; work begun, May, 1854; bridge damaged by floating ice while under construction, January, 1855; formally opened by the Prince of Wales, August, 1860. Replaced, 1898-1899, by a pin-connected truss bridge of 25 spans; and in 1906 by a new steel bridge.

Washington Bridge (Across Harlem River valley, N. Y.); two steel arches of 510 feet span; roadway 80 feet wide; length, 2375 feet; height above the Harlem River, 136 feet; built, 1886-89. Cost, $2,850,000.

Waterloo Bridge (Over the Thames at London.) Length within abutments, 1242 feet; width within balustrades, 42 feet; span of each arch, of which there are nine, 120 feet. It was opened on the anniversary of the Battle of Waterloo, the duke of Wellington and others being present, June, 1817. Cost, 2,400,000.

Westminster Bridge.—Old bridge was built of Portland stone, after a design of M. Labelye. Begun, 1738; opened for passengers, 1750; length, 1223 feet; cost $2,150,000; commissioners of works empowered to rebuild, 1853; one-half of the bridge opened early in 1860, the whole, 1862.

Williamsburg.—Across East River, connecting Manhattan and Brooklyn. Total length, 7308 feet; main span, 1600 feet; width, 118 feet; height above mean-high water, 135 feet; cost, $12,000,000, exclusive of real estate. Begun, 1897.

British Lion.—This term symbolizes the spirit of pugnacity of the British nation, as opposed to "John Bull," which symbolizes the substantiality, obstinacy, and solidity of the British nation, with all its prejudices and national peculiarities. To rouse John Bull is to tread on his corns; to rouse the British lion is to blow the war-trumpet in his ears.

Brother Jonathan is a collective personification of the people of the United States. When General Washington, after being appointed commander of the army of the Revolutionary war, came to Massachusetts to organize it and make preparations for the defense of the country, he found a great want of ammunition and other means necessary to meet the powerful foe he had to contend with, and great difficulty to obtain them. If attacked in such condition, the cause at once might be hopeless. On one occasion, at that anxious period, a consultation of the officers and others was had, when it seemed no way could be devised to make such preparation as was necessary. His excellency, Jonathan Trumbull, the elder, was then governor of the state of Connecticut, on whose judgment and aid the General placed the greatest reliance, and remarked: "We must consult Brother Jonathan on the subject." He did so, and the governor was successful in supplying many of the wants of the army. When difficulties afterward arose, and the army was spread over the country, it became a by word, "We must consult Brother Jonathan."

Bunker Hill Monument.—The corner stone of this monument was laid on the fiftieth anniversary of the battle of Bunker Hill, June 17, 1825, by Lafayette, and the oration was pronounced by Daniel Webster. It is a square shaft of Quincy granite, 221 feet high, 31 feet square at the base, and 15 feet at the top. Inside the shaft is a round, hollow cone, 7 feet wide at the bottom, and 4 feet 2 inches at the top, encircled by a winding staircase containing 224 stone steps, which lead to a chamber 11 feet in diameter immediately under the apex. The chamber has four windows, and contains two cannons, named Hancock and Adams, respectively, which were used in the war. The monument was completed and was dedicated June 17, 1843.

Bury the Hatchet.—Let by-gones be by-gones. The "Great Spirit" commanded the North American Indians, when they smoked the calumet or peace-pipe, to bury their hatchets, scalping-knives and war-clubs in the ground, that all thought of hostility might be buried out of sight.

Buried was the bloody hatchet;
Buried was the dreadful war-club;
Buried were all warlike weapons,
And the war-cry was forgotten:
Then was peace among the nations.

LONGFELLOW, *Hiawatha*

Carpet-baggers.—Corrupt and often ignorant politicians—mostly from the North—who flocked to the South during the era of reconstruction. They were uniformly "on the make," and were responsible for much of the venality and rascality that disgraced that period of the history of the South.

Caste Among the Hindoos.—Caste is a term applied to the division into social classes in India. To each of these classes certain pursuits are limited by the Laws of Manu, B. C., 960.

1. The *Brahmans* or sacerdotal class, which "issued from the mouth of Brahma."

2. The *Chuttree* or military class, which "sprang from the arm of Brahma."

3. The *Bais* or mercantile class, which "sprang from the thigh of Brahma."

4. The *Sudras* or servile class, which "sprang from the foot of Brahma."

The *Pariahs* and *Chandalas* are nobodies or worse, for it is a pollution to be touched by such "scum of the earth."

CALENDAR FOR READY REFERENCE

For ascertaining any Day of the Week for any given Time within Two Hundred Years from the introduction of the New Style, 1753 to 1952, inclusive.

YEARS 1753 TO 1952								Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1753g	1781g	1800e	1828q	1856q	1884q	1900g	1928h	a	4	7	7	3	5	1	3	6	2	4	7	2
1754d	1782d	1801a	1829a	1857a	1885a	1901d	1929d													
1755e	1783e	1802b	1858b	1858b	1886b	1902e	1930e	b	5	1	1	4	6	2	4	7	3	5	1	3
1756p	1784p	1803c	1831c	1859c	1887c	1903a	1931a													
1757c	1785c	1804h	1832h	1860h	1888h	1904k	1932k	c	6	2	2	5	7	3	5	1	4	6	2	4
1758f	1786f	1805d	1833d	1861d	1889d	1905f	1933f													
1759g	1787g	1806e	1834e	1862e	1890e	1906g	1934g	d	2	5	5	1	3	6	1	4	7	2	5	7
1760q	1788q	1807a	1835a	1863a	1891d	1907d	1935d													
1761a	1789a	1808k	1836k	1864k	1892k	1908l	1936l	e	3	6	6	2	4	7	2	5	1	3	6	1
1762b	1790b	1809f	1837f	1865f	1893f	1909b	1937b													
1763c	1791c	1810g	1838g	1866g	1894g	1910c	1938c	f	7	3	3	6	1	4	6	2	5	7	3	5
1764h	1792h	1811d	1839d	1867d	1895d	1911f	1939f													
1765d	1793d	1812l	1840l	1868l	1896l	1912m	1940m	g	1	4	4	7	2	5	7	3	6	1	4	6
1766e	1794e	1813b	1841b	1869b	1897b	1913e	1941e													
1767a	1795a	1814c	1842c	1870c	1898c	1914a	1942a	h	7	3	4	7	2	5	7	3	6	1	4	6
1768k	1796k	1815f	1843f	1871f	1899f	1915b	1943b													
1769f	1797f	1816m	1844m	1872m		1916n	1944n	k	5	1	2	5	7	3	5	1	4	6	2	4
1770g	1798g	1817e	1845e	1873e		1917g	1945g													
1771d	1799d	1818a	1846a	1874a		1918d	1946d	l	3	6	7	3	5	1	3	6	2	4	7	2
1772l		1819b	1847b	1875b		1919e	1947e													
1773b		1820n	1848n	1876n		1920p	1948p	m	1	4	5	1	3	6	1	4	7	2	5	7
1774c		1821g	1849g	1877g		1921c	1949c													
1775f		1822d	1850d	1878d		1922f	1950f	n	6	2	3	6	1	4	6	2	5	7	3	5
1776m		1823e	1851e	1879e		1923g	1951g													
1777e		1824p	1852p	1880p		1924q	1952q	p	4	7	1	4	6	2	4	7	3	5	1	3
1778a		1825c	1853c	1881c		1925a														
1779b		1826f	1854f	1882f		1926b		q	2	5	6	2	4	7	2	5	1	3	6	1
1780n		1827g	1855g	1883g		1927c														

Note.—The letters in the list of "Years from 1753 to 1952," refer to the table headed with the Month, the figures in which refer to the same figures at the head of the table of Days. For example: To know on what day July 4, 1911, fell, look for 1911 in the table of Years. The letter "f" is attached. Look for the same letter in the table of Months and in a parallel line under July is the figure 6, which directs to column 6 in the table of Days below, in which it will be seen that July 4, 1911, fell on Tuesday.

TABLE OF DAYS

1		2		3		4		5		6		7	
Monday	1	Tuesday	1	Wednesday	1	Thursday	1	Friday	1	Saturday	1	SUNDAY	1
Tuesday	2	Wednesday	2	Thursday	2	Friday	2	Saturday	2	SUNDAY	2	Monday	2
Wednesday	3	Thursday	3	Friday	3	Saturday	3	SUNDAY	3	Monday	3	Tuesday	3
Thursday	4	Friday	4	Saturday	4	SUNDAY	4	Monday	4	Tuesday	4	Wednesday	4
Friday	5	Saturday	5	SUNDAY	5	Monday	5	Tuesday	5	Wednesday	5	Thursday	5
Saturday	6	SUNDAY	6	Monday	6	Tuesday	6	Wednesday	6	Thursday	6	Friday	6
SUNDAY	7	Monday	7	Tuesday	7	Wednesday	7	Thursday	7	Friday	7	Saturday	7
Monday	8	Tuesday	8	Wednesday	8	Thursday	8	Friday	8	Saturday	8	SUNDAY	8
Tuesday	9	Wednesday	9	Thursday	9	Friday	9	Saturday	9	SUNDAY	9	Monday	9
Wednesday	10	Thursday	10	Friday	10	Saturday	10	SUNDAY	10	Monday	10	Tuesday	10
Thursday	11	Friday	11	Saturday	11	SUNDAY	11	Monday	11	Tuesday	11	Wednesday	11
Friday	12	Saturday	12	SUNDAY	12	Monday	12	Tuesday	12	Wednesday	12	Thursday	12
Saturday	13	SUNDAY	13	Monday	13	Tuesday	13	Wednesday	13	Thursday	13	Friday	13
SUNDAY	14	Monday	14	Tuesday	14	Wednesday	14	Thursday	14	Friday	14	Saturday	14
Monday	15	Tuesday	15	Wednesday	15	Thursday	15	Friday	15	Saturday	15	SUNDAY	15
Tuesday	16	Wednesday	16	Thursday	16	Friday	16	Saturday	16	SUNDAY	16	Monday	16
Wednesday	17	Thursday	17	Friday	17	Saturday	17	SUNDAY	17	Monday	17	Tuesday	17
Thursday	18	Friday	18	Saturday	18	SUNDAY	18	Monday	18	Tuesday	18	Wednesday	18
Friday	19	Saturday	19	SUNDAY	19	Monday	19	Tuesday	19	Wednesday	19	Thursday	19
Saturday	20	SUNDAY	20	Monday	20	Tuesday	20	Wednesday	20	Thursday	20	Friday	20
SUNDAY	21	Monday	21	Tuesday	21	Wednesday	21	Thursday	21	Friday	21	Saturday	21
Monday	22	Tuesday	22	Wednesday	22	Thursday	22	Friday	22	Saturday	22	SUNDAY	22
Tuesday	23	Wednesday	23	Thursday	23	Friday	23	Saturday	23	SUNDAY	23	Monday	23
Wednesday	24	Thursday	24	Friday	24	Saturday	24	SUNDAY	24	Monday	24	Tuesday	24
Thursday	25	Friday	25	Saturday	25	SUNDAY	25	Monday	25	Tuesday	25	Wednesday	25
Friday	26	Saturday	26	SUNDAY	26	Monday	26	Tuesday	26	Wednesday	26	Thursday	26
Saturday	27	SUNDAY	27	Monday	27	Tuesday	27	Wednesday	27	Thursday	27	Friday	27
SUNDAY	28	Monday	28	Tuesday	28	Wednesday	28	Thursday	28	Friday	28	Saturday	28
Monday	29	Tuesday	29	Wednesday	29	Thursday	29	Friday	29	Saturday	29	SUNDAY	29
Tuesday	30	Wednesday	30	Thursday	30	Friday	30	Saturday	30	SUNDAY	30	Monday	30
Wednesday	31	Thursday	31	Friday	31	Saturday	31	SUNDAY	31	Monday	31	Tuesday	31

Center of Area and Population of the United States.—The center of area of the United States, excluding Alaska and Hawaii and other recent accessions, is in northern Kansas, in approximate latitude 39 degrees, 55 minutes, and approximate longitude 98 degrees, 50 minutes.

The center of population, indicated below, is, therefore, about three-fourths of a degree south and more than thirteen degrees east of the center of area.

Date	Center of Population Approximate Location of Important Towns	Westward Movement During Preceding Decade Miles
1790	23 miles east of Baltimore, Md.	..
1800	18 miles west of Baltimore, Md.	41
1810	40 miles northwest by west of Washington, D. C.	36
1820	16 miles north of Woodstock, Va.	50
1830	19 miles W. S. W. of Moorfield, in the present State of W. Va.	39
1840	16 miles south of Clarksburg, in the present State of W. Va.	55
1850	23 miles S. E. of Parkersburg, in the present state of W. Va.	55
1860	20 miles south of Chillicothe, Ohio	81
1870	48 miles east by north of Cincinnati, Ohio	42
1880	8 miles west by south of Cincinnati, Ohio	58
1890	20 miles east of Columbus, Ind.	48
1900	6 miles southeast of Columbus, Ind.	14
1910	Bloomington, Ind.	39
1920	1.9 miles west of Whitehall, Ind.	9.8

Chalk, a soft kind of limestone or carbonate of lime. It is composed almost entirely of the shells of little sea animals, which in the course of ages have become packed together so closely, and in such immense numbers, that in some parts of the world they form vast cliffs twenty times the height of a house. Though generally yellowish-white, it is sometimes snow-white in color. It is usually soft, but is often hard enough to be employed for building purposes. When burned it makes excellent lime for *mortar*, and a good manure; and when ground and purified by washing it is called whiting or Spanish white, with which metals and glass are polished. Chalk is given as a medicine, and is used for cleaning the teeth, as well as for marking on black-boards.

Character by the Month.—Here is an old astrological prediction, said to indicate, with tolerable certainty, the character of the girl according to the month she happens to be born in:

If a girl is born in January, she will be a prudent housewife, given to melancholy, but good-tempered.

If in February, a humane and affectionate wife and tender mother.

If in March, a frivolous chatterbox, somewhat given to quarreling.

If in April, inconstant, not intelligent, but likely to be good-looking.

If in May, handsome and likely to be happy.

If in June, impetuous, will marry early, and be frivolous.

If in July, passably handsome, but with a sulky temper.
If in August, amiable and practical, and likely to marry rich.
If in September, discreet, affable, and much liked.
If in October, pretty and coquettish, and likely to be unhappy.
If in November, liberal, kind, of a mild disposition.
If in December, well proportioned, fond of novelty, and extravagant.

Christmas Tree.—The Christmas Tree, which has become an almost universal symbol, and is by most persons supposed to have originated in Germany, had its origin in Egypt at a period long before the Christian era. The palm-tree is known to put forth a branch every month, and a spray of this tree, with 12 shoots on it, was used in Egypt at the time of the winter solstice, as a symbol of the year completed.

Cities, Soubriquets of.—Certain cities have received popular appellations because of their identification with particular religious beliefs, observances, educational or literary pre-eminence, topography, resemblances to other cities, location, dominant industries, surroundings, and other reasons. Among such are the following:

Aberdeen, Scotland.—Granite City, from the prevalence and use of this stone.

Agra, India.—Rome of Hindustan. It was the seat of the Mohammedan empire in India, and its ancient structures are on a scale of great magnificence.

Alexandria, Egypt.—(1) Delta City, from the delta of the Nile. (2) Mother of Books, because there was deposited the largest collection of books ever gathered together prior to the invention of printing.

Allahabad, India.—Holy City of the Indian Mohammedans.

Amiens, France.—Little Venice, because it is so intersected by different branches of the Somme and the numerous bridges over them, as to have moved Louis XI. to bestow on it the above name.

Antioch.—(1) Queen of the East, because it was formerly the capital of Syria, and the place of residence of the Macedonian kings and Roman governors. (2) Mother of Christian Mission. From thence (Acts xiii, 1-3) Paul started on his first missionary journey.

Aquiljar, Austria.—Second Rome, because in the time of the Romans it was the entrepôt and commercial centre of northern and western Europe, and the Emperor Augustus often resided there. It was taken and burned by Attila, at which time its population was reckoned at 100,000.

Athens, Greece.—(1) The Violet Crowned, so named by Pindar, in allusion to the violet crowns offered to the god at the Dionysiac festivals. It soon became a stock phrase, and, according to Aristophanes, every stump orator could win over his audience by judicious use of "violet-crowned city," or "ancient violet-crowned Athens."

(2) Religious City, a name given by the old writers. It is said that there were thirty thousand temples, statues, and sacred places dedicated to worship of the heathen gods.

(3) Eye of Greece, because the most renowned of Greek Cities.

> Athens the eye of Greece, mother of arts
> And eloquence, native to famous wits
> Or hospitable.
>
> Milton, *Paradise Regained*, Book iv.

Atlanta, Ga.—The Gate City, so named by Jefferson Davis during the Civil war, it being, in his estimation, the most important inland position, from a military point of view, in the South.

Baalbec, Syria.—City of the Sun, the Heliopolis of the Greeks, is often referred to by this title, which is a translation of its two names. It is celebrated for its superb ruins, yet extant, of an ancient temple dedicated to the sun.

Bagdad, Arabia.—City of Peace.

Balkh (the ancient Bactra), Central Asia.—Mother of Cities, so named by Orientals in allusions to its great antiquity. The modern town covers but a fraction of the surface embraced by the ancient city, the remains of which cover a space twenty miles in circumference.

Baltimore, Md.—Monumental City. It contains the Washington and Battle monuments and many others; whence its title.

Berlin, Prussia.—City of Intelligence, from its numerous intellectual institutions.

Binghampton, N. Y.—Parlor City; name given by its admirers because finer homes and better kept lawns are seldom seen than line some of its streets.

Birmingham, Ala.—Magic City, so named on account of its rapid rise into size and prominence.

Birmingham, England.—The Midland Capital, from its geographical location.

Bokhara, Asia.—Treasury of Sciences, from its position as an Asiatic center of learning. It has 103 colleges with 10,000 students, besides a host of schools and 360 mosques.

Bologna, Italy.—The Fat City. In the days of the Italian Republics the city of Bologna was so named.

Boston, Mass.—(1) Athens of America, because famed alike for its institutions of learning and for the high order of the intelligence and culture of its citizens.

(2) City of "Notions," numerous manufactured articles of all kinds commanding a large sale.

(3) Tri-Mountain City, from the three hills on which it was originally built.

(4) Hub of the Universe; a humorous appellation popularly applied, originated with Dr. O. W. Holmes.

> Boston State-house is the hub of the solar system. You couldn't pry that out of a Boston man if you had the tire of all creation straightened out for a crowbar.—*The Autocrat of the Breakfast-table.*

Batavia, in Java.—Queen of the East, being the metropolis of the Dutch East Indian possessions.

Benares, India.—Holy City of the Hindus.

Brighton, England.—Queen of Watering Places, "London-super-Mare."

Brisbane, Australia.—Montpellier of Australia, so named on account of the salubrity of its climate.

Brooklyn.—City of Churches, from the number of churches it contains.

Buffalo, N. Y.—Queen City of the Lakes, because of its commanding position on the great lakes, and of much commercial importance.

Calcutta, India.—City of Palaces, from the large number of elegant residences.

Chicago.—(1) Garden City, from the number and beauty of its private gardens; (2) Windy City from the constant winds blowing from the lakes.

Cincinnati.—Queen City, so called when it was the commercial metropolis of the Middle West.

Cleveland.—Forest City from the number of trees on its streets.

Cologne, Germany.—(1) City of the Three Kings, in reference to the old legend which makes Cologne the burial place of Balthazar, Melchoir, and Jasper, the "wise men of the East."

(2) Rome of the North, so called (says Hope) in the Middle Ages, from its wealth, power, and ecclesiastical foundations.

Columbus, Ohio.—The Arch City.

Constantinople.—City of the Golden Horn.

Cordova, Spain.—Athens of the West; under its Mohammedan rulers it attained great eminence in the domain of letters.

Cork, Ireland.—Athens of Ireland, because it was the domicile or the birthplace of many erudite and eminent Irishmen.

Cusco, Peru.—Holy City of the Ancient Incas.

Denver, Colo.—Queen of the Plains.

Detroit.—City of the Straits, from its location on the straight connecting Lake St. Clair and Lake Erie.

Dresden, Saxony.—(1) Elbe Florence, so called from the important part which the river Elbe plays in the city's life and topography.

(2) German Florence, so named for its wealth in works of art and scientific treasures.

Duluth, Minn.—Zenith City of the Unsalted Seas; thus named by Proctor Knott in a famous speech in Congress.

Edinburgh.—(1) Auld Reekie, so named on account either of (a) its filthy and ill-smelling thoroughfares, or (b) the canopy or cloud of smoke that seems to overhang the city when viewed from a distance.

(2) Maiden Town. An old legend has it that it was to this place the fair daughters of the Pictish monarchs were consigned for safety in time of war.

(3) Modern Athens. It is the headquarters of learning in Scotland; as a literary town it is second only to London, and it is the seat of the supreme courts of Scotland. The good taste and culture of its people are marked. It contains a great university and many schools, and it is famed for the many distinguished men who have been born or who have resided there. Lastly, its topographical situation is very similar to that of its ancient namesake.

Florence, Italy.—(1) Lily of the Arno; (2) The Gentle. In the palmy days of the Italian republics Florence was so named. "In the mouth of an Italian this adjective includes all the amenities and agreeableness resulting from a high state of civilization."

Galway, Ireland.—City of the Tribes, because, in 1235, there settled here thirteen clans, named Athy, Blake, Browne, Budkin, Burke, D'Arcy, Ffont, Joyce, Kirwan, Lynch, Martin, Morris and Skerrett.

Geneva, Switzerland.—Rome of Protestantism. Under the guidance of Calvin and his associates it became a stronghold of the Reformation.

Hannibal, Mo.—Bluff City, from its location on the bluffs of the Missouri River.

Holyoke, Mass.—Paper City. It has the most extensive paper mills in the world.

Iglesias, Sardinia.—City of the Mines, on account of the magnitude of its mining operations.

Indianapolis.—Railroad City, from its being a great railroad center.

Italian Cities.—In the days of the Italian republics the chiefs of the sisterhoods of cities were known by some special epithet, supposed to be descriptive of their peculiar charms or of the idiosyncrasies of their inhabitants. Thus we have Naples, the Beautiful; Rome the Eternal City; Genoa, the Superb; Lucca, the Industrious; Padua, the Learned; Bologna, the Fat; and Florence, the Gentle.

Jerusalem.—(1) City of Peace; its ancient name, Salem, signifies "peace;" (2) Holy City of the Jews and Christians; (3) City of the Great King, so named in the Scriptures; (4) City of David, so named by King David, who captured it from the Canaanites, 1049, B. C.

Keokuk, Iowa.—Gate City, from its situation at the foot of the Mississippi Rapids.

Liverpool.—The Modern Tyre.

Lhasa, Thibet.—Rome of Buddhism. It is the "holy city" of the Buddhists in Asia.

London.—(1) City of Masts, so named from the spectacle presented by its vast array of shipping.

(2) Modern Babylon. In point of size it is the greatest in the modern world, as Babylon is believed to have been of the ancient. But there is also an allusion in the term to the luxury and licentiousness common to both cities.

(3) Lud's Town. So called after Lud, a mythical king of Britain.

> And on the gates of Lud's town set your heads.—Shakespeare, *Cymbeline.*

Louisville, Ky.—Falls City, from the falls of the Ohio River, here located.

Lowell, Mass.—City of Spindles, from its large manufacturing interests.

Lucknow, India.—City of Roses, because embowered with them.

Lynchburg, Va.—Hill City; Tobacco City; tobacco is one of the chief staples of trade.

Manchester, England.—Cottonopolis, on account of its extensive manufactures of cotton.

Mecca, Arabia.—Holy City of the Mohammedans.

Medina, Arabia.—Prophet's City. To this place Mohammed fled for refuge during the Hegira, July 16, 622, and here is his tomb.

Mero, Turkestan.—Queen of the World, because of its pre-eminent situation.

Milan, Italy.—Little Paris, in allusion to its similarity to the Gallic capital in point of gaiety and dissipation.

Minneapolis.—Flour City, from its extensive flour mills.

Montreal, Canada.—Island City. It is built on an island of the same name.

Moscow, Russia.—Holy City of the Russians or Slavs.

Nashville, Tennessee.—City of Rocks, from its natural surroundings.

New Haven.—City of Elms, from the great number of these trees it contains.

New Orleans.—Crescent City, from its position on a curve of the Mississippi.

Newport, R. I.—(1) City by the Sea, famous as a fashionable summer resort; (2) City of Mansions.

New York.—(1) Empire City, from its being the chief city of the United States.

(2) Gotham, a colloquial term applied in "Salmagundi" by Washington Irving and James K. Paulding, and is supposed to hint sarcastically at the worldly wisdom of its inhabitants.

Paris.—City of the Lily, or City of Louis.

Pernambuco, Brazil.—City of the Reef; the harbor is protected by an extensive reef of rocks.

Perth, Scotland.—The Fair City, because elegantly built and picturesquely situated.

Philadelphia.—(1) City of Brotherly Love, from the meaning of the name.

(2) Quaker City, planned and colonized by William Penn and other members of the Society of Friends.

(3) City of Homes. So named on account of the large number of private dwellings it contains, and the almost total absence of tenement-houses.

Pittsburg, Pa.—Iron City, from the extent of its iron manufactures; and Smoky City, from the smoke which overhangs it.

Portland, Me.—Forest City, from the number of trees in its streets.

Rochester, N. Y.—Flower City, from the profusion of flowers and extensive nurseries there.

Rome.—(1) Holy City; (2) City of Seven Hills; (3) Mistress of the World; (4) Imperial City; (5) City of Palaces.

Santa Fe.—City of the Holy Faith.

San Francisco.—City of the Golden Gate.

Salt Lake City.—City of the Saints; here is located the headquarters of the Mormon hierarchy, "the Church of Latter-Day Saints of Jesus Christ."

Seattle, Wash.—Queen City of Puget Sound.

Seven Cities, The.—Egypt, Jerusalem, Babylon, Athens, Rome, Constantinople, and either London or Paris. They are often grouped under this title, as embodying wealth, antiquity, greatness and magnificence.

Sheraz, Persia.—Athens of the East. It has numerous colleges, and anciently was the home of poetry and the arts. It gave birth to more distinguished Persian poets than any other Persian city.

If Mohammed had tasted the pleasures of Sheraz, he would have begged of Allah to make him immortal there.—*Persian Saying.*

St. Louis, Mo.—Mound City, from the artificial mounds found there.

St. Petersburg.—(1) City of Perspectives; its streets and quays are famous for the long vistas they present; (2) City of Snow; for nine months in every year it is shrouded in a canopy of snow.

Springfield, Mass.—City of Homes, from the many people who own their own homes.

Springfield, Ohio.—Flower City, from the beauty of its surroundings.

Thessalonica (Modern Salonica).—Orthodox City. It was for centuries a bulwark of Christianity, but in 1430 was captured by Amurath II.

Venice.—City of St. Mark; City of the Seventy Isles.

Washington.—City of Magnificent Distances, from its being laid out on a large and regular scale.

Worcester, Mass.—The Faithful City, so called from its motto: *Floreat Semper Civitas Fidelis.*

Coal.—A carbonaceous mineral substance, black, shiny or dull, easily broken, often splintery, inflammable, and used for fuel. It is composed of carbon (75 per cent), hydrogen, oxygen, and some nitrogen, with siliceous and other earthy impurities (ash). It consists of compressed and chemically altered vegetable matter, chiefly extinct kinds of lycopodiaceous trees. As the successive jungle-growths accumulated their stems, leaves, and spores, hydrogen and oxygen were evolved with some of the carbon. The relative proportion of carbon in the mass was increased, the woody fiber reduced in volume to one-ninth, or even one-fifteenth, of its original bulk, and the mass became black, shiny hydrocarbons, with imbedded charcoal ("mother-coal"), due to decomposition of trees lying exposed to the air, or dull black hydrocarbons, resulting from the consolidation of decomposed vegetable pulp, like soft peat.

Dana divides what may be called the species, termed by him Mineral Coal, into the following varieties: (1) Anthracite, (2) Native Coke, (3) Caking Coal, (4) Non-caking Coal, (5) Cannel Coal (Parrot Coal), (6) Torbanite, (7) Brown Coal (Lignite), (8) Earthy Brown Coal, (9) Mineral Charcoal. The first variety has only three-forty-sixths per cent of bituminous matter, the second has none, and the rest vary in this respect.

Coke.—There are two kinds of coke—gas coke and coke which is made in heaps or ovens. Coke is charred bituminous coal, just as charcoal is charred wood, and it consists only of carbon mixed with some earthy matters. When it is charred in heaps the coal is piled up in a stack, which is sometimes round and sometimes oblong, with openings left for the air. Fire is then set to it, and it is allowed to burn until smoke no longer rises from it. The air holes are then stopped by covering the heap with coal dust, and the coke is left to cool. During the burning, smoke, watery vapor, coal gas, and coal tar are given off, and the remainder is coke. A better way to make coke is to char the coal in great ovens built of firebrick for the purpose. The coal is put in at the top, and a little air let in at openings in the front. As soon as the smoky vapor ceases to pass off, the oven is tightly closed and allowed to cool for a day. The coke is then raked out, and if still aglow the fire is put out with water.

Coke is lighter than coal, and porous, or full of little holes. When used as a fuel it gives a great and steady heat without smoke, and leaves but little ashes. It is largely used in countries where anthracite coal is lacking, in furnaces for smelting metals and in furnaces where smoke is not wanted.

Congressional Gold Medals.—Awarded by Special Act of Congress.

George Washington.—The Capture of Boston 1776
Horatio Gates.—Surrender of the British Army 1777
Anthony Wayne.—Capture of Stony Point 1779
Francois L. T. de Fleury (Silver Medal).—Capture of Stony Point 1779
Henry Lee.—Surprise of Pawlus Hook.. 1779
John Paulding, David Williams, Isaac Van Wart (Silver Medal).—Capture of Major Andre 1780
Daniel Morgan, Victory of Cowpens... 1781
William A. Washington (Silver Medal). Victory of Cowpens 1781
John Eager Howard (Silver Medal).—Victory of Cowpens 1781
John Paul Jones.—Capture of *Serapis*.. 1787
George Washington.—First President of the United States 1787
John Adams.—Second President of the United States 1787
Thomas Truxton.—Action with the *Vengeance* 1800
Thomas Jefferson.—President of the United States 1800
Edward Preble.—Naval operations against Tripoli 1805
James Madison.—President of the United States 1805
Isaac Hull.—Capture of the *Guerriere*.. 1813
Jacob Jones.—Capture of the *Frolic*.... 1813
Stephen Decatur.—Capture of the *Macedonian* 1813
William Bainbridge—Capture of the *Java* 1813
Edward R. McCall.—Capture of the *Boxer* 1814
William Burrows (Nearest relative).—Battle on Lake Erie 1814
Oliver H. Perry.—Battle on Lake Erie. 1814
Jesse Duncan Elliott.—Battle on Lake Erie 1814
James Lawrence (Nearest relative).—Capture of the *Peacock* 1814
Thomas Macdonough.—Victory of Lake Champlain 1814
Robert Henley.—Victory of Lake Champlain 1814
Stephen Cassin.—Victory of Lake Champlain 1814
Lewis Warrington.—Capture of the *Epervier* 1814
Johnston Blakeley.—Capture of the *Reindeer* 1814
Jacob Brown.—Victories of Chippewa, Niagara, and Erie 1814
Peter Buel Porter.—Victories of Chippewa, Niagara, and Erie 1814
Eleazer Wheelock Ripley.—Victories of Chippewa, Niagara, and Erie 1814
James Miller.—Victories of Chippewa, Niagara, and Erie 1814
Winfield Scott.—Victories of Chippewa, Niagara, and Erie 1814
Edmund P. Gaines.—Victory of Erie... 1814
Alexander Macomb.—Victory of Plattsburgh 1814
Andrew Jackson.—Victory of New Orleans 1815
Charles Stewart.—Capture of the *Cyane* and of the *Levant* 1816
James Biddle.—Capture of the *Penguin* 1816
James Monroe.—President of the United States 1816
William Henry Harrison.—Victory of the Thames 1818
John Quincy Adams.—President of the United States 1818
Andrew Jackson.—President of the United States 1818
George Croghan.—Defence of Fort Stephenson 1835
Martin Van Buren.—President of the United States 1835
John Tyler.—President of the United States 1835
John Knox Polk.—President of the United States 1835
Zachary Taylor.—Victories on the Rio Grande 1846
Zachary Taylor.—Capture of Monterey 1847
Winfield Scott.—Mexican Campaign. 1848
Zachary Taylor.—Victory of Buena Vista 1848
Zachary Taylor.—President of the United States 1848
Millard Filmore.—President of the United States 1848
Franklin Pierce.—President of the United States 1848
Duncan N. Ingraham.—Release of Martin Koszta 1854
James Buchanan.—President of the United States 1854
Frederick Henry Rose.—Kindness and humanity (Dr. Rose was a British subject who by permission of his commander boarded a United States war vessel that had been visited by an epidemic of yellow fever and took care of the sick) 1858
Abraham Lincoln.—President of the United States 1858
Ulysses S. Grant.—Victories of Fort Donelson, Vicksburg, and Chattanooga 1863
Cornelius Vanderbilt.—Free gift of steamship *Vanderbilt* 1864
Andrew Johnson.—President of the United States 1864
Cyrus West Field.—Laying of the Atlantic Cable 1867
George Peabody.—Promotion of Industrial Education 1867
Ulysses S. Grant.—President of the United States 1867
George Foster Robinson.—For saving

the life of William H. Seward, Secretary of State, on April 14, 1865, when he was attacked by the assassin Payne, one of the conspirators against Lincoln and his cabinet 1871

John Horn, Jr.—For saving over one hundred people from drowning on various occasions 1874

J. S. Crandall and others.—For rescuing the passengers and crew of the steamer *Metis* off Watch Hill, R. I. 1874

Joseph Francis.—For life-saving appliance 1888

David H. Jarvis, Ellsworth P. Bertholf, Samuel J. Call.—In recognition of the heroic services rendered by them in connection with the expedition of 1879-1898, for the relief of the whaling fleet in the Arctic regions 1902

Orville Wright and Wilbur Wright.—For services rendered the science of aerial navigation 1909

Capt. Arthur Henry Rostron.—For services in giving relief to passengers of the wrecked steamship, *Titanic* 1912

Continental Congress, Presidents of.—

Peyton Randolph, Virginia.....1774
Henry Middleton, South Carolina....1774
Peyton Randolph, Virginia.....1775
John Hancock, Massachusetts.....1776
Henry Laurens, South Carolina.....1777
John Jay, New York.....1778
Samuel Huntington, Connecticut.....1779
Thomas McKean, Delaware.....1781
John Hanson, Maryland.....1781
Elias Boudinot, New Jersey.....1782
Thomas Mifflin, Pennsylvania.....1783
Richard Henry Lee, Virginia.....1784
Nathaniel Gorham, Massachusetts...1786
Arthur St. Clair, Pennsylvania.....1787
Cyrus Griffin, Virginia.....1788

Crescent.—According to tradition, "Philip, father of Alexander, meeting with great difficulties in the siege of Byzantium, set the workmen to undermine the walls, but a crescent moon discovered the design, which miscarried; consequently the Byzantines erected a statue to Diana, and the crescent became the symbol of the state." By another legend, Othman, the sultan, saw in a vision a crescent moon, which grew until it reached from east to west, whereupon he adopted the crescent for his standard.

Death Sentence Passed Upon Jesus Christ.—The following is a copy of the most memorable judicial sentence which has ever been pronounced in the annals of the world—namely, that of death against the Savior, the knowledge of which must be interesting in the highest degree to every Christian. The sentence is word for word as follows:—

SENTENCE PRONOUNCED BY PONTIUS PILATE, INTENDENT OF THE PROVINCE OF LOWER GALILEE, THAT JESUS OF NAZARETH SHALL SUFFER DEATH BY THE CROSS. IN THE SEVENTEENTH YEAR OF THE REIGN OF THE EMPEROR TIBERIUS AND ON THE 25TH OF THE MONTH OF MARCH, IN THE MOST HOLY CITY OF JERUSALEM, DURING THE PONTIFICATE OF ANNAS AND CAIAPHAS, PONTIUS PILATE, INTENDANT OF THE PROVINCE OF LOWER GALILEE, SITTING IN JUDGMENT IN THE PRESIDENTIAL SEAT OF THE PRÆTORS, SENTENCES JESUS CHRIST OF NAZARETH TO DEATH ON A CROSS BETWEEN TWO ROBBERS, AS THE NUMEROUS AND NOTORIOUS TESTIMONIALS OF THE PEOPLE PROVE:—1. JESUS IS A MISLEADER. 2. HE HAS EXCITED THE PEOPLE TO SEDITION. 3. HE IS AN ENEMY TO THE LAWS. 4. HE CALLS HIMSELF THE SON OF GOD. 5. HE CALLS HIMSELF FALSELY THE KING OF ISRAEL. 6. HE WENT INTO THE TEMPLE FOLLOWED BY A MULTITUDE CARRYING PALMS IN THEIR HANDS. ORDERS:—THE FIRST CENTURION, QUINTUS CORNELIUS, TO BRING HIM TO THE PLACE OF EXECUTION, FORBIDS ALL PERSONS, RICH OR POOR, TO PREVENT THE EXECUTION OF JESUS. THE WITNESSES WHO HAVE SIGNED THE EXECUTION AGAINST JESUS ARE:—1. DANIEL

The sentence is engraved on a plate of brass in the Hebrew language, and on its sides are the following words:—"A similar plate has been sent to each tribe." It was discovered in the year 1280 in the city of Aquill (Aquilla,) in the kingdom of Naples, by a search made for the discovery of Roman antiquities, and remained there until it was found by the Commissaries of Art in the French army of Italy. Up to the time of the campaign in

DECLARATION OF INDEPENDENCE—SIGNERS OF

NAME	ORDER*	COLONY	OCCUPATION	BORN	BIRTHPLACE	DIED	AGE†
Adams, John	6	Massachusetts Bay	Lawyer	Oct. 30, 1735	Quincy....Mass.	July 4, 1826	90
Adams, Samuel	2	Massachusetts Bay	Merchant	Sept. 22, 1722	Boston....Mass.	Oct. 3, 1803	81
Bartlett, Josiah	9	New Hampshire	Physician	Nov., 1729	Amesbury....Mass.	May 19, 1795	67
Braxton, Carter	51	Virginia	Planter	Sept. 10, 1736	Newington....Va.	Oct. 10, 1797	62
Carrol, Charles	31	Maryland	Lawyer	Sept. 20, 1737	Annapolis....Md.	Nov. 14, 1832	96
Chase, Samuel	44	Maryland	Lawyer	April 17, 1741	Somerset Co....Md.	June 19, 1811	71
Clark, Abraham	14	New Jersey	Lawyer	Feb. 15, 1726	Elizabethtown..N. J.	Sept., 1794	69
Clymer, George	38	Pennsylvania	Merchant	Jan. 24, 1739	Philadelphia....Pa.	Jan. 23, 1813	75
Ellery, William	22	R. I. and Prov. Plan	Lawyer	Dec. 22, 1727	Newport....R. I.	Feb. 15, 1820	93
Floyd, William	5	New York	Farmer	Dec. 17, 1734	Setauket....N. Y.	Aug. 1, 1821	87
Franklin, Benjamin	46	Pennsylvania	Printer	Jan. 17, 1706	Boston....Mass.	April 17, 1790	85
Gerry, Elbridge	8	Massachusetts Bay	Merchant	July 17, 1744	Marblehead....Mass.	Nov. 23, 1814	71
Gwinnett, Button	40	Georgia	Merchant	1732	.....England	May 27, 1777	45
Hancock, John	1	Massachusetts Bay	Merchant	Jan. 12, 1737	Braintree....Mass.	Oct. 8, 1793	57
Hall, Lyman	47	Georgia	Physician	1731	.....Conn.	1784	53
Harrison, Benj	54	Virginia	Farmer	1740	Berkeley....Va.	April, 1791	51
Hart, John	13	New Jersey	Farmer	1715	Hopewell....N. J.	1780	65
Howes, Joseph	35	North Carolina	Lawyer	1730	Kingston....N. J.	Nov. 10, 1779	49
Heyward, Jr., Thos	56	South Carolina	Lawyer	1746	St. Luke's....S. C.	March, 1809	63
Hooper, Wm	23	North Carolina	Lawyer	June 17, 1742	Boston....Mass.	Oct., 1790	49
Hopkins, Steph	12	R. I. and Prov. Plan	Farmer	March 7, 1707	Scituate....Mass.	July 13, 1785	79
Hopkinson, Francis	29	New Jersey	Lawyer	1737	Philadelphia....Pa.	May 9, 1791	54
Huntington, Sam'l	11	Connecticut	Lawyer	July 3, 1732	Windham....Conn.	Jan. 5, 1796	64
Jefferson, Thos	32	Virginia	Lawyer	April 13, 1743	Shadwell....Va.	July 4, 1826	83
Lee, Richard Henry	48	Virginia	Soldier	Jan. 20, 1732	Stratford....Va.	June 19, 1794	63
Lee, Francis Lightfoot	55	Virginia	Farmer	Oct. 14, 1734	Stratford....Va.	April, 1797	63
Lewis, Francis	7	New York	Merchant	March 1713	Llandaff....Wales	Dec. 30, 1803	91
Livingston, Philip	3	New York	Merchant	Jan. 15, 1716	Albany....N. Y.	June 12, 1778	63
Lynch, Jr., Thos	43	South Carolina	Lawyer	Aug. 5, 1749	Pr. George's Co.S. C.	1779	30
M'Kean, Thos	39	Delaware	Lawyer	March19, 1734	New London....Pa.	June 24, 1817	84
Middleton, Arthur	50	South Carolina	Lawyer	1743	Middleton Pl...S. C.	Jan. 1, 1788	44
Morris, Lewis	15	New York	Farmer	1726	Morrisania....N. Y.	Jan. 22, 1798	72
Morris, Robert	24	Pennsylvania	Merchant	Jan. 20, 1734	Lancashire..England	May 8, 1806	73
Morton, John	16	Pennsylvania	Surveyor	1724	Ridley....Pa.	April 1777	53
Nelson, Jr., Thos	49	Virginia	Statesman	Dec. 26, 1738	York....Va.	Jan. 4, 1789	51
Paca, William	28	Maryland	Lawyer	Oct. 31, 1740	Wye Hall....Md.	1799	59
Paine, Robert Treat	4	Massachusetts Bay	Lawyer	1731	Boston....Mass.	May 11, 1814	84
Penn, John	18	North Carolina	Lawyer	May 17, 1741	Carolina Co....Va.	Sept. 1788	48
Read, George	41	Delaware	Lawyer	1734	Cecil Co....Md.	1798	64
Rodney, Caesar	52	Delaware	General	1730	Dover....Del.	1783	53
Ross, George	37	Pennsylvania	Lawyer	1730	Newcastle....Del.	July, 1779	49
Rush, Benjamin	27	Pennsylvania	Physician	Dec. 24, 1745	Berberry....Pa.	April 19, 1813	68
Rutledge, Edward	34	South Carolina	Lawyer	Nov., 1749	Charleston....S. C.	Jan. 23, 1800	51
Sherman, Roger	19	Connecticut	Shoemaker	April 19, 1721	Newton....Mass.	July 23, 1793	73
Smith, James	36	Pennsylvania	Lawyer	1710	.....Ireland	July 11, 1806	96
Stockton, Richard	10	New Jersey	Lawyer	Oct. 1, 1730	Princeton....N. J.	Feb. 27, 1781	51
Stone, Thomas	30	Maryland	Lawyer	1742	Pointon Manor..Md.	Oct. 5, 1787	45
Taylor, Geo	33	Pennsylvania	Physician	1716	.....Ireland	Feb. 23, 1781	65
Thornton, Matthew	17	New Hampshire	Physician	1714	.....Ireland	June 24, 1803	89
Walton, George	53	Georgia	Lawyer	1740	Frederick Co....Va.	Feb. 2, 1804	64
Whipple, William	20	New Hampshire	Sailor	1730	Kittery....Me.	Nov. 28, 1785	55
Williams, William	26	Connecticut	Statesman	April 8, 1731	Lebanon....Conn.	Aug. 2, 1811	81
Wilson, James	42	Pennsylvania	Lawyer	1742	St. Andrews..Scotland	Aug. 28, 1798	56
Witherspoon, John	21	New Jersey	Minister	Feb. 5, 1722	Yester....Scotland	Nov. 15, 1794	73
Wolcott, Oliver	25	Connecticut	Physician	Nov. 26, 1726	Windsor....Conn.	Dec. 1, 1797	72
Wythe, George	45	Virginia	Lawyer	1726	Elizabeth Co....Va.	June 8, 1806	80

*Order in which they signed. †Age at death.

Southern Italy it was preserved in the sacristy of the Carthusians, near Naples, where it was kept in a box of ebony. Since then the relic has been kept in the Chapel of Caserta. The Carthusians obtained by their petitions that the plate might be kept by them, which was an acknowledgment of the sacrifices which they made for the French army. The French translation was made literally by members of the Commission of Arts. The above account still obtains some currency, but is without any historical basis.

Dew.—Moisture condensed from the atmosphere upon the surface of certain bodies. The higher the temperature the more aqueous vapor can the atmosphere retain in solution. The diminution, therefore, of heat, which takes place when day is succeeded by night, in many cases renders the air incapable of retaining some of the moisture which it held in the form of vapor during the day. This is deposited on any bodies which at the time are colder than the adjacent atmosphere. It scarcely ever happens that the air is saturated with vapor, or, as it is more correctly worded, that the aqueous vapor is in the condition of greatest possible density for the temperature. As Aristotle long ago observed, dew is deposited chiefly on calm and serene nights. It is more plentiful in spring and autumn than in summer. A cloudy night interferes with the condensation, for the clouds intercept radiation from the earth, and, in many cases, prevent the temperature falling to the dew-point. Dew when congealed becomes hoar-frost.

in the custom of finding two sureties on arresting a person, who were bound over in heavy penalties that the Pursuer should prove the justice and the legality of his claim; otherwise, the Pursued should receive indemnity from the parties thus bound over. This custom, however, in process of time, degenerated into the mere nominal recognizances or sureties of "John Doe and Richard Roe." In 1852, these two celebrated characters ceased to have any legal existence.

Dollar Mark, $.—Writers are not agreed as to the derivation of this sign to represent dollars. Some say it comes from the letters U. S., which after the adoption of the Federal Constitution, were prefixed to the federal currency, and which afterward, in the hurry of writing, were run into one another, the U being made first and the S over it. The more probable explanation is that it is a modification of the figure eight, and denotes a piece of eight reals, or, the dollar which was formerly divided into eight parts. It was then designated by the figures 8-8.

Domes of the World, Great.

	Diam. feet	Hgt. feet
Pantheon, Rome	142	143
Duomo, Florence	139	310
St. Peter's, Rome	139	330
Capitol, Washington, D. C.	135½	287½
St. Sophia, Constantinople	115	201
Baths of Caracalla (ancient), Rome	112	116
St. Paul's, London	112	215

DIAMONDS OF NOTE

Carats (uncut)	Carats (cut)	Name	Discovered	Possessor
3,025¾	{516½ {309¾	Cullinan I. Cullinan II.	1905 1905	King Edward VII.
1,680(.)	*Never cut*	Braganza	1741	King of Portugal.
787½	367.9	Rajah of Mattan	1756	Rajah of Mattan (Borneo).
.....	194¾	Orloff	....	Czar of Russia (scepter).
.....	139½	Florentine	....	Emperor of Austria.
242½	.....	Tavernier	1668	Stolen in 1792.
150	138½	.....	1775	King of Portugal.
410	136⅞	Pitt or Regent	1702	King of Prussia.
254	127	Star of the South	1853	*A Brazilian diamond.*
186½	106.1	Koh-i-noor	B. C. 56	Queen of England.
.....	86	Shah	....	Czar of Russia.
89¾	78⅝	Nassac	....	Lord (Marquis of) Westminster.
288⅝	.....	*Light Yellow*	....	Stewart (diamond).
150	.....	Porter Rhodes	1872	*Found in South America.*
112	67½	*Blue*	....	
83	52½	Sancy	15th Cent.	Czar of Russia.
.....	49	Pigott	....	Bought by Messrs. Rundell and Bridge.
83½	46½	Star of South Africa	1867	
88½	44½	Dudley	....	Earl of Dudley.
.....	49½	Hope	....	Mr. Henry Hope's family.
.....	40	Pacha of Egypt	....	Khedive of Egypt.
.....	28	Charles the Bold	....	

Dixie.—Popularly applied to the States south of Mason and Dixon's line, the former boundary of slavedom. Also, in folklore, a fabulous realm of peace, plenty, and indolence, whose charms form the burden of many a negro melody. Brewer says that a Mr. Dixie was a slaveholder of Manhattan Island, compelled by public opinion to remove his human chattels to the South. In their new abode they had to toil ceaselessly, and often sighed for their old home at the North, which lapse of time and distance invested with a halo of paradisaic pleasures. This "Dixie Land" became to the entire colored race in the South a species of Utopia, similar to the Scottish "Land 'o the Leal" or the Fortunate Islands of the ancients.

Doe, John, and Roe, Richard.—Formerly, two well-known names representing a species of legal fiction. They originated

Draconian Laws.—In modern parlance, statutes of unusual severity. The laws of Draco, enacted by him when archon of Athens (B. C. 621), on account of their rigor were said to be written in blood. This code was set aside by the laws of Solon B. C. 594, which were founded on the principle of making *property*, not *birth*, the title to the honors and offices of the state.

Eagle.—Is chosen to support the lectern, or reading-desk, in churches, because the eagle is the natural enemy of the serpent. The two Testaments correspond to the outspread wings of the eagle. In royal banners, we find it as the ensign of the ancient kings of Babylon and Persia, of the Ptolemies, Seleucides, and Romans. The French under the empire adopted the same device. The *two-headed eagle* signifies a double empire, assumed by Austria, which claims to be the successor of the Caesars and Charlemagne; in 802 the second head was added to her standard, on the union of Rome and Germany. Russia, by virtue of uniting Poland to her possessions, has the same emblem. It was first used by Constantine. The *golden eagle* and the *spread eagle* descend to us from the Crusades, where they were first employed by the emperors of the East.

Earthquake.—A quaking, vibratory, undulating, or other movement of a portion of the earth's crust produced by forces acting from beneath. Certain premonitory symptoms are believed to herald the approach of a great earthquake. These are: irregularities in the seasons, sudden gusts of wind interrupted by dead calms; violent rains at unusual seasons, or in countries where they rarely occur; a reddening of the sun's disc and a heaviness in the air continuing, it may be, for months; an evolution from the soil of electric matter, inflammable gas, with sulphurous and mephitic vapors; subterranean noises like those of carriage-wheels, artillery, or thunder; cries of distress emitted by animals; and drowsiness with a feeling of seasickness in men.

When the fatal moment arrives, the ground at some spot is heaved up, and becomes the center of vibration or undulations, reminding us of those produced by the ripple wave propagated in a continually enlarging circle around the spot where a pebble has been cast into a pond. The earth swells and heaves like a rolling sea; cracks and rents are produced in all directions, like those on a window pane. Great funnel-like holes yawn open. New lakes are formed. The houses and other erections may, with their inhabitants, be destroyed over the greater part of a city in a few moments, though it is a suggestive fact that this destruction is often limited to those built on one geological stratum. Precipitous cliffs fall into adjacent seas or rivers, in the latter case more or less damming them up and producing floods. Landslips take place with similar consequences. Cattle feeding on cliffs fall into the sea and are drowned. The sea becomes agitated, and after first receding from the land, then rolls in upon it with a wave of enormous height. This is more especially the case if the focus of agitation be beneath the sea. The sensation on board ship when an earthquake occurs is as if the vessel had struck a rock.

There are certain regions to which both the points of volcanic eruption and the movements of great earthquakes are confined. The two, therefore, have probably a common origin, steam, molten matter, etc. which have forced exit to the external atmosphere, generating a volcano, and similar explosive material still seeking for vent, producing an earthquake. Connected with the latter, as with the former, are such phenomena as the ejection from the ground of torrents of water discolored by mud, and emitting mephitic vapors which, if intense, are fatal to animal life. Not uncommonly, an old volcano goes into eruption, or, more rarely, its upper part and crater fall in and a new one is generated in the midst of an earthquake. Great upheavals of land are its normal effects, though in exceptional cases there are subsidences instead of elevation.

It is supposed that, on a very moderate estimate, an earthquake occurs somewhere every day. What runs up the number of such occurrences is that there is generally a series of shocks at a place instead of a single one. Most of these are on a small scale; but others affect a wide area, and are most destructive.

Notable Earthquakes.

B. C.
- One which made Euboea an Island..... 425
- Ellice and Bula, in Peloponnesus, swallowed up..... 372
- One at Rome, when, in obediance to an oracle, M. Curtius, armed and mounted on a stately horse, leaped into the dreadful chasm it occassioned (*Livy*)..... 358
- Duras, in Greece, buried, with all its inhabitants; and twelve cities in Campania also buried..... 345
- Lysimachia and its inhabitants totally buried..... 283

A. D.
- Ephesus and other cities overturned.... 17
- One accompanied by the eruption of Vesuvius; the cities of Pompeii and Herculaneum buried..... 79
- Four cities in Asia, two in Greece, and two in Galatia overturned..... 107
- Antioch destroyed..... 115
- Nicomedia, Cæsarea, and Nicæa overturned..... 126
- In Asia, Pontus, and Macedonia, 150 cities and towns damaged..... 357
- Nicomedia again demolished, and its inhabitants buried in its ruins..... 358
- One felt by nearly the whole world..... 543
- At Constantinople; its edifices destroyed, and thousands perished..... 557
- In Africa; many cities overturned..... 560
- Awful one in Syria, Palestine, and Asia; more than 500 towns were destroyed and the loss of life surpassed all calculations..... 742
- In France, Germany, and Italy..... 801
- Constantinople overturned; all Greece shaken..... 936
- One felt throughout England..... 1089
- One at Antioch; many towns destroyed, among them Mariseum and Mamistria..... 1114
- Catania, in Sicily, overturned, and 15,000 persons buried in the ruins... 1137
- One severly felt at Lincoln..... 1142
- At Calabria; one of its cities and all its inhabitants overwhelmed in the Adriatic Sea..... 1186
- One again felt throughout England; Glastonbury destroyed..... 1274
- In England; the greatest known there.. 1318
- At Naples, 40,000 persons perished..... 1456
- At Lisbon; 1,500 houses and 30,000 persons buried in the ruins; several neighboring towns ingulfed with their inhabitants..... 1531
- On felt in London; part of St. Paul's and the Temple churches fell..... 1580
- In Japan; several cities made ruins, and thousands perished..... 1596
- Awful one at Calabria..... 1638
- One in China, when 300,000 persons were buried in Pekin alone..... 1662
- One severely felt in Ireland..... 1690
- One at Jamaica, which totally destroyed Port Royal, whose houses were ingulfed forty fathoms deep, and 300 persons perished..... 1692
- One in Sicily, which overturned fifty-four cities and towns, and 300 villages. Of Catania and its 18,000 inhabitants not a trace remained; more than 100,000 lives were lost..... 1693
- Palermo nearly destroyed; 6,000 lives lost..... 1726
- Again in China; and 100,000 people swallowed up at Pekin..... 1731
- In Hungary; a mountain turned round. 1736
- One at Palermo, which swallowed up a convent; but the monks escaped..... 1740
- Lima and Callao demolished; 18,000 persons buried in the ruins..... 1746
- In London; a slight shock, February 8th; but severer shock, March 8th..... 1750
- Adrianople nearly overwhelmed..... 1752
- At Grand Cairo; half of the houses and 40,000 persons swallowed up..... 1754
- Quito destroyed..... 1755
- Great earthquake at Lisbon. In about eight minutes most of the houses and upward of 50,000 inhabitants were swallowed up, and whole streets buried. The cities of Coimbra, Oporto, and Braga suffered dreadfully, and St. Ubes was wholly overturned. In Spain, a large part of Malaga became ruins. One-half of Fez, in Morocco, was destroyed, and more than 12,000 Arabs perished there. About half of the Island of Madeira became waste; and 2,000 houses in the Island of Mytilene, in the Archipelago, were overthrown. This awful earthquake extended 5,000 miles; even to Scotland 1755
- In Syria, extended over 10,000 square miles; Baalbec destroyed..... 1759
- At Martinico, 1,600 persons lost their lives..... 1767
- At Guatemala, which, with 8,000 inhabitants, was swallowed up..... 1773
- A destructive one at Smyrna..... 1778
- At Tauris; 15,000 houses thrown down, and multitudes buried..... 1780
- Messina and other towns in Italy and Sicily overthrown; 40,000 persons perished..... 1783
- Archindschan wholly destroyed, and 12,000 persons buried in its ruins.... 1784
- At Borgo di San Sepolcro; many houses and 1,000 persons swallowed up..... 1789
- Another fatal one in Sicily..... 1791
- In Naples; Vesuvius overwhelmed the city of Torre del Greco..... 1794
- In Turkey, where, in three towns, 10,000 persons lost their lives..... 1794
- The whole country between Santa Fe and Panama destroyed, including Cusco and Quito, 40,000 people buried in one second..... 1797
- At Constantinople, which destroyed the royal palace and an immensity of buildings, and extended into Romania and Wallachia..... 1800
- A violent one felt in Holland..... 1804
- At Frosolone, Naples, 6,000 lives lost.. 1805
- At the Azores; a village of St. Michael's sunk, and a lake of boiling water appeared in its place..... 1810
- Awful one at Caraccas (*which see*)..... 1812
- Several throughout India; district of Kutch sunk; 2,000 persons buried.... 1819
- Genoa, Palermo, Rome, and many other towns greatly damaged; thousands perish..... 1819
- One in Calabria and Sicily..... 1826
- In Spain; Mercia and numerous villages devastated; 6,000 persons perish..... 1829
- In the Duchy of Parma; no less than forty shocks were experienced at Borgotaro; and at Pontremoli many houses were thrown down, and not a chimney was left standing..... 1834
- In Calabria; Cosenza and villages destroyed; 1,000 persons buried..... 1835
- In Calabria; 1,000 buried at Rossano, etc. 1836
- In many cities of Southern Syria, by which hundreds of houses were thrown down, and thousands of lives lost.... 1836
- At Martinique; nearly half of Port Royal destroyed; nearly 700 persons killed, and the whole island damaged 1839
- At Ternate; the island made a waste, and thousands of lives lost..... 1840
- Awful and destructive earthquake at Mount Ararat, in one of the districts of Armenia; 3,137 houses were overthrown, and several hundred persons perished..... 1840
- Great earthquake at Zante, where many persons perished..... 1840
- At Cape Haytien, St. Domingo, which destroyed nearly two-thirds of the town; between 4,000 and 5,000 lives were lost..... 1842
- At Point à Pitre, Guadaloupe, which was entirely destroyed..... 1843
- At Rhodes and Macri, when a mountain fell in at the latter place, crushing a a village, and destroying 600 persons 1851
- At Valparaiso, where more than 400 houses were destroyed..... 1851
- In South Italy; Melfi almost laid in ruins; 14,000 lives lost..... 1851
- At Philippine Isles; Manila nearly destroyed..... 1852
- In northwest of England, slight..... 1852
- Thebes, in Greece, nearly destroyed.... 1853
- St. Salvador, South America, destroyed 1854
- Amasca, in Japan, and Simoda, in Nippon, destroyed; Jeddo much injured. 1854
- Broussa, in Turkey, nearly destroyed... 1855
- Several villages in Central Europe destroyed..... 1855
- Jeddo nearly destroyed..... 1855
- Moluccas, nearly 3,000 lives lost.... 1856
- In the Mediterranean; at Candia, 500 lives lost; Rhodes, 100; and other islands, 150..... 1856
- Calabria, about 22,000 lives lost in a few seconds..... 1857
- Corinth nearly destroyed..... 1858
- Quito; about 5,000 killed, immense amount of property destroyed.... 1859
- Erzeroum, Asia Minor; above 1,000 persons said to have perished..... 1859
- At San Salvador; many buildings destroyed, no lives lost..... 1859
- In Cornwall, slight.....1859-1860
- Mendoza, South America; about two-thirds of the city and 7,000 lives lost 1861
- Greece; North Morea, Corinth, and other places injured..... 1861
- Guatemala; 150 buildings and fourteen churches destroyed..... 1862
- Manila, P. I., great destruction of property..... 1863
- Cities of Arequipa, Iquique, Tacna, and Chincha, and many small towns in Peru and Ecuador destroyed; about 25,000 perished..... 1868
- Cities in Guatemala destroyed..... 1874
- Java and neighboring Isles desolated. 1883
- Several Spanish towns destroyed.... 1884
- Province of Granada, Spain; 690 perished..... 1885
- Charleston, S. C., 41 lives and $5,000,000 worth of property lost. 1886
- Severe shock in southern Europe, especially in the Riviera; estimated that 2,000 perished..... 1887
- Japan; 4,000 perished, 50,000 houses destroyed..... 1891
- Islands of Zante and Stromboli; great loss of lives and property at Zante 1893
- Assam, India; many killed..... 1897
- Severe shocks in California, San Francisco wrecked. Greatest fire in history, lasting two days. $300,000,000 property destroyed; 300,000 homeless.....April 18, 1906
- Large part of Kingston, Jamaica, destroyed..... 1907
- Sicily and Calabria, Messina and Reggio destroyed..... 1909
- Cartago, Costa Rica; 1,500 lives lost. 1910
- Guadalajara, Mexico; great part of city destroyed..... 1912
- Turkey; 3,000 lives lost, 6,000 persons injured, 40,000 homeless..... 1912
- Japan; 43 killed, 855 houses, 20,000 made destitute..... 1914
- Sicily; 200 killed, 1,000 injured..... 1914
- Central Italy; 29,978 killed. Avezzana destroyed, 372 communes damaged 1915
- Guatemala, Guatemala; 2,500 killed. 1917
- Porto Rico; 100 killed..... 1918
- Mugello Valley, Italy; 100 killed... 1919
- Giane and Codadinple destroyed.... 1920
- Kausu province, China; 100,000 killed; 10 cities destroyed..... 1920
- Mendoza province, Argentina Republic; 100 killed in city of La Valle 1920
- Orizaba district, Mexico; 3,000 killed. 1920
- Southern Albania; 42 killed..... 1920
- Elbassan, Albania; 14 killed..... 1921
- Chile; 900 killed. Copiapo partly destroyed; Oralle, Coquimbo, Vallena, Chanaral and San Fernando damaged..... 1922
- Chile; 1,800 killed..... 1923
- Japan; 200,000 killed, 125,000 injured, $900,000,000 loss of property 1923

Echo.—The repetition of a sound in the air, caused by its being reflected from some obstacle. A very sharp, quick sound can produce an echo when reflecting surface is 55 feet distant. At 112.5 feet off monosyllables can be reflected; at twice that distance dissyllables; at three times as far off trisyllables; and so on for greater distances.

Execution in Various Countries.

Country	Mode	Publicity
Austria	Gallows	Public
Bavaria	Guillotine	Private
Belgium	Guillotine	Public
Brunswick	Ax	Private
China	Sword or Cord	Public
Denmark	Guillotine	Public
Ecuador	Musket	Public
France	Guillotine	Public
Great Britain	Gallows	Private
Hanover	Guillotine	Private
Italy	Sword or gallows (1)	Public
Netherlands	Gallows	Public
Oldenberg	Musket	Public
Portugal	Gallows	Public
Prussia	Sword	Private
Russia	Musket, gallows, or sword	Public
Saxony	Guillotine	Private
Spain	Garrote	Public
Switzerland—		
Fifteen cantons	Sword	Public
Two cantons	Guillotine	Public
Two cantons	Guillotine	Private
United States (other than N. Y., Ohio, Mass., Nev. and Dist. of Columbia)	Gallows	Mostly Private
N. Y., Ohio, and Mass.	Electricity	Private
Nevada	Gas	Private

(1)Capital punishment abolished in 1876.

Expectation of Life

AGE	EXPECTATION IN YEARS	AGE	EXPECTATION IN YEARS	AGE	EXPECTATION IN YEARS	AGE	EXPECTATION IN YEARS	AGE	EXPECTATION IN YEARS
0	28.15	20	34.22	40	26.04	60	15.45	80	5.85
1	36.78	21	33.84	41	25.61	61	14.86	81	5.50
2	28.74	22	33.46	42	25.19	62	14.26	82	5.16
3	40.01	23	33.08	43	24.77	63	13.66	83	4.97
4	40.73	24	32.70	44	24.35	64	13.05	84	4.66
5	40.88	25	32.33	45	23.92	65	12.43	85	4.74
6	40.69	26	31.93	46	23.37	66	11.96	86	4.21
7	40.47	27	31.50	47	22.83	67	11.48	87	3.90
8	40.14	28	31.08	48	22.27	68	11.01	88	3.67
9	39.72	29	30.66	49	21.72	69	10.50	89	3.56
10	39.23	30	30.25	50	21.17	70	10.06	90	3.43
11	38.64	31	29.83	51	20.61	71	9.60	91	3.32
12	38.02	32	29.43	52	20.05	72	9.14	92	3.12
13	37.41	33	29.02	53	19.49	73	8.69	93	2.40
14	36.79	34	28.62	54	18.92	74	8.25	94	1.98
15	36.17	35	28.22	55	18.35	75	7.83	95	1.62
16	35.76	36	27.78	56	17.78	76	7.40		
17	35.37	37	27.34	57	17.20	77	6.99		
18	34.98	38	26.91	58	16.63	78	6.59		
19	34.59	39	26.47	59	16.04	79	6.21		

WHY DO WE HAVE EYEBROWS?

Eyebrows.—Eyebrows call attention to our eyes which are things of great beauty. Secondly, eyebrows prevent perspiration from getting into the eyes from the forehead.

WHY DO EXPLOSIONS BREAK WINDOWS?

Explosion.—An explosion hurls back the air in huge waves, similar to the waves of the ocean. When these waves come into contact with an object there is a contest, and the weaker side is crumpled up and pushed back by the other. Large panes of glass whose only support and protection are the extreme edges, present an easy mark for air-waves. Therefore, powerful explosions often break many windows. The ground beneath, the walls and roof of a building, all receive the effects of these air-waves exactly like the windows. However these being much stronger than the windows are usually strong enough to overcome the air-waves.

Fire.—Burning mostly the union of oxygen with something else. When this union takes place slowly, heat is made, but we see no fire or light; when it takes place quickly, both heat is felt and fire or flame is seen. When iron rusts it is the same kind of burning as when wood blazes in the fire; but the oxygen of the air unites with the iron so slowly that the heat is not enough to be felt. If the union be made to take place quickly, both heat will be felt and light will be seen. When the heel of your boot strikes a stone, you often see a spark fly from it. This is burning iron. The iron nail in your heel strikes the stone, a bit of it is knocked off, and heat enough is made by the blow to cause the iron to unite with the oxygen of the air, and thus we see it burn. A piece of iron or steel may easily be heated enough to make it burn in a jar of oxygen, and a most brilliant light will be given off by it. When wood or coal is set on fire, it gives out both heat and light; but if we could give it still more oxygen it would burn still brighter. We do this when we blow a fire with the bellows, and this is the reason why it then blazes up and burns more briskly. Some things take fire—that is, unite with oxygen much more easily than others. When we scratch a match it at once bursts into flame. This is because it has a little phosphorus on the end, and this has such a liking for oxygen that it has usually to be kept in water to keep it from uniting with it. The phosphorus on the end of the match is mixed with glue, which keeps it from taking fire; but when the match is scratched on any rough thing heat enough is made to cause the phosphorus to unite quickly with the oxygen of the air, and it bursts into flame. Wood and coal have not so great a liking for oxygen as phosphorus, and need much more heat to make them unite with oxygen.

Fires, Great and Historic.—

London, 1912.—Began at London Bridge on the Southwark side, extended to the other side and hemmed in crowd.

London, Sept. 2-6, 1666.—89 churches, 13,200 houses destroyed; 400 streets laid waste, 200,000 persons homeless. Ruins covered 436 acres.

Richmond, Va., Dec. 26, 1811.—Governor and many leading citizens perished.

New York, Dec. 16, 1835.—600 buildings; loss $20,000,000.

Washington, D. C., Dec. 15, 1836.—General post-office and patent office destroyed, with 10,000 valuable models, drawings, etc.

New York, Sept. 6, 1839.—$10,000,000 worth of property.

Pittsburgh, April 10, 1845.—1000 buildings; loss, $6,000,000.

Philadelphia, July 9, 1850.—400 buildings; loss, $1,500,000; 39 persons killed.

St. Louis, May 4, 1851.—Large proportion of the city burned; loss, $15,000,000.

San Francisco, May 3-5, 1851.—2,500 buildings; loss, $3,500,000.

Washington, D. C., Dec. 24, 1851.—Congressional library, 35,000 volumes, with works of art burned.

Santiago (Spain), Dec. 8, 1863.—A fire in the church of the Campania; 2000 persons killed, mostly women.

Charleston, S. C., Feb. 17, 1865.—Almost totally destroyed, with large quantities of naval and military stores.

Richmond, Va., April 2 and 3, 1865.—Great part destroyed by fire at time of Confederate evacuation.

Portland, Me., July 4, 1866.—Almost entirely destroyed; loss, $15,000,000.

Chicago, Oct. 8-9, 1871.—Three and one-half square miles laid waste; 17,450 buildings destroyed; 200 persons killed; 98,500 made homeless; loss over $200,000,000.

Great forest fires in Michigan and Wisconsin, Oct. 8-14, 1871.—2000 lives lost.

Boston, Nov. 9-11, 1872.—800 buildings; loss $73,000,000; 15 killed.

Chicago, July 14, 1874.—Another great fire; loss $4,000,000.

Fall River, Mass., Sept. 19, 1874.—Great factory fires; 60 persons killed.

St. John, N. B., June 20, 1877.—Loss, $12,500,000.

Brooklyn Theater burned, Dec. 5, 1876.—300 lives lost.

Seattle and Spokane, Wash., 1889.—About $10,000,000 each.

Jacksonville, Fla., May 3, 1901.—Property loss $10,000,000.

Iroquois Theatre, Chicago, Dec. 30, 1903.—Entailed a loss of 639 lives.

Baltimore, Md., Feb. 7-8, 1904.—Financial loss, $85,000,000.

Rochester, N. Y., Feb. 26, 1904.—Fire in business center, loss, $2,700,000.

Toronto, Canada, April 9, 1904.—Destruction in business district of $12,000,000.

San Francisco, Cal., April 18-19, 1906.—Fire and earthquake (see earthquakes); loss, $350,000,000; most disastrous fire recorded.

Iloilo, Island of Panany, P. I., April 19, 1907.—20,000 homeless.

Coney Island, N. Y., July 28, 1907.—Loss $1,500,000.

Boyerstown, Pa., January 13, 1908.—25 persons burned in a theatre.

North Collinwood, Cleveland, Ohio, 1908.—167 children burned in a public school.

Chelsea, Mass., April 12, 1908.—Loss, $6,000,000.

Kootenay Valley, B. C., Aug. 4, 1908.—Forest fires burned three towns and $6,000,000 worth of property.

New Orleans, La., Aug. 30, 1908.—Loss $1,500,000.

Albany, N. Y., 1911.—State Capitol Bldg., $1,500,000 loss.

Coney Island, N. Y., 1911.—Amusement Park; $2,725,000 loss.

Porcupine District, Ont., 1911.—Mining property, lumber mills, etc., $3,500,000 loss.

Houston, Tex., 1912.—Business district, $4,500,000 loss.

New York City, 1912.—Equitable Bldg., $3,000,000 loss.

Salem, Mass., 1914.—1,700 buildings destroyed, $14,000,000 loss.

Jersey City, N. J., 1916.—Railroad terminal warehouses and steamer; $11,000,000 loss.

New York Harbor, 1916.—Black Tom Island; $11,000,000 loss.

Ottawa, Can., 1916.—Parliament Bldgs., $3,000,000 loss.

Halifax, N. S., 1917.—1,500 killed. Explosion of war materials and fire; 20,000 homeless; 4,000 injured; $50,000,000 loss.

Kingsland, N. J., 1917.—Munition factory; $12,000,000 loss.

Minnesota, 1918.—Forest fires; $35,000,000.

Morgan Station, N. J., 1918.—Munition plant; $20,000,000 loss.

St. Louis, Mo., 1918.—Government warehouse; $3,000,000 loss.

Long Island, N. Y., 1919.—Oil works and other plants; $4,250,000 loss.

Savannah, Ga., 1919.—Fertilizer factory, cotton and railroad terminals; $4,000,000 loss.

Galveston, Tex., 1920.—Morgan line piers and warehouses, $3,250,000 loss.

Old Point Comfort, Va., 1920.—Chamberlin Hotel; $2,000,000 loss.

Hoboken, N. J., 1921.—4 piers, 20 lighters; $6,000,000 loss.

Tokyo, Japan, 1921.—1,000 houses in residence district; $12,500,000 loss.

Symrna. Asia Minor, 1922.—Great loss of life. City almost completely destroyed. 100,000 homeless; $12,500,000 loss.

Berkeley, Cal., 1923.—600 residences covering 35 blocks; $5,000,000 loss.

Mexicali, Mexico, 1923.—30 killed. Fire started in theatre; $5,000,000 loss.

Jersey City, N. J., 1924.—$8,000,000 loss on waterfront.

Flag, United States.—On June 14, 1777, the United States Congress passed a resolution declaring "that the flag of the thirteen United States be stripes alternate red and white; that the union be thirteen stars, white in a blue field, representing the new constellation." In 1794, Congress decreed that after May 1, 1795, "the flag of the United States be fifteen stripes, alternate red and white, and that the union be fifteen stars white in a blue field." This change was made to mark the admission of Vermont and Kentucky into the Union. The stars and stripes were then equal and a star and stripe were to be added with the admission of each new state. It was realized, however, that the addition of a stripe for each new state would soon render the flag too large, and a resolution was accordingly passed by Congress, April 4, 1818, reducing the number of stripes to thirteen—representing the original Union—and making the stars twenty in number. It was furthermore enacted that a new star should be added for each new state admitted into the Union. The flag now contains

forty-eight stars, corresponding to the forty-eight states.

According to tradition the first flag, known as the "Stars and Stripes," was made by Mrs. Betsy Ross of Philadelphia, about whom succeeding years have thrown a glamour of patriotic romance.

Floods and Inundations, Great.—

Sea at Dort.—drowned 72 villages and 100,000 people..... 1421
Severn overflowed 10 days..... 1483
Holland; 400,000 drowned..... 1530
At Catalonia.—50,000 persons perished..... 1617
Part of Zealand overflowed; 1300 drowned; vast damage at Hamburg 1717
Yorkshire.—A dreadful inundation. 1771
In Navarre.—2000 persons drowned. 1787
Inundation of the Liffey.—Immense damage in Dublin..... 1802
Lorca, a city of Murcia, in Spain.... 1802
Hungary.—24 villages destroyed by Danube..... 1811
Inundations in Hungary, Austria, and Poland, summer of..... 1813
In Silesia.—6000 inhabitants perished; the ruin of Macdonald's French army accelerated by the floods; in Poland 4000 lives supposed to have been lost..... 1813
In Germany.—Great loss of life and property..... 1816
In England.—5000 acres deluged in the Fen countries..... 1819
At Dantzic.—The Vistula breaking dykes; 10,000 head of cattle and 4000 houses destroyed; numerous lives lost..... 1829
At Vienna.—The dwellings of 50,000 under water..... 1830
Avignon.—100 houses swept away, 228 at LaGuillotiere; about 300 at Vaise, Marseilles, and Nimes... 1840
Inundation in the center, west, and southwest of France; numerous bridges, with the Orleans and Vierzon viaduct (cost 6,000,000 francs) swept away. The damage exceeded 100,000,000 francs..... 1846
Great inundation at New Orleans, La.—1600 houses flooded..... 1849
Bursting of the Bradfield reservoir (Sheffield).—About 250 persons drowned..... 1864
England, in Yorkshire, Lancashire, and Derbyshire.—Farms destroyed, mines flooded, mills thrown down. 1866
Italy.—Thousands of people unhoused..... 1872
Mill River valley (near Northampton, Mass.)—Several villages destroyed, 144 perished..... 1874
Eureka, Nevada.—30 drowned..... 1874
Western Pennsylvania.—220 persons drowned..... 1874
Toulouse, Garonne.—1000 lives lost. 1875
Szegedin, Hungary.—Town nearly destroyed; of 6566 houses, only 331 stood; 77 persons drowned..... 1879
Murcia, Spain.—1000 lives lost, about 2000 houses destroyed..... 1879
Floods in Iowa, Kans., Minn., Mo.. 1881
Ohio and Mississippi valleys flooded. —Feb. $15,000,000 loss..... 1882
In Pennsylvania, Ohio, and Kentucky. —Very severe at Cincinnati..... 1883
Ohio River.—15 deaths and 5000 homeless..... 1884
Floods in Pennsylvania, New York, and New England.—Great loss of property..... 1886
Storm and flood in Texas.—Houses in Galveston washed away; 38 lives lost and more than $5,000,000 damage. 1886
Johnstown, Pa.—Several small towns and the city of Johnstown swept away, 2235 persons perished..... 1889
The Galveston flood.—7,000 lives being lost, and $30,000,000 worth of property destroyed, 3,000 buildings destroyed..... 1900
Kansas City, Mo. and Mississippi River towns.—Many lives lost.... 1903
Hepner, Oregon.—300 drowned..... 1903
Hong Kong, China.—10,000 drowned 1906
Paris, France.—$200,000,000 damage 1910
Mississippi Valley.—200 drowned, 200,000 homeless, $45,000,000 damage..... 1912
Dayton, Ohio.—84 drowned. City nearly destroyed. $128,000,000 damage..... 1913
Japan.—1,100 drowned..... 1913
Ohio and Indiana.—730 drowned. $180,873,000 damage, 60,000 buildings destroyed..... 1913
China.—2,000 drowned, $90,000,000 damage in province of Kwangtung, Kwangsi and Kiangsi..... 1915
Gulf coast.—300 drowned, $20,000,000 damage..... 1915
Shanghai, China.—500 lost, $5,000,000 loss..... 1915
Cabin Creek Valley, W. Vir. — 100 lost, 5,000 homeless; $5,000,000 damage..... 1916
South Atlantic Coast.—50 lost, $15,000,000 damage..... 1916
Tientsin, China.—Millions homeless, $50,000,000 damage, 15,000 miles inundated..... 1917
Porto Rico.—116 lost, $3,500,000 loss 1919
Pueblo, Colo.—120 lost, 140 missing. $20,000,000 loss..... 1921

Frost, crystals of frozen dew. When the watery vapor in the air is so cool that it cannot condense, or turn to water, without going below the freezing point (32 degrees Fahr.), it will fall to the earth in the shape of frost crystals instead of dew. This is called *Hoar Frost*, and sometimes white frost. This is different from freezing, commonly called frost, which is simply the hardening of water and moisture from the cold of winter. The frost work on the inside of window panes in warm rooms in cold weather, which sometimes takes the form of ferns or feathers of ice, is also a freezing and not a true frost. Moisture from the warm air of the room gathers on the glass, just as dew falls on grass, and is cooled and frozen there. But true frost is not frozen dew, that is, moisture which falls as dew and freezes afterward, but moisture which falls already formed in ice crystals. *Black Frost* is caused by a cold so severe that plants freeze and turn black, without showing any signs of hoar frost on the outside.

Gardens of the World, Popular.—

Garden of Eden.—(1) First abode of man, supposed to be located near the city of Babylon. (2) A name often applied to Eden Park, Cincinnati, Ohio.
Garden of England.—The Isle of Wight, and the counties of Worcestershire and Kent have all been so named.
Garden of Erin.—Carlow in Leinster, Ireland.
Garden of Europe.—Italy; an appellation well deserved on account of its healthful climate, picturesque scenery, astonishing fertility, and the great variety of its agricultural products.
Garden of France.—The Department of Indre-et-Loire, a district noted for its rich soil and lovely landscapes.
Garden of Gethsemane.—East of Jerusalem, near the Brook Kedron.
Garden of Helvetia.—Name given to Thurgau, Switzerland.
Garden of Hesperides. In the western part of the mythological world.
Garden of India.—Oude.
Garden of Italy.—The Island of Sicily, which bears the same relation to Italy, in respect of beauty and fertility, that Italy bears to the rest of Europe.
Garden of Kentucky.—Bourbon County, in that State.
Garden of Scotland.—Morayshire has been so named.
Garden of Spain.—Andalusia. It is fertile to the highest degree.
Garden of South Wales.—The southern division of Glamorganshire.
Garden of the West.—A name sometimes applied to the whole of that vast arable district west of the Mississippi, on account of its generous yield of grain, but more particularly applied to Kansas.
Garden of the World.—An appellation often bestowed on that vast expanse of country watered by the Mississippi and its tributaries—a region whose soil is of unsurpassed productiveness.
Garden of Argentina.—Turcuman, a province of Argentina.
Garden of the East.—Ceylon and Burmah. Both so called. Ceylon is also called "The Resplendent"; the "Jewel of the Eastern Sea;" the "Gem of Paradise." Its climate and productions are quite unrivaled.

Gas.—The common gas which we burn for light is obtained from coal. It can be made very easily by breaking a piece of bituminous or soft coal into little bits, filling the bowl of a tobacco pipe with them, and covering the mouth over with moist clay. When the clay is well dried the bowl of the pipe should be put into the fire, where it will heat red hot. In a short time a kind of yellow smoke will issue from the stem of the pipe, which when lighted will burn with a bright flame.

This smoke is coal gas, but it is not pure like that which we burn in our houses. If the end of the pipe stem be put under water, the gas will rise up through the water in bubbles. These bubbles of gas can be collected in a small bottle or other vessel in a very simple way. Fill the bottle full of water and turn it upside down in a bowl of water. The water will not run out of the bottle, because the pressure of the air on the water in the bowl will keep it in its place. If now the end of the pipe stem be put under the mouth of the bottle, the bubbles of gas will ascend into it, and gradually push the water down; if there be gas enough in the pipe bowl, it will fill the bottle, taking the place of the water. Thus will have been obtained a bottle of gas, which will burn when lighted. All the coal gas used in cities and towns is made and collected in the same way, only the coal is heated in great brick or iron ovens, instead of in tobacco pipes, and the gas is collected in immense iron gas-holders instead of in bottles.

If now the clay be removed from the pipe, some coke will be found in the bowl. This is some of the carbon of the coal; a part only of the carbon having gone off with all the hydrogen to make the gas, and this being all that is left. When we burn

coal in the open air we get from it flame and ashes, but when it is consumed in tight ovens, gas and coke are obtained. In making gas the coal is not really burned, but distilled, and the gas passes from the coal without making any flame. The ovens for distilling coal are called retorts. Several are usually built together, so that they may all be heated by one furnace, for there must be a fire outside the retort to heat the coal inside. When the retorts are filled with coal, the doors are closed tightly and the coal inside is heated red hot, when it gives off air, steam, tar, ammonia and gas. All these pass off by means of a great pipe at the back of the retorts; the tar and ammonia run off into cisterns, and the hot gas goes into coolers, where it is cooled. It is next purified by passing over lime, which takes up all the acids in it, and lastly it is put into the gasometers for use.

Geysers.—Certain intermittent hot springs in various portions of the earth, the most notable specimens being those in the Yellowstone region of the Rocky Mountains and those of the southwestern division of Iceland, about 30 miles from Mount Hecla. Nearly 100 of the latter are said to break out within a circle of two miles. Few of them play longer than five or six minutes at a time, although sometimes they go on for half an hour. The largest is called the Great Geyser. It has a pipe 78 feet in vertical depth, and from eight to ten feet in diameter, but gradually widening as it rises into the basin. The latter is 56 feet long by 46 feet broad, and is lined with an incrustation of silica deposited from the hot water, the process being aided by the alkali soda, which, with minute quantities of various salts, exists in the water. When the geyser is about to act, subterranean noises are heard like the distant firing of cannon, and the earth is slightly shaken; then a column of the liquid element is thrown up to the height of 100 or 200 feet. Steam after a time makes its way out of the rent, and the fountain ceases to play. The second in size is the Strokkur. If stones or turf be thrown down its pipe, an eruption will follow in a few minutes and eject them with great force. Geyser action is produced by the heating of the lower part of the geyser tube, as Professor Tyndall was able to show experimentally.

There are geysers in New Zealand, in the Northern Island, as remarkable as those of the Yellowstone Park or of Iceland. They are on three parallel lines running in a direction north 36 degrees east by the compass.

Giant's Causeway.—A remarkable group of basaltic rocks on the north coast of County Antrim, Ireland, eight miles east by north east of Portrush. It consists of a vast number of columns, generally pentagonal or hexagonal. The causeway proper is a low promontory formed of closely packed columns. Altogether there are about 40,000 pillars, fitting into each other most perfectly, and jointed horizontally. Various more or less detached groups are known as the Giant's Loom, Giant's Organ, Lady's Fan, etc. East of the causeway proper is the Giant's Amphitheatre, a small bay with cliffs 350 feet high, formed in its upper part of two tiers of basaltic columns from 60 to 80 feet in height. Beyond this is Spanish Bay, the scene of the wreck of an armada vessel; and still farther east the noble promontory of Pleaskin Head, 400 feet high, with double tiers of lofty columns separated by a band of ochre. The peculiar columnar structure of the causeway rocks is shown by geologists to result from the contraction in cooling of the lava of which they are composed. The Giant's Causeway derives its name from the legend which ascribes its construction to Finn M'Coul or Fingal, who bridged the channel between Ireland and Scotland, in order that the giants might pass from Antrim to Staffa.

Glacier.—A river of ice slowly descending a mountain side. A glacier commences primarily as a frozen mass of snow, formed above the line of perpetual congelation, and consolidated partly by pressure and partly by the freezing of water infiltered into it from its surface. In the Swiss Alps the glaciers are between 20 and 30 miles long, their greatest breadth two or three miles, and their depth more than 600 feet. Why the glacier descends has been a very disputed question. Saussure attributed it to its weight, aided by the water beneath it. Charpentier and Agassiz to dilatation produced by the freezing of water in the interstices, a view which Hopkins opposed on mathematical and mechanical grounds. Agassiz and Prof. James Forbes discovered that the glacier, like an ordinary river, moved faster on the surface than below, and in the middle than at the sides. Forbes therefore believed that viscosity was the cause of the glacier's action. Tyndall attributed it chiefly to regelation, that is, to parts of it melting and freezing again. When, in descending a mountain-side, the glacier has to force its way through a narrow channel, the brittle ice is crushed and broken, but by virtue of "regelation" it freezes anew when it has cleared the obstruction. Prof. Tyndall has imitated the whole process artificially on a small scale, and his is now the accepted explanation of glacier-movement. As a glacier descends, it carries with it stones, which, on its melting, are deposited in a moraine. By these moving beneath it, and projecting from it, the subjacent rocks are polished and scored with parallel furrows. It makes also a dome-shaped mass of smoother rock, called in Switzerland *roches moutonnées*. It scoops out lakes. If it reach the sea, and descend into it, huge masses of it float off as icebergs.

Gunpowder.—Gunpowder consists of nitre or *saltpetre*, *charcoal*, and *sulpher*, and all nations prepare it in nearly the same way, using about 75 pounds of nitre, 15 pounds of charcoal, and 10 pounds of sulphur for 100 pounds of gunpowder. The materials are first made as pure as possible, the nitre being soaked in spring water, then boiled and cooled, then filtered through canvas bags and allowed to harden again. This is done twice until it becomes perfectly white. The sulphur is also purified twice by being kept melted for several hours in gun-metal pots. The charcoal, which is made from dog-wood, alder, or willow, is burned in large vessels of iron instead of in the open air, as in the case of most charcoal, and must be thoroughly charred and soft.

The three substances are first ground separately to a fine powder, and are then ground together with a little water until they are thoroughly mixed. The mixture, now called "millcake," is next pressed very hard in a hydrostatic press into thin smooth cakes, called "presscake," which is afterward broken up between toothed rollers and rubbed through sieves until it is made into grains of the right sizes. The next thing is glazing, which is done by putting the grains into canvas bags or into a barrel, which is turned round very fast. The grains, by rubbing against each other, are thus worn round and smooth, and get a glaze or polish. This is very important, because glazed powder keeps dry and bears shaking better than other powder. After glazing, the powder is dried in rooms heated by steam pipes.

The manufacture of gunpowder is very dangerous, because it is liable to explode and blow up the mill. When gunpowder explodes, that which was a solid is suddenly turned into a gas, and takes up about 2000 times as much room as it did in its previous state. As this gas must find room for itself, it drives everything out of its way; it blows up a house in which it is stored, splits open rocks in a quarry or mine, or forces a ball out of a cannon. In making *fireworks* gunpowder is used in many different forms.

Halloween, is the night of October 31st, the eve of All Saints', all All-hallows Day, which is November 1st, and is probably a relic of pagan times or of mediæval superstitions, as it has nothing whatever to do with the church festival. In England and Scotland it is especially selected as the time for trying spells and divinations in love affairs. The superstitious tradition regarding it is that it is the night of all others when supernatural influences prevail; when spirits of the invisible and visible world walk abroad, for on this mystic evening it was believed that the human spirit was enabled, by the aid of supernatural power, to detach itself from the body and wander through the realms of space. There is a similar superstition in Germany concerning "Walpurgis night"—the night preceding the first of May. On this night, the German peasants believe that there is a witch festival, or gathering of evil spirits, on the summit of the Brocken in the Hartz Mountains, and the malign influence of this convocation was believed to be felt all over the surrounding country. It was an old custom, and still observed in some places, to light great bonfires of straw or brush on that night, to drive away the spirits of darkness supposed to be hovering in the air. Considering that All Saints' Day was originally kept on May 1st, there would appear to be but little doubt that Allhallow eve and Walpurgis night have a common origin, which, doubtless, dates back to the earliest belief in a personal and all-powerful Evil One—the Chaldean's Power of Darkness.

Hail.—There are two kinds of hail; the small grains, like fine shot, which often fall in winter, but rarely in summer, and which generally come before snow; and larger hail, which falls usually in hot weather, and is most severe in very hot hot climates. The first is caused by the freezing of rain drops as they pass in falling through colder air than that from which they started; the second, or common hail, results from the meeting of two currents of air, one very warm and loaded with vapor, and the other very cold.

It is known, by going up in balloons and in other ways, that the air is not all of the same heat, but is divided into cold and warm parts or layers, a layer of very cold air, much below freezing, often lying between two warm parts. When bodies of warm damp air move upward into one of these layers of cool dry air, the damp air is at once changed into ice, and hail falls. Sometimes the hailstones thus formed are very small, and sometimes many meet and freeze together into large masses. They are usually not much larger than a walnut or a pigeon's egg, but some have been seen

as large as an orange. In 1860, during a storm which took place while an English ship was off the Cape of Good Hope, hailstones of the size of half a brick fell and hurt many of the sailors. Hailstones often do great harm to crops, especially in France, Germany, and India.

Harp of Ireland.—The origin of the harp in the arms of Ireland, is said to be as follows:—On Henry the Eighth being presented by the Pope with the harp of Brian Borhu, he was induced to change the arms of Ireland, by placing on her coins a representation of the relic of her most celebrated native king.

Highest Buildings, Monuments, etc.—

	Feet
Eiffel Tower, Paris	984
Woolworth, New York, N. Y.	792
Terminal Tower Building, Cleveland, O.	708
Metropolitan, New York, N. Y.	700
Municipal Building, New York, N. Y.	560
Chicago Temple Building	556
Washington Monument, Washington, D. C.	555
City Hall, Philadelphia, Pa.	548
Pyramids, Cheops, Egypt	543
Bankers Trust, New York, N. Y.	539
Cathedral, Cologne	511
Cathedral, Antwerp	476
Cathedral, Strassburg	474
Tower, Utrecht	464
Steeple, St. Stephen's, Vienna	460
Pyramid, Khafras, Egypt	456
St. Martin's Church, Bavaria	456
Chimney, Port Dundas, Glasgow	454
St. Peter's, Rome	448
Notre Dame, Amiens	422
Salisbury Spire, England	406
Cathedral, Florence	380
Cathedral, Cremona	372
Cathedral, Freiburg	367
St. Paul's, London	365
Soldiers and Sailors, Indianapolis	365
Cathedral Seville	360
Pyramid, Sakkarah, Egypt	356
Cathedral, Milan	355
Notre Dame, Munich	348
Invalides, Paris	347
Parliament House, London	340
Cathedral, Magdeburg	337
St. Patrick's, New York	328
St. Mark's, Venice	328
Statue of Liberty, New York	321
St. James Cathedral, Toronto	316
Cathedral, Bologna	306
Cathedral, Norwich, England	309
Cathedral, Chichester, England	300
Cathedral, Lincoln, England	300
Capitol, Washington	300
Trinity Church, New York	283
Cathedral, Mexico	280
Cathedral, Montreal	280
Campanile Tower, Florence	276
Column, Delhi	260
Cathedral, Dantzic	250
Porcelain Tower, Nankin	248
Custom House, St. Louis	240
Canterbury Tower, England	235
Notre Dame, Paris	232
Chicago Board of Trade	230
St. Patrick's, Dublin	226
Cathedral, Glasgow	225
Bunker Hill Monument	220
Notre Dame, Montreal	220
Cathedral, Lima	220
Cathedral, Rheims	220
Cathedral, Garden City, L. I.	219
St. Peter and Paul, Philadelphia, Pa.	210
Washington Monument, Baltimore	210

Ice.—Water congealed so as to be rendered solid by cold. Dana ranks water as a mineral species, and notes that its crystals are hexagonal and occur usually in compound stellate forms. Ice is transparent owing to the close contact of the crystals which compose it; this makes the individual particles so blend as to render the mass optically, as well as mechanically, continuous. Its specific gravity is 0.194. Water freezes at 32 degrees of Fahr., at zero (0) Centigrade. Its greatest density is at about 40 degrees Fahr., four or five degrees Centigrade, hence ice floats on water. The surface of sheets of water is frozen while their mass remains liquid. Ice one inch and a half thick will support a man; four inches thick will support cavalry; five inches thick will support an 84 pound cannon; 10 inches thick will support a multitude; 18 inches thick will support a railroad train.

Iceberg.—A hill of ice which is either floating in the ocean or has somewhere taken the ground. The genesis of an iceberg is generally on the shore; it exists first as a glacier but when this in its onward progress reaches the cliffs and glides down them into the ocean, it loses the name of glacier and takes that of iceberg. Scoresby counted 500 of them drifting between latitude 69 degrees and 70 degrees north. The magnitude of some icebergs is very great. Captain Sir John Ross saw several of them together in Baffin's Bay aground in water 1,500 feet deep. One seen off the Cape of Good Hope was two miles in circumference and a 150 feet high. Others were from 250 to 300 feet above the sea. For every cubic foot above there must be at least eight below. The rotation of the earth makes the icebergs which escape from the North Polar regions in proximity to Europe drift partly to the westward and they rarely reach Britain, though Cowper has a poem "On the Ice-islands seen floating in the German Ocean, March 19, 1799." Many impinge upon the eastern shores of Iceland; escaping that island they are born away in the direction of the eastern shores of America. They do not approach the equator nearer than about 40 degrees north and 36 degrees to nine degrees south. When an iceberg reaches a coast and melts, it generates chilling fogs, and so reduces the temperature as temporarily to deteriorate the climate of the adjacent land. They carry with them earth, rocks, etc., obtained when they were in the glacier state. These, when the ice melts, fall to the bottom of the sea and form moraines. When they scrape their way over the bed of the ocean they score the several rocks over which they pass. They often transport animals and seeds of plants to great distances.

John Bull.—A collective nickname for the English people, first used in Arbuthnot's ludicrous "History of Europe." It is now also applied to characteristic English traits.

Labyrinth.—One of the wonders of ancient Egypt. It consisted of 12 palaces, beneath which were vast subterraneous excavations, equal in size to the palaces above, in which were preserved the bodies of the kings who constructed them, and the sacred crocodiles which the Egyptians worshipped as deities.

Liberty Bell was cast in London in 1752 by order of the Pennsylvania Assembly, for use in their State House. The bell reached Philadelphia the following year, but it cracked without any apparent reason when it was rung to test the sound, and it was necessary to have it recast. This was done by Philadelphia workmen, and in June, 1753, it was again hung in the belfry of the State House. On July 4, 1776, when the Continental Congress declared the colonies independent of Great Britain, the bell was rung for two hours, so the story goes, by the old bellman, who was so filled with enthusiasm and excitement that he could not stop. It was taken down when the British threatened Philadelphia in 1777, and removed to Allentown, Pa., but was returned to the State House in 1778, and a new steeple was built for it. On July 8, 1835, it cracked tolling for John Marshall's death and although an attempt has been made to restore its tone by sawing the crack wider, it has been unsuccessful. During the World's Fair in New Orleans in 1885, the bell was sent there for exhibition. It left Philadelphia, January 24th, in charge of three custodians appointed by the mayor of the city, who did not leave it day or night until it was returned in June of the same year. The train carrying the bell was preceded over the entire route by a pilot engine. The following words are inscribed around it: "By Order of the Assembly of the Province of Pennsylvania, for the State House, in the City of Philadelphia, 1752," and underneath, "Proclaim liberty through all the land unto all the inhabitants thereof—Levit., xxv. 10." Its weight is about 2,000 pounds.

Lightning.—The dazzling light emitted by a large spark darting from clouds charged with electricity. In the lower regions of the atmosphere it is white, in the upper one somewhat violet, as is the spark of an electrical machine in a vacuum. It does not uniformly take the zigzag form conventionally represented. It is seen sometimes like a sharp and rugged antler standing upright, and across it a line of gleaming circles like a series of huge golden coins or a string of illuminated beads, and other forms. In the upper regions of the sky, where the air is rarefied, it tends to take the form of sheet-lightning, sometimes called heat lightning; in the lower regions it becomes more concentrated and moves in lines. As a rule lightning strikes objects from above, though occasionally ascending lightning has been seen. The loftiest buildings are most in danger from its effects, and so are tall trees, especially oaks and elms; the resin of pines, interfering with their efficiency as conductors, makes them more safe. When it sinks deeply into the ground, it sometimes vitrifies the rocks, producing fulgurites. Light travels with such speed that a flash is seen the instant it occurs. Thunder, which is simply the noise of the explosion, takes about five seconds to travel a mile, hence the distance of any flash, followed by thunder, may be calculated. If a mile distant, the danger is but slight.

Longevity, Human.—The following list of instances of remarkable longevity is given on the authority of Prichard, Whitehurst, Bailey, and others.

	Died	Age
Apollonius of Tyana	99 A. D.	130
St. Patrick	491 A. D.	122
Attila	500 A. D.	124
Llywarch Hên	500 A. D.	150
St. Coemenge	618 A. D.	120
St. Mongah of Kentigern	781 A. D.	185
Piastus, King of Poland	861 A. D.	120
Countess of Desmond	1612 A. D.	145
Thomas Parr	1635 A. D.	152
Thomas Damme	1648 A. D.	154
Dr. Mead, Hertfordshire	1652 A. D.	148
James Bowles, Kenilworth	1656 A. D.	152
Henry Jenkins	1670 A. D.	169
William Edwards	1688 A. D.	168
Petrarch Czartan	1724 A. D.	185
Margaret Patten	1739 A. D.	137
John Roven	1741 A. D.	172
Mrs. John Roven	1741 A. D.	164
John Effingham, Cornwall		144
Thomas Winslow, a captain under Cromwell	1766 A. D.	146
Draakenburg, a Dane	1772 A. D.	146
Jonas Warren, Ballydole	1787 A. D.	167
Jonas Surington, Bergen, Norway	1797 A. D.	159
Demetrius Grabowsky, Poland	1830 A. D.	169
Bridget Devine	1845 A. D.	147

Lynch Law.—Summary punishment without form of law; mob law; or, as in the case of the Vigilance Committee of the Far West, the mode of ridding an outraged community of its incorrigible offenders. There are various accounts of the origin of the term. One, which is perhaps as probable as any, is to the effect that the name of "Lynch Law" was derived from a native of Campbell Co., Va., old Colonel

Lynch, who was in the habit of administering summary punishment to miscreants of every description without paying any attention to the ordinary processes of law. Hence he was called "Judge Lynch;" and this, it is said, is the true origin of the terms "lynching" and "lynch law."

Maelstrom, The, which means, literally, "grinding stream," is situated on the Norwegian coast, southwest of the Loffoden Isles, and is the most remarkable whirlpool in the world. It runs between the Island of Moskenes and a large solitary rock in the middle of the straits. The strong currents, rushing between the Great West Fjord and the outer ocean, through the channels of the Loffoden Isles, produce a number of whirlpools, of which the maelstrom is by far the most dangerous. During severe storms from the west, for instance, the current runs continually to the east at the rate of six knots an hour, without changing its direction for rising or falling tide, and the stream will boil and eddy in such mighty whirls that the largest steamer could hardly contend successfully, with the waters. The depth of the Whirlpool is only 20 fathoms, but just outside the straits soundings reach from 100 to 200 fathoms.

Mammoth Cave.—The largest known cavern in the world, situated in Edmonson County, Kentucky, 99 miles from Louisville; discovered in 1809. The immediate district is one abounding in large caves and the surface is characterized by thousands of sinkholes. It is estimated that there are 4000 sinkholes and 500 open caverns. An area of 8000 square miles in Kentucky and Tennessee is more or less marked by this character. There is almost no surface drainage, the surface water immediately finding its way into the sinks and through the subterranean caverns and channels that everywhere abound. Green river, which gathers most of these waters, flows from 300 to 600 feet below the general level of the upland country and many of the caverns reach down to this underground water level. This action is now known to be the origin of the caves and sinks. The Oolitic sub-carboniferous limestone in which most of them occur has been dissolved along its joints by the percolating water, a not unusual process in other limestones regions.

Mammoth Cave is in reality a complex series of more than 200 so-called rooms, chambers, domes, abysses, pits, grottoes, avenues, and galleries extending nine miles underground. In certain of the lower caverns there are rivers, cataracts, and lakes, varying in volume with local rain supply.

The most remarkable portions are the great pits and domes, which are caverns of unusual vertical extent. They are in reality the same, pits extending downward and domes upward from the main points of observation. Crevice Pit with Klett's Dome, which is a part of it, is 150 feet in total vertical measurement. The Bottomless Pit is 105, and Scylla is 135 feet deep. Cleveland Avenue is two miles long, and Silliman's is one and one-half, and in places 200 feet wide. Many parts of the cave are beautifully incrusted with gypsum and other deposits, while stalactites and stalagmites are abundant in some of the lower portions. Where these crusts are covered with crystals, their sparkling is especially impressive, as in Star Chamber.

The Dead Sea, Lake Lethe, the Styx, and the Roaring and Echo rivers are the largest stretches of water.

The outer galleries of the cave are inhabited by millions of bats. There are two species of blind fish, crayfish, crickets with abnormally long antennæ, and a few insects. All of these are believed to have descended from former normal surface types and to have become modified by their subterranean environment.

Man in the Moon.—This is one of the most ancient as well as one of the most popular superstitions. It is supposed to have originated in the account given in the Book of Numbers, of a man punished with death for gathering sticks on the Sabbath-day. In one of the drawings representing this extraordinary and familiar character, he appears as a man with a staff over his shoulder, on which he carries his fatal bundle of sticks, followed by a dog.

Mardi-Gras.—The Mardi-Gras is the festival preceding the first day of Lent, or Ash Wednesday. Most of the distinctive ceremonies now annually performed in New Orleans were originally introduced by the French population as early as 1827. The day is a legal holiday, and the entire city is for the time ostensibly placed under the control of a king of the carnival, the great "Rex." There are two principal pageants. The first, in the daytime, is the escort of the "beloved Rex," through his favorite city; the other, or night pageant, is known as the "Mystic Krewe of Comus." This has a character altogether unique. The first display was in 1857. On Twelfth night (January 6), the "Knights of Momus" have a display analogous to the Mardi-Gras, but more exclusively burlesque, and in which they satirize the follies of the age. The arrangements for these celebrations come within the control of quite an elaborate organization. The Mardi-Gras is held on Shrove Tuesday, a day of pleasure in most Roman Catholic countries. It is the carnival of the Italians, the Mardi-Gras of the French, and the Pancake Tuesday of former times in England.

Mayflower's Passengers.—The following is a true list of the male passengers landed at Plymouth in the Mayflower, 1620.

Isaac Allerton,	William Mullins.
Jno. Alden.	Edmund Margeson.
Jno. Allerton.	Degony Priest.
William Bradford.	Thomas Rogers.
William Brewster.	John Rigdale.
John Billington.	Edward Fuller.
Peter Brown.	Moses Fletcher.
Richard Britterage.	John Goodman.
John Carver.	Richard Gardiner.
Francis Cook.	George Soule.
James Chilton.	Capt. Miles Stanish.
John Crackton.	Edward Tilly.
Richard Clarke.	John Tilly.
Edward Dotey.	Thomas Tinker.
Francis Eaton.	John Turner.
Thomas English.	Edward Winslow.
Samuel Fuller.	William White.
John Howland.	Richard Warren.
Stephen Hopkins.	Thomas Williams.
Edward Leister.	Gilbert Winslow.
Christopher Martin.	

Servants as follows:

Carter.	More.
Cooper.	Power.
Ely.	Sampson.
Holbeck.	Story.
Hooke.	Thompson.
Langmore.	Trevore.
Latham.	Wilder.
Minter.	

Mason and Dixon's Line.—A name given to the southern boundary line of the free state of Pennsylvania which formerly separated it from the slave states of Maryland and Virginia. It was run—with the exception of about 22 miles by Charles Mason and Jeremiah Dixon, two English mathematicians and surveyors, between November 15, 1763, and December 26, 1767. During the excited debate in Congress, in 1820, on the question of excluding slavery from Missouri, the eccentric John Randolph of Roanoke made great use of this phrase, which was caught up and re-echoed by every newspaper in the land, and thus gained a celebrity which it still retains.

Metals, Value of.—The following table gives the names and prices of all the known metals of pecuniary worth:—

	Price, Av. Pd.
Radium	$23,294,000.00
Glucinium	1,751,000.00
Lanthanum	5,900.00
Iridium	5,100.00
Germanium	4,500.00
Indium	3,700.00
Tantalum	3,700.00
Rubidium	3,200.00
Niobium	2,900.00
Thorium	2,800.00
Didymium	1,600.00
Strontium	1,500.00
Gallium	1,450.00
Lithium	1,400.00
Yttrium	1,350.00
Vanadium	1,300.00
Titanium	1,200.00
Platinum	1,150.00
Osmium	950.00
Rhodium	800.00
Palladium	750.00
Ruthenium	700.00
Gold	300.00
Beryllium	250.00
Molybdenum	20.00
Potassium	20.00
Zirconium	15.00
Thallium	10.00
Silver	8.17
Cobalt	3.25
Selenium	3.00
Calcium	3.00
Tellurium	3.00
Bismuth	2.50
Magnesium	2.00
Sodium	1.00
Cadmium	.85
Tin	.60
Tungsten	.50
Aluminum	.25
Copper	.13
Antimony	.12
Zinc	.06
Lead	.06
Arsenic	.04

Missing Link.—The link between the monkey and man. According to Darwin, the present host of animal life began from a few elemental forms, which developed, and by natural selection propagated certain types of animals, while others less suited to the battle of life died out. Thus, beginning with the larvæ of ascidians (a marine mollusk), we get by development to fish lowly organized (as the lancelet), thence to ganoids and other fish, then to amphibians. From amphibians we get to birds and reptiles, and thence to mammals, among which comes the monkey, between which and man is a "Missing Link."

Molly Maguires.—The first organization of this name was formed in Ireland, with the object, it is believed, of generally misusing process-servers and others engaged in the prosecution and eviction of tenants, and was composed of young men who, in some localities, assumed women's clothing, blackened their faces, and otherwise disguised themselves. It remained, however, for the American "Mollies" to terrorize whole counties, and leave a blood-red trail behind them in the coal regions of Pennsylvania. To give even a record of the murders and

outrages they committed would require an entire volume; but they were numbered by hundreds, and the unfortunate victims were, in most cases, well known and respected men. The American organization was composed of the restless and reckless element drawn to the coal region through the opening of the coal fields. There is no recorded instance where the disguise of women's clothes was assumed in the United States. Through the effort of James McParlan, a detective, the secrets of the order were finally revealed, and many of its members were brought to justice.

Moonshiners.—Those who distill illicit whisky and evade the payment of the government excise tax, their operations being carried on chiefly at night. The term arose in the mountains of North Carolina and Tennessee, where this practice is very common.

Mourning.—

Black. The color of mourning in Europe, also in ancient Greece and Rome.

Black and white striped. Expressive of sorrow and hope combined; worn by the South Sea Islanders.

Grayish brown. The color of the earth; worn in Ethiopia.

Pale brown. The color of withered leaves; worn in Persia.

Sky blue. Expressive of hope for the deceased; worn in Syria, Cappadocia and Armenia.

Deep blue. The mourning of Bokhara, in Central Asia; worn also by the Romans under the republic.

Purple and violet. Denotes royalty: worn for cardinals and the kings of France. *Violet* is the mourning of Turkey.

White. Mourning of China. Henry VIII. wore white for Anne Boleyn. Until 1498 it was the mourning of Spain.

Yellow. Mourning worn in Egypt and Burmah. Anne Boleyn wore yellow for Catherine of Arragone. Yellow may be regarded as a token of exaltation.

Naval Academy.—The United States Naval Academy is located at Annapolis, Md. The appointments of midshipmen are made by the President, Senators, Representatives and Delegates. The law authorizes one hundred appointments each year by means of competitive examination. The course of study is four years. Candidates must be unmarried and upon becoming married will be dismissed. Each candidate before admission is required to sign articles binding himself to the U. S. Navy during the pleasure of the President of the U. S. His pay is $780.00 a year, while a student.

Niagara Falls.—Four of the Great Lakes of the St. Lawrence river system differ little in elevation. Superior, the first of the series, lies at 602 feet, and Erie, the last of these four, at 573 feet above sea level. But Ontario, the fifth, lies in a broad valley 300 feet below the upper plain on which Lake Erie rests, the difference between the two bodies of water being 326 feet. The upland plain joins the low valley along a bold escapement of 200 feet or more that extends east and west continuously through western New York, passing between the two lakes into Canadian territory.

The connecting stream between all of the lakes have rapids or river characters, but that connecting Lakes Erie and Ontario, because of their great difference of level and the presence of this escarpment, had developed a cataract and series of rapids that form one of the natural wonders of the world. The stream is Niagara river and the cataract Niagara Falls.

Niagara river is only about 28 miles in length, and for about 19 miles of that distance, from Buffalo to Niagara Falls, it flows as a broad, smooth stream with low drift banks, presenting no unusual characters. There the rapids begin, and for half a mile, in which distance the descent amounts to 50 feet, the waters become a boiling torrent. In this portion several islands appear, the largest one, Goat Island, dividing the river into two unequal parts. Both plunge over the precipice into a narrow, deep gorge, which turns away almost at a right angle and with a succession of foaming rapids and whirlpools finally reaches the open, low valley at its bordering escapement seven miles below. One sharper turn than the others is known as the Great Whirlpool.

The separation by Goat Island makes two falls. The smaller lies to the American side and is known as the American Fall. It has a crest of 1,060 feet, a depth of less than 10 feet and a fall of 167 feet. Under the ledges which form the chief support the spray has succeeded in forming cavernous recesses, one of which is accessible and is known as the "Cave of the Winds." The part between Goat Island and the Canadian shore is much the larger. It forms a great curve with a crest 3,010 feet long, known as the Canadian or "Horseshoe Fall." The amount and depth of water pouring over this crest are much greater than at the American Fall, but its fall is somewhat less—158 feet. A further descent of 104 feet is reached by the seven miles of rapids through the gorge.

The average flow of water over both falls is estimated by the United States engineers, from the mean flow of water over a period of 40 years from Lake Erie at Buffalo, to be 222,400 cubic feet per second. This volume of water has a potential value of probably more than 3,800,000 horsepower. The American side shows a recession of half a foot per year; the Horseshoe Falls recedes two to four feet.

The Falls were discovered in 1678 by Father Hennepin, whose description and estimates of proportions are somewhat extravagant. The first accurate surveys were conducted by James Hall in 1842. Since that time several have been made and it is on these instrumental observations that the rate of recession is based. New York established a reservation of 107 acres on the American side at an expense of $1,500,000. A somewhat larger reservation has been secured by Ontario for the Canadian side. Several great bridges cross the gorge and river. Eight hundred thousand people visit this place annually to see the cataract.

Old Dominion. Virginia. In colonial days acts of Parliment relating to the Virginian settlements (which at that time included all the British dominions in North America) always designated them as the "Colony and Dominion of Virginia." In the maps of the time this colony was described as "Old Virginia," is contradistinction to the New England settlements, which were called "New Virginia." The transition from "Old Virginia" to "Old Dominion" would be an easy and a natural one.

POSTAGE RATES

First-Class: Letters and written and sealed matter, 2 cents for each ounce.

Government post cards, 1 cent each.

Private mailing or post cards, 1 cent each.

Air Mail: Five cents for the first ounce and 10 cents for each additional ounce or fraction thereof.

Second-Class: Newspapers, magazines, and other periodicals containing notice of second-class entry, 1 cent for each 2 ounces regardless of weight or distance.

Third-Class (limit, 8 ounces): Circulars and other miscellaneous printed matter, also merchandise, 1½ cents for each 2 ounces.

Books (including catalogs) of 24 pages or more, seeds, cuttings, bulbs, roots, scions, and plants, 1 cent for each 2 ounces.

Fourth-Class (over 8 ounces): Merchandise books, printed matter, and all other mailable matter not in first or second class—

ZONES	First Pound (Including 2 Cents Service Charge). *Cents.*	Additional Pounds.
Local....	7	1 cent each 2 pounds.
1 and 2..	7	1 cent each pound.
3.....	8	2 cents each pound.
4.....	8	4 cents each pound.
5.....	9	6 cents each pound.
6.....	10	8 cents each pound.
7.....	12	10 cents each pound.
8.....	13	12 cents each pound.

Passion Flower.—So called by early Spanish settlers, who fancied it to be a representation of our Lord's passion.

The *leaf* is symbolic of the spear that pierced his side.

The five *anthers*, the marks of the wounds.

The *tendrils*, the cords or whips.

The column of the *ovary*, the upright of the cross.

The *stamens*, the hammer.

The three *styles*, the nails.

The *filamentous process*, the crown of thorns.

The *calyx*, the glory or halo.

The *white* tinge, purity.

The *blue* tint, heaven.

It remains open for three days, and typifies his three years' ministry.

Patron Saints.—This designation was given during the Middle Ages to those saints that were supposed to watch over and protect the interests of particular persons, places and trades. The following is a list of some of the more prominent of these:

Aberdeen, St. Nicholas.
Antwerp, St. Norbert.
Austria, Sts. Colman and Leopold.
Brussels, St. Gudule.
Cologne, St. Ursula.
Edinburgh, St. Giles.
England, Sts. George and Mary.
Flanders, St. Peter.
France, Sts. Mary, Michael and Denis.
Genoa, St. George.
Germany, Sts. Martin, Boniface and George.
Holland, St. Mary.
Ireland, St. Patrick.
Italy, St. Anthony.
Lisbon, St. Vincent.
Milan, St. Ambrose.
Naples, St. Januarius.
Paris, St. Genevieve.
Portugal, Sts. Sebastian, James and George.
Prussia, Sts. Mary, Adalbert and Andrew
Rome, Sts. Peter and Paul.

Russia, SS. Nicholas, Andrew, Wladimir, and Mary.
Scotland, St. Andrew.
Spain, SS. James the Great, Michael, Thomas à Becket, and Edward.
Venice, SS. Mark, Justina, and Theodore.
Vienna, St. Stephen.
Wales, St. David.

Pawnbroker's Sign, Origin of.—It is generally held that the three golden balls used by pawnbrokers as a sign were adopted from the armorial bearings of the Medici family of Italy by the Lombard merchants, among whom were several representatives of that family. This sign was used in London in very early times by some of those merchants who had emigrated from Italy and established the first money-lending establishments in England.

Peat.—A deposit formed in bogs by the decay of vegetable matter, frequently consisting almost entirely of Sphagnum, or bog-moss. In composition it differs from coal only in the relative proportion of its constituents. Thus, peat contains: Carbon, 55.62; hydrogen, 6.88; oxygen and nitrogen, 37.50; while coal consists of: Carbon, 88 to 94 per cent; hydrogen, 2.5 to 5.5; oxygen, 2.5 to 6.0. It forms extensive deposits in various parts of northern Europe, and notably in parts of Ireland, where it is commonly known as turf, and is largely used as fuel.

Phrenology.—A system of Physics-psychology founded by Dr. Gall (1758-1828), a German physician, and afterward expounded and developed by his pupil, Dr. Spurzheim. It is based on four fundamental principles:

(1) The brain is the organ of the mind.

(2) The mental faculties can be analyzed and reduced to a definite number.

(3) Different parts of the brain are appropriated to these different mental faculties.

(4) Capacity and character are indicated by the external form of the skull.

According to phrenologists, the mind is commonly divided into 35 faculties, associated with a corresponding number of areas on the cranium. These faculties are as follows:

Amativeness. Philoprogenitiveness. Inhabitiveness or Concentrativeness. Adhesiveness. Combativeness. Destructiveness and Alimentiveness. Secretiveness. Acquisitiveness. Constructiveness. Self-esteem. Love of Approbation. Cautiousness. Benevolence. Veneration. Firmness. Conscientiousness. Hope. Wonder. Ideality. Wit. Imitation. Individuality. Form. Size. Weight. Coloring. Locality. Number. Order. Eventuality. Time. Tune. Language. Comparison. Causality.

Anatomy and physiology have proved that the exterior surface of the brain is by no means an index to mental processes or characters; still less is such a guide furnished by the minute variations in the shape of the skull, which in a general way correspond to the exterior surface of the brain. Size of brain does not correspond directly to mental power of activity; nor is the superficial conformation the most important feature of the brain. Parts of the external surface known to have functions other than those attributed by phrenologists; the frontal sinus of the skull is sometimes large enough to occupy the region allotted to four or five phrenological organs; and there are many esteological differences in the various bones of the skull which obviously have nothing to do with brain-functions or mental processes.

Plymouth Rock.—On December 22, 1620, the Pilgrim Fathers first set foot on a bare rock on the bleak coast of Massachusetts Bay, "while all around the earth was covered with deep snow." This rock became known as "Plymouth Rock," and is to New England what the Palladium was to ancient Troy, or the shield of Minerva to Athens. In course of time the rock became broken into two pieces. One part remained in its original position at Hedge's Wharf, Plymouth; the other was taken to the center of the town and surrounded by an iron railing. In 1880 this portion which had been dragged into Plymouth by 20 yoke of oxen in 1774, and over which the Whigs erected a liberty-pole was returned to its original position.

Potter's Field.—"Potter's Field" was a piece of ground which, according to the statement in Matthew, xxvii. 7, was purchased by the priests with the 30 pieces of silver rejected by Judas, and converted into a burial-place for Jews not belonging to the city. Here is the passage: "And they took counsel and bought with them the potter's field to bury strangers in." With us the term "potter's field" denotes the ground where unidentified persons and the bodies of unclaimed paupers are buried; and the term undoubtedly had its origin in the transaction alluded to by Matthew.

Printer's Devil.—The origin of this term is ascribed to the fact that in the early days of printing the apprentice's duties included the inking of the forms with bags containing ink or besmeared with it. In the performance of this work his face and hands became so daubed with ink that in appearance he suggested the devil. Hence the name.

Rain.—The fall of water in drops from the clouds, or the drops which fall. A cloud consists of aqueous vapor, the individual vesicles of which are very small. When by the constant condensation of fresh aqueous vapor these vesicles become large and heavy, and several of them unite, they are unable to resist the action of gravity and fall as rain.

Rainbow.—A luminous bow or arch appearing in the clouds opposite to the sun when they are resolved into rain. Theoretically several bows may co-exist; generally, however, there is but one. Sometimes there are two, very rarely three or even four—the largest number authentically on record. Every rainbow exhibits the prismatic colors. When there are two bows, the lower, or primary, is very bright, and has the red highest; the outer, or secondary, is more faint, and has the violet the highest color. They are produced chiefly by the refraction and dispersion of the light in passing through the raindrops, partly also by its reflection from the back of the drops, without which the appearances would not reach the eye. The secondary bow ceases to be visible when the sun is 54 degrees above the horizon.

Rubicon, the ancient name of a small stream—thought to be the modern Fiumicino—which formed the boundary between Italy and Cisalpine Gaul. It is celebrated from Cæsar's having hesitated about crossing it with his army, and initiating civil war, in the year 49 B. C. When he came to the river he paused upon the brink, but finally saying, "The die is cast," he spurred on his horse, and dashed into the water. Hence, "To pass the Rubicon" has become a proverbial phrase, to denote the taking of the first step in a momentous undertaking, from which one cannot or will not recede.

Sabbath Day's Journey.—"A Sabbath day's journey, according to Dr. Adam Clark, was seven and one-half furlongs, or about 1,650 yards. The Rabbins fix it at 2,000 cubits, which is about 1,350 yards. Josephus says that the Mount of Olives was five stadia, or 625 paces, from Jerusalem, which would make the allowable Sabbath day's journey about 1,050 yards."

St. Valentine's Day.—The custom of sending valentines can, without doubt, be traced, in origin, to a practice among the ancient Romans. At the feast of the Lupercalia, which was held on the 15th of February, in honor of the great god Pan, the names of all the virgin daughters of Rome were put in a box and drawn therefrom by the young men, and each youth was bound to offer a gift to the maiden who fell to his lot, and to make her his partner during the time of the feast. This custom became allied to the name of St. Valentine, probably, only through a coincidence in dates. St. Valentine was bishop of Rome during the third century. He was of most amiable nature, and possessed remarkable gifts of eloquence, and was so very successful in converting the pagan Romans to Christianity that he incurred the displeasure of the Emperor, and was martyred by his order February 14, A. D. 270. When the saint came to be placed in the calendar, his name was given to the day of his death, and this was made a festival to offset that of the Lupercalia, and an effort was made to substitute the names of saints for those of girls in the lottery, but naturally without success. Many other customs of mediæval and later times, which have become allied in name to a holy saint of the church, are unquestionably of purely secular, even pagan, origin.

Salutes, United States National and International.—Salute to the Union. This is one gun for each state, and is commemorative of the Declaration of Independence. It is fired at noon of the Fourth of July, at every military post, and on board commissioned naval vessels belonging to the United States.

The National Salute, 21 guns. This is the salute for the national flag, the President of the United States, presidents of foreign republics, or sovereigns of foreign states, visiting the United States.

Vice-President of the United States, American and foreign ambassadors, 19 guns.

The President of the Senate, Speaker of the House of Representatives, Members of the Cabinet, the Chief Justice, a Congressional Committee, Governors within their respective states or territories, Viceroy or Governor General of provinces belonging to foreign states, General of the Army, Admiral of the Navy, and same ranks in foreign armies and navies, 17 guns.

American or foreign Envoys, or Ministers Plenipotentiary, Assistant Secretaries of the Navy or War, Lieutenant General, or a Major General commanding the army and corresponding ranks in the navy, and foreign armies and navies, 15 guns.

Ministers-Resident accredited to the United States, Major General, Rear Admiral, and corresponding ranks of foreign armies and navies, 13 guns.

Charges d' Affaires, Brigadier General, Commodore, and corresponding ranks in foreign armies and navies, 11 guns.

Consul Generals accredited to the United States, 9 guns.

Salutes are only fired between sunrise and sunset, and not on Sundays, except in international courtesies. The national colors are always displayed at the time of saluting. The salute of the flag is the only

calute which is returned, and this must be done within twenty-four hours. United States vessels do not return salute to the flag in United States waters if there is any fort or battery there to do it, nor do United States vessels salute United States forts or posts.

If there are several batteries or forts within sight or six miles of each other, one of them is designated as the saluting fort, and returns all salutes of foreign men-of-war. In New York, Castle William, on Governor's Island, is the saluting fort.

Santa Claus.—The children's Christmas deity is known in the United States by this name, the Dutch form *Santa Klaas*, being simply the abbreviation of Nicholas, a patron saint of unquestionable Holland ancestry.

Science, The Five Follies of.—These are usually said to be the following: The squaring of the circle; the establishment of perpetual motion; the philosopher's stone; charmation, or the discovering of secrets by magic; and judicial astrology.

Scylla and Charybdis.—Two geographical sobriquets frequently met in ancient and modern literature. Scylla is a rocky cape on the west coast of South Italy, jutting out boldly into the sea so as to form a small peninsula just at the northern entrance to the Straits of Messina. About the beginning of the fifth century B. C. a fort was built upon the rock (which is about 200 feet high, and much hollowed out below by the action of the waves), and in course of time a small town grew up, straggling down the slopes toward the sea. The navigation at this place was looked upon by the ancients as attended with immense danger, which, however seems to have been much exaggerated, for at the present day the risk is no more than attends the doubling of any ordinary cape. Charybdis (modern name Galofaro) is a celebrated whirlpool in the Straits of Messina, nearly opposite the entrance to the harbor of Messina in Sicily, and in ancient writings always mentioned in conjunction with Scylla. The navigation of this whirlpool is, even at the present day, considered to be dangerous, and must have been exceedingly so to the open ships of the ancients.

Smoke.—Any volatile, and specially any carbonaceous matter escaping from a burning substance. When wood or coal is in process of combustion, it emits, not merely minute particles of unconsumed carbon, but invisible gaseous matter. Appliances for consuming smoke aim simply at preventing the rise of the carbonaceous particles, ignoring the unseen gases. They turn on the furnishing of a supply of air containing an abundance of oxygen, the absence of which is the reason why any carbon escapes unconsumed.

Sphinx, Riddle of.—A famous enigma of antiquity. The story runs that Juno sent a monster named the Sphinx to ravage the territory of Thebes. This monster had been taught riddles by the Muses, and she propounded one to the Thebans: "What is that which has one voice, is four-footed, two-footed, and at last three-footed;" or, as some have it, "What animal is that which goes on four feet in the morning, on two at noon, and on three at evening." An oracle told the Thebans that they would not be delivered from her until they had solved her riddle. They often assembled to try their skill, but as often failed, when the Sphinx always carried off and devoured one of their number. At length Odipus came forward and gave the correct answer, "Man," who when an infant creeps on all fours, at manhood stands erect on two legs, and in old age hobbles about with the aid of a crutch.

Tammany, Society of, or Columbian Order was formed in 1789, being the effect of a popular movement in New York, having primarily in view a counterweight to the so-called "aristocratic" Society of the Cincinnati. It was essentially anti-Federalist or Democratic in its character, and its chief founder was William Mooney, an upholsterer, and a native-born American of Irish extraction. It took its title from a noted, ancient, wise, and friendly chief of the Delaware tribe of Indians, named Tammany, who had, for the want of a better subject, been canonized by the soldiers of the Revolution as the American patron saint. The first meeting was held May 12, 1789. The act of incorporation was passed in 1805. The Grand Sachem and thirteen Sachems were designed to typify the President and the Governors of the thirteen original States. The society is nominally a charitable and social organization, and is distinct from the general committee of the Tammany Democracy, which is a political organization.

Thunder.—The violent report which follows a flash of lightning. It commences the same moment as the flash; but, as the sound travels only at the rate of about 1100 feet a second, while light does so at the rate of 200,000 miles, the flash of the lightning is the first to be perceived, and thus a means is afforded of calculating the distance of the lightning. The noise of the thunder arises from the disturbance produced in the air by the electric discharge, but why the sound should be so prolonged has been differently explained. The old hypothesis was that the sound was echoed from every precipice, from every building, and from every cloud in the sky. Another is that the lightning itself is a series of discharges, each producing a particular sound according to the distance at which it commences, and the varying densities of the portions of air which it traverses before reaching the ear. A third conjecture is that the noise arises from the zigzag movement of the electric fluid, the air at each salient angle being at its maximum compression.

Train Management.—Standard Code.—A train while running must display two green flags by day and two green lights by night, one on each side of the rear of the train.

After sunset, or when obscured by fog or other cuase, must display headlight in front, and two red lights in rear.

Two green flags by day and two green lights by night, displayed in the places provided for that purpose on the front of an engine, denote that the train is followed by another train running on the same schedule, and entitled to the same time-table rights as the train carrying the signals.

Two white flags by day or two white lights by night, carried in the same manner, denote that the train is an extra.

A blue flag by day and a blue light by night, placed on the end of a car, denotes that car inspectors are at work under or about the car or train, and that it must not be coupled to or moved until the blue signal is removed.

Colored Flag or Lantern Signals—Torpedoes. Standard Code.—Red signifies danger.

Green signifies safety.

White signifies caution, go slowly.

Green and white signifies stop at flag stations for passengers or freight.

One cap or torpedo on rail means stop immediately.

Trees, Noted

Burgoyne Elm.—At Albany, N. Y., associated with that ill-fated British general, during the War of Independence.

Cary Tree.—Planted by the roadside in 1832 by Alice and Phœbe Cary, is a large sycamore, standing on the turnpike from College Hill to Mount Pleasant, Hamilton County, Ohio.

Charter Oak, The.—A tree celebrated in American (legendary) history, which formerly stood in Hartford, Conn. According to tradition, when Governor Andros came to Hartford in 1687 to demand of the Assembly the surrender of the colonial charter, the debate in that body over the governor's demand was prolonged beyond daylight, when suddenly the lights were extinguished, and in the darkness a patriot, Captain Wadsworth, escaped with the charter and hid it in a hollow oak. There is, however, no contemporary record of this event. The Charter Oak was overthrown by a storm in 1856.

Elm, Old Liberty.—A famous tree on Boston Common, which stood near the "long walk," at the foot of Flagstaff Hill, and was in its day considered the "oldest inhabitant" of Boston. It was a tree of unknown age, and was believed to have stood there before the settlement of the town in 1630. It was already decrepit as long ago as 1755. It was over seventy-two feet high, and measured twenty-two and a half feet in circumference one foot above the ground. After resisting many a storm, it was blown down in the winter of 1876. An iron fence surrounds the spot where it stood.

Fairlop Oak.—A giant oak-tree in Hainault Forest, Essex, England, whose girth was forty-eight feet, and beneath whose widely spreading branches an annual fair was held on the first Friday in July. The tree was blown down in February, 1820.

Judas Tree.—A corruption of Kuamos tree; *i. e.*, the leguminous or bean tree. The corrupt name has given rise to the tradition that it was upon one of these trees that Judas Iscariot hanged himself.

Mather's Willow.—The weeping-willow over the grave of Cotton Mather in Cop's burying-ground, near Bunker Hill, taken from a tree that shaded the grave of Napoleon at St. Helena.

Mt. Vernon Ashes.—The immense ash trees planted by General Washington at Mount Vernon, and now the admiration of visitors.

"Old Moses."—The largest tree in the world is one discovered, in 1874, in a grove near Tule River, in California. Though the top has broken off, it is 240 feet high, and the diameter of the tree where it has been broken is 12 feet. This giant of the forest is called "Old Moses," from a mountain in the neighborhood, and is calculated to be 4840 years old! The hollow of its trunk, which is 111 feet, will hold 150 persons, and is hung with scenes of California, is carpeted, and fitted up like a drawing room, with table, chairs, sofa, and pianoforte. A section of this tree, 74 feet round and 25 feet across, was exhibited in New York, in 1879.

The Washington Elm still stands at Cambridge, Mass. It is on Garden street, a short distance from the colleges, and is a large, well-preserved tree. An iron fence is built around it, and on a stone in front is the following inscription: "Under This Tree George Washington Took Command of the American Army, July 3, 1775."

"Uncle Sam,"—The practice of calling the United States Government "Uncle Sam" is believed to have originated in the following manner: During the Revolutionary war a man named Samuel Wilson was a beef inspector at Troy, N. Y., and was very popular with the men in his employ, who always called him Uncle Sam. After the inspection of the beef, it was shipped by him to a contractor named Elbert Anderson, and was always marked "E. A. U. S." A joking workman, being asked what those letters were the abbreviations of, replied that he did not know, unless they were for Elbert Anderson and "Uncle Sam." The joke was kept up and spread, until it became common to refer to all packages

marked "U. S." as belonging to "Uncle Sam."

Union Jack.—The origin of the term Union Jack has never been precisely ascertained. It would appear, however, that the word "union" arose from the union of the three kingdoms into one great political power. As an alteration in the banner of St. George occurred in the reign of James the First, it may, with great probability, be supposed to have been a rendering of the word "Jacobus," abbreviated into Jack.

Vision, Limits of.—Vary with elevation, conditions of the atmosphere, intensity of illumination, and other modifying elements in different cases. On a clear day an object one foot above a level plain may be seen at a distance of 1.31 miles; one ten feet high, 4.15 miles; one twenty feet high, 5.86 miles; one 100 feet high, 13.1 miles; one a mile high, as the top of a mountain, 95.23 miles. This allows seven inches; or, to be exact, 6.99 inches, for the curvature of the earth, and assumes that the size and illumination of the object are sufficient to produce an image.

Washington Monument.—Notwithstanding the fact that the plan of a monument to General Washington was approved by Congress in the latter part of December, 1799, nothing was done in the matter until 1833, when an association of prominent persons undertook the raising of the needed funds by subscription, and on July 4, 1848, had so far succeeded in their undertaking that the cornerstone of a monument was laid, and during the succeeding eight years the shaft was carried to a height of 156 feet. The work was then suspended, at first for lack of funds, then because of the Civil War, and finally because the foundations were believed to be insecure. In 1876 Congress undertook the completion of the monument. The base was first strengthened, and the work of rebuilding the shaft was resumed in August, 1880, and was finished August 9, 1884. The shaft is 555 feet high, and the entire height of the monument, including the foundations, is 592 feet. The base is 55 feet 1½ inch square. At 500 feet above the ground the monument has four sides, each of which is 35 feet wide. Its area at this point is that of a comfortable six-room house, each room of which might be 12x61 feet. This square forms the base of the pyramidal top which runs from it 55 feet until it terminates in a metallic point. This point is constructed of the largest piece of aluminium ever made. The stones of which the monument is constructed are great blocks of crystal marble from Maryland, and in some cases are nine feet long, two feet thick, and three or more feet wide. There are more than 18,000 of them.

Watches of the Night.—The Jews, like the Greeks and Romans, says the Rev. Dr. William Smith in his "Bible Dictionary," divided the night into watches instead of hours, each watch representing the period for which sentinels or pickets remained on duty. The proper Jewish reckoning recognized only three such watches, entitled the first or "beginning of the watches" (Lamentations ii, 19), the middle watch (Judges vii, 19), and the morning watch (Exodus xiv, 24; I Samuel xi, 11). These would last, respectively, from sunset to 10 o'clock P. M., from 10 o'clock P. M. to two o'clock A. M., and from two o'clock A. M. to sunrise. After the establishment of the Roman supremacy the number of the watches was increased to four, which were described either according to their numerical order, as in the case of the "fourth watch" (Matthew xiv, 25), or by the terms "even," "midnight," "cockcrowing," and "morning" (Mark xiii, 35). These terminated, respectively, at nine o'clock P. M., midnight, three o'clock A. M., and six o'clock A. M.

Weather Forecasting.—Almanac predictions can be nothing but conjecture, the earth's subjection to many unknowable and undeterminable forces rendering such calculations impossible. It is practicable, however, by the following rules, drawn from actual results during very many years and applied with due regard to the subjects of solar and lunar attraction with reference to this planet, to foresee the kind of weather most likely to follow the moon's change of phase.

Prognostications.

If New Moon, First Quarter, Full Moon or Last Quarter Happens	In Summer	In Winter
Between midnight and 2 A. M...	Fair.....(1 and 2)	Frost, unless wind is S. W. (7).
Between 2 and 4 A. M...	Cold and showers....	Snow and stormy.
Between 4 and 6 A. M...	Rain.....	Rain.
Between 6 and 8 A. M...	Wind and rain.....	Stormy.
Between 8 and 10 A. M...	Changeable.....	Cold rain if wind W., snow if E.
Between 10 and 12 A. M...	Frequent showers. (3)	Cold and high wind.
Between 12 and 2 P. M...	Very rainy.....(4)	Snow or rain.
Between 2 and 4 P. M...	Changeable.....(5)	Fair and mild.
Between 4 and 6 P. M...	Fair.....	Fair.
Between 6 and 8 P. M...	Fair if wind N. W....	Fair and frosty if wind N. or N. E.
Between 8 and 10 P. M...	Rainy if S., or S. W..	Rain or snow if S. or S. W.
Between 10 and midnight..	Fair.....	Fair and frosty.

Observations.—1. The nearer the moon's change, first quarter, full and last quarter to midnight, the fairer will be the weather during the next seven days.

2. The space for this calculation occupies from ten at night till two next morning.

3. The nearer to midday or noon the phase of the moon happens, the more foul or wet weather may be expected during the next seven days.

4. The space for this calculation occupies from ten in the forenoon to two in the afternoon. These observations refer principally to summer, though they affect spring and autumn in the same ratio.

5. The moon's change, first quarter, full and last quarter happening during six of the afternoon hours, *i. e.*, from four to ten, may be followed by fair weather, but this is mostly dependent on the wind, as is noted in the table.

6. Though the weather, from a variety of irregular causes, is more uncertain in the latter part of autumn, the whole of winter and the beginning of spring, yet, in the main, the above observations will apply to these periods also.

7. To prognosticate correctly, especially in those cases where the wind is concerned the observer should be within sight of a vane where the four cardinal points of the compass are correctly placed.

Water.—A clear, colorless, transparent liquid, destitute of taste and smell, and possessing a neutral reaction. It is one of the most important and most widely-distributed substances in nature, occurring universally in one or other of its three physical states—liquid, solid, or gaseous. As a liquid it constitutes the great mass of the oceans, rivers, and lakes, which cover nearly three-fourths of the earth's surface in the solid state it exists permanently in the form of ice or snow in the polar regions; and as a vapor is a constituent of the aerial envelope of the earth, and the exhalations of volcanoes and boiling springs. It occurs in combination in many mineral substances, and also in organic bodies, animals and plants containing from 80 to 90 per cent. Water is the most efficient of all solvents, there being few substances which are not, to some extent, affected by it, hence natural waters never occur absolutely pure, but contain in solution more or less of the constituents of the strata through which they have passed.

Rain-water contains substances derived in minute quantities from the atmosphere, such as ammonia, nitrate of ammonia, carbonic acid, nitrous and sulphurous acids.

Spring-water always contains a much larger proportion of dissolved substances than rain-water. When this is so highly charged with saline or gaseous constituents as to have a peculiar taste or smell, and is unfitted for ordinary use, it is called mineral water, and when the amount of these constituents does not sensibly affect its taste, etc., it is described as fresh-water.

Sea-water is essentially a mineral water, its saline constituents consisting of the chlorides and sulphates of sodium, potassium, magnesium, and calcium, together with minute quantities of silica, bromine, iodine, phosphoric acid, etc. The total solid contents of sea-water in mid-ocean varies from 30 to 40 grms. per litre, being largest near the equator and smallest near the poles.

A cubic inch of fresh water at 42 degrees weighs .036126 pounds. A cubic foot weighs 62.321 pounds. A cubic foot contains 6.2321 gallons. One gallon weighs 10 pounds. A ton comprises 35.943 cubic feet. Salt water is slightly heavier than fresh.

Water was long regarded as an element, but toward the end of the seventeenth century it was shown by Lavoisier to be a compound, and to consist of two parts by weight of hydrogen to sixteen of oxygen, or two volumes of hydrogen to one of oxygen. When pure it is free from taste and smell, and at ordinary pressure is liquid between 0 degrees and 100 degrees, boils at 100 degrees, and freezes at 0 degrees C, expanding to the extent of one-eleventh of its volume. The quantity of heat absorbed in the melting of ice is sufficient to raise the temperature of an equal weight of water 79.2 degrees, and the quantity of heat rendered latent by water at 100 degrees becoming vapor would raise the temperature of water 5.37 times as much as from 0 degrees to 100 degrees. Water is 825 times heavier than air, and when converted into steam expands to nearly 1,600 volumes. One cubic centimetre at four degrees, and under a pressure of 760 mm. of mercury, weighs 15.432349 grains, or one gramme, the unit of weight in the metric system.

Water in its gaseous form. It is a colorless, invisible gas, quite distinct from the visible cloud which issues from a kettle,

etc., which is composed of minute drops of water produced by the condensation of the steam as it issues into the colder air. Under ordinary atmospheric pressure, water boils in an open vessel at a temperature of 212 degrees, and the steam always has this temperature, no matter how fast the water is made to boil.

West Point.—The United States Military Academy is situated on the Hudson river at West Point, N. Y. The maximum authorized strength of the Corps of Cadets is 1,338. The candidates are nominated by U. S. Senators, Representatives, the Vice-President and the President. Some come from honor military schools and some from the regular army. Appointments are made only to fill vacancies. The course of study is four years which is largely mathematical and professional. The location is made memorable by the Treason of Benedict Arnold. The buildings and grounds are valued at $25,000,000.

Wedding Anniversary

At end of First Year comes the	Cotton Wedding
Second Year	Paper Wedding
Third Year	Leather Wedding
Fifth Year	Wooden Wedding
Seventh Year	Woolen Wedding
Tenth Year	Tin Wedding
Twelfth Year	Silk and Fine Linen Wedding
Fifteenth Year	Crystal Wedding
Twentieth Year	China Wedding
Twenty-fifth Year	Silver Wedding
Thirtieth Year	Pearl Wedding
Fortieth Year	Ruby Wedding
Fiftieth Year	Golden Wedding
Seventy-fifth Year	Diamond Wedding

Wedding Ring had its origin in the most remote antiquity. The ring was used anciently as binding ceremonies, making agreements, grants, etc., and evidently extended to the most solemn of engagements—marriage. The ancient Greeks held that a small nerve runs from the ring finger to the heart; and that therefore it was honored with the office of bearing the ring because of its connections with that master mover of the vital function. A Roman writer claimed that a small artery connected the ring finger with the heart.

What Makes a Bee Hum?—A bee's wings move very rapidly, vibrate and cause the air to move, which brings about the humming sound.

What Makes Water Boil?—When water is sufficiently heated it becomes gas. This gas is called steam. Bubbles which result are bubbles of water gas or water vapor.

What are Dreams?—A dream is a collection of ideas which come to the mind when we are asleep. When we are dreaming we do not have control over the trend of our thoughts, and the principle of suggestion is in control. The images that appear in dreams are usually completely lacking in coherency, but we are not surprised at this in our dreams. Sometimes however, our minds develop wonderful brilliancy during sleep. It is generally accepted that dreams result from natural causes. Internal bodily impression or the preceding state of mind or body usually cause and mould a dream. Dreams therefore, look backward over time past, instead of anticipating the future, and yet throughout the world in all the ages, many people have interpreted dreams as prophesying future events.

What Makes a Stick Float?—By the force of gravity the earth pulls everything toward the center of the earth. The heavier an article, the harder is this pull. Water is heavier than a wooden stick and therefore the pull of the water toward the center of the earth is greater than the pull of the stick. That is why the stick remains at the top of the water.

What Causes a Lump in the Throat?—When food passes into the throat it is not merely dropped into the stomach, but there is a nine or ten inch series of rings in our throat, that passes and squeezes the food from one set of muscle rings to another. These muscle rings work both up and down.

Upper Yosemite Falls

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When vomiting is caused, the muscles work upward, and force the material from the stomach.

When frightened a hollow feeling comes into the stomach, and these muscle rings of the stomach work upward. Pressing against the wind-pipe they cause one to feel as if there is a lump in the throat.

What Makes Milk Sour?—The particles of dust etc., fall from the air into milk. These carry microbes, which turn the sugar into an acid, causing the milk to become sour.

What Causes a Whirlpool?—A whirlpool is caused by the meeting of two currents of water going in different directions. The more rapid and powerful these currents are the larger is the whirlpool.

What is Smoke?—Smoke is a mixture of finely divided particles of solid matter suspended in the air. Although much smoke is made up of particles of carbon, the composition of smoke depends on what is burned.

What Makes Our Teeth Chatter?—Cold often causes a spasm of shivering which the brain cannot control. This causes the muscles of the jaw to quickly contract, thus allowing the jaw to fall of its own weight. Rapidly occurring over and over again, is what causes the teeth to chatter.

The two kinds of spasms are called "tonic" and "clonic." In a "tonic" spasm the muscles contract steadily and uniformly and remain contracted. In a "clonic" spasm the muscles relax and contract alternately and rapidly, producing an appearance of agitation.

What Causes Stars to Twinkle?—The light from the stars is constant and steady, but some rays are delayed in their long

trip from the stars to us and thus in one instant we see the light from the stars and the next instant we do not.

Whence Came the Name Black Maria?—The Black Maria is a conveyance used to transport criminals and disorderly persons to jail. The name Black Maria originated in Colonial days. Maria Lee, a negress, was the proprietress of a sailors' boarding house in Boston. Being tremendously large and strong, and holding the lawless element in great fear of her, she greatly aided the officials in keeping the peace. Black Maria often aided the police in taking unusually troublesome persons to jail. Alone she is reported at one time to have taken three drunken sailors to the station house. She aided in so many similar cases that the words "Call Black Maria" meant "Arrest the person."

On the Way to the Summit, Glacial Park

© E. M. Newman

Whence Came Masonic Signs?—Freemasonry began in the Middle Ages. Skilled Masons went from one place to another assisting in building magnificent churches, cathedrals, etc. In the Middle Ages it was necessary for these Masons to have some signs whereby they could be recognized by strangers as highly trained craftsmen, and not imposters. This was the beginning of Masonic signs.

Whence Comes the Expression "Showing the White Feather?"—When people act cowardly, we say they "show the white feather", because a white feather shows that a bird is a cross-breed. A good fighting gamecock is never a cross breed.

Whence Came Thanksgiving Day?—The President of the United States and the Governors of the various States usually name the last Thursday in November Thanksgiving Day. In the summer of 1621, the Pilgrim Fathers, after landing at Plymouth had a very poor harvest. Although in great need, after getting the harvest in, they gathered together and thanked God for what He had given them.

Thanksgiving Day was annually recommended by Congress during the Revolutionary War, but was discontinued from 1784 until 1789, when Congress recommended Washington to name a day of Thanksgiving for the adoption of the Constitution. In 1795 President Washington appointed a Thanksgiving Day upon the suppression of insurrection. In 1815 President Madison, upon recommendation from Congress, named a Thanksgiving Day in honor of peace. In 1863 and 1864 President Lincoln named a Thanksgiving Day and recommended that these be held annually. Since then Thanksgiving Day has been an annual event.

Whence Came the Name X-Rays?—When Professor Wilhelm Conrad Roentgen of the University of Wurzburg, Germany, was not certain of their exact nature, he titled them "X-Rays" because unknown quantities are usually called "X".

Where is the Highest Cross of Gold in the World?—The highest cross on any building in the world is tipping the spire of the Chicago Temple building at Chicago, Ill. From the pavement, 556 feet below, the cross appears of no size. But in reality it is twelve feet high and six feet wide, made of bronze, plated with copper, then covered with gold leaf. It weighs 250 pounds. It is illuminated.

White House.—The residence of the president of the United States is officially known as the Executive Mansion, which means that it is the residence of the head of the executive branch of the government; but it is seldom called, in ordinary talk, either by those who live in it, or by the American people in general, anything but the White House. This is a very unpretentious title, and it is interesting to note how the residence of the president, in a country which is full of white houses, came to bear this simple name as its special property.

The explanation is easily found. The first Executive Mansion at Washington was occupied in 1800. It was built of freestone, and was unpainted; but in 1814 the British army occupied Washington, and burned, with other public buildings, the president's house, leaving it a blackened ruin.

The house was rebuilt on the same site, and the same walls were used in its construction; but they were so discolored by smoke that, on the suggestion of General Jackson, they were painted white, not only to improve their appearance, but in token of the successful defiance of British fire by the American Republic.

The mansion soon became the "White House" in the mouths of the people, on account of its dazzling color, and from that day to this it has been repainted white every ten years. Its name commemorates a patriotic feeling, therefore, as well as serves to describe the appearance of the mansion, for the original coat of white paint was a sort of protest against the vandalism of the British, and every subsequent coat has served to perpetuate the protest.

White House Weddings.—The first wedding to occur in the White House was that of Miss Todd, a relative by marriage of President Madison. Then, in their order, came the weddings of Elizabeth Tyler, a daughter of President Tyler; John Quincy Adams, Jr.; Miss Easten and Miss Lewis, both during General Jackson's administration; Martha Monroe; Nellie Grant; Emily Platt, a niece of President Hayes; President Cleveland; Miss Alice Roosevelt; Jessie Woodrow Wilson; and Eleanor Randolph Wilson.

Why is a Married Man Called a "Benedict?"—In the Shakespearian play "Love's Labour Lost," Benedict was the name of a humorous character who in the end was married to Beatrice.

Why Does a Ball Bounce?—Because of elasticity. A thing is elastic when it can be made to change its shape and resume it again. The amount of force required to bounce an article is not important in determining the elasticity of that article. To bounce, an article must flatten when it strikes, then spring back to its former shape.

Why Does a Cold Glass Crack if We Put Hot Water in It?—A cold glass or tumbler is contracted. All the tiny particles that make up the glass have contracted and drawn together. When the hot water is put in, particles composing the inside of the tumbler begin to expand while the outside particles remain contracted and they pull away from each other and force the glass to crack.

Why Do Some People Freckle?—The action of the sun's rays on certain kinds of skin causes small parts of the second layer to give out a yellowish brown pigment. Persons of fair complexion and hair generally are more subject to freckles. Other people, because of a different kind of skin, do not freckle regardless of exposure to the sun. Though some freckles are permanent, in most cases cold weather causes them to disappear.

Why Are Glasses Touched Before Drinking?—As athletes usually shake hands before the beginning of a contest, in the olden days persons who fought duels paused before their fighting and drank a glass of wine. To make sure that there was no poison in either glass, the habit was formed of pouring some of the wine from each glass into the other, so that if one contestant

was poisoned, the other would be, too.

This practice still continues, although there is no longer thought of poison, and hence wine is no longer actually poured from one glass to the other. Merely the act of touching the glasses is sufficient to express friendliness and good will.

Thus touching glasses together in drinking, before a conference, is nick-named "hob-nobbing" because of the material used in that action long ago. The flat part of the open hearth where water and syrup were warmed was called a "hob" and a "nob" was the small table at which people sat when so engaged.

breathe as deeply as we should and our blood does not have enough oxygen from the air in it. When our brain learns that there is not enough oxygen in our blood it orders us to take a great deep breath, or to stretch, or both. This great big breath is called a yawn. Thus yawning and stretching are real helps to the body. They are not nice in front of other people because they show that we are tired of the other people's company.

World's Famous Highways.—It is of interest to motorists to know that the highest thoroughfare in the world is Main street, Denver; the widest is Market street, Philadelphia; the narrowest street is the Via Sol, Havana, Cuba, which has a width of 47 inches; the shortest is the Rue Ble, in Paris. The dirtiest is that of Tchangsti, Nankin, China; the cleanest is the Via Castile, in Seville, Spain; the richest is Fifth avenue, New York City; the most aristocratic is Grosvenor place, in London; the most beautiful is the Avenue des Champ Elysees, Paris; and the oldest is the Appian Way, built by Julius Caesar in the days of the Romans, and still in use and good repair.

Wax Model Showing Various Cuts of Beef
American Museum of Natural History, N. Y.

Why Does The Kettle Sing?—Steam arises from boiling water. Steam is a powerful force. Being forced out of the spout it causes the air to vibrate and tremble. This trembling air upon striking the ear drum causes it to tremble and thus a singing sound is produced. In the same way a stick rapidly twirled in the air sings.

Why Is The Right Hand Always Used For Shaking Hands?—Shaking hands with the right hand started in the days when everyone carried a knife or a sword. In those ancient days it was customary, to indicate a friendly feeling, to hold out the right hand, showing that there was no sword or knife therein for attack.

Why Is The Sky Blue?—In the sky are many tiny dust particles. The rays of the sun are white in color, and what appears to be white light is in reality a combination of all the various colors. These rays of light from the sun striking the specks of dust in the sky are largely absorbed. However, short rays of light are reflected from these dust particles to us and these short waves are blue. Thus the sky appears to us blue.

Why Do We Sneeze?—Because of some foreign object which irritates the membrane of the nose. Nature has an automatic way of expelling such irritating objects, by sneezing. Usually this irritation can be stopped by pressing on each side of the nose, about half-way down where the bone stops.

Why Are Tears Salt?—Because salt when properly mixed with water makes a perfect wash for the eyes and Nature makes the proper solution. Pure water is injurious to all delicate living things.

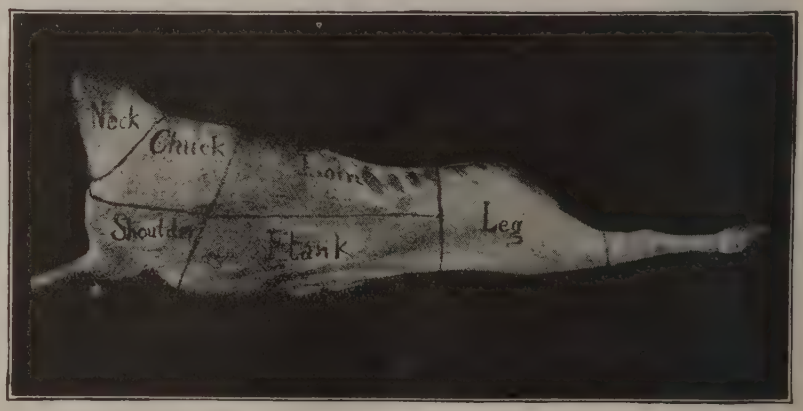
Why Do We Yawn and Stretch?—When we are bored or sleepy or tired, we do not

Wind.—A current of air moving in the atmosphere in any direction or with any velocity. Winds are produced by variations of temperature in different latitudes, or at different portions of the same latitude.

Heated air tends to ascend, and, to prevent a void from arising in the lower portion of the atmosphere from which it has ascended, a current of air, colder, and therefore denser, takes its place. This phenomenon is most obvious in tropics, from which hot rarefied air is ever ascending, one part toward the northern, and the other toward the southern Pole. From these two regions, cold currents of air proceed near the surface of the ground or the ocean to supply the threatened void. Were the earth at rest, the hot currents would depart from, and the cold currents strike the equator at right angles, but owing to the rotation of the earth from west to east, more quickly than its friction can carry the atmosphere with it, the latter is somewhat deflected to the westward, the hot currents leaving and the cold one striking the equatorial line at an oblique instead of a right angle. As the circles to be traversed by the rotating sphere or spheroid vary in magnitude in every latitude, cyclones tend to be generated which rotate in one direction, when they arise to the north, and in another when they are generated south of the equator.

The heat of the vertical, or nearly vertical, sun rarefies the atmosphere in the tropics over both land and water, not, however, to the same extent. Land is easily heated during the day and cooled during the night. Water is less easily changed in temperature, hence every tropical island is like a separate furnace, at work during the day rarefying the air and sending it upward, while, falling below the temperature of the ocean during the night, it modifies, suspends, or reverses the process, especially if the absence of clouds make radiation great. Hence, land and sea breezes arise; the former blowing during the day from the sea to the land, the latter during the night in a contrary direction.

Next, every high mountain is a refrigerating apparatus, capable of sending down its slope cooled air on all its sides, and consequently from every point of the compass.



Wax Model of Lamb Showing Parts Used for Meat
American Museum of Natural History, N. Y.

Even apart from these local complications, the higher the heated air which ascends from the tropics rises, the colder the atmospheric region into which it enters; it therefore ultimately parts with the caloric which enabled it to ascend and begins to fall, while the cold polar currents blowing toward the equator become heated, especially where their course is over the land, and ascend.

Flatiron Building Inserted to Show Comparative Size of Rainbow Bridge of Utah
© E. M. Newman

Observation shows that in consequence of these causes, there are eight principal directions in which winds blow: From the north, the northeast, the east, the southeast, the south, the southwest, the west, and the northwest. A north wind is one which blows from the north, not one blowing to that region, and so with the others. Classified according to the direction in which they blow, winds are divided into Regular, Periodical, and Variable Winds. The first are winds which blow all the year round in the same direction, as the Trade winds; the second those which blow regularly at the same seasons and the same hours of the day, as the monsoons, the land and sea breezes, and the simoon, the third, which blow sometimes in one direction and sometimes in another, as the prevalent winds of the temperate and arctic zones. The direction of the wind is easily ascertained by a vane.

World's Seven Wonders.—The seven wonders of the ancient world are: The Pyramids, the Colossus of Rhodes, Diana's Temple at Ephesus, the Pharos of Alexandria, the Hanging Gardens at Babylon, the Statue of the Olympian Jove, and the Mausoleum by Artemisia at Halicarnassus.

The Pyramids are numerous, and space forbids anything like even a list of them. The great piles were constructed of blocks of red or syenitic granite, and of a hard calcareous stone. These blocks were of extraordinary dimensions and their transportation to the sites of the pyramids and their adjustment in their places, indicate a surprising degree of mechanical skill. The Great Pyramid covers an area of between twelve and thirteen acres. The masonry consisted originally of 89,028,000 cubic feet, and still amounts to about 82,111,000 feet. The present vertical height is 450 feet, against 479 feet originally, and the present length of the sides is 746 feet, against 764 feet originally. The total weight of the stone is estimated at 6,316,000,000 tons.

The City of Rhodes was besieged by Demetrius Poliorcetes, King of Macedon, but, aided by Ptolomy Soter, King of Egypt, the enemy were repulsed. To express their gratitude to their allies and to their tutelary deity, they erected a brazen statue to Apollo. It was 105 feet high, and hollow, with a winding staircase that ascended to the head. After standing fifty-six years, it was overthrown by an earthquake, 224 years before Christ, and lay nine centuries on the ground, and then was sold to a Jew by the Saracens, who had captured Rhodes, about the middle of the seventh century. It is said to have required nine hundred camels to remove the metal and from this statement it has been calculated its weight was 720,000 pounds.

The Temple of Diana, at Ephesus, was built at the common charge of all the Asiatic States. The chief architect was Chersiphon, and Pliny says that 220 years were employed in completing the temple, whose riches were immense. It was 425 feet long, 225 broad, and was supported by 125 columns of Parian marble (60 feet high, each weighing 150 tons) furnished by as many kings. It was set on fire the night of Alexander's birth by an obscure person named Erostratus, who confessed on the rack that the sole motive which prompted him was the desire to transmit his name to future ages. The temple was again built, and once more burned by the Goths in their naval invasion, A. D. 256.

The Colossal Statue of Jupiter in the temple of Olympia, at Elis, was by Phidias. It was in gold and ivory, and sat enthroned in the temple for 800 years, and was finally destroyed by fire about A. D. 475.

World's Seven Modern Wonders.—The seven wonders of the modern world are:

1. Wireless Telegraphy, Telephone and Radio.
2. Automobile.
3. Aeroplane.
4. Radium.
5. Antitoxin.
6. Spectrum Analysis.
7. Xray.

Sylvan Lake, Yellowstone Park
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PLANETS

LENGTH OF TIME REQUIRED TO REACH THE VARIOUS PLANETS FROM THE EARTH VIA AEROPLANE TRAVELING 100 MILES PER HOUR

BOOK XIV

HYGIENE

CAROLINE CROASDALE, M.D.
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(**OUTLINE**)

Section I

General Hygienic Care of the School Child.

Introduction.

Factors determining the child's health.

1. Heredity (brief discussion).
2. Hygienic Care of Growing Child.
   a. Food and Nutrition.
   b. Air and Sunshine.
   c. Cleanliness.
   d. Play and Exercise.
   e. Sleep and Rest.
   f. Mental Hygiene and Moral Control.

Careful discussion of each of these subheadings.

HEALTH AND HYGIENE OF THE SCHOOL CHILD

(Illustration from Health Education No. 6)

"What is Health?

Health is not merely freedom from illness.

Health is not merely *sufficient* vigor.

Health means the possession of a *reserve force* of strength and energy.

Reserve force is necessary to meet the emergencies of life.

Reserve force is the capital which is so large a factor in success.

Health may be defined as that abundance of life and overflowing vigor which is the foundation of success and happiness.

Childhood is the time to build up this reserve" Health Education.—Bulletin No. 6—Federal Bureau of Education.

No such examination, of course, was made of our young women, but there is every reason to suppose that the results would have been much the same.

Since the war, largely as a result of these findings and increased appreciation of the preciousness of human life, there has sprung up all over the country a great movement to guard and conserve more adequately the health of our children.

The most natural and the strongest of these agencies will always be the combination of *parent, physician* and *school.*

One of the objects of this discussion is to show how the parent and the school, with the physician's aid, can best work together to conserve child health.

One of the questions which is likely to arise in the minds of parents and teachers at this point is—what factors determine in general the kind of health a given child will have?

These may be summed up under two great headings:

1. Heredity—that very marvelous process by which all living things tend to reproduce traits possessed by their ancestors.

2. Hygienic care of growing child.

The subject of Heredity in human beings is a very profound one and by no means completely understood. It is recognized, however, that all children tend to reproduce both the physical and mental traits of the parents and more remote ancestors.

Once your child is born of course you are powerless to influence this factor,

100 CALORIE PORTIONS OF A FEW FAMILIAR FOODS
In terms of ordinary household measurements and of quantities commonly purchased.

Section II.

Protection of the Child against Disease.

1. General hygiene and the teaching of Health Habits.
2. Vaccination.
3. Routine Health Exam. and follow-up Work.
4. Care of the Teeth, and Why.
5. Care of the Nose and Throat.
6. Care of the Eyes and Ears.
7. Prevention and Care of Common Colds.
8. Care of Elimination.
9. After-care in the Infectious Diseases of Childhood.
10. Care of Cuts, Wounds and Abrasions.

Conclusion.

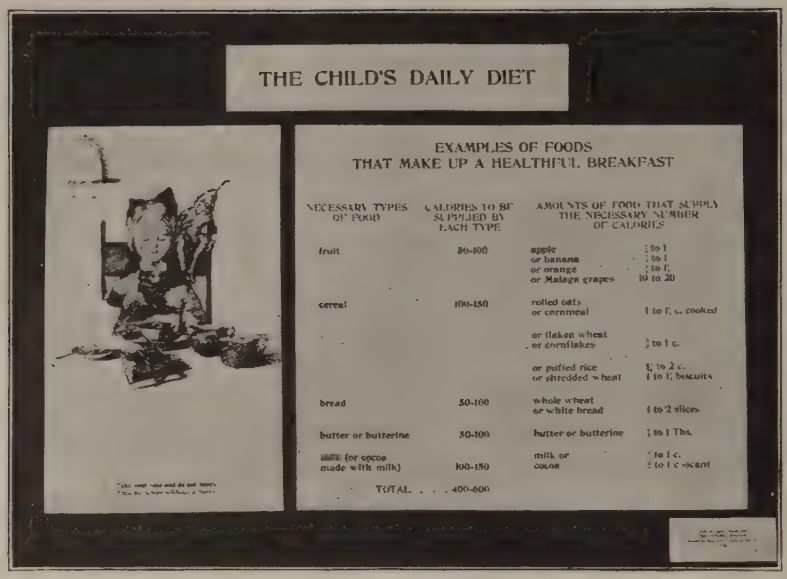
Section I.

GENERAL HYGIENIC CARE OF THE SCHOOL CHILD

(Dealing especially with children between the ages of 6 and 14.)

Introduction and General Considerations.—One of the most surprising results of the physical examination of the drafted men during the war was the record showing that about three out of every ten were unfit for duty because of some physical defect—such as poor vision, bad teeth, poor hearing, being much under weight, etc.

Most of these defects could have been prevented entirely by the proper care of the boy during the years of childhood.



indeed you have only a limited power before its birth—but you have left to you that other all important factor—Hygienic Care.

Our point of view about heredity has changed somewhat in the last ten years—the tendency being to lay less stress upon it than hitherto. For instance, many diseases used to be considered hereditary which we know now are not, the outstanding example here being tuberculosis.

This disease is never hereditary, tho, of course, the child of tubercular parents may show more *tendency* to contract it than the child of normal parents.

There are very few diseases, today, with which a child may be born—but the child may and does inherit *tendencies* to certain diseases if those tendencies or the actual diseases have been present in the parents.

However, even if your child has inherited say a tendency to poor digestion, that is no reason for you to expect and accept it as a fact that he will always be so hampered.

It is reason, however, for you to be especially on your guard about his food and general health regime. If tuberculosis has been the stalking spectre in your ancestral line that is no reason to be pessimistic about your child. Only let it constitute a warning to you that this child needs extra air, extra sunshine and careful feeding.

It would be false indeed to underestimate the importance of heredity in the make-up of your child; and in health teaching among older boys and girls there is no stronger appeal for them to keep themselves strong and well than the benefit such fitness will bring to their future children. But to overestimate its importance is likely to prove misleading and pessimistic.

Even with very bad heredity in a given child surprisingly good results can be obtained by good hygienic care.

Fortunately the kind of hygienic care the child is to receive can be to a very considerable extent determined by the parent. So that after all, parents can to a very large extent determine the kind of health their children are to have.

The question to be answered at this point is, what constitutes good hygienic care?

It is a very big subject and includes almost every influence, both physical and mental, which touches the child during the period of growth.

The chief factors concerned are as follows:

1. Food and Nutrition.
2. Air and Sunshine.
3. Cleanliness of body, clothes and surroundings.
4. Play and exercise.
5. Sleep and rest.
6. Mental hygiene and parental control.

Let us discuss briefly each of these major divisions as they affect the health of the child.

1. **Food and Nutrition.**—Proper feeding during the years of growth is generally recognized as fundamental to the health of every child.

The kind of food your child has today determines to a large extent the kind of man he will be tomorrow. It then behooves every parent to understand the principles which are involved in proper child feeding.

Let us consider first a little about food and the human body in general.

Food, of course, as everyone knows, gives us the following things:

1. Fuel for body activities—enabling us to work both mentally and physically; to play and to keep us warm. In order for our life processes to go on normally our bodies must maintain a certain temperature—the heat for this comes entirely from the food we eat.

2. Food supplies material to repair the parts of us which become worn out by working and playing.

3. Food supplies material for growth.

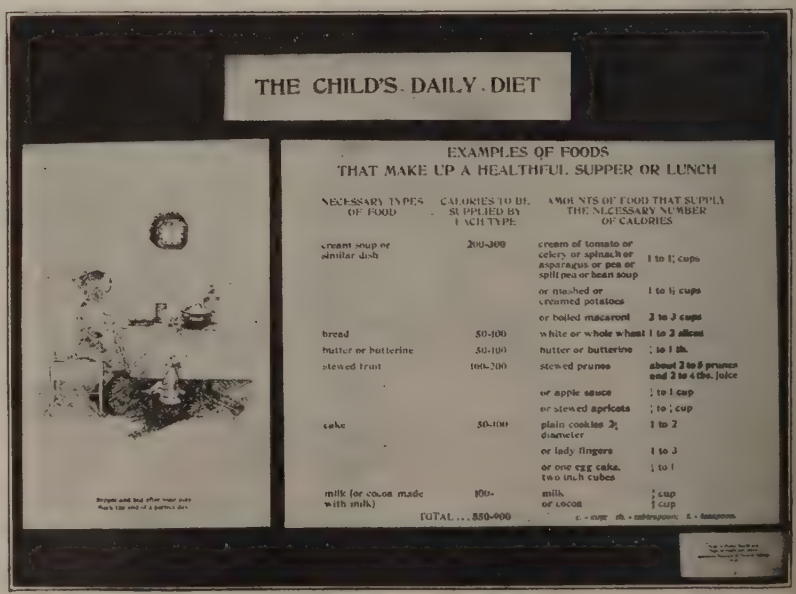
With these three great general uses of food in mind let us make a simple classification of food materials.

1. **Fuel Foods—these include:** (A) All Fats—such as butter, cream, olive oil, fat of meats, etc. (b) All Starches and Sugars—such as bread, cake, crackers, cereals, desserts and pastries, all vegetables and all fruits.
2. **Foods for Growth and Repair—these include:** All the so called *protein* foods of which eggs, milk, cheese, fish, lean meat and the grains are the most important.
3. **Mineral Salts—these include:** Salts of iron, of lime, of sodium and many others. They are found pretty well distributed thru all of our food, some foods being rich in one and some in another.

Iron salts, for instance, are especially abundant in oatmeal, whole wheat flour, raisins, etc. The salts of lime are very abundant in milk—and as it is these which aid young children chiefly in forming bone one very good reason for the free use of milk with growing children will be seen.

Iron salts are an indispensable constituent of normal blood.

4. **Vitamines.**—Food substances not completely understood but which are vitally necessary to the normal growth and health of every child.



(a) Those found in fresh fruits and leafy vegetables such as cabbage, spinach, lettuce. Tomatoes are also rich in this vitamine.
(b) Those found in milk and dairy products.
(c) Those found in the cereals and grains.

We do not understand completely what the vitamines do for us but we do know that some of them have a very important influence on growth. It has been shown, for instance, that young rats fed an abundance of fat, sugar, protein and water, but with vitamines of a certain type extracted from this food, will live but cease growing entirely until the special vitamine is restored.

The lack of certain other vitamines will produce very definite diseases—an example of this is scurvy—a disease from which sailors and explorers used to suffer frequently. It is now occasionally seen in badly fed young children. It is caused by the absence of the vitamine contained in fresh fruit and leafy vegetables. It can be cured by treating the sufferer with doses of fresh orange juice or tomato juice —either fresh or canned.

Another disease caused by lack of vitamines is seen in the Orient among poor coolies of Japan and China. The chief article of diet there is rice, of course. This is a very good food provided some of the outer husks of the rice grain are left in the milling process. Because it is in these husks that the precious vitamine of the rice resides. If the coolies are fed on the so-called polished rice—that with all the outside husks removed—they soon develop a serious disease called beriberi. This can be cured if they are changed quickly to the unpolished rice. Polished rice is used in America but our diet is so varied, as a rule, that we have other sources of vitamines.

What is true of the rice grain in respect to the location of its vitamine is also true of the other grains—wheat, oats, rye, etc. Fine white flour made from any of these is very low in vitamine content compared to coarser, darker flours. This is one of the reasons why whole wheat and brown bread are much more wholesome and should always be provided for children at least part of the time.

Tradespeople and advertising specialists are beginning to make capital of the term *vitamine*. Yeast, for instance, is widely advertised and recommended as a vitamine food. It is perfectly true that yeast contains vitamines but there is no logical reason why anyone should resort to yeast for these substances when they are found in such abundance in attractive foods like oranges, lettuce, cabbage, milk, butter, cereals, etc. A good mixed diet contains all the vitamines any child needs, and in the best possible form.

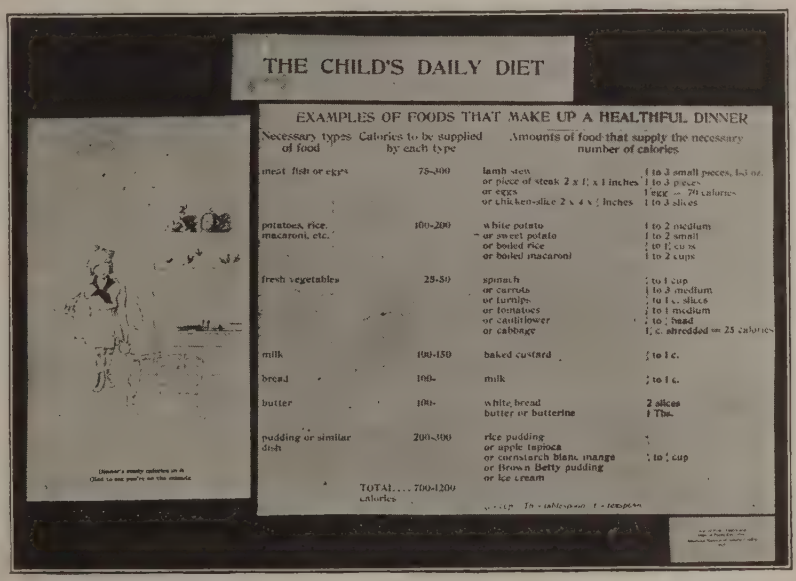
5. **Water.**—This is frequently not classed as a food because it does not give energy, nor repair waste or supply growth. It is, however, necessary in order that all the above named processes should go on. All children of from 6 to 14 need from 4 to 8 glasses of water daily.

At the close of this food classification a word of caution may be necessary. Very few foods are purely and solely of one type. Thus bread, which we have classed as a starchy food, is also rich in protein and when made from darker flour is also rich in vitamines. Milk, usually classed as protein, contains every food element required by the child, making it the one perfect food for children.

Foods like butter, olive oil, cream and sugar, on the other hand, consist practically entirely of one kind of food substance.

The great majority of food substances tho are highly complex.

With this simple classification of foods in mind let us proceed to the feeding of our child.



The first question to be asked here is: how does the feeding of children between the ages of 6—14 differ from the feeding of adults?

1. Most children of these ages are more active muscularly than adults.

2. The child is growing.

The conclusions reached from these two statements are:

1. His greater activity requires proportionately a greater total quantity of food than the adult.

2. The child's diet needs a greater proportion of protein food (growth food) than the adult.

Let us consider first the question of how much food the child needs. This is determined by several factors.

1. The individuality of the child—very active, highly strung children usually require more food than the more passive types.

2. The weight and height of the child—larger children require more food.

3. Age—the amount of food required increases from the 6th year, till at 13—16 it is more actually than the adult requirement.

4. Sex—to a limited extent.

During the first year of life both male and female children require about the same amount of food and in proportion to the size of their little bodies more food than they will ever require again.

From the second to the twelfth year the food requirements of boys and girls of the same body weight is about the same.

At this point the girl shoots ahead of the boy in growth and so requires more food than the boy. But from fourteen to sixteen the boy shoots ahead of the girl in growth and requires considerably more than she does at this time.

The usual method of measuring food quantities in relation to nutrition is by the calorie.

A calorie is really a certain amount of heat. In this connection one calorie represents enough heat to raise the temperature of about 1 quart of water 1°F.

The reason the calorie is chosen as the unit for measuring foods accurately is because all of the major classes of foods, i.e., fats, starches, sugars and proteins, are transformed into heat in our bodies. (The proteins have in addition the special power of providing new substance for repair and growth). Therefore it seems appropriate that since practically all of the food we eat may be transformed into heat within us the unit for measuring it should be a certain amount of heat, i.e., the calorie. By very careful experiments, it has been determined how many calories equal amounts of each of the major food substances will yield. Thus—

1 gram of pure protein completely turned somewhat as it is in the body will yield 4 calories.

1 gram of pure starch or sugar likewise treated will yield 4 calories.

1 gram of pure fat treated the same will yield 9 calories.

A gram may be thought of roughly as the amount of powdered sugar that could be held on the nail of one's little finger.

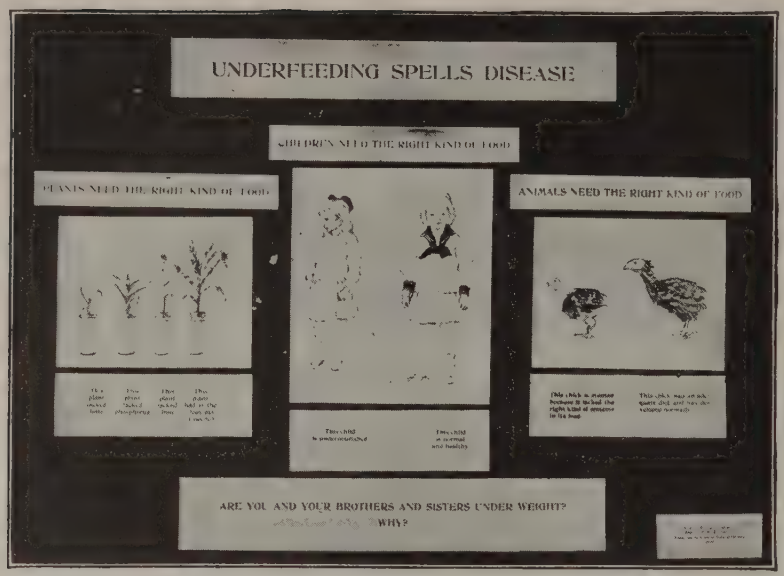
It will be seen from the above figures that starches, sugars and proteins are the same in their heat yield, while fats are much more caloric.

Using these figures, then, one could calculate the number of calories in any given amount of any food provided the proportions of fat, starch, sugar and protein in it were known.

Thus as a sample problem—How many calories could be derived from a glass of milk which contained in its solid part (water has no caloric value) 7 grams of protein, 6 grams of fat and 5 grams of sugar?

1 gm. protein—4 calories x 4—16 cal.
1 gm. fat —9 calories x 9—81 cal.
1 gm. sugar —4 calories x 5—20 cal.

This particular glass of milk—117 calories or would yield over 100 calories. This would be rich milk high in butter fat. Poorer milk yields only about 100 calories or less.



Fortunately it is not necessary for us to spend time working out caloric values as there are many excellent tables all worked out for our use giving calories per table portion. The one appended here was worked out by Dr. Emmett Holt, the eminent specialist in child feeding.

Now that we have some idea of the meaning of the term calorie the next question is how much per day or how many calories does a given child require?

This is determined roughly by age and body weight.

Between the ages of 6 and 14 we allow approximately 40-50 calories for every pound of body weight.

Thus a boy of ten weighing 70 lbs. would require at least 2,800 calories per day. The same would be true for the girl of this age, as there is not much difference between them, nutritinely speaking, till the eleventh year.

Here again it is not necessary for the parents to puzzle unduly over total calories; as the Federal Bureau of Education, Department of Health, has worked out excellent menus which give correct quantities for children from 7—12 years. They are included here.

After total quantity of food required is settled in a general way the next important question to be determined is the proper protein requirement.

We said sometime back it will be remembered that children require more protein then adults because of growth. Roughly speaking; 15% of their total daily calories should be derived from protein food. In the table of menus appended the protein food included is in this proportion. So, here again tedious calculations are unnecessary. What is necessary at this point, however, is that the parent shall choose the child's protein food with good judgment.

The best all-around protein food for the growing child is milk.

Every child 6—14 should drink at least a pint a day. Dr. Graham Lusk, the great nutrition specialist, says that no family of 5—father, mother and three children—should buy any meat at all until they are regularly using 3 quarts of milk each day. "No other food can take the place of milk," says the Federal Bureau of Health Education. "Milk should not be given too cold; warm milk is more easily digested. If children rebel against drinking milk alone it may be given in the form of cocoa, custards, milk soup, etc. Where it is impossible to get fresh milk, dried or evaporated milk may be used tho they are not so good.

"Tea and coffee should not be given to growing children at all." Not only are they stimulating and non-nutritious, but their stronger taste spoils the child for the milder, blander tasting milk.

The first food a family should buy is milk. The last food to be dispensed with is milk.

After milk, eggs, simple cheese and cereals are also preferable to meat. A very small piece of meat or fish once each day is the most required by any child.

The Food Bulletin of the Bureau of Federal Education says here:—"Where plenty of milk and an egg a day are included in the diet of the child very little meat need be given before the 7th year.

"Allow not more than two ounces of meat daily for the child from 7—10, and not more than 3 ounces daily from 7—14, (an ounce here is a rounded tablespoonful).

"The broth from stews may be given in vegetables and bread. Very fat gravies should be avoided as meat fat is hard for most children to digest.

"Breads, cereals and the grain products, should furnish one-third of the child's total food intake."

Remember that the darker, coarser breads are always to be preferred.

Cooked cereals are more nourishing than the cold ones.

Vegetables form a very essential part of the diet. There is little danger of feeding a child too many vegetables. They are important in helping to counteract constipation.

Potatoes, baked, boiled or mashed, should be given every day.

Lettuce, spinach, beet greens, carrots, cooked onions and all the dried vegetables should be generously served. Cabbage is very wholesome, but most children need to have it cooked.

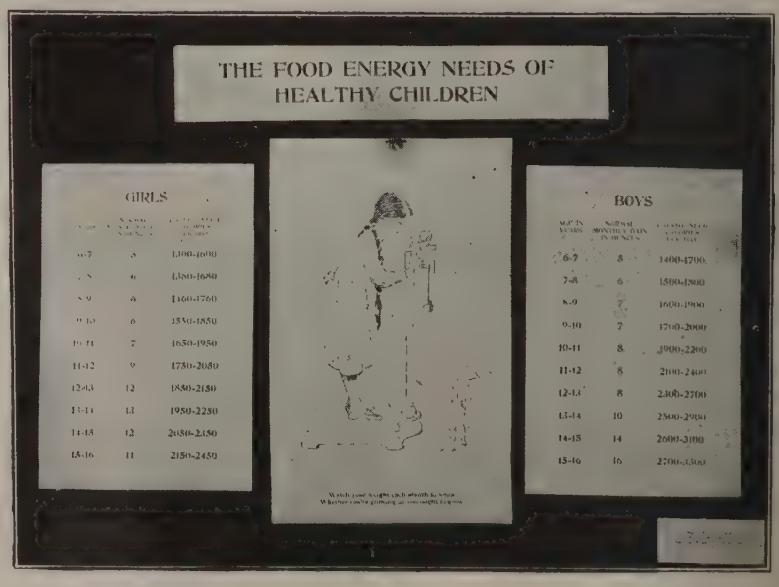
Many children find corn and cucumbers difficult to digest so these had best not be used till after the 12th year.

"There should be some fruit eaten every day—fresh or dried. Fresh fruit should be very ripe; uncooked bananas should not be eaten before the 10th year." All the simple stewed fruits are good. Excessive amounts of sugar should be avoided. A small amount of simple candy, like milk chocolate, may be eaten directly after a meal. Eating of candy between meals should never be permitted. Eating between meals of any thing should always be discouraged—if absolutely necessary, it should be bread and butter.

Children 5—7 years, should not have more than 1 tablespoonful of sweets in addition to sugar in the diet.

Those 7—12 not more than 2 tablespoonfuls daily.

Fat is a necessary part of every child's diet. Butter and cream are the most wholesome. Substitute butters are not injurious, but it is better not use to them



with children as they contain little or no vitamine. Olive oil and small amounts of nuts are wholesome. Children should not be given cooked fat, except bacon, as they are harder to digest.

All fried foods and pastry should be avoided.

Every child should have 3 well-planned meals each day.

If lunch is eaten at school one hot dish at least, such as soup or cocoa, should be included. If a basket lunch is carried it should consist of two or three nutritious sandwiches of egg or raisin or lettuce or peanut butter, with a few simple cookies and some fruit. Meat sandwiches are not necessary.

Breakfast is a very important meal for the school child. No properly disciplined child should ever be allowed to leave the house without breakfast. For good breakfast menus see the chart. The Federal Bureau of Education recommends the following so-called Good Food Habits:—

1. Meals should be eaten at regular times.

2. A glass of water, not too cold, may be taken with each meal. We know now that drinking water slowly at meals does not interfere with digestion.

3. Children often have to be taught to like foods which are good for them—vegetables such as carrots, or spinach or lettuce. Be patient but firm in teaching a child to like new foods. Begin by giving a small amount of the new food, give but one new food at a time and repeat it regularly until the child learns to like it.

4. Children should never be forced to eat when not hungry. Forced feeding causes more harm than light eating for a few days.

5. Children should be happy while eating—let the mealtime be a joyous occasion, with no undue excitement just before, during or after eating.

6. Plenty of time should be allowed for meals with reasonably slow chewing.

How is one to know if a child is properly nourished? The best test is does he weight the correct amount for his age and height? Every school child should be weighed once each month thru out the year and a record kept. In many schools now this is done routinely—the class weight record hanging on the wall. The child sees from the chart how much he should weigh for his age and height and how much he should gain each month. This is a point which the home and school should work together always.

Reproductions of the weight charts gotten out by the Federal Bureau of Education are to be found on this page.

We are just beginning to realize how extensive and far reaching are the results of faulty nutrition in our school children. Dr. Emmett Holt gives very interesting data concerning the relation of nutrition to school progress and retardation. His conclusion, based on extensive study of many statistics, somewhat as follows:

1. Children in advanced grades for their ages are found to be taller and heavier than children who are average age for the grade.

2. Tall and heavy boys and girls are physiologically older and further advanced in school progress than those who are small and light.

3. School progress goes hand in hand with physical development.

4. Bright children are as a rule better developed physically and heavier for their height than retarded ones.

The general conclusion to be drawn here is that mental development parallels physical development *as a rule.*

Good physical development—good nutrition.

Excellence in school progress is dependent upon good nutrition.

A child must be well nourished to attain more than average grade or go faster than his fellows.

Poorly nourished children in the school tend to show the following:—

1. They lack energy and are easily tired.
2. They show marked inattention—it is very hard to hold their interest.
3. Poor memory.
4. Slow comprehension.
5. Restlessness.

Poor nutrition is generally conceded to be one of the chief causes of retardation, or backwardness, in our school children today.

The following results were obtained in 1921 in the city of Detroit as a result of a study of backward and bright children in relation to nutrition:

The weight of boys retarded 1 year was 1.5 per cent below the average weight for the grade.

The weight of boys retarded 2 years was 2.6 per cent below the average weight for the grade

The weight of boys retarded 3 years was 4.9 per cent below the average weight for the grade.

The weight of boys retarded 4 years was 8.1 per cent below the average weight for the grade.

The weight of boys accelerated 1 year was 2.6 per cent above the average weight for the grade.

The weight of boys accelerated 1½ years was 5 per cent above the average weight for the grade.

The weight of boys accelerated 2 years was 7.1 per cent above the average weight for the grade.

The weight of boys accelerated 2½ years was 10.2 per cent above the average weight for the grade.

From "Food, Health and Growth"
—By Dr. L. E. Holt.

Another very fundamental result of faulty nutrition is that it predisposes the child to all kinds of infectious diseases—the most dreaded of which is tuberculosis.

The conclusion to be drawn from the foregoing is that every thoughtful, earnest parent will give the careful and painstaking attention to the feeding of her children.

2. Air and Sunshine.—These are just as necessary for the growing child as food. The so-called open air movement in America today, including sleeping porches, summer camps, Boy and Girl Scout activities in the open, will undoubtedly make for a stronger, finer race.

Oxygen, the most important constituent of the air we breathe, is as necessary to life and nutrition as is food itself. Without it life is impossible—diminished oxygen supply always means reduced health and vigor. Witness the difference in the occurrence of colds, coughs and pneumonia in the winter, when we are huddled indoors, as compared with the summer, when we spend more time outdoors.

Oxygen supply for children usually takes care of itself in summer but during the long winter months spent indoors special care must be exercised at all times to see that sufficient air is secured by ventilation.

1. Every child should be trained to sleep with at least one window open all winter—being of course very warmly covered.

2. Most careful attention should be given to the ventilation of the school room—the child himself being trained to appreciate good ventilation. In our large cities, where over-crowding is the rule and many children suffer acutely from lack of air, the open air school is being established to care for the weaker ones, and with most encouraging results—children gaining in weight and mental alertness.

In observations made on the children in the open air schools of Philadelphia it was found that in practically every instance they could accomplish almost twice as much school work in a given time under the open conditions as was possible in the closed room.

The following is quoted from Dr. Walker Cornell's report on a study of open air schools—

"Children taught in fresh air learn with avidity and directly. They do not require the perpetual reviews and drills so common in our hot, dry schools. They are happier and grown more rapidly in cold air. The discipline of a school is reduced to a simple problem when the air is right.

"After eight weeks of cold air work in the two rooms first opened for demonstration, the school physician found that the nasal discharge, which is very common in all primary schools in cold weather, was entirely absent in the two rooms open to the fresh air. One child with catarrh was found in each room, but both had been out of school and returned the day of inspection. He found in two similar rooms where the air breathed was like that supplied in the very best schools of Chicago and other progressive cities that over 40 per cent of the pupils had nasal discharge, although his examination was held before the severest weather had been experienced."

In most places where open air schools have been established they are for the benefit of badly nourished and tubercular children. But we are progressing so in our appreciation of health that the time is not far distant when every new school house will have at least partial open air facilities and equipment.

SAMPLE SUMMER DIET FOR A WEEK FOR CHILDREN 7 TO 12 YEARS.

BREAKFAST	DINNER	SUPPER
Oatmeal, ½ to ¾ cup, with milk. Stewed fruit, 2 to 3 tablespoonfuls. Bread and butter, 2 to 3 slices. Milk to drink, 1 glass.	Lamb stew, with vegetables, small portion. Squash or string beans, 2 to 3 tbsps. Bread and butter, 2 to 3 slices. Bread pudding, 2 tbsps.	Potato soup, with milk, 1 cup. Poached egg and toast. Brown bread and butter, 2 to 3 slices. Stewed prunes, 4 to 5. Milk to drink, 1 glass.
Force or cornflakes, 1 cup, with milk. Egg. Brown bread and butter, 2 to 3 slices. Milk to drink, 1 glass.	Chicken with rice, small portion. Mashed potato, 2 to 3 tbsps. Dandelion greens, or boiled onions, 2 to 3 tbsps. Stewed fruit, 2 to 3 tbsps. Bread and butter, 2 to 3 slices.	Spinach soup with milk, 1 cup. Corn bread and syrup, 2 to 3 pieces. Cottage cheese, 1 level tbsp. Ginger cookies, 1.
Hominy, ½ to ¾ cup, with milk. Toast and butter, 2 to 3 slices. Baked banana, 1. Milk to drink, 1 glass.	Bacon, 1 slice. Poached egg and spinach. Spaghetti with tomatoes, 2 to 3 tbsps. Green peas or string beans, 2 to 3 tbsps. Bread and butter, 1 to 2 slices.	Cornflakes, 1 to 2 cups, with milk. Puree of lima beans, ⅔ cup. Ginger cookies, 1 to 2. Milk to drink, 1 glass.
Cornmeal, ½ to ¾ cup, with syrup. Scrambled egg, 1. Bread and butter, 2 to 3 slices. Milk to drink, 1 glass.	Rice pudding, 1 to 2 tbsps. Hamburg steak, 1 small ball. Stewed potatoes, 2 to 3 tbsps. New beets and beet-top greens, 2 to 3 tbsps. Stewed fruit, 2 to 3 tbsps. Bread and butter, 2 to 3 slices.	Milk toast or rice, ½ cup, with milk. Baked potato, 1. Bread and butter, 2 to 3 slices. Milk to drink, 1 glass.
Shredded wheat, 1, with milk. Corn bread and butter, 2 pieces. Apple sauce or stewed pears, 2 to 3 tbsps. Milk to drink, 1 glass.	Fish or clam chowder, ¾ cup, or egg. New beets or spinach, 2 to 3 tbsps. Boiled potato. Bread and butter, 2 to 3 slices. Custard or junket, ½ cup.	Oatmeal soup, 1 cup. Squash, chard, or carrots, 2 to 3 tbsps. Stewed fruit, 2 to 4 tbsps. Bread and butter, 2 slices. Milk to drink, 1 glass. Plain cookies, 1.

SAMPLE WINTER DIET FOR A WEEK FOR CHILDREN 7 TO 12 YEARS.

Oatmeal, ⅔ cup, with milk. Bread and butter, 2 to 3 slices. Stewed prunes or figs, 3 to 4. Cocoa with milk, 1 glass.	Beef stew with vegetables, small portion. Bread and butter, 3 to 4 slices. Rice pudding or custard, 2 to 3 tbsps.	Corn bread and syrup, 2 to 3 pieces. Soft egg. Bread, 2 to 3 slices, and peanut butter, ½ tbsp. Cocoa with milk, 1 glass.
Force or cornflakes, 1 to 2 cups, and milk. Bread and butter, 2 to 3 slices. Soft egg and bacon. Milk to drink, 1 glass.	Chicken, small slice. Potato soup with milk, 2 to 3 cups. Creamed carrots or onions, 2 to 3 tbsps. Ginger bread and thin cream, 1 small piece. Bread and butter, 2 to 3 slices.	Milk toast, 2 to 3 slices. Cottage cheese, 1 tbsp. Stewed prunes, 4 to 5. Cookies, milk to drink, 1 glass.
Pettijohn or malt breakfast food, ⅔ cup, with milk. Bread and butter, 2 to 3 slices. Soft egg. Milk to drink, 1 glass.	Creamed or fresh broiled fish, small portion. Baked sweet potato. Bread and butter, 2 to 3 tbsps. Baked apple, 1.	Spinach or bean soup, 1 cup. Baked potato, 1. 1 corn bread and butter, 2 pieces. Milk to drink, 1 glass.
Cornmeal, ⅔ cup, and milk. Toast and butter, 2 to 3 slices. Stewed dried peaches, 2 to 3 tbsps. Cocoa with milk, 1 cup.	Lamb stew with vegetables, small portion. Boiled potato, 1. Bread or rice pudding, 2 to 3 tbsps. Bread and butter, 2 to 3 slices.	Celery soup with milk, 1 cup. Bread and butter, 2 to 3 slices. Custard or junket, ½ cup. Ginger cookies, 1 to 2. Milk to drink, 1 glass.
Stewed dried peaches, 2 to 3 tbsps.	Bread or rice pudding, 2 to 3 tbsps.	Custard or junket, 3 cup. Milk to drink, 1 glass.

From Diet for the School Child, No. 2. Federal Health Education.

COMPARING FOOD VALUES AT A GLANCE

Copyright, Denoyer-Geppert Co.

The graph at top left shows the percentage of protein (red), fat (yellow), carbohydrate (blue), water (green) and mineral (purple). Milk is an almost perfectly balanced food. Compare the band representing milk with those of the other foods.

The amount of heat necessary to raise the temperature of 1 liter of water from 0° to 100° Centigrade (from freezing to boiling) is 100 calories. Each portion around the vessel is the equivalent of 100 calories.

At bottom left are twin chicks; the sturdy one had a vitamin diet, while the other had no vitamins. The three squares indicate diet requirements: in iron (red), in calcium (blue); in phosphorus (yellow). The three rectangles show how cooking breaks down the indigestible capsules which enclose the starch granules in our starchy foods: the first rectangle shows with no cooking; the next, with a little cooking; the third, when thoroughly cooked. At lower right is depicted the balanced meal amid pleasant surroundings.

	Quantity	Total Calories
Meats		
Beef, roast, very lean	1 tbsp.	22
Beef, round, fat removed	1 tbsp.	37
Beefsteak, tenderloin	1 tbsp.	57
Lamb, roast	1 tbsp.	40
Lamb chop, tenderloin only	1 tbsp.	40
Chicken, roast	1 tbsp.	36
Turkey, roast	1 tbsp.	57
Beef juice	1 tbsp.	8
Gravy, thick	1 tbsp.	62
Bacon, beechnut, cooked dry (raw slice, 13 grams)	1 slice	25
Fish		
Bluefish	1 tbsp.	30
Cod	1 tbsp.	20
Trout, brook	1 tbsp.	23
Shellfish		
Clams, long	6	79
Oysters, medium size	6	44
Soups		
Consomme, canned	4 tbsps.	14
Pea, cream soup	4 tbsps.	162
Other cream soups (average of five)	4 tbsps.	126
Vegetable soup	4 tbsps.	43
Tomato soup	4 tbsps.	49
Dairy Products and Eggs		
Milk, whole, 3.5%	1 tbsp.	20
Skimmed milk, fat free	1 tbsp.	10
Buttermilk, fat free	1 tbsp.	9
Cream, light, 20%	1 tbsp.	62
Cream, heavy, 40% fat	1 tbsp.	116
Condensed milk, sweetened	1 tbsp.	123
Butter	1 level tbsp.	40
Egg, whole (Wt. with shell, 58 grams.)	1	85
Egg, yolk	1	65
Egg, white	1	20
Vegetables		
Baked beans, home-made	1 tbsp.	66
Lima beans, whole	1 tbsp.	32
String beans	1 tbsp.	7
Beets	1 tbsp.	14
Cabbage	1 tbsp.	10
Carrots	1 tbsp.	6
Cauliflower	1 tbsp.	6
Turnips	1 tbsp.	12
Spinach	1 tbsp.	12
Corn (cut off ear)	1 tbsp.	30
Onions	1 tbsp.	9
Peas	1 tbsp.	28
Asparagus tips, mashed	1 tbsp.	7
Potato, white	1 tbsp.	32
Potato, sweet	1 tbsp.	38
Potato, baked, medium size	1	79
Celery, one stalk	4 in. long	2
Tomato, medium size	1	23
Lettuce	1 leaf	2
Bread		
White, baker's slice 3x4x½ in.	1	80
Whole wheat, slice 3x4x½ in.	1	106
Rolls, French, 4x2x1½ in.	1	112
Corn bread, piece 3½x4x½ in.	1	104
Zwieback, small piece	1	34
Crackers		
Graham, 3x3 in.	1	35
Saltines, 2 in. square	1	13
Uneeda biscuit, 3 in. square	1	25
Wheatsworth, 2x3 in.	1	26
Cereals		
Farina and Cream of Wheat	1 tbsp.	17
Hominy, boiled	1 tbsp.	15
Cornmeal	1 tbsp.	14
Oatmeal	1 tbsp.	20
Cornflakes	1 tbsp.	11
Rice, boiled	1 tbsp.	34
Macaroni, boiled	1 tbsp.	30
Shredded wheat biscuit	1 tbsp.	109
One rounded tablespoonful of cereal = 1 ounce by volume.		
One heaping tablespoonful of cereal = 1½ ounces by volume.		
Fruits, Fresh		
Apple, medium, 3¼ in. diameter	1	96
Grapefruit, medium, 4½ in. diameter (3½ oz. juice.)	½	59
Orange, large, 3½ in. diameter (5½ oz. juice.)	1	96
Peach, large, 2½ in. diameter	1	44
Pear, medium, 2½ in. diameter	1	90
Strawberries, medium, 1 in. diameter (1½ oz. mashed.)	6	20
Banana, average, 7 in. long (100 grams peeled.)	1	104
Orange juice	1 tbsp.	16
Fruits, Dried		
Apricots, large	5	114
Dates, large	5	133
Figs, large	5	316
Prunes, large	5	262
Raisins, large	5	40
Fruits, Cooked		
Apple sauce	1 tbsp.	38
Prune pulp	1 tbsp.	40
Marmalade, orange	1 tbsp.	105
Jelly, currant	1 tbsp.	113
Apple, baked, large	1 tbsp.	128
Peaches, canned, large 2½ in.	2 halves	51
Peaches, canned (juice 24% sugar)	1 tbsp.	33
Cakes, Pastries, Puddings		
Cookie, 3 in. diameter	1	42
Gingerbread, 1x2x3 in.	1 piece	221
Sponge cake, 2x3½x½ in.	1 piece	91
Lady finger, 4 in. long	1	74
Apple pie, ⅛ pie	1 piece	352
Custard pie, ⅛ pie	1 piece	243
Bread pudding	1 tbsp.	68
Rice Pudding	1 tbsp.	60
Baked custard (8 ozs. milk, 1 egg, 1 oz. sugar)	1 tbsp.	37
Junket (8 oz. milk, 1 oz. sugar)	1 tbsp.	28
Apple tapioca	1 tbsp.	36
Chocolate cornstarch	1 tbsp.	69
Ice cream (made with egg)	1 tbsp.	57
Orange ice	1 tbsp.	94
Tapioca pudding	1 tbsp.	55
Sugar, etc.		
Sugar, granulated	1 level tbsp.	25
Domino, half size	1	25
Domino, cube	1	29
Honey, 20 c. c.	1 tbsp.	101
Maple syrup, 20 c. c.	1 tbsp.	88
Karo corn syrup, 20 c. c.	1 tbsp.	95
Ice cream soda	1	278
Chocolate sauce	1 tbsp.	152
Milk chocolate, 1x2x¼ in.	1 piece	58
Fudge, 1x1x¾ in.	1 piece	70
Peppermints, plain, 1 in. diameter	1	27
Lollypop, 1¼x⅝ in. diameter	1	107
Miscellaneous		
Olive oil	1 tbsp.	235
Cream sauce	1 tbsp.	61
Cocoa	1 tbsp.	13
Peanut butter	1 tbsp.	56
Peanuts	10	85
Walnuts	1	31

From "Food, Health and Growth"
—By Dr. L. E. Holt.

HEIGHT AND WEIGHT TABLE FOR BOYS AND GIRLS

HEIGHT and WEIGHT TABLE for GIRLS

Height Inches	5 Yrs	6 Yrs	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs
39	34	35	36											
40	37	38	39											
41	38	39	40											
42	40	41	42	43										
43	42	42	43	44										
44	44	45	46	46										
45	46	47	47	48	49									
46	48	48	49	50	51									
47	...	49	50	51	52	53								
48	...	51	52	53	54	55	56							
49	...	53	54	55	56	57	58							
50	...	...	56	57	58	59	60	61						
51	...	...	59	60	61	62	63	64						
52	...	...	62	63	64	65	66	67						
53	...	...	...	66	67	68	68	69	70					
54	...	...	...	68	69	70	71	72	73					
55	...	...	...	...	72	73	74	75	76	77				
56	...	...	...	...	76	77	78	79	80	81				
57	...	...	...	...	...	...	81	82	83	84	85	86		
58	...	...	...	...	...	...	85	86	87	88	89	90	91	
59	...	...	...	...	...	...	89	90	91	93	94	95	96	98
60	...	...	...	...	...	...	...	94	95	97	99	100	102	104
61	...	...	...	...	...	...	...	99	101	102	104	106	108	109
62	...	...	...	...	...	...	...	104	106	107	109	111	113	114
63	...	...	...	...	...	...	...	109	111	112	113	115	117	118
64	...	...	...	...	...	...	...	...	115	117	118	119	120	121
65	...	...	...	...	...	...	...	...	117	119	120	122	123	124
66	...	...	...	...	...	...	...	...	119	121	122	124	126	127
67	...	...	...	...	...	...	...	...	...	124	126	127	128	129
68	...	...	...	...	...	...	...	...	...	126	128	130	132	133
69	...	...	...	...	...	...	...	...	...	129	131	133	135	136
70	...	...	...	...	...	...	...	...	...	...	134	136	138	139
71	...	...	...	...	...	...	...	...	...	...	138	140	142	143
72	...	...	...	...	...	...	...	...	...	...	...	145	147	148

106
111
115
118
119
122
125
128
130
134
137
140
144
149

PREPARED BY DR. THOMAS D. WOOD

About What a GIRL Should Gain Each Month

AGE		AGE	
5 to 8	6 oz.	14 to 16	8 oz.
8 to 11	8 oz.	16 to 18	4 oz.
11 to 14	12 oz.		

These cards may be obtained from the CHILD HEALTH ORGANIZATION
370 Seventh Avenue, New York

Weights and measures should be taken without shoes and in only the usual indoor clothes.

HEIGHT and WEIGHT TABLE for BOYS

Height Inches	5 Yrs	6 Yrs	7 Yrs	8 Yrs	9 Yrs	10 Yrs	11 Yrs	12 Yrs	13 Yrs	14 Yrs	15 Yrs	16 Yrs	17 Yrs	18 Yrs
39	35	36	37											
40	37	38	39											
41	39	40	41											
42	41	42	43	44										
43	43	44	45	46										
44	45	46	46	47										
45	47	47	48	48	49									
46	48	49	50	50	51									
47	...	51	52	52	53	54								
48	...	53	54	55	55	56	57							
49	...	55	56	57	58	58	59							
50	...	...	58	59	60	60	61	62						
51	...	...	60	61	62	62	64	65						
52	...	...	62	63	64	65	67	68						
53	...	...	...	66	67	68	69	70	71					
54	...	...	...	69	70	71	72	73	74					
55	...	...	...	...	73	74	75	76	77	78				
56	...	...	...	...	77	78	79	80	81	82				
57	...	...	...	...	...	81	82	83	84	85	86			
58	...	...	...	...	...	84	85	86	87	88	90	91		
59	...	...	...	...	...	87	88	89	90	92	94	96	97	
60	...	...	...	...	...	91	92	93	94	97	99	101	102	
61	...	...	...	...	...	...	95	97	99	102	104	106	108	110
62	...	...	...	...	...	...	100	102	104	106	109	111	113	116
63	...	...	...	...	...	...	105	107	109	111	114	115	117	119
64	...	...	...	...	...	...	...	113	115	117	118	119	120	122
65	...	...	...	...	...	...	...	...	120	122	123	124	125	126
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PREPARED BY DR. THOMAS D. WOOD

About What a BOY Should Gain Each Month

AGE		AGE	
5 to 8	6 oz.	12 to 16	16 oz.
8 to 12	8 oz.	16 to 18	8 oz.

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All parents should see to it that the children of school age spend at least two hours in the open air every day—properly protected, of course, against cold and wet.

Once our children come to really love fresh air our work along this line is done. The overheating of homes and schools should be guarded against, 68-70°F being the desired temperature.

Colds, sore throats and even coughs and T. B. follow readily long hours spent in close over-heated, unventilated rooms.

One of the chief arguments against taking children to crowded moving picture houses is that the air is usually bad. After spending three hours in a stuffy, crowded place, all too often watching most distorted and over stimulating pictures, the child is brought out on the cold wet street, quantities of candy having been meanwhile added to the evening's dissipation. The morning is very likely to show a cross, irritable child whose tongue is coated, who does not want his breakfast and who may, in addition, show the first signs of a cold or sore throat.

This, of course, is no argument against the right kind of moving pictures in well ventilated places.

The development of "outdoor-mindedness" in parents, teachers, and children is one of the fundamentals of health. Practically every moment of a child's vacation days should be spent outdoors. Where it is possible children should be encouraged to sleep outdoors in a sleeping porch. For this kind of sleeping in winter they must be provided with warm flannel night clothes, including caps and bed socks. It may also be necessary to screen them from strong draughts. Sleeping out in the winter must be done with care, but it will prove a great benefit especially to under-nourished children who take cold easily.

In the summer time country children, and even city children, possessing a small lawn, may derive much fun and benefit from a little canvas army tent. It may be used as a playhouse in the day time and as sleeping quarters at night.

3. Cleanliness.—Of all the agencies which have come to the aid of modern science in stamping out disease there is perhaps no single one so important as cleanliness—both of person and surroundings.

Every child of school age should have at least two warm body baths each week and should be taught to sponge quickly to the waist each morning in cool water—as cold as can be born. This of course depends somewhat on the room temperature available. There are two chief results to be obtained from bathing—

1. Cleanliness—ridding the skin of dust and bacteria.

2. Stimulation to the circulation—especially after rubbing with a coarse towel. This is most beneficial.

Washing the hands before each meal is a habit every child should be taught very early in life. This prevents bacteria from being carried into the mouth with the food.

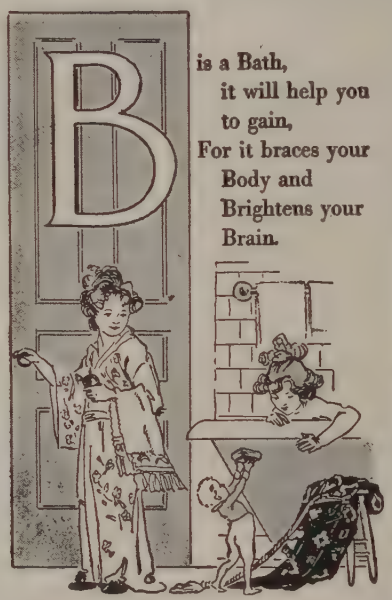
Cleanliness of the mouth is especially important. A very large proportion of infectious diseases gain entrance to the body via the mouth, hence the careful use of the tooth brush should be insisted on. Teeth should be brushed at least twice each day—in the morning and before bed. If a third time can be managed it is of course advisable. A simple paste powder should be used once each day. The hair should be washed with warm soap and water every two or three weeks. Dirty hair may readily carry germs of disease.

Every school child should have clean underclothing at least twice a week.

Except for very delicate children woolen underclothing seems to be no longer necessary—moderate weight cotton mesh with plenty of top clothes—the latter removed indoors seems to give adequate protection.

Warm stockings and sturdy footwear should be provided for every child in winter. The fashion of rolling the stockings below the knees on small children in cold weather, I think, has nothing to recommend it, tho this fashion is very comfortable and attractive in summer.

4. Play and Exercise.—All healthy young animals must play and the child who does not care to play is not a normal child. As a rule a healthy child given one to two hours each day of free time in the open will play sufficiently to get enough exercise. We are coming to realize tho that directed



play in the school is necessary and desirable, because children left to play undirected will often overtax themselves. This is especially true of under-nourished children.

The country child who trudges several miles to and from school each day needs little or no time devoted to formal gymnastics in school, especially when farm chores, done evening or morning, or both, are added to his long walk. The country child does need organized and directed play as a part of his school routine. Every country school, no matter how small, should possess some simple equipment for games:

Basketball, baseball, giant stride, swings and slides should be the minimum equipment. The country school should welcome the visiting special teacher of Physical Education with her helpful ideas about games and sports.

Directed play as a part of the school routine not only supplies the child with exercise but with *enjoyable* exercise. It further gives him another avenue of self-expression and last, but not least, it teaches him to love fair play.

Remember that while farm chores do give the child exercise, and done within a reasonable amount, are helpful to him, there is no denying that for him they constitute work. They lack the spirit of play and fun. Exercise to have the most beneficial effect should be done joyously.

It is this joyous element so essential to the best kind of exercise, that skillfully organized and directed play in the school can so well supply to the child.

5. Sleep.—This, together with food and air constitutes an absolute fundamental for good health.

A child of ten requires at least ten hours of sound sleep every night in a well-ventilated room or sleeping porch if he is to grow into the strong man of tomorrow.

The child should be trained to go to bed at a regular time, removing *all* clothing worn during the day, putting on clean loose night clothes.

A regular rising time should also be established and adhered to carefully unless some special event has kept the child up late the night before and he has sleep to make up. Naps in the daytime when possible are advisable especially with the weaker, poorly-nourished children.

Many of the more modern schools now have rest rooms with cots where the weaker children are encouraged to take short rest periods during the school day.

During the summer vacation a nap in the daytime should be encouraged for all children.

It is only in sleep that the worn-out parts of the child's body can be adequately repaired. Children who are growing rapidly and very active highly strung children need extra amounts of sleep.

Much of the nervousness seen in our American children today can be directly traced to disturbed or inadequate sleep.

It must also be remembered that children stand loss of sleep very badly—much more so than adults. The most systematic and careful effort should be made to secure abundant sleep for growing children. The adult sleep requirement is eight hours out of twenty-four for the average person. This is not sufficient for the average boy or girl much before the 20th year.

Average sleep requirements:—

6— 8 yrs. requires 11—12 hrs.
8—12 yrs. requires 10—11 hrs.
12—16 yrs. requires 9—10 hrs.
16—20 yrs. requires 8— 9 hrs.

6. Mental Hygiene and Parental Control.—Modern psychology is teaching us more the profound influence the child's mental hygiene has upon the health of his nervous system and indeed upon his whole physical make-up. What phases of the child's hygienic regime may be included under the term mental hygiene?

1. Parental control and discipline—this when exercised wisely and carefully in the early years of childhood will make for those habits of obedience, cheerfulness, gentleness, promptness, neatness and emotional control, which, if well established, add so much to the physical and mental wellbeing of the child.

The disobedient, untidy, peevish and emotionally uncontrolled child has not the chance of being so well physically as his better trained brother.

It is quite true, of course, that a child may act in an undisciplined way because he is not well physically, but it is also very true that the undisciplined child, with his fits of temper and peevish disobedience, reacts physically to his own mental state

The most important disciplining of the child along these lines must be done before the 5th year. The mental habits mentioned

here are inextricably bound up with the health and wellbeing of the child's nervous system—and this is the system which controls every part of the child's body.

The so-called "nervous child" is not always an undisciplined child, but he is all too frequently so. It must be confessed that the average American parent is not conspicuously successful in this matter of wise discipline. They usually err in one of two ways.

By constant nagging of the child. "Don't do this", "don't do that," "stop that noise," "sit down and be quiet," etc. to most of which the average child pays little or no attention. Then when a real situation arises and the child receives advice which should be heeded at once, his habit of not responding is so fixed that he "pays no attention," as usual. Many children described by parents and teachers as careless and disobedient are so simply because of persistent nagging. Not only do parents sin in this direction, but often teachers as well. The correct policy here is to leave the child as free as possible, making demands only when it is essentail and then insisting on absolute and immediate response. Children who are not fatigued by constant nagging usually respond well to this method.

So far as enforcing of discipline is concerned, without lengthy discussion, suffice it to say that it is not the severity of the punishment which makes it effective, but the absolute certainty that punishment will be given.

The second common error made here all too often by both parents and teachers is to punish severely one time the same act that would be allowed to go unnoticed another time. This bewilders and confuses the child so that his sense of values with reference to conduct is never well established.

2. Better understanding by the parent of the child's sex nature—using the term sex in the newer broader sense (to be indicated below) and some attempt at rational sex instruction.

This raises, of course, a much discussed problem. It is being recognized, however, more and more by medical experts everywhere that much of the nervous ill health of adult life is undoubtedly due to faulty sex concepts developed in childhood.

Educators are pretty generally agreed that the child's first sex instruction should come from the parent. But before this can be done very effectively most parents feel the need of a broader and clearer understanding of sex themselves. The embarassment and difficulty many parents experience in attempting to give even the most meagre instruction along this line is usually the result of their own unpleasant ideas and associations connected with the subject. The parent who feels that there is something innately wrong and vulgar about the question of sex should not attempt to give any instruction to his child until he has been able to free his mind of this point of view. He will only succeed in passing over his own disturbed viewpoint to the child. We must realize at the onset that the sex urge, next to the desire for food and drink, is the most fundamental instinct the human being possesses. Modern psychology is teaching now that all human motives for conduct may be divided into two great groups on this basis—

1. Those motives which spring from the need of self preservation—these vary all the way from the desire for food to the quest for power and self-aggrandizement. Without this so-called motive for self-protection in each individual we should soon perish.

2. Those motives which spring from the need of *race* preservation. These vary all the way from simple physical sex desire to the most altruistic actions of which man is capable. This is known as the race motive, or sex motive—it leads men to love, marriage, procreation; also to build hospitals, schools, orphanages and asylums.

Seldom in a given act is the motive unmixed—except in the seeking of food or sex satisfaction. Thus the man who raises money for a new school or hospital may not be inspired by race motive alone—his ego motive is flattered, by, say the prominence this connection will bring him. The best poised individuals are those in whom there is a fine balance of ego motive and race or sex motive. The person whose ego motive is dominant is the well recognized type of selfish, pushing, power-seeking individual all too prevalent in public and private life today—the un-

scrupulous politician, the coal baron or the petty tyrant. The individual with the sex or race motive dominant gives us in the highest types our very best philanthropists and educators, or the very finest of parents and teachers. In grosser types, where as we say, the sex motive is unsublimated, the individual may be grossly sexual or even sexually immoral. This briefly is what is meant by the broader point of view concerning sex which every parent should have.

He should further understand something of the normal sex development of the child. Many people consider that there is little or nothing of sex about the child, except the physical differentiation, before the age of puberty. This is not true. The development of the child along lines of sex may be divided roughly into 4 periods:—

1. The period of infancy—including roughly the first three years of life. Even at his early age the two main trends of energy in the human being can be recognized by the close observer. The will to power or ego motive—the child asserts his ego by crying for everything he wants. The sex motive—in his period of development the sex motive in the child is of course very vague—it consists chiefly of vaguely pleasurable sensations from his own body. Thus the habit of rubbing the thighs together as the child lies on his back is vaguely pleasant. Urination and defacation are also attended by pleasurable sensations in the young child. The establishment of the so-called primacy of the sex zones—that is the localizing of sex sensation in the sex organs alone has not yet taken place.

There are various erogenous zones at this time, including the mouth (sucking is also pleasurable to the child), the anus, and various regions of the skin, as well as the beginnings of possibilities of sensation in the sex organs themselves.

There is no need for us to be offended at the idea of associating anything of sex with such a young child, as at this age he is of course neither moral nor immoral—he is simply a healthy little growing human animal with enormous possibilities both for good and evil.

2. The second stage in sex development, roughly speaking, is the period from about the 3rd to 8th or 9th year. During this time in the normal child the primacy of the sex organs as the seat of sex sensation becomes better established tho it is not complete until after puberty. The child's love impulse or sex impulse which has been hitherto occupied entirely with his own little body goes out to those nearest to him, i. e., the father and mother; they are his first loves. By careful psychological test it is being proven that the love interest of the little boy at this time seems to center more about his mother and that of the little girl about her father. The memory of this period is effaced in the minds of most grown-ups.

It is during this period especially that friction between the father and mother, quarrels, separations and divorces may cause serious harm or injury to the developing sex consciousness of the child.

Over harshness, or over indulgence and excessive affection from one or the other parent during this period, may cause what is known as a father or mother "fixation."

That is the child's love interest becomes unduly fixed on one or the other parent and this fixation, or complex, as it is sometimes called, is carried on *unconsciously* by the child into adult life. People with parent fixations frequently find it impossible to fall in love satisfactorily or to marry at all; or sometimes marry a person much older than themselves and often unhappily. The parent on whom the person is unconsciously "fixed" may meanwhile have died or be far away and the person himself is unconscious, of course, of what is blocking his love impulse.

The great majority of children fortunately pass thru this stage of childhood in a perfectly normal way—reaching puberty with a normal amount of the right kind of affection for the parents. Children are entirely at the mercy of their parents during this period of development. Over-harshness and over-indulgence and affection on the part of one parent as opposed to the other at this time should be carefully avoided.

3. The third stage which may be roughly outlined in the development of the child's sex nature is from about the 10th year to 16th or 17th. The length of this period varies greatly in different children—may last even into adult life. It is sometimes described as the home-sexual period—meaning that time when the love interest of the child seems to center on an in-

dividual of the *same* sex outside of the family. It is the hero worship stage. After loving first himself, then his parents (particularly the one of the opposite sex), the child's love impulse reaches out a step further and fixes on a person of his own sex, not of his family. It is very often a teacher, a Scout master, a moving picture hero or heroine, a baseball star, an athletic leader, etc. This stage in the sex development of the child is frought with enormous possibilities from an educational standpoint. Careers are often determined and life goals fixed by these juvenile affections. It places a very grave responsibility on those who are the recipients of such admiration.

Teachers and leaders of all kinds who handle our boys and girls during this period should be given the most careful instruction as to the handling of this problem. Mismanaged or badly handled, the child may be injured severely along lines of his normal *mental* sex development.

The unnecessary prolonging of this stage by isolation of the sexes in school or the strict supervision at home may also be injurious. Boys and girls during the adolescent years should have reasonable opportunity for associating freely with each other, under wise supervision.

Separate schools for the sexes during this period which segregates the boys and girls rigidly from each other may, and in all too many cases do, trend to deepen and prolong to an unwholesome extent the homesexual period in development. It is during this period that physical sexual maturity is reached. Sex consciousness deepens at this time and sex questions become of vital interest to both the boy and girl.

4. The last period in development is maturity, when the love impulse goes out normally to persons of the opposite sex—reached varying from 15—22 or 23.

The next question to be considered is—while all this development is going on naturally in the growing child what information (and when) shall he be given concerning the subject of sex? Carefully collected statistics from our leading colleges show that most boys receive their first sex information at about the age of 7—the girls at about 9. The sources of the information being usually illicit and undesirable—such as older comrades, servants, rough associates, etc. So that in all too many instances the child's first concept of sex is a distorted, vulgar, coarse one which it may take years to eradicate.

The best course for parents to pursue here is somewhat as follows:—

1. Answer *honestly* and *frankly* to the limit of the child's understanding his *first* question about sex.

2. Do not force subsequent information upon him, but make him feel that you are ready at all times to talk with him as freely as he desires.

3. Encourage him to be interested and to observe carefully plants and animals.

4. At puberty (sex maturity) 13—14 years, if few questions have been asked, round out the child's concepts with the idea that he now possesses potentially the power of fatherhood. With the girl the idea that she now possesses potential motherhood. Meaning of menstruation should be explained to the little girl. Tell her it is part of Nature's method of preparing her to be a mother. With the boy, the relation of seminal emission to fatherhood should be similarly explained.

Cautioning children against masturbation before there is any evidence of its having occurred is always to be avoided.

The girl should not be frightened or depressed about the coming of her periods. She should be taught to regard the function as a perfectly natural thing—one of the milestones in growing to be a woman. Do not let her regard herself as "sick" at that time. Do not use the word sickness in reference to the period. Much of the menstrual distress seen in young women today is undoubtedly due to faulty mental attitude formed when the periods are being established. The girl should be encouraged to go about her work as usual, avoiding the more strenuous kinds of exercise, such as basketball and swimming, and giving herself a little extra protection from cold and dampness.

The old idea that bathing should be abstained from during the period is ridiculous and obsolete. A plunge bath need not be taken, but a warm sponge bath in a warm room immediately before bed can-

not possibly harm even a very delicate girl.

If the periods are late in appearing (after 15 or 16) or unusually painful a physician's advice should be sought.

In most families the father is the best teacher for the boy on sex matters—the mother for the girl. Good literature for the parents on this very important aspect of child health may be secured from the American Social Hygiene Assn., New York City.

We know today that much of the nervous illness in adults dates back to faulty sex education in youth—this is a responsibility which no intelligent parent can any longer refuse to face.

Care of Masturbation in Children.—This is relatively common in both boys and girls—in most healthy children gradually given up as they grow older.

Causes:—

1. Tight foreskin—need of circumcision (boys).
2. Neurotic make up.
3. Vicious associations.
4. Uncleanliness of parts.
5. Clothing too tight over the parts.

It is a great mistake to frighten or scold unduly about this habit.

1. Make sure if there is a removable physical cause that it receives attention (see second column).

2. Encourage the child to gradually break the habit by simple sex instruction and ideals of physical strength.

3. Avoid scolding and disciplinary measures that will increase the child's sense of shame and self-condemnation. This habit is injurious largely in direct proportion to the sense of shame and self-condemnation felt by the sufferer. It is very undesirable, of course, and means a constant waste of energy on the child's part. This is particularly true in boys after puberty, but no good is ever accomplished by harsh disciplinary measures.

If the habit grows worse in spite of gentle and sympathetic care on the part of the parent, a physician should be consulted.

The older literature on this subject often gave the idea that insanity and feeble mindedness could be caused by this habit. We know now that this is absolutely untrue. It does, however, constitute more or less of a menace to the nervous health of the child when it becomes excessive.

SECTION II.

Methods of Protecting the Child Against Disease.

Careful general hygiene such as has been described in Section 1 will help to give the child the physical endurance and nervous stability that will aid greatly in protecting him from infection.

Teaching the child himself simple health habits both at home and at school will aid greatly in building up good hygienic habits. These should be formed in early childhood. The following, published by the Federal Bureau of Education, should hang in every school room and home where there are growing children:—

Rules of the Health Game.

1. A full bath more than once a week.
2. Brushing the teeth at least once every day.
3. Sleeping long hours, with windows open.
4. Drinking as much milk as possible, but no tea or coffee.
5. Eating some vegetables or fruit every day.
6. Drinking at least four glasses of water a day.
7. Playing part of each day out of doors.
8. A bowel movement every morning.

The parent and the teacher must here work together to see that the child carries out to the very best of his ability every rule of the health game. Such health habits established in childhood will be automatic long before adult life is reached.

2. Vaccination against smallpox. There are a few highly contagious diseases against which even the vigorous health seems to be no protection. Smallpox is one of these. Practically every person, no matter how healthy, who has never had the disease and never been successfully vaccinated will succumb if freely exposed. Smallpox is a very loathsome disease, with high death rate, and causes annually the loss of thousands of lives throughout the civilized world right up to modern times.

The discovery of the principle of vaccination by Dr. Edward Jenner, an English physician, in 1794, has been a wonderful boon to humanity. Since vaccination has been perfected smallpox from being one of the worse scourges known to humanity has come to be a relatively uncommon disease. Every child should be vac-

cinated before attending school. If the vaccination is kept clean there is now no danger of infection of any kind. Badly swollen arms, marked illness and the very occasional lockjaw following vaccination mean that the sore was infected by bacteria as a result of uncleanliness. No intelligent parent is in any way justified in

opposing vaccination in this age. If he does so he is working against the best interest of his child and the whole community.

Typhoid fever is another disease for which the principle of vaccination is being used. In sanitary communities with good water and milk supply routine vaccination against typhoid is not yet advocated.

The principle of vaccination in a modified form (antitoxin) is also used in diphtheria. So far it has been employed chiefly as treatment for the child sick with diphtheria. It is probable that in the near future it may be used routinely as a preventive of diphtheria somewhat after the manner of vaccination for smallpox.

Here again the intelligent parent will readily acquiesce.

3. Care of the child's teeth. We realize today more than ever before that the condition of the teeth is of vital importance to the child's health.

The following procedure is indicated here:—

1. Teach the child the use of the tooth brush by the fourth year—the mouth and brush being cared for by the mother before that time.

2. Take the child routinely to a dentist every six months after the fifth year, sooner if pain or decay appears.

3. It is a mistake to neglect the milk teeth, and in pulling them at home great care should be taken not to pull by mistake the so-called "six year old molar"—this is the first permanent double tooth and if accidentally pulled or allowed to decay so that it is lost all the teeth in the jaw will be crooked and deformed, as it acts as the keystone of the arch. The effects of decayed teeth (either first or second) on the child are as follows:—

1. *Indigestion* from swallowing of germ laden food—every decayed tooth accumulates masses of bacteria—and from imperfect chewing.

2. Nervous irritability and poor nutrition from indigestion.

3. Child is predisposed to such infections as tuberculosis, diphtheria, sore throat and tonsilitis because the decayed teeth act as breeding places for bacteria.

4. Unattractive appearance.

4. Care of Child's Nose and Throat.—This requires especial attention because of adenoids and tonsils. As is well known, these structures in American children especially tend frequently to be enlarged and diseased.

The adenoid body is a small mass of soft tissue located just where the nose opens into the throat. When it is healthy it is not enlarged and is supposed to aid in destroying bacteria. If it becomes enlarged, the following results are soon noticed in the child:—

1. He cannot breathe through his nose—breathes through mouth *all the time.*

2. Seems to have a cold in the head *all the time.*

3. Sleeps restlessly.

4. Face looks dull and heavy.

5. School progress retarded.

6. General nutrition and appetite often badly affected.

The removal of the adenoids by a simple operation is the only cure for this condition.

Once this has been recommended by a good physician it is almost criminal neglect on the parent's part to defer having it done. Nothing will so undermine a child's health as neglect of this condition.

Children's tonsils also frequently become diseased and enlarged. The possible results to the child's health here are as follows:

1. Frequent sore throat and tonsilitis.

2. Indigestion and poor nutrition from swallowing germ laden material from the infected tonsils.

3. Child is predisposed to tuberculosis, diphtheria, scarlet fever, etc.

4. Injury to the child's heart from repeated attacks of tonsilitis. This is the most serious result of diseased tonsils. The removal of the tonsils by simple operation is the only cure possible here. Once this has been recommended by a reputable physician it should be done promptly, as in the case of adenoids.

5. Prevention and care of so called common diseases of childhood, i.e., measles, whooping cough, chicken pox, mumps.

Diphtheria and Scarlet Fever Are, of Course, More Serious.

Twenty years ago these more serious infections of childhood were looked upon as inevitable and necessary in the life of every child. Hence, let the children contract them as soon as possible and have it finished and done. They were not regarded as particularly harmful at any rate.

We know today that both of these lines of reasoning are false and pernicious. It is *not* necessary for every child to have these diseases and they may in any given child prove serious, more particularly in their after effects perhaps than during the the actual illness. Modern medicine is taking every precaution to protect children against these diseases.

Quarantine is the best all-round method of prevention. Every intelligent parent and citizen should do his utmost to uphold these quarantine regulations. By quarantine we mean, of course, measures taken to isolate the sick from the well.

Measles is the most serious of these diseases. It begins usually like a common cold in the head, the rash appearing a day or two later. The child should always be kept warm in bed in a darkened, well ventilated room, fed very lightly, and a doctor consulted. The disease itself is seldom serious but it may have the following serious after effects. especially if neglected and allowed to take cold:—

1. Bronchial pneumonia.
2. Earache with severe abcess.
3. Injury to vision.
4. Injury to the kidneys.

Chicken pox is usually milder than measles, with less likelihood of severe after effects, but pretty much the same precautions should be taken.

Whooping cough does not as a rule show very serious after effects.

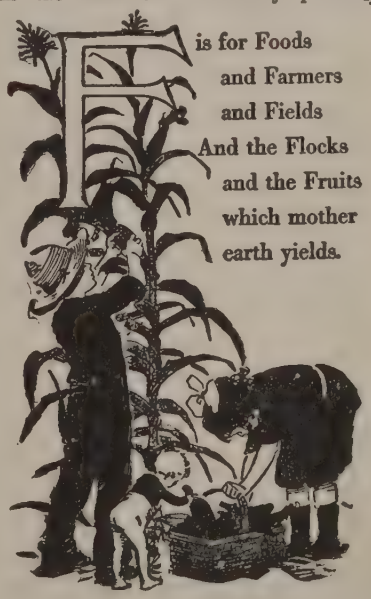
Mumps is an infection of the salivary gland in front of and below each ear. It is highly contagious and painful, usually not serious, but with about three children out of every hundred affected tending to show inflammation of the ovary, or testicle, as an after effect. If this after effect is severe, it may cause sterility in later life, especially in boys.

Scarlet fever and diphtheria are both, of course, much more serious than the infections just mentioned. They call for expert medical care. The after effects of both these diseases may be very severe, as:—

1. Injury to the heart.
2. Abcess in the middle ear, with deafness.
3. Injury to kidneys.

To summarize then, the best methods for preventions of these diseases and the minimizing of their possible injuries after effects—

1. Rigid obedience to quarantine laws.
2. Prompt attention to common colds in the head—as these very probably



predispose to the infections just mentioned. If the child wakes with a cold in the head, he had much better miss a day at school—remaining warmly in bed, with a laxative and hot foot bath, than to go out and run the risk of a more severe illness.

3. Care as to daily bowel movement—faulty elimination being a common pre-

disposing cause of sore throats, colds and more severe infections. Every child should be trained to have a set time of the day for elimination and *go* unfailingly at that time. The child's school work, home chores, etc. should be arranged so as not to interfere with this set time.

Parents can do their children no greater

service than to establish a regular daily time for elimination very early in childhood—then hold the child firmly to it. Faulty habit formation in childhood is one of the commonest causes of chronic constipation in adults.

4. Care of simple wounds, cuts and abrasions. These may constitute a serious menace to the health of the child if they become infected—in severe cases meaning perhaps permanent crippling of a part of life itself. The best home treatment for a simple cut is to cleanse with tincture of green soap in hot water, apply iodine and a sterile gauze dressing. The wound should be kept covered till healed in order to keep out bacteria, which cause infection. Healthy children do not infect readily in this way. The gravest result which can follow a wound or abrasion is lockjaw, or tetanus. This organism is found in highly cultivated soil and gains entrance to the body thru a so called punctured wound, such as would be made by a nail in the foot. Punctured wounds of any severity, especially about the feet, should always be seen by a physician.

Routine Medical Examination.—Next to careful hygienic care routine medical, or as it is often now called routine Health Examination, at least once a year is indispensable in safeguarding the health of the child.

So clearly has this been recognized by physicians and educators all over the country that systematized school medical inspection is rapidly becoming established wherever possible. School authorities are recognizing more and more that the school as well as the parent is responsible for the child's health and that his health is more fundamental even than the instruction he receives. Many of our states and larger cities are attempting to do this for their school children. Unfortunately in only a few of the larger communities is there sufficient money appropriated to insure the work is being well done.

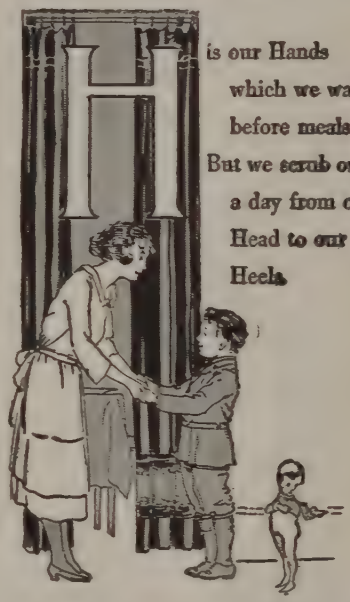
The object of routine school medical examination and inspection are as follows:—

1. To discover any diseased conditions in the child.
2. To discover the presence of infectious conditions.
3. To discover correctable physical defects, such as those of vision or hearing, tonsils, adenoids, posture, teeth, etc.
4. To indicate ways in which the child's health may be improved.

By giving each child a complete examination once in each school year; by having routine daily inspection to locate sick and ailing children and by careful follow up work on each child it is possible to bring about greatly improved health conditions among our school children.

The weakest place usually in this scheme is in the follow up work—thus:

The school doctor examines as carefully as time permits say 300 children in School



No 12. Out of that 300 he finds 12 with defective vision—badly in need of glasses; 4 needing adenoids removed, 5 with badly diseased tonsils, 13 in need of dental care, 7 badly undernourished, etc. Printed notices are sent home to the parents with instructions to take the child to the family doctor or the free school clinic, if the parent so desires. In all too many instances this advice goes unheeded, the child keeps his defect and the state has spent its money in vain.

The efficacy of school medical inspection must be measured entirely by the percentage of corrections obtained. These depend very largely on the intelligence and cooperation of the parent. You as parents are taxed to pay for school medical inspection. Why not get your money's worth by at least investigating the advice sent home about your child? The examiner does not *wish* to find defects in your child—he is much more likely to err on side of missing them when they are present than of declaring them when they are absent.

School Medical Inspection can be improved only by increased confidence and cooperation on the part of the parents, together with more intelligent understanding from our teachers.

In some localities school physicians are not permitted to remove any of the children's clothing—this of course, greatly hampers him. The examiner should always be permitted to have children stripped to the waist. The parent should be even more interested in the child's Health Examination record than in his regular school report.

Some localities are adopting the plan of grading each child as a result of Health Examination—i. e. A, very good; B, good; C, fair, etc.—explaining to the child that his grade will go up if, for instance, he can gain 5 pounds, or be fitted with glasses, or have his teeth attended to, or whatever is necessary.

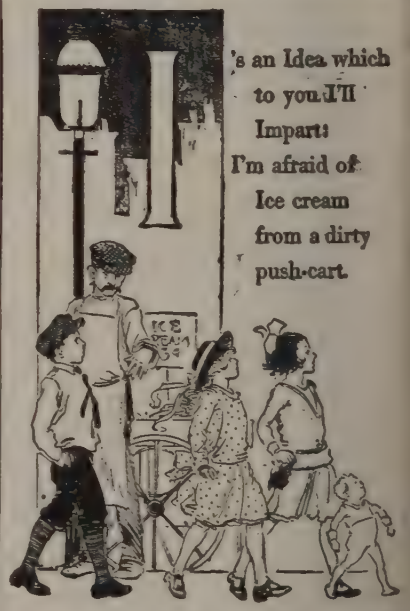
It has been abundantly demonstrated that good health for our children is purchasable—and cheap at any price.

The Six Doors of Child Health

1. A scale in every school.
2. Time allowed in every school for teaching of health habits.
3. A hot school lunch available for every child.
4. Teachers trained in Normal Schools to teach health habits.
5. Every child's weight record sent home on the monthly report card.
6. A thorough physical examination, with the clothing removed to the waist, at least twice a year for all school children.

From "Summer Health and Play School"

HUMAN PHYSIOLOGY.—Physiology in relation to the human body is the science which concerns itself with the functions



of the various parts and the manner in which they perform their duties. The work done by any part depends primarily upon the character of the minute particles of matter of which it is formed.

CELLS.—Each of these microscopic particles is called a *cell*. It consists of a thin sac enveloping a clear substance, the *proto-*

plasm, which contains a less granular portion known as the *nucleus*.

Tissues, Organs, Systems.—A combination of similar cells forms a *tissue*, and the union of two or more tissues to constitute a structure for the performance of a special function is called an *organ*. The heart is an organ for pumping blood and the stomach is an organ for helping to digest food. Several organs working in harmony for the accomplishment of a common purpose constitute a *system*.

Locomotion.—The *osseous system*, composed of over 200 bones, and the *muscular system*, formed of over 500 muscles, serve chiefly for the purpose of locomotion. One kind of muscles known as the *involuntary* are present in nearly all tubelike structures, such as the alimentary canal and blood vessels. The marked power of contraction and relaxation possessed by all muscles enables them to render important service to the bodily welfare. They have, however, no power in themselves to act, but must be stimulated by another set of organs composing what is known as the nervous system.

The Nervous System, consisting of the brain and spinal cord, with their thousands of tiny nerve fibers branching to all parts of the body, controls every movement and the activity of each organ. The numerous nerve fibers, which are bound into bundles forming the white cord-like nerves, are the processes of cells located in the brain or spinal cord or near to them.

Neurone.—A nerve cell, with its two or more processes, varying from less than a half inch to more than three feet in length, is called a *neurone*. The purpose of the processes is to transmit a stimulus or message, while the function of the body-part of the neurone is to originate a stimulus or modify one sent to it by another neurone

Brain.—The neurones in the thinking regions of the brain, *i. e.*, the frontal third and the portion adjacent to the crown, seem able to originate stimuli and direct at will the daily activities in which we engage. A band of neurones in front of the central fissure of the brain is called the *motor area* because these cells control the voluntary movements of the body. The bursting of a blood vessel in this area or along the processes of these cells extending down through the brain and cord often causes paralysis of the muscles which the neurones affected govern. The band of neurones behind the central fissure form the *sensory area* of the brain. Here the impulses aroused by touch, heat, cold and pain are received. The *hearing neurones* are located in the region of the brain adjacent to the ear and those concerned in *seeing* lie in the back part of the brain.

Communication of Neurones. — The neurones whose cell bodies form the gray matter, and their processes, the white fibrous portions of the brain and cord, are able to communicate with one another by contact of processes. The independent neurones of the brain direct the dependent neurones both in the brain and in the spinal cord.

Reflex Action.—The dependent neurones can also be made to act by an outside stimulus, such as touch or pain. A pinprick on the toe of a sound sleeper will send an impulse up the sensory nerves to the spinal cord, where it will arouse the motor neurones to send an impulse causing the muscles to contract and withdraw the limb, but the brain will know nothing of the operation. Such activities, carried on without the effort of brain neurones controlled by the will, are known as *reflex actions*.

Sympathetic System.—Many neurones concerned in reflex action are located at the base of the brain and in its stem, while others of the same character form the *sympathetic system*, whose nerves supply the digestive organs and other viscera and all the involuntary muscles of the body. The work of the lungs, heart, stomach, liver and other vital organs goes on involuntarily because the neurones governing them are stimulated to act by the needs of the body.

The taste of food stimulates the neurones, causing the stomach to form gastric juice, but we can also make the stomach do this work to some extent by thinking of the delicious flavor of foods. In this case the neurones of the brain originate a stimulus and send it down to the neurones exciting the juice-making organs to work. Even though food is in the stomach and its presence has started the flow of gastric juice, the output may in a few minutes be greatly decreased by the inhibiting influence of the neurones of the brain, aroused to action by some excitement or great grief affecting the mind.

Influence of Mind on Body. — Although the exact relation of the mind to the brain and other parts of the body is not entirely understood, observations and experiments show that the mind may influence the work of all the organs of the body. This fact forms a vital part of the Christian Science faith, which teaches that thought is more efficient than drugs and hygienic measures in curing disease. In many disorders of the nervous system mental suggestion renders worthy service.

Sense Organs.—In order that the brain may be informed of the conditions in the external world, many of the nerve fibers called sensory nerves have special terminations on or near the surface of the body called *sense organs*. The eyes are the special sense organs which are so affected by the waves of light coming from objects that they can send to the brain through their nerves a message telling how things look. The ears receive and transmit to the brain only those impulses aroused by the waves of sound. The delicate nerve endings within the nose inform the brain concerning odors, while the peculiar nerve terminations in the tongue and other parts of the mouth receive and send to the brain all knowledge as to how foods taste. Special tiny organs at the ends of nerves are scattered throughout the skin to receive the stimuli aroused by touch, heat or cold, and, inform the brain when the body is being hurt.

Foods.—While thought and action are the chief purposes of the body, the systems which effect these must be hourly repaired and nourished, the waste matter must be gotten rid of, and a means of reproducing the species must be provided. The chief part of the living tissues consists of *proteids* whose worn-out parts can be replaced only by the consumption of other *proteids* found in the albumen of lean meat, the white of egg, casein of milk, and in peas, beans, corn and wheat.

Oxidation.—Starches, sugars and fats cannot repair the worn-out parts of the cells, but by the living action of the body these foods can be made to unite with oxygen. This *oxidation* may furnish heat to keep the body warm and may also supply the energy necessary for its activities. While the fat of the body is largely made from the starches and sugars, forming what is known as the carbohydrate foods, proteids can also be transformed into fat and used to furnish energy and heat.

Diet.—The daily food requirements of a man at ordinary labor are about three ounces of proteids and one pound of starches, sugars and fats. Some inorganic salts and water are also necessary.

Digestion.—In order that the nourishing materials may reach all cells of the body they must be prepared to enter the blood stream for transportation. This preparation is accomplished by a group of organs forming the digestive system. The two chief processes of digestion are mastication, or the breaking up of the food into small particles in the mouth, and the transforming action of the juices from certain organs called *glands*. The important elements in the watery secretions of these glands are known as *enzymes*. These are ferments which cause chemical changes in the food without any change in themselves.

The *ptyalin* from the salivary glands of the face changes starch into sugar, the *pepsin* from the thousands of gastric glands in the lining of the stomach transforms part of the proteids into peptones, while the other part is acted on by the *trypsin* of the pancreas. This chief gland of digestion also yields *lipase* to split up the fats and *amylopsin* to make sugars of the remaining starches.

Absorption of Food.—After the food has been acted on by the gastric juice from one to four hours, and by the intestinal and pancreatic juices a variable period, it is in a state capable of being absorbed by the cells forming the lining of the small intestine. The absorbing surface is greatly increased by transverse folds and millions of tiny projections called *villi*. Within these are thin-walled tubes to receive the liquid food and pass it on to the larger blood tubes, whence it is transported to all parts of the body.

Liver.—The liver serves as a storehouse for part of the food, which it deals out according to the needs of the body. Much of the food passes through the liver before it is distributed to the body, thus giving this organ opportunity to remove poisons which may be present and dispose of them in the bile sent into the intestine to aid digestion.

Circulatory System.—The circulatory system, in addition to distributing the food throughout the body, conveys the oxygen from the lungs to all the tissues and transports the waste matter from all cells to the lungs, skin and kidneys for elimination. The *plasma*, or clear part of the blood, bears the food elements, while the red corpuscles, with a special affinity for oxygen on account of their hemaglobin, load up with this gas in the lungs and discharge it to the tissues throughout the body.

Heart, and Course of the Blood. — The blood stream is kept in perpetual motion by the beating of the heart, with valves so arranged as to prevent any backward flow. The blood is carried by the veins from all parts of the body to the right auricle of the heart, whence it passes to the right ventricle. This sends it through the pulmonary artery to the lungs, where the carbon dioxide is exchanged for oxygen through the tiny, thin-walled capillary branches of the artery. The oxygenated blood returns by the pulmonary veins to the left auricle, passes to the left ventricle and thence out through the aorta,

branching again and again in all regions of the body until the final subdivisions are smaller than hairs and with walls so thin that the oxygen and food can easily pass through to nourish the cells. At the same time the carbon dioxide and part of the other waste products enter the blood stream of these tiny vessels called *capillaries*, which unite to form the veins carrying the blood to the heart.

Lymphatics.—Some of the blood plasma and the white corpuscles passing out of the capillaries, together with some of the waste matter, enter a set of vessels called *lymphatics*. These unite into larger vessels which ramify through firm bunches of tissues called *lymph glands* and terminate in veins in the neck.

Exercise renders the lymph system more active because the muscular contractions press the waste matter into the vessels and move it forward, as a series of valves prevents the backward flow. *Massage* accomplishes the same effect and therefore like exercise greatly aids the body in removing its waste. The purpose of the lymph glands, so abundant in the groin, the armpit, the neck and amid the intestines, is to catch and destroy any infection such as bacteria.

Respiratory System.—The sole purpose of the respiratory system, consisting of the lungs and the air passages leading to them, is to supply the body with oxygen and cast out the carbon dioxide constantly resulting from living processes. The inspired air consists of four-fifths parts of nitrogen, one-fifth part of oxygen and only four-ten-thousandths part of carbon dioxide, while the expired air contains one-twentieth part of carbon dioxide and less than one-sixth part of oxygen.

Excretory System.—The dying tissues and a remnant of the oxidized food proteids form the nitrogenous waste which is removed from the body by the excretory system. This consists chiefly of the kidneys, with the two tubes called ureters carrying the urine drop by drop into the bladder, where it is stored and passed out at intervals through a small tube called the urethra. About one and a half quarts of urine, containing some salts and an ounce of urea, the tissue waste, are excreted daily.

Diabetes and Bright's Disease.—In persons with diabetes the urine contains sugar because too much sugar is free in the blood. This condition may be due to a disorder of the cells of the pancreas or liver. In Bright's disease the cells of the kidney fail to perform their work and allow some of the nourishing part of the blood to escape with the urine. Such a condition is sometimes due to a prolonged fever, the excessive use of alcohol, a heavy meat diet, lack of thorough mastication or too little exercise.

Skin.—The skin is also an organ of excretion, as its millions of sweat glands pour out daily from one quart to a gallon of perspiration containing some salt and a little urea. The chief use of the sweat, however, is to cool the body. The skin is filled with the terminations of the nerves of sense, whose stimulation by heat or cold excites to action the entire system.

Bathing.—On this fact depends the physiologic effects of bathing and hydrotherapy. Many internal chronic disorders, as well as acute ailments, are frequently alleviated or entirely cured by the proper application of water when all other measures fail. Since a large portion of the blood passes through the skin each minute, cold bathing relieves the body of much heat and is therefore the most efficient means of lowering the temperature in cases of fever.

Hair.—Each hair grows from a little papilla at the bottom of its sac and will be renewed every time it is pulled out so long as the papilla is uninjured. A pair of sebaceous glands in connection with each hair furnish an oily substance to soften the hair and skin. The loss of the hair on the scalp is seldom due to any microbe or germ, but to a diminishing of the nourishment from the blood-vessels in the papilla. The best remedy for falling hair is a thorough washing of the scalp fortnightly and a daily five-minute massage continued for several months.

Reproductive System.—The average length of life of each individual is about 45 years. To continue the race new individuals must arise. The only portion of the body, however, which can give origin to a new being is a special large cell called an *ovum* or *egg* developed in females from about the thirteenth to the fiftieth year within the two small organs called *ovaries* lying below the kidneys. This special cell or ovum is capable of further growth only after another special cell, the *spermatozoon*, from the testes of the male has united with it. After the union of the two cells, which process is known as *fertilization*, the egg continues down the tube leading from the ovary into a thick-walled sac, the *uterus* or *womb*. Here it becomes fixed to the soft lining, absorbs nourishment from the blood of the mother for a period of about nine months, when it is born as a complete individual.

Hygiene.—Hygiene is the science which concerns itself with the prevention of disease and the maintenance of the body in vigorous health. Personal hygiene relates to the special care of one's own body, while public hygiene includes much of sanitary science and deals with the general food supply, water supply, disposal of sewage, quarantine regulations and other questions affecting the entire community.

Death Rate. — The development of the science of hygiene began about the middle of the nineteenth century and has made such rapid progress as to greatly lessen the death rate in communities regulating their living according to its teachings. In benighted India the death rate is 42, *i. e.*, 42 people die annually among every thousand living. In the United States the death rate is 17, while in Norway, Sweden and Denmark, where hygienic living is practiced by the greatest numbers, the death rate is only 14 per thousand.

Length of Life.—The average length of life increases with our growing knowledge and practice of healthful living. The average length of life in the sixteenth century was about 18 years; to-day it is over 40 years in Germany, England and the United States. The life span in France in 1830 was only 39 years, while in 1900 it was over 47 years. In Massachusetts it increased from 39 years in 1850 to 46 years in 1900.

Cause of Sickness.—There are about 3,000,000 people sick every day in the United States and one-half this number die annually from disease. Recent investigations show that at least one-fourth of this sickness and death can be avoided by the individual and combined efforts of the people of our country. Much of the sickness and about one-half of the deaths result from diseases caused by the countless army of unseen life called *microbes*.

Contagious Diseases.—Microbes are the agents concerned in all *infectious diseases*, some of which are spoken of as *contagious* because the healthy readily contract the ailments by associating with the sick or by handling articles from the sickroom. The germs of tuberculosis slay 150,000 persons yearly in the United States, pneumonia destroys more than 100,000 lives, while typhoid fever kills about one-tenth of its 250,000 victims. Over 100,000 infants perish yearly from digestive disorders due to bacteria, largely introduced by unclean milk and other food.

How Disease Germs Are Scattered.—The germs of typhoid fever, cholera, dysentery and diarrhœa leave the body in the excreta from the bowels and kidneys. The body of a sick person is a germ garden yielding a deadly harvest of microbes, which if allowed to escape alive in the body waste are quite certain by the aid of wind, water or insects to find new victims. This fact shows the vital importance of treating the body excretions in such a manner as to destroy the agents of disease. If this were carefully done for even a decade, students of hygiene believe that tuberculosis and typhoid fever would be lessened by one-half.

How Typhoid Is Contracted.—The germs of typhoid generally reach new victims either in water or in food, though they may be transferred to the mouth by the fingers or other objects which have been in contact with the sick. Fortunately the germs will generally not live in ordinary river water more than ten days and most of them are destroyed by sedimentation, sunlight and other agencies during twenty-four hours transportation in a stream averaging two or three feet in depth and flowing at the rate of about three miles per hour. Investigations indicate that more than one-half of the cases of typhoid fever are due to contaminated water.

Food as a Source of Infection. — Such foods as shellfish, celery and cress are sometimes the source of typhoid and dysentery when they have been taken from water or earth contaminated by sewage or night soils.

Since tuberculosis is widely distributed among the cattle of this country and as many as 10 per cent are affected in many localities, market milk frequently contains tubercle bacilli. These germs enter the milk sometimes through the udder but more frequently by means of the feces which soil the cow and are then knocked as dry particles into the milk pail.

Diarrhoea in Infants.—The greater part of the diarrhœa and intestinal disorders of infants, resulting in over 10,000 deaths during each warm month of the year, is due to the large number of germs of various kinds in unclean milk. In many instances, the milk when delivered to the customers in the city contains one million germs per cubic centimeter. Milk from healthy cows and properly cared for should not contain more than 30,000 germs per cubic centimeter when twenty-four hours old.

Other Diseases Conveyed by Milk.—In addition, to typhoid fever and tuberculosis, scarlet fever and diphtheria are frequently transmitted through the agency of milk. This fact explains why every one should wash his hands thoroughly before handling milk, in which diphtheria and typhoid germs multiply rapidly.

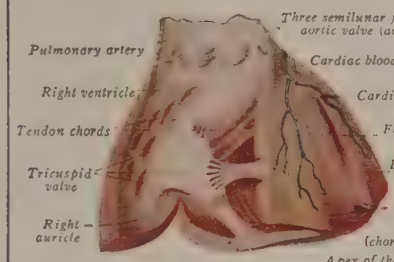


Fig. 1. Heart

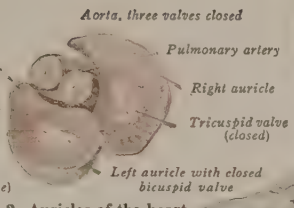


Fig. 2. Auricles of the heart

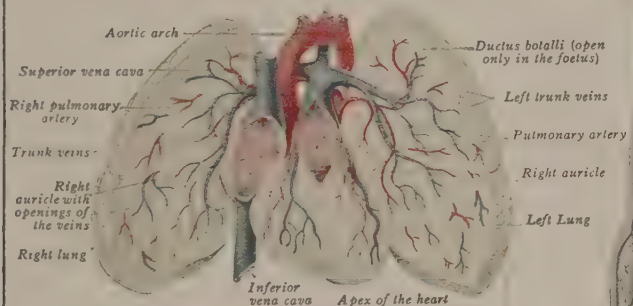


Fig. 3. Pulmonary circulation

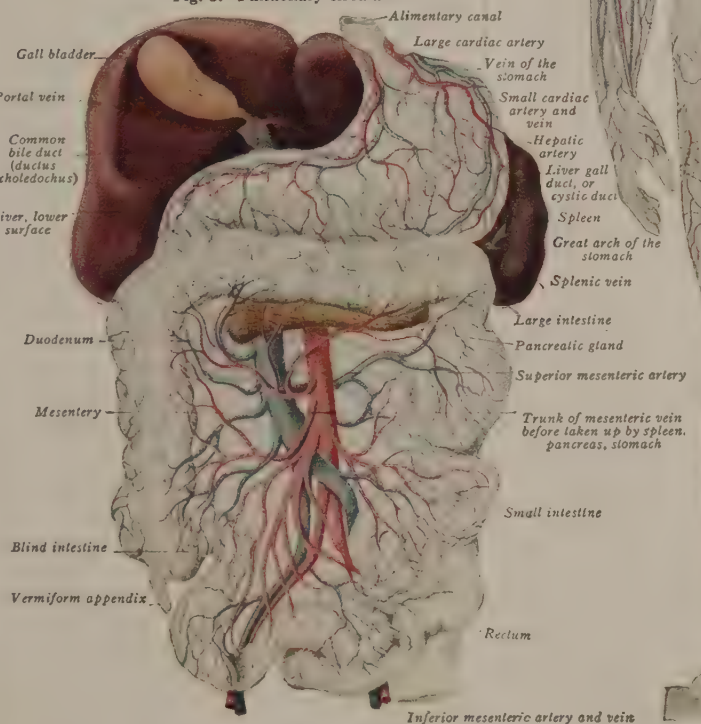


Fig. 4. Portal vein circulation

(The union of veins of the stomach, intestine, spleen and pancreas into trunk of portal vein is hidden by the stomach)

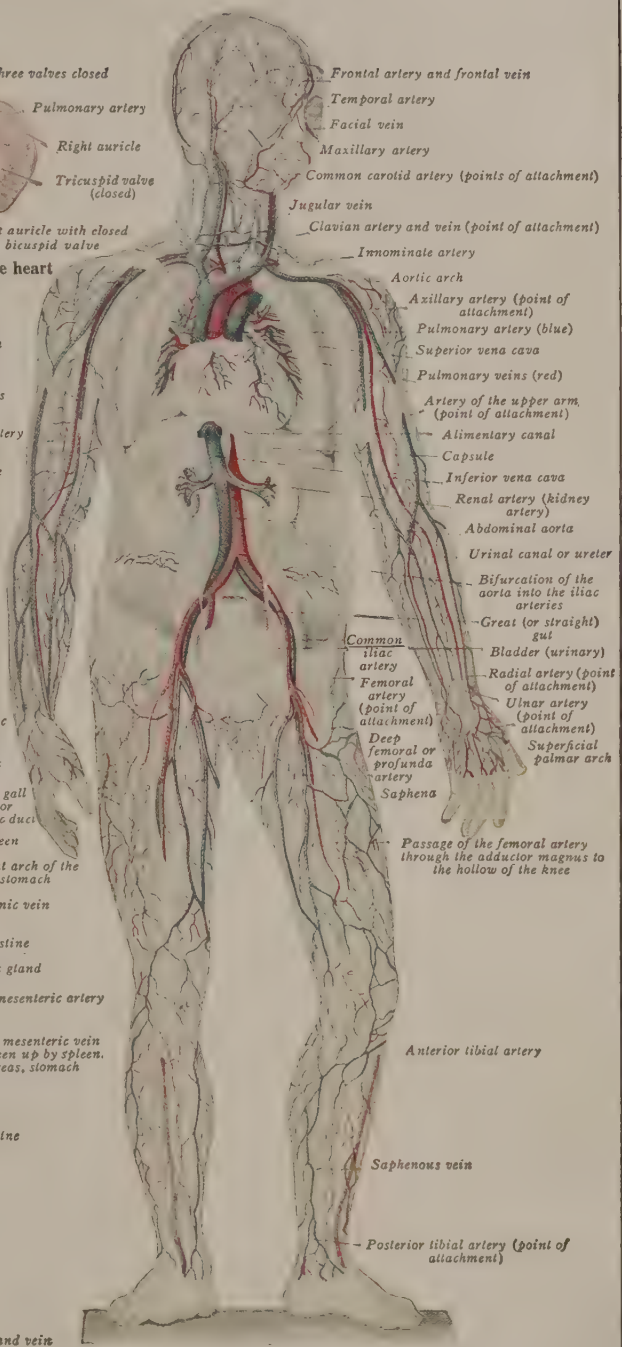


Fig. 5. Circulation of the blood in the body

In fig. 5 the intestines of the portal vein circulation have been removed from the abdominal cavity

The red lines indicate the arteries, the blue lines the veins

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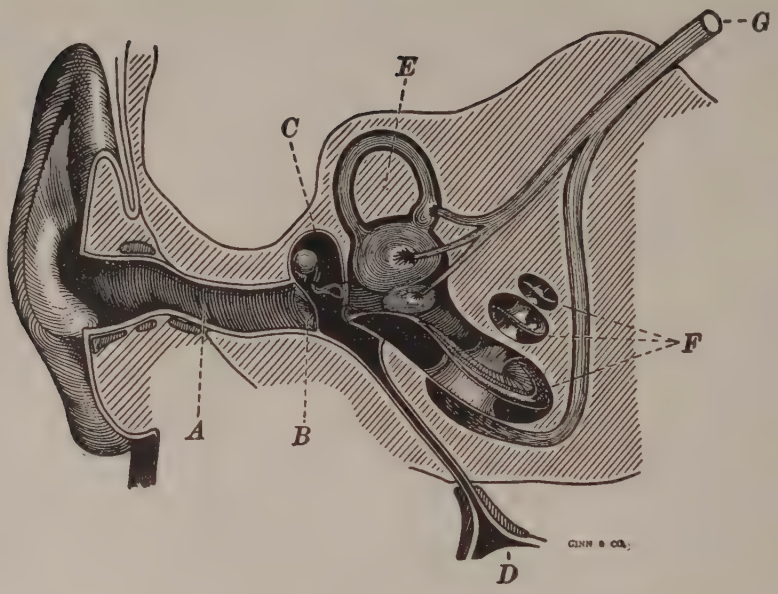


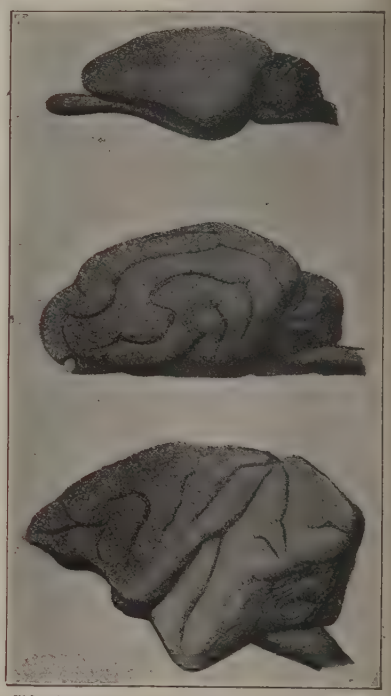
Diagram of the ear

A, the auditory canal, leading to the tympanic membrane *B*; *C*, cavity of the tympanum, communicating by the Eustachian tube with the pharynx *D*; *E*, semicircular canals; *F*, cochlea; *G*, auditory nerve

of a thousand cubic feet by adding one pint of formaldehyde solution to a gallon jar containing twelve ounces of potassium permanganate. The room should remain tightly closed for twelve hours. Clothing, metals and furniture are in no way injured by the gas.

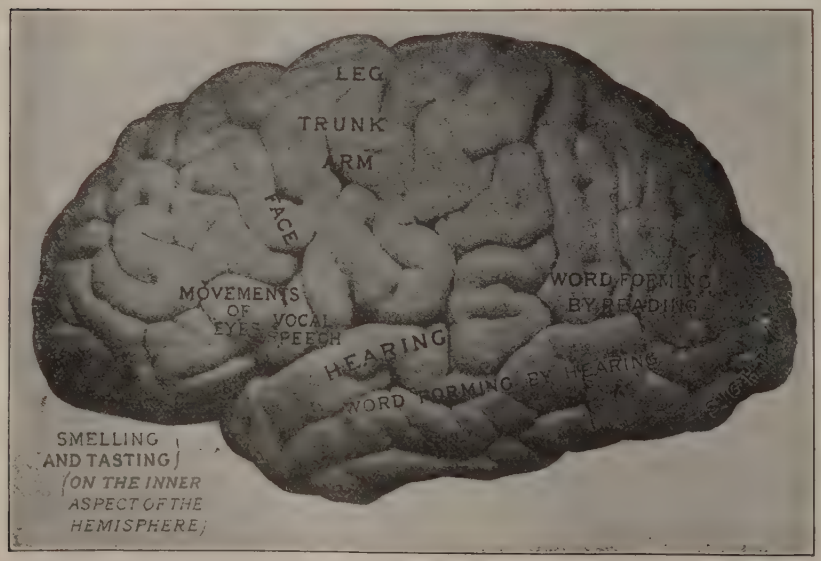
Vaccination.—Specific immunity against various infectious diseases may be acquired by *vaccination*. This consists in inoculating the body with weakened germs or the growth-products of the same kind of germs as those causing the disease to which one wishes to become immune. Immunity from typhoid fever, plague and cholera is often secured by injecting under the skin dead cultures of the germs of these diseases. Immunity from hydrophobia is secured by several successive inoculations with hydrophobia germs which have been weakened in the spinal cords of rabbits exposed to dry air from two to fifteen days.

The most successful vaccine produced is that which prevents smallpox, the most dreaded malady of the eighteenth century, when it killed 60,000,000 people in Europe. This vaccine is prepared by weakening the smallpox germs by growing them in the skin of calves. These weakened germs when smeared on the broken skin of the arm result in the formation of a large scab, some fever and slight indisposition due to the products of the germs, which cause the body tissues to react and form substances capable of destroying the strong smallpox germs which may later reach the body. Owing to the fact that these substances so inimical to the smallpox germs in the body become successively weaker each year after the fourth or fifth year, it is necessary for one to vaccinated every ten years, until middle life.



Side view of the brains of rabbit, cat, and monkey

Ginn & Co.



The Left Half of the Human Cerebrum GINN & CO.

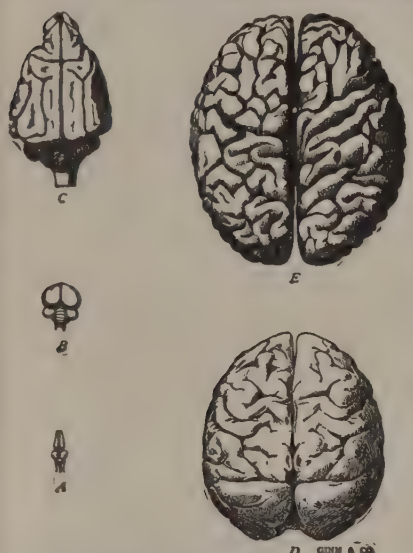
The words "leg," "trunk," "arm," "face," are printed over the centers that control the corresponding parts of the body. Other words show where different sensations and memories are located

Antitoxins. — Immunization against such diseases as lockjaw and diphtheria is effected by introducing into the body substances which nullify the poisons generated by the growing germs. These substances are called antitoxins. They are secured from the blood of animals which have developed them to fight off the poisons of these germs injected into them at varying intervals.

The constitutional diseases, such as rheumatism, Bright's disease, arteriosclerosis, or hardening of the arteries, and certain affections of the heart, are not well understood as to their causation, and therefore efforts to prevent them have not met with success.

The Certified Milk to be had in many cities is usually of high quality and contains less than 30,000 bacteria per cubic centimeter. Such milk is taken from cows shown to be free of disease by periodical physical examination and tuberculin tests. The stables are kept scrupulously clean and free from flies and all the milk receptacles after being rinsed in cold water are sterilized in steam or boiling water. The milk is cooled immediately after it is drawn and stored in ice water, because warmth causes a rapid growth of the bacteria which poison the children.

Pasteurized Milk.—It is unsafe to give to young children milk not known to be clean and from healthy cows. When it is necessary to use questionable milk it should always be pasteurized. A special apparatus for pasteurizing may be purchased, but with some care the process may be accomplished by placing the milk in a Mason jar or tall pail, which is then set into a kettle of boiling water, just removed from the stove. The water in the kettle should stand at least as high as the milk in the pail, which must be



FROM SMALLER BRAIN TO LARGER

(*A*, frog; *B*, pigeon; *C*, dog; *D*, chimpanzee; *E*, man. Notice the convolutions that increase as intelligence advances

stirred ten minutes and then left standing (covered) ten minutes longer. The milk should then be cooled as quickly as possible by placing it in cold water and stirring it a few minutes. Milk thus treated will usually remain sweet in an ordinary refrigerator three or four days, but it is preferable to use it within twenty-four hours.

The commercial pasteurized milk sold in many cities is often unreliable because the pasteurization has not been properly accomplished, and frequently the milk is of too dirty a quality at the beginning. Experiments prove that children thrive almost if not quite as well on properly pasteurized milk as upon clean raw milk. In pasteurization the temperature should never exceed 160 degrees and it is preferable to maintain it at about 148 degrees. Boiled or sterilized milk should not be used as the regular food for children because some of the albumin has been coagulated and salts precipitated.

Mastication.—Toxins injurious to the heart and other organs are commonly generated in large quantities in the large intestine of those consuming much meat. A vegetarian diet with milk (especially buttermilk) and eggs lessens the formation of these toxins and thorough mastication, often called Fletcherizing, in some way stimulates the bowels to cover the waste matter with a coat of mucus, preventing the absorption of any toxins present.

The careful preservation of the teeth, the thorough mastication of a largely vegetarian diet, regular daily exercise in the open air, daily evacuation of the bowels, induced by laxative foods and exercise and not by drugs, and eight hours of sleep in a room with open windows, together with a cold morning bath, are the best known means for maintaining a vigorous constitution which will have marked power in warding off both infectious and constitutional diseases and for enabling the organs to continue in the healthy performance of their functions even beyond fourscore years and ten.

SCHOOL AND COLLEGE ATHLETICS

By Richmond H. Kirtland

Games, Sports, Recreation, Scouting

ARCHERY

Archery of course long ago ceased to be of life and death importance. The last notable use of bows in war was made by the Chinese, about 1860. But in the days of early Edwards and Richard III in England, the long bow was England's chief defense against her enemies. The king commonly required the entire male population to practice with the bow every Sunday, and forbade all other sports. In Scotland, surreptitious golf gave the department of state a good deal of anxious trouble.

Queer as all this is, in dead earnest, archery as a pastime has kept much of its old fascination, as every boy knows; and the details of this modern game are sure to interest somebody.

The best bows are still made of yew, as they were six hundred years ago, and the best yew comes from Italy and Spain. But when yew was hard to get, the English armed their less skillful marksmen with witch hazel, ash and elm. If they had been able to get at the American hickory, the chances are it would have given yew a good run for its money. The American Boy Scout hand-book names mulberry, osage-orange, sassafras, Southern cedar, black locust, apple, black walnut, slippery elm, ironwood, mountain ash, hickory, California yew and hemlock.

The English long bow was usually five feet long. The practice now is to have the bow about as long as the bowman is. The stiffness of a bow is spoken of as its weight, in the number of pounds pull required to draw a full-sized arrow to the head. A woman's bow now weights 24 to 32 pounds, a man's bow 40 to 60 pounds, and a Boy Scout's bow 15.

Like fishing-rods, bows are made either solid or spliced and are glued. The one piece, "self" bow has the pleasanter action, but costs more, and is more apt to warp or spring out of shape. All very long bows are likely to be spliced in the middle. The wood is rounded on the inside, toward the string, and flattened on the other side.

The experts say that it takes more skill to make a good arrow than to make a good bow. A perfect target arrow is quite a complicated affair. The main shaft is of pine, with a piece of hard wood to carry the metallic head. A square notch is cut for the string, and just forward of the notch three feather guides are attached, either by glue or by silk winding fore and aft. If these feathers curve, it is important that they all curve the same way.

The string is best made of flax or linen, silk wound for the arrow head, and carefully waxed or glued.

Targets for the modern sport of archery are four feet in diameter, with a series of concentric rings 4 and 4/5 inches broad. The score is: inner circle, gold, 9 points; inner ring, red, 7 points; next ring, blue, 5 points; next ring, black, 3 points; outer ring, white, 1 point.

Popular distances now are 40, 50, and 60 yards—a degeneracy beneath Robin Hood's scorn. Of course the secret of this change is in the fact that the modern rifle begins where the best bowmen of Robin's day left off.

Diagram of the circulation of blood

R.A., right auricle; L.A., left auricle; R.V., right ventricle; L.V., left ventricle; P.A., pulmonary artery; *A*, pulmonary artery and vein of right lung; *B*, pulmonary artery and vein of left lung; *C*, carotid artery to head, showing branch of left subclavian artery; *D*, portal vein; *E*, hepatic vein; *F*, hepatic artery; *G*, jugular vein, bringing blood from head and neck

BASEBALL

Baseball is played by two opposing teams of nine men each, on a field containing a diamond. A baseball diamond is a square, ninety feet on each side, with a base at each corner.

When a player makes a complete circuit of the four bases without being put out under the rules of the game, he has scored, or made a run for his team. The side making the larger number of runs during a game wins.

A standard game of baseball consists of nine innings. For the first half of the first inning, the captain of the home team chooses whether his men shall bat or take the field. After three men of the side first at bat have been put out, the teams exchange places, and so alternate throughout the game, each half inning continuing until three men have been put out.

A man at bat becomes a base runner (a) if he makes a fair hit (not a foul); (b) if the umpire calls four balls on the pitcher; (c) if under certain conditions a third strike called by the umpire be not caught and held by the catcher; (d) if the person or clothing of the batter be hit by a ball at which he does not strike, and which he makes a reasonable effort to avoid; (e) if the catcher interferes with his attempt to bat; (f) if a fair hit ball touch the person or clothing of an umpire or base runner before touching a fielder.

A player is declared out in any one of some thirty cases, the commonest being these:

1. If he bat either a foul or a fair hit which is caught by an opponent before the ball touches the ground.
2. If while a batter three strikes be called.
3. If while a base runner he be touched by a ball in the hands of an opponent, unless some part of the runner's person be in contact with a base to which he is entitled.
4. If he interferes with a player attempting to field a batted ball.
5. If in running bases he runs more than three feet from the base line, except to avoid an opponent who is fielding a batted ball.

Batsmen are passed to first base without liability to be put out (a) when four balls are called; (b) when hit by a pitched ball; (c) when the catcher interferes with batting; (d) when a fair hit ball strikes the person or clothing of an umpire or base runner before reaching a fielder; (e) if the umpire declare a balk.

Base runners advance one base without liability to be put out:

1. Whenever by reason of any player receiving free advancement under the rules; two men would otherwise claim the same base. If, for example, all bases are full when a batsman is passed to first by four balls, the situation will bring in a score and leave the bases still full.
2. If the umpire call a balk.
3. If the catcher allow a passed ball.
4. A base runner is entitled to advance one base if he be blocked from a base by a fielder who has not the ball in his possession.
5. An illegal catch of a batted ball gives all runners three bases; of a thrown ball, two bases.
6. All runners are entitled to advance one base if the catcher move out of his position pending a throw by pitcher.

B. B. Batters' Box.
H. Home Plate.
1, 2, 3. Bases.
P. Pitcher's Plate.
C. B. Catchers' Box.
P. L. Players' Lines.
B. L. Base Lines.
R. L. Runner's Lines
Co. L. Coacher's Lines.
F. L. Foul Line.
B. S. Backstop.
P. B. Players' Bench.

Base Ball Terms and Specifications

(1) **Materials.**—*Official Ball.* Reach or Spalding, cork center, yarn wound, horsehide cover, 9 to 9¼ in. circumference, 5 to 5½ oz.

Bat. Hardwood, round, diameter not over 2¾ in., length not over 42 in.

Catcher's or First Baseman's Mit. Any size, shape, or weight.

All Other Gloves. Weight not over 10 oz., size not over 10 in. around palm.

Protector. A padded or air-filled shield for the body of umpire and catcher.

Mask. A wire head gear for men working behind the bat, especially to protect against foul tips.

Leg Guard. A lower defensive armor for umpire and catcher.

Base. Stuffed canvas bag, 15 in. square, attached by its center at intersection of base lines, for first, second and third bases.

Home Plate. Five sided white rubber plate. Front 17 in., sides 8½ in., running along base lines 12 inches each.

Pitcher's Plate. White rubber, 24x6 in., located 60 ft. 6 in. from home plate.

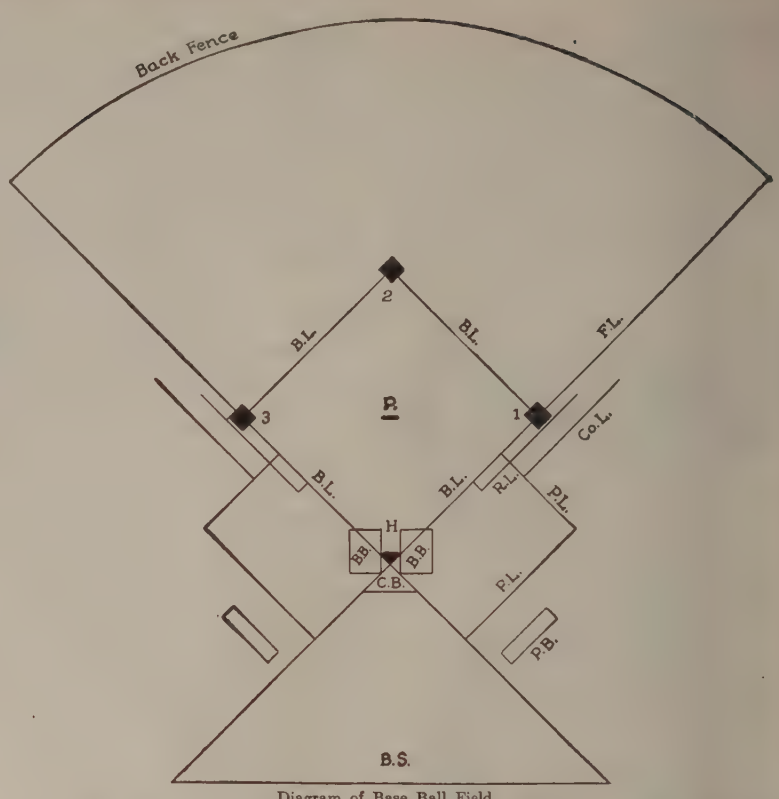


Diagram of Base Ball Field.

Toe Plate, Heel Plate. Spiked to prevent slipping.

(2) **Grounds.**—*Diamond or Infield.* A square, 90 ft. on a side, within or near which the pitcher, catcher, basemen, and shortstop play their defensive game against the batsmen and base runners of the opposing team.

Outfield. The clear space beyond first, second and third bases, in which the three fielders work. The outfield should extend at least 235 feet from the home plate.

Pitcher's Box. A position of the pitcher, in which one or both the pitcher's feet are touching the pitcher's plate.

Catcher's Box. A triangular space 10 ft. deep, behind the home plate. (See diagram.)

Batter's Box. A rectangle 4x6 ft., at right and left of home plate, six in. from the plate.

Players' Lines. Enclosed rectangles 50x74 ft. along base lines each side of home plate, to be kept clear of all players not actually engaged in the game.

Coachers' Lines. Outside the diamond, 15 ft. from the foul line and parallel to it, near first and third, beyond the players' lines. One coacher may work along this line at first and one at third, but never within the line.

Runner's Line. Begins 45 ft. from home plate, runs parallel to base line, 3 ft. outside the diamond, to first base.

Backstop. A large upright frame covered with wire netting, at least 90 ft. behind home plate.

Grand Stand, Bleachers. No seats for spectators within 90 ft. of home plate or of foul lines. In outfield, no spectators or obstructions within 235 ft. of home.

Foul Lines. The base lines from home plate to 1st and 3rd, and their continuation into the outfield.

Players' Bench. A bench at least 25 ft. outside players' lines, on which must be seated all players of the team at bat, unless actually batting, coaching, or running bases.

(3) **Terms of Play.**—*Assist.* Any handling of the ball which directly aids in putting an opponent out, is called an "assist" and is so recorded by the scorer.

Balk. One of numerous forbidden motions, chiefly by the pitcher. For example, the pitcher may not begin to throw to the batter or to first base without completing the throw; he may not throw to put out a base runner without stepping directly toward the base he aims at, etc. See Reach or Spalding guides.

Base on Balls. When a pitcher has made four throws to a given batsman, at which the batsman does not strike, and which do not pass over any part of the home plate, the batsman is entitled to become a base runner at 1st base. Certain other throws by the pitcher are also called balls. See guides.

Base Runner. A player who has ceased to be a batsman, and is on his way around the diamond, in an attempt to score.

Batting Order. A regular arrangement of players' names, for succession in batting. Batting order cannot be changed during a game, except by the use of substitutes.

Block Ball. A ball which, while in play, touches any person not in the game. In case of block ball, the players running bases may advance until the ball is again in pitcher's hands.

Bunt, Bunt Hit. A form of batting in which the ball strikes the bat, instead of the bat striking the ball. A bunted ball is commonly a sacrifice, though a swift runner with a quick get-away may sometimes beat out a well placed bunt, especially if there be indecision among the fielders

as to who shall field the bunted ball. A bunted foul counts as a strike, even a third strike.

Called Game. A game terminated by the umpire because of rain, panic, fire, darkness, or any other cause endangering players or spectators. Games called before the fifth inning is completed are commonly called no game.

Caught Stealing. The putting out of a base runner who is trying to make a base on the sly.

Chance. The opportunity of a fielder to so field a ball as to assist in retiring a base runner.

Double Play, Triple Play. A play in which two runners, or three, are put out in quick succession, by clever fielding.

Drawn Game. A game with a tie score, called by the umpire after five or more innings.

Earned Run. Scored when a player reaches home base by reason of safe hits, sacrifice hits, stolen bases, bases on balls, hit batsmen, wild pitches, and balks, but not by reason of fielding errors, or other penalties than those implied in this list.

Error. In general, any misplay in fielding which prolongs the life of an opposing batter or base runner.

Extra Innings. Play which runs beyond the regular nine innings, by reason of a tied score.

Fair Hit. A hit which settles on the foul line or inside the diamond, short of first or third base; a hit which, passing first or third base, bounds on fair territory or first strikes on fair territory.

Fly. A ball batted high in fair territory.

Forfeited Game. A game awarded by the umpire against an offending team, by reason of broken rules of play.

Foul, Foul Hit. (1) Short of 1st or 3d base, a batted ball which settles outside the diamond, or would so settle if not interfered with. (2) A batted ball which bounds past first or third in foul territory. (3) A batted ball which first lands on foul territory beyond first or third base.

Foul Strike. Fouls count toward the first two of a batter's three possible strikes. Foul bunts may count for all three strikes.

Foul Tip. A foul hit in which the bat merely glazes the ball.

Hit Batsman. A batsman whose person or clothing has been hit by a pitched ball which he made reasonable effort to avoid.

Homer, Home Run. A fair hit which goes so far that the batter is able to make a circuit of the bases before the ball can be fielded.

Infield Fly. Before two men are out, with runners on first and second bases, the umpire will declare out any man who bats a fair fly which can be handled by the infield, bunts excepted.

Passed Ball. A pitched ball which goes to the backstop 90 ft. behind home plate. In such case all runners advance one base.

Run. A complete circuit of the bases resulting in a score.

Runs Batted In. Runs scored by reason of hits made by other players.

Sacrifice. A hit made for the purpose of advancing a base runner, though the batter expects to be put out.

Safe Hit. A hit which cannot be fielded in time to prevent the batter reaching first base.

Shut Out. To prevent a team from scoring during an entire game.

Strike. In general, one of three batting opportunities the loss of which will put a batsman out, or the act of losing one of these three opportunities. See opening discussion.

Time. Temporary suspension of play by the umpire.

Time at Bat. A lawful occupation of the batters' box which does not terminate in four balls, a hit batsman, a sacrifice hit, or interference by the catcher.

Wild Pitch. A pitched ball so high or wide that it cannot be effectively fielded by the catcher.

Abbreviations in Base Ball

AB. At Bat.
BR. Bats Right Handed.
BL. Bats Left Handed.
R. Runs.
H. Safe Hits.
TB. Total Bases Batted.
2B. Two Base Hits.
3B. Three Base Hits.
HR. Home Runs.
SH. Sacrifice Hits.
SB. Stolen Bases.

BB. Bases on Balls.
RBI. Runs Batted In.
RRF. Runs Responsible For.
CS. Caught Stealing.
SO. Struck Out.
PT. Percentage.
DP. Double Play.
TP. Triple Play.
PB. Passed Ball.
PO. Put Outs.
A. Assists.
E. Errors.
TC. Total Chances.
PR. Pitches Right-handed.
PL. Pitches Left-handed.
IP. Innings Pitched.
ER. Earned Runs off a given Pitcher.
PTER. Percentage of Earned Runs.
HB. Hit Batsmen.
HP. Hit by Pitcher.
WP. Wild Pitch.
B,BK. Balk.
W. Won.
L. Lost.

BASKETBALL

Basketball is one of the best of games for both player and spectator. There is opportunity for personal prowess and for team work; quick thinking and quick action are at a premium; accuracy of motion and of judgment are necessary. The individual star has frequent opportunities to shine, but he will be often eclipsed if he does not use good passwork by his team, in support of personal brilliance. Attack and defense are so varied, so quickly shifting from one team to the other, that a moment's inattention may be very costly.

The side which has the ball attempts to advance it for a try at goal; the defending team meanwhile uses every legal effort to break the attack by getting possession of the ball.

Like all good games, basketball is what it is largely because of its rules. These rules vary slightly from year to year, and vary with the quality of the players, there being separate sets of rules for women, for professionals, and for male amateurs. Rules for women eliminate roughness, reduce the danger of falling, shorten the distances covered in running, and in general adapt the game to the feminine physique. Amateur rules for men are in a number of respects intermediate between the vigorously combative game of the professionals and the non-interfering game played under women's rules. The following summary of play is founded on the amateur rules for men.

A basketball court is a rectangle sixty to ninety feet long and thirty-five to fifty feet wide, with clearly marked sides and end lines. At the middle of each end, a "basket" is suspended ten feet above the floor, from a wire ring eighteen inches in diameter, carried by a back board four feet by six.

Free throw lines are twenty-four inches long, directly in front of the baskets, fifteen feet from the end lines. Free-throw lanes are so marked that no player of either side may come within three feet of the ball during its progress from the free-throw line to the basket.

At the centre of the court is a circle four feet in diameter, within which the ball is put in play by the referee at the beginning of the game and at various other times as provided by rule.

The object of the game is to score baskets or goals—each team attempts to throw or toss the ball through its own basket. A goal scored from the field in the ordinary course of the game counts two points; a goal secured from the free-throw line as the penalty for a foul committed by opponents counts one point.

Two classes of fouls are distinguished: Personal fouls are declared for forbidden roughness in personal contact, for holding a player, or blocking his progress. For personal fouls, the penalties range from one free throw to the disqualification of the player for the remainder of the game. Four personal fouls of any sort during a game disqualify the player for the remainder of that game.

Technical fouls are called for other violations of the rules. For example, it is forbidden to carry the ball more than one step in any direction, to make a second dribble without first passing the ball to another player, to delay the game, to talk to officials during the game, and so on.

To dribble is to keep the ball moving, in one player's possession, by throwing, batting, rolling, or bounding it with one hand. A dribble ceases if the ball comes to rest in one or both hands, if it touches both hands at once, or if it touches a second player. The ball may be batted

in the air only once during a dribble. A player may throw for goal after dribbling.

The ball is dead, and is put in play at center by the referee after a goal is made, after the two free throws following a double foul, or when the ball lodges in the supports of the basket.

A ball becomes dead when it goes out of bounds. The last player who touches it before it leaves the court is held to be the cause of its going out of bounds. The referee commonly designates the nearest opposing player to put the ball in play, by throwing, rolling, or bounding it to another player in the court.

A ball is "held" when two opposing players have one or both hands on it, or when a closely guarded player is held by the referee to be withholding the ball from play. A held ball is dead until put in play by the referee at the spot where held, in the same manner as at the beginning of the game, except that a ball held in either end zone must be thrown out by a member of the defending team.

If the referee is unable to decide who is responsible for a ball going out of bounds, he declares a "jump ball" near the boundary line, between two players of his own choosing.

Team work, accuracy in handling the ball, speed, quickness and accuracy of judgment, cleverness in deceiving opponents all go to make the good player and the good team in basketball. A good coach will invent a variety of snappy exercises to test and develop all these general qualities. He will also train for the actual situations of play. For example, several players must be able to throw baskets from the foul line, scoring at least three shots in four; several players should specialize in the dribble; everybody should practice receiving a hotly-thrown ball while running toward the basket, instantly checking himself for the try-at-goal; baskets should be thrown from the field at long and short range, from all angles; a number of systems should be perfected for getting the ball down the field by passing; and so on.

BOXING

A Few General Suggestions.—*Position.* Left arm, left foot advanced, right foot angled for a brace in starting, right heel slightly off ground, for quick action. Body quartering, left side forward, generally slightly crouched. Thumbs in the only safe position—the middle one.

Distance. Don't waste strength making or guarding blows which could not reach their mark. Work in, quickly, before you really attempt to land. Give as little warning as possible, make your blows snappy, with a quick get-away. In gauging distance by extending the arm, work around toward your left, away from the opponent's dangerous right arm, until you get your opportunity for leading in.

Muscles. Active, but not strongly contracted, except in the very act of striking, or receiving a heavy blow.

Bend the body freely, forward and back from the hips; bend the head, neck, shoulders, and back quickly, freely, in all directions. These movements deceive the enemy as to distance, are useful in guarding and in covering and launching an attack.

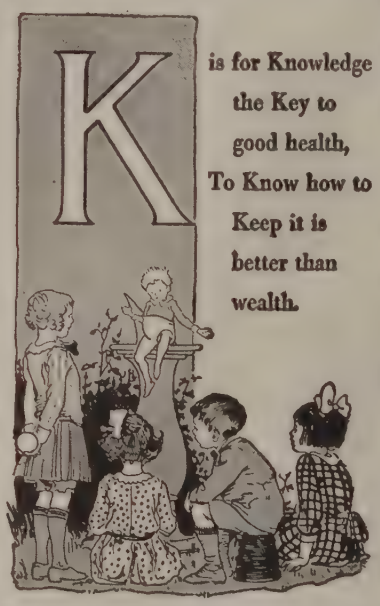
It is exceedingly important to answer every blow you see coming, by a *counter blow*, at the same time guarding against the one you have seen under way.

Follow up your successful blows with a *rush* and shower if you're sure it's *safe*—look out for opening yourself to a big blow of the knockout sort.

Seldom make big windmill *swings*. They are too obvious, and dangerous to the man who makes them. Save your big attacks for real openings. Don't put all your force in a blow that could be easily blocked, and probably will be.

Give first and most careful attention to *defense*. The chief means of guarding against attack are blocking, shoving aside a blow, stopping an opponent's blow by a quick counter blow, slipping, ducking, and side stepping. Study the signs of a coming blow. The eye is the great tell-tale. *Watch it!*

To *block* is to receive on the fist or arm a blow meant for the body or head. In the instant of using one hand for blocking, watch for an opening for the other. Put only enough effort in the blocking motion to keep off the force of the blow. The



right arm is the main guard. Don't send it too far out in blocking, or you will leave an opening.

Coming blows may be *shoved aside* either to right or left. It is occasionally possible to shove an opponent's right across to your right, or his left to your left, thus turning him partially around, making an opening, and perhaps disturbing his balance. The open palm does well in blocking and shoving off blows.

Stops are quick counter blows with the left hand, shot out for the head or body in the instant you feel the enemy is going to strike. Stops are good when they beat the other fellow to it, and so surprise the force out of his blow, or head it off altogether. While making stops with the left, change the guard of the right, to protect both body and face.

A *slip* is a sudden jerk of the head or body to right or left, letting a blow glance by. If the blow is from the opponent's right, slip to your right, and vice versa.

In boxing, a *duck* is a big slip, usually to avoid a big swing for the head. Guard the chin while ducking, and make a counter blow with the other hand.

A *side step* has three swift movements; retreat one step, spring to right one step, and turn to left, facing opponent.

A *feint* is a useful preparation for a lead. A short step forward with the left, a snappy blow which you know will not quite land, instant recovery, and instantly a longer step, with a real blow. Feinting is commonly done with the left hand. If with the right, feint for the head and lead for the body, or feint low and strike high. Feinting of course succeeds only when it causes the enemy to raise or lower his guard, leaving an opening. Feints are used also to draw leads from the enemy, which, being expected, can be blocked and countered, often to marked advantage. The feint and the real blow following are of course almost always by the same hand. A good feinter who is quick on his feet, keeps his opponent guessing.

In general, hit with the *palm down*—a position which leaves the forearm ready to block or shove away a blow, as well as to attack. *Practice all sorts* of blows—straight out, hooks to right and left, uppercuts, jabs by the body twist, and even the slugging windmill swings. To strike with weights in the hand is a practice that puts power in the blow of the empty hand later on.

John L. Sullivan changed the long-drawn brutality of old-time fist fights into a swift decisiveness, by the use of *knockout blows*. Corbett and others perfected these blows and added variations. There are four main types of knockout, and it is well to know all about them, possibly for offense, surely for defense. These four blows land (1) on the point of the chin or near it; (2) on the solar plexus, or pit of the stomach; (3) over the heart; and (4) on the neck close under the ear. The most painful of these is the stomach blow, the most temporary effect is from the blow under the ear.

Skill in boxing can come only through *constant practice* of a good many sorts. A punching bag is indispensable, as are chest weights, used in all possible positions. Breathing exercises and long runs in the open are good for the "wind" and some quick-shifting game like squash for speed on the feet. But most necessary of all are a wrestling mate for generally "mixing it up", and a sparring partner, preferably more skillful than you are.

CAMPING OUT

One doesn't camp out in a cabin or bungalow, with hired chefs and a community dining room. He brings his house with him on the running board or under the wagon seat; he cooks his own food; if he wants furniture, he makes it with an ax. Real camping is a throw-back to the primitive—the butcher, the baker, the candle-stick maker are barred. At its best, there isn't even a guide. The instinct for returning to simplicity is pretty strong in most of us, but we have come so far in our way of civilization that few of us know how to get back. This article is for the folks who would like to join the big procession returning to their father's house in the woods.

Where to go doesn't so much matter. Little journeys will often do as well as long ones. The main thing is to cut loose from routine, get an utterly new angle on the game of living. This may sometimes be as well managed by a creek bank over the next hill, as in the Canadian wilderness. But if one has a few weeks off and a little gas car, he may almost choose his own

camping ground; let him try the mountains this year, the lakes and rivers next, and after that the Old Salt itself. Which he will like best will depend on his temperament, but he will be the richer for all three.

Three Sorts of Camp. The motor car has popularized the traveling camp, for one night stands *en route* to some far country. At the journey's end a headquarters camp may be set up, from which side trips lead out to hiking camps, over a night or two. In any case, the first and biggest question is of outfit.

Outfit in General. Long before your starting date, begin a check list. You can have fun with that all winter, until you get to be such a seasoned old camper that you throw together a two weeks' outfit off-hand. Even the old stager has a mental check list, he says to himself, shelter and bed; fire, cooking and eating tools; grub and grub getters; personal kit; sundries for safety, comfort, and pleasure. Every item admitted to the check list must prove its right to be there; for one wagon, quite likely a Ford car, carries each party of four and all its duffel. There may be a folding cot or two for the cripples, but feathers, mats, and spring beds are left at home, along with easy chairs and porcelain dishes. These are the tests of camp duffel: Can I get along without it? Is it as light and compact as possible? Is it durable? Is its design right for camping?

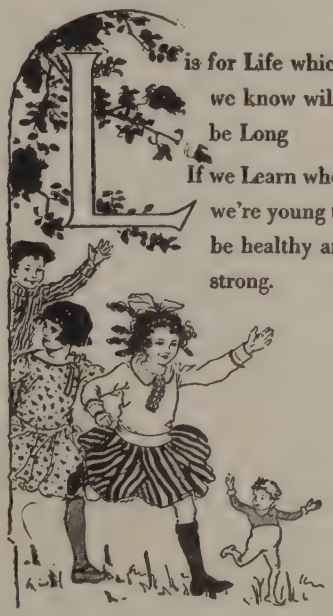
Duffel Bags. The entire camp luggage for a party of four, to stay several weeks, should be packed in six or at most seven waterproofed bags: Four bundles bedding, clothing, and personal effects; one bundle tents, flies, jointed poles, stakes, and extra canvas; one bundle grub, table ware, and camp sundries; one bundle stove and stove furniture. Clothing is kept in light muslin sacks which serve for pillows in camp; odds and ends of personal property are put in the pockets of the sleeping bags, or enclosed in smaller sacks within the clothing bags. Theoretically, there should be no loose odds and ends whatever, on the journey; they are sure to be very much in the way.

Loading the Car. A folding baby gate makes the best carrier for the running board. It is light in weight, high, long as you want it, strong enough for the purpose, and inexpensive. Fasten it with angle irons at the bottom, ropes or wire braces at the top. The tent bundle is long and flat, on the right running-board under the doors. A few harness clips on the running-board are useful and inconspicuous. If the front fenders are strongly braced, there will be a bundle on each, tied to the headlight irons. Four bundles in the baby gate, one on the right running-board, two in front. Of course if you have tonneau room, you can either bring in two bundles from the outside, or take along a few extra comforts.

Camps by the Way are one night stands, very simple, commonly set up at twilight. It is best to turn off the main highways a mile or so along a side road, where you can either set up your house by the side of the road, or get a farmer's permission to stay over night in his orchard or meadow. A courteous statement of who you are, where you are from, where you are going, and what you want will almost always be met half-way. To make sure that this condition lasts, we should take care to give as many favors as we get.

On long trips, the storage battery may well be used for lighting your evening camp.

Of course the simplest roadside camp is a lean-to of some sort, fastened to the top of the car. Automobile tents may be had for this purpose, though any sheet of waterproof duck or twill will do. An excellent scheme is to use the fly from the wall tent combination, fastening one end to the car-top, the other end to the two wheels, and staking the middle out on the ground with a board or pole running through, so that the one canvas serves for both roof and ground cloth. This is a capital arrangement when the grass is wet. A rehearsal or two at home before you start will make it practical to sew a few tapes along the ground-line of this fly tent, for staking out. By this device, night camp may be set up in five or ten minutes, with dry beds and an excellent shelter. With this arrangement, you will study the direction of the wind before you stop your car in bad weather. A few extra pairs of tapes along the sides of the fly may help in shutting out a driving storm. It certainly pays to make up your beds in the



water-proof rolls described later in this article. With such rolls, four beds can be made in four minutes—there's nothing to do but unbuckle and unroll—and a little rain more or less doesn't matter.

If the weather is fair, it's a waste of time to put up any shelter at all. No other sleeping room can compare with the unroofed open air.

The Headquarters Camp.—*Shelter and Bed.* East of the Rocky Mountain states, there should certainly be a tent or two for each party. The 9x9's or one 10x12 will make very comfortable quarters for four. The requirements of weight and bulk forbids the use of heavy duck. We recommend the use of shelter tent duck or the best grade of twill for all sizes up to and including 10x12. Tents of these materials may now be bought ready made from any of the better dealers in outing goods, or may be made up to order.

There are half a dozen or more standard shapes of tents, but of these, two are pretty clearly the all-round styles for general use. Women are quite sure to prefer wall tents, with 8 ft. poles and 3½ or 4 ft. walls. Men who know are about as unanimous in choosing the lumberman's style, lean-to roof, 8 or 9 ft. poles, low rear walls, and an upright front. This front may be staked out awning fashion, thrown back on the roof, or tied down to close the tent. The lumberman's tent is thus convertible into three. It is a lean-to with warming fire in front; it is a living room with a front porch; it is a snugly closed house.

Whatever the style of tent, there should be an 8 or 9 in. sod cloth around the bottom, and some good drop screen in front, to keep out varmints, flies and mosquitos. A front of double mosquito net or single bobbinet is effective. It is well to have a broad band of cheesecloth at the top, bottom, and sides of the curtain for wear and tear, and for surplus tucking in. A few minutes attention to sod cloth and drop curtain will positively shut out the whole horde of flying and crawling night pests. We make no guarantees about quadrupeds. They are part of the game. Of course it will be necessary to kill off any mosquitos you have shut in. They will suggest how it can be done.

If carrying space permits, the headquarters camp will be greatly improved in hot or rainy weather by the use of a fly over each wall tent, extending well out in front for a porch.

In a country of wooded undergrowth, it is commonly unnecessary to carry poles or stakes; but if the journey is a long one and a tent is to be set up every night, it may be well to carry half a dozen stakes, and to put ferrule joints in light end poles cut to the length of your tent bundle. If your tents are made with a ridge of rope or tape, as they should be, you will not need a ridge pole on the way. Ridge poles should always be used in permanent camps, to gain head room and preserve the shape of the tent.

It is well to floor the ladies' tent with a water-proofed ground cloth, of material like the tent. A ground cloth of some sort is particularly desirable for camps set up by the road in the evening. It makes a neat cover for the bundles in the baby gate.

Waterproof your tents, flies, ground-clothes, and duffel-bags in a paraffin solution. Melt a pound of "Parawax" for each six quarts of gasoline, pour the hot paraffin into the gas, and go ahead. Dipping does the more thorough job, but brushing will do. Articles waterproofed in this way should be aired for several days before using, in order to evaporate all the gasoline.

Beds and Bedding. Sleeping bags are bulky, heavy, and expensive, but a home-made blanket roll will pay for itself in comfort, especially if the nights are cool, or if one likes to sleep in the open. The roll we recommend is made up in a simple cross-shaped cover of water-proofed twill, with tapes for tying or rings and a strong cord for lacing up. If the sleeper uses a cot, he must have as many thicknesses of blanket under him as over; if he sleeps on the ground, there may be a blanket or two less under than over. In any case, the proper way to make up blankets for a single bed out-of-doors begins like this:

Lay the twill cover out flat. Spread one blanket in position BC, another in position AB; Fold blanket C over B; A over B; cover flap E over B; C over B; A over B. Lace and tie, leaving a little freedom, for comfort. If more than two blankets are needed, fold all but the top one alternately, as above; the top one may well be tucked in at both sides. Flap D is a head cover, with convenient pockets for

odds and ends. This head flap for out-of-door sleeping is held up from the face by a cross-bar resting in forked sticks. The lower ends of D are of course tied down. It is impossible to kick out of a bed made up like that; wind and weather cannot get through it.

A few newspapers under the bottom blanket of any bed will do wonders for warmth.

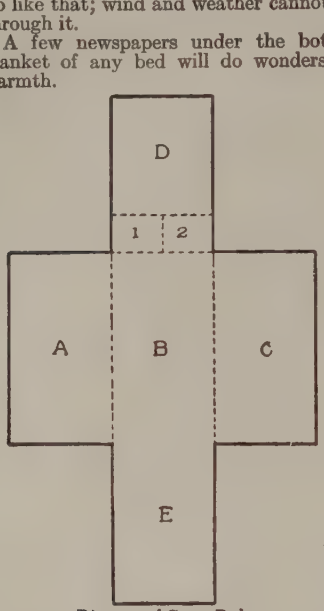


Diagram of Camp Bed

Lacking a natural mattress for your ground bed, one may be improvised of almost any leafy material—ferns, juniper, branches from any of the evergreen trees, small brush, sweet clover—whatever comes handy. For downright comfort, juniper is perhaps the best of the lot, though unpleasant to handle. If branches are used, they should not be thrown down haphazard, but should be laid in courses like shingles, covering the butts. Ground beds in the permanent camp should be made in two layers, a lower one of coarse stuff, and a finishing coat of tips, ferns, or leaves.

Occasionally, one may find it necessary to sleep on bare ground. This will not be bad, if hollows are dug for the hips. A form-fitting bed of sand is more comfortable than prodding branches badly covered.

The Camp Kitchen. It may be well enough to know how to make a fire without matches, but it is vastly more important never to forget the matches. Flint and steel, burning glass and fire fiddle will not be needed if there is a good reserve stock of matches in camp and in your pocket, both in waterproof containers.

Headquarters camp should have some means of baking. Kettle ovens and steel camp stoves are heavy; the writer always straps on the wagon somewhere a light four griddle, sheet iron stove, with an oven. This is admittedly a bulky package—its actual dimensions are 11x16x22 in., and its weight 14 pounds. Such a stove should be carried if at all practicable. It takes most of the hardship from your permanent camp; reduces the bulk of firewood required, raises the fire off the ground so that the cook can stand erect, and makes possible a comfortable tent on cold, rainy days, and in the evening.

If the stove cannot be carried, a folding reflector is the next best thing, though it is possible to improvise ovens of many sorts. The writer once served a meal of potatoes, muffins, and corn pudding baked at the same time in one galvanized bucket. An overlapping cover makes an oven of a frying pan. The regulation meat baker used at home will itself serve very well as oven in camp. Potatoes, corn, and fish may be baked in hot embers under the fire. The corn is protected by its husks, potatoes are delicious in their charred shells, but the fish will need a protection of wet paper. Boy Scouts learn to bake a twist of dough on a stick held near the fire. Suit yourself. Half the fun of camping is in inventing new ways to do old things.

No breakable utensil should go to camp. Aluminum ware is preferable except for dishes which must be held in the hand. It gets hot quickly and stays hot long. On this account aluminum cups are quite out of the question, except for cold drinks. Aluminum fry pans are excellent, if they have the right sort of handles. A light 12-inch fry pan with a smooth flat bottom gets our vote as the all-round best camp kitchen tool. It should have a socket for a long wooden handle, in case you need to fry over a big warming fire. Next to the fry pan in importance come three or four nested aluminum stew pans or pails. Of course all handles should be riveted, not soldered on. Don't forget the long handled spoon or the pan-cake turner. You *can* do without them. Guides enjoy the flourish of turning cakes by flipping the pan in the air, but what's the use, if the results are inferior?

Grub and Grub Getters. It all depends on who you are, where you are going, how long you are going to stay, and what time of year it is. Camp is a bad place for finicky folks. But most people will eat in camp things they refuse entirely at home. The general tests for a grub list are: *What items can we surely depend on from the country we camp in.*. It is well to discount this expectation pretty heavily. The fish do not always bite; a late frost may have killed the berries; we are hungrier than we planned to be. *Are our staples of the lightest possible weight for their food value?* Rice will do more for us than potatoes, at a fraction of the weight and bulk. Bacon is easily the best camp meat brought from home. Sugar, oatmeal, cornmeal, flour are high in value for their bulk. Dried fruits must always be included, for their medicinal qualities. Condensed milk is less bulky than the evaporated sort, and keeps better after opening. Butter is a luxury worth carrying. Pack it in the lightest tins you have. If one's camping is to be really strenuous and in far places, he must cut out the canned goods altogether. In a good country and in the good old summer time, the loss will not be serious. Dehydrated vegetables, eggs, and even powdered milk are practical, and growing in favor.

Always carry a few hooks and lines. The rods do not so much matter. There is a peculiar exasperation in the sight of game fish, or any other pan fish, when one has no tackle. By the same token, carry an accurate .22 rifle, or a .22 pistol with six-inch barrel, the lighter the better. Don't insist on head shots, if the camp is hungry. Red squirrels and woodchucks are always in season, and you are not wise in the camping game if you scorn them.

In many states, one may fairly count on wild berries — strawberries, raspberries, blueberries, blackberries, in succession, from May until August. On the New England shore, wild cranberries are ready late in summer. There are spots along the great lakes, in the mountains—best of all on the coast—where the combination of wild riches, free for the taking, is true beyond dreaming, from snow to snow. To get the best of it, you will of course steer wide and clear of all beach resorts, hotels, and popular summer camping grounds. We are still a young enough and big enough land for this happy appropriation of a common treasure, off the beaten track.

Personal Kits. By this time it will be understood that conventional travelling bags and cases are out of order in camp. One change of clothing, in a light muslin sack, is useful for a pillow at night. Give particular attention to the comfort of your feet. Conventional notions about the dangers of getting wet will require a larger wardrobe than folks need who have exploded this fallacy. But a poncho is comfortable in a pouring rain, and wet clothes are a bit clammy to sleep in or put on in the morning. There is of course no family wash in camp. Such tyrannies are in the discard. Put into your kit all the things you must have for health and for a reasonable degree of comfort, but go light on decorations for a while. It will make a noticeable difference in the load. Odds and ends of toilet articles are best kept in the pockets of the bed roll. Positively no personal property goes that cannot be packed in your one duffel bag, along with your blankets and clothing. Be sure to put in a pocket compass, a jackknife and a waterproof match-box of some sort.

Camp Sundries. Candles or candle lanterns are better for camp than oil lamps of any sort. Camp axes are sheathed, and carried in the duffel bags. A buck-saw is worth carrying, if you use a stove, or if you tinker much about camp. Remember soap, towels, and an old rag or two. Nails are very useful—a pound of 10's, a pound of 20's, and a half a pound of 6's. Take 50 ft. of small cotton rope, braided if you can get it, and some stove-pipe wire. A pair of white cotton gloves will be convenient in case there are fish to skin. There's a knack, for instance, of drawing the edible part of a bull-head away from the rest, with half a dozen simple motions, if you have a sharp jack-knife and a pair of cotton gloves. Be sure of a whetstone, carborundum preferred.

Carry maps of the regions you are to visit. If the U. S. topographical survey has covered the regions, get the map of every quadrangle which may interest you.

Except in a hunting party, one or two light guns are enough, and more are a nuisance. Always one or two small cameras—the smaller the better—if the lenses and shutters are good. Small pictures are good mementos, and the occasional lucky composition can be enlarged. Mosquito dope, in spring and summer. Any aromatic oils are useful—cedar, pennyroyal, peppermint, camphor; oil of pine is effective, but not good to look at. Citronella is the stand-by. Use a little olive oil or melted vaseline for a base. Put up as many one-ounce bottles or boxes as there are members in your party, and keep one larger bottle in reserve.

Working Hints About Camp. In locating your camp, water, wood, shelter, bed, drainage, and permission are the main things to look out for. Sometimes it is necessary to beware of the dog, but that speaks ill for the location. I once found it necessary to make a funeral for twenty-five

porcupines before camp duffel could be safe. Granted the six necessities named above, one begins to thank his wood gods for such bathing pools, bird songs, water falls, vistas, fruits, fish, game and sunshine as are available.

Fires. Big open fires are unpleasant for general cooking purposes, even in winter. If you must have a big fire for warmth, study the wind, and locate a small cooking fire so that you can work between the two. A fire built for cooking only should be small, directly under the cooking utensil, and close to it. Makeshift fireplaces do very well for short stays. Narrow trenches, parallel lines of rocks, tripods of stones, sharpened green sticks driven down in threes, two logs a few inches apart at one end, and separating slowly for the larger utensils—these are a few of the simple devices. Forked sticks will support a pole above the fire, and from this horizontal pole, smaller forked sticks in various lengths will carry the cooking pots. Six foot saplings make good swinging cranes. Fire irons and patent grids are of course very convenient.

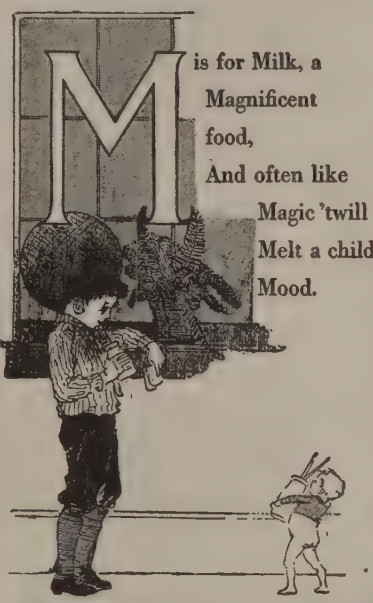
Lighting the Fire. Anybody can start a fire in a dry time. It's another story when the ground is wet, and all the fallen sticks are soaked through with rain. A hot *little* fire is what you must plan for first. Get the materials for your fire before you strike a match. It is almost always best to lay your fire before you light it. It is well to recognize several kinds of fire materials: tinder, anything which readily takes fire from the flame of one match; small dry twigs or split-up sticks which kindle from the tinder; middle-sized sticks, broken up; larger sticks, left unbroken, and thrust in as they burn. If coals are wanted for broiling, hardwood sticks several inches through are best. Always, the hot little fire first. Birch bark, white or yellow, will burn in any weather. But woodman, spare that tree! Cut it down if you must and the law allows, but don't disfigure it with a knife. Pull off loose fringes with your hands, or find a dead tree and work your works on it. Standing dead stuff is of course drier than ground wood in wet weather. The lower branches of evergreens die first, and may always be counted on, if they're there. Break them off, split them, and whittle, if you have no birch bark. Gauge and grade the size, the dryness, and the kindling heat required for all the materials at hand. Any sound deadwood is likely to be dry at the heart, so the ax and pocket knife, with common sense, will solve the fire problem.

Safe fires are not built on dry peat or leaf mold. Rocks, bare soil, creek banks, or raised fire-places are safest. Fire is of course particularly dangerous in a dry time of high winds. Let your fire run, if it will, several yards out in all directions from the starting point. The one rule for safe fires is, *watch them* while you're in camp, and *put them out* when you go away. Night fires should be used only under conditions of known safety. Tent stoves are best for that purpose.

The convenient and comfortable camp is near water and wood, is water-proof and shaded by a fly, requires little stooping, has a place for every utensil, good beds, a table or two, and portable seats. Camp without these is no place for old folks, for women, or families, beyond the first day or two. But with these things, and a fair division of labor, there is little hardship in camping. It is understood that *all camp furniture is made in camp.* Buck-saw, nails, and nail-pulling hand-ax make quick work of it. Tables, benches, and chairs can be sturdy and portable only when they stand on four good legs, each leg braced two directions at right angles. Wire sixes are best for fastening these braces. It is a simple matter to put backs on the benches and chairs. If you take along some extra canvas, hammocks, cots, and reclining chairs are in your repertoire.

Hints on Camp Cooking. Fry fish slowly, in fat as deep as you can spare it. This means a small, steady fire and frequent turning. Roll your fish in a mixture of corn-meal and flour before frying. If you turn a trout or flat fish a few times before leaving him in the pan, he will lie without curling.

Stews are easily possible. Red squirrels, wood-chucks, and cotton-tails are available when other things fail. Dehydrated vegetables in a stew will probably require longer cooking than your meats. If you



have fresh vegetables study their boiling periods and add each at the right time to bring all together at the finish. For instance, do not put in the potatoes until the meats begin to be tender, with twenty-five minutes to go. A slow simmering fire is the thing for stews. Add butter, salt, and a thin, smooth batter of flour—not much of it—a few minutes before serving.

In *Baking* remember one rounded or heaping teaspoon of baking powder to the cup of flour. Gems and muffins need a cup of milk (solution of powder or dilution from tin can); an egg or its equivalent in egg powder; tablespoon melted butter; sugar and salt to taste, the whole stirred with flour of any sort to the consistency of well-cooked mush. The stuff should run, but slowly.

Pancakes are more tender made with water than with milk. Better take along some prepared flour—"Aunt Jemima" if you can get it.

Too much baking powder is better than too little.

Johnny Cakes are better of half wheat, half corn.

For *Puddings*, boil rice or corn mush; stir in milk to a thin batter; add beaten egg or egg powder, raisins, sugar, nutmeg; bake until brown.

Steaks, chops, fish can be *broiled* in camp as well as at home, or better, if you bring along a camp grid or a folding bread toaster. Use a bed of live coals. Wire the broiler handle to a stick, if you find the heat unpleasant.

Planked meats are more readily prepared in camp than at home.

There is no better way with *small game* than to boil it until tender, and brown it with butter in the frying pan.

Fish Chowder. A kettle or big stew pan, with layers, in turn, of pork, fish, sliced potatoes, and crackers. Long, slow simmering. Keep covered with water.

Baked Beans. Layers, from the bottom upward, of onion, beans, onion, pork, beans, molasses, covered with water. Beans previously boiled until nearly tender. Both the chowder and the beans will be much better if they can be baked in a fire-hole. This requires a covered kettle, a rock-lined pit, and enough live coals to bury the pot completely. Layer of ashes on top. Get this pit in action at noon, and a delicious hot supper will be waiting for you at night. The pit itself is of course first heated by a fire built for that purpose.

Coffee, the good rule: tablespoon to the cup, and one for the pot. Better say pint cup, unless you like it strong. Don't boil your coffee; let it come slowly to a boil, and then merely keep it hot till you are ready for it.

One of the very best things about camping is that there may be so complete a change of work that we call it play. We have a new set of cooks, for out-of-doors it is the men's turn to cook, at least until the kitchen is made easy to work in. Even at that, the folks who cook at home need a change much more than the men are likely to need it. In general, men's camp cooking is likely to be greasy. Better make an art of it. Digestion will approve, and there's fun in the gem.

The Hiking Camp. Outfit, only what each man can carry comfortably on his back, say around thirty pounds, complete, packed either in a duffel bag with harness, or in a pack basket. The basket holds its shape, does not jam the contents, is cooler to carry, but is not water-proof. The basket wins by a big margin, if you can protect it from rain.

Small waterproof bags, stamped or tagged, are very useful for dry foods and sundries.

In midsummer, a shelter tent (pup tent), with a blanket or two and a liberal square of mosquito net will be advisable; but in cooler weather, a well made bed-roll is rain-proof, damp-proof, wind-proof, cold-proof—all the house you need.

For a hiking trip in the woods, one should plan each meal in advance, making them all very simple, of condensed nourishment, and carrying only such dishes as are positively necessary. There should be a change of gear for the feet, but a poncho will probably make further change unnecessary.

Real outers find the improvised hiking camp most interesting of all. But it is possible to overdo the impromptu feature of the game. When you set out for a long walk in the woods, it is always well to have along the half of a dog tent, a tin of meat or cheese, a compass, and a loaded water-proof matchbox. If you lose your sense of direction in the woods, and haven't a compass, *stop travelling!* Sit down, cool off, think it over, wait. Recall where your

camp is placed; review the land-marks on your way; reflect that water runs down hill, that moss is heaviest on the shaded side of trees, and the worst possible thing to do is to lose your head and rush around.

Perhaps the last word about wandering alone in the big woods is *not to do it*, until you have a sure and tested sense of direction, and a habit of really seeing and remembering the land-marks you pass, looking back at them as well as forward.

CANOEING

Paddling one's own canoe is an immensely popular sport, over thousands of miles on inland waterways. Here and there is a group of canoe sailing enthusiasts, with their arguments, their races, their elaborate contrivances for carrying more and more sail, preserving balance, and resisting side thrust. Folding centerboard outriggers, seats sliding far over the side, and a big sail together make a craft which only an expert can handle without coming to grief. Obviously, all canoeists should be good swimmers, whether they get their thrills by shooting rapids or by coming about in squally winds under full sail.

Beginners in paddling might be glad of a suggestion or two. Let your canoe be light, but strong. Some of us prefer spruce, and like to shape our own, thin and broad. In any case, before a long journey is done, you are sure to appreciate lightness of outfit, canoes, paddles and all.

All popular canoe models are now made of canvas covered cedar.

Two paddlers make more than twice as good headway as one. They neutralize each other's side thrust. Every moment's use of rudder or paddle to change the course is a moment of lost energy. The through traveller makes no unnecessary zigzags.

Learn to steer with your stroke. No matter on which side you are paddling, turn the inner edge of your paddle back a bit, and strike parallel to the course, as usual. The angle at which you hold your paddle as it goes through the water will determine whether you turn to right, to left or go straight ahead.

Canoeists are likely to be interested in the article on camping, in this volume.

CRICKET

Cricket, a national favorite in England, has taken little more hold in America than baseball has with the Britons. Cricket is much like the Two Old Cat of our country school days. In place of the two bases for the Old Cat game, stand two "wickets"; each wicket is a set of three posts 27 inches high, carrying a loose block of wood called a "bail". The posts must be too close together to let a ball through between them, and must be sensitive enough to make the bail fall off if a pitched ball hits the wicket.

Four feet from each wicket, toward the other wicket, is a line marking the batter's position. Two batters are up at once, one by each wicket.

The game is played by two opposing teams of eleven men each. In each inning, all the players come to bat. While one team is at bat the other is in the field. A pitcher stands beside each wicket and each pitcher throws in turn at the opposite wicket. If he can hit his mark, the bail will fall, and the batter at that wicket will be out. It was the batter's business to hit the ball before it struck the wicket.

All batted balls are fair hits, and each hit requires the two runners to exchange places. Meantime, if the batted ball is caught on the fly, or if a bail can be knocked off by a ball in the hands of a wicket keeper before the runner due at that base arrives, that runner is out. There are thus three methods of putting a batter out.

The batsman may make several runs for each hit if they have time, and since the bats have a flat surface and the game is a long one, the score often runs into hundreds.

FIELD HOCKEY

Field, 100 yd. by 50 or 60 yd.

Five yard strips along each side.

Goal Posts, 12 ft. apart at middle of each end.

Cross Bar, 7 ft. up.

Net back of goal to catch ball.

Striking Circle. Front of this circle is a 12 ft. line parallel to goal line 15 yd. forward from goal posts. Ends of this forward line are connected with goal line by arcs from goal posts as centers.

Boundary Lines are called Side Lines and Goal Lines, respectively.

One Mid Line and two Quarter Lines.

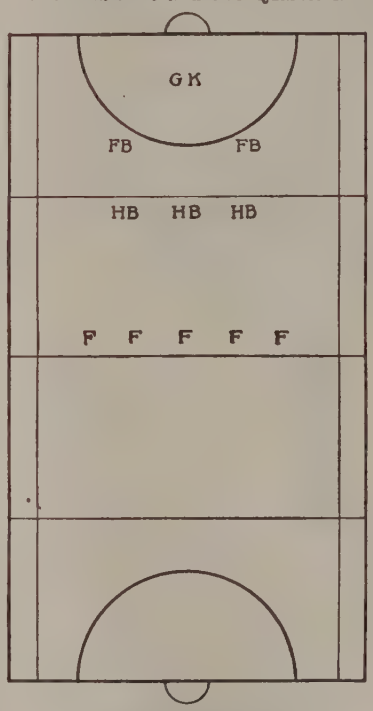


Diagram of Hockey Field.

Team, 11 men—5 forwards, 3 half backs, two full backs, 1 goal keeper, with general positions as shown in the diagram.

Object of the game, to drive a ball through the opponents' goal, by striking it with hockey sticks. All shots at goal must be made from within the striking circle.

The forwards are the chief attackers; the half backs assist the forwards; full backs break up attacks by the enemy; goal keepers block shots at goal. Every attacking man is guarded by a corresponding opponent.

Only players "on-side" may strike a ball toward the opponents' goal. A player is off-side when the ball has last been hit by a member of his own team behind him, unless at the time three or more opponents are between the player and the goal he is attacking. An off-side player becomes on-side when his team-mate who last touched the ball passes him toward the opponents' goal, or when an opponent touches the ball.

It is permitted to stop the ball by using any part of the body, but only the goal keeper may kick the ball. A ball caught in the hands must be dropped at once.

Back strokes are not permitted. A player may hook an opponents' stick to stop a blow, but may not hook an opponents' clothing or person.

The beginning of a hockey game is an operation known as the "bully". For this two opposing players stand on the center line, each with the opponents' goal at his left hand and with the ball between them. Each must strike the ground and the opponents' stick three times in succession, after which both are free to strike the ball. During this operation all players of each side must be behind the ball.

A bully on the mid-line is also used at the beginning of the second half and after each scoring of a goal. If an attacker drives the ball across the opponents' goal line outside the posts a bully must be played on the 25 yd. line nearer this goal. A foul by the defenders within the striking circle calls for a bully at the spot where the foul was committed.

When any player causes the ball to go out of bounds at the side one of his opponents must put the ball back in play by rolling it into the field in any direction other than forward. For this purpose only one man may be outside the five yard line.

It is a foul to hold, strike, push, trip or kick an opponent.

To raise the stick above the shoulders.

To strike with the back of the stick.

To strike the ball while off-side.

To cross between a player and the ball, in order to prevent his striking.

Penalty for each of these fouls, one free hit by the opponents, the defenders standing at least five yards from the man who makes the free hit.

Game, two halves of thirty-five minutes each, or shorter halves by agreement.

Score, one point for each goal.

The referee is head official, and has charge of the ball.

An umpire in each half of the field watches the conduct of players, and reports certain classes of fouls assigned to him.

FISHING

There is a good edge on the old saw
When the wind's in the west
Fish bite the best;
Wind in the south
Drives the bait in the fish's mouth;
When the wind's in the east
Fish bite the least;
When the wind's in the north
The fisherman goes not forth.

But all such maxims are only general. The writer's guiltiest memory of an overcatch goes to a day of northeast wind; and he has found many a spot where the "wise natives" could tell, if they would, when the signs were right in the lakes and streams near by. If you come across somebody who has the reputation of always catching fish, get next to him if you can. He has studied or stumbled his way to a revised version of proverbs. Perhaps he just knows where they are and what they are doing to-day.

This should make it plain that any statements about the sure way to make big-heap-catch fish will be six or eight parts bunkum in an average ten. So even this discussion is condemned to begin with. But try it.

Hard up for bait? Crickets and grasshoppers are sleepy and stiff early in a cool morning. Bass like hoppers as trout like flies.

The unexpected wakes up the big slow fellows at the bottom of the pool. Give them a swimming frog, a mouse a devil bug of some unearthly design.

Can't catch frogs. Cut a bit of fresh or salt pork rind to act like a frog when you draw it along in little jerks. Put a triple hook or two on the meat side of the rind.

Night crawlers do crawl at night, if there's dew or rain on the ground. Take a lantern, look sharply, step gently, and end with a forearm snap, a grip, and a steady pull. They are game animals. Even small trout seem to prefer one bite of crawler to three whole garden worms.

There is nothing offensive about the larva of a fly, unless you happen to think so. In a very dry time you might do worse than to hang up some defunct creature in the sun, with a pan of corn meal directly below it. Bird-catching tomcats are suggested. Plan your plans and work your works several days before you need the bait.

Flat fish in the lakes—perch, sunfish, blue-gills—always leave an inch of worm to squirm around the point of the hook. The reluctant fellows can't quite resist that. Trout? Hook the worm two or three times through, across. Trout do not nibble.

Corks and bobbers—yes, if the water is shallow or if you are out for occasional biters. At the first sign of steady motion, *strike*! That is, make a short, sharp pull on your rod to sink the barb of your hook. After that, take your time—the bigger the fish, the more the time.

But if you can keep your bait where you want it, don't use a float. Answer every touch on your hook by a little flip of your rod. In that way you can catch three fish to the one of the fellow who waits "for him to swallow it" or for the bobber to go under.

Live minnows—big ones, for big pike; two inch or three inch, for perch; middle size for bass. Tie or tack four feet of mosquito netting to two four-foot sticks. Get into the small stream below the big pool and have your partner drive them down to you. Slow troll with a long line for big fish.

Perch live near the bottom. Find the bottom with a sinker heavy enough to show by slack line the moment bottom is reached. Then lift a foot or so. Take the depth in this way whenever your boat has been moved. That is one of the advantages of having a reel on your rod.

The natural feeding grounds of fish are over or just over the edge of weed beds. But in summer mid-day they are out in the lake—not always deep in the water. Some kind of fish, blue gills for instance, keep during the middle of the day a fairly constant depth of six or fifteen feet, however deep the lake may be; but there are hours when they fairly lie on top. At such times even blue gills may be taken with the fly.

Bait casting is accomplished in three ways—hand line, long reed pole and short rod with a reel. Each is good sport and has its advantages. The bait rod and reel get the vote for all-round efficiency. Rod and reel together cost from seven to seventy dollars, as you will. Get your outfit some weeks before the season opens and practice over all distances, landing weights on a newspaper. An automatic winding reel makes back-lash infrequent, though we old-stagers hardly approve of such fool-proof devices. They are emptying the ponds. In using any artificial bait, plug, rubber, or fly, it is important to strike the instant the fly touches the bait. He will promptly discover the fraud, and rid himself of it if he can. The use of live bait for large lake fish counsels a longer wait before striking.

Make your own flies, if you want all the fun there is in it. There's nothing mysterious about it. Dissect a few store flies, beginning at the head. In this dissecting, do not cut where you can untie. You will find that most knots are only half hitches. Your dissection should show the use of a

binding thread, the reverse folding of wings, the winding of hackles, herl, silk, and tinsel. If you shoot, keep a growing collection of feathers, with plenty of oil of cedar or moth balls in the box. Stand in well with some folks who raise chickens. Keep your eye especially on all game roosters. Feathers from the necks of those birds are the most useful ones in your box. One can do very well without any other hackles, if necessary. Note that binding thread goes round the hook in a direction opposite to all other materials.

Tools and Materials for fly tying.

A small vise, from the ten cent store (lacking this, use a pair of pliers, with a string wound tightly round the handles; at a pinch, you can hold these pliers between your knees), hooks, silkworm gut or substitute, wing feathers, hackles, silk floss, silk thread, peacock herl, ostrich herl, shoemaker's wax, shellac, a mounted needle with square bent end.

Begin with the wing in reverse position; then go to the tail; fasten in each feather with a half hitch of the binding thread; carry the thread a few turns forward out of the way; wind on, and fasten in turn, the tail, body of floss or herl, ribs of tinsel or silk twist, hackles, and finally the wings, bent back to position. The fastening of the wings and a touch of shellac or a tuft of ostrich herl make the head.

Dry fly fishing is the top notch of play in this line. Make them small. Balance your wings. Use dry fly oil. (All your flies would be the better for it.) Use a fine or a finely tapered leader.

Fly casting is not mysterious, not excessively difficult, and not very expensive, if you do most of the work on your outfit. Much of the cost of a good fly rod is in the winding. You can do that yourself, if you will study out the trick of burying both ends of your thread.

The back cast is the key to good fly casting. In general, keep it high and put a curve at the far, back end, rather than a whip-cracking snap. Make your wrist do the work. The job is daintier and easier so. Lift the tip a bit just before the flies are to light on the water. That makes them come down more gently. Side casts are useful acquisitions, later on. Be sure to varnish all used bamboo rods every fall. That holds the winding and keeps out water. Save the surface and you save the fish that gets away when your rod is soft. Use highest grade elastic rod varnish; not shellac.

Test every line before you leave home, especially the first ten feet of it. Don't go out with a line that breaks under eight or ten pounds. Dry your lines every day—storage of wet lines rots them.

Keep the law. That is only fair to the other fellow, and in the end, it is best for you.

FOOTBALL

To an outsider, football seems at first an unintelligible series of fallings-down and gettings-up again. But it is really a highly technical game, full of opportunities for both physical and mental prowess, and governed by very exacting rules.

Football is played on a field 160 ft. by 360 ft. A midline divides the field across, and on each side are ten cross lines, five yards apart. Counting from the center, the tenth cross line at each end of the field is a goal line. The area enclosed by the side lines and the goal lines is the field of play. The spaces back of the goal lines, measuring 30 ft. by 160 ft., are the end zones. At the middle of each goal line stand two goal posts 18 ft. 6 in. apart, with a cross bar ten feet above the ground.

Two teams of eleven men each play the game. The general object of each team is to advance the ball toward and across the opponents' goal line. This advance is made by throwing the ball, carrying it, or kicking it, subject to rules. The team not in possession of the ball attempts to block the advance, either by checking the progress of the player who carries the ball or by getting possession of the ball itself.

A football game is divided into two halves, and each half into two quarters. The quarters are commonly of fifteen minutes each. A fifteen minute intermission separates the halves; a one minute intermission occurs between the first and second quarters, and between the third and fourth.

At the beginning of the game the opposing captains toss up for choice of goal or kickoff. If the winner of the toss chooses goal, the other side must kick off. At the beginning of the third quarter, the team which lost the initial toss-up has its choice of goal or kickoff. For the second

and fourth quarters, the team exchange goals.

The team which has possession of the ball makes the attack, or offensive. For this attack the opening play of the first and third quarters is a kickoff. At kickoff, the ball is sent into the opponents' territory by a place kick from the holders' 40 yd. line—the line ten yards from the middle of the field on the attackers' side. Of course if the opponents secure possession of the ball after a kick they become the attacking party. At kickoff, the team possessing the ball may not advance beyond the cross-line on which the ball lies, nor may the opponents come within ten yards of that line, until the kick is made.

There are four general methods of putting the ball in play: punt, drop-kick, place-kick, and scrimmage. As just explained, a place-kick is used to open each half game. After a free catch, any one of the four methods may be used.

Until 1922, a touch-down was always followed by a place-kick for a try-at-goal. In that year, the place-kick after touch-down was abolished in American Intercollegiate foot ball. Instead of place-kick after touch-down, the ball is now brought out 5 yards for one play of any practical sort from scrimmage line.

Definitions and Chief Rules of Play.—A *down* occurs when the referee blows his whistle or declares the ball dead. When a player carrying the ball is so held that he cannot advance the ball is "down" and either the player or the referee may call it so. If the man carrying the ball is so held by an opponent that any part of his body other than his hands or feet touches the ground while he is so held, the ball is down. Other chief instances of downs or dead balls are: after a touch-down, touch-back, safety, or goal has been made; in general when the ball goes out of bounds at the side; after an incompleted forward pass; while the penalty for a foul is being enforced; after a air catch.

If a team having continuous possession of the ball fails to make ten yards' advance during four consecutive downs, the ball goes to the opponents on the fifth down.

No play may be made while the ball is dead, except as provided by rules for reopening play in the case.

To make a *drop-kick*, a player lets the ball fall from his hands and kicks it just as it rebounds from the earth.

When a player has an opportunity to catch a ball which is in the air from an opponent's kick, he may signal for a *fair catch*, by throwing up an arm; in which case he must not be interfered with in his attempt at a catch. If he succeeds in catching the ball and takes no more than two steps after catching it his team is entitled to put the ball back into play by any one of four methods already mentioned—scrimmage, drop kick, punt or place kick.

Forward Pass. Once during each scrimmage, from a point at least five yards back of the scrimmage line, the ball may be thrown forward any distance toward the opponents' goal. Suppose Team A makes the pass. Any member of team B may attempt to catch the ball, and if he succeeds, may advance with it or call it down, in his possession. If team A makes the pass only the end men of the scrimmage line or players at least one yard back of the line in team A may attempt to catch the ball before it is touched by an opponent. After a member of team B has touched the ball any player of either side may seek to gain possession of it. If a ball passed forward be not caught, but strikes the ground, either before or after being touched by a player of either side, the pass is incomplete. An incomplete forward pass counts as a down, at the spot of the preceding down.

Foul. Any violation of rules. See *penalties.*

Free Kick. A punt, drop kick, or place kick following a fair catch. During this play the side in possession of the ball must not advance beyond the line of the fair catch, and the opponents must not come within ten yards of that line until the ball has been kicked or has touched the ground for a kick.

Goal from Field. A goal kicked from the field during the regular progress of play. Ball must go over the cross-bar, or over one of the goal posts. Score, 3 points.

Hurdling with the ball is not permitted. A player carrying the ball may not hurdle

in the scrimmage line by jumping over a player within five yards of the point from which the ball was snapped back. A man carrying the ball in the open more than five yards from the point of beginning the play may not attempt to jump over a player who is still on his feet. Stepping over a prostrate player is not hurdling. In the open, a player on his knee may be hurdled without penalty.

Kickoff. The play by which first and third halves are opened. A place kick from the forty yard line of the team possessing the ball.

Offside. A player is offside when the ball has last been touched by a member of his own team behind him. No offside man may touch the ball, except to recover a muff or a fumble or to recover a forward pass under the rules. All players of team A are on side when the ball has last been touched by a member of team B.

Out of Bounds. The ball is out of bounds when either the ball or the player carrying it touches the ground on or outside the side line or side line extended. If a ball kicked by a member of team A goes out of bounds without touching a member of team B, the ball goes to team B; but if such a ball touches a member of team B before going out it belongs to the team which first secures possession of it. A ball out of bounds must be brought back into the field five or fifteen yards, for scrimmage. No player may be out of bounds when the ball is put in play except the kicker and the holder of the ball in a place kick.

Penalties, Summary of.

Loss of two yards. For taking out time more than three times during either half.

Loss of five yards. For failure of a substitute to report to referee before entering play; for illegal position or offside play; for violating neutral zone at scrimmage; for playing out of bounds; for putting ball in play illegally; for guard or center carrying ball; for feint to snap the ball; for fake attempts to draw opponents off side; for player taking more than two steps after fair catch; for delaying the game; for interfering with opponents before ball is in play; for holding by defense; for wilful collision with the full-back; for crawling after the ball is down; for flying tackle or tackle below the knees; for unfair play not specifically mentioned in the rules.

Loss of ten yards. For intentional throwing of forward pass to the ground; for running into opponents after the ball is dead.

Loss of fifteen yards. For substitute communicating with a player before the ball is put in play; for any player leaving the field during the one minute intermissions; for interfering with a signalled fair catch; for tackling a player who has made a fair catch; for unlawful assistance to a man carrying the ball, including interlocked interference; for holding by side possessing the ball; for forward pass by the team which did not put the ball in play; for roughing a man who has kicked the ball; for hurdling; for piling up after the referee declares the ball dead; for any unnecessary roughness or unsportsmanlike action; for coaching from the side lines; for illegal presence on the field of play.

Loss of twenty-five yards. For being unready to play at the beginning of the second half.

Loss of half the distance to the goal. For a player illegally returning to the game; for striking, kneeing or kicking an opponent; for a foul by the defense within one yard of its goal line.

Loss of a down. For incomplete forward pass; for more than one forward pass in a scrimmage; for two players of the passing side touching a forward pass; for forward pass going out of bounds on the fly; for ball snapped out of bounds by team A and recovered by team A.

Loss of ball to opponents. For the five cases last mentioned, if on fourth down; for an offside player touching the ball; for a kicker recovering the ball before it has been touched by a man entitled to get it; for kicking or kicking at a loose ball.

Suspension from game. For illegal return to the game; for illegal equipment.

Disqualification. For striking, kneeing, kicking; for roughing the kicker; for any flagrantly unsportsmanlike conduct.

Forfeiture of the game. For refusal to allow the game to proceed, or refusal to play within two minutes, when ordered by the referee.

Definitions continued: *Place kick.* A ball kicked while it is resting on the ground, either free, as at kickoff, or supported by an assisting player.

Punt. A kick in which the ball is struck as it drops from the player's hands, and before it touches the ground.

Safety. A safety is made when the ball is declared down, behind or on the goal

line, in the hands of a player defending his own goal, provided that the impetus which sent the ball over the goal line was given by a member of the defending team. Certain other technical cases of fouls, incomplete passes, or kicks across the side lines also constitute safeties. A safety made by a player of team A counts 2 points for team B.

Scrimmage. The action of putting the ball in play between closely opposing lines of players. At least seven men of each team must be in position on the scrimmage when the ball is put in play. There are really two scrimmage lines, separated by the length of the ball as it lies lengthwise of the field. To be in position on the scrimmage line a player must have two hands or two feet, or one hand and the opposite foot, within twelve inches of his team's line.

The seven men in the line up for scrimmage are, each way from the middle, center, right and left guards, right and left tackles, right and left ends. Back of the line, one yard or more, are the quarterback, the right and left half-backs, and the full-back. The ball is put in play by being snapped back on signal from center to quarterback.

Touch-back. Resembles safety. Occurs, for example, when team A has sent the ball over B's goal line, but a member of B touches it down behind the line. After a touch-back or a safety, the defenders who made the touch-back or the safety put the ball in play on their own 20 yard line.

Touch Down. Made when a ball lawfully held by a member of either team is declared "down," *on, over* or *behind* the opponents' goal line.

BOY SCOUTS

Things Scouts Must Know.—(From the Official Handbook, by Permission of Boy Scouts of America, New York City.)—To be a good scout one should know something about the woods and the animals that inhabit them and how to care for one's self when camping.

The habits of animals can be studied by stalking them and watching them in their native haunts.

BOY SCOUTS

The Scout should never kill an animal or other living creature needlessly. There is more sport in stalking animals to photograph them and in coming to know their habits than in hunting to kill.

Woodcraft is one of the activities of the Boy Scouts of America and means becoming acquainted with things that are out of doors. It includes the tracking of animals by the marks left by their hoofs, and by stealing out upon these animals, not to do them harm, but for the sake of studying their habits and getting acquainted with them.

It also means to be able to distinguish the different birds—to know a song sparrow from an ordinary sparrow; to know a thrush from a lark; and to be able to distinguish the birds by their plumage and by their song. It means to understand the reptile and snake life, which sometimes is abundant in our forests, and to actually know that there are only three kinds of snakes that are dangerous—the rattlesnake, the moccasin, and the copperhead. All the other kinds are harmless, and part of woodcraft is to know the habits of these reptiles and to look upon them as friends.

It also means to know the fishes, to tell pools where the muscalonge can be caught, know the ripples where the trout sport, know where the pickerel and the perch have their haunts, and not only to enjoy the sport of pursuing them, but the delight

of eating them baked or cooked in the woodman's style.

It means to be able to know the trees, and to be able to tell by the foliage and bark the difference between the oak and the maple, and the birch and the chestnut, as well as the other trees which grow so abundantly in our woods. It means to be in close touch with nature. To understand plant life in the different ferns and grasses; to know which flowers bloom in the spring, which in the summer and which the fall—in short, to get so intimately in touch with nature as to know her at her best and to love her in many moods—to truly enjoy this great world which God has made.

It means to know the secrets of the streams and the trails in the forest. To know the stars by name and to be able to find one's way by them. It means to understand and appreciate the whispers of the sea as well as the hoarse dash of the ocean waves against the rocky coast. It means to appreciate the song of the surf as it dashes over the pebbles; and, in fact, to live and understand the great outdoor life which is all about us.

Camp life means to live under canvas, away from the piles of brick and stone that we generally call our cities. It means to be in the open air, to breathe pure oxygen, to sleep upon "a bed of boughs beside the trail", to hear the whisper of the trees from amidst the fragrance of the "couch of boughs", to look at the campfire and the stars when the sun has set, to ply the oar or wield the paddle in the moonlight; to dive in the cool waters of the lake or river at the dawn; to eat the plain substantial food of the forests and the wilds, with the delicacy of the fish and

BOY SCOUTS CARRYING THE INJURED

fruit which they afford; and to come heart to heart with nature in constant communion with the woods, the mountains, and the streams—all of this is camping, and all of this is good.

But the camp affords a better opportunity than this. It offers the finest method for a boy's education. Between the ages of twelve and eighteen years the interests of a boy are general, and reach all the way from the catching of minnows and tadpoles to finding God in the stars. Each day brings him new discoveries, and each night sends him back to his camp bed, to sleep among the branches of the balsam or fir, with an unspeakable joy tugging at his heart. A summer spent

BOY SCOUTS FOLLOWING A TRAIL, WOODSMAN FASHION

like this puts red blood in the boy's veins, a glow of health to his cheek, the hardness of steel to his muscles and sinews, and fits him for the struggle of the school or the shop that is going to test his endurance during the long winter months.

The life of camp is profitable because of its varied activities. A boy learns to build his own bed out of fallen timber, to make his own mattress out of fir branches or by weaving it out of grass; to cook his own meals; to make his own fishing equipment; to catch his own fish; to build his

own fire; to keep his camp clean, and in short, to rely upon himself and to take care of himself.

He learns self-resourcefulness in this outdoor life faster than he would anywhere else; and somehow or other, every lake, and tree, and star, and pool of water come to be his personal friends, so that no matter where he is, he is never alone; and whether in solitude or with companions, he is cheerful and sunny, and always ready to help others.

BOY SCOUTS

Some boys cannot go to a camp for a summer, while others cannot even go to camp for one week or two weeks, but there isn't a boy, no matter in what city he lives or how big it may be, who cannot go out into God's out of doors for a week-end hiking party or camp.

The Boy Scouts of America also teach the Boy Scouts to make themselves valuable to the community by saving life. Accidents occur every day. Some one falls and breaks a bone. Or there is an accident by rail or by water. Never a day passes in the history of the world but many are seriously injured by some unsuspected and unforseen happening, and it is the part of the Boy Scout to live up to his motto, which is "BE PREPARED," so as to be able to relieve the unfortunate one who is hurt or wounded in any of these happenings.

For this reason the Boy Scout needs to know what we call "First Aid to the Injured." For this purpose he has to know something about the structure of the human body. He has to know the main bones, the joints, the muscles. He has to know how the blood circulates and whether the veins or the arteries carry the blood to or from the heart. He has to know about the method of breathing, and also the method for digesting food. He has to know something about the nervous system, and the five senses of touch, sight, smell, taste and hearing. He also has to know something about the skin.

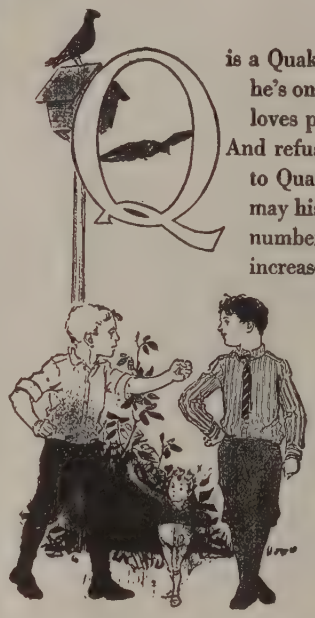
Knowing the construction of the body, he should know how to bandage a broken limb. He should know how to use a tourniquet for the stopping of the flow of blood. He ought to know what to do in case some one faints. He ought to know what a compress is, and how stimulants are used.

There are various kinds of accidents of which a Boy Scout ought to have sufficient knowledge to handle rightly. There are those injuries in which the skin is not pierced or broken, such as bruises, strains, sprains, discolations and fractures. There are those injuries in which the skin is pierced or broken, such as wounds and hemorrhage, nose-bleed, abdominal wounds, wounds in which foreign bodies remain.

There are injuries from local effects of heat and cold and electricity, such as burns and scalds and frost-bite. Then there are injuries which produce unconsciousness, such as shock, fainting, injury to the brain, sun-stroke, heat-stroke, freezing, suffocation, besides the accident of poisoning by drugs or in some other manner.

Then there are injuries which result from indoor and outdoor sport, as in the gymnasium, in the baseball or football game, in Fourth of July celebrations, in boating, skating, swimming, shooting and fishing, automobiling, and in camping and outings.

Not only this, but there are hundreds of cases of drowning every year, and the Boy Scout ought to know how to rescue those who are in peril of their lives by water, how to produce artificial respiration and how to act in every case of accident and emergency. To know what to do, and to be prepared to do it, is one of the privileges and duties and the glories of every Boy Scout.



The great aim of the Boy Scout of America is to make every Boy Scout a better citizen. It aims to touch him physically—in the campcraft and woodcraft of the outdoor life in order that he may have strength in after days to give the best he has to the city and community in which he lives, as well as to the nation of which he is a part. It seeks to develop him by observation, and the knowing of things far and near, so that later on, when he enters business life, he may be alert and keen, and so be able to add to the wealth of the nation. It teaches him chivalry, and unselfishness, duty, charity, thrift and loyalty; so that no matter what should happen in the business, or social, or national life, he may always be a true gentleman, seeking to give sympathy, help, encouragement and good cheer to those about him. It teaches him life saving in order that he may be able in dire accidents and peril by land and sea to know just what to do to relieve others of suffering. It teaches him endurance, in order that he may guard his health by being temperate, eating pure food, keeping himself clean; so that being possessed of good health, he may always be ready to serve his country in the hour of her need. It teaches him patriotism by telling him about the country he lives in, her history, her army and navy, in order that he may become a good citizen and do those things which every citizen ought to do to make the community and land that he lives in the best community and land in the world.

Good citizenship means to the Boy Scout not merely the doing of things which he ought to do when he becomes a man, such as voting, obeying the law and paying his taxes, but the looking for opportunities to do good turns by safeguarding the interests of the community and by giving himself in unselfish service to the town or city, and even the nation, of which he is a part. It means that he will seek public office when the public office needs him. It means that he will stand for the equal opportunity and justice which the Declaration of Independence and the Constitution guarantees. It means that in every duty of life he may be on the right side and loyal to the best interests of the state and nation. By the "good turn" that he does daily as a Boy Scout, he is training himself for the unselfish service that our cities and land need so much.

The foregoing statement from the Scout Manual deals with the general purposes of the Boy Scout organization, and is sufficient to deserve attention and respect. One of the best features of scout work is its appeal to a wide range of healthy interests at a time when the boy doesn't yet know what he will do for a life work. He gets an insight into the quality of many different occupations and industries, while he is still pliant enough to be interested in many things, and he goes far enough in a number of the lines he takes up to learn whether these may furnish the chief aim for his future. But whether scout work helps him find his own life niche or not. it makes him at home, interested, and useful in a world of real things and real folks.

After a boy has passed through the three stages or preliminary degrees, and has become a first class Scout, he may begin to qualify for merit badges in special fields. No merit badge is given except after a real

BOY SCOUTS

test, given by somebody who knows well the field in question. The list of subjects is long and interesting:

Agriculture	Bird Study
Angling	Blacksmithing
Architecture	Bugling
Art	Business
Astronomy	Camping
Athletics	Carpentry
Automobiling	Chemistry
Aviation	Civics
Bee Keeping	Conservation

Cooking	Music
Craftsmanship	Painting
Cycling	Pathfinding
Dairying	Personal Health
Electricity	Photography
Firemanship	Physical Development
First Aid	Pioneering
First Aid to Animals	Plumbing
Forestry	Poultry Keeping
Gardening	Printing
Handicraft	Public Health
Horsemanship	Scholarship
Interpreting	Sculpture
Leather Working	Seamanship
Life Saving	Signalling
Machinery	Stalking
Marksmanship	Surveying
Masonry	Swimming
Mining	Taxidermy

A general statement of what is to be mastered for a merit badge in each of these subjects is found in the handbook.

Beyond these badges of honor in special subjects are a few important special honors:

The Life Scout badge is given to all first class Scouts who qualify for merit badges in first aid, physical development, personal health, public health, and life saving or pioneering.

The Star Scout badge is awarded to a first class Scout who has qualified for ten merit badges—the five of the Life Scout and five others.

The Eagle Scout badge goes to a first class Scout who holds twenty-one merit badges, including first aid, physical development, life saving, personal health public health, cooking, camping, bird study, pathfinding, pioneering, athletics, and any ten others.

National headquarters for both Boy and Girl Scouts are maintained in New York City.

GIRL SCOUTS.

The Girl Scouts of America use the same motto as the Boy Scouts: "Be prepared;" and the same slogan: "Do a good turn daily."

CAMPFIRE GIRLS

Much of the training of Girl Scouts is identical with that of the boys, the chief difference being in the substitution of careful work in domestic training for the general trade and handicraft work of the boys, Before a girl can be a first class Scout, she must prove her familiarity with various out-of-door activities: signalling, tracking, stalking, and nature study in general; she must have skill in every branch of housekeeping, in first aid, in nursing; she must show a patriotic acquaintance with American institutions.

First class Girl Scouts may try for merit badges through a long list of admirably chosen activities. In this list, the numbers starred are reserved for the older girls:

Artist	Health Winner
Athlete*	Home Maker
Bee Keeper	Home Nurse
Bird Hunter	Horse Woman
Bugler	Hostess
Business Woman*	Interpreter
Canner	Journalist*
Child Nurse	Laundress
Citizen*	Milliner
Cook	Motorist*
Craftsman	Musician
Cyclist	Needlewoman
Dairy Maid	Pathfinder
Dancer	Photographer
Dressmaker	Pioneer*
Brummer	Rock Tapper
Economist	Sailor*
Electrician	Scribe
Farmer	Signaller
First Aide*	Star Gazer
Flower Finder	Swimmer
Gardener	Telegrapher
Handy Woman	Zoologist
Health Guardian*	

GOLF

Golf is a very old game. Its earliest records are found in pictures of the sport as played in Holland, but its introduction to Scotland more than five hundred years ago proved so popular that golf is generally understood to be of Scotch origin. The rise of golf in America has been very rapid. 350,000 players spend a total of over $50,000,000 a year for this recreation; some 300,000 men and boys earn money as professional instructors, caddies, and keepers of grounds; the investment in golf courses and buildings is more than $100,000,000 in the United States alone.

The cost of playing varies greatly with the conditions. If one is willing to wait his turn on public courses, content himself with a half dozen clubs and half-dollar balls, he may have his golf for fifteen or twenty dollars a season, assuming no special costume for the game. The average annual cost to those who do the thing in standard fashion, club-house, caddies, and the rest, is about $120 a year. Of course when it is figured that membership in a golf course commonly implies among other things the ownership of a good motor car and the ability to feed one's friends, when golf is thought of as a social function,—it becomes anything but a poor man's game. This is unfortunate, but there seems no help for it, except in the continued extension of public courses supported by tax, or by the gifts of those whose public service takes that turn.

Most people who make a beginning at golf become enthusiasts, whether they master the game or not. There are a good many reasons for this. Always there is a long walk in the open, in attractive country, on velvety turf. Always one matches his wits and skill against a combination hard to beat, so that every good stroke is a personal triumph and every bad shot is a challenge to do better next time. The conditions are so varied that two perfect shots can seldom be exactly alike. Distances vary, surfaces vary, there are traps and obstacles, slopes up, down, right, left. At one time it may be desirable to make all possible distance—a hundred-fifty, two hundred yards in the clear, with a long run of the ball after it strikes; again only a medium distance is to be covered, but the ball must perhaps rise high in the air to get over an obstacle, and stop almost without run, to avoid a trap, or stay on the green. Even these shots are not the most difficult ones, for more games are lost on the putting green than anywhere else. It is the dainty little shots of a few inches or a few feet that make the severest test of judgment and control. Here a fraction of an inch to the right or left, a shade too much or too little force, leaves the ball high and dry, with a stroke as surely lost as though a long drive had failed. To accomplish just the result desired, the right club must be chosen and the stroke must be timed and directed, the power controlled for the effects wanted.

Usually one has a live opponent and a very real contest, but it is possible to have a very good round of golf with only Colonel Bogie in sight. Colonel Bogie is that imaginary player on every course who never makes a hopelessly bad mistake; always manages to get from one hole to the next in a proper number of strokes, and leaves a record of his performance at each hole for other folks to measure themselves against.

A standard golf course consists of eighteen holes, at distances varying from a hundred yards to half a mile apart. In match play two players go over the course together, each claiming for his own score the holes which he has made in a smaller number of strokes than his opponent has used. In medal play only the total number of strokes used by each player in the entire round is counted in the final decision. A full contest of either sort plays seventy-two holes.

In championship play the winner commonly makes an average of about four and one-sixth shots for each of the seventy-two holes.

The clubs used in golf may well enough be classed in four general groups: drivers, for long shots; driving irons, for intermediate shots; putters, for sinking the ball in the cup; and clubs of special design or material, used in meeting emergencies. To the last group named belong the niblick, for example, and the lofting mashie. Since a ball may not be touched by the hands from the time it is teed for the first shot till it drops into the four-inch can, there are bound to be times when clubs useful in smooth, level going are of no service whatever in crises. If a ball has dropped into a rut or a heel-print, a niblick will get it out; if it is necessary to make a short lifting shot in order to clear an obstacle or reach a higher level a lofting mashie will turn the trick.

Probably no game has ever been invented which takes a stronger hold on its devotees than golf.

For a clear statement of rules and etiquette in golf, see Bancroft and Pulvermacher: *Handbook of Athletic Games*—Macmillan.

GYMNASIUM AND PLAYGROUND GAMES

Bar Pull.—Two players sit on the floor facing each other, legs extended, soles of feet touching and hands grasping a wand held cross-wise between them. On signal, each attempts to pull the other to his feet.

Bombardment.—A line is drawn across the middle of the field and two teams line up on opposite sides, a dozen feet or more from

the line. Each party has several basket balls or medicine balls for ammunition, and each player has an Indian club standing beside him, which it is his business to guard. If a pin is knocked down either by an opponent or by the guard it counts for the opposition and must be set up before the guard can make another shot.

Bowling.—A bowling alley must be 60 ft. long from foul line to head pin; the rolling surface must be 41 to 42 inches wide—smooth, and perfectly level. Balls may not weigh more than 16½ pounds nor be more than 27 inches in circumference, though any smaller size may be used. The ten "pins" are each 15 inches high, turned from hard maple, with carefully standardized dimensions. Back of the foul line, which a bowler may not cross, is a run-way at least 15 feet long. At the far end of the alley is the pit, for receiving balls and pins. Three inches from the pit a row of four circles mark the base of the pin pyramid. The next row contains three, the next two, making the total ten, with the head-pin. Pins are exactly 12 inches apart from center to center.

Any number of players may compete, each rolling one frame of two balls, in turn, until ten frames have been rolled. If the first ball rolled by any player knocks down all the pins, a "strike" is recorded, by marking an X in the upper right hand corner of the player's score for that frame. The final score for a frame in which a strike occurs cannot be recorded until two more balls have been rolled by this player, for the score in such a case consists of the sum of all pins knocked down in three shots by him. If all three shots should be strikes, the score for the first frame would be 30, and a game entirely made up of strikes would bring a score of 300. If all the pins are knocked down in two shots, a "spare" is noted by making a diagonal line in the upper right hand corner of the frame. The point score for that frame will count ten pins from these two shots, and whatever pins may fall from the first shot in the next frame. If this third shot is a strike, the score will be 20 for the frame in which the spare was made.

Bull in the Pen.—Players join hands in a ring, facing in. One of the number is chosen "bull," and attempts to break out by charging through between two players. If he succeeds, he may take the place of either of the two who let him through, and the player so displaced becomes "bull."

Captain Ball.—Eight small circles three feet across, two large circles five feet across, placed as in the diagram. Captains stand in the large circles, supported by team-

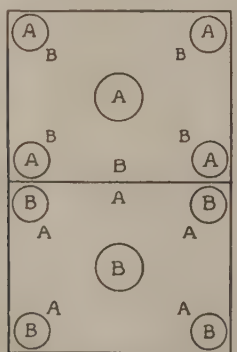


Diagram of Captain Ball Floor.

mates in small circles. Guards may not step across any circle line and men in circles must not step out. Ten men in each team are placed, as shown by letters A and B. Balls which come into the captain's hands count a point for his team, but only his circle men may throw to him. The business of the guards is to block opponents' throws and secure possession of the ball for their own circle man and captain. The game starts like basketball, with a jump between the captains' guards at center.

Cat and Mouse.—Circle of players facing in, hands joined. A player chosen to be "cat" attempts to catch a player mouse, beginning with the mouse inside the circle, the cat outside. The players in the circle let the mouse through by raising their arms, but lock the cat. Two slow cats and one quick mouse make a good variation.

Chicken Fight.—Two players stand in an eight foot circle, each on one foot, with arms folded, or with one arm folded and the other clasping the unused foot. The players hop about the circle and try to bump each other into losing the fight. If either touches his second foot to the ground, or steps across the circle, or falls, or unfolds his arms, he is defeated.

Circle Ball.—A circle of players several feet apart, with one player inside the ring. Players in the circle throw to each other a medicine ball or basketball, and the player within tries to intercept it. If a catcher drops the ball he is "it," and if the player in the center blocks the ball or catches it, the thrower becomes "it."

Crowd Ball.—A large ball 20 inches in diameter is tossed up between two lines of players near the center of the field, whereupon each party attempts to rush the ball down field to the opponents' goal line. Batting and throwing the ball are permitted. Goals count one point.

Curtain Ball.—A curtain ten feet high is stretched across the middle of the playing space, with half the company on each side. Each party throws the ball over the curtain, and balls which touch the floor count for the throwers.

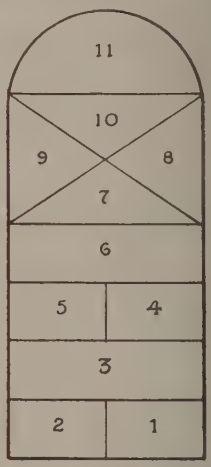
Dodge Ball.—Half the players stand in a large circle, the other half inside the circle. Those in the circle try to hit players inside the circle with a basketball. Players so hit drop out. When the last one is hit the sides exchange places.

Duck on the Rock.—A straight line is drawn on the ground, about twenty-five feet from a substantial rock. The player who is "it" stands near this rock, guarding his "duck," which sits on the rock. Other players begin the game by throwing their rocks, one by one, at the duck. If the duck is knocked off the rock players who have thrown may recover their missiles and go safely back to the throwing line, so long as the duck is off. The tender hurries to put his duck back on the rock, for while the duck is on, the guard may tag anybody who so much as touches a missile in the attempt to recover it, and a person so caught becomes "it," placing his own missile as duck.

Fox and Geese. Fox Trail.—Played on the spokes and rim of a large wheel tramped in the snow. The fox or the hunter—his name depends on the title of the game—stands near the hub of the wheel and attempts to catch any players who try to cross from side to side. Neither fox nor geese may leave the beaten paths. Geese are safe in the "dens," where spokes meet the rims of the wheel. The game is livelier when two circles are drawn, with dens on the outer rim and runways along the spokes and the inner rim. Any player caught becomes "it."

Hand Wrestling.—Two standing players face each other and grasp right hands. Using this contact only, each player tries to make the other move one foot.

Hop Scotch.—Hop Scotch is played in several forms, all alike in that an object is thrown into and brought back from successive areas in a diagram. The best place for the game is on bare ground or on good-sized squares of cement.



This is one of the oldest diagrams. 1, 2, 4, 5 are "bed-rooms"; 3, 6 are "pick-ups"; 7, 8, 9, 10 are "pie"; 11 is the "moon."

A player standing on the base-line tosses the hop Scotch block into number 1, lifts one foot, hops in, works the block around until he can kick it out at the base line, and hops out after it. Then he does the second bedroom in the same way, but must hop through number 1 on the way in and out. Numbers 3, 6, the pick-ups, are like 1 and 2 except that the block is picked up and carried in the hand as the player hops back through the preceding spaces. 4, 5 are like 1, 2, and so are the pies, 7, 8, 9, 10. The moon is the high climax in this game. The block is thrown in as before, worked toward the curved end of the moon and kicked out backward. Then the player hops out after it, picks it up, places it under his knee, and holds it in the angle of the raised leg while he hops back through all the spaces in reverse order. The player who first achieves all this wins. An error of any sort ends the player's turn, and he must begin at his next turn in the square for which he last threw the block.

A player must hop through each square in 1, 2, 3 order to the one where he is due, and must come back in reverse order. He must not step on a line. The block must not stop on a line nor be dropped except into the square where due. There must be no handling of the block in coming back from the moon.

Human Target.—One player is chosen for target. All others, moving about and

passing the ball, attempt to hit the target. Throwers cannot run with the ball in their possession. When the player is hit, a new target is chosen.

Indian Club Race.—Forty or fifty feet from the starting line is a second line, along which are standing four Indian clubs for each contestant. The runner who brings one at a time and sets up all his clubs wins the race. The clubs may be arranged in various ways or the race may be a relay.

Indian Wrestle.—Two players lie on the mat with feet in opposite directions, the right arms locked together. On count "one" they raise the right legs and touch toes. Same for count "two." On count "three" they raise and lock legs at knees and in that position attempt to roll each other over backward. Vary with *left* arms and legs.

"I Spy."—Any number of players from 3 to 30. The player who is "it" stands at goal blindfolded, counting 100 while all other players hide. At the last count he calls out "one hundred!" or some other warning and starts out to find the hidden players. A familiar warning call is:

"One, two, three! Look out for me!
For I am coming, and I can see!"

As soon as a player knows he has been seen he should race to the goal, for the first to count three there wins. If the spy comes first, he says "One, two, three for (e. g.) Billy Jones," and Billy, as first man caught, must stand for next game. Any players who reach the goal and count three there before the spy can do so for them are free. Their formula is "One, two, three for me!"

Keep the Ball.—Three or more players. If more than three, divide them into teams. Each team attempts to pass the ball by throwing to a teammate, while the other side attempts to block passes and capture the ball. A game may be won by counting passes to any agreed number.

Kicking Baseball.—Home plate four feet wide, two feet deep. The batsman stands on the home plate and kicks at a pitched basketball. Strikes are called for pitched balls which pass over the plate below the knee, for attempts to kick, and for the first two fouls. Bases are thirty or forty feet apart. Players are put out as in baseball, and also by the catching of the third strike on first bound or by being hit by a ball while running bases.

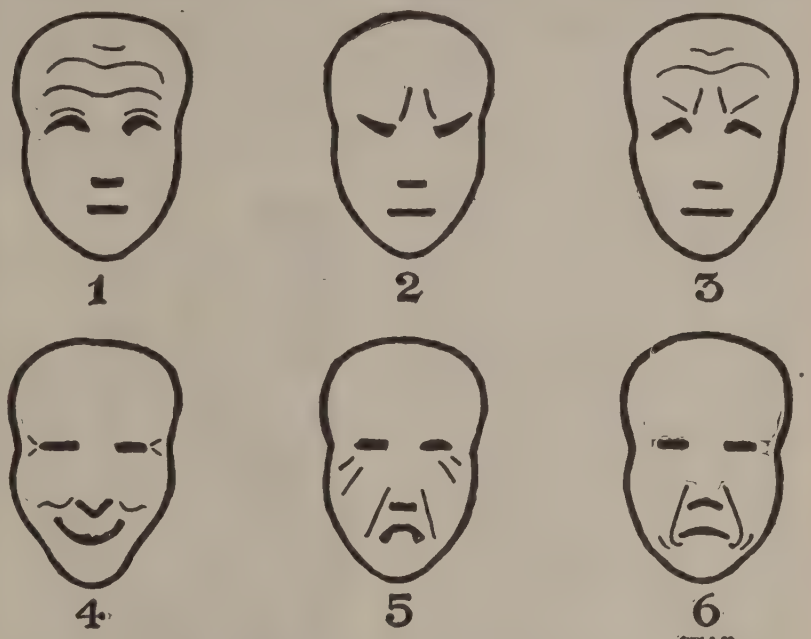
Line Football.—Opposing teams line up behind goal lines at ends of gymnasium or playground. A basketball lies in the center. At signal, the right end man of each line runs for the ball, attempting to kick a goal. Kickers must not use the hands, but guards may bat or kick the ball, provided they have only one foot across the line. Kickers take their places at the left end of the line. Goals count one point.

Old Sow.—If there are five players, four shallow holes are dug at the four corners of a square about fifteen feet on a side, and a similar hole is dug in the middle. Each player has a hockey stick or other crooked club, with which he strikes the block. The player who is "it" tries to bring the block into the center hole, and the others try to prevent by batting it away. A hole may be stolen whenever a player is not holding it with his stick, and the player who is "it" may capture a hole by putting his stick in it while the owner's stick is out, in which case the dispossessed must either find another hole or become "it". If the middle man succeeds in dropping the block into the center hole he may choose his successor.

One Hole Cat, One Old Cat, One 'Ol Cat.—Three or four players, who rotate through positions of fielder, pitcher, catcher, batter. One base is so located that the batter can run to it and back after a good hit. The batter continues to bat until he is put out. Then the catcher takes his place, everybody moves up one notch, and the ousted batter begins again as pitcher or fielder.

unhindered to continue the game. The game ends either by the exhaustion of the enemy's forces or by a count of heads when time is up.

Pull-Away.—Two parallel lines at any convenient distance apart. The player who is "it" attempts to tag on the back the players who run across from side to side. If they do not cross, he warns—"Pom-pom—pull-away! Come away or I'll fetch you away!" Whereupon he counts ten, and on the tenth stroke, all must run across, on penalty of being tagged where they stand. Players caught join in catching others, until none



MUSCLES MAKING REVELATIONS

1, astonishment; 2, reflection; 3, pain; 4, laughter; 5, weeping; 6, contempt. — After Schmidt

Plug Ball.—Two lines about 20 feet apart, with same number of players, preferably a big group behind each line. Basketballs and medicine balls are thrown back and forth. A ball touching the floor before it reaches the team line counts against the thrower; balls touching the floor behind the line count against the receivers. A referee keeps score for each goal line. There should be one ball for six or eight players.

Prisoner's Base.—A very old game. Two parallel base lines are drawn 50 or 60 feet apart, with a 3 foot circle—the prison—just behind the middle of each line. The object of each party is to take and keep prisoners from the enemy and to set free its own members who have been captured. A player who left his home base after an opponent set out may capture that opponent and take him to prison in the 3 foot circle, provided that a still later opponent does not appear and take captive the captor. Any player who returns to home base may immediately set out as the all-conquering hero, until a still fresher arrival send him scurrying back for a new right of way. If a player successfully penetrates to his enemy's prison, he may release the prisoners and bring them home remain. The first one caught is "it" for next time.

Quoits.—The formal game of quoits is seldom met in this country, but "pitching horse-shoes" is common enough. Two pegs are driven down about twenty-five feet apart, inclining slightly toward each other, with three or four inches projecting above ground. Each player has three or four old horseshoes, matched in sets as nearly as may be. The players take turns in pitching, standing behind one peg and aiming at the other. Shoes which encircle the peg when the count is taken are "ringers," and count five; shoes leaning against the peg at the finish are hubbers, counting three; one count goes to each shoe which lies nearer to the peg than any shoe of an opponent.

Rope Tug of War.—A long rope is provided, on which two opposing teams pull, endeavoring to draw the marked middle of the rope beyond a certain distance marker. In the more exciting forms of this sport, a ditch or stream lies between the contending parties and the losers pay the penalty of a ducking.

Scrimmage Ball.—Two goal lines are

drawn near opposite ends of the playing space. Each team lines up behind its own goal, with the ball lying on the floor at center. One half of each team are forwards, the other half guards. The forwards and guards exchange places after each goal. On the referee's signal, the forwards rush out and try to put the ball across the opponents' goal line, by pushing or batting it with one hand. Guards defending their goal may step across the line with one foot, but not with both. Fouls are declared for rough play, for blocking or propelling the ball except with one hand, for throwing the ball, or for the propelling of the ball by a player who is down. Penalty for fouls, a try at goal from the foul line, with defenders behind their goal line, and attackers on the foul line. The ball is tossed up by one of the forwards, and batted by another forward. If the defenders block the ball, it is still in play. Goal from the field, two points; goal from foul line, one point.

Scrub.—Scrub grows out of one old cat by the addition of another base or two, a few fielders, and perhaps a waiting list of batters, everybody moving up in turn as a batter is put out.

Sparrow Fight.—Two players sit on the floor near each other, each with a wand held in the bend of the elbows and passing under the knees, the hands clasped over the shins. Each player attempts to upset the other by getting a toe under the opponent's foot, and lifting.

Swat Ball.—Two equal teams divide between them all available air-filled balls, and attempt to hit opponents with them. A player who is hit must drop out of the game. Balls may be recovered by anybody who can get them and used over and over. There are no space restrictions. The game ends by a count of teams after a given time or by the annihilation of either party.

Three Deep.—Players in a circle, two deep—that is, in pairs, one player behind another. A runner and a chaser are chosen. To avoid being caught, the runner may stop in front of any pair, making it "three deep." The outside or rear player is thus crowded off, and becomes the runner, in danger of being caught, until he saves himself. If the player who is "it" catches the runner, the runner becomes chaser, and the former chaser must save himself by stopping somewhere three deep.

Tug of War, Catch and Pull.—A line is drawn on the floor or the ground. Players divide into two teams on opposite sides of this line. The game is to pull opponents across the line, catch as catch can. Several players may grapple one man if they can manage it, but any player who wholly crosses the scratch line, becomes a member of the opponents' team and must work there.

Two Old Cat.—Four or more players. Two bases, with a batter at each, and a catcher behind the bat. Each catcher becomes a pitcher for the return throw, so that the batters strike alternately. When either makes a hit both batters must run, exchanging bases, and either or both may be put out by getting the ball to the base before the runner reaches it. When a putout occurs at either base, the catcher at that base takes the bat, and his fielder, if any, becomes catcher.

War.—The most violent of team contests. Two well-separated lines mark the two home grounds. Each player attempts by brute strength to capture and drag home enemy players.

HandBall.—Handball is a national game of Ireland, where it appears to have originated. It is played in England, under the name of "fives," with rules rather more elaborate than the Irish rules. Handball in the United States is of the simpler form.

Handball strongly resembles squash, the chief differences being that in squash the ball is struck by a racket, the court is smaller, and five playing surfaces are necessary, rather than optional.

A handball floor is 60 ft. by 24½ ft. The front wall is 35 ft. high. Other walls may slope down toward the back, which is considerably lower than the front. A line, called the ace line, is drawn on the floor parallel to the front wall and thirty feet from it. Two feet nearer the front

wall is a second line, marking the limit beyond which the server must not take more than one step in the act of serving.

The game is played by two or four persons. The object is to secure points, by causing the opponent to fail in returning a ball to the front wall. In this country 21 points make game.

The ball may be hit by either hand. The hand is best held as a shallow cup, deepest at the second joint, where the ball strikes. Gloves may be worn.

Each effort to win a point begins by a service. For this play a ball is dropped to the floor and hit as it rebounds. A ball served must go to the front wall without striking any other object, must hit the wall above the six inch base board, and in rebounding must first touch the floor beyond the ace line—though it may cleverly be made to strike side and back walls on its way to the floor. A served ball which strikes between the front wall and the ace line in its rebound from the front is a short ball. Three shorts in succession cause loss of service—the hand-in becomes hand-out. Each fair service cancels whatever shorts the server may have against him.

If a served ball strikes properly behind the ace line the receiver must return it on first bound, to the front wall above the base board. After this first service and return the players alternate in striking the ball until one fails to get it back to the front. Only the served ball must strike behind the ace line in rebounding from the front wall; all returned balls may fall on either side of the ace line. Again, it is only the served ball which must be returned on first bound; in all other cases balls coming from the front may be either volleyed before they strike the floor or may be hit on first bound.

In general, intentional interference, blocking the ball is a foul, and unintentional interference is only a hinder. Fouls are punished, but a hinder is merely followed by reservice from the same player. It is always a foul, however, to stop a ball on its way to the front wall.

It is a foul to strike a ball with both hands; to touch the ball twice in one attempt at batting.

Since only the server can score, fouls by the hand-in forfeit the ball, while fouls by the hand-out score for the server.

The officials of handball are a referee and a scorer.

Ice Hockey.—Ice Hockey resembles Field Hockey—see that title—except that a team consists of seven players instead of eleven; caroms from side banks are important; a rubber disk called puck is used instead of a ball; and the goal is smaller. The posts for ice hockey are six feet apart, and the crossbar is four feet up. The playing rules are about the same in the two games.

Indoor Baseball.—The floor space for indoor baseball should be at least 40 ft. by 50 ft. The standard size for a diamond in a gymnasium is 27 ft. square. Where more space is available, the square is often 35 ft. The front of the pitcher's box is 23 ft. from home plate—less than half the distance required for out-of-door baseball. The home plate is 12 by 12 and all others are 18 inches square.

Teams may consist of either seven or nine players.

The object of the game is to make runs—passages round the diamond, touching all four bases. Runners are liable to be put out in various ways, much as in out-door baseball.

Nine innings make a game.

The smallness of the field makes certain changes of baseball rules necessary:

The ball is larger than an out-of-door ball and much softer.

The bat is shorter and smaller around than for the regular game out-of-doors.

Pitchers may throw to the batter *only underhand.*

A batted ball is fair or foul according as it first strikes, not as it rolls or bounds after striking.

Stealing is minimized by the rule that base runners may not leave their bases while the pitcher holds the ball.

Base runners may overrun at 2d and 3d as well as at 1st, provided that they take the sack with them as they go by and bring it back.

The positions of all players but the pitcher are considerably varied, as need

arises and the captain directs. Since hits are necessarily short, several fielders are likely to be found in positions which would belong to a shortstop out-of-doors.

In other respects, indoor baseball is about like the out-of-door game.

Lacrosse.—Lacrosse, the national game of Canada, is of Indian origin. The British are mildly interested in lacrosse, the Americans hardly more than curious about it. But the game admits of wonderful skill. In general, it resembles hockey; the field is about the same size; the object of the game is to pass a ball through a goal at the end of the field; goal posts are six feet high, with a crossbar six feet from the ground; nets are commonly placed behind the goals to stop the ball. But the differences are also notable:

The boundaries of the lacrosse field are agreed upon by the captains. The striking circle of hockey is replaced by a 12 foot square, with the goal in its center. Twelve men constitute a team. The hockey stick is displaced by the crosse, a sort of shallow, racket-pouch with a handle of any convenient length, loosely strung in such a way that the ball can be retained in the pouch only by a skilful rocking of the crosse. Offside play is not recognized, and so of course not penalized. Rubber soles are permitted, but spikes are forbidden. The ball is of spongy rubber, weight 4¼ oz.

The score is one point for each goal.

The play begins with "Facing"—a manoeuver corresponding to the "Bully" of hockey and the center-jump of basketball. Two players face each other, left hands toward the goal they are to attack. On signal each draws his crosse sharply toward him and is then free to try for the ball. He may bat the ball if he chooses, or scoop it up and run with it, but the best tactics is to begin as promptly as possible a series of short quick passes toward the goal. The Canadians have developed amazing team-play, with passwork more remarkable than that of the best basketball, in view of the tools by which the passing must be done. It is possible to throw the ball 200 yards or more with the crosse, but short throws retaining control of the ball pay better in the long run.

Charging is not permitted, but a man may block the progress of a player who is advancing with the ball, by standing in his way.

When the ball goes out of bounds the two nearest players must "face," not less than four yards from the boundary line.

It is a foul to strike, push, hold or trip an opponent; to throw the crosse; to interfere with a player who has not the ball; to interfere with the goal-keeper before the ball passes into the crease; to touch the ball with the hand. (A goal-keeper may stop the ball with his hands, as in hockey. The crease is the 12 foot square surrounding the goal.)

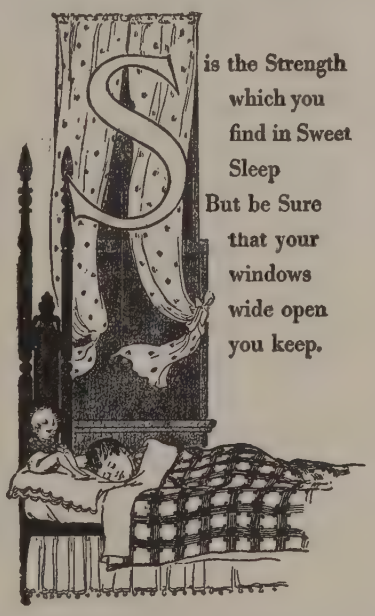
The penalty for a foul is either disqualification, or a "free position". If the latter, the referee designates a player of the side against whom the foul was committed to make such play with the ball as he may choose, no opponent being permitted within 5 yards when his play is made. A free position cannot be declared within ten yards of the goal which would be endangered by it.

PHOTOGRAPHY FOR BEGINNERS

Hand cameras cost what the buyer and the maker please, from two dollars to three hundred and fifty, beginning with the smallest "Brownie" and ending with the luxurious "Home Portrait Graflex". In all this range of styles and prices, each instrument will do good work in its own field. The more complex and perfect the camera, the greater the variety of things it can do—but every added adjustment is one more opportunity to go wrong. The beginner may take satisfaction in his high percentages on the photographic target.

Pleasure in pictures is of course always a matter of personal taste. Most people use cameras to make records—souvenirs of persons and things, so that the photographic album has come to be the modern diary.

What folks generally want in a picture is clearness of detail. They enjoy identifying John Henry and Whoppingers'



Falls—names are very important in the scheme. This big company will always be beginners in photography. They are happier so.

Now and then somebody wonders why it is that two pictures of the same object are not equally pleasing; perhaps he sets out to find what it is about a picture that makes us call it beautiful. That is another beginning. If this enquirer sticks to his problem, he may learn to make pictures which are more than mere souvenirs; his work may interest others; it will be attractive fifty years from now; names will be incidental. The picture is even more like John Henry because it suggests everybody else who thinks and acts like John Henry; Whoppingers' Falls gets to be a *mood* of things—partly human and commonplace, partly mysterious, beyond us, like sunsets and tides. Workers in this group, the pictorialists, understand that sharp detail is not often desirable. They try to make the camera see what their own eyes see—a world never twice alike, always in some mood—gay, dreamy, sombre, threatening, but always a bit baffling, even when most matter-of-fact. So it appears that our beginner has a great many things to think about.

Record Photography.—It will be necessary first to talk in plain terms about the use of box cameras, and the first stages of dark room procedure.

Time. Just as we are taught that fungi must be either mushrooms or toadstools, so we are told that pictures are either snapshots or time exposures. One of these statements is about as stupid as the other. There are several hundreds of mushroom species, most of them harmless, scores of them delicious, but only students are able to prove them so. So *all* pictures are made by time exposures. The question is: *how much* time? That requires study.

Brownie "snapshots" and Kodak "I" exposures are of about 1–25 second. With care, a camera may be held in the hand for this exposure. Longer time requires a tripod, or other firm support. These facts mark the only distinction between "Time" and "Instantaneous" speeds.

With a watch in hand one may learn to count seconds. Then by putting in a word between seconds he may count *half* seconds pretty accurately. Say 1 and 2 and 3 and 4. If you practice with an empty Brownie camera, open so that you can see the light flash, you can acquire control of one-fifth second, one-half second, and any number of seconds. One-fifth of a second is about the time that it takes to move a Brownie lever quickly up and down *once*, or to open and close a shutter set for "B" or Bulb exposure.

Why bother? Because you can make pictures from morning till night, summer or winter, indoors or out, if you will *study your instruments.*

The writer once made an excellent portrait indoors, with window lighting, at 4.30 P. M. on a rainy day in March, using a 2A Brownie. Of course the poser had to be a good one, for the time was 18 seconds. The entire range of daylight is yours, with flashlights in reserve, if you are a student of lighting.

Aperture — Every camera has some means of controlling the amount of light that goes through the lens. Evidently the larger stops, or light openings, let in more light than the small stops, and the more light the more quickly the work is done. Brownies have three stops, called F16 (the largest), F32, and F64 (the smallest).

From 9 A. M. to 3 P. M. of a bright summer's daystop 16 will make a good exposure of an average out-of-door subject in 1/25 of a second; stop 32 in 1/10 of a second; stop 64 in 1/5 of a second. The smaller the opening the greater the detail, so it might occasionally be worth while to try stop 64 at 1/5 second on average views, particularly of buildings which you want to represent exactly.

Time of exposure depends also upon the hour of day, the strength of light and the season. Winter scenes without snow, require about twice as much time as summer views. Spring, fall and snow scenes are intermediate. Exposures in mid-forenoon or mid-afternoon will need nearly twice as much light as at noon with the same stop, and pictures made near sunrise or sunset will need several times over more time than pictures at noon.

The *direction* of light also matters.

Working against the light requires about four times the exposure needed for working with the light. The reason is, of course, that in working against the light we are picturing objects in shadow.

In general, one should expose for the deepest shadows in his field of view, rather than for the brightly lighted spots. Few pictures are hopelessly over-exposed, but under-exposure is an everyday affair. To help the Brownie people and the "T B I's", we have worked out a chart of exposures, including most of the foregoing suggestions.

Indoor portraits, window lighted, with reflector and portrait attachment, stop 16, distance 3½ feet, time 2 seconds to 8 seconds according to light.

Interior views in subdued light, 9 A. M. to 3 P. M., stop 64, time 15 minutes to 45 minutes, according to walls and lighting. (Pull down shades facing camera.)

Developing and Printing.—The fun of picture making is only begun when the film has been exposed. Developing and printing are really simpler than beginners imagine, and quite inexpensive. You need:

1. A dark room, with a safe light—safe means *photographically* safe. Such a light comes through red and orange glass. For example, darken the windows, put a red bulb in your light (electric), and pin an orange cloth or paper around it. The writer has used a light like that for ten years. A candle lantern or enclosed kerosene lamp may be made safe with orange or ruby glass. Kodak safe lights cost less than a dollar complete.

2. *Developing solution.* Buy MQ tubes or Kodak developing powders. Pyro powders are excellent for films, but not for papers. The simplest way is to use MQ tubes for both films and papers. One tube of MQ to 8 oz. of water for a strong, quick working solution. It is commonly better to use one tube to 12 oz. of water. An ordinary drinking tumbler holds about 8 oz. MQ solution will keep for several days and may be used until it no longer works well. Pyro discolors rapidly and is made up fresh for each film or two.

3. *Fixing solution.* Buy acid Hypo in half pound boxes. Dissolve the half pound of Hypo and the small package of hardener (also found in each box) in 32 oz. of water—four tumblers. Acid Hypo solution keeps indefinitely and should be used until it loses its effectiveness in clearing a film. One of the indications of exhausted Hypo is its tendency to become frothy when stirred.

4. *Photographic paper.* AZO, to begin with. It is cheap, slow enough so you can control it and sufficiently varied to suit all your negatives. For pictures taken directly with the light or directly against it use extreme contrast No. 4. Good average negatives take AZO 2 or 3. If you wish to make softened prints from very contrasting negatives, use AZO 1.

5. Three trays and a printing frame.

Developing Roll Film.—If you buy a film tank, follow the directions which come with it. But in order to *see* the pictures come in your negatives use three trays,

in a darkroom with safe light—Tray 1, developer solution, one MQ tube to 12 oz. of water; Tray 2, rinsing water; Tray 3, acid Hypo. Take the film out of its wrapper and off its spool. Holding it by each end, wet it in Tray 2, water only, to avoid staining. Then draw back and forth, film side up—the film is on the inner side of the roll—through developer in Tray 1 until the highlights (that is, the dark spots of the negative) are heavy on the film side and show through pretty clearly on the back. *Rinse* by drawing similarly a few times through Tray 2. *Fix* with same motion in Tray 3 until the negative is perfectly clear, with no trace of white on the back. A roll of film should clear in four or five minutes. If it takes much longer mix fresh Hypo.

Wash for an hour in running water, or through a dozen changes of water. The film must not be washed as a *roll*, or the work will not be thorough, and the negatives will not keep well. It may be pinned out on a board which slants down from the water tap, or may be weighted at each end in the bath-tub. Washing by hand is a laborious process. It isn't a bad plan to cut up the developed film and pin or clip each section so that it hangs in a washing box under the water faucet. Guard against rolling.

Rolling.—Hang up the film to dry. If it shows a tendency to roll and twist clip a straight edge of some sort, perhaps a piece of stiff cardboard, on each end. Drying will require from one to four hours, according to conditions.

Printing.—When the films are dry, cut them into single negatives. Lay your printing frame glass side down, take out the cover, put in your first negative, picture side up. Place a sheet of AZO, emulsion down, and clamp the cover on. Expose under the lamp. You will remember that the two sensitized surfaces come together, making a print by actual contact. The dull side of the film carries the negative. Printing paper is not so easily judged. A sheet of dry photographic paper almost always shows some tendency to roll with emulsion inside. The two sides of the dry paper feel unlike to the touch. If these tests do not satisfy, nip the corner of the paper between your teeth. The emulsion, or sensitive side, will stick to your teeth. This is an unfailing test.

In printing hold your frame at a distance from the lamp equal to the diagonal of your negative. A postcard negative, for example, may be held six and one-half inches from the light. With a 60 watt Mazda lamp, ordinary negatives print on AZO, ARTURA, or PROFESSIONAL CYKO in ten to fifteen seconds. If the negative lacks contrast, it is better to underprint a bit and prolong the development. Economy suggests the use of trial strips to determine the printing time, until you become expert in judging negatives. If you find one side of the negative stronger than the other hold the printing frame obliquely under the light, to favor the unexposed area. If the dense areas, or weak spots, are local in the middle of the negative, for instance, a "dodger" may be kept in motion over the thin area, to protect it during part of the exposure time. By the use of a "dodger" and double printing clouds may be introduced from special cloud negatives into landscapes otherwise bare at the top.

Developing Prints.—Developing prints requires about the same process as develop-

BROWNIE EXPOSURES—APRIL to SEPTEMBER

SUBJECT	LIGHT	9 a. m. 3 p. m. Stop	9 a. m. 3 p. m. Time	8-9 a. m. 3-4 p. m. Stop	8-9 a. m. 3-4 p. m. Time	7-8 a. m. 4-5 p. m. Stop	7-8 a. m. 4-5 p. m. Time	6-7 a. m. 5-6 p. m. Stop	6-7 a. m. 5-6 p. m. Time
Light clouds only. Distant views; sea and sky; heavy clouds snow.	Bright	64	1/25	64	1/25	32	1/25	32	1/25
	Hazy			32	1/25	16	1/25	64	½
	Bright	64	1/25	32	1/25	16	1/25	64	½
	Hazy	32	1/25	16	1/25	64	½	32	½
	Dull	16	1/25	64	½	32	½	64	½
Semi-distant views light-colored buildings or other light objects near by; shores and shipping.	Bright	32	1/25	16	1/25	32	½	32	½
	Hazy	16	1/25	32	½	32	½	16	½
	Dull	32	½	32	½	16	½	16	½
Average landscape with important foreground; dark colored or partially shaded buildings; figure studies unshaded.	Bright	16	1/25	32	½	32	½	64	1
	Hazy	32	½	32	½	16	½	64	1
	Dull	16	½	16	½	32	1	64	2
Portraits in shade out-of-doors, with open sky overhead.	Bright	16	½	16	½	32	½	32	1
	Hazy	16	½	16	½	16	½	16	1
	Dull	16	½	16	½	16	1	16	1
Shady banks, ravines, wooded trails, camps and figures under trees.	Bright	16	¼ sec.	16	2/6 sec.	16	½ sec.		
	Hazy	16	2/6 sec.	16	2/6 sec.	16	4/12 sec.		
	Dull	16	½ sec.	16	4/12 sec.	16	6/16 sec.		

ing negatives. MQ solution for both, but preferably stronger for paper than for films. If the prints develop too fast you have probably over-printed. Cut your time on the next print. If the result is still unsatisfactory, try adding a few drops of Potassium Bromide solution to your developer—never more than a total of two drops saturated solution to an oz. of developer.

Rinse the print and place it in the same Hypo bath which you used for your film.

Wash thoroughly, even more thoroughly than you wash your films, for unless all the Hypo is taken out of the print it will slowly fade and discolor. Prints do not wash in contact with each other. They must either be kept moving by running water or must be individually handled through about thirteen changes of water, requiring altogether about an hour of time.

Dry prints by spreading out, picture side down, on any clean cloth surface. Cheese cloth frames make quickest driers, but it is less bother to spread the prints on bed covers wherever it becomes handiest.

Trimming.—The best way to trim your prints is to study the composition of each picture before you press the camera button. The next best thing is to make a set of printing masks, one by one as you need them, so that each print has a margin and includes only what is essential to the picture. But if a print has come through badly proportioned, with bald sky, barren foreground and unnecessary detail at the sides, *trim it* . . . savagely.

Mounting.—Photographic albums are of course neatly convenient, but if you want each picture to show on its own merits you will mount it separately. The writer prefers to use double weight photographic paper, a size or two larger than the print. Margins may then be left blank, double printed or embossed, as the worker prefers. If you decide to mount your prints, either on cards or in albums, dry mounting tissue is the most satisfactory adhesive.

Hints to pictorialists. One can find out by himself pretty nearly all he needs to know about composition if he is willing to make experimental blunders for a few years. There is a good deal of satisfaction in the feeling of progress, which is sure to come to anybody of fair taste, through the winnowing process of repeated selection. The best workers in the country hardly average more than one masterpiece to a hundred exposures. But every moment of this study pays. It opens one's eyes to both nature and art. For a time we begin to see that there are a few big ideas in all sorts of art. The long road of experiment may be shortened if one chooses to apply these few big notions to field work with the camera.

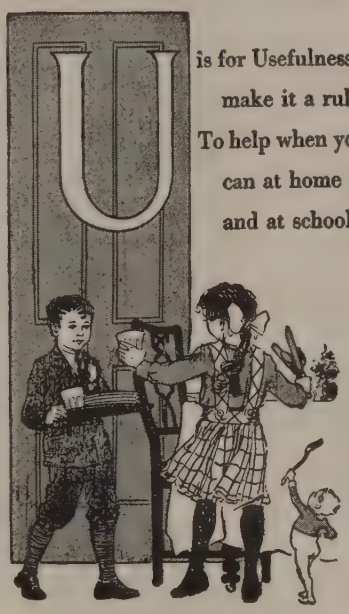
UNITY. Let the picture mean one thing, one mood, not several i. e. . . A high bare rock and a meadow-willow-brook pastoral are not likely to combine well in one negative.

SIMPLICITY. Too many things in one picture are pretty sure to kill the unity. A thousand horses may go into one real picture, if they are all in a cavalry charge. In such a complex there is real simplicity.

DOMINANT OBJECT. Great pictures are rather sure to have a focus of attention, to which the eye returns over and over, a real key to the composition. Study will prove that there are a certain few best locations for this dominant object. It will almost surely not be in the exact center, nor exactly above, below, right or left of the center. It will probably be found somewhere near the center, however, and near a diagonal line.

RESPONSE. There are a good many sorts of response in pictures. A big, dark object may be echoed by a smaller dark object. Heavy shadows are offset by high lights. A rythm of lines at pleasing intervals is a thing worth knowing about. For instance, upright trunks of trees answer each other, but perfectly even spacing of such objects is mechanical rather than pictorial, by the same token that an elm is more graceful than a maple. Horizontal lines find interesting answers in vertical ones, and so on.

BALANCE, PROPORTION, HARMONY are suggested by the foregoing. Downright symmetry of equal halves is very seldom approved, but some kind of balance is needed. This feeling for proportioned masses very often results in



perceptible thirds . . . sky ⅔, water ⅓, land ⅓, and the like. Vertical and horizontal halving is to be avoided, but diagonal halves and many other fractions than ½ are available.

GENERAL DESIGN. Geometric figures will often be found in pictures, frequently with radiation toward a common point. The large plan may suggest ovals, triangles, angles toward a vanishing point at right or left, top or bottom. Sometimes there is more than one vanishing point . . . i. e. one for the setting and another for the figures in the picture. Several geometric systems may be found harmoniously developed in one pattern, making a sort of symphony.

The student of pictorial design can hardly do better than to get a big collection of penny prints from great paintings, where he will find the clearest emphasis on each of the foregoing keys to composition.

(Composition is, of course, only the first stage of camera craft. Each of the photographic processes is worthy of similar analysis, but this article has already reached its limit. There are great numbers of photographic books and magazines for those who are interested.)

POLO

Polo is the oldest and most wide-spread member of the hockey family, for judging by the records and literary references, foot hockey has always been derived from the mounted sort. Authentic polo is more than 2,000 years old.

Polo has naturally used a great variety of rules, implements, team numbers, and styles of play. The English system of closely planned team-work and short passes down the field was defeated by an American team in 1909. British comment reported that when the Americans came across, they were inferior in both mounts and passwork, but that they bought the ponies and learned the combinations, without sacrificing individual dash and long-range marksmanship.

Polo grounds are commonly about 175 by 300 yards in size, with board margins. Two to eight players—usually four—make a team. The object of the game is to drive a wooden ball, from horseback, by strokes of a long-handled mallet, between goal-posts eight yards apart.

Ponies for this game are especially bred and trained. They must be exactly fourteen hands and two inches high, "with the strength of a hunter, the courage of a racer, and the docility of a pony". The tendency to extravagant expense in the game has to be met by rules and close supervision.

The requirements of this game are severe. There must be perfect horsemanship, good, quick, clear and cool headwork, and the ability to make controlled shots, forward or backhand, meeting a flying ball with a mallet head a few sizes bigger than the business end of a good-sized golf ball.

The conditions of this game make it less democratic than golf, but its magnificent challenge to daring and skill, and its value in training for open warfare have kept its hold on vigorous young men of means, and its place in regular armies.

Play is in periods of 7½ minutes each, the number of periods depending on the number of players. When four men play, there are eight periods, with short intermissions between.

The game begins by a throw-in. On signal, the referee throws the ball between two opposing lines of three players each, facing opposite goals, with one man on guard behind each line. Instantly after the throw-in, the dash and struggle are on. The ball may be struck only with the mallet, must not be caught or held, though it may be blocked by the players person or by his pony. Dribbling with the mallet is permitted.

If a ball goes over the side lines, it is thrown in as in the beginning, but opposite the point where it went out. If the attackers drive a ball across their opponents' end line outside the goal posts, a defender shall knock the ball into the field, from a point along the end-line at least ten feet outside the post. At the instant he strikes the ball no opponent may be within 50 feet of him. If the player delays in making his stroke the referee may put the ball in play by throwing it in.

Safety of players and ponies is furthered by certain rules. The player who last hit the ball has the right of way in following it for another shot. No opponent may block his right of way by stopping crosswise of his course between him and the ball, nor may there be any crossing of his path except at safe distances. But a man may cut into or across the right of way if

the conditions make it safe to do so. The referee is, of course, the judge of safe play.

Hooking an opponent's mallet is forbidden, except to block an actual stroke, and then there must be no reaching across the opponent's pony. Two players approaching a ball from opposite directions must have the ball between them, at each man's right hand. Charging, striking a player or a pony with the mallet are forbidden. Fouls are declared for any of these offenses, and in general for all cases of careless, reckless, dangerous riding, for roughness in personal contact with an opponent, or for cruel treatment of ponies. It is a foul for a dismounted player to strike the ball or for any assistance to be given in the progress of the game by a person who comes on the field for that purpose.

Each foul subtracts ¼ or ½ point from the score of the offending team. A goal made, directly or indirectly, by means of foul play does not count.

RIFLES

Hints for Beginners.—Clean and oil your gun every day you use it, every day in camp, and once a month on general principles. You can inspect the inside of a rifle barrel by putting a piece of paper in the breech for a reflector. Don't stop cleaning until the rags come through without any discoloring, and the barrel shines in every spot. Nitro-solvent oil is best for taking out the residue of powder. Be especially careful to clean the cartridge chamber in the barrel. That is where rifles are likely to first go wrong. The powder residue eats away the steel, the shells expand on firing and then the extractor will not work.

Be careful not to jam your sights. A slight blow may spoil your marksmanship and bring famine in camp.

If you give peep sights a three days' trial, you will probably not use other types afterward. For snap shooting get the largest aperture you can buy.

Practical rifle fire is both quick and accurate. In all contests, and in your daily practice, work against both time and the bull's eye. Invent a scoring system in which time counts perhaps two points, to three for accuracy. To gain speed, learn to shoot on the lift and on the swing from right and left. It is bad policy to try to freeze the sights in a long, hesitating refinement. Make your gun barrel draw a line which brings the tip of the front bead just below the spot you want to hit. Slow down the motion as the bead comes to place and squeeze of the trigger. Never consciously pull on a trigger with the finger. Squeeze with the whole hand as though the gun stock were a lemon.

If your shots tend to group at one side, study the situation. If you are a new man and the shots are at the right, you are probably flinching a bit, *pulling* your trigger and drawing the muzzle around with it. Try lying prone, shooting over a padded rest of some sort—a lump of sod, a folded coat, anything to support the barrel without solid reaction from below. Very slowly squeeze off the trigger.

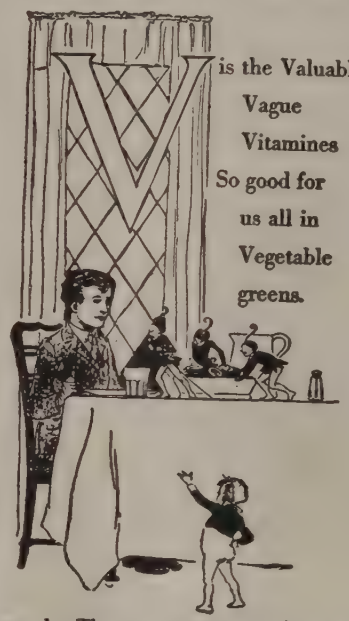
Learn to "call your shots". That is, notice exactly where the bead lies on the target when the bullet starts. That point is by no means sure to be where it was when you told yourself to let it go.

If your gun comes with a heavy trigger pull, and is not automatic, better have the trigger pull reduced to four pounds.

After several hours of careful practice on different days, if your shots continue to go wrong in consistent groups better have an expert try your sights. Sight your own rifles as soon as you know you can trust your aim and your trigger pull from the prone position. Remember that the forward sight works by contraries—if you move it to the left, you have thrown your shots to the right, and so on. The final horizontal corrections of a peep sight are made with bits of paper under one edge of the sight base.

Some sort of rivalry gives the best impulse to speed, but the higher premium must always be on accuracy. When you can score ten bulls in ten seconds, at a two inch ring fifty yards away, you are becoming a fair shot at a standing mark. Refinement of the stationary game comes with the use of smaller targets, farther away, with allowance for sunlight, windage and distance.

The use of rifles at moving targets will at once show the value of these hints on



speed. There are two general styles of shooting at running game. One may follow its movements with the gun, and so come up in a kind of pursuit, or he may anticipate the motions and have his sights lined up in waiting. Of the two, the snappy follower will get more shots, but the shrewd anticipater will often make a bigger percentage of kills for the number of shots fired. Of course, the ideal rifleman combines both systems and takes all the chances that offer.

ROWING

Rowing has been an officially recognized sport for only a little over a century. The adoption of outriggers—steel frames for placing the row-locks well out at the side of the boat—started in 1845 the rapid movement toward the long, narrow, and light racing shells of our day. The sliding seat was first used in a race in 1870.

At present, an eight oared shell is about 60 ft. long, 2 ft. wide, and weighs around 270 lbs.; and a single shell is about 26 ft. long, 11 in. wide, with a weight of 28 lbs.

To row with an oar in each hand is called sculling. Sculls are a little less than 10 ft. long. When each man pulls one oar in a team or crew, the oars are called sweeps, and are about 12 ft. 3 in. long. Races in a full rowing regatta are likely to include single and double sculls, and sweeps in pairs, fours, and eights.

A full crew of eight men is accompanied by a coxswain, who sits in the stern facing forward, steers the boat, keeps the captain posted and advises him about the pace. In spurts a racing crew is likely to finish a short race at about 41 strokes to the minute. Longer courses of three miles or more take a steady pace of about 33, and quicken at the finish to 38 or better.

The first oarsman facing the coxswain is the captain or stroke oar, who receives the advice of the coxswain and himself sets the rowing pace. Other oarsmen must of course follow his lead accurately or there can be no hope of winning. Good generalship is required in placing the men, both to balance the boat and to match men in pairs according to strength. In general, of course, the less the rudder has to be used, the more energy can go toward the goal flag.

Much depends on form. The sliding seat makes it possible to use muscles from neck to toes, but it is no easy matter to bring these into smooth agreement. Practice commonly begins with rowing machines in a gymnasium long before the spring opens. Each new man on a crew adds to the problems of training.

Certain types of stroke have proved advantageous. Best results require that the oar blades should not be deeply plunged during the stroke, but should be only well covered by water. Feathering is universal, in order to cut the resistance of the air in the backward thrust of the oar. To feather is to give such a downward flip to the wrist and forearm as to make the oar-blade skim along nearly parallel to the surface of the water in the recovery after each stroke. If the oar is spoon-shaped, it is sometimes allowed to touch the water lightly as it swings back, thus sustaining a part of the weight of the oar on the water; but more than a very little of this saves the rower at the expense of the pace.

Rowing is a favorite inter-collegiate contest wherever practicable, but is by no means limited to that range. Boat clubs practice it the world over, and annual regattas are of national and international interest.

SHOTGUNS

Shooting with the rifle at running or flying game is so difficult a sport that there is no disgrace in using a scatter gun for the purpose, and it does less harm to the landscape. The drift of practice with both rifles and shotguns has been toward smaller and smaller bore. In 1875, a ten gauge shotgun was the ordinary thing; in 1900, twelves were in order; now the sportsmanlike bird hunter uses sixteens and twenties. He has all the advantage of the argument. Whether the gun shall be a repeater or double-barreled, is entirely a matter of taste. There is a good deal of force in the notion that all guns a man takes to the woods should have the same type of action.

Trap Shooting is in itself a sport with many thousands of adherents. Even unredeemed pot-hunters find that it pays to practice the leads at unknown angles on clay birds. One doesn't like to miss the few chances he gets in the fall. A Dupont hand trap costs only a few dollars, and

does first class work. It is as hard to learn to shoot by the book as it is to learn to swim in that way. Practice is the big thing, but theory helps. For instance, a flock of teal in full flight go about ninety miles an hour. If we assume that shot travel 1,000 feet per second, it is easy to figure that the lead for a cross-flight of these birds at ten rods distance will be about 21 feet. But the angle of flight makes a very great difference in the amount of the lead, and something is also to be allowed for the drop of the shot. So it appears that a man who can make a high score at flying marks in all directions, with speeds up to ninety miles an hour, is an artist worthy of respectful approval in his field.

STALKING

Whether your purpose in following game in the woods is carnivorous, photographic, or only curious, there's good fun in it. The hints given here are obvious to all old stagers.

Travel up the wind, or across it, never with it, while you mean business.

Stop! Look! Listen! Don't talk! Don't be near enough together to talk.

Make either much noise or none. Much often arouses curiosity and disarms suspicion. In order of preference, no noise, much noise, middle-sized noise. But at that, it depends on the kind of noise.

Bring your toes down first, and look out for dry twigs under your feet. They are as bad as Fennimore Cooper made them out to be!

Don't wear either corduroy or canvas in the woods, if you hope to do real stalking. These things can be heard a long way.

Come up to the brow of the hill with great caution. Peep over; travel along just below the ridge for a while.

In the right spot, sit down, use your eyes and ears, and don't move around.

Small creatures are as interesting as big ones, often more so.

Crafty game animals are pretty sure to double back to get the wind of the disturber. Size up the country and allow for this turn, if you can. A big buck will drop his head and slip through the brush without a sound when he chooses, and sometimes he plays this trick unbelievably near you.

Some creatures have so much curiosity that your patience can be made to outlast theirs. The young and foolish of many tribes are like that, and some of the old ones. It is not always useless to wait by a woodchuck hole. But expect an eye and an ear to come up first! If you sit in plain sight, don't look for much more until you have become a part of the landscape, very still and unoffending. There are times when even the wild animals seem to detect hostility and to reward friendliness.

One has to acquire a new sort of vision in the woods, where there is so much protective coloration. A gray squirrel against a beech trunk is pretty well hidden, if his tail doesn't blow in the wind. The upstretched neck of a partridge looks like any other broken off stick in the woods. Deer freeze so still in thickets that it takes eyes like an Indian's to find them there. Perhaps the best way to learn to see things in the woods is to study slowly the field of view one little square at a time, watching for the faintest suspicion of movement.

SKATING

There are two general types of skating —one emphasizes speed, the other values grace and ingenuity. Each has its devotees, with national and international contests annually.

Speed records in skating do not differ greatly from sprinting records on foot, as may be inferred from the fact that the 100 yd. dash on skates is made in 8 to 12 seconds.

By official agreement, the title of champion in international speed contests goes to the winner of three out of four races, the distances being 500, 1,500, 5,000, and 10,000 metres. (A metre is 1 yd. 3 and 39–100 in.)

Figure skating contests are conducted annually, but arouse less interest in America than speed racing. As a sporting proposition, Americans are chiefly interested in skating as a means of playing hockey. But the recreational popularity of skating is very great, and is pretty sure to remain so—witness the temporary craze and the permanent eclipse of the roller rinks in this country.

The modern ice skate differs radically from its antecedents of a generation back. In 1890, "club" skates were fastened by adjustable clamps; the skate was likely to come off at embarassing moments, often bringing a sole of shoe with it. No special shoe was required, except as to strength at the sides of the soles. The skates were all steel, with blades about $\frac{3}{16}$ of an inch thick, resting on the ice at only one point of an arc, thus earning the name of rockers. Newer types came in with the popularity of hockey, and were designed for quick stops, speed, lightness and safety. A skating shoe is now a permanent part of the outfit, riveted fast to the plates of the skate. The blades are long, thin, straight and borne on three aluminum tubes, one horizontal, two vertical.

Much old-time grace has been sacrificed to speed in the change of blade design. Rockers tended to curves, and to pleasing variations of balance; hockey skates tend to straight lines and a general firmness of movement, rather than grace.

SKIING

Skis are the descendants of the long, narrow, leather-covered snowshoes used in northern Europe since very ancient times, but popularized in our generation by the sports of Norway. Skis are now thin, flat strips of oak, ash, or spruce, five or six inches wide, about eighteen inches longer than the user is tall, smooth or ribbed lengthwise on the bottom, thickest under the feet, fastened with straps across the toes, like snowshoes.

There are two types of official contests with skis: the jump and the long distance across country trip. Of late years, the distance record in jumping has been held in America, clearing a distance of 214 feet, or better. When one remembers the terrific velocity necessary to gain this distance, and the fact that a fall in landing cancels the jump, the feat seems to require incredible daring and skill. In the United States—Michigan, Wisconsin, Minnesota, and the Rocky Mountain country are chiefly interested in ski jumping. The sport is gaining in popularity wherever deep snows prevail in winter.

Skis have practical uses in the Scandinavian sections of Europe. They had a considerable place in the Alpine campaigns of the world war. Soldiers of continental Europe are giving increasing attention to them. Military ski runners have covered 15 miles in an hour and a half, under favorable conditions. Skis require a depth of at least six inches of snow for best service; they do not work well in melting snow nor in thick underbrush. In such unfavorable conditions they yield to the snowshoes perfected by American Indians.

SNOWSHOEING

Unlike skiing, snowshoeing has little of the spectacular about it. One can get the knack of it in a few minutes; the rest is an affair of training the leg and foot muscles to an unaccustomed straddle, heels up, toes down. Assuming that there are bound to be occasional falls, one does well to practice for them at first, so that the general tangle of pack, snowshoes, and snowshoer may be less hopeless when the time comes. After the novelty wears off, snowshoeing becomes a workaday affair of getting where one wants to go, but could not go without this Indian legacy.

SOCCER

The rules of Association Football, known in the United States as Soccer, were first formulated at Cambridge University, England, about 1860. The game is steadily growing in popularity in this country, especially in grammar schools.

The field is rectangular, commonly about 75 yards by 115 yards, with well marked boundaries. At the middle of each end are goal posts 8 yards apart, with a crossbar 8 feet up. A mid-line divides the field across, and from the middle of this line a circle is drawn, with a 10 yard radius. Flags mark each corner of the field. In front of each goal is a goal area, 20 yards by 6 yards, running 20 yards along the end line. Enclosing the goal area is a penalty area, 18 yards by 44 yards, running 44 yards along the end line. A penalty kick mark is 12 yards in front of the mid-point of each goal line. A corner kick area is a quadrant drawn from each corner with a radius of one yard.

The ball used in soccer is perfectly round, unlike the Rugby ball.

Soccer rules resemble those for field hockey. The ball may be advanced only by kicking. A goal is made when the ball is kicked under the crossbar, not over it. Two teams of eleven men each are placed

as in field hockey—a goal keeper, two full backs, three half backs, and five forwards.

A player is offside when the ball was last touched by a member of his own team behind him; provided that the presence of three or more opponents ahead of player A, at the instant his teammate B kicks the ball, makes player A on side, and provided further that a player cannot be offside who was in his own half of the field when the ball was last played.

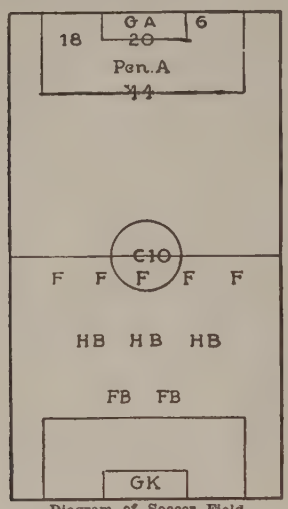


Diagram of Soccer Field.

A player offside cannot put himself onside. This must be done for him in one of three ways: (1) An opponent may play the ball. (2) The offside man may be behind the ball when a teammate plays it. (3) Three opponents may be ahead of the offside man when a teammate behind him plays the ball. "Take care that when the ball is played by one of your own side you have three opponents between you and their goal line or that you are in a line with or behind the ball."

No one but the goal-keeper may catch the ball, or bat it with his hands, arms or shoulders, and he only in actually guarding the goal.

The game is played in two halves of twenty to forty-five minutes each, according to the age of the players.

Toss-up awards choice of goal or kickoff at the beginning of the game; goals are exchanged at the beginning of the second half.

Play is started by a kickoff at the center of the field. At kickoff no member of either team may cross the mid-line until the ball is kicked, nor may any opponent enter the ten-yard circle until that time. After the scoring of a goal by either team, their opponents kick off at center.

If the attackers send the ball over the end-line outside the goal posts, a member of the defending team has a free kick from within the goal area, no opponent being permitted within ten yards. The ball is in play as soon as kicked.

If the defenders send the ball over their own goal line the attackers have a free kick from the nearest corner circle, no opponent within ten yards.

If the ball crosses a side line a member of the team which did not drive it out shall throw it in by an overhead throw in any direction, using both hands.

When play is resumed after time out, the referee tosses the ball up at the point where it was when play was suspended. At toss-up, the ball is not in play until it strikes the ground.

Fouls: For offside play; for touching the ball with the hands (except goal keeper); for tripping, kicking, kneeing, holding, or roughly charging an opponent.

Penalties vary according to location. If the defenders commit personal foul within the penalty area, the attackers have a free kick from the penalty kick mark, 12 yards in front of the goal. For fouls committed by either party outside the penalty area, and by the attackers within that area, the offended party are awarded a free kick at the spot where the foul occurred.

The officials of soccer are one referee and two linesmen. Linesmen are the referee's assistants, particularly charged with watching the ball, noting the cause of its crossing bounds or goal line and furnishing necessary measurements for free kicks.

SQUASH

The game of squash resembles handball and tennis in certain respects, but is still more like the English game of rackets.

A squash court is a rectangular room with five playing surfaces—front wall, back wall, side walls, and floor. Light and ventilation are provided at the top. Squash courts in clubhouses and dwellings are best located on upper floors. Entrance to the court is through a door in the rear wall, made flush with the playing surface. Floor and walls are planked, with a smooth dull surface. All boundary and playing lines are painted black, one inch wide.

The rectangle of the floor is 17 ft. by 32½ ft. The front, back, and side walls must be at least 14, 9, and 12 ft. high, respectively.

The front wall is divided into three horizontal rectangles. A service line 6½ feet from the floor sets off the top area, within which balls must strike in service. Nearest the floor is a forbidden area, within which no ball may strike without loss to the man who drives it there. The upper part of this forbidden area is commonly covered by the tell-tale—a noisy strip of sheet metal 15 inches wide, painted black. Balls which strike here tell their own story. The planking is left bare for 9 inches next the floor to aid in the recovery of balls.

The back wall is divided across by a line 4½ feet from the floor, below which line lies the playing surface for all balls which are to rebound to the front wall.

The floor is divided lengthwise into equal parts, and cross-wise by a service line, ten feet from the back wall. Behind this line are the right and left boxes, between which service alternates, and forward are the right and left service courts.

Four persons can play squash, but they are likely to get in one another's way. Official contests are between two players

Play is begun by a service, as in tennis. The choice of serve is determined by spinning rackets. The server stands first in the right box, tosses up the ball and strikes it as it comes down. A ball so served must hit in the upper rectangle of the front wall, above the service line, and must rebound into the left service court. After one bound on the floor the ball must be returned to the front wall by the opponent, striking the wall above the tell-tale. The players alternate in returning the ball to the front, until one fails in his return, and so loses the point. Except in service, balls may strike the front wall anywhere above the tell-tale. In returning a ball to the front, either player may use caroms from the floor, rear wall, or side walls. After service, a ball coming from the front may similarly carom from any or all of the playing surfaces, including the floor, but it must be played before it strikes the floor a second time, or the point is lost. As explained, a served ball may be returned only on first bound from the floor, but after this first return, the ball may be volleyed directly from the wall, or may be struck in any part of its course before it reaches the floor a second time. No player is permitted to strike a ball twice during one effort at return.

A failure to serve correctly is called a fault. Two faults, or one failure to return a ball in due turn cause the server (hand-in) to become receiver (hand-out). Successful service from the right box is followed by service from the left, in which case the ball must come back to the right service court on the floor.

Only the server can score in squash, by the failure of the hand-out to keep the ball properly coming back to the front.

A fly ball, directly from the racket, is dead if it strikes above a boundary line on any of the four walls, but a bounding ball is not dead in such case.

A "let" is a failure for which the player failing is not responsible under the rules. For example, if a player be interfered with by his opponent, or if a player be hit by an opponent's ball on its way to the front wall, no score can follow as a result of the failure to return. But if a ball coming from the front wall strikes a player, there is no let.

The first person to reach a score of fifteen points wins the game, provided that whenever the score is tied at 13 or 14, the out-hand sets the game, by announcing whether the winner of the next three or the next five points shall have the game.

Squash is perhaps the speediest game now in use. There is little hope for a squash player of slow judgment or slow physical reaction. But this means that the game has its own hot enthusiasts.

SWIMMING

Many folks who have never been taught to swim have found themselves able to keep afloat and to make some progress toward shore when they have accidentally fallen into deep water. But progress of that sort is likely to be slow and panicky, and if the panic gets too severe, another drowning occurs. For drowning is almost always a mental trouble before it is a physical one. There is fear of sinking; a frantic desire to keep the head and shoulders above water; fear to breathe, because a bit of water, gone wrong, has been unpleasant. If the shore or other safety is in sight the struggle to reach it is needlessly hurried and exhausting. The motions necessary to keep afloat are so utterly simple and easy that accidental drowning becomes the tragedy of ignorance.

For most people, floating on the back in salt water requires no motion whatever, and floating in fresh water is a very easy matter. Captain Dalton once swam on his back across the English Channel, a distance of 60 miles. Floating and swimming on the back should be mastered by everybody. Treading water is a process pretty fairly explained by its name. The motion is practically that of climbing a steep flight of stairs.

In all swimming the taking of breath is, of course, a very important thing to learn. Beginners are pretty sure to want to keep

their chins dry. Only violent exertion can manage that, and hence the early fatigue, so often fatal. In all the racing strokes the face is entirely under water for more time than it is out. A good general rule for breathing is to breathe through the mouth and out through the nose. The mouth need not be closed under water. One should exhale slowly while the face is submerged, and so be ready for a quick intake when the moment comes.

Next to swimming on the back, the old-fashioned breast stroke is most important. A swimming frog illustrates the leg motion of this stroke pretty clearly. Draw the knees well up under the body and well apart, kick the legs out straight and then snap them together. The hands shoot forward from the chest, palms together, and then the arms sweep around at each side to right angles with the body, draw in, and start again.

The trudgeon and the crawl are the two race winning strokes, though each expert is likely to make his own combinations and variations of the two. The trudgeon is somewhat less fatiguing than the crawl, and the crawl is correspondingly faster. The trudgeon stroke uses a sort of big over-arm movement, the two arms alternating, and a *scissors kick*. For the scissors kick, the legs are separated, as in walking, rather than drawn up sidewise as in the breast stroke, and are then snapped together. The Australian crawl uses a short alternating over-arm stroke, a sort of downward flip from the elbow, like the motion of good base-throwing on a ball diamond, with a similarly alternating thresh of the lower leg. In the true Australian crawl, the right arm and left leg strike together, then the left arm and the right leg. The American crawl uses the arms independently of the leg motion, and narrows the angle of the leg stroke. In both the trudgeon and the crawl, the swimmer lies in the water face downward, rolling a bit from side to side, and twisting the head to bring the mouth up for air.

For the best brief manual of the theory of swimming, see the Spalding Red Book *Speed Swimming*; and for a humorous discussion of "swimming by the book," read Irwin Cobb's *Fibble D. D.*

TENNIS

Lawn tennis is played on either an outdoor or indoor court, with any smooth, firm surface. A closely trimmed, firmly rolled grass court is excellent; the liveliest court is of clay; but cement courts have the advantage of being quickly available after rain; while in-door tennis courts naturally have wooden floors.

Tennis Players in Action.

The total space available should be about 40 by 90 feet, laid out as in the diagram. When three or four persons play, the rectangle ABCD is used, size 36 by 78 feet. In singles, as the tennis game for two persons is called, only the area EFGH is used, size 27 by 78 feet. A tennis net is stretched between posts IJ, with a height of three feet at the mid-point S.

The opposing parties at tennis contend for points by batting a ball back and forth across the net. The side that fails to return the ball over the net loses the point. One person "serves", that is, puts the ball in play, throughout each game, and announces the total score as each point in turn is won or lost. (In match games the score is announced by the referee.)

If south side puts the ball in play, for example, he stands just back of line GH, nearer G than H, tosses the ball well above his head and strikes it with his racket as it comes down, aiming to make it clear the net and fall within the area KS. If, at either the first or second trial the ball clears the net and falls on or within the lines RKOS, north side must return the ball *on the first bound*. In singles, this returned ball may strike the court anywhere in area RG; in doubles area IC is used. All returned balls may be batted either on first bound or they strike the ground—the latter stroke being known as a "volley".

When this first point has been won or lost the server delivers a ball into court OQ, from a position nearer H than G, on line GH. So the service for each point alternates from right court to left. If neither of the two served balls strikes within the required area the point is lost. Balls which strike the net and roll over into the required court do not count either for or against the server.

The first and second points of a game count fifteen each, the third point counts ten. The winner of the fourth point wins the game, provided the score has not been divided. To make the scoring clear, suppose south wins first point; he announces the score 15 *love*; north wins second point, score 15 *all*; south gets third and fourth points, score 40-15; north wins fifth and sixth points, score 40 *all*, or *deuce*. In this game, had south won the fifth point, the game would have been his. But in a game which reaches the score of *deuce*, the winner must be two points ahead. The first of these two points is "advantage in"; the second is game. When two players are evenly matched, the score often passes back and forth through deuce to *'vantage in*, *'vantage out* several times before "game" can be declared.

If south serves the first game, north serves the second, and so on. The first winner of six games wins a "set", provided that the games do not count *"five all"*, making a *deuce set*; in which case the set must go through "vantage in", "vantage out," until the server win or lose two games more than his opponent.

When a set has been finished, north and south exchange sides, if they wish to continue.

In doubles, north and south sides alternate in serving, but all four players serve, each a game, in rotation. The player not serving or receiving commonly stands near the net, for a better chance to "kill" any balls which come within his reach. Tennis doubles offer a very fine combination of strategic team-work and personal skill. It is possible for superior strategy to overcome a considerable superiority of personal skill. For instance, if player A of south side is known to have a weak backhand, which he is reluctant to use, both players of north party will aim at this weakness on every possible occasion, which rather brutal procedure is bound to make trouble for south.

Much practice is necessary to develop speed and control in striking the ball, not only in service, but in return. A good player has at command not only swift, straight balls, but a variety of curves and "cuts." A beginner will do well to study both the flight and the rebound of a curved ball, and he should master one curve at a

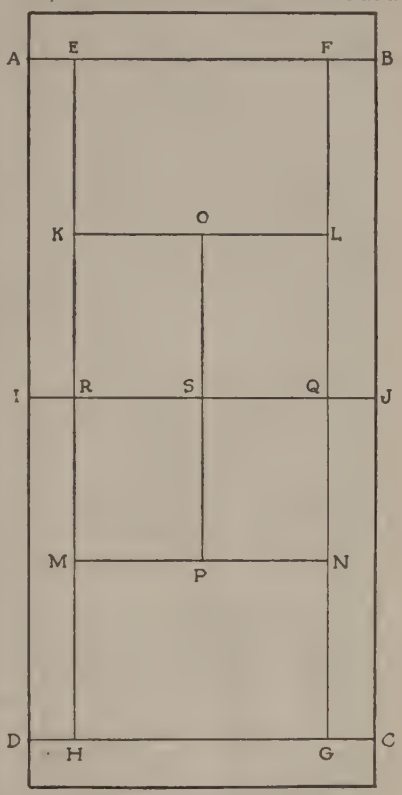


Diagram of Tennis Court.

time, after gaining fair control of a swift straight ball. Since most players are more skilled with the right hand than with the left, a service which twists the ball toward the receiver's left is likely to be troublesome. Extreme curves are likely to be so slow in flight that much of their baffling quality is offset by the added time given for solving them. If an opponent is playing too far back, an under cut dropping the ball near the net will be pretty sure to win or lose the point. If the opponent is too close to the net, a bit of upper cut in the high lob sent over his head will help to bring the ball down within bounds. Batting the ball against the smooth side of a building is a very useful exercise in gaining control of the racket.

TRACK AND FIELD EVENTS

Track and field events show little team work, except of a mild sort in relay races. These contests are rather individual struggles against rivals all doing the same thing, in an attempt to win honors or trophies for themselves or for their organizations. When rival athletic organizations meet points are scored for the winning of each event under rules which vary with the age and sex of the contestants or the custom of the groups concerned.

The control of athletic events in this country is largely in the hands of a few associations: Elementary and high school unions are local, intercollegiate associations

are broader in range, the Y. M. C. A. and Amateur Athletic Union are national.

The commonly recognized distinction between amateur and professional athletes is that a professional has received money for his services as a player or a coach. This definition is often unjust in various ways. Payment may be in other forms than cash, and the occasional acceptance of money for taking part in games does not in any way indicate a really professional attitude toward the game in question. The definition is likely to be revised in the near future.

The terms Track and Field are commonly used together to cover all sorts of contests in running, jumping, and weight throwing. The names of these contests and a short statement of the rules and customs holding in each will be given in turn.

Officials.—Each athletic meet is in general charge of a referee, whose word is final in the matters he pronounces on, subject only to a later protest, in certain cases, before a governing committee of the association he represents.

The referee's assistants are:

Clerk of the Course, who records all entries, investigates records with a view to handicapping contestants, assigns numbers and otherwise busies himself.

Starter, the man behind the gun.

Inspectors, for relays and running races above 300 yards, to make sure that the rules are fairly observed in the distant parts of the course.

Judges at the finish, who pick the winners.

Timekeepers, with stop watches registering fifths of seconds.

Scorer, the secretary of official results.

Field Judges of jumping, weight throwing, and vaulting.

Marshall, to keep the peace and clear the track.

All contestants report to the clerk of the course on arrival, register, enter for certain events, receive handicaps according to previous records and receive a number for the meet. They must learn in advance the exact time for each event in which they are to appear and be on hand unless officially excused.

Sprints, or dashes, cover any distance up to three hundred yards. The course is divided into lanes, one for each contestant. These lanes are assigned by lot. Runners who are not handicapped start from scratch K, a line drawn across the track. A runner's body may overhang this line at the start, but he may not in any way touch ground beyond the line before the starting signal is given. This starting signal is always in three stages, for which the words are: (1) On your mark! (2) Get set! (3) Go! For sprints and dashes, a pistol shot is used instead of the word Go. A crouching start aids a quick getaway in all sprints and dashes.

Fouls in all Running Races.—Running without a number, unless permitted by the referee.

False start—that is, touching the ground beyond the starting mark before the signal is given. Penalty, a distance forfeit in yards for the first two offenses, disqualification for the third.

Receiving coaching or other aid during a race.

Hindering a competitor in any way during a race.

Grasping the tape at the finish. Hands should be held high or thrown back.

Unsportsmanlike conduct, or disputing the judgments of officials.

Crossing in front of competitors after rounding the last turn toward the finish, or at any other time unless six feet or more in advance of the man whose trail is crossed.

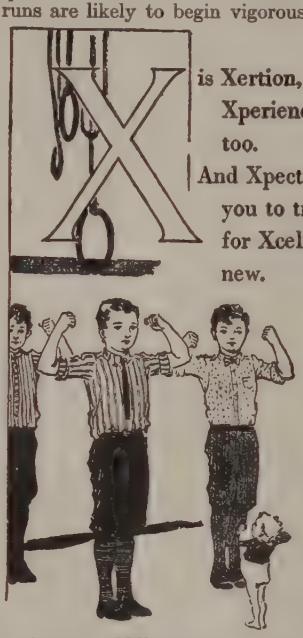
When there are too many runners for a decision in one trial, the race is run in heats, the winners of each heat entering the finals.

In championship races up to 300 yards, under official rules, each runner must have a separate course, marked off with ropes or permanent lines.

Men are making good time in the dashes at the rate of 9 3/5 seconds to 10 3/5 seconds per 100 yards, or about ten yards each second. Women's colleges report the 100 yards in about 12 seconds.

Middle Distance Runs.—300 yds. to one mile.

Long distance runs, the cross-country and Marathon, depend more on endurance than on speed. Dashes require speed and quick nervous reactions. Middle distance runs are likely to begin vigorously, use a



moderate middle pace and end with a dash. On this account, all distance runs should end in a straightaway course.

440 yd. races commonly use the crouching start; longer races get away from the standing position.

Rules are as in dashes.

Good time for adults, including high schools and Y. M. C. A.'S, runs for various distances about as follows:

440 yd.—47 to 54 sec.

880 yd.—1 min. 50 sec. to 2 min. 5 sec.

1 mile—4 min. 15 sec. to 4 min. 47 sec.

Relay Races.—As used in adult athletic contest, a relay race is an affair between two or more teams, usually of four men each. When the teams are of four men, each man does one-fourth of the total distance. The first runners are started as in dashes; no other runner may start until he has been touched by the teammate next before him in the race. Commonly, each team passes through from man to man a token which is delivered at the goal, automatically proving the fairness of all the contacts. The touch-off, or delivery, of tokens must occur within a twenty-foot space marked off for the purpose. An inspector is stationed at each of these starting points to see that the rules are complied with.

Relay races are commonly run on regular tracks, with distances from 300 yds. upward, usually such that each runner can go through his part of the distance at top speed. The speeds obtained in relay races are likely to be faster than the runners would make in single competition.

Hurdle Races combine running and jumping. A hurdle is a gate-like obstacle which the runner must leap over as he comes to it. There are two standard hurdle races—one of 120 yds. with 10 high hurdles, (3 ft. 6 in.); the other of 220 yds. with 10 low hurdles, (2 ft. 6 in.). In championship races, the location of each hurdle is exactly prescribed. A runner is permitted to knock down two hurdles, but not more, under penalty of disqualification.

Adult men do the short hurdle races in 15 to 17 sec., the long one in 25 to 27 sec.

Cross-Country Runs are usually between teams of any equal number, over open country, to a total distance of six miles. Scoring may be individual, or may be based on time made either by the entire teams, or by the first five members to arrive at the finish.

Cross-country speed for six miles is about 32½ minutes.

Walking Races are commonly for ½ mile, 1 mile or 2 miles. No walker may have both feet off the ground at once. A judge accompanies the walkers to enforce this rule.

Championship time will be about one mile in seven minutes.

Jumping.—The *Running Broad Jump* requires a 40 yd. running path of cinders or firm earth, leading to a take-off plank, beyond which the soil is dug up for safety in landing. The take-off plank varies in width, the standard being 5 in., but is always sunk broad side up, flush with the ground level. At the edge of the plank next the landing pit, the soil is dug out several inches for leverage in springing from the plank.

Each contestant takes as much run as he pleases—the ordinary run is about six paces—so timing his steps as to bring his jumping foot on the take-off plank for the spring. If the running path is soft or the wind unfavorable, more is lost than gained by long runs. The runner approaches the board at full speed, lands solidly on his jumping leg, and without pause makes a crouching spring; flings his arms forward for the bit of boost that gives, and while still in the air thrusts his legs forward, in order to make his mark as far from the plank as possible.

Jumps are measured from the forward or unburied edge of the take-off board to the nearest mark made by the jumper in landing. On this account he must be careful not to fall backward or even throw a hand to support himself in landing, for the marks so made will lower his record.

Field judges are the officials for jumping.

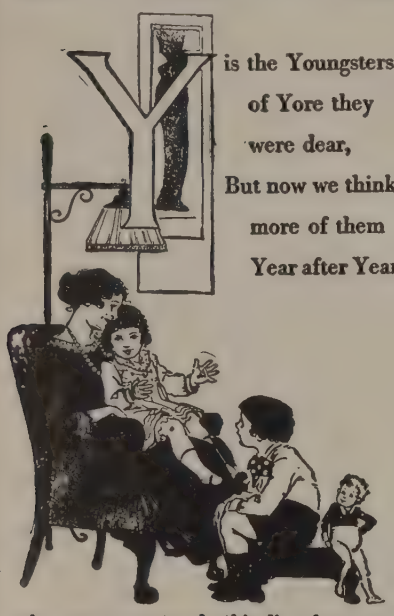
When a large number of competitors are entered, each has three trial jumps, and a convenient number of winners from these trials enter the final competition. In the final competition each man again has three jumps and the best of the three jumps made by each man is his record for the event.

It is a foul for the toes to touch the ground beyond the plank in making the spring, or for the jumper to over-run the board without jumping. Either of these offenses counts as one of the three trial jumps.

Any distance above 20 ft. is good for the

running broad jump; the best collegiate record is 24 ft. 11¾ in.

The *Standing Broad Jump* uses a regular take-off board, with both feet on the board when the spring is made. Toes may overhang the edge of the board, for starting thrust. If, as sometimes happens, the jump is from a scratch line on the ground



the toes may touch this line but must not over-reach it.

Three trials are used, as in the running jumps.

Field judges are in charge.

Records for standing broad jumps go 11 ft. 4⅛ ins.

Three Standing Broad Jumps.—Managed as broad jump, above. The jumper must not stop, even for one extra set of motions, between jumps, but must spring to his second and third immediately on landing from first and second.

Adult records run above 45 feet for three jumps.

Running Hop, Step and Jump.—The start is as for running broad jump. The foot that makes the take-off must make the first landing; the opposite foot at once takes the step; then without a pause both feet register the final jump. The distance is measured from the scratch line or bare edge of the take-off board to the nearest trace of feet, body or hands in the final landing.

Running High Jump.—General management as all other jumps. Required, a landing pit of soft earth, dug up six feet square; a pair of uprights six feet apart, bored for pegs to support a light crossbar; a V-shaped running ground, such that contestants may get a 20 yd. approach from either side. Good form does not approach the bar from the front. In intercollegiate practice, a balk line is drawn on the ground three feet from the uprights; the runner must not step beyond this line before he springs.

Any method of getting over the bar is permitted, if the jumper does not touch it; but best results have been gained by working in standard form. Since height, not broad distance, is required, the approach should not be too fast. The take-off is from right or left foot according to the direction of approach. The leg nearest the bar is first thrown over, then a twist to clear the hips, a flip of the second foot, and a landing on the foot that made the take-off.

Three trials are permitted at each height. A contestant may decline to try any particular height, and may come in at a greater height later on, but there may be no return to lower levels, except to break a tie.

Handicaps are added to the score of the opponents.

Good records for high schools are above 5 ft. 6 in., and for colleges, above 6 ft.

The *Standing High Jump* is made from any position, with one or both feet, but without preliminary hops or jumps.

Good scores for adults must be close to 5 ft. The record is a few inches above it.

The requirements for a *Pole Vault* are: A run-way 8 to 10 ft. wide and 20 yd. or so long; uprights notched or pinned for half-inch lifts of the crossbar; a landingpit of soft earth or sawdust. Between the uprights a wide plank is sunk, edge up, crosswise, with two inches projecting, to stop the bottom end of the pole. In front of this plank a hole is dug for the same purpose—if the jumper doesn't like that 'ole, 'e may find a better one. Fifteen feet in front of the bar is a balk-line, not to be crossed before the take-off. Poles are about 16 ft. long, of spruce or bamboo, wound for grip, and plugged or spiked at the lower end.

Good form is very important. The pace must be managed to bring the jumping foot to the balk-line; one hand grasps the pole slightly below the height of the crossbar, the other hand two feet higher up. The run is finished at top speed. As he comes to the balk-line, the runner places his pole, lifts one foot, springs from the other, slides the lower hand up on the pole, lifts the body by the pull and thrust of both arms, turns to a horizontal position above the pole, feet forward, drops the pole back, and lands on his feet in the pit. Most jumpers land facing the bar. A good landing is important for safety.

The jump is fair and the height is recorded if the cross-bar is not displaced by either the pole or the person of the jumper.

Field judges officiate.

Records for men run from 12 to 13 ft.

Throwing the Weights.—The *Shotput* is made from within a 7-ft. circle, which the contestant must not cross in making the throw, or leave from the front before the throw is measured. A toe-board is fastened near the forward edge of the circle, for the thrower's convenience. The weight of the shot varies with the age of the contestants. The standard is 16 pounds.

The shot must be "put", not thrown—that is, it must not be drawn back of the ear or behind the shoulder; at the beginning of the action, it preferably rests *on* the shoulder, in the cup of the hand. Form is important: (1) A half crouch at rear of the circle, the weighted shoulder drawn far back and low; (2) a sliding hop forward; (3) a twisting shift of the feet and an upward lunge of the whole body, while the putting arm straightens, and even the fingers add their flip at the end, like the kick of the toes in swimming.

Each contestant has three trials. The best of the three is his record for the event.

Field judges.

Good adult distance for the 16 lb. shot put is 45 to 50 ft.

There are two styles of throwing the discus—one, the old Greek form, with prescribed motions from a fixed position; the other, a modern free style, managed much like the shot-put, except that the discus is really thrown, with a full arm swing.

The discus is a double convex wooden contrivance, iron-bound and metal-faced, diameter about 9 inches, weight about 4½ lbs.

Scores of 97 ft. have been made in Greek style, and 135 to 150 ft. free style.

The *Hammer Throw* is from within a 7 ft. circle which must not be crossed in throwing, and which may be left only from the rear.

The standard hammer is of metal, with a wire handle; total weight 16 lb., total length not over 4 ft.

Good form requires one, two, or three complete turns of the thrower before he releases his hammer. If he can control himself, two turns are better than one, and three are better than two, since speed can be built up throughout. Intercollegiate and adult records with the hammer run from 160 to 190 ft.

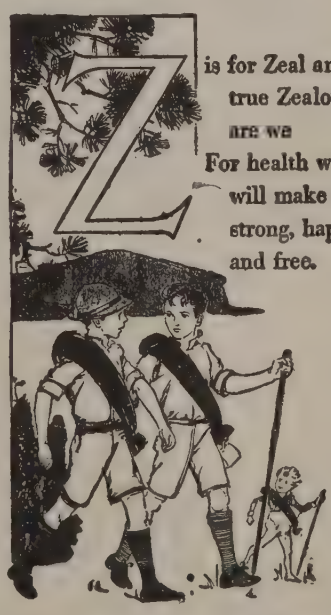
Throwing the 56 *lb. Weight.* Same general conditions as for shot put and hammer throw. Throwing this weight is like throwing a very heavy hammer with a very short handle. The over-all length of this weight must not be over 16 in.

The record is close to 50 ft., 6 in.

Throwing the Javelin.—This is a Swedish event, imported like the discus throw from the modern Olympic games.

The official javelin is 8.5 ft. long, weighs 1.6 lb. or more.

The thrower runs about 18 yds. to a restraining line, and without touching or over-stepping that line launches his javelin. The score may be taken for either hand, or for both added together. The best score for one hand runs over 200 ft.,



and for both added together, about 359 ft.

Base Ball Distance Throw.—From within a 6 ft. circle. The thrower steps from the rear half into the forward half of this circle, but must not cross the line.

Women's records go well above 200 ft.

Basketball Distance Throw. — Managed like the baseball throw. The basketball

and baseball throws are not now commonly included in intercollegiate events.

VOLLEY BALL

Volley ball is a lively and interesting game between two teams of any convenient number of players.

Across the middle of a rectangular field, not larger than 30 by 60 ft., a net is stretched, the upper edge 7½ ft. from the floor. The object of each team is to keep the ball beyond the net in the enemy's country, and to prevent its striking the ground in home territory.

No matter how many play, each player must take his turn at serving the ball and must continue to serve until his side is out, by reason of faulty service, foul, or failure in returning the ball. To serve a ball, a player stands back of the end line in his own court—he may have one or both feet on the line—tosses up the ball, and bats it with his hand toward the opponents' court, as it comes down. He may use either or both open hands, but must not use doubled fists. The ball need not go over the net on the server's stroke, if other members of his team can keep it from touching the ground, and eventually get it over. But in any one such attempt, no one player may touch the ball a second time.

When a team makes a foul or fails in service or return the referee calls *side out;* service passes to the opposing team, and each of the losers moves on one stage in his rotation toward service.

Catching or holding the ball is illegal; dribbling is prohibited—dribbling is touching the ball twice in succession. Players must not delay the game by batting the ball about unnecessarily—they must seek legitimately to advance their score.

Served balls are dead if they touch the net, but returned balls may be recovered from the net.

The ball is dead when it touches the floor, when it touches any object outside the court or when the referee blows his whistle. No player may touch the net, or reach over the net to strike a ball. No player may be helped or supported while striking the ball. Players must remain in their own court. If the serving side makes a foul the ball goes to the opponents, and there may be an additional penalty of a point added to the opponents' score if the foul is for unsportsmanlike conduct or for addressing officials. A foul by the receivers adds a point to the servers' score. Only the servers may score, except for fouls.

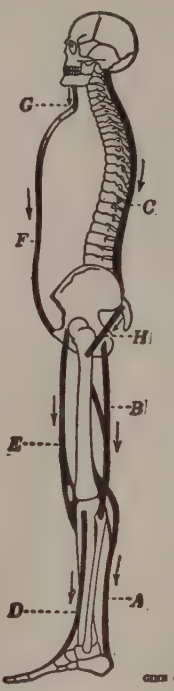


Diagram showing the action of antagonistic muscles which keep the body erect. After Huxley.

Arrows indicate the direction of the pull, the feet serving as a fixed basis of support. The muscles A, B, H, and C keep the body from falling forward; D, E, F, and G keep it from falling backward.

The officials are a referee and two linesmen. The referee is chief official, and works near the middle of the field, with a linesman at each end.

A standard volley ball is somewhat smaller than a basketball, though a basketball will do when the game is played for recreation only. For the net, any tennis net will serve.

WRESTLING

Wrestling is a sport no doubt much older than man, but the rules of the game have changed from age to age. In the old Greek wrestling matches, for instance, no hold below the waist-line was permitted. In the Irish collar and elbow contests neither man may for an instant let go his hold on his opponent's collar.

In this country wrestling means catch-as-catch-can, and a fall is secured whenever both shoulders squarly touch the floor at once. Only strangle-holds, shutting off an opponent's wind, are barred. At least twenty-five different holds are named and distinguished by professional wrestlers.

The arm and neck, foot hold, toe hold, quarter Nelson, and further Nelson are generally preliminary to other holds. A number of holds, for example the toe hold, are not directly productive of falls, but are so painful that the victim concedes a fall in order to escape.

There is not much value in a mere list of wrestling positions. The movements involved, the changes from one hold to another, the escapes and counters are often so fast and complicated that only a moving picture or a living instructor could tell the whole story. Wrestling is an art worth any young man's time. Champion wrestlers must have not only tremendous all-round muscular development, but mental alertness to match.

A fairly complete list of wrestling holds follows:

Arm and Leg
Arm and Neck
Arm Drag
Arm Grapevine
Arm Roll
Chancery
Chancery and Bar
Cross Buttock
Crotch Hold
Double Body Hold
Double Nelson
Double Thigh and Crotch
Double Wrist
Elbow and Back Heel
Flying Mare
Foot Hold
Further Nelson
Half Nelson
Hip Lock
Knee Hold
Quarter Nelson
Scissors
Single Wrist
Sit Back
Strangle Holds (Barred)
Three Quarter Nelson
Toe Hold

BOOK XV

FINE ARTS

ARTHUR HOEBNER, A. N. A.
VIRGINIA ROBIE
RUPERT HUGHES, M. A.

FINE ARTS.—This term is generally applied to those arts in which the artist seeks chiefly to give pleasure by the immediate impression produced on the mind by his work. These arts are thus distinguished from arts which are designed to answer some practical purpose, and so have been termed *useful*. By some, the term fine arts, which is generally taken to include those which appeal to the eye and ear alike, has been limited to the arts of *painting, sculpture, architecture,* and *music*.

The minor fine arts may be defined as those dexterities and industries which add to the quality of usefulness certain elements of pleasure and beauty, such as embroidery, ceramics, glassmaking, goldsmiths' work, jewelry, and cabinet-makers' work. Poetry, dancing, acting, and studied eloquence, inasmuch as they are related, are classed as fine arts.

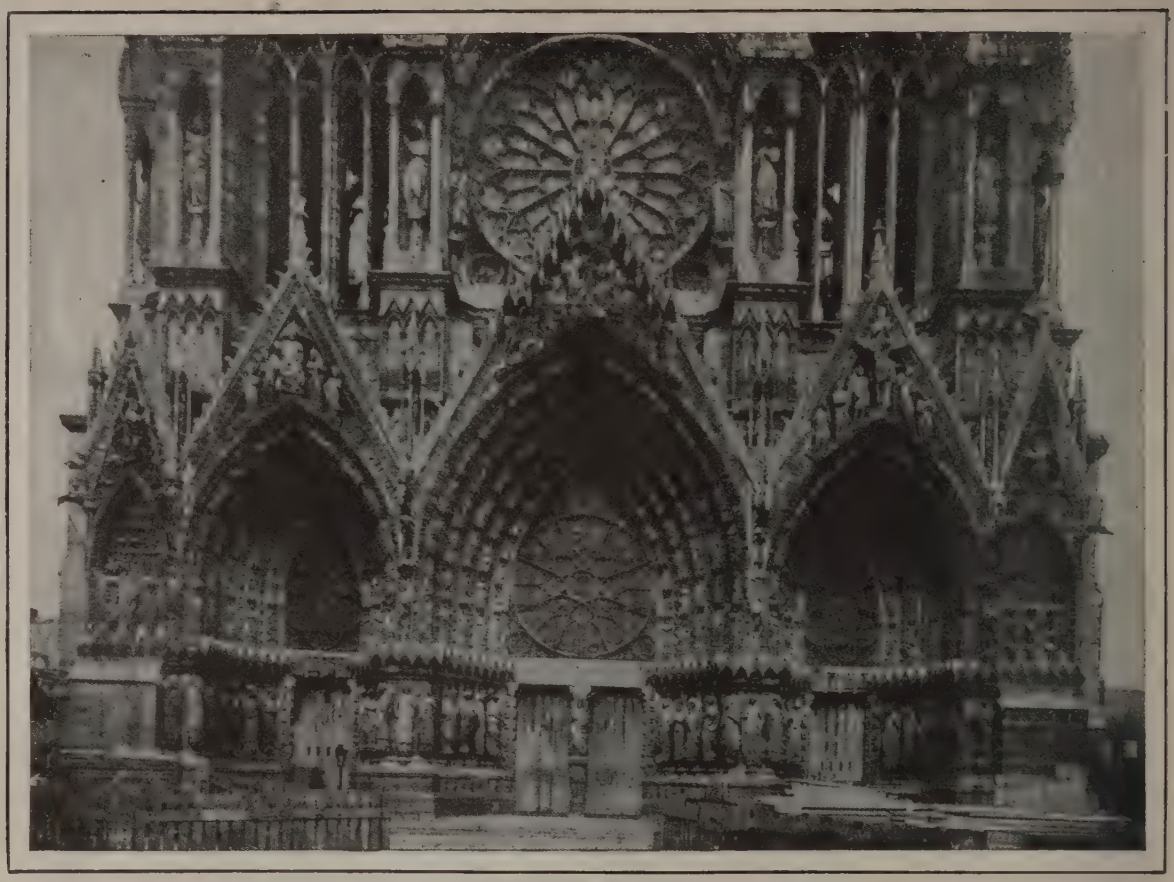
Antique Arts.—In its general acceptation the term *antique art* is understood to be that of a period antecedent to the revival of the classical studies in western Europe, or before *renaissance* of the arts from their assumed period of lethargy. There was, in fact, a distinct character about the productions of the artists of the more ancient and the more modern times, which was sufficiently marked to produce in the best of them a separate style of art, and which has led to the establishment of the schools of the so-called antique and modern styles; the mediæval arts form, as it were, an intermediate class, which was as distinctly marked as any of the other styles. The antique school was distinguished by an anthropomorphism and a divination of the human form.

Mediaeval Art was formed upon, and characterized by, a species of contempt for the human figure, and an inspiration after an ideal perfection, and therefore there is something vague and undefined in its efforts to represent the objects it copied.

Modern Art has united the indefiniteness of its aim with that clearness of the perception of its objects which is so marked a characteristic of its productions.

The antique schools date from the dawn of civilization to the end of the tenth century; the mediæval schools date from the tenth to the fifteenth century; and the modern schools have continued the traditions of the masters of art to the present time.

THE HAWA MAHAL, OR HALL OF THE WINDS, JEYPORE, INDIA.
Part of the Palace of the Maharajahs of Jeypore. It was composed entirely of pink and white stucco and is a unique piece of Indian architecture. It was built by the founder of the city, Jey Sing, in 1728.



REIMS CATHEDRAL, FRANCE

One of the grandest Gothic structures in Europe, built 1212-1430. Contained splendid rose windows, and a mass of beautiful statues and monuments. Charles VII. was crowned here, with Joan of Arc standing by his side.

ARCHITECTURE.—The art of building or constructing is coeval with the earliest dawn of civilization, and may be said to present largely the history of the human family written in stone, brick, or other durable material.

Architecture is divided into three classes —civil, military and naval:

Civil architecture has for its object the construction of any public or particular buildings intended to meet the requirements of an organized society. It is sometimes divided into *domestic, rural* and *monumental.*

Military architecture relates to the erection of works necessary to the defence or attack of cities, harbors, or countries.

Naval architecture relates to the construction of marine vessels, whether intended for purposes of war or commerce.

Of these classes most general importance attaches to civil architecture, which usually finds a place as one of the branches of the so-called Fine Arts.

Greek and Roman Orders.—To Greece we are indebted for the three orders of architecture, the *Doric*, the *Ionic*, and the *Corinthian;* Rome added two others, both formed out of the former, the *Tuscan* and the *Composite.* Each of these has a particular expression; so that a building, or any parts of one, may be rude, solid, neat, delicate, or gay, accordingly as the Tuscan, the Doric, the Ionic, the Corinthian, or the Composite are employed. The columns of these several orders are easily distinguishable to common observers, by reason of the ornaments that are peculiar to their capitals; but the scientific difference consists in their proportions.

The Doric Order is the oldest, strongest, and simplest of the three Grecian orders, and the one that is best represented among the remains of ancient Greek architecture. The Doric column, is distinguished by its want of a base (in the more ancient examples, at least), by the small number of its flutings, and by its massive proportions, the true Grecian Doric having the height of its pillars six times that of the diameter. The capital was small and simple, and the architrave, frieze, and cornice were rather plain and massive.

The Ionic Order is distinguished by the volutes of its capital. In the *Grecian Ionic* (1) the stylobate consists of three receding equal steps, the combined height of which is from four-fifths to a whole diameter; (2) the column, which includes band, shaft, and capital, is rather more than nine diameters in height, the shaft being fluted with twenty-four flutes and alternating fillets; while (3) the entablature is rather more than two diameters in height. The volutes are connected on the flanks by a peculiar roll-moulding, called the baluster or *bolster.*

In the *Roman Ionic*, a modification of the latter style, the stylobate is lofty and not graduated; the shaft diminishes one-tenth of a diameter and has twenty fillets and flutes; the capital, which is two-fifths of a diameter, has its volutes a little lower than the other, and a square abacus with moulded edges covers the whole. The chief examples of the Grecian Ionic are those of the Athenian Acropolis; while those of the Roman Ionic are found on the Temple of Fortuna Virilis and the Colosseum at Rome.

The Corinthian Order has the capital of the column adorned with beautifully carved acanthus leaves, but varies considerably in minor details. The column is generally fluted, with a fillet between the flutings, and stands upon a base. The entablature is variously decorated, especially the cornice; the frieze may be quite plain, or sculptured with foliage and animals. The Corinthian order was not very common in Greece before the time of Alexander the Great; among the Romans it was much employed.

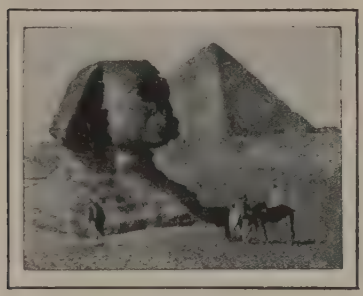
The Tuscan Order admits of no ornaments, and the columns are never fluted. Otherwise it differs so little, however, from the Doric, that it is generally regarded as being only a variety of the latter.

The Composite Order is so called because the capital belonging to it is composed out of those of the other orders, borrowing a quarter-round from the Tuscan and Doric a row of leaves from the Corinthian, and volutes from the Ionic. Its cornice has simple modillions or dentils. It is called also the *Roman* of the *Italic* order.

There are, besides these, various *styles* of architecture, such as the Gothic, the Moorish, etc., but these are not classed as orders, being styles merely.

Early Period.—The Egyptians are the most ancient nation known to us among whom architecture had attained the character of a fine art. Other ancient peoples among whom it had made great progress were the Babylonians, whose most celebrated buildings were temples, palaces, and hanging-gardens; the Assyrians, whose capital, Nineveh, was rich in splendid buildings; the Phenicians, whose cities, Sidon and Tyre were adorned with equal magnificence; and the Israelites, whose temple was a wonder of architecture. But comparatively few architectural monuments of these latter nations have remained till our day.

Egyptian.—This is not the case with the architecture of Egypt, however, of which we possess ample remains in the shape of pyramids, temples, sepulchres, obelisks, etc. Egyptian chronology is far from certain but the greatest of the architectural monuments of the country, the pyramids of Ghizeh, are at least as old as 2800 or 2700 B. C.



THE SPHINX AND GREAT PYRAMID, AT GIZEH, EGYPT

The Sphinx is considered older than any of the pyramids, and is hewn from the natural rock. It was a local personification of the sun-god.

The Egyptian temples had walls of great thickness and sloping on the outside from bottom to top; the roofs were flat, and composed of blocks of stone reaching from one wall or column to another. The columns were numerous, close, and very stout, generally without bases, and exhibiting great variety in the designs of their capitals. The principle of the arch though known was not employed for architectural purposes. Statues of enormous size, sphinxes carved in stone, and on the walls sculptures in outline of dieties and animals, with innumerable hieroglyphics, are the decorative objects which belong to this style.

Greek Architecture.—The earliest architectural remains of Greece are of unknown antiquity, and consist of massive walls built of huge blocks of stone. In historic times the Greeks developed an architecture of noble simplicity and dignity. This style is of modern origin compared with that of Egypt, and the earliest remains give indications that it was in part derived from the Egyptian. It is considered to have attained its greatest perfection in the age of Pericles, or about 460-430 B. C. The great masters of this period were Phidias, Ictinus and Callicrates. All the extant buildings are more or less in ruins. The style is characterized by beauty, harmony and simplicity in the highest degree.

Distinctive of it are what are called the *orders* of architecture, by which term are understood certain modes of proportioning and decorating the column and its superimposed entablature. The Greeks had three orders, called respectively the *Doric, Ionic,* and *Corinthian.* Greek buildings were abundantly adorned with sculptures,

TEMPLE OF THESEUS AT ATHENS

Erected about 460 B. C. It is a Doric structure, built of Pentelic marble, whose columns are 19 feet high. The sculptures are lost.

and painting was extensively used, the details of the structures being enriched by different colors or tints. Lowness of roofs and the absence of arches were distinctive features of Greek architecture, in which, as in that of Egypt, horizontality of line is another characteristic mark. The most remarkable public edifices of the Greeks were temples, of which the most famous is the Parthenon at Athens, though the best preserved is the Temple of Theseus. Others exist in various parts of Greece as well as in Sicily, Southern Italy, and Asia Minor, where important Greek communities were early settled. Their theatres were semi-circular on one side and square on the other, the semi-circular part being usually excavated in the side of some convenient hill. This part, the auditorium, was filled with concentric seats, and might be capable of containing 20,000 spectators. A number exist in Greece, Sicily, and Asia Minor, and elsewhere. No remains of private houses are known to exist. By the end of the Peloponnesian war, or about 400 B. C., the best period of Greek architecture was over; a noble simplicity had given place to excess or ornament. After the death of Alexander the Great, 323 B. C., the decline was still more marked.

ARCH OF TITUS, ROME

Commemorated the destruction of Jerusalem, 70 A. D., and is considered first of the Roman arches in beauty of execution. It was constructed of marble and adorned with beautiful reliefs of scenes connected with the captivity of the Jews by Titus.

Roman.—Among the Romans there was no original development of architecture as among the Greeks, though they early took the foremost place in the construction of such works as aqueducts and sewers, the arch being in early and extensive use among this people. As a fine art, however, Roman architecture had its origin in copies of the Greek models, all the Grecian orders being introduced into Rome, and variously modified. Their number, moreover, was augmented by the addition of two new orders—the *Tuscan* and the *Composite.*

The Romans became acquainted with the architecture of the Greeks soon after 200 B. C., but it was not till about two centuries later that the architecture of Rome attained (under Augustus) its greatest perfection. Among the great works now erected were temples, aqueducts, amphitheatres, magnificent villas, triumphal arches, monumental pillars, etc.

The *amphitheatre* differed from the theatre in being a completely circular or rather elliptical building, filled on all sides with ascending seats for spectators and leaving only the central space, called the *arena,* for the combatants and public shows. The Colosseum is a stupendous structure of this kind. The *thermæ,* or baths, were vast structures in which multitudes of people could bathe at once. Magnificent tombs were often built by the wealthy.

COLOSSEUM, ROME

This famous arena was Rome's chief marvel. It was founded by Vespasian and finished by Titus 80 A. D., and became the scene of countless fights of gladiators and wild beasts, as well as of the magnificent celebration of the 1000th anniversary of Rome's foundation—248 A. D. It would accommodate 87,000 spectators.

Remains of private residences are numerous and the excavations at Pompeii in particular have thrown great light on the internal arrangements of the Roman dwelling-house.

Almost all the successors of Augustus embellished Rome more or less, erected splendid palaces and temples, and adorned, like Hadrian, even the conquered countries with them. But after the period of Hadrian (117-138 A. D.) Roman architecture is considered to have been on the decline. The refined and noble style of the Greeks was neglected, and there was an attempt to embellish the beautiful more and more. This decline was all the more rapid latterly from the disturbed state of the empire and the incursions of the barbarians.

Byzantine.—In Constantinople, after its virtual separation from the Western empire, arose a style of art and architecture which was practiced by the Greek church during the whole of the middle ages. This is called the Byzantine style. The church of St. Sophia at Constantinople, built by Justinian (reigned 527-565), offers the most typical specimen of the style, of which the fundamental principle was an application of the Roman arch, the dome being the most strking feature of the building. In the most typical examples the dome or cupola rests on four pendentives.

After the dismemberment of the Roman empire the beautiful works of ancient architecture were almost entirely destroyed by the Goths, Vandals, and other barbarians in Italy, Greece, Asia, Spain, and Africa; or what was spared by them was ruined by the fanaticism of the Christians.

ST. SOPHIA, CONSTANTINOPLE

Rebuilt by Justinian in the 6th century, is probably the finest example of Byzantine architecture. The principal dome was supplemented by minor domes, and when converted into a mosque after the conquest of Constantinople by the Turks, minarets were added. Henceforth it became the model for all Turkish mosques.

Mediaeval Period.—A couple of centuries after the fall of Rome, a new style of architecture arose, two forms of which the Lombard and the Norman Romanesque, form important phases of art. The Lombard prevailed in North Italy and South Germany from the eighth or ninth to the thirteenth century; the Norman Romanesque flourished, especially in Normandy and England, from the eleventh to the middle of the thirteenth century. The semicircular arch is the most characteristic feature of this style. With the Lombard Romanesque were combined Byzantine features, and buildings in the pure Byzantine style were also erected in Italy, as the Church of St. Mark at Venice. The best example of the

ST. MARK'S CATHEDRAL, VENICE

Begun in the 10th century to receive the relics of the Apostles brought from Alexandria, it was transformed in the 12th and 13th centuries into the finest type of a richly colored Byzantine basilica. Rich in carved details, gleaming pinnacles, colored marbles and mosaics, bronze reliefs and sculptures, the whole structure is dominated by the grand figure of St. Mark above the chief archway.

Tuscan Romanesque is the Cathedral of Pisa (1063-1118) with its Baptistry and celebrated Leaning Tower. A peculiar variety of Romanesque originated in Southern Italy and Sicily, the finest example of which is the Cathedral of Monreal in Sicily.

CATHEDRAL OF PISA

with the Baptistry in the foreground and the Leaning Tower in the background. The Baptistry is the finest of the group. The edifice was begun in 1152 and the main structure completed in 1278. It is built almost entirely of white marble, and one arcaded story succeeds another, surmounted with a conical dome. It contains Nicolo Pisano's world-famous marble pulpit.

Moorish Type.—The conquest of the Moors introduced a fresh style of architecture into Europe after the eighth century—the Moorish or Saracenic. This style accompanied the spread of Mohammedanism after its rise in Arabia in the seventh century. The edifices erected by the Moors and Saracens in Spain, Egypt, and Turkey are distinguished, among other things, by a peculiar form of the arch, which forms a curve constituting more than half

COURT OF LIONS

in the Alhambra, perhaps the most celebrated portion of the Moorish palace at Granada. It contained 128 white marble columns supporting galleries. In the center was an alabaster basin flanked with twelve lions, from which the court takes its name. It has been extravagantly lauded in both romance and poetry.

of a circle or ellipse. A peculiar flowery decoration, called *arabesque*, is a common ornament of this style, of which the building called the Alhambra is perhaps the chief glory. The Giralda cathedral at Seville is also a fine example.

The Germans were unacquainted with architecture until the time of Charlemagne (or Charles the Great, 742-814). He introduced into Germany the Byzantine and Romanesque styles. Afterwards the Moorish or Arabian style had some influence upon that of the western nations, and thus originated the mixed style which maintained itself till the middle of the thirteenth century.

Gothic.—The modern Gothic style grew up in France, England, and Germany. Its striking characteristics are its pointed arches, its pinnacles and spires, its large buttresses, clustered pillars, vaulted roofs, profusion of ornaments, and, on the whole, its lofty, bold character. Its most distinctive feature, as compared with the Greek or the Egyptian style, is the predominance in it of perpendicular or rising lines, producing forms that convey the idea of soaring or mounting upwards. Its greatest capabilities have been best displayed in ecclesiastical edifices.

The Gothic style is divided into four principal epochs: the *Early Pointed*, or general style of the thirteenth century; the *Decorated*, or style of the fourteenth century; the *Perpendicular*, in vogue during the fifteenth and early part of the sixteenth centuries; and the *Tudor*, or general style of the sixteenth century. This style lasted in England up to the seventeenth century, being gradually displaced by that branch of the Renaissance or modified revival of ancient Roman architecture which is known as the *Elizabethan style*, and which is perhaps more purely an English style than any other that can be named.

Notable examples of Gothic architecture during the thirteenth and fourteenth centuries are as follows:

In Germany. Cathedrals at Strasburg, Cologne and Freiburg; the churches at Nuremberg and the minster at Ulm.

In Italy a modified form of Gothic is represented by the cathedrals at Milan, Siena and Florence; while in France, Germany, the Netherlands, and Italy are to be found many examples of secular Gothic in the ducal palaces, castles and private mansions.

MILAN CATHEDRAL, MILAN

Built 1386-1500; second to St. Peter's and Seville cathedrals in size. It contains 6,000 statues, superb stained windows, many tombs (including that of St. Carlo Borromeo), and vast granite monoliths. Its roof is marble, with 98 Gothic turrets and hundreds of pinnacles. The whole edifice is white marble.

In France, Cathedral of Notre Dame, Paris; the cathedrals at Rheims, Amiens, Chartres, Beauvais and Rouen; and the churches of St. Ouen and St. Malcom at Rouen, St. Jacques at Dieppe, and St. Wulfraud at Abbeville.

CATHEDRAL OF NOTRE DAME, PARIS

A famous example of the Pointed Gothic style. It was begun in 1163 but was built chiefly in the 13th century, and restored by Viollet-le-Duc, 1866, and following. The façade, with its rich Gothic sculptures, is very imposing; while the long range of windows and flying buttresses is highly effective. The fine pulpit and rood-spire were built by Viollet-le-Duc. Cathedral contains 37 chapels.

In England. Westminster Abbey, London; cathedrals at Lincoln, Salisbury, Wells, Litchfield, Exeter, Winchester, York and Carlisle; the series of abbeys with Melrose as chief; St. George's chapel, Windsor, and King's College chapel, Cambridge.

The Renaissance.—The rise of the Renaissance style in Italy is the greatest event in the history of architecture after the introduction of the Gothic style. The Gothic style had been introduced into the country and extensively employed, but had never been thoroughly naturalized. The Renaissance is a revival of the classic style based on the study of the ancient models; and having practically begun in Florence about the beginning of the fifteenth century, it soon spread with great rapidity over Italy and the greater part of Europe. The most illustrious architects of this early period of the style were Brunelleschi, who built at Florence the dome of the cathedral, the Pitti Palace, etc., besides many edifices at Milan, Pisa, Pesaro and Mantua; Alberti, who wrote an important work on architecture, and erected many admired churches; Bramante, who began the building of St. Peter's, Rome, and Michelangelo, who erected its magnificent dome. On St. Peter's were also employed Raphael, Peruzzi, and San Gallo. The noblest building in this style of architecture in Great Britain is St. Paul's, London, the work of Sir Christopher Wren; and seconded by the Banqueting Hall of Whitehall, executed by Inigo Jones.

In France the Renaissance style is shown in Lescot's court of the Louvre, Paris; the palace of Versailles; the Invalides; and the colonnade of the Louvre.

In Germany the most important monuments are the castle of Heidelberg, and the town halls of Augsburg, Rothenburg and Bremen.

In Spain the Renaissance period produced the Cathedral of Valladolid, and the Escorial.

ST. PAUL'S CATHEDRAL, LONDON

Was built 1675-1710 by Sir Christopher Wren, in the form of a Latin cross, and is next in size to Milan Cathedral. The interior is vast and contains numerous monuments and crypts. Wellington and Nelson are buried here and several famous artists. The dome of the cathedral is probably the most imposing in existence.

Modern Period.—Since the Renaissance, architecture has been marked by two sets of influences—the *Classic Revival* and the *Gothic Revival.* The former received its first impulse in France and the latter in England. The former was a reaction against the extravagances practiced during the Renaissance, and the latter was a reaction against the imitations of classic forms.

In France, Roman models were followed, and the type is represented in the Church of the Madeleine and the Arc de Triomphe, Paris. In Great Britain we have the British Museum, London, and St. George's Hall, Liverpool; in Germany, the Old Museum at Berlin, the Walhalla near Ratisbon, and the Glyptothek at Munich; and in Austria by the Parliament House at Vienna

CHURCH OF THE MADELEINE

Built by Vignon and finished 1842, is the most beautiful edifice in Paris. It is a vast Corinthian temple lighted from above, and richly adorned with painting and sculpture. The south façade contains a colossal group of sculpture representing the LAST JUDGMENT. There are many exquisite side chapels with sculptures by Bouchet, Pradier, Rude, and others.

The Gothic Revival has its best examples in the British Houses of Parliament and in the Natural History Museum at South Kensington, London. In Germany and Austria the building of a number of important churches resulted, especially the Votive Church, at Vienna.

VOTIVE CHURCH, VIENNA

A superb modern Gothic structure, built by Ferstel, commemorating the Emperor's escape from assassination in 1853. It abounds in statues, and wonderful stained windows and possesses finely decorated twin spires.

ST. PETER'S, ROME

Built 1450-1626, is the largest church edifice in the world. The interior has 30 altars, many vast and beautiful chapels, tombs of popes, and statues by Michelangelo, Canova, and Thorwaldsen. 138 popes were buried in St. Peter's. It took 176 years to build, and cost $60,000,000. The Doric colonnades surrounding St. Peter's square were built by Bernini in 1667.

Recent European Architecture.—There has been no dominating style of architecture apparent for more than a half century, though there has been an undoubted tendency toward a refined Renaissance. This was especially signalized in France by the completed Louvre, the new Opera House, the new Hotel de Ville, the Sorbonne and the church of Sacré Coeur, all in Paris. In Germany and Austria the same tendency is to be observed in the theatre at Dresden; the opera house and new Burgtheater at Vienna; and the new Parliament house, Protestant cathedral, and Bauschule at Berlin. Both Renaissance and Gothic styles have been followed in Great Britain, the former being represented by the Albert Memorial Hall, and

the Victoria and Albert museums, London; and the latter by the imposing Westminster Catholic cathedral, and the Liverpool cathedral.

OPERA HOUSE, PARIS

Largest theatre in the world, built 1861-74 by Garnier. The façade is exceedingly rich in statuary. The grand staircase of white marble, with balustrades of red antique marble, is the finest in Europe. The interior is adorned with sculptures, frescoes and mosaics by the first of French artists.

The great industrial and commercial activity of the people have stimulated the construction of the most palatial commercial and financial buildings in the world. Among multitudes of these the most striking are the Auditorium and Peoples' Gas buildings in Chicago; the Majestic building in Detroit; the *Times*, Trinity, Stock Exchange, Flatiron, and World buildings in New York; and many large and luxurious hotels, particularly in New York, Philadelphia, Chicago, Boston and Washington. Notable, too, are many railway terminals—the Grand Central and Pennsylvania in New York, the Pennsylvania in Washington, the new Northwestern in Chicago, and the South Station in Boston. Domestic architecture is original and characteristic, ranging from the colonial manor house of the South through many eclectic styles, to the classic mansion of upper Fifth avenue or Lake Shore boulevard. As compared with the older European countries, the United States possesses little purely historical architecture of merit. More history than art attaches to Old South church and Fanueil hall, Boston, St. Paul's in New York, Christ's church and Independence hall in Philadelphia.

TRINITY CHURCH, BOSTON

Built by H. H. Richardson, and completed 1877. The style is Romanesque and was suggested by the Cathedral at Salamanca, Spain. The harmony of both exterior and interior proclaims this edifice one of the few of first rank in America.

CAPITOL AT WASHINGTON

Built from designs of several architects (including Bulfinch, Walter, and Crawford), 1818-65, of white marble and stone. Its greatest length from north to south is 751 feet; its greatest width, 350 feet. Its imposing dome is one of the finest in the world, and the interior is replete with statues and historical paintings. It contains the Senate chamber, the Representatives Hall, Supreme Court rooms, Law Library, a Hall of Statuary, and numerous offices and committee rooms. The architecture is classic Renaissance.

United States.—Architecture in the United States has received its strongest influences from the classic revivals of Europe. To such influences belong the Capitol at Washington; the University of Virginia; Girard College, Philadelphia; the White House, and much of the federal architecture. The Gothic revival is notable in St. Patrick's cathedral and the Cathedral of St. John the Divine, New York, and Romanesque influences in the works of Richardson, such as Trinity church, Boston, and the County Buildings at Pittsburgh. The new and splendid buildings of the University of Chicago are close imitations of academic Gothic, while the newer Medical and Law buildings of Harvard University follow classical lines. Many imposing buildings have been erected by educational institutions and municipalities, notably the Boston public library, the Congressional library at Washington, the New York library, the National academies at West Point and Annapolis, Columbia University, N. Y., the University of California, Princeton University and the Museum of Fine Arts, Boston.

India and China require brief notice. Although many widely differing styles are to be found in India, the oldest and only true native style of Indian ecclesiastical architecture is the Buddhist, the earliest specimens dating to 250 B. C. Among the chief objects of Buddhist art are *stupas* or *topes*, built in the form of large towers, and employed as *dagobas* to contain relics of Buddha or of some noted saint. Other works of Buddhist art are temples or monasteries excavated from the solid rock, and supported by pillars of the natural rock left in their places. Buddhist architecture is found in Ceylon, Tibet, and Java, as well as in India. The most remarkable Hindu or Brahmanical temples are in Southern India. They are pyramidal in form, rising in a series of stories. The Saracenic architecture latterly introduced into India is of foreign origin.

The Chinese have made the *tent* the elementary feature of their architecture;

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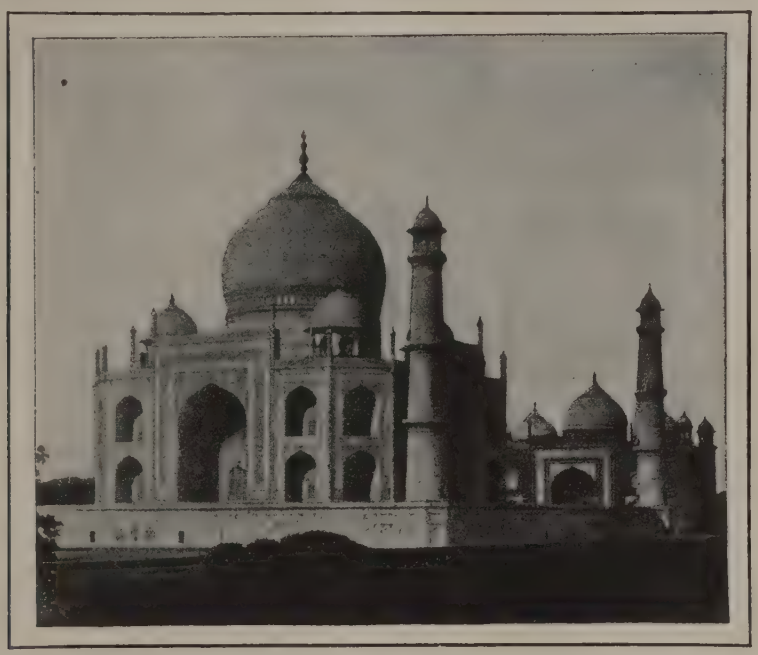
Fine example of English Gothic architecture, suggested by King's College Chapel, Cambridge, and Magdalen College and Christ Church, of Oxford, England. Designed by Shepley, Rutan and Coolidge, and built at a cost exceeding $1,000,000.

and of their style any one may form an idea by inspecting the figures which are depicted upon common chinaware. Chinese roofs are concave on the upper side, as if made of canvas instead of wood.

The imperial palaces are of great extent; consisting of a series of courts with galleries and halls of audience, beautifully painted. The temples differ greatly in form and size, but, in many points of architectural construction and decoration, they resemble the dwelling-houses of a higher class. The ordinary temples, or *joss-houses*, consist each of one chamber containing an idol. The Buddhist temples are larger and more elaborate, consisting of a vestibule, which leads to courts containing temples, sometimes two stories in height, in which are seated colossal images of Buddha.

The pagodas, which form a conspicuous feature in Chinese scenery, are either monumental records, or are intended for the reception of some relic of Buddha. They are generally octagonal in form, and nine stories in height, and surmounted by a conical roof, from which an ornamental pole arises. Each story is less in size than the one below it, and is surrounded by a balcony, from which a sort of penthouse projects, ornamented with bells at the corners. These pagodas are built of brick, and the exterior of some of them is coated with porcelain tiles.

The most famous architectural structure in India is the Taj Mahal at Agra, a splendid mausoleum of the seventeenth century built by the Emperor Shah Jehan to his favorite queen.



TAJ MAHAL, AGRA, INDIA

Famous marble mausoleum erected by Shah Jehan to his wife, Mumtaz Mahal. 20,000 men were employed on the work for 22 years at a cost of $15,000,000. It was built by Hindustan artists about the middle of the 17th century, and is inlaid with jasper, agate, cornelian, and other precious stones.

SCULPTURE.—While the term "Sculpture" would strictly, refer only to works carved or cut by hand in some solid substance, it is extended to include all plastic forms, cast, moulded, hammered, carved or engraved; everything, in fact, where a surface is changed by man's intervention directly or indirectly.

Materials. — Almost every imaginable material has been used, the most popular being gold, silver, bronze, ivory, all kinds of marble, stone, wood, precious and semi-precious stones, clay, enamel, wax, plaster. Sometimes several materials are combined. In the so-called chryselephantine sculpture of the Greeks, some parts of a statue were of gold, others of ivory. In Limoges enamel there are portions where the precious metals are not enameled. In many mediæval and Renaissance wood-carvings the wood surface is entirely concealed by a thin coating of plaster which in its turn, is colored; silver was often gilded; stone and terracotta coated with stucco.

Polychromy.—We are so accustomed to a colorless sculpture in marble and stone, that we forget how large a part was played in the past by polychromy or the custom of giving a colored surface to sculpture. This was particularly the case among the Babylonians, Egyptians, Assyrians, Persians and early Greeks. It even survived through the best Greek periods, and was continued by Etruscan, Roman, mediæval and Renaissance art. Of course, most of this coloring was evanescent, when exposed to the weather; and this makes it difficult for us to understand exactly how a great deal of sculpture looked when it came from the artist's hand. One method was permanent, the glazed and colored terracottas. The lions and other animals and figures built up of enameled tiles in relief, which have been found at Babylon, Susa and Khorsabad show how familiar this method was to the ancient Orient. The most famous later examples are the terracottas of the Italian Renaissance called "Robbia" ware. Many mediæval and Renaissance ivories, woodcarvings and stuccoes also preserve a rich coloring. The polychromatic remains of Greek sculpture are, naturally, much less well preserved, but there is enough to show that brilliant and heavy coloring was used at an early date especially in architectural sculptures. As soon as marble replaced stone it was not necessary to stucco and paint the entire surface and the polychromy was gradually restricted to patterns and borders, to shading the eyes, the hair and other details. The interesting statues of priestesses found on the Athenian Acropolis, after being buried there since about 490 B. C., show the most exquisite of the early coloring; while the so-called *Sarcophagus of Alexander* in Constantinople is the best preserved example of the latest and most delicate work. Even so great a painter as Nikias was accustomed to complete the surfaces of the masterpieces of Praxiteles.

Surface Treatment.—There is great variety in the treatment of surfaces, from sculpture in the round, at one end, to intaglio at the other. In the process of intaglio or incavo, used particularly in precious or semi-precious stones, the design is excavated and often reversed. Sometimes the design is merely scratched or outlined in the surface, as in Greek and Etruscan bronze mirrors or jewel cases. Next comes work in which the back-ground is only slightly lowered (stiacciato), the figures being kept flat, with cameo-like unreality, mainly in connection with figures in higher relief in the same composition.

Low relief follow, used singly or together. In early work, whether Oriental or Greek, it was the custom to carve all figures on the same plane. The Romans added the idea of combining figures on different planes in a single composition in which the figures in the foreground are so nearly detached as to be held only by one or two members to the figures behind them, giving practically the effect of statuary.

Statuary and sculpture in the round is where the surface is free standing on all sides. Its most perfect embodiments are of course the equestrian or other statues that stand out on pedestals, to be viewed from any point. But the majority of such works in the past have been made to stand against some background, in a niche, in the gable of a temple, the portal of a Gothic cathedral, and the like, and were often left unfinished in the parts that could not be seen. It is curious that statuary should be both the most clumsy and primitive and again the ultimate and most perfect form of sculpture. The stiff Babylonian seated figures, the miraculous wooden images of the prehistoric Greeks, the puppet-like Virgins with the Child of the Romanesque middle ages, are the least skillful products of their respective ages. And yet, at the other extreme, the majority of masterpieces of Greece and Rome, Gothic and Renaissance, are statues either single like the *Phidian Zeus* and *Athena*, the *Hera of Polyclitus*, the *Aphrodite*, or a group like the *Laocoon*, or *Praxiteles*. Nothing in relief can equal such works as the *Venus of Milo* or Verrocchio's equestrian statue of *Colleoni*.

Mission of Sculpture.—Sculpture as embodying human form, has a triple mission: to express plastic beauty of form; to embody thought and feeling; to act as a chronicler of facts. It was not always able to carry out this triple mission; in fact it did so only during three periods, the Greco-Roman, the Gothic and the early Renaissance. The particular genius of sculpture assigned to it certain limitations. It could not, of course, tell a story with

the same detail as painting. On the other hand it could embody better than painting the deeper, broader moods of typical humanity. Consequently sculptors are often tempted to resort to figures embodying general ideas or types, such as allegorical and symbolic figures of Peace, of War, Labor, Commerce, Charity, the embodiments of Virtues and Vices, Occupations and Trades, Inventions and Beliefs. In our day this tendency has produced many insipid works.

At the other extreme is sculpture turned into pictorial channels: this was mainly in relief work, especially when the Romans had, as we have already seen, opened up the way by using a multiplicity of figures in several planes. *The Farnese Bull* group is an example of it in statuary. The so-called Alexandrine reliefs of Greco-Roman art, with their backgrounds of landscape and architecture and the spiral narrative of Trajan's column lead up to such elaborate compositions as the early Renaissance scenes in Ghiberti's *Gates*.

Periods.—Considering its broad historic lines we find that sculpture has had a history of nearly six thousand years. For the first three thousand five hundred years, from about 4000 to 500 B. C., it remained a form of narrative, an embodiment of certain facts or persons. It was instructive but not intended to convey any pleasure. It had little or no æsthetic value. Such was the sculpture of Egypt, Babylonia, Assyria, Persia and other Eastern nations.

In about 500 B. C., the Greeks began to make of it not only a vehicle of thought and feeling but an end in itself, a thing of beauty and interest. Sculpture then became in every way an art. The Romans continued this idea, with variations and a gradual loss of beauty until the final downfall in about 300 A. D. Sculpture had therefore been of æsthetic value for about eight centuries. It then lapsed into being once more an embodiment of fact, but more than in the earliest stage of its history, it was used to express thoughts and beliefs, though with infirmity of technical ability. This æsthetic eclipse, this dark age, lasted for nine centuries from about 300 to 1200 A. D.

Then, with the Gothic revival came a new birth similar to that of Greece, combining in the same way love of nature and artistic imagination, perfection of technique and a wealth of ideas to be expressed. Sculpture once more was complete and practiced for its own sake. During the Renaissance there was a decay in imagination and an emphasis on naturalism. Types were displaced by individuals. Post-Renaissance work becomes somewhat artificial and spectacular, leading to the simplicity of the neo-classic revival as a reaction. But, dissatisfied with its cold artificiality, the leading sculptors of the nineteenth century have in various different ways sought the secret of plastic expression mainly through naturalism, simplicity and occasionally by a forceful realism that is inspired as if by the primitive passions of earth.

Egypt.—Aside from the crude figures of prehistoric animals outlined on rocks by cave-men, the earliest sculptures are those of Egypt. To the uninitiated there is a monotonous uniformity in Egyptian sculpture during the four thousand years of its history; but a real vitality appears at two periods,—at its beginning and during its closing stages under the Ptolemies. This shows itself especially in portraiture. The heads may be rigid but they are certainly realistic; this realism was less a matter of art than of religion. It was believed that the soul of the deceased would return to inhabit at intervals the body, and in case anything should have happened to the body, portrait statues were provided with heads so realistic that the soul would be sure to recognize it. Hence the fanatic pains to reproduce every smallest peculiarity. Hence the filling of the chamber tombs of Egypt with such statues. With the waning of religious belief came also a waning of this realism. The famous squatting Scribe in the Louvre, the kneeling washwoman, and the Mayor of the Village at Cairo, are perhaps the most extraordinary works thus far found in this style.

But Egyptian sculpture may also be credited with the ability to express an idealistic impressiveness of an impassive type in royal and divine figures. The statue of King Khufu, of the Great Pyramid, at Cairo, and the colossal rock-cut statues at Ipsambul are plastic embodiments of the genius of Egypt and rise to the dignity of works of art. They are the exceptions. But, while in these seated figures we do not notice the ability to express the human form, this is clear as soon as the sculptor attempts to put figures in movement or carve them in relief. Of course there is decorative value and delicacy of detail in Egypt relief work, especially in the Middle empire, but the ignorance of perspective and action are lamentable.

Babylonia, Assyria and Persia.—Although sculpture commenced in Babylonia almost as soon as in Egypt,—not long after 4000 B. C.,—it never equalled it either in amount or value. The sculptors suffered from lack of adequate material, and the hard diorite that was imported gave an even more disagreeable stiffness to statuary than was the case in Egypt. The statues from Telloh in the Louvre are typical of this fault.

In Assyria, Babylonia's successor in the artistic leadership of Western Asia, numerous quarries of soft limestone gave an opportunity to develop relief sculpture, and to spread the exploits of the Assyrian Kings on the inner palace walls, in the same way as the walls of tombs and temples had been covered in Egypt. While sculpture is still in the main narrative and still ignorant of perspective and free movement, we must confess to receiving a distinct impression of force from the muscular and energetic Assyrian warriors and of animal vitality from the hybrid monsters who guard the palace-portals, winged bulls and lions. The Assyrians were great sportsmen and hillmen. They therefore knew and studied animal life and could reproduce animals far more faithfully than men. The lions, wild asses, deer and hounds that we see in the royal hunts, wounded, slain or led, are full of character and realism. In fact, in the opinion of some critics, one must jump twenty-five hundred years to the modern work of Barye to find superior understanding of animals in action. One wounded lioness, with paralyzed spine, dragging herself along, is famous.

All the other oriental peoples practiced sculpture to a certain extent, but among the numerous works of Persian, Hittite or Phenician artists, nothing emerges as of especial interest. Nearly everything is a more or less lifeless imitation of Babylonia and Assyria, or, occasionally, of Egypt.

Greece.—In Greek sculpture there are four periods: (a) the archaic style, before c. 480 B. C.; (b) the grand style of the fifth century; (c) the beautiful style of the fourth century; (d) the dramatic and picturesque style of the Hellenistic age.

First Period—The Greeks long carved symbols, far inferior to Oriental art; formless statues in wood or stone to be worshipped, or lifeless reliefs. But during the sixth century their plastic sense was stirred. Two distinct racial schools were formed, the Ionic, originating in Asia Minor, and the Doric, with its centre in Greece, in the Peloponnesus. We are accustomed to these styles in architecture, they were quite as real in sculpture. The Ionian school developed relief work and the draped female figure, and showed poetry and imagination in types of gods, heroes, legends and myths. The Dorian school studied particularly the nude male figure and statuary, were greater realists, and perfected the athletic type. Both schools made an attempt at portraiture and realism in details, which proves considerable power of observation, though as yet there was no sense of life. It was an age of incubation. The most interesting exceptions are those fascinating priestesses from the Athenian Acropolis, each a different character study. The curious smile on some of them, with the up-curved lips, gives an almost Leonardesque aspect to their faces, which make up in quaintness what they lack in mystery. Their polychromy is the most artistic and best preserved of the archaic age.

The famous statues of the gables of the Temple of Ægina, now at Munich, are the best works of the pure Doric school. At the west end was the Fight over the body of Patroclus, and in the east the earlier expedition against Troy. Here the attempt is made to bring the athletic single figures into a composition in the awkward triangular space formed by the gables. The fallen helmeted warrior is full of repressed anguish, the stooping figure reaching out with both arms, like a football quarterback, is full of eagerness. All the figures are those of athletes trained to the minute, and the effect is of bronze statues.

The recent discoveries at Delphi have given superb works of both schools to this age; the unique great bronze charioteer, purely Doric, and a series illustrating the development of relief sculpture during the century preceding the Parthenon (550–450). There are friezes and metopes of the treasury-buildings of various Greek cities built within the sacred precincts; especially interesting as a prototype of the Parthenon is the frieze of the treasury of Siphnos. These are mainly Ionian.

The reaction against the stiffness of the early athletic figures, with arms glued to their sides, already evident at Aegina, is emphasized in the group of the tyrannicides, Harmodius and Aristogiton, carved by Critius and Nesiotes, of which a copy is in Naples. They are rushing forward vehemently to strike the tyrant Hipparchus. This vehemence is itself eliminated in the works of the greatest predecessor of Phidias, Myron (c. 470-460 B. C.), in which mastery of physical form in action is complete and yet repressed.

His two masterpieces, of which copies remain, are the *Discobolus* or disk-thrower bending low for the throw, and the *Marquas* (Rome, Lateran), starting back as he sees the flutes of Athena. All archaicisms have disappeared except in such minor details as the hair. Yet the grand style does not yet exist, because Myron was a materialist, and great art required the creative imagination of a Phidias. Perhaps the charming *Girl Runner* in the Vatican shows a similar mastery of the trained female form at this time.

Another preparatory work was the gable sculpture at the temple of Zeus in Olympia, excavated by the Germans; and representing at one end a fight between Lapiths and Centaurs, and at the other a famous chariot race. The grouping and posing are freer than at Aegina, but the workmanship is disappointing. Apparently the artists, said to be Peconius and Alcamenes, relied upon polychromy and distance. The stately Apollo in the center has traces of archaicism; while the aged reclining seer is a realistic portrait. It is archaic art made supply and human before the advent of the Phidian types. This is even clearer in the metopes, of which *Heracles and Atlas* is the most beautiful, and *Hercales and the Bull* the most dramatic.

Second Period.—The decorations of the Parthenon are the greatest works of sculpture of any age; they are nearly all collected in the British museum. It is impossible to say whether Phidias himself actually handled any part of them, or did more than plan them; but as all his famous masterpieces, such as the colossal statues of *Athena, Parthenos* and the *Olympian Zeus* have disappeared, they are our only clue to his style. The small scenes in the metopes are mainly the earliest part, and have archaicisms and irregularities of execution. The two pediments stand closest to Phidias. One had the Birth of Athena, the other the Contest between Athena and Posedion for Athens. The most wonderful of the remaining male nude figures are the *Theseus* and the *Cephisus*, both reclining; while of the females the group of the *Three Fates* is perhaps the grandest in existence, in its majestic beauty, in the drapery, minute yet broad, free yet clinging, in the heavy yet supple forms, showing so translucently, in Ionic softness.

The frieze representing the Panatheniac procession in honor of Athena had an average relief of only one inch and a half, but the extraordinary modeling makes the figures appear to project much further and this effect is increased by the skilful overlaping managed through inclining the planes. The most beautiful of the figures in repose is the group of three gods from the east frieze, still in Athens; while it is difficult to select one slab as more perfect than another among the graceful groups of Athenian horsemen and maidens. They are the embodiment of idealized humanity expressed by an art as subtle in the rendering of personality as of form and texture.

The sculptures of the Theseum at Athens are of about the same age but far inferior. There are two other almost contemporary works at Athens worthy of the Parthenon. They are the grandoise Caryatid figures supporting the porch of the Erechtheum, and the Victories of the balustrade of the temple of Nike, a graceful and voluptuous development of the *Three Fates*, with even transparent drapery. The *Victory binding on her Sandal* is a masterpiece.

Outside Athens the most important remaining work is the frieze of the temple of Apollo near Phigalia (c. 430 B. C.), now in the British museum. The subjects are the popular fights between Greeks and Amazons, Centaurs and Lapiths. Though the sturdy figures are full of action and variety the execution of the drapery is superior to that of the nudes.

There was another great master in the Fifth century, Polyclitus. Being Dorian rather than Attic he naturally excelled in statuary. His masterpieces are the *Diadumenus*, a victorious athlete binding the fillet around his head and the *Doryphorus*, an athletic holding a spear, who embodies in his square, massive build the canon of proportions for the human body which Polyclitus established as a rule to be followed by all sculptors. The bronze originals are lost, but several Roman copies in marble, more or less accurate, remain in Naples, the British museum, Rome, etc. Another notable work was a wounded Amazon, of which the best copy is in Rome (Vatican). His colossal statue of *Hera* (Juno) was as much admired as the *Olympian Zeus* of Phidias, and the bust of the Ludovisi Juno in Rome and another in Naples, have been supposed to reproduce its noble head.

Third Period.—Praxiteles, about 350 B. C., introduced a new ideal of grace and beauty, a different feeling for textures and postures, a more humanized and less lofty aesthetic ideal. This humanism was heralded by Cephisadotus, in his *Irene and Plutus* (Peace nursing Wealth) preserved at Munich in the marble copy of the bronze original. The most beautiful of Praxiteles' statues was considered by antiquity to be the *Aphrodite of Cnidus*. Of the lost original the best copy is in the Vatican. It was the most famous of Greek nude Aphrodites; soft and voluptuous yet broadly developed, shrinking yet conscious of her beauty. She has the melting, dreamy gaze characteristic of Praxiteles. Almost as famous was the *Satyr*, of which an admirable torso is in the Louvre, but the best copy as a whole in the Capitoline (Rome), where he rests against a tree-trunk with left hand on hip, careless and playful. There are many less artistic replicas. But there remains one original by the hand of Praxiteles himself, which though less famous in antiquity, is far more precious to us as it gives his own handling, which was so great a part of his art. It is the statue of Hermes holding the infant Dionysus, found at Olympia, a masterly combination of strength and softness, of sketchiness and finish. The feeling for texture is equally exquisite in flesh, hair and drapery.

Another sculptor, quite as great as Praxiteles and as dramatic as Praxiteles was self-poised, was Scopas. He incarnates the spirit that heralds the coming age. He took part in the most ambitious sculptural work of the times, the Mausoleum of Halicarnassus, built after 351 B. C. Many superb pieces are in the British museum, especially the notable and spirited colossal statue of Mausolus himself and the supposed Arthemisia. The two friezes, that of the chariot race and that of the Amazons are interesting to compare with such fifth century work as the Phigalian frieze. They are less crowded, more delicate and lithe. The museums are full of statues of the schools of Scopas and Praxiteles; various types of Eros, of Satyrs and Fauns, of Aphrodite, various portrait statues of poets and philosophers; various types of gods and goddesses, must be referred to this age, which was the golden period for well poised, beautiful, calm humanistic types. There was also, however, the dramatic and pathetic side to this art, represented especially by Scopas, and there are copies of one group of statues in particular that render this spirit splendidly; the statues of Niobe and her children being slain by Apollo and Arthemis. The best are in Florence. Among the numerous figures the son of Niobe with up-stretched arm and sweeping drapery and Niobe herself protecting her youngest child, are especially full of pathos. Among single figures the Meleager of the Vatican is typical of Scopas.

Latest of the fourth century masters is Lysippus, a prolific and popular artist who headed the late Dorian of Sicyonian school, reviving the polyclitan idea of a canon of the human figure, which he made slenderer and with smaller head. He was also an impressionist. The best copy of his masterpiece, the *Apoxyomenos*, or the Athlete cleaning himself with a strigil, probably embodies his canon, with its light pose and agile strength.

The most beautiful work of the end of this age, and the best preserved work of Greek sculpture, is the *Sarcophagus of Alexander* from Sidon, in Constantinople. Its hunting and battle scenes between Greeks and Persians are even more picturesque than the Amazon frieze of Halicarnassus, and the effect is enhanced by the perfect condition of the surface, on which every detail of delicate polychromy remained, to show us how the hard whiteness of the marble can be eliminated with perfect art.

Fourth Period.—The conquest of Alexander assisted in spreading Hellenic sculpture throughout the East and changed its character, by creating new centers of artistic production. Athens and, in fact, Greece itself ceased to lead. The principal schools were at Alexandria, Rhodes, Pergamon, and other cities of Asia Minor. Sculpture became more pictorial, dramatic, realistic. Landscape, portraiture, genre child life, colossal figures and groups, historic scenes and theatrical episodes, all became the fashion. The placidity, ideality and grace of the previous age were lost. Many among the best known Greek originals and copies belong to this age. Conspicuous is the *Apollo Belvedere* (See p. 1066), a Roman copy in marble of a bronze Greek original of Apollo as an archer, a graceful figure which became famous at a time when few Greek originals were known. The statue of Apollo's sister, *Artemis* (Louvre), as huntress is a companion to it. To continue examples of types of the Olympian gods, the famous Otricole head of *Zeus* (Vatican), popularly thought to represent the Phidian Jupiter, is a splendid conception of this time in a Roman copy. There are two spectacular figures of Hercules, the originals of which are of the school of Lysippus: one is the *Farnese Hercules* (Naples), an exaggerated muscular figure in repose, the other the much admired *Torso Belvedere* (Vatican). Of the figures of Venus or Aphrodite, the foremost and the only Greek original is the wonderful *Venus de Milo* (Louvre).

APOLLO BELVEDERE

In the Vatican, Rome. This famous statue is generally ascribed to the school of Scopas. It is thought to have been brought from Greece by Nero. Lubke calls it the most brilliant piece of sculpture of ancient times. "Too fair to worship; too divine to love."

which rises above the peculiarities of our age, and is a thing of such serene beauty as to stand on a level with even the Parthenon gables. The exquisite handling of flesh and drapery and the grace of the pose are subordinated to the artist's conception of the goddess as super-woman. There could be no greater contrast than the self-conscious and meretricious Venus de Medici of the Ufizzi (Florence), perfect as it is as a study from nature.

STATUE OF THE VENUS OF MELOS

Now in the Louvre, Paris. One of the most perfect masterpieces of Greek sculpture; by an unknown genius about 200 B. C.; was discovered on the island of Melos, 1820.

A Greek original dating from the very beginning of this age is the statue of *Victory* found at Samothrace (Louvre), a most impressive and theatrical study of drapery in violent motion. This and similar works, and the two famous groups, the *Laocoon* (Vatican) and the *Farnese Bull* (Naples), are all derived from the school of sculpture at Pergamon.

Pergamon in Asia Minor, was the seat of the Attalid Kings. Its greatness was due to Attalus (241 B. C.), whose victories over the hordes of Gauls were commemorated in a group of bronze statues. The intensely dramatic figure of the *Dying Gaul* (Capitol, Rome) is an early marble copy of one of these masterpieces, and a realistic study of a barbarian hero. Another copy from this series is the Gaul slaying himself and his wife, rather than fall a captive (Ludoviso, Rome). Some small single figures of dead warriors in Naples, so beautiful in their realism and repressed vigor, are copies of other works dedicated by Attalus at Athens. A fighting Persian in Rome (Vatican), resting on one knee, is worthy of Michelangelo in his pose.

THE DYING GAUL

In the Capitol, Rome. By an unknown Greek sculptor. Found in the gardens of Sallust. The right arm was restored by Michelangelo. Hawthorne says: "I do not believe that so much pathos is wrought into any other block of stone." This statue was long called the "Dying Gladiator."

The direct successor of Attalus, Eumenes, built at Pergamon the great *Altar of Zeus*, one of the seven wonders of the world. It was surrounded by two carved friezes, large parts of which have been excavated and are in the Berlin museum. The larger frieze represents the Battle of the Gods and Giants. It is for the Hellenistic age what the Parthenon sculptures are for the fifth century. The two finest sections are those where Zeus in one case and Athena in the other, are engaged in combat. There is an exuberant and massive vigor about the figures, a restlessness and intricacy, a contrast of light and shade, a clashing of lines in the composition that, combined with the size of the figures make it quite overpowering. The relief is so high that the figures are almost detached and have the effect of gable rather than of frieze sculptures. For nearly three centuries this great Pergamine altar influenced sculpture.

This is shown in the spectacular group of the *Laocoon*, by Agesander and two other sculptors of the Rhodian school in about 100 B. C. We see in this struggling, writhing mass, an artificial form of the dramatic art of the earlier Pergamenes, in which everything is sacrificed to technical virtuosity. It corresponds to the late Barocco style of Bernini after Michelangelo. To the same school and date belongs the group of the *Farnese Bull* in Naples representing the punishment of Dirce, fastened to a bull by her step-sons. It was carved by Apollonius and Tauriscus. It is wonderful in overcoming the difficulties of a colossal group carved so as to appear equally well on all sides.

Portraiture was also developed. There are a number of characteristic heads of Alexander, conspicuous for his leonine locks, his deep-set eyes and his neck drawn down to one side. In the Naples museum are many bronze heads from Herculaneum of this age, some suppose to be portraits of the Ptolemies; others are of the famous Greek philosophers and poets. The boy with a goose in the Louvre, after Boethus, and similar pieces in the Vatican, show the genre work that was so popular in Alexandria. The picturesque element which the same school introduced appears in many reliefs, such as that in the British museum of Dionysus and his tipsy followers, on his way through the streets to visit a dramatic poet.

Rome.—Added to the patrimony of sculpture certain invaluable new elements. These were principally in portraiture, in historic relief sculpture in equestrian statuary and in decorative sculpture. This is certainly a wide enough field.

Portraiture. In almost any of the large museums one is struck by some characteristic Roman bust or portrait statue. Ancestor worship, the use of realistic wax figures and painted terracotta portraits so common in Republican Rome, explain why under the empire portraiture in marble and bronze attained to a perfection never equalled before or since. It is a realistic art in which there is enough of idealism to save it from being a mere photograph of nature. This art kept its excellence for nearly three centuries. To compare the seamed and gnarled old man, with near-sighted eyes in the marvellous head of the time of Cicero, in figure with the serene head of Augustus from his statue in the Vatican, is to see the two sides of this art in its earliest stage. The technique is perfect but unobtrusive. One can gain a clearer idea of Roman character from these heads than from reading Latin literature.

During the century after Augustus there was a gain in realistic power and smoothness of execution, which is well shown in heads of these equally rotund and unintellectual Emperors Vitellius and Vespasian, where the treatment of flesh textures is more perfect and brilliant. In the Vatican the head of a colossal seated statue of the Emperor Nerva, nearly a half-century later, is less perfect, perhaps, in workmanship, but is extraordinarily vivid in its portrayal of a man full of plans but without the strength of character to execute them under difficulties. The weak mouth, dreamy eyes and seamed forehead are those of a disappointed optimist. Then come numerous excellent portraits of Trajan and Hadrian before the art begins to stiffen. Even then there are remarkable exceptions, such as the heads of Caracalla, a masterly transcript of unbalanced impetuosity and vicious atavism. How different all this is to the Greek conception of concealing the emotions under a serene and perfectly balanced exterior, and of giving to plastic effects the form of types instead of individuals!

Many of the portraits belong not to busts but to life-size or colossal statues,

in which one may say that Hellenic and Roman peculiarities were combined. The emperors were represented often as gods, and as nude or slightly draped figures of Hellenic type. They were also given as orators and benefactors, in statues of a kind similar to those of Sophocles, or Demosthenes produced by later Greek art. But they also appear as generals, in full military panoply, like the Vatican Augustus, and this form is typically Roman. It is a general fact that there never was a time in the history of sculpture when so many honorary portrait statues of persons of every sort, men and women, were erected. The squares of every town, the basilicas and porticos, the villas, the baths, the theatres and hippodromes, were all peopled with hundreds of these works, so that we may say that the Romans throughout the world were surfeited with sculpture to an extent unknown even to the Greeks.

AUGUSTUS, AS GENERAL,
in Vatican, Rome. A superb portrait statue somewhat idealized. It was found, in 1863, at the Villa Livia, near Rome. The finest imperial statue that has come down to us.

Historic Relief Sculpture was the second peculiarly Roman field. This was made possible by the new form given to work in relief. Roman artists revolutionized the art. Their realism seized on sculpture as a medium for expressing national and political life as well as mythological scenes. They attempted at first to do this without radically breaking away from Greek methods. We see this in the reliefs covering the marble parapet that encircled the famous Altar of Peace erected in the Field of Mars at Rome in 12 A. D. to celebrate the pacification of the world by Augustus. This was the greatest work in its class, covering a length of about one hundred and fifty feet. The procession on its two unbroken sides—the other two have doorways—has been called the Roman version of the Parthenon frieze and is a fair type of the Roman individual, realistic way of treating a theme. Compared to the Hellenic symbolism, that left out the personality of Pericles and the other Greeks whose position corresponds to that of the Romans, we see here the imperial family headed by Augustus on their way to the great commemorative sacrifice.

Out of this graceful semi-Hellenic Augustan style it took a century to develop what was characteristically Roman, forceful, dramatic, picturesque and story-telling. A half-way stage was marked in 81 A. D. by the well-known reliefs on the Arch of Titus, with its triumphal procession and the carrying of the seven-branched candlestick. It was in 114, in the reliefs of the Arch of Trajan at Beneventum, that the final stage was reached and perfectly expressed. In them nearly all the principal events in Trajan's reign were represented: his triumph over the Dacians, his Eastern wars, his army reforms, his efforts to restore prosperity by the encouragement of agriculture and commerce. In order to tell these stories effectively the sculptor has adopted the method of placing his figures in three planes, in perspective, one behind the other. The figures in the front plane are sometimes almost detached, being held by an arm so that they have almost the effect of statues; while the figures in the background are almost flat and sink back. This gave the sculptor an opportunity for the greatest variety of pose and direction, of groupings and composing. There is great play of light and shade and this helps to give dramatic effect. To us this may seem almost a commonplace, but until then these had all been unknown factors in sculpture. So carried away were the Romans of this time by the storytelling possibilities of relief-sculpture that the same men who decorated this arch, carved a continuous spiral band that unwinds itself on the column of Trajan in Rome, the entire history of his two Dacian wars. It is in very low relief and local touches are given by details of architecture and landscape; while originally its effectiveness was increased by brilliant coloring.

Equestrian Statues were used by Greek sculptors before the time of Alexander, whose figure on a prancing steed, engaged in battle, was a famous work often copied by Roman artists. In the Naples museum there are two bronze Equestrian statues of men of the Augustan age named Balbus, found at Herculaneum: they sit well and the horses are more graceful and Hellenic than the heavier animals that were modelled by later Roman artists. The colossal bronze Marcus Aurelius in the square of the Capitol is the most famous Equestrian statue in the world, and served as model for many artists during the Renaissance and later. It is a powerful work, and dramatic in a somewhat heavy style.

Decorative Sculpture.—Quite as interesting as innovation was the creation of a varied system of decorative sculpture lavishly used and fantastically varied. Greek carved decoration had been so simple and serene that we did not need to consider it in connection with the history of sculpture especially as the line of demarcation between figures and ornament had been strictly maintained. But with Roman art, encouraged by late Hellenistic suggestions, there came a rank exuberance, a richness of decorative work, a charming mingling of figures and ornament. What could be more exquisite than some of the carved marble vases and altars in the Vatican museum or than many of the pilasters that served as models for the fanciful designs of the Italian Renaissance.

Even figures alone were made to serve a decorative purpose, as in the charming stuccoes in the walls of certain tombs on the Via Latina and in the Terme museum at Rome. The artist would sketch in the wet stucco on the walls with a hand admirably sure, little genre scenes that have never been surpassed in delicacy and effectiveness.

The history of Roman sculpture has not yet been written but its outlines are clear. Semi-Hellenic and Eclectic in the age of Augustus, it assumed increasingly Roman characteristics until the time of Trajan, though Attic grace and Hellenic idealism often prevades it. Hadrian, for a time gave it an increase of Greek characteristics, but under Marcus Aurelius there was a distinctly Roman reaction, with an infusion of the dramatic traits of the Hellenistic school of Pergamon and Rhodes. The free use of the drill helped to cheapen dramatic effects and there was a gradual decline during and after the reign of Septimius Severus. At the close of the third century, under Diocletian, figure sculpture has become lifeless and almost puppet-like.

Early Christian and Mediaeval.—It was the natural result of the decay of Roman society rather than enmity to sculpture that eliminated it from the field of art at about the time when Christianity became the religion of the State under Constantine. The friezes of the arch of Constantine,—about the only parts of its sculpture that was not robbed from the earlier monuments—and the figures of Consuls of this time found in the Roman Forum, show that the growing incapacity of sculptors is a sufficient explanation, without bringing in the idea that the Christian church proscribed the art because it so frequently represented the "idols" of paganism. The decay was general throughout the Roman world, both East and West.

For a short time the Christian sarcophagi were able in their reliefs to tell in a mechanical way the story of Christian belief in the Bible and immortality, but even this phase, which left sculpture without æsthetic value and on the same storytelling plane as in the pre-Hellenic days of Egypt and Assyria, came to an end in the fifth century. Painting was then used alone to teach the people the facts of faith and history.

After this, sculpture remained in eclipse for nearly seven hundred years, while the world went through many changes: the crumbling of the old world, the invasion of the northern races, the rise of Mohammedanism, and the gradual growth of the nationalities and the culture of European peoples under the guidance of the Church. Architecture and painting fluctuated yet survived; but sculpture did not rise above the level of industrial carving until, in the twelfth century, the later Middle Ages awoke once more to the joys of æsthetic beauty, in a manifold and glorious effort to rejuvenate the world. It was merely one phase of the combination of hard practical work and self-denial under the guidance of idealism which ruled the twelfth and thirteenth centuries and led to the crusades, the great Monastic movement, the age of chivalry, and the formation of States and communes.

Gothic Style.—It was at the close of this age we call "Romanesque" that sculpture, after having been reduced to decorating book-covers and reliquaries, once more assumed a really monumental role, and began an evolution that has no parallel except that of Greece. Even the Greeks and Romans has succeeded less completely in making of the plastic art an integral element a logical

coadjutor of architecture. This happened when the new art reached its efflorescence in the Gothic style of the thirteenth century. This new union was fundamental because the Gothic architects were usually sculptors as well, and not only furnished the drawings for a cathedral but carved its portals or its capitals with their own hands. By doing this they went further than either the Greek or Renaissance artists in a practical amalgamation of the two arts.

France was not only the birthplace of the Gothic style but established its purest and best forms. The new sculpture was used to express the knowledge and the ideas then current throughout Europe. The age was one of extraordinary culture. Universities were making education quite general; encyclopaedias were being written; a multitude of teachers were trying to give ideals and facts to the masses. Artists and men of letters were aiding each other in the work. The propaganda among the masses had to be carried on largely through the eyes, and as the cathedrals usually were the one place where all the people congregated not only for worship but for plays, for fairs, for public and political meetings, the cathedrals were used as the means for instructing the masses. Their walls and portals were carved with figures and relief which systematically summed up the encyclopedic teaching—all the knowledge of the time. We see in thousands of figures a system of doctrine and morality explained and illustrated; the history of the world set forth; the law and the various phases of labor, both manual and intellectual. **"Man, know thyself and thy God."**

It took more than a half century to achieve this result. The figures set in the old porches of the cathedrals of Chartres and Le Mans have a similar architectural stiffness to an archaic Apollo or Artemis. They are intentionally elongated and straightened in order to give them almost the function of a column or a caryatid. In some faces we even see a reflex of the archaic smile. The artist is at the same pains to reproduce exactly the details of the face and costume of his models. He aims at a portrait rather than a type and like the Greek sculptor before Phidias, he misses the sentiment of life. The statue of a queen from Corbeil now at St. Denis, illustrates this stage. This realistic phase was just as necessary with the French as it had been with the Greeks in order to enable the artist by careful study and observation to attain to that perfection of technical execution and knowledge of nature that will let him use his art freely. The sculptor is once more a man with a mission as he was in Greece in the fifth century B. C. Each cathedral is a museum of masterpieces, beginning at Notre Dame in Paris and continuing at the cathedrals of Chartres, Rheims, Amiens, Auxerre, Troyes and many more.

The perfection of the early French style is shown in the exterior of Rheims cathedral. We have here a breadth of style, a grand treatment of drapery and a majesty of pose that reminds of the Parthenon gables. At the same time there is the greatest versatility. A sense of humor is shown in many heads, as in the St. Joseph, and a capacity for grotesque effects that is quite Leonardesque, appears in many of the corbel masks. One of the apostles recalls an antique philosopher or poet—a Sophocles or Aeschines; a St. Elisabeth is like a Juno. The figures are superbly posed and we must believe that they were often studied from the nude and draped afterward,—a thing which critics have thought was not done until the middle Renaissance. Another Greek analogy is that the leading Gothic masters sought to establish canons for figured sculpture, in the same way as had been done by Polyclitus and Lysippas. These canons were geometric and based on triangles or rectangles, and were more elaborate than the Greek because they took account of all the main poses of the body.

While it is true that most of the heads are rather types than portraits, there is an evident study of nature. For instance in the charming youthful head of the Virgin, and in the piquant angel at Rheims. This is even true in such works as the Saint Theodore at Chartres, a figure which may be considered the typical knight of the Crusades. Though the costume hardly lends itself to artistic effect, it is made charming by ease and grace of pose, by skilful play of light and shade and by perfect naturalness. It does not suffer at all by comparison with the famous statue of St. George by Donatello, which typifies the more self-conscious champion of the Renaissance. Some of the finest statues are those dividing the main portal. The "Beautiful Christ" at Amiens, and the severer one at Chartres, the dignified Virgin at Notre Dame, the smiling and coquettish Virgin at Amiens and the rather self-conscious Grande Dame at Rheims are all masterpieces. As a composition, one of the most symmetrical and artistic is the tympanum of the left doorway at Notre Dame, with the Resurrection and Coronation of the Virgin. Mannerisms and studied richness in drapery appear later in the century, as in the apostles at the Sainte Chapelle, and the sculptors became more and more artificial as the fourteenth century advances, until from the north, especially Flanders, comes a wave of realism and character study, which can be studied in the school of Burgundy, in the monuments of Dijon, ending in nearly 1500, with two masterpieces—the monuments of the Duke of Burgundy and the Pulpit called the Well of Moses.

Spain.—French artists carried to Spain their decorative system and subjects. There are fine portals at Burgos, Leon and Toro, in the thirteenth century and sculpture was more abundant here than in Italy or Germany: but though the designs were good, we seldom find the beauty of French work.

Germany. — The Gothic movement reached Germany from France quite as soon if not sooner than the corresponding architectural wave. Germany had begun an interesting use of monumental sculpture in the Romanesque age, especially in Saxony and neighboring provinces, and it was here that, in the middle of the thirteenth century, one finds the first works of real genius, with a mastery of technique and expression to rival the French works. These are the Golden Gate of the cathedral of Freiberg, the portals of Magdeburg cathedral and especially the statuary and portals of Bamberg, where the crudity of Germanic realism is modified. The most famous single figure is the Equestrian statue of the Emperor Conrad III at Bamberg. There is little of the French idealism or love of pure beauty, or creation of types; but rather a strong personality, sometimes artificial and clumsy. This art reaches great force in certain large figures in the choir of the cathedral at Maumburg, especially the twelve statues of the great nobles; bold, free, strong and full of life, they have all the qualities and none of the defects of German naturalism and are the most perfect embodiments of the feudal pride of the Saxons. Perhaps the finest are the Margrave Eckardt and his wife Uta. Their date is about 1270.

STATUE OF THE "SYNAGOGUE"
From the façade of Strassburg Cathedral. This façade was designed by Erwin of Steinbach, and is rich in sculptures after the French Gothic school. These sculptures are in stone.

A few years later we find at Strassburg Cathedral other great German masterpieces though in this Rhenish School, French influence is much more domi-

nant. Perhaps the earliest part is the extraordinary angels' pillar inside the transept, which is still archaic; and the most perfect are the two famous statues of the church and the Synagogue, outside the south transept. The Synagogue especially, with its gauze-like simple drapery, bent head and curving lines, is one of the most gracefully poetic figures conceived by the sculpture of any age. On the main facade the statues of the Wise and Foolish Virgins and of the Prophets are less perfect but very striking and dramatic. They show the approach of the rather exaggerated art of the fourteenth century. The grand style now disappears, the center of production shifts to Nürnberg, to Cologne, and Ulm.

Beside architectural sculpture the Germans were active in sepulchral monuments and shrines, which are better preserved there than in France, where the Revolution destroyed so much. Terra cotta and wood, also, were more generally used than in France, and here we can see more traces remaining of the polychromy which originally covered almost all Gothic sculpture.

Pre-Renaissance.—We usually speak of the "revival" of art, in the sense of an early Renaissance, as beginning in Italy during the thirteenth century, with Giotto in painting and Nicola Pisans in sculpture. Yet Italy was far inferior to France during the Gothic age in the amount and quality of her sculpture. Nicola Pisano, was her first great sculptor, and the famous pulpit in the Baptistery at Pisa, carved in 1260, his earliest masterpiece. In its fine bas-reliefs we see an interesting adaptation of Roman, Byzantine and French Gothic models. In the Adoration of the Magi, the Virgin is a Juno, the angel seems taken from some work of the Emperor Justinian. The figures have none of the Gothic vivacity and slenderness, but are majestic and heavy, and an occasional nude figure shows plainly the study of the antique. Another pulpit at Siena is the work of the master with the help of his son Giovanni and several scholars. Here enters a dramatic element which was developed by Giovanni, who is far more of a typical Gothic artist than his father: his pulpit at Pistoia, in S. Andrea, is his best. The great fountain of the square at Perugia is a joint work. Giovanni entered into the spirit of Gothic symbolism, as is evident in the caryatid figure of his pulpit for the cathedral at Pisa. He became overdramatic in his later works, but several of his statues of the Virgin with the Child are full of dignity.

This school of the Pisani spread over the entire peninsula. A spectacular work in the north, at Milan, is the shrined S. Peter Martys; another at Bologna, is the shrine of S. Domenico; while the royal tombs in Naples prove how quickly it conquered the south. In Florence and Orvieto, however, are the schools' two most extensive undertakings. The facade of the cathedral of Orvieto is unique in Italy. Four broad piers separate the portals and are covered with a series of low reliefs representing a vast Christian poem in four scenes: Genesis, the Tree of Jesse, with a choir of the Prophets of the Redemption; the Life of Christ; the Last Judgment. This epitome of the world from Creation is given in a charming poetic and at times dramatic style. The scene of the Last Judgment is particularly grand, and the Creation scenes the most exquisitely beautiful. There is nothing like it even in France. It is the incarnation of a poet's dream.

Giotto's tower in Florence has many five sided reliefs (fifty-four in all), which were planned by Giotto himself, mainly in the spirit of allegory. The Virtues and Vices, the Arts and Sciences, the glorification of labor, of commerce and industry, of organized society. They are interesting to compare with the different representations of similar subjects on the French cathedrals. Of greater beauty and grace are the reliefs in the bronze doors of the Baptistery by Andrea Pisano, mainly devoted to the life of John the Baptist. These charming framed and grouped scenes are of a classic simplicity, and are quite perfect in their drapery and grace. They remind one of the best French work, which they certainly equal. The last notable master of this school was Andrea Orcagna whose tabernacle at Or San Michile in Florence is an extraordinarily successful combination of architectural design and color with sculpture. This brings us to the eve of the Renaissance.

Of English Gothic sculpture there is little to be said. It is very abundant at Wells cathedral and fairly so at Lichfield and Salisbury, but not well arranged and too much addicted to isolated statuary. There are no individual statues and scenes of great artistic beauty as in France or Italy.

Renaissance.—Italy now wrests the leadership from France. The Renaissance was born in Tuscany at the beginning of the fifteenth century, and the revolutionary movement invaded all the arts almost simultaneously. Three men took the lead in the field of sculpture: Ghiberti, Donatello and Jacopo della Quercia.

Donatello was by far the greatest and exercised the widest influence. His St. George, is one of the famous statues of the world, standing solidly and earnestly though with a touch of self-consciousness. In his charming bust of the youthful Christ and in St. John, Donatello really recreated the child in art, at least in Italy, where children had always seemed like little men in mediæval art. Nothing more rollicking and joyous can be imagined than his dance of plump but active children on the pulpit at Prato. His wonderful versatility appears in his equestrian statue of Gattamelata at Padua, his Brancacci tomb at Naples, with its wealth of decorative design, and his bronze statue of David in Florence.

Ghiberti, his contemporary; is chiefly famous for the bronze gates of the Florentine Baptistry. He is a connecting link with the Gothic past. In the first gate he imitates so closely the neighboring gate of 1330 by Andrea Pisano, with its small simple compositions, that he seems thoroughly mediæval. A few years later he adopted an absolutely opposite scheme for his second gate, which Michelangelo thought worthy of Paradise. Here the scenes were few and large, the figures numerous and small. These reliefs with their vanishing planes, their vivid picturesqueness and elaborate scenario struck an entirely new note in sculpture.

Jacopo della Quercia, the third in this early trio, was the precursor of Michelangelo in his love of anatomy and his dramatic bravura. This is especially evident in his work at S. Petronio, in Bologna, in the reliefs of the portals in the facade and the group of the Virgin holding the Child. He was at the same time master of a delicate and penetrating charm, which he shows in the exquisite reclining figure of Ilaria del Carreto, on her tomb at Lucca, on a cenotaph decorated with children holding a long wreath, the most beautiful instance of a favorite motif copied from some Roman original.

TOMB OF ILARIA DEL CARRETO

In Lucca Cathedral, by Jacopo della Quercia. Perhaps the most beautiful composition of sepulchral art.

Later Italians.—The latter part of the fifteenth century is so crowded with talent, not only Florentines (and other Tuscans), but Lombards, that it is difficult to single out special men and works. Fiesole's bust of Bishop Salutati, with its keen and rather pleasantly ascetic face, is a highly finished example of Tuscan verve. Among the numerous sepulchral monuments in which decoration and figures were more happily combined than in any other class of works, perhaps the Marsuppine tomb by Desideris da Settignano, stands supreme. He was Donatello's greatest pupil. Among the pulpits the most harmonious is that in Santa Croce in Florence by Benedetto da Majano. It has a relief in each face and here the pictorial style inaugurated by Ghiberti is adopted with its use of perspective and scenario—in exactly the same way that it was adopted at the same time by painters like Mantegna. Among altarpieces, the most spectacular are perhaps two: that at Padua by Donatello in bronze and that at Pistoia (S. Jacopo) by several artists. This last is of silver and not only covers the face of the triple altar but surmounts it with a high structure. The whole is made up of lines of compositions in relief and statues in niches. It is the largest work of its kind and the most varied and interesting.

Robbia School.—Next came Luca della Robbia, a serene religious artist, most noted as the creator of that form of relief sculpture in polychromatic glazed terra cotta known from him as "Robbie ware." It was extremely popular throughout Tuscany and further south. His nephew Andrea almost equalled him in talent and productiveness. The Resurrection of Christ at S. Marco in Florence is an early and simple study in white and blue. The coloring became more and more elaborate until under Luca's grandson Giovanni, it was at times crude. The Robbia school was the great representative of religion in the Italian sculpture of the Renaissance, as Fra Angelico and the Sienese artists were in painting.

MADONNA AND CHILD WITH ANGELS

In Via dell' Agnola, Florence, by Luca della Robbia. A beautiful lunette, in glazed terra cotta with figures of singular simplicity, directness and purity, mainly white and blue.

As the culminating work of the early Florentine school came the very greatest equestrian statue the world has seen, the Bartolommeo Colleone in Venice by Andrea del Verrocchio, the *beau ideal* of a fearless Renaissance adventurer or *condottiere*. It is in every way superior to the Marcus Aurelius, its only antique rival. Horse and man are one and full of force and life.

EQUESTRIAN STATUE OF COLLEONI

At Venice, by Andrea del Verrocchio. It was finished by Leopardi, and is the greatest equestrian statue in the world. It is vibrant with energy and personality.

However, the days of masterpieces passed away for a short time, even the men who led the Florentine school just before Michelangelo, such as Sansavino and Rovezzano were second-rate men.

Michelangelo was essentially a plastic genius. It is evident even in his works of architecture and painting. He was more original and varied than Donatello, in his conceptions if not in his style. We might call him the Browning of Sculpture so difficult is it sometimes to explain him, so subtle and wise is his thought. He cut himself lose from traditions and schools. At first he steeped himself in classic sculpture and imitated it so well in his Faun as to deceive the best critics. Then he passed through a phase of normal religious themes, as we see in his *Pieta* at St. Peter's, where the highly-finished surface is also a passing phase in his technique, which affected afterward greater sketchiness. Michelangelo reached the full realization of his colossal talent in two works: the tomb of Pope Julius II, which was never completed, and of which the famous powerful statue of Moses belongs; and the monuments of the Medici at S. Lorenzo in Florence, of which the tombs of Guiliano and Lorenzo were almost finished. We have in these works primitive, elemental sculpture used to convey generic ideas of life and death. The mystery that has enveloped the reclining figures that we call *Dawn* and *Twilight, Day and Night*, has been continuous since the day of their execution. The Lorenzo, popularly called *"Il Penseroso,"* is far more than a portrait, it is brooding introspection. No artist before Michelangelo had so openly played with the human form, and yet none had been so completely an idealist. His heads, especially the David, the Brutus, the Lorenzo make an undying and vital appeal.

After him, the Decadence. Benvenuto Cellini, to be sure, was an extraordinary technician. His *Perseus* with the head of Medusa shows that he could produce other things than the works of delicate and decorative beauty for which he was famous. Baccio Bandinelli was an inflated and debased follower of Michelangelo's Baroccio mood. Giovanni da Bologni had better taste and was the last classicist of any merit.

France.—Though Italy certainly overshadowed the rest of Europe during the Renaissance, a great deal of interesting sculpture was produced in France, and its national character is now being more clearly seen. Its greatest representative was Jean Goujon (1520-1566), whose influence transformed the French school, combining with it characteristics both Italian and Flemish. His most famous figures are the water nymphs for the Fountain of the Innocents, in Paris, and the Diana of the Fountain for the Chateau at Anet. There is a touch of artificiality in pose and drapery, a self-conscious grace that is not at all disagreeable. His predecessor, Michel Colombe, was more classic and truly graceful, and his work, while quite different from the Italian style, is more closely related to it. There is a great deal of picturesqueness and atmosphere to his relief of St. George fighting the Dragon made for the Chateau of Gaillon. Another and somewhat later master, Germain Pilon, left masterpieces in the tombs of Francis I. and Henry II. at St. Denis. So also did Jean Juste in his tomb of Louis XII.

TOMB OF LOUIS XII.

At St. Denis, by Jean Juste, of Tours. One of the finest royal tombs at St. Denis whose sculptures have escaped destruction.

Germany. — The German Renaissance hardly ever reached a high level. Something seemed to prevent its sculptors from passing beyond a rather commonplace naturalism. The one great exception was

MOSES

By Michelangelo, now in S. Pietro in Vincoli, Rome. Designed to adorn the tomb of Pope Julius II., intended to be erected in St. Peter's. It is an extraordinary expression of the sublime and terrible.

Peter Vischer (1460-1529) whose beautiful shrine of St. Sebald at Nuremberg, with its beautiful apostles shows Italian influence, while his colossal bronze statues of Kings Arthur and Theodore at Innsbruck are quite original and deserve to take their place beside the Gothic *St. Theodore* and Donatello's *St. George.*

KING ARTHUR

By Peter Vischer, in the **Hofkirche**, Innsbruck. One of a series of bronze statues surrounding the tomb of the Emperor Maximilian. A splendid example of the armored knight.

It is curious that in all Germany, Austria and the Netherlands there is so little during the fifteenth and sixteenth centuries that is at all notable, considering that so much was produced in mere quantity: carved portals, statues of the Cross, altarpieces, sepulchral monuments. It is a national trait that wood should then be preferred to stone or marble by most sculptors.

Modern—The seventeenth and eighteenth centuries were a rather futile period for sculpture. The spirit of the Renaissance was dead; the modern spirit not yet born. There was nothing real or simple in art; all was artificial and exaggerated and designed to display technical virtuosity. Bernini (1598-1680) led this Baroccio style in Italy; Girardon (1628-1715) and Puget (1622-1694) in France. Draperies were inflated, attitudes pronounced, compositions over-dramatic. The vision of St. Theresa by Bernini is more characteristic of him and of the mawkish religious sentimentality of the age than his classic pieces, and the same is true of Girardon's monument to Richelieu. Puget's Milo of Crotona introduced the Baroccio manner even into classic themes. Finally, the finicky preciosity so characteristic of the age of Louis XV. is embodied in such works as the statue of the Marechal de Saxe by Pigalle (1714-1785) at Louvre.

One may perhaps date the real beginning of modern sculpture at the French Revolution, and preface it with Houdon's vivacious figure of *Voltaire*, its prophet. It was at first largely characterized by a neo-classic revival, necessarily artificial because it had no connection with the age. Its leaders were the Venetian Canova and the Dane Thorwaldsen. Canova's influence became universal. Rome inspired them all.

Canova was an unusually prolific artist. Of his many works the early *Cupid and Psyche* and the *Pauline Borghese* as Venus are especially famous and illustrate his charm of line and softness of texture. The essential coldness of his style, however, kept his art from becoming great.

PAULINE BORGHESE

By Canova, in Borghese Palace, Rome. Here Napoleon's sister is represented as Venus, reclining on a couch, slightly draped. This famous statue caused a great sensation as a combination of portraiture and mythology.

VOLTAIRE

By Houdon, in the Theatre Français, Paris. A superb character study, superior to anything since the Italian Renaissance.

Thorwaldsen showed dependence on the antique even more literal and more Hellenic. His frieze at the Quirinal in Rome shows that he was as accomplished in relief work as in statuary. Dannecker spread the new style in Germany; witness his *Ariadne* at Frankfort. Flaxman did the same in England, though his famous *Michael and Satan* shows independence in the selection of non-classic themes. Sculpture as the real reflection of the age had, however, its representatives, and grew stronger every decade. On the Arc de Triomphe in Paris, the stupendous group embodying the French Revolution, known as the *Chant du Depart* and the *Marseillaise*, is a work of vital drama by Rude, himself a part of the Revolution. A similar quality appears in his pupil Carpeaux (1827-1875), whose vital force is best expressed in the group of the *Spirit of the Dance* (1869) at the Opera in Paris. Barye (1795-1875) also came with his wonderful interpretations of animal life, so familiar to Americans. One had to go to Assyria to find anything approaching his varied sympathy with the brute creation. There was nothing corresponding to this movement in Italy.

CENTAUR AND LAPITHA

In bronze, by Barye, in the Louvre, Paris. A fine mythological composition exhibiting his genius as a sculpture of animals. Barye has been called the "Michelangelo of Wild Beasts."

Germany soon threw off neo-classicism and produced a Schadow (1764-1850), who almost established a national type in his statue of Leopold. Another fine example of Schadow is his *Queen Louise and her Sister*. Then came Rauch (1777-1857) whose statues are perhaps the finest in Germany; especially his *Maximilian I*, at Munich and his *Frederick the Great* at Berlin. His pupil Reitchel (1804-1861) was an excellent artist but did not reach his master's level, though his statues of *Lessing* (Brunswick) and *Luther* (Worms) and his *Pieta* at Potsdam show more sentiment.

QUEEN LOUISE AND HER SISTER

By Schadow, in the National Gallery, Berlin. A fine example of the neo-classical of which Schadow was a brilliant representative in Germany.

Recent Sculpture—France has been the leader in the last two generations. National schools of sculpture have long since died, so far as style is concerned; the art is becoming rapidly international, and France has struck the key-notes. There has been the greatest variety in her styles. Dubois with his *Florentine Singer* and his *St. John*; Mercie, with his *David* and his *Thiers* are governed by the spirit of the Tuscan Renaissance, except that Mercie goes deeper into modern feeling. Fermiet seems a reincarnation of the playful spirit of the late Greek genre masters of

EQUESTRIAN STATUE OF VELASQUEZ

In bronze, by Fremiet, in the Louvre, Paris. A famous example by the nephew of Rude, the sculptor of the Arc de Triomphe. A very vivacious composition.

the Alexandrian age. His equestrian statue of Velasquez is one of his most representative works. Another sculptor of high rank is Chapu (1833-1891,) whose *Joan of Arc* has been placed in the Louvre.

JOAN OF ARC AT DOMREMY

By Chapu, in the Louvre, Paris. A notable study by this distinguished representative of modern French eclecticism.

Dalou sometimes suggests a combination of Rubens and the classic side of Greek art, as in his *Triumph of Silenus*, sometimes embodies present day realities as in his *Mirabeau*. He is the greatest of the modern men except Rodin.

With Rodin we reach the ultimate break with the academic school, with all traditions and all recurrences to past types. He is as naturalistic as Donatello in his ugly beginnings; as primeval as Michelangelo without the Italian's idealism. His *Kiss* as an embodiment of passion, his *Thinker* as the ruminant spirit of brute force about to spring, are extraordinarily original and full of power. His ill-balanced and extreme individualism make his works very uneven. His is in sculpture what Zolo aimed to be in literature. One may say that Bartholomé strikes a similar note in his extraordinary composition for the Pere-Lachaise cemetery (Paris) with a nude human maid entering a sort of Egyptian tomb, while a writhing mass of grief-stricken figures, that seem transferred from Dante's *Inferno* are grouped outside, flung together with complete lack of restraint.

One hesitates to compare with these giants the modern English sculptors such as Thornycroft (The Mower), Onslow Ford (statue of Henry Irving, Dancing) and Gilbert, so academic in their productions.

America has at last entered the arena with distinction. The neo-classic revival was responsible for the earlier men who flourished in or before the middle of the nineteenth century. Powers' (1805-1873) Greek slave, so reminiscent of Canova is its best known single work. But Crawford (1813-1857) succeeded in infusing something of America in his *Indian mourning the decay of his race.* These men lived and studied in Rome. So did W. W. Story (1819-1896) whose statues did not rise above cold mediocrity.

Rhinehart's (1825-1874) seated statue of Justice Tancy, at Annapolis and Baltimore, is something which we can safely praise for its naturalness and dignity. Another expatriate to Rome, Moses J. Ezekiel, has gone over to the neo-classicists. The former dean of American sculptors, J. Q. A. Ward (1830-1910), who recently died never joined the new movement, which is embodied in various forms: in Herbert Adams whose charming busts are a Franco-American variation on the Lombard Renaissance; in F. W. MacMonnies, whose style is full of prose, vivacity and expansiveness and quite Neo-Alexandrian; in D. C. French whose style is more personal and self-conscious; and especially in Augustus St. Gaudens, whose death removed the greatest sculptor we have yet developed, a man of originality and force. His Shaw monument in Boston is full of intensity and real motion, his *Puritan* in Springfield is a real representative of New England; his equestrian statue of General Sherman is interesting to compare with Fremiet's *Joan of Arc*, in Paris, and Rauch's *Frederick the Great*, in Berlin.

Among the younger sculptors the most ambitious is George G. Barnard, whose work has been done in France. His colossal groups of the *Life of Humanity* for the state capital at Harrisburg were exhibited in Paris before being sent to this country.

PAINTING.—While it is probable that men made use of color and design in some rude way since the earliest times, the first authentic records of painting are met with in Egypt, as far back as the third or fourth Memphitic dynasty of kings, the date, which is quite uncertain, being somewhere near 3,500 B. C. and it is at Memphis, in Lower Egypt, then the seat of empire, that are found the earliest and best examples consisting chiefly of decorations on tombs and mummy cases. This was before the later conventional types were represented, and consisted of domestic scenes rendered by flat, shadowless methods yet still with better drawing and more variety than appeared later.

In the Theban period of the nineteenth dynasty, a time of temple and palace building, the painting of tombs and sepulchres continued, along with the decoration of walls. It was graceful, somewhat monotonous, and rather the work of the skilled craftsman, than that of an artist expressing his emotions, or finer feelings. As the country lost in military and political power, the art declined and, coming in contact with Greek methods, grew imitative, finally being quite lost in the art of the Greco-Roman world. Early Egyptian paintings still exist, curiously enough, in an almost perfect state of preservation in many of the tombs, and there are examples in the Ghizeh museum, as well as in many of the great European and American art museums and the New York historical society.

Chaldaeo - Assyrian Painting was the original work of an original nation. Chaldæa, of unknown antiquity, had Babylon for his capital. There are records of its work dating approximately from 1,400 to 625 B. C. Religion had little part in the art. Painting then was largely a history and glorification of the reigning family. There were only two types of faces, one with and the other without a beard, and the painters rendered animals far more sympathetically than they did mankind. Their color was arbitrary not natural, with prevailing tones of blue and yellow. Painting, as the art is known today, was not practiced in Chaldæa-Assyria. There are valuable collections of the work in the Louvre, Paris, and the British museum, London.

Early Persian Painting was but an echo of the Assyrian. For the work of the Greeks, we have to rely mainly on the writings of early authors which are confusing. Their painting was upon pottery and they did mural decorations in distemper. Light and shade were used on the figure though not in a modern way. They had notions of perspective, both in the landscape and the figure; the first was rendered in a symbolic manner and though color was used in abundance, it was limited to leading hues.

The earliest period of Greek painting is known as the Older Attic school, of whom Polygnotus, flourishing between 475-455 B. C., is said to have been the founder. His most important works were wall paintings for the assembly room of the Knidians at Delphi, relating to the story of the Trojan war. A scene painter named Agatharchon was working toward the end of the fifth century, B. C. He made investigations in the laws of optics which was an advance toward nature, and another man, Apollodorus, of the same period, according to such writers as Plutarch and Pliny, was the first to discover variations in shades of color, as well as to paint objects as they appeared. After the Peloponnesian wars and Athen-

ian loss of supremacy, other schools sprang up, Ionian, Sikyonian, and Theban-Attic. There are few remains extant. Four slabs in the Naples museum have on them red outline drawings from which the color has scaled, but there are many Greek vases with paintings on them of various sorts, generally monochromatic work that still remains as complete as when first painted.

Roman Painting followed rather slavishly Greek methods, originating little if any, though it assumed perhaps, a more decorative quality and what has been preserved is more the work of mechanical decorators than men with large creative faculties. The name of Fabius Pictor (300 B. C.) is celebrated in historical painting, and in portraiture there were in the last century of the republic, Sopolis, Dionysius and Antiochus, the latter the most famous. Rome and Naples contain many specimens of mural work of this time and the great museums have examples, while there are some in America. Ancient painting practically ends with the destruction of Pompeii, A. D. 79.

Italian Painting—200-1250 A. D. Christianity came out of the decadent civilization of the Roman empire, was to change its art as it did all other things and, during its time of persecution, art struggled on feebly, starting Roman in form, but ending Christian, and its two principal motives were religion and decoration, the first being of the greater importance. The walls of the Catacombs in Rome contain the earliest Christian painting, in chronology very much mixed, and with degeneracy from the beginning; but with Constantine, Christianity being recognized as the national religion, it came out of the Catacombs and gave itself over to illuminations, church decoration and mosaics, declining during the sixth and seventh centuries, due to the influence of Byzantium. In 1250 came an awakening. From then to 1400, known as the Gothic period, though Italy was torn by political wars, art became the servant of the church and the chief theme was the Bible story. Work during this period was executed in fresco on the walls of churches.

The Florentine School.—Cimabue is a notable example of a man trained in the Byzantine methods, who improved upon the traditions. He gave more life to his figures than had his predecessors and his most eminent pupil was Giotto (1266?-1337) whose art was the best of its time. A half a century later, Fra Angelico was born (1387-1455) the last inheritor of the Giottesque traditions, whose religious sentiment was the strong feature of his art. He was the last of the great religionists in painting. The early Renaissance in Italy was from 1400 to 1500 and then painting became the color thought and form-language of the people. A revival of antique learning took place and after the fall of Constantinople, there came an influx of Greek scholars into Italy. Masaccio (1401?-1428?) was the first great nature-student of the early Renaissance and, in the front rank, a monk, Fra Filippo Lippi (1406-1469) who was possibly his pupil was at least his legitimate successor. He was the first to use the faces of the people about him as subjects for his religious characters, clothing them in the garb of the day, and his tendency was to materialize his sacred characters.

In Botticelli and Ghirlandajo (1449-1494) we find traits of imagination and originality not surpassed by others of the early Florentines. The first was a pupil of Lippi and a man of deep religious feeling. His figures, always tall and willowy are delicate and refined in drawing and full of tenderness and grace. Ghirlandajo was the greatest technician of his time, drawing wonderfully and composing well, though occasionally his results were somewhat prosaic, even if he was an undisputed master of his trade. Perugino, Leonardo da Vinci and Lorenzo da Credi were the distinguished pupils of Verrocchio (1435-1488), the greatest being di Vinci (1452-1519), whose *Last Supper* in Milan, and *Mona Lisa* at the Louvre, in Paris, are among the most famous paintings in the world. He was as well a distinguished mathematician, a scientist and a man of many attainments. Piero di Cosimo was of this period (1462-1521), a painter of classical and mythological themes.

LAST SUPPER

Painted by Leonardo da Vinci, 1496-98, in the Refectory adjacent to the Church of Santa Maria delle Grazie, Milan. In force of conception, harmony of detail, and delicacy of touch, this is among the finest work ever painted. Through the ravages of time little now remains of the original.

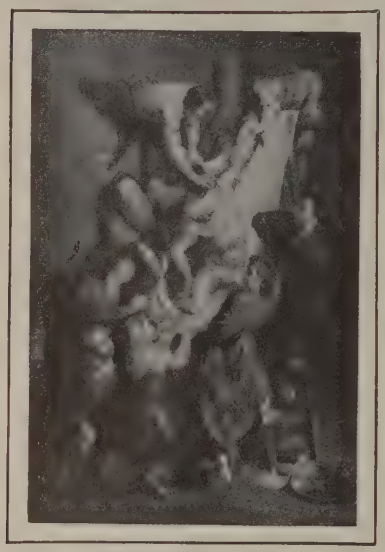
The Umbrian and Perugian Schools included Foligno (1430-1502), Piero della Francesca (1420-1492), and Signorelli (1441 1523). Finally, there was Giovanni Santi, (1434-1494), the father of Raphael. Perugino (1446-1524) showed more of the old religious feeling, his sentiment was very human, his compositions were graceful and his color was rich. He was among the first to employ the medium of oil in his painting. He had as pupils Raphael and Lo Spagna (1530?). Pinturricchio (1454-1513) did not use oils, but his frescoes were unusual in their artistry and charm, in their effectiveness and masterly qualities. He was a varied and interesting painter. In the schools of Ferrara and Bologna, were Cosimo Tura (1425-1498?), Francesco Cossa (1450-1536), and Lorenzo Cossa (1460-1536?), Francis (1450-1518) and Ercole di Giulio Grandi (1531?). Of the Lombard schools may be mentioned Vincenzo Foppa (1455-1492) and Borgongnone (1523?).

The Paduan School, the greatest representative of which was Andrea Mantegna (1431-1506), a pupil of Francesco Squarcione (1394-1474), a good teacher, but an indifferent painter. Mantegna however was a deep student of nature, one of the greatest of the early Renaissance and was scientific in his perspective. Other men were Pizzolo (about 1470) and Marco Zoppo (1445-1498). In the schools of Verona and Vicenza were Vittore Pisano, called Pisanello (1380-1456), the earliest of note; Liberale da Verona (1451-1536), Francesco Bonsignori (1455-1519), Francesco Caroto (1470-1546) and perhaps best of all, Bartolomneo Montagna (1450?-1523). The Venetians, being of a worldly spirit demanded a similar art. Their painting was largely decorative and colorful and its early manifestation, in the fifteenth century, was in the making of mosaics and altar pieces after the Greek or Byzantine manner. Of this date was Jacobello del Fiore, and Semitecolo Gentile de Fabriano, painting with Pisano as assistant in the Ducal Palace about 1420, was possibly responsible for a change in Venetian art. He taught there and was possibly the master of two Vivarinis, Antonia and Bartolommeo (1450-1499?). The latest of the family was Luigi Vivarini (1461-1503). A pupil as Carlo Crivelli (1430?-1493).

Venetian Painting dates from the Bellinis, two families working about the same time. Jacopo Bellini (1400-1464?), his two sons Gentile (1426-1507?), and the greatest of the family, Giovanni Bellini (1428-1516?) made a strong trio. The last named was the epoch making man of early Venice, being superior to all his contemporaries in technical strength. He had many followers. Other men were Carpaccio (-1522?), Cima da Conegliano (1460-1517?), Catena (-1531?), Basaiti (1490-1521?), Previtali (1470-1525), Bissolo (1464-1528), Rondinelli (1440-1500?), Diana (-1500?), Mansueti (about 1500) and finally Antonello da Messina (1444-1493?). Messina it was who introduced the use of oil medium in Venice, having learned it from the Van Eycks, the Flemish painters who discovered it. He was an excellent portrait painter. A Florentine painter was a monk of San Marco, Fra Bartholommeo (1475-1517), follower of Savonarola, the last of the pietists in art, who worked in collaboration with Albertinelli (1474-1515), in the workshop of Cosimo Rosselli. Other men; Fra Paolino (1490-1547), Bugiardini (1475-1554), Granacci (1447-1543), and Ridolfo Ghirlandajo (1483-1561). Andrea del Sarto (1486-1531) called 'the faultless painter" was the best draughtsman and colorist of the Florentine school, painting many madonnas and altar pieces. He had many pupils, most of whom deserted him later to follow Michelangelo. The best of these were Pontormo (1493-1558) and Franciabigio (1482-1525).

Michelangelo (1475-1564) was the great artist of the Renaissance. His long life was a succession of triumphs and he is universally acknowledged as the greatest man in art in the world's history. More sculptor than painter, a magnificent

draughtsman, a master of composition, Michelangelo Buonarroti, to give him his full name, was born at Castle Caprese, a small town near Florence, on March 6, 1475. At thirteen he was apprenticed to the painters Domenico and Ghirlandaio. Pope Julius II. commissioned him to paint in fresco the Vault of the Sistine Chapel in the Vatican, and it was for Pope Paul II. that he did his *Last Judgment* which was almost the last work in painting he was called to undertake, though later he did do two frescoes in the Pauline chapel of the Vatican. In addition to being sculptor and painter, he was an architect, engineer and poet, and the great dome of St. Peter's was raised from his plans. His *Last Judgment* contains no less than 314 figures and was the labor of over six years. He was the supreme master of Italian art. Among his immediate followers;—Daniele da Volterra (1509-1566), Marcello Venusti (1515-1585?) and Sebastiano del Piombo (1485-1547), the last a remarkable portrait painter.



DESCENT FROM THE CROSS

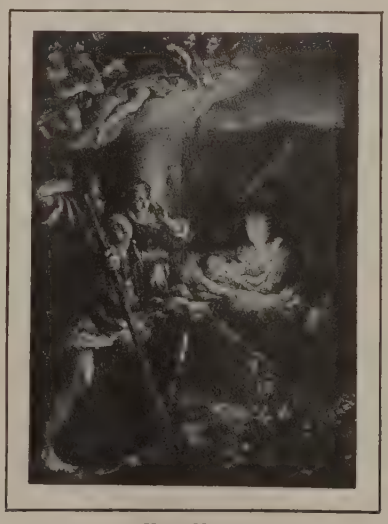
The masterpiece of Volterra, now in the Church of Triniti de Monti, Rome. Considered by Poussin one of the three great pictures of the world, and by Lanzi as among the finest pictures of Rome. Volterra was the most successful follower of Michelangelo.

Raphael Sanzio (1483-1520) often has been called "the Harmonist of the Renaissance", the very opposite of Michelangelo, a very personal painter, of grace, purity, serenity and loftiness, whose themes were religious and mythological, rendered in a calm, intellectual manner. The European galleries are full of his works among the most prominent of which are *The Sistine Madonna,* at Dresden; *Marriage of Virgin Brera,* at the National gallery, London, *Madonnas St. Michael and St. George,* at the Louvre, Paris, and many more. His influence was largely felt and he had many followers and imitators, among them;—Francesco Penni (1488-1528?), Giulio Romano (1492-1546), Primaticcio (1504-1570), Giovanni da Udine (1487-1564), Perino del Vaga (1500-1547), Andrea Sabbatini (1480-1545), Innocenza da Imoli (1494-1550?) and Timoteo di Viti (1469-1523). Bernardino Luini (1475-1533?), was a follower of da Vinci, and other men of that school were Salaino (1495-1518), Beltraffio (1467-1516), Marco da Oggiono

SISTINE MADONNA

Painted by Raphael for the monastery of San Sisto, Piacenza, Italy; hence its name. It is now in the Dresden Gallery, and is regarded by many critics as the FIRST painting in the world. No work compares with the beauty, dignity and grandeur of the Virgin, and the two enchanting angel boys, leaning on the lower division of the picture, give the last touch of beauty to this magnificent work. On the left is Pope St. Sixtus, on the right St. Barbara.

(1470-1530?), Solario (1458-1515?), Giampietrino (1520-1540), Cesare da Sesto (1485-1523) and Gaudenzio Ferrara (1481-1547?). One of his best pupils settled in Sienna. He was Sodoma (1477-1549?) and he built there a new school though its influence was slight. Among Sodoma's followers;—Pacchiarotta (1474-1540?), Girolamo della Pacchia (1477-1535), Peruzzi (1481-1536) and Beccafumi (1488-1551). Men of the Ferrara and Bolognese schools feeling the influence of Raphael were;—Dosso Dossi (1479-1542), Garofolo (1481-1559), Mazzolino (1480-1528?) and Bagnacavallo (1484-1542).

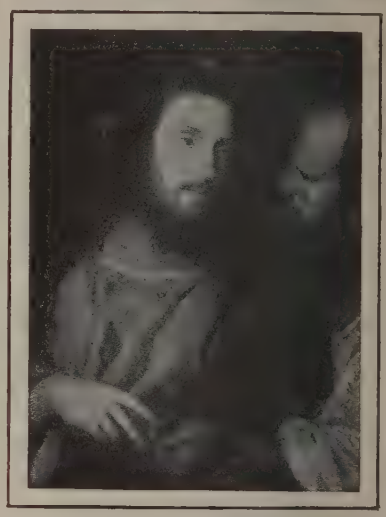


HOLY NIGHT

A famous example of the poetry of light and shadows by Correggio, now in the Dresden Gallery. The picture is a portrayal of the scene of the Saviour's birth: "But on a sudden the cloud became a great light in the cave, so that their eyes could not bear it. But the light gradually decreased, until the Infant appeared."

Antonio Allegri, more commonly called Correggio, was born near Mantua in 1494. A writer has called him "the Faun of the Renaissance." His appeal was sensuous and artistic rather than religious, historical or intellectual. He is said to have formed his style on that of Mantegna. He painted many religious and mythological subjects as well as some famous pictures of "Leda and the Swan," and he was more allied to the schools of Venice than with the severer intellectual schools of Florence. He had the most delicate perception of light and shade and his figures are endowed with every human charm, æsthetic perfection obviously having been his sole aim. He died March 5, 1534. Among his pupils who however did him small credit, were;—his son, Pomponio Allegri (1521-1593?), Michaelangelo Anselmi (1491-1554?) and Parmigianio (1540-1540).

The Venetians.—Beauty of color was the note of the school of Venice adopted by the artists of the sixteenth century there. The light and shade on the nude figure, the pre-



THE TRIBUTE MONEY

Painted by Titian, and in Dresden Gallery. One of the highly prized pictures of that gallery, perfect in finish and detail, bringing out the illimitable contrast of soul between Christ and the crafty Pharisee. It has for ages given a new meaning to Christ's answer: "Render therefore unto Cæsar the things that are Cæsar's; and unto God the things that are God's."

sentation of rich brocades, the richness of robe of adornment, the fullness of material life, the portrayal of the glories of a nation given to display held these men. The work of Giorgione had a great influence on his contemporaries. He was born in 1477 and died at the age of thirty-four. He adopted the oil medium, then little known and he introduced scrumbling and glazing to produce depth of color. Easily the first painter in the whole range of Italian art was Tiziano Vecelli, known as Titian (1477-1576), a pupil of Bellini. He lived ninety-nine years and worked to within a few months of his death, having been famous and practically independent since his thirty-fifth year. His theme was humanity whether in classical or religious compositions and his art dignified all who sat to him for in himself he was an epitome of all the excellences of painting.

Tintoretto (1518-1592), was a fecund worker, a great draughtsman, a fine colorist and a master of light. Paolo Veronese (1528-1588), the fourth of this quartette of

the great Venetians was a brilliant colorist and a decorative painter of the highest order. He turned scenes from scripture and legend into pageants of Venetian glory and his art was the most gorgeous of all his contemporaries. Other men of the school;—Palma il Vecchio (1480-1528?), Lorenzo Lotto (1480-1556?), Rocco Marconi (1505-?), Pordenone (1483-1540), Bonafazio Veronese (-1540?), Paris Bordone (1495-1570), Jacopo Bassano (1510-1592) and his son Francesco (1550-1591). From Venetian territories were;—Savoldo (1480-1548?), Romanino (1485-1566), Moretto (1498-1555?) and his pupil Giovanni Moroni (1520-1578), who was a masterful painter of portraits and a prolific workman. It is said Titian used to send clients to him. At Verona were Girolamo dai Libri (1474-1555), Torbido (1486-1546?) and Cavazzola (1486-1522).

Decadence of Italian Art.—From the first of the seventeenth century, Italian art began its decadence. Men became imitators and art may be said to have been under the rule of the Jesuits. The decoration of the churches was continued, but in a more or less perfunctory manner and without the serious piety of previous times and though there were earnest men among the artists, the spirit had fled. Agnolo Bronzino (1502-1572?) was an imitator of Michelangelo, as were Vasari the art writer (1511-1574), Salviati (1510-1563) and Federigo Zucchero (1543-1609). Baroccio (1528-1612) was an imitator of Raphael. The family of Caracci, in about 1585, sought to revive art. There were five of the Caracci, three of whom led the school: Ludovico (1555-1619), Agostino (1557-1602), and Annibale (1560-1609), the last being the most famous. Among their pupils was Domenichino (1581-1641). Guido Reni (1575-1642) ran to excessive sentiment and pathos. Other men were:—Albani (1578-1660), Guercino (1591-1666), Sassoferrato (1605-1685), Carlo Dolci (1616-1686), Cristofano Allori (1577-1621), Berrettini (1596-1669) and Maratta (1625-1713).

Neapolitan School of Naturalists.—The Neapolitan school of Naturalists was led by Caravaggio (1569-1609), who represented sacred themes by employing models from the street life about them and their use of dark shadows caused them to be referred to as the "Darklings." Other men;—Giordana (1632-1705) and Salvator Rosa (1615-1673). Among the late Venetians were Palma il Giovine (1544-1628), and Padovanino (1590-1628), while the last great Italian painter was Tiepolo (1696-1770), who with an art founded on that of Paolo Veronese, produced decorative ceilings and panels of rare beauty of color and charm. He left a son, Domenico Tiepolo (1726-1795). Two painters of Venetian canals and architecture were Canaletto (1697-1768) and Guardi (1712-1793).

Modern Italian Art has been notably without any of the grand elements that characterized the earlier workers. It has been mainly perfunctory and clever, the names of Michetti, DeNittis, Favretto, Tito, Nono and Simonetti standing rather for brush facility than any deep thought. Exception may be made in favor of Giovanni Segantini (1858-1899), an astonishingly original and personal painter who made many pictures of the high Alps and the peasantry, in a manner entirely his own, with long brush strokes of interesting pigments in effective juxtaposition. An admirable draughtsman and a master of composition, his pictures are full of allegory and human interest.

French Painting has always been strongly decorative. As early as the fifth century the artists produced mural paintings. Byzantine influences were at work in the eighth century, while in the eleventh, twelfth and thirteenth centuries, stained glass work appeared, and many missal paintings and furniture decorations. René, of Anjou, King of Naples (1409-1480), was a painter of considerable merit who gave an impetus to art, his work showing Italian influence. A contemporary was Jean Fouquet (1415-1480?) who did illuminations and painted portraits. His pupils were Jean Pèreal (-1528?) and Jean Bourdichon (1457-1521?) who formed a school at Tours. Four members of the Clouet family were painters, the most noteworthy being Jean (1485-1541?) and Francois (1500-1572?). They painted portraits, and the latter was said to have been a pupil of Holbein whose work his own resembled. Francois I. having during his travels invited many Italian painters to his court, their influence was felt on the French work. Jean Cousin (1500-1589?) and Toussaint du Breuil (1561-1602) were thus impressed.

THE BROKEN PITCHER

Painted by Greuze, and now in the Louvre, Paris. The most celebrated picture by this artist; nor has any been so often copied. This young girl, so naive and charming, has captivated the public taste from the time she was first painted down to the present day.

The Seventeenth Century discloses great development as well as production. It was the time of the founding of the French Academy of Painting and the formation of many collections. Among the earliest men of that century was Fréminet (1567-1619), as well as Vouet (1590-1649), both having studied in Italy. Nicolas Poussin (1593-1665), a Frenchman who spent most of his life in Italy, was the founder of the classic and the academic in French art, and he was strong in heroic landscapes. A more famous landscape man however was Claude Lorrain (1600-1682). He was perhaps the first one to get something of the truth and light of out-of-doors. With Louis XIV. French art took on a national character. Lebrun (1619-1690) was court painter and flattered his patron. LeSeur (1616-1655) was better and more sincere. Sebastian Bourdon (1616-1671) was a painter of history, and the leaders of portraiture were; Philip de Champaigne (1602-1674), Pierre Mignard (1610-1695?), Largilliere (1656-1746) and Rigaud (1659-1743). The frivolities of the times were responsible for the themes given out by Antoine Watteau (1684-1721), who may be said to have been the first great French painter. His work was original, decorative, of great brilliancy and charm. His best pupils were; Lancret (1690-1743), and Pater (1695-1736). Later came Van Loo (1705-1765), Boucher (1703-1770) much after the manner of Watteau, and Fragonard (1732-1806). Claude Joseph Vernet (1712-1789) was a painter of landscape and marines, Chardin (1699-1779), painted genre themes of humble life and the name of Greuze (1725-1805) is associated with sentimental heads of young girls, executed with dexterity and cleverness, works as a rule, of much charm.

French Classicism was a strong protest against the flippant and licentious art of such men as Boucher and Van Loo and which, in a way, was a revival of Greek form in art, came in first with Vien (1716-1809), and was carried on by his pupil David (1748-1825), who became the leader of the school. David painted military pictures after having studied the marbles at Rome, and he reproduced scenes from Roman and Greek life in an elevated and sculpturesque style. His portraiture was admirable. A friend of the Emperor Napoleon I. he reigned a long time as the supreme authority on art. His drawing was faultless though his color was hard and unsympathetic. His best pupils were; Jean Baptiste Regnault (1754-1729), Vincent (1746-1816), and Prudhon (1758-1823), whose themes were mythological and allegorical. Others were; Girodet (1766-1824), Léthiere (1760-1832), Guérin (1774-1833), and Gerard (1770-1837).

The most distinguished of the pupils of David, were Jean Ingres (1780-1867) and Jean Gros (1771-1835). In single figures and portraiture Ingres was at his best for he was a remarkable draughtsman who gave his greatest attention to form and line to the subordination of color and emotion. Gros too, was a superlative draughtsman with a strong sense of realism at the beginning and a deep love of color, light and air. In his art we may find the beginnings of the school of romanticism, a movement in French art that began in the early part of the nineteenth century. Landscape art of the time of Ingres continued along the traditions of Claude and Poussin. Its exponents were; Watelet (1780-1866), Bertin (1775-1842). Michallon (1796-1822), and Aligny (1798-1871). Madame Vigée-Lebrun (1755-1842) stood apart from contemporary influences and was a successful portrait painter, royalty and nobility sitting to her. Similarly Horace Vernet (1789-1863) painted battle scenes successfully, irrespective of any classic influence.

The Realists. With a famous picture, *The Raft of the Madusa*, Géricault (1791-1824) broke completely away from the traditions of the classic. It was realism so uncompromising that France was divided into two parties as far as the artists were concerned. Géricault dying young, his fellow pupil Delacroix (1799-1863) continued the new movement and his picture *Dante and Virgil*, created scarcely less of a sensation than *The Raft of the Medusa*. Other men of this period were; Deveria (1805-1865), Champmartin (1797-1883), Sigalon (1788-1837), Cogniet (1794-1880), Robert-Fleury (1797-?), Boulanger (1806-

SUNSET

Painted by Theodore Rousseau, and now one of the glories of the Louvre, Paris. This masterpiece, writes Sensier, "gives all the forceful harmonies, the forms, the accents of the autumn day upon the border line of a wood; the sun of gold and rubies throws its last flames in a sheaf of brilliant light." It was painted on the outskirts of the Forest of Fontainebleau.

1867) and Delaroche (1797-1856). Acy Scheffer (1797-1858), Dutch born, became identified with French art, but he was not among the great, his merit being rather poetic charm than individuality. Decamps (1803-1860), was among the first of the French painters to visit the Orient. Others going there were Marilhat (1811-1847), Fromentin (1820-1876), who wrote as well as he painted, and later, Gérome (1824-1904) and Cabanel (1823-1889). Other men of the time: Flandrin (1809-1864), Gleyre (1806-1874), Hamon (1821-1874), Aubert (1824-) and Couture (1815-1879), the last a mingling of several influences. His large picture, *The Romans of the Decadence*, made him famous in a day and was a departure in semi-classic realism.

The Barbizon School.—The year 1830 saw a new school of landscape art in France, the result of the study of the old Dutch landscapists and the Englishmen Constable and Bonnington, culminating in the Fontainebleau-Barbizon school of which the leader was Theodore Rousseau (1812-1867), undoubtedly the greatest landscapist of the century. Corot was earlier (1796-1875), a painter of great poetic charm and delicacy, his work being in a light, silvery key. Others of this group were: Jules Dupré (1812-1878), Diaz (1808-1876), Daubigny (1817-1878), Francais (1814-), Cazin (died 1901), Pelouse (died 1890) and Harpignies, the last still living at the age of ninety-one. Animal painters of this epoch were Troyon —the greatest—(1810-1865), Van Marcke (1827-1890), his pupil, Jacque (1813-1890), Rosa Bonheur (1822-1899) the famous woman painter, and her more talented brother, Auguste (1824-1875). Jean Francois Millet (1814-1875) was the figure painter of the Barbizon group, rendering the peasant life about him with

OXEN PLOWING

Painted by Rosa Bonheur, and now in the Luxembourg, Paris. As an animal painting, this picture stands second to none. The character given to these patient oxen, and the natural beauty of the plowed field have never been surpassed.

DANCE OF THE NYMPHS

Painted by Corot in his most characteristic style—and of idyllic grace and poetic softness. Light and air were the two great essentials of his art. It is here in all its perfection, with the added troop of Nymphs with which he was often wont to people his landscapes. This picture is hung in the Louvre, Paris.

rare fidelity and force. Another, though not a follower, was Jules Breton (1827-1906). Billet, Legros and Lerolle are other figure men still living. Decorative painters of this epoch were Paul Baudry (1828-1886) and Puvis de Chavannes (1824-1898) the last one of the greatest of modern men whose mural work in the Sorbonne, and at the Boston Museum of Art is world-famous. Other men: Hebert (1817-), Henner (1829-1905), Lefebvre (1834-), Bonnat (1833-), the portraitist Carolus-Duran (1837-), Laurens (1838-), Cormon (1845-), Benjamin-Constant (1845-1902) and Henri Regnault (1843-1871) who died in battle at the age of twenty-seven, but who left several notable canvases, his portrait of *Marshal Prim* in the Louvre, being most distinguished. Gustave Courbet (1819-1878) the realist, had to do with modifying the romantic and classical tendencies, and Bastien-Lepage (1848-1884) established a school of out-of-door painting, having a large following. Meissonier (1815-1891) was a distinguished painter of military scenes rendered in great detail after the manner of the Little

Dutchmen of the seventeenth century. He had one remarkable pupil, Charles Bargue (d. 1883), who even excelled his master in dexterity. Military painters include DeNeuville (1836-1885), Détaille (1848-1913), Berne-Bellecour (1838-) and Aime-Morot (1850-). Other men Ribot (1823-1913), Roybet (1840-), Bonvin (1817-1887) and Vollon (1833-1900) the last two having been admirable painters of still life. Fantin-Latour (1836-1904) an allegorical-romantic painter, brings us to the impressionists of which Manet (1833-1883) was the leader, his followers and adherents including Degas, Pissarro, Renoir, Sisley, Boudin, and most famous of all, Claude Monet, who in his exploitation of nature's lights quite revolutionized the palette of the century and raised the key of all contemporaneous painting.

Spanish Painting.—Spanish art before the fourteenth century is entirely conjectural, practically no facts being obtainable. That of the fifteenth century was a reflex of Italy and the Netherlands. The bulk of it was always done under church domination. The earliest school was at Toledo, of artists who embellished the cathedral. This was merged into the Castilian school with headquarters at Madrid, its founder unknown, but the first painter of importance was Antonio Rincon (1446-1500) referred to as the "father of Spanish painting," a pupil of Ghirlandajo, in Italy. He painted chiefly at Toledo and left portraits of Ferdinand and Isabella. A pupil of Michelangelo, Berruguete (1480-1561?) was the first to introduce pure Italian methods in Spain. Others; Becerra (1520-1570?), Morales (1509-1586), Sanchez-Coello (1513-1590) and a dumb painter, Navarette (1526-1579), a pupil of Titian. Theotocopuli (1548-1625) was called "El Greco" (the Greek) and had much of the Venetian influence, his work being unusual in color and drawing. A pupil was Tristan (1586-1640).

Velasquez (1599-1660) was the great man in Spanish painting. Though he studied in Italy, he was thoroughly original and Spanish to the core. He was a realist, a great master in all the technical variations of his art and one of the greatest portrait painters of all times. He made himself independent of the church and with him Spanish painting reached its climax. Although there are many examples by him in the world's galleries, his best work is in Madrid where are his famous portraits of royalty and his great compositions. Mazo (1610-1667) was his son-in-law and imitator. An assistant was Carreño de Miranda (1614-1685). Other men; Claudio Coello (1635-1693), a wonderfully facile workman, DeCastro (about 1454), Vargas (1502-1568), Cespedes (1538-1608?), Roelas (1558-1625?), Pacheco (1571-1654), Herrera the Elder (1576-1656?) and Zubaran (1598-1662) a painter of dismal themes, with monks in tortured rapture. From his dark shadows he was referred to as the Spanish Caravaggio. Cano (1601-1667), was another.

The Andalusian School was headed by Murillo (1618-1682), a painter of great religious fervor and often sentimentality, with Madonnas that had a great appeal. Other men; Juan de Joanes (1523-1579), Francisco de Ribalta (1550-1628) and Ribera (1588-1656) known as Lo Spagnoletta. A pronounced mannerist, Ribera was a painter of great strength in a dark key and with subjects of almost repulsive character; his influence spread in Italy as well as in Spain. It was Goya (1746-1828) who stood out prominently among the decaying Spanish art which languished after the passing of Valasquez and Murillo. Essentially Spanish, his themes were rather brutal and bloody, of the Inquisition, the bull ring and battle pieces, but his portraits form a historical record of his countrymen and women.

IMMACULATE CONCEPTION

Painted by Murillo, and now in the Louvre, Paris, is a copy of his finest work at Seville, Spain. A fascinating picture of tender, caressing beauty, and eloquent of sensual piety. This was a favorite subject of Murillo. Another replica of note is hung in the Hermitage, St. Petersburg.

Modern Spanish Art.—Mariano Fortuny (1838-1874) attracted the greatest attention with genre subjects treated airily and with enormous charm, for the man was a superb technician and a consummate lover of the beautiful. Nor were his landscapes less alluring. One of his famous works, now owned in America, was *The Choice of a Model*. His brother-in-law is Madrazo (1841) a painter of portraits and genre works. Zamacois (1842-1871) painted genre works in great detail, one of his famous pictures being *The Education of a Young Prince*, and men of unusual cleverness include Villegas, Pradilla, Alvarez, Luis Jiminez Aranda, Domingo and Martin Rico, the last identified with Venetian scenes. Two modern men have had not only a strong influence on the art of Spain, but on the art of Europe as well. They are Sorollo and Zuloaga, the first a painter of both figure and landscape, who portrays the brilliancy of Spanish sunlight, the activity of the city streets, the fisherman on the seashore and the happenings of refined social life. He is a portrait painter as well, having for his patrons the King and his court, and all these themes he renders in attractive color, with wonderful facility. Zuloaga, on the contrary, while painting portraits as well, has in his figure work devoted himself largely to the portrayal of the more sombre side of the Spanish character, in the most modern manner and technique. Both are able craftsmen and represent the best in modern art.

Flemish Painting.—If the earliest history of Flemish painting is lost, that country at least was not indebted to other lands for means and methods which were always quite original. Hubert van Eyck (died 1426) and his brother Jan van Eyck (died 1440) were celebrated painters, the elder being the more famous, though both did altar pieces in great detail, with rare skill. They are said to have been the first to introduce the medium of oil painting, though this is more or less apochraphal since the method was known before, but certainly they were the first to have introduced it into panel pictures. While little is known of the personality of either man, it is certain that they left a serious influence on the artists who succeeded them, among whom were Peter Cristus (1400-1472?) and Roger van der Weyden (1400-1464?), both of whom followed their style. The last founded what is known as the school of Brabant. Other men: Van der Goes (1430-1482?), Justus van Ghent (1450?) and Dierick Bouts, who though Dutch, founded a school in Louvain and his art was essentially Flemish.

Memling (1425-1495?) one of the greatest of this school, was strong, not alone in portraiture, but in the landscape as well. He had for followers Van der Meire (1427-1474?) and Gheeraert David (1450-1523). A prominent figure in Flemish art was Quentin Massys (1460-1530) who though a Dutchman, was Flemish by influence and the most important man in his profession in Antwerp. He, with Mostert (1474-1556?) was the last of the Gothic school in Flanders. Men disclosing the Italian influences now appeared, among them Mabuse (1470-1541), Franz Floris (1518-1570), Barent van Orley (1491-1542?), Cocxie (1499-1592), Lambert Lombard (1505-1584), and the portrait painters, Peeter Pourbus (1510-1584?) and Antonio Moro (1512-1578). Two brothers Brueghel, flourishing toward the end of this century were known, the one painting merrymakings, as "Droll," or "Boeren-Brueghel," and the other painting fearsome things, as "Hollen or (Hell) Brueghel."

The School of Rubens.—Flemish painting was greatest in the seventeenth century. Rubens founded a new art, on Italian methods, yet distinctly northern in character. Rubens (1577-1640) and his pupil Van Dyke were destined to leave their stamp on the art of all time. The first was eclectic in his choice of theme and to all he did he gave renaissance splendor. No one excelled him in technique and many of his subjects were religious, seen through eyes of his day, with an unction in the painting, a masterly drawing and modeling and an artistic grasp of his personages. He was well born and his life was a succession of triumphs for he was ennobled by his king, having not only the patronage of the highest, but the unstinted praise of his fellows. His masters Van Noort (1562-1641) and Vaenius (1558-1629) were far inferior to him. But in Van Dyke (1599-1641), Rubens had a worthy successor whose best work was in portraiture and who was one of the most materially successful of any of the painters. Style and great charm he had to a marked degree. He painted the famous men and women of his time, having a large studio with a great number of pupils. Other men; Diepenbeeck (1596-1675), Jordaens (1593-1678), Crayer (1582-1669), Janssens (1575-1632), Zegers (1591-1651), Rombouts (1597-1637) and Cornelius de Vos (1585-1651) the last a highly gifted painter, whose portraiture was a high order. Snyders (1579-1657), and Fyt (1609-1661).

were painters of still life and landscape, of great detail and fidelity. Snyders sometimes painted the landscape in the figure-pieces of Rubens.

Genre Painters.—About this time a group of men were drawn to pictures of the commonplace life about them, of peasants at their household tasks and pleasures, among them being Teniers the Younger (1610-1690), whose wit was inclined to be coarse, though allowance must be made for the times. Another was Brouwer (1606-1683?) and, though in a slightly different vein, Gonzales Cocques (1618-1684). A later man was Verhagen (1728-1811), a talented portrait painter. Still later men: Francois Navez (1787-1869), Wappers. (1803-1865), Louis Gallait 1810-?) and the Baron Leys (1815-1869), who developed a quaint Gothic style founded on the German, Cranach. His distinguished pupil, Sir Alma-Tadema, (1836-) now a naturalized Englishman and member of the English Royal academy, caught much of his manner and even exceeded his master in technical dexterity. Tadema has become identified with the rehabilitation of the life, customs and manners of ancient Rome, compositions of which he has made after great research and investigation. Alfred Stevens (1828-1906) one of the most charming of the moderns, a painter of genre, long a resident of Paris, was identified with French art for many years. Verboeckhoven (1799-1881) a sheep painter, but not of the first rank; Clays (1819), an admirable painter of marines; Robie, flower painter, and Van Beers, genre painter, make up another group. The name of Wiertz (1806-1865) stands for that of an eccentric but talented artist whose work is seen in a museum by itself in Brussels and discloses a strong, artistic mind, somewhat unbalanced and full of vagaries.

CLEOPATRA MEETING ANTONY

Painted by Alma-Tadema, and representing the historic scene at the moment when Antony yielded to the fatal fascination of this captivating and artful Egyptian Queen. The picture is minutely finished, and is a fine example of sensuous, Egyptian portraiture by a noted contemporary artist.

Dutch Painting.—Dutch art, like the Dutch people, has ever been sober, sturdy, honest, at times perhaps a little coarse, mostly depicting home life and its joys or sorrows, a little matter of fact, realistic occasionally to grotesqueness, but invariably true to itself and of sterling quality. Even where the theme was of sacred character, the artists used the people about them as personages in their compositions. Mainly these compositions were of a few figures engaged in card playing, carousing, seated by the hearthstone, at meals, or in the mild amusements of a social nature that made up the entertainment of these staid people. Albert van Ouwater is the first known painter, the founder of the Dutch school, and yet no picture has been definitely settled as being by him though some are ascribed to his hands, one, bearing date 1480 which might be later than he flourished. Tradition however credits him with strong landscape work. A pupil was evidently Geertjen van St. Jan (about 1475) who painted some altar pieces, and Bosch (1460-1516), painted some fantastic purgatory pictures that are known through engravings. The leading artist of the early period was Lucas van Leyden (1494-1533), pupil of Engelbrechsten (1468-1533). He was a friend of Albrecht Dürer whose manner he copied. First influenced by the art of Flanders and in late life by the Italians, van Leyden's middle period was distinctly Dutch and he was quite the strongest painter of his times.

The Sixteenth Century imitated the Italian during which time the artists included such men as: Scorel (1495-1562), Heemskerck (1498-1574), Cornelis van Haarlem (1562-1638) and Steenwyck (1550-1604?) the last two being much the stronger of the group. In the seventeenth century the profession of the painter in Holland was crowded and the work was essentially Dutch in character. There was a noble group of portrait painters of which Mierevelt (1567-1641) was one of the earliest. All of the men were thoroughly trained craftsmen, having learned their trade under excellent masters at an early age. Mierevelt was prolific, elegant, smooth, polished, agreeable in color, and had for patrons the aristocratic people of his time. Ravesteyn (1572-1657) and De Keyser (1596-1679) were accomplished workers, but the names of Hals and Rembrandt stand out with such prominence as to overshadow their contemporaries among the portrait men. Of this pair, the elder was Franz Hals (1584-1666), one of the greatest painters for the manipulation of pigment the world has ever seen, ranking with Velasquez and, with the last known as a painter's painter. He swept on his surfaces with great freedom, with certain hand, and generally in admirable color.

Rembrandt (1607-1669) is the greatest name in all Dutch art. He painted in Amsterdam and had a large following. His earliest work dates from 1627, and he painted till the end of a life full of vicissitudes, changes and at the last bitterness for, as Rembrandt grew old, his fellow townsmen turned to younger men. Yet there was nothing he touched in painting that he did not glorify for he was a supreme master of his trade, with exquisite artistic taste and judgment, with invention and absorbing interest. And he etched as well as he painted, producing marvelous drawing in line. He was most fecund and his pictures are scattered all over Europe and this country. He also had a far-reaching influence not alone on Dutch art, but on the art of all Europe. Yet though many followed him, sometimes blindly, none equalled his magic touch. Some however came reasonably close. An admirable portrait painter was Bol (1611-1680), as were Flinck (1615-1660), Eeckhout (1621-1674) and Maes (1632-1693). Other men were Poorter (painting from about 1635 to 1643), Victoors (1620-1672), Koninck (1619-1688), and Frabitius (1624-1654). A fine portrait painter was Van der Helst (1612-1670), a craftsman of much elegance and style and very capable in his arrangements of the figure. And too, he was different from the rest of the school in his precise manner.

The Little Dutch Masters, a coterie of painters, included genre painters who did their pictures on a small scale, with great attention to detail and careful finish. One of these men was Gerard Dou (1613-1675). He was a pupil of Rembrandt with whose manner he disclosed no affiliation though he rendered his panels with great charm and grace, in a masterly manner. Metsu (1630-1667), was another of the little Dutch masters; perhaps the best of them was Terburg (1617-1681), whose little panels of interiors, portraits and genre pictures are in their way, marvels of consummate skill and extraordinary artistic finish. This group has never since been equalled though it has been the inspiration of many a painter. Other men of the time: Van Mieris (1635-1681), Netscher (1639-1684), Schalcken (1643-1706), Van Ostade (1610-1685), Steen (1626-1679), Pieter de Hooghe (1632-1681), and Jan van der Meer (1632-1675), one of the best of these genre men.

Landscape Painting made considerable progress among the Dutch painters of this time, one of the earliest seventeenth century men being Van Goyen (1596-1656), whose pictures of the canals, streams, windmills and houses were most successful. He had a characteristically low sky line and obtained agreeable color. Two of the important men in this direction were Salomon van Ruisdael (1600-1670), and his nephew Jacob van Ruisdael (1625-1682) who was better than his uncle. He found themes that were rather Norwegian than Dutch, consisting of glens, waterfalls and the like, and but little is known of him, save that he lacked patrons

and died in an almshouse. Other men: Molyn (1600-1661), Wynants (1615-1679), Van der Neer (1603-1677), and Everdingen (1621-1682). The great man of the period in landscape however was Hobbema (1638-1709), probably a pupil of Jacob van Ruisdael, painting with greater freedom than his master. His favorite theme was a road leading through a woodland and he was a master in his interpretation of nature. He too, was little appreciated during his life, but he has influenced the art of landscape ever since. Of the men painting animals, the most famous was Paul Potter (1625-1654),

THE YOUNG BULL

Painted by Paul Potter, and now in the Hague Gallery. One of the great masterpieces of animal painting. This picture was carried by the French to Paris and regarded as the fourth in value in their collections. Admired for its truth, taste, and general arrangement of the masses and forms. Potter has been called the "Raphael of animals."

with a reputation not entirely merited, though his *Young Bull* at The Hague gallery is one of the best known pictures in the world. Other men: Adrien van der Velde (1635-1672), Albert Cuyp (1620-1691), Both (1610-1650), Berchem (1620-1683), Du Jardin (1622-1678) and Van der Heyden (1637-1712). Among the marine painters were, Willem van der Velde (1633-1707), perhaps the best of them all, and Backhuisen (1631-1708) and Simon de Vlieger (1601-1660). The best of the Dutch flower painters was Van Huysum (1682-1749). Jan van Heem (1600-1684) and Hondecoeter (1636-1695) rendered poultry, while Weenix (1640-1719) and Van Aelst (1620-1679) painted dead game. Adrian van der Werff (1659-1722) and Philip van Dyck (1683-1753) were of a later epoch, their work being of but modest importance.

The Modern Dutch Painters are excelled by none of their contemporaries in Europe. The *doyen* of the group is Joseph Israels, painting his own country people with rare sympathy and charm, in a masterly manner. His canvases are eagerly sought and bring enormous prices in the auction rooms. Something in his work is akin to that of the Frenchman, Millet, but he is a more able craftsman and he is still living at the age of ninety-two. Anton Mauve (1838-1888) famous for his sheep and cattle, though his landscapes were no less important, was an entirely personal painter, also of great charm and refinement, a prolific worker both in the medium of oils and water-colors. Only fairly appreciated before his death, when he passed away his work was eagerly sought after, at fabulous prices. Three brothers Maris are James, (1835-), Matthew (1835-) and Willem (1839-1910) the last named being the best of the group though all are eminent men in their profession. Willem was a portrayer of cattle in landscapes, of seashore with great skies, or of rich meadowland and he gave distinction to his canvases which are in great vogue with the collector. Weissenbruch (1822-1880), another of the group, was highly esteemed and a most capable, personal renderer of nature. Other men in the figure: Artz, (1837-1890), Blommers (1845-), Neuhuys (1844-) and Bosboom (1817-1891), with Keever, Poggenbeek and Bastert. Mesdag (1831) is a marine painter of some popularity.

German Painting.—Early art in Germany, as in the rest of Europe, received its impulse of Christianity through Italy. Always however from the beginning it has remained distinctly Teutonic, somewhat material, to an extent awkward, and without the refinement of the Italian. Yet in its robustness it is very characteristic of the country and it thus acquired a force that has ever been one of its merits. And from the earliest times the Germans painted the peoples and the material about them. Missal illumination and the decoration of walls were the first forms their art took. Some of the latter are yet extant and date back to the tenth century. They are at Oberzell. Work of the twelfth century may be still seen in the Lower church of Schwarsrheindorf, while work of the next century is in the Brunswick cathedral. About the thirteenth century, panel painting came into vogue and was used almost entirely for altar decorations. Some of these are in the Berlin museum. The earliest of the painters of the panel was known as "Meister Wilhelm," at Cologne. Stephen Lochner, flourishing about the middle of the fifteenth century, was known as "Meister Stephen." A painting by him, *Madonna of the Rose Garden*, is at the Cologne museum. In the same museum are works by the "Master of the Lyversberg Passion," of date about 1463-1480.

The Bohemian School flourished in the last half of the fourteenth century, under the patronage of Charles IV., near Prague. Among the men were Theodorich, of Prague (about 1348-1378), Wurmser and Kunz. Their art while original, was heavy, awkward, and their attempt at realism was not successful. Little is known of the early school of Nuremberg painters though some of their work remains, the chief of which is the Imhof altar piece. At Nuremberg lived Plydenwurff, who flourished about the same time as Wolgemut (1434-1519) and is said to have collaborated with this master in certain altar pieces. Wolgemut's principal fame unfortunately, for he was in himself a great artist, is that he was the master of the famous Albrecht Dürer (1471-1528), one of the world's greatest artists both in painting and engraving. Portraits, religious pieces and altar panels Dürer did with skill, sincerity, originality and distinction. His influence on German art was powerful and he had many pupils and followers. Travelling much over Europe he broadened his knowledge without losing any of his personal methods and never lacked for thorough recognition while he lived. His pupils and followers: Schäufelin (1490-1540?), Hans Baldung (1476-1552?), Hans von Kulmbach (-1522?), Altdorfer (1480-1538?), Barthel Beham (1502-1540), Sebald Beham (1500-1550), Penez (1500-1550), Aldegrever (1502-1558) and Bink (1490-1569?). Martin Schongauer (1446-1488), painter and engraver is better known by the latter work which he did in a masterly manner, beginning at a very early age. He was known among his contemporaries as "Martin, the Beautiful," by reason of his exquisite work. Other men: Zeitblom (1484-1517), Schaffner (1500-1535) and the portraitest, Bernard Strigel (1461-1528).

The Holbeins.—Hans Burkmair (1473-1531) founded at Augsburg, the Swabian school, and he was contemporaneous with Holbein, the Elder (1460-1524), the two men being the best of their time; but the son of the latter, Hans Holbein, the Younger (1497-1543), surpassed all the men of his nation and holds the highest place in German art, remaining one of the greatest art products of all times. He was an engraver, too, of the first rank and traveled much, becoming court painter to Henry VIII. of England. Though his life was comparatively short, he accomplished an enormous amount of work. Yet he always remained thoroughly German, absolutely original and there was no direction in an art way in which he was not superlatively good. Louis Cranach (1472-1553) and his son, Louis Cranach the Younger (1515-1586), were also of this time, but after Holbein there was a decline in German painting, the Italian school finding many imitators. Among these were: Rottenhammer (1564-1623), Elzheimer (1574-1620), Denner (1685-1749), Mengs (1728-1779) and Carstens (1754-1798). Angelica Kauffman (1741-1807), famous during the Georgian period in England whither she came at the age of twenty-three, was a friend among others there of Sir Joshua Reynolds and she painted with great material success being made a member of the Royal academy, but her art was of a very modest quality.

VESTAL VIRGIN

Painted by Angelica Kauffman, and now in the Dresden Gallery. The purity of conception and pleasing beauty raised this picture to a high standard. Goethe said: "No living painter excels her in dignity or in delicacy of taste."

Modern German Art.—The nineteenth century saw a revival of art in Germany, the leaders seeking to introduce something of the spirit of the Italians therein, but they failed to accomplish good results. The men: Overbeck (1789-1869), Cornelius (1783-1867), Veit (1793-1877) and Schadow (1789-1862), had studied in Rome and elsewhere. Kaulbach (1805-

1874) and Piloty (1826-1886) were more important, the last being one of the best of the Munich men. He was unusually clever technically, made enormous compositions, and had a great influence on the young men about him. Easily the two great painters of this epoch were Menzel (1815-1905) and Leibl (1844-), both distinguished draughtsmen, entirely original and excellent colorists, their work possessing great qualities of composition, craftsmanship and charm. Lenbach (1836-1904, was one of the great

PRINCE BISMARCK

Painted by Franz von Lenbach. An admirable portrait by one of the most notable of German portraitists.

portrait painters of the men of his time in Germany. Other men were Liebermann, Gabriel Max, Thoma, von Uhde and Stuck, and Heinrich Hoffmann, whose Biblical pictures bear high repute.

Among men of foreign birth painting in Germany were Makart (1840-1884) an Austrian, using brilliant color on large canvases; Munkacsy (1846-1900) a Hungarian, who subsequently left Germany for Paris and whose *Christ before Pilate* create a great sensation; and Bocklin (1827-1901) a Swiss, of enormous talent and charm, much originality and intellectual force.

The English School.—The early art in England was brought to it largely by the foreign element of painters who came from Italy, Germany, Holland and elsewhere, many of these men being attached to the court and having a strong influence on the lesser artists of British birth. The first distinctly English painter of note was Hogarth (1697-1764), an able technician, an illustrator, above all a moralist and a satirist, who attacked the vices of his day with scathing brush. In the National gallery of London is his famous series of cartoons, *Marriage a la Mode* and *The Rake's Progress*, and though these are famous rather for their satire than for their æsthetic qualities, Hogarth was nevertheless a most distinguished painter along purely artistic lines.

Georgian Portrait Painters.—This great school is headed by Sir Joshua Reynolds (1723-1792), a pupil of Hudson (1701-1799) whom he greatly surpassed. Reynolds was a serious student of the earlier Italians, but it is as a portraitist that he is best remembered. He was the first president of the newly formed Royal academy, a colorist of rare charm and a man who caught the human side of his sitters with unusual fidelity. Gainsborough (1727-1788), was his great rival, one of the most original of the British school, painter of the landscape as well as the portrait, excelling in both directions and obtaining beautiful color. Others of the group; Rommey (1734-1802), Beechy (1753-1839), Raeburn (1756-1835), John Hoppner (1759-1810) and Lawrence (1769-1830), the last celebrated in his day, very popular, clever and effective, but less able than some of his school. Other names include, Etty (1787-1849), somewhat academic, but colorful; Moreland (1763-1804), a painter of farm life; Sir David Wilkie (1785-1841) painter of home life; Landseer

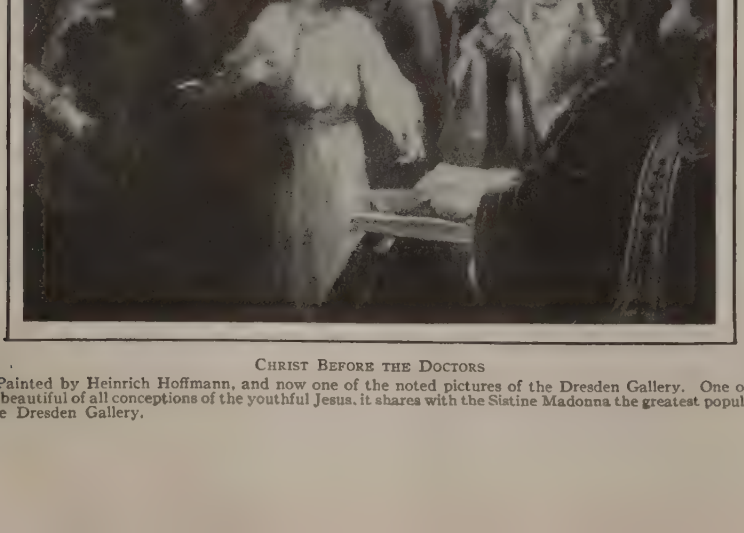
SHOEING THE BAY MARE

Painted by Landseer, and now in the National Gallery, London. A prime favorite of this noted animal painter. Though frequently accused of endowing his animals with too great a perfection, yet this thoroughbred evidently has a poetic right to give the farrier advice—as her attitude here so plainly implies.

(1802-1873), whose pictures of animals gave him great fame, and Mulready (1786-1863), painter of village children.

British Landscapes.—Here the English were strong. Richard Wilson (1713-1782) was the first of originality and importance though he did not attempt any realism and was more or less a reflection of the art of Claude Lorrain. Old Crome (1769-1821) was the leader of what was known as the Norwich school, of men painting in that section of England and he had a strong influence on his time. After Crome, was Cotman (1782-1842), but the best of all the Englishmen in landscape was John Constable (1776-1837), son of a miller of wealth and himself known as "the handsome miller." A student of the Academy schools, he shortly afterward went to nature and devoted himself to portraying scenes out of doors for the rest of his life. It was reserved for the French first to appreciate him, in 1824. His manner was broad, quite different from the then existing fashion in England, and he had a strong influence on the men who subsequently formed the Barbizon school in France. Callcott (1779-1844) was inclined to the manner of Claude, but Bonnington (1801-1828) was very original in color and manner and in his short life did many excellent pictures. Turner (1775-1851) a great name in British landscape painting, was a colorist of rare originality and force. He possessed an extraordinary imagination, unusual facility and was a fecund worker in both the mediums of oil and water color. Prout (1783-1852), Cox (1783-1859), and Dewint (1784-1849) were famous water colorists.

Pre-Raphaelites.—Holman Hunt (1827-1910) was associated with this school and Sir John Millais (1829-1896) and Rossetti (1828-1882) along with him, were the founders. Hunt painted religious pictures in great detail, more intellectual than



CHRIST BEFORE THE DOCTORS

Painted by Heinrich Hoffmann, and now one of the noted pictures of the Dresden Gallery. One of the most beautiful of all conceptions of the youthful Jesus, it shares with the Sistine Madonna the greatest popularity of the Dresden Gallery.

artistic, in dry, hard color, and much over-elaboration. Millais soon broke away from the school and gave himself to the painting of genre pictures and portraits with which he achieved enormous success, eventually becoming president of the Royal academy. Rossetti, more of a poet than a painter, took many of his themes from Dante, was neither an agreeable colorist, nor a well trained draughtsman, but he had a large following among whom may be mentioned Burne-Jones (1833-1898) painter of mystic themes and famous designer of stained glass, his color dry, though at times rich, and his drawing distinguished. Madox-Brown (1821-1893) had much dramatic power. Sir Frederick Leighton (1830-1896) who succeeded Millet as president of the Royal academy, was an accomplished draughtsman, but possessed little sense of color as such. He painted many classic themes and decorative works of great merit and charm. Albert Moore (1840-1893) was a graceful decorative painter of delightful originality and Watts (1818-1904) an original painter of portraits and allegorical pictures of deep thought and originality if at times of indifferent technical achievement. Other men: Orchardson (1835-1910), Erskine Nicol (1825-), Faed (1826-), Holl (1845-1890), Herkomer (1849-), Vicat Cole (1833-1893), Cecil Lawson (1833-1893), W. L. Wyllie, and Henry Moore (1831-1895). The younger modern men in England and Scotland have been strongly influenced by the art of Whistler and the modern Dutch painters.

A school known as the modern Scotch school includes such men as: James Guthrie, E. A. Walton, James Hamilton, George Henry, E. A. Hornell, John Lavery, Alexander Roche and others. An Irishman, William Orpen, has struck an original note in recent years in portraiture and figure work.

American Painting.—Early American art was in portraiture, largely borrowed from England, from which country came many itinerant portrait painters. Of these foreigners, the first were: Smibert (1684-1751), a Scotchman who settled in Boston, and a fellow countryman, Watson (1685-1768), who settled in New Jersey.

John S. Copley (1737-1815) and Benjamin West (1738-1820) were the first distinctively American painters though they learned their art in England and were under the domination of the then prevailing British fashions in art. Copley practiced in Boston and was the early pictorial historian of the New England families. West remained abroad where he enjoyed the favor of the English king and so succeeded to the presidency of the Royal academy. Many of these early men painted General Washington. Among them were C. W. Peale (1841-1827), Trumbull (1756-1843), Rembrandt Peale (1787-1860) and others. The best of the early American group, was Gilbert Stuart (1755-1828), a fine colorist and admirable draughtsman, and a man of intensely interesting personality whose portraits of Washington are quite the most famous. Other early men: Vanderlyn (1776-1852), Washington Allston (1779-1843), Jarvis (1780-1834), Sully (1783-1872) who painted a celebrated portrait of Queen Victoria, and Doughty (1793-1856), the first of the American landscapists. In this direction followed Thomas Cole (1801-1848) and A. B. Durand (1796-1886).

The Hudson River School.—Cole was the painter of a famous series known as *The Voyage of Life* and *The Course of Empire*, which were engraved and had a wide popularity. For the times both were excellent painters and they may be said to have founded what was known as the Hudson river school, of which Kensett (1818-1872) was a follower. Frederick E. Church (1826-1900) pupil of Cole, was famous for his pictures of mountain scenery, of natural phenomena, rendering great stretches of country with rare fidelity and skill. He enjoyed much material, as well as artistic success and was a prolific workman. Bierstadt (1830-1902) painted the western country, mainly the Rocky mountains. Other portrait and genre painters: Chester Harding (1792-1886), Inman (1801-1846), Page (1811-1885), Elliott (1812-1868), Baker (1821-1880), Healy (1808-1894), and Huntington (1816-1906), the last being one of the founders and a president of the National academy of design. Leutze (1816-1868), who came early to this country from Germany, painted many historical scenes, the most famous being *Washington Crossing the Delaware*.

William M. Hunt (1824-1879) was a pupil of Couture and a friend of Millet, at Barbizon. He introduced the work of Millet to this country and was himself an able painter as well as a popular teacher. Some of his portraits were rendered in a masterly manner, notably that of Judge Story, at Salem. Hunt had a strong influence on his followers. Uniquely American was George Fuller (1822-1884), lacking in his early art training but with an originality in his color and choice of theme that made him one of the interesting figures of his time.

A trio of landscape men that were strongly to influence the men of their time and the art that followed, consisted of George Inness (1825-1894) A. H. Wyant (1836-1892) and Homer D. Martin (1836-1897). Inness, influenced in turn by the Men of Thirty, at his best a powerful renderer of nature and a poet of the dramatic order; Wyant, more lyrical, was essentially of the soil, painting tender, dreamy bits of nature, while Martin was intensely personal.

Foreign Influences.—The foreign art that came to America at the time of the Centennial Exhibition in Philadelphia, in 1876, had much to do with stimulating the men and many students went to Europe to study, Munich and Paris being the most popular places. There still remained a group of strong men, most of them already having had the best of European influences. Among these were Eastman Johnson (1824-1896), a strong painter of portraits and genre; Elihu Vedder (1836-1922) a man with rare imagination; John LaFarge (1835-1910), distinguished for his decorations and designs for stained glass, and Winslow Homer (1836-1910) home trained, early in his career painting scenes from the American civil war, but later developing into a great marine painter, a man of large talent and virile artistic personality. John S. Sargent (1856-) though of American parentage, is European by birth and training, one of the most distinguished of living portraitists: he has decorative panels in the Boston public library. William M. Chase (1849-1916), pupil of Piloty and Munkacsy, is a painter of portraits, landscape and still life, excelling in all directions and Thomas W. Dewing (1851-) following along the lines of the little Dutch masters, holds a unique place among the moderns by reason of his skill and exquisite taste. Among landscape men, Willard L. Metcalf holds a commanding position because of his fidelity to nature's forms and his abiding skill in their representation. Other Americans include, J. Alden Weir, Abbott H. Thayer, E. C. Tarbell, Robert Reid, Charles H. Woodbury, Wyatt Eaton (1849-1896), Childe Hassam, Walter Shirlaw (1838-1909), E. L. Blashfield, Joseph DeCamp, H. S. Mowbray, George De F. Brush, I. R. Wiles, the brothers Harrison, Alexander and Birge, and Robert Blum (1857-1903).

CARMENCITA

Painted by Sargent, and now in the Luxembourg, Paris. One of his best delineations, portraying this dancing girl in all her insolent beauty and charming grace as the acme of the dancer's art. The original shows the sparkle and glitter of the deliciously colored gown in all the hues of a brilliantly lighted stage.

James MacNeill Whistler (1834-1903) American only by birth and preliminary education, a cadet at the U. S. Military academy at West Point for a while, but during all his art life a resident of Europe, was at his best a master, strongly influenced by the art of Japan. He painted as a rule in low tones and had an extensive following leaving a strong influence on the art of his time. As an etcher he was second only to Rembrandt. His portrait of his mother, in the Luxembourg, Paris, is a work of surpassing charm and excellence.

Edwin A. Abbey (1852-1911) made England his home for many years, being a Royal academician. He executed much work in historical and decorative compositions. His panels *The Quest of the Holy Grail* are at the Boston public library and he has done decoration for the State Capitol at Harrisburg, Pennsylvania. He also painted the official picture of the Coronation of the late King Edward VII. of England. Other Americans living, mainly, abroad are: Frederick A. Bridgman, Gari Melchers, Jules Stewart, W. T. Dannat, and Eugene Vail. John W. Alexander, P. N. A., is a painter of

portrait and decorations (in the Carnegie Institute, Pittsburg) of strong originality and distinction. Other men and women include John Francis Murphy, D. W. Tyron, Horatio Walker, Bruce Crane, John H. Twachtman, Henry W. Ranger, E. E. Simons, Childe Hassam, Arthur B. Davies, J. W. Freer, Frank Duveneck, John C. Johansen, Cecilia Beaux, Mary Cassatt, George Bellows, R. A. Blakelock, Emil Carlsen, Kenyon Cox, Thomas Eakins, C. W. Hawthorne, E. W. Redfield, H. O. Tanner, Douglas Volk, Edward C.Steichen, Albert Sterner, E. J. Waugh, Hugo Ballin, F. S. Church C. M. Dewey, Robert Henri, W. L. Lathrop, Carlton Wiggins, Frank Benson and H. H. Breckenridge.

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How to Look at Pictures.—It is a mistake to suppose that age is any indication of the value of a picture. This is an error into which many laymen fall, with the result that discouragement ensues because the work under consideration does not appeal. Indifferent work is by no means a monopoly of the modern painter. There have been poorly equipped craftsmen since the world began. But, because a picture is not immediately understood, is by no means to say that it is lacking. Art, like the study of literature or music, is a profound study, requiring the most serious application, investigation, research and experience. The average person prefers rag-time to the symphonies, nocturnes and grand compositions of musical masters, just as trashy reading appeals to the minds of the uncultivated. This is not, however, for a moment to admit that the works of the great composers and authors are not of higher importance than the meretricious tunes of the hurdy-gurdy, or the ephemeral novels of the day. But one, by a systematic course of study, can so train the ear and mind that only the best will satisfy in the end. And so it is with pictures. It is the story of all great collectors that their collections are gradually weeded out as their tastes improve and a higher standard is demanded.

Intuitively some minds are attracted to the best in art, as in music and literature. They are, however, the exceptions, not the rule. Even such minds are improved and strengthened by study and experience. The average man can only hope to achieve reasonable discretion in the matter of art by serious investigation and much sober reading. Some one has said that a work of art means a combination of two people—he who did it and he who looks at it. A picture is one man's conception of nature, and though twenty painters render the same subject, each according to his endowment and altogether differently from his fellow, each will be right, according to his convictions and power of transferring his thought to canvas. For it is a matter of seeing, no less in the layman than in the artist, and one may be taught to see, as one may be taught to do other things. A good picture must say something; not necessarily tell some trite anecdote, or record some trivial incident, but must strive to convey some truth, even it be but the truth of humanity, as for instance in Titian's *Man With the Glove*, in the Louvre, one of the grandest portraits ever painted, or in the *Mona Lisa*, the most successful single figure piece ever offered to the world. In both cases the artists gave an epitome of the man and the woman of their day, and did so in the last terms of craftsmanship. Veronese gave the glory of color and the sumptuousness of apparel in his *Marriage at Cana*, which, as a record of the biblical event, was utterly false; but his genius carried it beyond facts and made of it a superb composition. The extraordinary piety in many of the older men among the Primatives atoned for other shortcomings, while the absolute and convincing sincerity of the Little Dutchmen, and their technical skill, made up for many a stupid composition.

A masterpiece must be all things to all men. You may have it dark in key, like a Ribera; glorious in light and shade, like a Rembrandt; full of poetry and graceful beauty, like a Raphael; colorful, like a Titian; elegant, like a Van Dyke; faithful and analytical, like a Holbein; unctuous and rich, like a Rubens; a poem in tone, like a Turner; or full of the glories of light and air, as a Monet, for each of these men had a mission to convey and he conveyed it seriously, earnestly, and according to the best that was within him. So when you stand before a canvas, seek first to know what was the object of the creator. If his aim was color, try to analyze his accomplishments in that direction; if to portray the glory of out of doors, follow him there; or, if the human form attracted him most, endeavor to put yourself in touch with such an ambition on his part. And if at first there is no appeal, engage in a little introspection and possibly you may discover the fault is your own, not that of the artist. But above all, approach a work of art, one that has stood the test of time, with reverence and the genuine endeavor to get the good, not the bad out of it, to get the viewpoint of the painter, and so to try and enter with him into his general trend of thought.

They have an inscription above the doors of the picture gallery at the South Kensington museum, in London. It reads, "That which has pleased long and many must have some merit." It is advice to be remembered. Da Vinci, Botticelli, Rembrandt, Velasquez and the whole nobility of art are not where they are because of the critical opinions of the few, subject to changes of fashion, but because their art was founded on the eternal truths. They were great craftsmen as well, and they had something worth the world's listening ear, each in his own way, and each according to his own lights; but it was always truth, the truth of humanity, nature, beauty—always truth. The spectator may not understand them, but the fault is not theirs, and it is up to the spectator to reorganize his point of view, for no ignorance, no stupidity, no false arguments, can for one moment dislodge truth, which despite all efforts yet remains as firm as the rock of ages—as truth, eternal, unassailable, inviolate. So, read of art. Listen to what the best judges have said about pictures. Get from these writers their point of view, the point of view of men who by study and experience are better qualified than you to judge, and so, in a humble spirit, and with a child's openness of mind, approach the work of these great men whom heaven has endowed with beauty of thought, precision of hand, and splendor of imagination. Do this reverently, and with the genuine desire to learn, and the reward will be yours. It will repay a thousand fold, for if we may not all be creators, at least we may get an intelligent satisfaction from the creation of those more gifted, alas, than are we.

Terms in Fine Arts

Amphitheater.—A building for gladiatorial and other shows, generally elliptical in form.

Angels.—In mediæval art divided into nine degrees: Seraphim, Domination, Princedom, Cherubim Virtues, Archangels, Thrones, Powers, Angels. The Cupid-like angels were only introduced in the time of the Renascence.

Antae.—Rectangular pilasters forming the ends of the walls of the cella of a Greek temple, and supporting the extremities of the architrave. A temple of this form was called a temple "in antis."

Apse.—The extremity of a church, generally semicircular in form and surmounted by a semi-dome.

Aquatint.—A process of engraving by acid laid on in even washes with a brush, upon a broken surface formed by a crackled film of resin on the copper.

Arabesque.—An ornament composed of stems, foliage, leafage of plants, scrolls, and fantastic animals. Not, as its name implies, an Arab invention but found in Greek and Roman architecture.

Arch.—A curved structure, generally a segment or segments of the circle. Semicircular arches were used by the Romans; horseshoe arches by the Byzantines and Moors; pointed arches formed of two intersecting segments of circles by the Gothic builders.

Architrave.—The horizontal part of a structure resting immediately on the capital of column or pilaster.

Atlantes.—Human male figures, employed instead of columns to support the architrave.

Atrium.—A covered court in a Roman house, with an opening in the center (compluvium) and roof sloping inwards.

Baldachino.—A canopy over seats and other places of honor.

Baroque.—Rococco.

Base.—The lower division of a column on which the shaft is placed; absent in the Doric order.

Basilica.—A rectangular hall divided by rows of columns into three naves, and used by the Romans as a court of justice. Adopted as the typical form of early Christian churches.

Bas Relief.—(Basso relievo.) Figures sculptured on panel projecting less than half their proportions from the surface.

Body Color.—In water-color painting, color made opaque by intermixture with white.

Buttress.—A piece of wall built at right angles to the wall of a building to strengthen the structure, either immediately against the wall or connected by an arch called a flying buttress.

Byzantine.—The style of architecture and painting is use at Constantinople from the sixth to the twelfth century.

Capital.—The, usually ornamented, member which crowns the top of a column or pillar, and by the form of which the different orders are characterized.

Caryatides.—Female figure, employed instead of columns to support the architrave.

Cella.—The internal part inclosed by the walls of a Greek temple.

Chevron.—A zigzag molding used in Romanesque architecture.

Chevet.—A form of apse inclosed by an arcade with a series of chapels round it, common in Romanesque and Gothic churches in France.

Chiaroscuro.—The distribution of light and shade.

Cinquefoil.—An ornamental foliation, consisting of five projecting cusps.

Cloister.—A quadrangle covered walk, forming a portion of a monastic building.

Clustered Column.—A pier formed by a number of shafts clustered together, either united, or separate.

Column.—A column consists of three principal parts: base, shaft, and capital.

Cornice.—The horizontal molded projection terminating a building.

Corona.—A molding forming part of a conical, with lower part grooved to form a dripstone.

Crypt.—A subterranean chapel beneath a church.

Cusp.—Pointed foliations in architectural tracery.

Damascened.—Metal ornamented by inlaying another metal.

Decorated.—The second of the pointed or Gothic styles of architecture in England.

Dentils.— Ornaments in the form of small cubes of teeth.

Dormer.—A gable window in the sloping side of a roof.

Dry-Point.—Direct engraving upon copper with the etching needle.

Entablature.—The horizontal superstructure which lies upon the columns in classic architecture.

Etching.—Engraving by the action of acid on a copperplate covered with a wax ground on which lines have been scratched by the etching needle.

Fan Tracery.—Elaborate carved work spread over an arched surface.

Terms in Fine Arts.—Continued

Fillet.—A plain band used in architecture to separate ornaments and mouldings.
Finial.—An ornament of carved work representing foliage on a pinnacle or spire.
Flamboyant.—The style of French architecture peculiar to the fifteenth century, contemporary with perpendicular in England.
Flutes.—Small semicircular grooves or channels cut in the shafts of columns or pilasters.
Fresco.—Painting executed on a freshly laid ground of stucco.
Fret.—An angular, interlaced architectural ornament.
Frieze.—(1) The middle division of an entablature which lies between the architrave and cornice. (2) Any horizontal sculptured band.
Grisaille.—A style of painting in gray by which solid bodies are represented as if in relief.
Groin.—The angular curve formed at the intersections of a vaulted roof.
Gymnasium.—A large building used by the Greeks in which gymnastics were taught and practiced.
Hypostyle.—A roof supported by columns.
Impasto.—The thickness of the body of pigment laid on to a painting.
Intaglio.—A stone in which the design is sunk beneath the surface, and gives impression of a bas relief.
Klaft.—A royal Egyptian headdress forming a kind of hood and terminating in two flaps, which form over the breast.
Lancet.—A pointed arch, obtuse at the point, resembling a surgeon's lancet.
Lantern.—A small turret above the roof of a building having windows all round it.
Lintel.—The stone or beam placed across the top of a door or window.
Loggia.—The gallery or corridor of a place.
Lotus.—A water lily. In Egypt it is held very sacred.
Mansard.—A roof with two sets of rafters of which the upper part is less steep than the lower. Named after a French architect.
Marquetry.—Inlaid work of ornamental woods and stones of various colors.
Medallion.—A circular or oval tablet on the face of a building.
Metope.—A kind of panel between the triglyphs in the Doric frieze.
Mezzo Relievo.—Sculpture in relief in which half of the figure projects.
Mezzo Tinto.—A method of engraving by smoothing away the lights from a ground mechanically roughened.
Monolith.—An object formed of a single block of stone.
Mosaic.—An imitation of painting by joining together minute pieces of hard substances of different colors.
Nave.—The middle part or body of a church from the choir to principal entrance between the aisles.
Nimbus.—A halo or circular disk around the head of sacred personages.
Ogee.—An arch described with four centers so as to be concave in lower and convex in upper part.
Ogive.—A pointed arch.
Oriel.—A projecting angular window, generally triangular or pentagonal in shape.
Ovolo.—A convex molding much used in classical architecture.
Pagoda.—A religious building of the Hindoos.
Palaestra.—A place for wrestling, formerly part of the gymnasium.
Pediment.—A triangular crowning of a portico usually supported by a row of columns.
Pendentive.—The part of a vault between two arches supporting a dome.
Peristyle.—A building, the interior of which is surrounded with columns.
Perspective.—The art of representing on a flat surface the appearance of objects from one given point of view.
Pilaster.—Square pillar on a wall partly imbedded in it, less than one fourth of its thickness projecting.
Pinnacle.—A small spire.
Piscina.—A stone basin usually placed in a niche in the wall of the chancel at which the priest might wash his hands.
Plinth.—The lower projecting base of a column.
Pronaos.—The portico situated in front of a temple.
Propylaea.—Gateway or entrance to an Egyptian temple.
Quatrefoil.—An ornament in pointed architecture, consisting of four foils.
Rococo.—A style of decoration distinguished by a Superfluity of confused and discordant details.
Romanesque.—The debased style of architecture and ornament adopted in the later Roman empire, and the styles founded upon it.
Rose Window.—A large, circular window divided into compartments by curved mullions.
Rubble.—Rough stones and broken bricks, used to fill up between walls.
Rustication.—Hewn stone masonry, the joints of which are rendered conspicuous by grooves or channels.
Sarcophagus.—A stone coffin.
Scumbling.—The process of going over a painting with a brush, nearly dry, to soften and blend the tints.
Stylobate.—The common base of a row of columns.
Taenia.—A band which separates the Doric frieze from the architrave.
Tempera.—Painting with pigments mixed with chalk or clay, and diluted with size.
Torso.—The trunk of the statue of a human figure.
Tracery.—Geometrical ornament.
Transept.—A transverse nave, passing in front of the choir, and crossing the longitudinal nave of a church.
Trefoil.—An ornament of three foils.
Triforium.—The second or middle story of the nave wall of a Gothic church, consisting of a gallery over the ceiling of the side aisle and below its roof.
Triglyph.—An ornament, consisting of three flutings or upright groupings, separating the metopes in a Doric frieze.
Triptych.—A form of pictures in three panels.
Tympanum.—The triangular space between the horizontal and sloping cornices. The name is also given to the space included between the lintel of a door and the arch over it.
Vault.—An arched ceiling or roof of stone.
Volute.—A spiral scroll.
Voussoirs.—The wedge-shaped stones used in constructing an arch.
Zoophorus, Zophorus.—(Lit. bearing animals.) A continuous frieze, decorated with figures of animals, conventional and real.

WORLD'S FAMOUS PAINTINGS

I. In the Rijks Museum, Amsterdam

Title of Painting	Painter	School	Observations
The Night Watch.	Rembrandt (1607-1669).	Dutch.	Captain Banning Cock's company of musketeers coming out of the guard house. Wonderful arrangement of light and shade on figures.
Directors of the Cloth-Makers' Guild.	Rembrandt (1607-1669).	Dutch.	A masterpiece of portrait arrangement.
Banquet of the Guard.	Van der Helst (1612-1670).	Dutch.	On the occasion of the peace of Westphalia in 1648. Sir Joshua Reynolds called this canvas "the first picture of portraits in the world."
The Night School.	Gerard Dou (1613-1675).	Dutch.	Remarkable in the treatment of candle-light and exquisite in finish.
A Lady.	Netscher (1639-1684).	Dutch.	Marvelous rendering of textures and stuffs.

II. In the Antwerp Museum

Crucifixion.	Peter Paul Rubens (1577-1640).	Flemish.	Considered one of this master's chef d'œuvres. Sir Joshua Reynolds ranked it as one of the first pictures in the world.
The Entombment.	Quinten Matsys (1466-1531).	Flemish.	One of his celebrated works, containing ten figures, with the dead Christ in the center.
The Water Wheel.	Hobbema (1638-1709).	Dutch.	Excellent rendering of water in movement, by one of the great landscape painters of all times.
The Mandolin Player.	Terburg (1617-1681).	Dutch.	Exquisite treatment of surfaces and intimate surroundings of a Dutch interior.

III. In the Berlin Museum

Leda and the Swan.	Correggio (1494-1534).	Parmese.	A theme the artist painted many times, with great success.
Children of Charles First.	Van Dyke (1599-1641).	Flemish.	Justly considered one of the greatest of all the world's portraits of children.
The Wings of the Adoration.	The brothers Hubert and Jan Van Eyck (1390-1440).	Flemish.	One of the most elaborate altarpieces ever painted.
Boy Blowing Bubbles.	Vermeer (1632-1675).	Dutch.	Highly representative work of a most brilliant craftsman, one of the best of the coterie known as "the Little Dutchmen," and of recent years more fully appreciated at his true worth.
Saint Anthony and the Infant Christ.	Murillo (1618-1682).	Spanish.	One of the best of a long series of such pictures painted by this distinguished Spaniard.

IV. In the Borghese Gallery, Rome

Madonna.	Botticelli (1446-1510).	Florentine.	Botticelli was famous for his deep religious sentiment as expressed in his paintings and for exquisite finish.
Leda and the Swan.	Leonardo da Vinci (1452-1510).	Florentine.	It is fair to say that modern critics contest this attribution and in fact there are but few authentic works extant by Da Vinci.
Sacred and Profane Love.	Titian (1477-1576).	Venetian.	An undisputed masterpiece, full of glorious coloring and of splendid conception and execution.
Entombment.	Raphael (1483-1520).	Umbrian.	A highly important example containing eleven figures.
Danae.	Correggio (1494-1534).	Parmese.	Graceful arrangement of four nude figures.
Madonna.	Bellini (1428-1516).	Venetian.	Naively painted, and of deep religious feeling.

VII. In the Dresden Gallery

The Sistine Madonna.	Raphael (1483-1520).	Umbrian.	One of the most famous and popular of all the world's pictures.
La Notte.	Correggio (1494-1534).	Parmese.	This picture, *The Night*, is a representation of the Adoration of the Shepherds and was formerly known as *Madonna de Reggio*.

WORLD'S FAMOUS PAINTINGS—Continued

VII. In the Dresden Gallery—Continued

Title of Painting	Painter	School	Observations
Marriage at Cana.	Veronese (1528-1588).	Venetian.	Painted many times by Veronese, the most important canvas being at the Louvre, Paris.
Tribute Money.	Titian (1477-1576).	Venetian.	The last is a sumptuous work in rich, glowing color.
Cupid Crowning Venus.			
Sleeping Venus.	Sassoferrato (1605-1685).	Roman.	A fine canvas, for many years attributed to Titian.
Venus Reposing.	Palma Vecchio (1480-1528).	Venetian.	
Fortune Teller.	Caravaggio (1569-1609).	Roman.	This artist painted many pictures of this same theme.
Saint Mary of Egypt Kneeling at The Grave.	Ribera (1588-1656).	Spanish.	The artist, known as Lo Spagnoletto, painted much for churches and religious houses.
Saint Roderiguez.	Murillo (1618-1682).	Spanish.	
Virgin and Child.			
Charles I. of England.	Van Dyke (1599-1641).	Flemish.	Official portrait painter to the English court, Van Dyke limned all these people many times.
The Children of Charles I.			
Henrietta Maria, Wife of Charles I.			
The Artist's Wife.	Rembrandt (1607-1699).	Dutch.	This gallery contains a wonderful collection of Rembrandt's work.
The Artist and His Wife.			
Manoah's Sacrifice.			
Judgment of Paris.	Rubens (1577-1640).	Flemish.	
Madonna.	Holbein the Younger (1497-1543).	German.	One of the most important compositions by this master, containing no less than eight large figures.
Reading Magdalen.	Correggio (1494-1534).	Parmese.	One of the most popular and most reproduced religious pictures in the world, though of recent years its attribution has been questioned.
Crowned With Thorns.	Guido Reni (1575-1642).	Italian.	This work is familiar through many reproductions.
Lady in Satin.	Terburg (1617-1681).	Dutch.	Characterized by his usual detail and finish, a beautiful example.

VIII. In the Academy of Fine Arts, Florence

Allegory of Spring.	Botticelli (1446-1510).	Florentine.	World famous for its graceful arrangement of beautiful nudes.
Crucifixion.			This gallery is particularly rich in the pictures of its townsman, Botticelli.
Coronation.			
A Predella.			
Many Madonnas.			
An Angel.	Da Vinci (1452-1510).	Florentine.	This is in a painting by Verrocchio, and was painted when Da Vinci was his pupil.
The Nativity.	Ghirlandajo (1449-1494).	Italian.	

IX. In the Royal Museum, The Hague

The Young Mother.	Gerard Dou (1613-1675).	Dutch.	One of his very best examples.
The Anatomical Lecture.	Rembrandt (1607-1669).	Dutch.	One of the great paintings of all time, containing many figures showing seven students listening to a lecture by the famous Dr. Nicollas Tulp, who is dissecting a dead body. Rembrandt's fame dated from this picture. It was painted for the Guild of Surgeons, Amsterdam. Curiously enough, several famous painters have rendered the same theme, among them:—Aert Pietersen, Thomas de Keyser, Nicolas Elias, and Pieter van Mirevelt. There are several other important examples by Rembrandt in The Hague gallery, notably, *The Presentation in the Temple* and *The Flight Into Egypt.*
The Young Bull.	Paul Potter (1625-1654).	Dutch.	The most famous cattle picture in the world, painted when the artist was but twenty-seven. The animal is the size of life, another animal is lying near a tree by which are some sheep, and to one side is a peasant. Back of them there is a familiar Dutch landscape. Recent critics qualify the earlier profound admiration for this work.
Protrait of Paul Potter.	Van der Helst (1612-1670).	Dutch.	

X. In the Museum of Haarlem

Banquet of Officers of Arquebusiers of Saint George.	Frans Hals (1580-1666).	Dutch.	This large canvas contains twelve figures and is justly famous. The greatest claim this museum possesses is its superb collection of the work of its eminent townsman.
Banquet of Officers of Arquebusiers of St. Andrew.			All of these works may be considered as masterpieces.
Assembly of Officers of Arquebusiers of St. Andrew.			
Officers and Sergeants of Arquebusiers of St. George.			
Governors of the Elizabeth Hospital.			
Governors of the Hospital for Old Men.			
Lady Governors of the Hospital for Old Women.			

XI. In the Hermitage, St. Petersburg

Holy Family.	Raphael (1483-1520).	Umbrian.	
The Descent From the Cross.	Rembrandt (1607-1669).	Dutch.	This gallery is wonderfully rich in examples of Rembrandt's work.
Portrait of an Old Jew.			
Soldier			
His Mother.			
The Farm Yard.	Paul Potter (1625-1654).	Dutch.	A celebrated work ranking next to the artist's picture of *The Bull.*
	Van Dyke (1599-1641).	Flemish.	There are fourteen important canvases by this artist in the gallery.
	Rubens (1577-1640).	Flemish.	Represented by six notable canvases.
	Murillo (1618-1682).	Spanish.	Fourteen important canvases represent this painter here.

XII. In the Louvre, Paris

Madonna of the Cradle.	Raphael (1483-1520).	Umbrian.	
St. George and the Dragon.			
La Belle Jardiniere.			
Portrait of Himself.			
Portrait of Himself.	Rembrandt (1607-1669).	Dutch.	
Emmaus.			
Philosophers.			
The Samaritan.			

WORLD'S FAMOUS PAINTINGS—Continued

XII. In the Louvre, Paris—Continued

Title of Painting	Painter	School	Observations
Erasmus.	Holbein, the Younger (1497-1543).	German.	One of the world's famous portraits of deep human interest.
Soldier and Maiden.	Terburg (1617-1681).	Dutch.	A cabinet picture of great charm and delicacy of finish.
Officer Addressing a Lady.	Metsu (1630-1667).	Dutch.	A graceful composition by a master of genre work.
The Dropsical Woman.	Gerard Dou (1613-1675).	Dutch.	Very famous as being of a somewhat repulsive theme which the painter has by sheer force of craftsmanship made most interesting.
The Immaculate Conception.	Murillo (1618-1682).	Spanish.	This artist, as well as his contemporaries, painted this theme frequently, but this picture is the most famous of all and is a large canvas full of figures, exquisitely rendered.
The Birth of the Virgin.			
La Maitresse du Titian.	Titian (1477-1576).	Venetian.	
The Entombment.			A world-famous picture of deep religious significance.
The Man With the Glove.			Universally considered one of the greatest masterpieces of portraiture that the world has ever seen.
Crowned with Thorns.			
The Holy Family.			The collection is particularly rich in the work of this masterly Venetian.
Mona Lisa.	Leonardo da Vinci (1452-1510).	Florentine.	Perhaps the greatest single figure piece ever painted. It is a portrait of the wife of Zanobi del Giocondo, and the canvas is sometimes referred to as "La Gioconda." Da Vinci is said to have spent four entire years on the picture, which he sold to Francis I. for the then extravagant price of four thousand gold florins, a terrific amount for those days. It has been the shrine for art worshippers and students for many years. Many copies of this work, some by pupils of Da Vinci are in the various galleries of Europe. Stolen 1911. Found in Florence, 1913.
Saint Anne.			Among the few authentic pictures by this great artist.
Saint John, the Baptist			
The Marriage at Cana.	Paul Veronese (1528-1588).	Venetian.	The Louvre is full of masterpieces and this is one of its most famous, being an enormous canvas, of sumptuous coloring, containing portraits of Francis I. and his queen, Mary of England, the Emperor Charles V., and many painters, including the artist himself, Titian, Tintoretto and others.
Betrothal of Saint Catherine.	Correggio (1494-1534).	Parmese.	
Antiope and Jupiter Disguised as a Satyr.			
The Music Lesson.	Terburg (1617-1681).	Dutch	One of the famous gems of painting executed in great detail.
Shooting Match.	Van der Helst (1612-1670).	Dutch.	
Children of Charles I.	Van Dyke (1599-1641).	Flemish.	Van Dyke gave the greatest distinction to his portraits, of which, though he died at the early age of forty-two, he did many.
Charles I., at Full Length, With Horse and Suite.			
Isabella of Spain.			
The Duke of Richmond.			
Saint Sebastian.	Guido (1575-1642).	Italian.	A most representative collection of the work of this popular painter.
Mary Magdalen.			
The Holy Family.			
Portrait of the Infanta Margarita.	Velasquez (1599-1660).	Spanish.	A comprehensive representation of this great master's methods of work.
Maria.			
The Infanta Maria Theresa.			
Philip IV.			
Meeting of Gentlemen.			
Laughing Girl.	Frans Hals (1584-1666).	Dutch.	All are excellent examples, but this Dutch master is seen at his best in the gallery of his native place, Haarlem.
Portrait of a Lady.			
Portrait of the Beresteyn Family.			
The Embarkation for Cythera.	Antoine Watteau (1684-1721).	French.	Considered one of the most beautiful pictures in the world, of great charm, originality and poetic feeling.
Gilles of the Comedie Italienne.			
L'Indifferent.			
The Broken Pitcher.	Greuze (1725-1805).	French.	A very popular work, well known through reproduction.
The Raft of the Medusa.	Gericault (1791-1824).	French.	An epoch-making picture, being a great departure in realism and a protest against the prevailing academic manner. The work when first shown created a great sensation.
Portrait of Mme. Recamier.	David (1748-1825).	French.	Very distinguished canvases and both well known by reproduction.
Portrait of Himself.			
Oath of the Horatii.			These are hard, academic compositions, the figures rigid and unsympathetic, but drawn with distinction, though the manner of painting is of a curiously artificial period in French art.
Rape of Sabine Women.			
Œdipus Explaining the Riddle of the Sphynx.	Ingre (1780-1867).	French.	The picture *La Source* was painted when the artist was seventy-five and is one of the great works of his time, while some of his portraits are of most distinguished excellence.
Apotheosis of Homer.			
La Source.			
Portrait of Himself.			

XIII. In the National Gallery, London

Madonna and Child.	Cimabue (1240–1302).	Florentine.	Archaic and charmingly naive in its religious earnestness.
Madonna and Child.	Filippo Lippi (1457–1504).	Florentine.	Unusually fine landscape background to a well-balanced composition of deep religious feeling, characteristic of the times.
Saint Jerome and Saint Dominic.			
Madonna and Child.	Botticelli (1446–1510).	Florentine.	Of distinguished treatment and original composition arrangement, rendered in alluring detail and with conviction.
Reclining Venus.			
The Ansidei Madonna.	Raphael (1483–1520).	Umbrian.	Sometimes known as *The Blenheim Madonna* because it once belonged to the Duke of Marlborough. It is a noble composition, with the Virgin enthroned, St. John on one side and St. Nicholas of Bari on the other. There are other examples by Raphael in this gallery.
Our Lady of the Rocks.	Leonardo da Vinci (1452–1510).	Florentine.	This is a masterpiece pure and simple, one of the few authentic known works of Da Vinci, and there is a study for it at the Castle at Windsor. For finish, beauty of conception and profound skill of execution, it is unsurpassed in the world.
The Family of Darius at the Feet of Alexander.	Paul Veronese (1528–1588).	Venetian.	A grand, sumptuous composition, eminently characteristic of the master colorist.
Portrait of the Doge Leonardi Loredano.	Giovanni Bellini (1428–1516).	Venetian.	A most remarkable human document, full of deep sincerity.
A Tailor.	Giovanni Moroni (1525–1578).	Bergamese.	One of the world's famous portraits, full of character.
Mercury, Venus and Cupid.	Correggio (1494–1534).	Parmese.	Extraordinary painting of the nude forms of a man, woman and child.
Portrait of Jean Arnolfini and His Wife.	Jan van Eyck (1390–1440).	Flemish.	A remarkably painted portrait of two hideously ugly Dutch people, almost ludicrously naive in its selection of arrangement, but masterly in its rendering of light, shade and detail.
Portrait of an Old Lady.	Rembrandt (1607–1669).	Dutch.	A famous canvas, showing a seated woman in white cap and ruff.
La Chapeau de Paille.	Rubens (1577–1640).	Flemish.	The portrait of a beautiful young woman, thought to have been Mdlle. Lunden, wearing a black Spanish beaver hat. The picture was once known as *The Spanish Hat.* Rubens obviously admired this work, for he never parted with it, and when he died it went to his widow, who also retained it during her life.

WORLD'S FAMOUS PAINTINGS—Continued

XIII. In the National Gallery, London—Continued

Title of Painting	Painters	School	Observations
The Ambassadors.	Hans Holbein (1497-1543).	German.	One of the world's masterpieces, showing two gentlemen standing in handsome robes, by a table which is littered with various still-life, minutely painted. The floor is of intricate design, and cast diagonally thereon is the object that has been the subject of much speculation. It is apparently a human skull elongated, though for what reason no one seems able to determine. The work is of superlative greatness, however.
Charles the First.	Van Dyke (1599-1641).	Flemish.	A great portrait of the monarch on horseback, of rare excellence.
Portrait of Gevartius.			A man with a pointed beard, wearing a ruff about his neck, very famous and popular in reproduction.
The Peace of Munster.	Terburg (1617-1681).	Dutch.	Important composition, with many figures gathered about a table.
The Avenue-Middleharnais.	Hobbema (1638-1709).	Dutch.	One of the great landscapes of all time, by a man who received little appreciation during his life.
Interior of a Dutch House.	Pieter de Hoogh (1630-1684).	Dutch.	Interesting arrangement of light, shade and dexterous rendering of textures.
Philip IV. of Spain.	Velasquez (1599-1660).	Spanish.	One of the Spanish master's famous portraits of his king.
Marriage a la Mode.	William Hogarth (1697-1764).	English.	A series of six cartoons or pictures of the fashionable life of the artist's time, telling satires on the weakness, extravagance and dissipation of the nobility. These and other works here by Hogarth are world-famous.
Portrait of Mrs. Siddons.	Thomas Gainsborough (1727-1785).	English.	The famous actress seated in graceful pose, in large picture hat.
Portrait of Two Gentlemen.	Sir Joshua Reynolds (1723-1792).	English.	All of these portraits are human documents of the first order.
Doctor Johnson.			
Boswell.			
Admiral Keppel.			
Himself.			
George IV. as Prince of Wales.			
The Age of Innocence.			A very popular work of girlhood, known through reproduction.
Derby Day.	W. P. Frith (1819-1909).	English.	A popular picture full of infinite detail, representing England's famous race track on Epson Downs, on its fête day.
The Valley Farm.	John Constable (1776-1837).	English.	A famous landscape, which, with others by Constable, made a profound impression on the French artists who founded the Brabizon school, largely on the work of Constable.
The Fighting Temeraire.	J. W. M. Turner (1775-1831).	English.	An extraordinary colorful painting of the famous battleship being towed to her last berth; as a landscape allegory, not excelled.

XIV. In the Old Pinakothek, Munich

Saints John and Peter.	Albrecht Dürer (1471-1528).	German.	Wonderfully drawn and painted and full of engaging detail.
Saints Paul and Mark.			
Crucifixion.	Wohlgemuth (1434-1519).	German.	A marvelous composition, with many figures in the costumes of the artist's own time, with the dead Christ on the cross against a background of a mediæval city, all rendered in infinite detail.
Sacrifice of Isaac.	Rembrandt (1607-1669).	Dutch.	
Descent From the Cross.			
Mary and Saints.	Ghirlandajo (1449-1494).	Italian.	
Madonna Canigiani.	Raphael (1483-1520).	Umbrian.	A beautiful pyramidal composition that came originally as a part of the dowry of the Princess de Medici, to Elector Wilhelm, about 1507.
Street Boys.	Murillo (1618-1682).	Spanish.	There are in this gallery five other similar themes by Murillo.
The Physician.	Mieris (1635-1681).	Dutch.	This gallery contains fifteen other examples by this artist.
The Quack.	Gerard Dou (1613-1675).	Dutch.	This picture shows the artist at a window. In all there are twelve paintings in this gallery by Dou.
Dutch Interior.	Pieter de Hoogh (1632-1681).	Dutch.	
Battle of the Amazons.	Rubens (1577-1640).	Flemish.	
Abraham and Hagar.	Van der Werff (1659-1722).	Dutch.	
The Entombment.			
The Scourging.			
Ecce Homo.			
The Crucifixion.			

XV. In the Prado, Madrid

Las Lanzas (the Surrender of Breda).	Velasquez (1599-1660).	Spanish.	Unquestionably the finest historical military picture in the world. There is a group of soldiers to the right with lances (*las lanzas*) which give the picture its name. On the extreme right is a portrait of the artist with wide collar and hat with plumes.
The Spinners.			Known as *Las Hilanderas* or *Tapestry Weavers* a group of several women about a spinning wheel, and a great doorway in the center, in which are seen several more figures. A great and enduring masterpiece, showing the master at his best. There are over fifty pictures and portraits by Velasquez at the Prado, where his work is seen in its finest flower.
The Adoration of the Magi.	Rubens (1577-1640).	Flemish	
The Supper at Emmaus.			
Rape of Europe.			
Adam and Eve.			
Portrait of Marie de Medici.			
The Temptation of St. Anthony.	Teniers (1610-1694).	Flemish.	
A Village Festival.			
The Ninepin Player.			
A Surgical Operation.			
The Martyrdom of St. Bartholomew.	Ribera (1588-1656).	Spanish.	
Jacob's Ladder.			
St. Jerome Praying.			
St. Francis of Assisi in Ecstasy.			
Women Fighting in a Circus.			
The Adoration of the Shepherds.	Murillo (1618-1682).	Spanish.	
The Penitent Magdalen.			
Christ and St. John (Ninos de la Concha).			
Immaculate Conception (Four examples).			
Venus Listening to Music.	Titian (1477-1576).	Venetian.	
The Entombment.			
Venus and Adonis.			
The Fall of Man.			
Mater Doloroso.			
Portrait of Charles V. on Horseback.			
Portrait of Charles V. on Foot.			
King Philip II.			
Empress Isabel of Portugal.			
Charles V. at the Battle of Muhlberg.			

Title of Painting	Painter	School
The Chastity of Joseph.	Tintoretto (1518-1594).	Venetian.
Visit of the Queen of Sheba to Solomon.		
Susanna and the Elders		
Death of Holofernes.		
Tarquin and Lucretia.		
An Allegory of Venus.		
The Finding of Moses.		
Venus and Adonis.	Paul Veronese (1528-1588).	Venetian.
Christ at the House of the Centurion.		
Susanna and the Elders.		
The Marriage at Cana.		
A Youth Between Vice and Virtue.		
Cain Wandering With His Family.		
The Sacrifice of Abraham.		
The Vision of St. Peter Nolasco.	Zurbaran (1598-1662).	Spanish.
The Sleep of the Child Jesus.		
Saint Casilda.		
The Labors of Hercules.		
The Madonna del Pesce.	Raphael (1483-1520).	Umbrian.
Lo Spasimo de Sicilia.		
Portrait of a Cardinal		
Madonna la Perla.		
The Holy Family Under the Oak.		

WORLD'S FAMOUS PAINTINGS—Continued

XVI. In the Pitti Gallery, Florence

Title of Painting	Painter	School	Observations
Consequences of War.	Rubens (1577-1640).	Flemish.	
Two Landscapes.			
Portrait of Pope Leo X.	Raphael (1483-1520).	Umbrian.	The last is the *Madonna of the Chair* and has long enjoyed a great world-wide popularity, being perhaps the best known of the many Raphael madonnas. It has been reproduced in engraving and color, in every possible medium, and has had an enormous sale through Europe and America.
Portrait of Pope Julius II.			
Madonna Doni.			
Madonna dell' Impanata.			
Madonna del Granduca.			
Madonna della Segiola.			
Mary Magdalen.	Titian (1528-1588).	Venetian.	
Supper at Emmaus.	Palma Vecchio (1480-1528).	Venetian.	A theme that has always had a fascination for painters.
Charles I. of England and His Queen, Henrietta Maria.	Van Dyke (1599-1641).	Flemish.	
Three Ages of Man.	Lotto (1480-1556).	Venetian.	A very human composition, with age to the left and a handsome youth in the center, attending the reading of a man of middle age.
A Concert.	Giorgione (1476-1511).	Italian.	The three figures are said to be a portrait of Calvin, Luther and Melanchthon
Madonna and Saints.	Fra Angelico (1387-1455).	Italian.	
Eve.	Albrecht Dürer (1471-1528).	German.	Naive in both conception and rendering.
Adam.			

XVII. In the Uffizi Gallery, Florence

Holy Family.	Del Sarto (1486-1531).	Florentine.	The figures of St. Francis and St. John are contained within the composition. This is said to be Del Sarto's masterpiece.
La Fornarina.	Del Piombo (1485-1547).	Venetian.	This is a portrait of a very beautiful woman and for years was thought to have been by Raphael.
Portrait of Pope Julius II.	Raphael (1483-1520)	Umbrian.	A work most spiritual in its conception.
Virgin at the Well.			
Birth of Venus.	Botticelli (1446-1510).	Florentine.	
Venus and the Graces.			
Virgin and Child.			
Judith With the Head of Holofernes.			
Adoration of the Magi.			
The Annunciation.			
Portrait of Sir Robert Southwell.	Holbein (1497-1543).	German.	Both are world-famous portraits, of the first order.
Portrait of the Artist.			
Portrait of Elizabeth Brandt.	Rubens (1577-1640).	Flemish.	
Henry IV. at Ivry.			
Adoration.	Van der Werff (1659-1722).	Dutch.	
Entombment.	Van der Weyden (1400-1464).	Flemish	Very naive and full of great sincerity, in the manner of the Van Eycks.
Madonna Enthroned.	Memling (1430-1492).	German.	
Man Praying.			
Madonna.	Fra Angelico (1387-1455).	Italian.	In all a very comprehensive showing of the work of this interesting painter.
Coronation of Virgin.			
Naming of John the Baptist.			
Marriage of the Virgin.			
The Assumption.			
Virgin and Child.	Titian (1477-1576).	Venetian.	The Uffizi gallery contains portraits of artists painted by themselves at the request of the directors of the gallery, a distinguished honor that is not limited to men of Italian birth but includes the world's greatest artists, among them Rubens, Masaccio, Perugino, Raphael, Michel-Angelo, Leonardo da Vinci, Titian, Dürer, and other modern Europeans and Americans.
Venus.			

XVIII. In the Vatican Gallery, Rome

Communion of St. Jerome.	Domenichino (1581-1641).	Italian.	A famous work by a famous painter of altarpieces.
Dead Christ and Magdalen.	Raphael (1483-1520).	Umbrian.	
Faith, Hope and Charity.			
Transfiguration.			
Coronation of the Virgin.			
Adoration of the Shepherds.	Murillo (1618-1682).	Spanish.	A very effective rendering of the theme.
Coronation of the Virgin.	Pinturicchio (1454-1513).	Umbrian.	A fine painter who worked in "tempera," for he never mastered oils. His most famous work is a decoration for the library of the cathedral at Sienna.
Nativity.	La Spagna (——1530).	Umbrian.	
Madonna Enthroned With Saints.	Perugino (1446-1524).	Umbrian.	This artist was a pupil at the schools with Da Vinci, and was the master of Raphael, Lo Spagna and Pinturicchio.
Vision of St. Helena.	Paul Veronese (1528-1588).	Venetian.	
Madonna With St. Sebastian.	Titian (1477-1576).	Venetian.	
St. Jerome.	Da Vinci (1452-1510).	Florentine.	Cardinal Fesch had only the head of the saint, which had been cut out of the wood panel, but the rest was found at a dealer's shop in Rome and joined together with the original.

XIX. In the Venice Academy

Virgin in the Temple.	Titian (1477-1576).	Venetian.	An old woman in the picture, selling eggs, is said to be a portrait of the mother of the artist.
Assumption of the Virgin.			A grand work containing many figures.
The Entombment.			This was the last work of this great artist, begun in his ninety-ninth year and completed by Palma Vecchio.
Virgin and Child and Senators.	Tintoretto (1518-1594).	Venetian.	
Holy Family, With St. John.	Paul Veronese (1528-1588).	Venetian.	An astonishing piece of realistic flesh painting.
Procession in St. Mark's Square.	Bellini (1428-1516).	Venetian.	Highly interesting historically as showing the square as it existed in 1496.

XX. In the Vienna Academy

Portrait of Maximilian I.	Albrecht Dürer (1471-1528).	German.	Maximilian was a great patron of Dürer, though he did not invariably pay the artist's charges promptly.
Madonna and Saints.			
Himself at Forty-Five.	Rembrandt (1607-1669).	Dutch.	Rembrandt painted himself many times in various costumes.
Himself in Age.			
Young Man in Armor.	Van Dyke (1599-1641).	Flemish.	
Crucifixion.	Van der Weyden (1400-1464).	Flemish.	
Virgin and Saints.	Paul Veronese (1528-1585).	Venetian.	
Family of Velasquez.	Velasquez (1599-1660).	Spanish.	
A Venetian Lady.	Titian (1477-1576).	Venetian.	Very sumptuous in the color and remarkable treatment of stuffs.

FURNITURE.—It was not until the Gothic period, roughly spanned by the twelfth and fifteenth centuries, that furniture making was raised to an art, a crude art at first, heavy and clumsy as if the designers were awakening to new forms of beauty and in doubt as to how they should be expressed—but one of steady development until in the fourteenth century it reached a high degree of perfection.

Gothic.—The leading characteristics of this early style, as applied to furniture designing, were the pointed arch, the trefoil, the quatre-foil and simple tracery. Furniture was massive and Gothic motifs were confined to ornament. Construction was at first little affected by the style.

The leading characteristics of the later Gothic style as expressed in furniture were the divided Gothic arch, the quatre-foil, the cinque-foil, and an intricate scheme of tracery. The number of pieces in actual use at this period were chests of many varieties, cupboards, presses, dressoirs and armoires, stools, benches, chairs, bedstocks and bedsteads.

Peasant Cupboard of the Early Thirteenth Century

The Hall.—During the twelfth and thirteenth centuries, both in England and France, the hall was the main room in the house, in many cases the one room of the dwelling. In the homes of the nobility it was a lofty apartment which served the purpose of both kitchen and dining-room, and afforded the only living-room of the house. Meals were served on long trestle tables, the lord and lady of the manor sitting on a dias, which elevated them a few inches above their guests.

Below the dias the long and narrow table was set with viands less costly then those served to the master and the mistress. Here were gathered the baron and retainers. The placing of the salt divided the guests from the serving people. "Below salt" is an expression which has endured until today. On the dias were chairs with high backs and canopies. The latter were convenient in case of rain, for the raftered roof was not always proof against the weather. Benches without backs for the guests, and stools for the servants constituted the rest of the dining-room furniture. Between meals the tables were placed against the wall and the chairs were drawn to the fire. At night the serving-men slept on pallets of straw on the hearth.

Drawing-Room.—The next century added another room in the home of the affluent—a "withdrawing" room for the ladies—the beginning of our modern drawing-room. Here the mistress of the house with her ladies-in-waiting could retire when the music from the minstrels' gallery became too loud, or the jester's jokes too broad, or the drinking and fun too boisterous.

The Fifteenth Century was an important milestone in the march of progress. By this time the hall had lost its early character. It was large and often a meeting place for the owner and his friends, but as rooms multiplied, it ceased in turn to be parlor, kitchen and dining-room. It was gradually approaching the great entrance-hall of the seventeenth and eighteenth centuries. It retained its fine proportions, its lofty dimensions, but the raftered roof had given place to a beamed or vaulted ceiling. The big fire-place had grown more architectural, though still retaining its generous hearth. The rough walls were gone and in their place were oak panels and fine tapestries, the latter imported from Flanders, for the day of the French looms had not arrived.

During this period, furniture was of two general types— movable articles which could be transported with ease, and massive pieces which could be left behind with safety. It would be a bold thief who would try to escape with a heavily carved chair weighing several hundred pounds and made more unwieldy by a wooden canopy. In the same way the bedstead of the day was also quite immovable, for it, too, was well incased in wood and finished with a canopy. Both canopies had the same origin—namely, to protect the occupant from rain in case the roof should not be sufficient shelter. And while the wooden canopies in a milder form survived long after better building methods came into existance, they had their beginning in defective house building. When houses became water-tight and air-tight, furniture gradually assumed different aspects.

Origin of Modern Chair.—In the late fifteenth century, except in ecclesiastical chairs, the canopy was discarded. This straight back design was the ancester of our every-day chair—although three centuries of furniture making intervened between the two. Flemish designers in the sixteenth century had an active hand in its evolution. They remodeled or revised the chair on new lines and sent it to England where, in the seventeenth century, it underwent other changes. But the part the old Gothic designers had in making all this possible must not be forgotten. They took the crude pieces of the dark ages—the bench, the chest, the bedstock and transformed them into things of beauty. They made not only objects of beauty, but, in comparison with earlier efforts, articles of real comfort and convenience. Their constructive work was built for centuries rather than years, while the delicacy and charm of their carving, now almost as perfect as when it left their hands, still stand as models for the world.

St. Peter's Chair, St. Peter's Church, Costello, Italy. One of the earliest examples of wooden furniture.

Classic Renaissance.—With the sixteenth century came a transformation in living. The Renaissance, beginning in Italy, gradually spread throughout Europe. The house was no longer a stronghold; it had become a home.

Periods.—Broadly, the Renaissance had three distinct styles: The trecento, quatro-cento, and cinque-cento. The first was developed between the years 1300 and 1400 and its influence was confined to architecture and sculpture. The quatro-cento belonged to the fifteenth century and was a more classic style than its predecessors. The cinque-cento was the culmination of the art of the Renaissance. The former styles were but preparation for the architecture, sculpture, painting, and decorative arts of the sixteenth century.

It was not until the cinque-cento period that furniture showed traces of the classic revival. Wood-workers clung to Gothic designs long after stone-cutters had discarded them. Thus some of the tre-cento and quatro-cento motifs are exhibited in the furniture of the sixteenth century. It is well in studying the wood-work of this epoch to keep in mind the leading features of the three styles. The trecento consisted of interlacing lines combined with simple tracery and conventionalized foliage. The quatro-cento blended the festoon, the garland, the band, and the cartouche with naturalistic fruit and flowers. The cinque-cento was a restoration of classic details and included the fret, the arabesque, the anthemion, or honeysuckle, the scroll, and the acanthus.

The Renaissance raised furniture-making to an equality with the other industrial arts. Pupils were apprenticed to a master and studied with him until they had perfected their craft, when they opened work.

shops of their own. The pieces produced in these great studio-shops united beauty with utility. For the first time designs were made with reference to their setting. The furniture of the private dwelling was suggestive of neither cathedrals nor abbeys. It was made with a careful regard for the needs of the owner, his station and manner of living. Thus houses possessed a harmony which had hitherto been absent.

French Renaissance.—"The new birth" in France may be divided into the following epochs: First Transition, 1453-1515, including the reigns of Charles VIII. and Louis XII.; second, Francois I., 1515-1547; third, Henri II. and Henri IV., 1547-1610; fourth, Louis XIII., 1610-1643 Under Charles VIII. the great tide of the Renaissance extended northward.

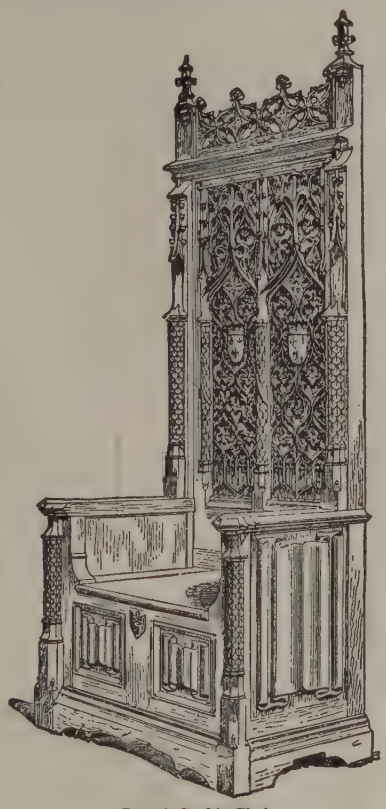
Francis I.—The reign of Francis I. was one of great activity in all lines of artistic achievement. This monarch, unwilling to be outdone by Henry VIII. of England and Charles V. of Germany, summoned to his court the greatest architects, painters, designers, and wood-carvers of Italy and Flanders. Under his patronage were erected many beautiful buildings, which in part, at least, give some hint of what the French Renaissance really was.

His Successors.—France has had but one other such royal patron, Louis XIV. Both sovereigns were nearly equal in power. Francis had the advantage of coming to the throne at a more interesting period of the world's history. His reign, a little more than a quarter of a century in length, 1515 to 1547, represented extraordinary achievement. The combined reigns of the five succeeding monarchs, Henri II., Francis II., Charles IX., Henri III. and Henri IV., completed the century and brought to a close the most important years of the French Renaissance. Of these sovereigns, so different in character, four of whom represented the many virtues and vices of the House of Valois, Henri II. and Henri IV. only were worthy successors of the great "Francois Premier." They exerted a helpful influence on the fine and industrial arts, and left much to testify to their taste and generosity. Both have been immortalized in a "Style," the "Henri Deux" being the more celebrated.

Renaissance Details, at first were combined with Gothic construction. It was not until the sixteenth century was well under way that the real force of the Renaissance was felt. France was the birthplace of Gothic art and the transitional period was of longer duration than in Italy.

Chairs. In the reign of Francis I., chairs became more varied in treatment. The cane design of Flanders was early adopted; the plain high Dutch chair was also a favorite, but it was somewhat reconstructed. The seat was lowered, and it was comfortably upholstered. The French seem at all times to have been very keen about comfort, far more so than the English, who until the seventeenth century were more or less indifferent to many of the refinements of life. And it was then by way of France that many minor comforts reached England.

Cabinets. As the 16th century advanced, French cabinets developed on high and narrow lines. Those of the Francis I. period show carved panels, moldings, and pilasters, but seldom anything ponderous—although at this time presses and armoires were built on heavy models. Distinctions between these pieces of furniture were always made in France where subtle dividing lines were recognized. French furniture-makers also made a distinction between designs for the *salon famille* and the *salon campagnie*, and this is the reason why so much French furniture which comes to this country is so unfitted for living-rooms. It was never intended for anything but gala apartments, and naturally looks out of place elsewhere.



French Gothic Chair

Henry II., in many ways did as much for France artistically speaking as Francis I. He did not build in the lavish way of his father, but two very clever women ruled his court, and each in different ways had a tremendous influence on the arts of the day. One was Catherine de Medici, whose tastes were naturally Italian, and the other was Diane de Poitiers, the most remarkable woman of her time. Diane's emblem, the crescent, is found combined with Henri's monogram in one of the most beautiful rooms in Fontainebleau. The chimney-piece has interlaced lines and shows the early stages of that beautiful Renaissance pattern known as "strapwork" so popular with workers in stone, wood, and silver in both France and England. It is found in woodwork, in furniture, in the Grolier book-bindings, and in the Oiron pottery, better known as "Henri Deux" ware.

Between the reigns of Henri II. and Henri IV., the latter better known as Henry of Navarre, no marked changes took place in handicraft. By the time the latter came to the throne a good deal of the beauty of early Renaissance ornament had disappeared. The simple arabesques, seen to such charming advantage in the Francois I. style, and the equally simple strapwork of the Henri II. style, lost favor with decorators and wood-carvers. Shell ornament, which was destined to play such an important part in the decorative arts of France for nearly two centuries, came into great prominence during the Henri IV. period, although known at an early date.

Upholstery. During the reign of Louis XIII. came many changes in domestic comfort. The upholstered chair in the modern meaning of the term came into existence. It was an arm-chair, and the seat was lower and broader, and the upholstery instead of being any rich and sumptuous material which the designer of the chair could command, or the owner happened to possess, was an especially selected covering so designed as to correspond with other chairs or to harmonize with the wall treatment. Window draperies were also selected with great care; they were more than a mere protection against air and sunlight. The age of upholstery had arrived.

Wall Treatment received especial attention, and was carried to a very elaborate point in France during Louis XIII's. reign. Simon Vouet, who bore the same relationship to Louis XIII. that his famous pupil, Le Brun, did to Louis XIV., was responsible for most of the florid decoration of the day. Furniture-makers were always a little behind the decorators, and while many of the wall schemes of the day are too ornate from the modern view-point, the beautiful chairs, tables, and cabinets are well worth studying. Flemish influence was strong in the early part of the seventeenth century, due indirectly, it is said, to Rubens' visit to the French Court.

The Characteristics of the French Renaissance are briefly as follows:

A transitional period similar to that of Italy but of longer duration, for Gothic art was more firmly rooted in France than in the south. The ornament of the French Renaissance was in a lighter vein than that of the Italian, and less dependent on antique models. Delicate arabesques and pierced shields were used by furniture-makers and decorators. Later in the sixteenth century wood-carvers combined an interlaced ribbon or strap ornament with the lozenge and the cartouche, which was followed by the introduction of the shell and the ornate scroll. From that date wood-carving lost much of its charm.

Flemish and Dutch Renaissance.—The Renaissance reached Flanders and Holland tardily. Gothic traditions lingered late in the north and the long transitional period lasted well into the sixteenth century. Holland was always more independent politically than Flanders and her work was less influenced by outside conditions. This fact makes Dutch work comparatively easy of identification, while that of the Flemish, being more mixed, sometimes raises a question. Spanish and French influences are ofter present in the early Flemish work. Charles, King of Spain, and Emperor of Germany, was also Count of Flanders, and Duke of Burgundy. The intercourse between these countries and provinces was decidedly intimate at this period. The Italian Renaissance was on the wane when the Flemish Renaissance was at its height

Holland and Flanders were far enough away from Italy to be quite independent of her influence. When Italian influence reached Flanders it was by way of France, with a strong mixture of French feeling added. When this complex influence was carried into England it had gained another element in addition to the Franco-Italian, and this is one reason why the English Renaissance swings so far from the classic. In the former the Flemish tincture is decidely marked. In the sixteenth century, particularly, English work showed far more Flemish influence than either French or Italian. In the seventeenth century it was more Dutch than Flemish in feeling and remained so until the pendulum swung once more toward French designs, this movement giving way to the classic revival of the late eighteenth century.

Dutch Chair of the Renaissance, Museum of Fine Arts, Boston.

Flemish Carvings.—Primarily the Flemings were great carvers. They had carved for centuries, and having carried Gothic ornament to a fine point it was quite natural that they should continue to carve, when a totally different style was in vogue. They were less bound by classic traditions than the Italians, and they maintained a simpler mode of living. The Flemings in their work has always used the human figure. Heads of men and women decorate many of their pieces, particularly cabinets, cupboards, sideboards, etc., and where there are large expanses of wood to be covered. Some of the pieces are too heavily carved to suit our present ideas, but we must, at least, pay tribute to their skill.

Paneling, ribbon-bandeaux, swags of fruit and flowers, strap work, and kindred things are more harmonious in a modern dining-room or living-room than masks, animal heads, or the human figure, clever as they may be in execution. The linen fold pattern, sometimes called the "parchment scroll," really a survival of Gothic ornament, is found in a good deal of Flemish furniture of the sixteenth century and is one of the simplest and best of the patterns of that day—so attractive that it is a wonder that it is not used more in modern furniture constructed on Flemish lines and in the paneling of rooms built in Flemish style.

Many Flemish ideas exist in our everyday furniture which we have long since accepted as entirely modern. They do not suggest to the casual observer anything bordering on period styles and are only "period" through long years of transforming and adapting. Flemish furniture makers did much in promoting the evolution of the chair. They rebuilt, as it were, the beautiful Gothic chair, lowering the seat as well as the back and substituting horizontal braces for the heavily carved arched braces of the fifteenth century. Flemish chairs were of several varieties, but two types were prominent—the upholstered chair with turned legs and braces, and the carved chair with a cane back and a cane seat.

The Dutch at this time were achieving fame in different lines. They were not a nation of carvers. They were great in a different way. Marquetry and inlay were favorite Dutch methods of ornamenting furniture during the seventeenth century.

The special value of the Flemish and the Dutch Renaissance from our viewpoint is the effect it had on the furniture-making of England, for by this time, late seventeenth century, we of America had our own furniture interests. If we date the colonial period from the time when it really began 1620, our own era had come into existence, and though no one knew it, least of all ourselves, we were making furniture history.

Characteristics.—In summing up the contributions of Holland and Flanders to furniture making, special emphasis should be laid on the cane work of the first country and the marquetry of the second. But Dutch marquetry, beautiful as it is, pertains to decoration rather than construction, and it is to Flemish designers that the greater glory belongs.

German and Spanish Renaissance.—Two phases of the Renaissance, German and Spanish, terminate the great Classic Revival on the Continent. In Germany there was a long transitional period during which the lingering traditions of Gothic art died slowly. The early phases of the Renaissance show the grafting of the new upon the old. This mixture of Gothic and Renaissance was less successful in that country than in France where a happier union prevailed.

The best examples of German wood-carving of the early sixteenth century were of ecclesiastical origin. Choir stalls and altar pieces were richly decorated in the manner of the day. In domestic furniture the combination of Gothic construction and Renaissance ornament was less successful.

The great presses of this century are the most characteristic pieces. Made of oak and walnut with carved panels and heavy doors they are as substantial today as when they came from the hands of their maker. The press illustrated among our pictures, is made of walnut with an unusually fine scheme of decoration. The plain surfaces are well distributed and the ornament, although elaborate, is neither heavy nor fantastic. The lock is concealed in the carving, while the key repeats the lines of the ornament. The ball-feet are worthy of note, as they indicate a new feature of furniture-making.

Carved Press of the German Renaissance

Spanish Contributions.—From her oriental colonies Spain imported ebony and ivory and other costly adjuncts to furniture making. The elaborate metal work which today is the most interesting part of a great deal of this furniture is Spain's most important contribution to furniture making.

The Moors. Damascening, *nielo*-work, and kindred crafts had long belonged to Spain, following closely on the Moorish invasion. In Granada, the city of the Moors, were fashioned many of the most elaborate chests and coffers, and long after the Moorish expulsion, Granada was still the center of fine cabinet work. Those who visit the Alhambra today can trace many similarities between the wall decorations of this famous palace and the embellishments of old Spanish furniture. The Gate of Justice and the Gate of Judgment recall in a grander, bigger way certain motifs in inlay and metal relief, and the whole architectural and decorative scheme brings to mind the comparison that it is all a grandiose kind of jewelry.

The cabinet elevated on high turned or carved columns was a characteristic piece and as one or more examples are usually found in every museum and in many private collections, it is as typical a specimen as could be selected. One type is quite plain apparently but the whole front lowers at the turn of a key and reveals an exquisite inlay of ivory and metals with ornamental bosses. And there are many variations of this beautiful style. Iron is used most attractively at times and the inlay includes bone, horn, shell, and occasionally painted decorations. Color is sometimes introduced beneath the horn.

The Leather Chair. The influence of the Flemish cane chair on the furniture-makers of Europe has been mentioned. The leather chair of Spain equaled it in importance. Both had high backs and carved legs and braces, but there the resemblance ended. The Spanish design consisted of a sturdy frame of oak, chestnut or walnut, a back completely encased in leather, turned stretchers, a carved underbrace and hoof feet. English furniture makers of the 17th century gained inspiration from both Flemish and Spanish models in their famous Jacobean designs of wood and cane.

English Renaissance.—By the middle of the seventeenth century, French and Italian furniture, like the wall treatments of that day, became heavy and ornate.

The vitality of the Renaissance in these countries was over. It was the age of beautiful surfaces; of elaborate ornamentation. Constructively neither the Italian nor the French had as much to their credit as in the previous century. Craftsmen were painting the lily and gilding refined gold.

English craftsmen never interpreted the Renaissance as did furniture-makers of the continent. When the classic wave reached England it had gained and lost much on the way. There were French and Flemish influences, and there were, moreover, English traditions too firmly planted to be uprooted.

The Characteristics of the 16th and 17th Centuries in designing were:

First, the English Renaissance or Tudor, which was a mingling of Flemish and Italian grafted upon Gothic; second, late Tudor or Elizabethan, showing greater unity (strapwork and paneling were features of this period); third, Jacobean, covering nearly a century, and including many types. Furniture was paneled and carved until walnut was introduced, when veneer and marquetry became popular. Among Jacobean characteristics were the spiral leg, the rising panel, and spindle ornaments. With the accession of William of Orange in 1688, Dutch influence became paramount, and English furniture was slowly developed on more graceful lines.

Historic Periods.—English Renaissance, Tudor, Elizabethan and Jacobean, are terms associated with the 16th and 17th centuries, a long period to sum up in a sentence, but one, which in spite of "mixed motifs," was remarkably homogeneous. Queen Elizabeth was, of course, very much a Tudor, but having been honored by a style all her own, the term "Tudor" is often applied to the reigns of Henry VII., Henry VIII., and Mary.

Tudor Cupboard of Oak

Henry VII.'s reign began in 1485 and was contemporaneous with the reigns of Charles VIII. and Louis XII. Elizabeth's long term ended in 1603, while Henri of Navarre was on the French throne. The early and late Tudor periods thus covered one hundred and eighteen years, the Virgin Queen appropriating nearly fifty. In company with Victoria, she is quite entitled to her own "style."

The Henri II. period is very closely allied to the Elizabethan, through the strap-work motif in wood carving which was popular in Flanders, England and France. It is seen in many English cupboards of the late sixteenth century and also in chimney breasts and wall treatments. It is one of the most valuable contributions of the Elizabethan period to design, and ranks with the linen fold motif of an earlier day and the "rising panel" of a later one.

Wainscot Chair of Elizabethan Design

Styles in English furniture were of slow growth, with much overlapping and intermingling. The Jacobean period was well under way before there were many changes in design, and it was not until Charles I. was on the throne that the popularity of certain Elizabethan patterns completely waned. Even then the outlines of furniture changed little. The court and livery cupboards were modified a trifle to suit a simpler scheme of carving, but oak was still the chief wood, and so long as it remained in use "massive" furniture continued to be made. The Protectorate caused a break in the crafts and by the time it was over, and Charles II. was safely placed on the throne, 1664, many new influences shaped and developed English handiwork.

Jacobean Furniture is roughly divided into two parts—"early" and "late." "Early Jacobean" preceded the Commonwealth, covering the reigns of James I. and Charles I. "Late Jacobean" followed the Commonwealth, including the reigns of Charles II. and James II. The Commonwealth or Protectorate with Oliver Cromwell at its head was too turbulent to be very productive of the arts.

After the Restoration, all English furniture became more graceful. Charles II. had been brought up at the court of Louis XIV. and returned to England with French ideas of comfort and refinement.

The furniture of Charles II.'s time is worthy of its present renaissance. Designers retained the best of the many motifs bequeathed from the earlier part of the century, combined with newer schemes. Paneling remained in favor, but it was diversified by nail-head and spindle ornaments, in the very late sixteenth century.

The introduction of walnut brought about a decided change in English furniture. It made possible a lighter, more graceful construction and an entirely different scheme of decoration. Carving was largely superseded by marquetry, which was well adapted to walnut and to the Dutch designs which William introduced.

The William and Mary period was brief, but it is an important link between seventeenth-century oak and eighteenth-century mahogany. During this reign the revocation of the Edict of Nantes caused many Huguenots to take refuge in England. A large portion were of the craftsman class and readily found employment. This added another element in furniture designing.

Walnut was used during Queen Anne's time and continued in favor until mahogany was well established, which was between 1720 and 1730. The cabriole leg is credited to William and Mary—to their reign, that is to say, and a most valuable accessory it proved to be. Inasmuch as William and Mary ruled jointly, a share-and-share-alike plan, unique, in English history, their brief period has an additional claim to consideration.

Louis XIV., Louis XV. and Louis XVI.—When Madame de Maintenon wrote to a friend, "The King will have us buried in symmetry," she expressed one of the most characteristic features of the Louis XIV. style. It was symmetrical, balanced, beautifully proportioned, cold, formal, lacking in imagination, and from modern viewpoints oppressively grand—like the monarch for whom it was named. Thirty

Charles II. Cabinet —Late Jacobean

years ago, there were probably fifty rooms in this country furnished in Louis XV. to one in Louis XVI. The latter had not been popularized by the professional decorator. It belonged to that remote century, the seventeenth, which for some strange reason has always seemed several hundred years away from the eighteenth.

Characteristics of Styles: French styles may be briefly characterized as follows:

Louis XIV: A formal rococo in which proportion and balance were salient features. Important details were the shell, the classic acanthus, the ram's head, the mask, and the satyr. In the early period furniture was massive and the designs of the Louis III. style were perpetuated. Carving was largely superseded by marquetry and by chiseled mounts of ormolu and bronze. Boulle furniture belongs to this reign and is now the most highly prized of Louis XVI. designs.

Regency. The rococo division of French designing is known as the Regency—the output of that brief period between the death of Louis XIV. and the coming of age of Louis XV., when the Duke of Orleans was regent. The Regency is an important period when viewed from the historic side of interior decoration. It forms an important link between the Louis XIV. style and the real Louis XV., which later in the century became once again extremely rococo. It is, however, the least worthy of admiration of any of the French epochs.

Ormolu Table of the Regency—1715-1723

Louis XV: Balance and symmetry were less important in the eyes of furniture-makers than richness of ornament and faultless execution. Angles gave place to curves, and the talents of the gold smith and the painter were utilized in designing furniture which, in point of workmanship, has never been surpassed.

Louis XVI: Simplicity of construction and severity of ornament. Rococo details disappeared and classic emblems replaced them. Important features were the fluted column, the bay leaf, the oak and acorn, the Bell Flower or "Corn Husk," the Greek band, and the plain acanthus. Straight lines superseded curves and ornament was a means, not an end.

Louis XVI. Table

The long reign of Louis XVI. witnessed many changes and developments in furniture designing. The reign of the next Louis was briefer, but quite long enough to make any one phase impossible, but with the final Louis—if we leave out Louis XVIII., who does not count when it comes to "periods"—the designing of the eighteenth century seems to have been crystallized. All the furniture of these three great epochs shows marvelous execution. Whether it be a Louis XIV. cabinet of boulle, a Louis XV. chair, or a Louis XVI. table, the workmanship is unsurpassed.

Metal played a very important part in many of the designs and added tremendously to their cost. Furniture decorated with insets of porcelain, usually of Sèvres, formed one class of Louis furniture; and fine upholstery of Beauvais and Aubusson were important accessories in both Louis XV. and Louis XVI. designing.

English Furniture of the Eighteenth Century.—The Early Eighteenth Century.—In our devotion to the late eighteenth century we are apt to overlook the rich legacy bequeathed to us by the early eighteenth, or to confuse it with other periods.

Yet the first half of this fascinating century was almost as important; a period of great variety of design, of many men working in many veins, of old ideas slowly giving way to new. If less unified than the latter half it was full of picturesque vigor and of sturdy simplicity, partly Dutch, and partly a survival of Jacobean traditions which lingered in spite of changed conditions.

The perpetuation of Dutch motives—such as the cabriole-leg and the web-foot continued until the fourth decade of the century. The web-foot or flat-foot we find in most of the furniture of Queen Anne's time, and a charming adjunct it is to the designing of the day. Chippendale preferred the ball-and-claw foot also at times in his later and elaborate "ribbon backs." He was one of the first English furniture makers to use the square leg, also one of the first to adopt the curving French leg of the Louis XV. period, but he clung to the cabriole or bandy leg in its various forms until about 1740.

Chippendale was the first important English furniture maker to have his name perpetuated by a style. Celebrated designers had preceded him but their identity is submerged in that of their sovereign. Chippendale raised his craft to such a point of excellence that his own name became associated with it.

What furniture of the eighteenth century would have been if mahogany had been unknown is a difficult question to answer. It is impossible to imagine Chippendale's designs in oak—just as it is impossible to conceive of the heavy furniture of the seventeenth century being executed in mahogany.

The Chairs and Settees from the Chippendale shop in Martin's Lane comprised at least six different styles—the early Dutch types with ball-and-claw feet and plain slats; the same with pierced slats. These two distinct backs were also combined with straight legs and later there were other variations. The curved leg of the Louis XV. style was a favorite with Chippendale, but was usually combined with an elaborate back. There were several distinct "ribbon" styles, a rather uncommon one having an intricate leaf pattern carved with the ribbons. After 1740 the "Gothic manner" and the "Chinese taste" fascinated Chippendale, and about 1750 he became extremely rococo. The English designer is not at his best in copying the Frenchman, and Chippendale pleases us least in his rococo furniture; nor do we like him nearly so well in his Gothic and Chinese absurdities as in his earlier and simpler things.

Chippendale's great point of excellence was his ability to take the designs he found at hand and so improve them that they took on new life and meaning. He was a past master at adapting; not so much an originator as a free and most successful translator of all that came to his hand. That he had more than his just reward is perhaps true. That he did not make or even design half the furniture bearing his name must also be conceded, but that he gave permanent fame to much that would have perished but for his indefatigable efforts must always be placed to the credit of "T. Chippendale of St. Martin's Lane."

The Later Eighteenth Century.—Thomas Sheraton, Thomas Shearer, George Hepplewhite, and Robert Adam are the names which stand out brightest in the roster of the late eighteenth century. Possibly Robert Adam should come first and Shearer fourth. Transpose them as you will, but place Sheraton near the top. It might be well to mark both Adam and Sheraton "one" for it is hard to divide the honors.

Robert Adam, fresh from his studies in Italy, returned to England at an opportune time. With him came Bartollozi, the engraver, and the painters, Pergolesi and Cipriani, both designed to play an important part in English furniture making.

We recognize the urn and the oval pateræ as Adam; also certain motifs like the acanthus, the ribbon band, the arabesque and the garland, as both Adam and Louis XVI. There is a good deal of similarity between the two styles. We find in the English style a greater slenderness and a totally different treatment of the wood. The Adams used carving very sparingly; many of their finest pieces have not a trace of it. They also brought

to great perfection painted furniture, employing Pergolesi and Cipriani for the finer work; also that gifted and erratic woman, Angelica Kauffman.

In Adam furniture a charming light green is often seen; there is also a burnished gold which almost equals Vernis-Martin. Cipriani had many Italian secrets of mixing colors and a good deal of this work is from his hand.

Cane Furniture was designed by Adam and is today the type most frequently reproduced by American furniture makers. The chair backs are usually oval and the cane webbing usually follows the lines of the frames. By this time the square leg has been to a large measure discarded. Hepplewhite, however, preferred the square to the round one; Shearer did likewise; Sheraton used both the plain round leg and the square leg; he also had a strong preference for the fluted leg of the Louis XVI. style In most of the Sheraton furniture in this country the fluted leg is found. In the sideboards especially it is a characteristic feature.

Inlaid Work.—By the last decade of the century, the fancy was no longer for carved mahogany; in many instances it was no longer for mahogany of any kind. Inlaid furniture of satin-wood and painted furniture of satin-wood represented the taste of the hour. Many writers have credited to Sheraton the introduction of satin-wood. If this be true he gave almost as much to the Adam Brothers as they gave to him.

Sheraton's furniture creations may be divided into three classes—carved, inlaid and painted. His sideboards and chairs come usually under the first head; his cabinets and tables, the latter found in great variety in England, to the second; and to the third, belongs a large portion of the work he did for the Adam Brothers, which is extremely scarce in this country. Some of his inlay has as much color as if executed with the brush. Sycamore was a favorite wood with him and under the name of "harewood" was given a beautiful golden brown. Combined with satin-wood or white mahogany, it was extremely effective. Whitewood was stained apple green, that lovely tone which Kauffman and Cipriani were so successful in securing. Other woods Sheraton used with consummate skill. He was thus able to give to his simplest designs a real color value.

Hepplewhite's greatest contribution to furniture-making of the late eighteenth century was his masterly use of heart and shield shaped motifs. Most of his chairs have shield-backs, but it was in his dress-tables and kindred things that this motif is seen in its most charming guise. Charm is the word to give his work. The strength of Chippendale; the proportions of Sheraton we do not find. His range is limited. He repeats one theme over and over. His knowledge of woods did not equal Sheraton's—he had none of Chippendale's mastery of construction—but he had a fine intuitive feeling for beauty and he expressed it in his work. He was not a carver of note, like Chippendale, not a master inlayer like Sheraton, yet so great was his popularity that he employed many men to help him fill his commissions and his reputation was so well established that after his death in 1875 his widow was able to carry on his business for years.

Their Comparative Merits. — Neither Sheraton nor Hepplewhite could rob Chippendale of his supremacy as a chair maker. Sheraton's designs with straight legs and rectangular backs are not his most attractive work. In Hepplewhite's chairs his famous shield seems to lack constructive force. Chippendale still held his field. Sheraton's sideboards, cabinets, tables and bedsteads reach high water mark. Hepplewhite's sideboards and tables are also greatly to his credit. To Sheraton we accord a grasp of proportion, a feeling for restraint which were not equaled in his generation. If we place him at the head of the furniture makers of his century it is because he expresses the ideals of our own day—simplicity, proportion and reserve. Chippendale produced a far greater variety of designs, not alone because variety of design appealed to him, but because he lived at a time when fashions in furniture were extremely diversified. The last quarter of the eighteenth century was a remarkably unified period and here tribute must again be paid Robert Adam, for he was largely responsible for producing it.

Thomas Shearer must be mentioned as a designer of mark—particularly successful with sideboards and book-cases. The serpentine sideboard is supposed to have been originated by him. Hepplewhite gave this type distinction and it is his name that we associate with it.

The French Empire.—The Empire style marked the last of the great historic epochs in furniture and decoration. It was cold and formal, reflecting the personality of the man — Napoleon — so closely identified with it. The Revolution brought chaos to the industries of France which had so flourished under the old regimé. Furniture-makers and metal-workers were thrown out of employment. Many suffered imprisonment or death by the guillotine. With few exceptions the artist-artisans of the Louis XVI. period had little part in the handicraft of the Empire. The Directory and the Consulate were periods of construction. In the arts the process of rebuilding is slow. David's name is associated with this transition from old forms to the new, and with him must be mentioned Charles Percier and Pierre Fontaine. Percier was architect to Napoleon during the Consulate and ranks with Fontaine as a celebrated craftsman of the period. Napoleon was not a patron of the arts, yet no monarch of the old regimé had so dominated a style. The letter "N" is stamped over the entire decorative scheme of the Empire.

Designers of Louis XVI's day lauded the classics, but seldom to the extent of the Empire artists and never to the glory of one man. The laurel leaves of the preceding style were rearranged and twisted into a victor's wreath. The fluted column upheld a torch. Roman and Grecian emblems were used lavishly. "Paris was to become a new Athens, Napoleon a Cæsar, and France a second Roman empire." The craze for the antique transformed the dress of the day. Statesmen wore togas and court ladies donned the gowns of Grecian goddesses. Architects, decorators, and furniture-makers were imbued with the spirit of the hour. The classic lived again and, if somewhat inconsistent, the enthusiasm of the day overlooked all shortcomings.

The Chief Characteristics of the Empire Style were the wreath and the torch, the Roman eagle, the Athenian bees, the Greek fret, and the honeysuckle. After the campaign in Egypt the sphinx was added to the medley and became a conspicuous feature in both furniture and decoration. Distinctive qualities of the furniture of the period are few and easily mastered. Constructively the plain column and the claw-foot are the most salient features; decoratively the wreath and torch are most prominent. Marquetry was discarded and plain surfaces were covered with ornamental mounts of chiseled brass and ormolu. Chairs showed a square frame with a plain round leg, ornamented with mounts of characteristic patterns.

In the plainer form the Empire style was full of dignity. If it lacked the charm of the graceful Louis XVI. style it had, on the other hand, qualities of repose and stability which placed it far above some of its predecessors. One of the most interesting phases was the strong influence which it exerted upon American furniture-making of the early nineteenth century.

American Empire Table

American Empire and Colonial.—After pioneer days the colonists modeled their homes on those of their native land. Early furniture was the heavy oak of the old country or pine and hickory made in the colonies. Toward the end of the seventeenth century the transition from massive to more graceful forms took place. The introduction of mahogany in England soon influenced furniture-making on this side of the water, and for fifty years Chippendale, Hepplewhite, and Sheraton were the guiding stars of American designers. Early in the nineteenth century English patterns declined in favor and French influence became paramount. The Empire style marked the end of colonial furniture-making.

Colonial Furniture.—The term used in its literal sense, includes the household effects of the colonists from the time of the settlement at Jamestown until the war of the Revolution. This restricted definition excludes the work of the great English cabinet-makers of the late eighteenth century, and all pieces which owe their origin to the style known as the Empire. Thus the furniture of Sheraton and Hepplewhite, and the later designs of Chippendale, are debarred from the category, together with those massive mahogany shapes having carved columns and claw-feet which have long been the stronghold of colonial connections. Correctly speaking, these pieces should be classed as late Georgian and American Empire. To limit the adjective "colonial" to the furniture imported or made by the colonists prior to 1776 would disqualify

more than half of the old mahogany in this country. The word has been used so long in a wider sense and has been applied so continually to everything in furniture, from the earliest possessions of the Pilgrims to the designs in vogue as late as 1820, that it is doubtful if the literal meaning is ever accepted. From one point of view the broader use of the term is the right one. It was not until 1830 that American furniture-makers ceased to be governed by the standards of the Old World. English taste in house-furnishing prevailed long after English supremacy was at an end. The colonial period in furniture outlived the colonial period in history fifty years.

In the accepted definition two centuries of furniture-making are covered. 1620-1820. The first hundred years may be called the age of oak, and the second the age of mahogany. During the earlier period the history of all handicraft in this country was closely allied to that of England and Holland. In the later epoch Dutch influence lessened, and England shared with France the honor of molding taste in America.

After the War of 1812 English patterns declined in favor and furniture-makers turned to France for inspiration. The American development of the Empire style is a lasting credit to the designers of this country, and forms a fitting close to the second century of colonial furniture-making.

While the Empire style in America followed in a general way the trend of the movement in France, it was free from the incongruities which marred many of the foreign pieces. Carved columns, claw-feet, pine-apple finials, and ornamental brasses were the hall-marks of the American empire. Realistic heads of lions and griffins, and the many Egyptian details to which French furniture-makers resorted, were happily absent from the work of the day on this side of the water.

By 1830 the Empire style in this country had run its course. Designs lost their vitality and became heavy and ponderous. When black walnut superseded mahogany the characteristics which had made furniture-making an art for more than a hundred years ceased to exist. Varied as were colonial types there were certain features common to all. Whatever extravagances marked English and continental styles, designs in this country leaned toward simplicity. It is this quality that renders colonial furniture as satisfactory to-day as when it came from the hands of its makers.

Modern Furniture.—In the past there has been a survival of the fittest in furniture. The transitional Gothic and traditional Renaissance pieces are not nearly so numerous as pure specimens, and so it is with Elizabethan furniture, with Charles II. pieces, with Queen Anne designs, with examples of Chippendale and his contemporaries. The experimental pieces —the failures have apparently disappeared. Modern furniture makers have rendered marked assistance in reproducing the best, the most typical specimens and thus perpetuating the good. The value of a correct reproduction both as an example of style, and as a well made piece of work must be conceded.

Reproductions are usually more successful than adaptations—faithful copies rather than free translations. This is particularly true of mahogany designs. The oak furniture of the seventeenth century can sometimes be more freely interpreted, if there be skill of hand, and taste and discrimination back of the skill. But with the furniture of the succeeding century, he is wisest and most successful who does not alter a line but reproduces as truthfully as is possible.

Variety versus Harmony.—We have so much to choose from that we do not always choose wisely. The matter is not so simple as it was in the old days. Again in the tremendous gain we have made in certain lines we have lost in others. Allowing a good deal for the glamour that time gives, it is doubtful if in the twenty-second century, our own age will present that harmony and grace, that perfection of detail which we find in the eighteenth century. Even the costumes of the period fit into the background and it seems to us like a gigantic stage setting, in which white paneled walls and mahogany furniture, powdered hair, brocades, and lace ruffles all make a consistent picture.

It is this harmony of wall treatment, furniture, and costumes that charms us in all historic styles. In the seventeenth century the dark oak paneling seems to be just the needed background for sturdy oak furniture and for the brighter, more picturesque costumes. This is a more vigorous period of the world's history. It lacks the repose, the refinement, of the eighteenth century but it charms us with its own harmony. Turning the years of the calendar back to the sixteenth century we find cruder furniture, cruder walls, the furniture massive, the walls partially paneled, and finished with tapestries or molded plaster—all brave and strong in color—just the setting we immediately see for the heavily carved oak and for the brave apparel of the period. We shudder to think what conflict would arise if the backgrounds were shifted; if the white paneled walls formed the setting for the dark oak, or if the refined mahogany were placed against the paneled oak. In the same way the transposing of the costumes would mar the harmony. The gorgeous apparel of Elizabeth's day would be out of focus against the background of the Georgian period. The delicate brocades and laces of the latter would be lost without a dark oak setting. The Jacobean costumes fit best their own century, and so in each case the right relation is maintained.

Claims of Colonial Style.—Colonial styles more than any others seem to fit the long popular American house. The expensive carved pieces in "Flemish" or "old English" were too elaborate for the average room and had little meaning except in rooms especially designed for them. It was not until "Mission" furniture became popular that oak really held its own with mahogany. The "Mission" fad had a great deal to do with the present revival of seventeenth century oak, although, like other furniture happenings, it was of slow growth.

Mission.—The simplicity of Mission or "craft" designs won instant approval and to a certain extent revolutionized living-room and library furniture. It suited certain backgrounds far better than mahogany being particularly in line with severe trims and plastered walls. That a great deal of it was unnecessarily heavy and awkward was at first overlooked. A little later many people realized that it was impossible to have simplicity without going to such extremes. Several craftsmen modified the earlier designs, while several furniture makers turned their attention to the seventeenth century, reproducing the plainest of Jacobean patterns in the way of tables, cabinets, and chairs.

It would be folly to hint that mission furniture, or its adaptations, will fit all places. But it can be claimed that it fits many places exceedingly well and that it has been a real factor in making many homes more comfortable, more attractive, and far more livable. It emphasizes the structural idea in cabinet-making and gives point to the theory that the less the grain and texture of the wood are treated, the better. Oak is especially adapted to its use, and the present interest in that wood is largely due to the mission movement.

Period Furniture.—The seventeenth century opened up a mine of material for our furniture makers and as the demand for such furniture increased other types were added. It is now possible to furnish entire rooms in Jacobean and Elizabethan, and with the right settings these new-old styles are wonderfully interesting. There was a time when the interest in the Chippendale designs was greater than that in the Jacobean, but that can hardly be said to be the case to-day. William and Mary patterns are also in demand and are now receiving greater attention in this country.

When our own furniture makers undertook the reproducing of period designs in earnest a new era was possible. It brought well made furniture of correct pattern within reach of moderate incomes. The price limitation worked for good, for it made impossible the most elaborate designs. The plainer phases of the French styles were carefully studied and faithfully reproduced. Naturally, the pieces were not cheap, but relatively speaking—and such comparisons must be relative—they were not more costly than well-made colonial reproductions, or, coming to more modern designs, finely executed pieces in oak. Skilled labor and the best of materials were a necessity and these factors make cheapness impossible. But the word "cheap" is also relative, and the phrase "more economical in the end" as true as it is trite.

What the furniture of the future will be it is impossible to say. Perhaps it will combine the strength of mission the grace of colonial, the beauty of the old French styles with the enduring qualities of Gothic.

CERAMICS.—In the broadest sense the term ceramics includes the whole field of the compounds and mixtures of which the foundation is silica and to which solidity and permanence are given by the action of fire, or briefly, the field of the igneous silicates. In this term, therefore are included not only pottery and porcelain but bricks, tiles, terra-cotta, stoneware, glass, the hydraulic cements and enamels for steel ware and for use in jewelry. The principles of composition and the technical treatment of these are similar in character though differing widely in detail.

The study of ceramics may be approached from many points. The historical view concerns itself with the gradual development of the nations as expressed in fictile wares; the artistic is founded upon the historical and deals with clay, glaze and color as means of art expression; the technical and scientific considers the methods by which results are produced

and the industrial or utilitarian view deals with the production of wares upon a large scale and as a commercial proposition.

Materials.—Certain rocks and minerals are the foundation of all ceramic work. Clays of all kinds, feldspars, quartz, limestone, steatite, cryolite, and fluorspar are used more or less, together with, for glazing, the compounds of lead, zinc, boron, potash and soda. Some of these substances are easily fusible, others resist the action of very high temperatures and the remarkable variety of ceramic products is due to the possibility of wide variation in the nature of the compounds. Two things are, in the main, necessary, a sufficient resistance to the action of fire and a sufficient yielding to produce the solidity due to partial fusion. Some clays, such as those used for brick or terra-cotta, possess both these properties naturally balanced, others, such as the white clays used for porcelain and fine earthenware, possess only the refractory nature, the yielding to heat must be supplied by an admixture. Thus all porcelains are more or less artificial in that the material is not found in nature ready for use. Hard porcelain is a mixture of natural substances, soft porcelain is a mixture of substances which have, for the most part, been prepared artificially.

Evolution.—The progress of clay-working among the nations has been through similar phases in all parts of the world although in some cases the beginning has been with the brick, in others with the pot. Broadly speaking the brick was evolved from adobe and was manufactured only under climatic conditions such as make sun-dried clay a possibility. The pot was evolved from the basket or bark vessel and was made by such peoples as the British and the North American. Possibly sun-dried pots were made at the first but no specimens remain. The origin of burning or baking the clay is unknown. The British placed pots in the funeral pyre and afterwards collected the bones and buried them in one of the vessels, using others to contain food and water. The Red-man made large numbers of earthen vessels and baked them in the open fire. All these wares were built by hand and shaped finally when nearly dry.

The potter's wheel, whereby symmetrical form is given to plastic clay, was used by Egyptians, Greeks and Romans but does not belong to the Bronze age in which the hand-built ware is placed.

The Greeks.—As producers of pottery from natural clays the Greeks stood first. Many thousands of their vases are now to be seen in museums. The work is classified under certain well marked styles. The earliest wares were plain or simply decorated with black bands; then came the Geometric style in which, as the name implies, the prices were covered, more or less completely, with lines arranged in angular patterns. This was succeeded by the black figured ware in which animals, birds and human figures were painted in black silhouette upon the brown or red clay. The finest period was that of the red figured ware in which the black pigment was used as a background the figures being reserved in the natural red. All these wares are once fired the pigment being laid upon the unburned clay.

Romans.—The Roman potters carried their art into many lands using often local clay. The black ware commonly known as Upchurch from the locality in England where much of it has been found was made of a common red clay and was turned black in the burning by the action of smoke. Castor ware is a variety which is characterized by painting in white clay upon a black or brown body. Samian or Aretine ware was molded from a bright red clay, the source of which is unknown.

Chinese Influence.—None of these ancient wares has been perpetuated with the possible exception of the Castor ware which may have been the remote ancestor of the early English slip decorated wares. The treatment is similar though there does not seem to have been any continuity of production. The whole trend of the pottery idea was changed by the influence of Chinese porcelain upon the Western world. Up to this time dark colored wares from natural clays had been made exclusively but as soon as the porcelains of the Chinese became known through the channels of trade the whole ceramic world strove for the production of white pottery. In the near East the expedient was adopted of coating the dark clay with a white veneer of ground quartz mixed with a little pipe-clay. The knowledge of this process was confined to the Persian, Arabs and Moors but upon the invasion of Spain by the last named people the ware known as Majolica was originated. The characteristic feature of this is a glaze rendered opaque by the use of tin oxide which serves, as did the earlier white veneer, to conceal the dark colored clay of the body. Nearly every country in Europe participated in this development. The Majolica of Italy, the Delft of Holland, and the different styles of faience made at Nevers, Rouen, Moustiers and other places in France are technically almost identical. Wide differences are, of course, apparent in design and form but the essential technique is the opaque tin enamel.

Majolica derives its name from the island of Majorca in the Mediterranean whence these wares were first exported. The term was first applied only to the lustered pottery which originated in Spain and was afterward made with such great success in Italy, but it is now generally used for all wares with the stanniferous enamel. Whether the knowledge of this was carried from Spain to Italy or was communicated to the Italian potters by Oriental workmen is a debatable point. In any case it was in Italy that the art reached its fullest perfection. The names of Luca della Robbia, Giorgio Andreoli and even Michelangelo himself are connected with this product while it is from the town of Faenza that the word faience is derived. The world is fortunate in possessing a manual of the potter's art in Italy during the sixteenth century by Piccolpasso, a contemporary writer. In this most exhaustive work detailed information is given as to the production of the wares of the time and every modern writer has drawn liberally upon this source.

Soft Porcelain may be said to have grown naturally from Majolica, first in Italy where the rare Medici porcelain was made about the year 1580, and afterward in France at St. Cloud in 1695, at Chantilly in 1725 and at Vincennes the forerunner of Sevres. The aim of the early porcelain makers was to produce a translucent white ware which should approach the Chinese masterpieces in appearance. No pure white clay had then been discovered in Europe so that the result had to be accomplished by artificial means. A mixture was made of sand, gypsum, salt, alum and niter and was fused in crucibles to a solid slag known as "fritt." This was then ground to a fine powder and to it was added a small portion of a plastic calcareous clay. This clay tended to darken the color so that it was not possible to use enough to impart a working plasticity to the mass. Hence the porcelain makers were driven to use such emollients as soap and mucilage before the paste could be shaped. So tender was this ware in its resistance to fire that heavy losses were experienced in the kilns and it was eventually superseded by the hard porcelain which now constitutes the staple European product. No more beautiful ware than the French "pate tendre" has ever been made. The glaze was a very fusible glass composed largely of lead oxide and, consequently, the paintings, which were executed with consummate skill by artists of repute, sank into the glaze in the burning and acquired their lustrous beauty. To this fact is also to be attributed the superb quality of the ground colors, the inimitable turquoise, the apple green, the rose du Barri and the blue du Roi.

Development in France.—France gave birth, in the sixteenth century, to two notable departures from the established methods. These were the faience known as Henri II. and the ware of Bernard Palissy. The former has been the subject of much discussion as to its place of origin. It was first attributed to Hekene de Hangest who was a woman of refined taste, the chatelaine of the Chateau of Oiron. It was said that she and her librarian together made this pottery as a labor of love. Only about sixty pieces are now known to exist. The characteristic feature of the ware is that a light, yellowish clay is inlaid, somewhat after the method of a bookbinder, with clays of darker color, the whole being covered with a transparent glaze. Other locations have been given to this ware but the name Henri Deux is accepted as the most satisfactory.

Bernard Palissy was born in 1510 and his life has inspired many a theme. His aim was to make a perfect white enameled pottery and though he struggled for fifteen years he never realized his purpose. He made, however, the beautiful colored glazes which will always be associated with his name. Being a devoted student of nature he modeled reptiles and fishes on his platters and covered the clay with glazes in the natural colors.

Neither of these two wares had any appreciable effect upon the ceramic industry nor is either of them made at the present time.

Continental Development. — Chinese porcelain is generally conceded to be the criterion, as it is the prototype of this class of ware. The ingredients are the pure clay known as kaolin, feldspar and quartz. The glaze is composed of lime, feldspar and quartz. Both body and glaze are burned together at a very high temperature. The highest perfection of the work of the Chinese potters was reached between the fourteenth and the seventeenth centuries to which period most of the finest pieces are referred. It was this porcelain which inspired the European connoisseurs as already stated. France led the way at St. Cloud with a purely artificial ware but the first hard porcelain made in Europe must be accredited to Saxony. In the year 1709 one Johann Friedrich Böttger, being employed as chemist by the Elector of Saxony, was shown some infusible, white earth. He had become interested in porcelain

through the fine collection of Chinese and Japanese wares in the possession of the Elector and at once essayed its production. The result was the famous porcelain of Meissen, also known as Dresden. The production of porcelain now became the passion of princes. One after another the rulers of the German states established studios or small factories in which the fashionable art could be pursued. Vienna, Höchst, Berlin, Nymphenburg and many other places became centers of production but in the majority of cases the work ceased upon the death of the patron. Meissen, Vienna, and Berlin still flourish together with a large number of modern manufactories which are successfully producing commercial wares.

English Porcelains.—England soon became involved in the passion for porcelain, three manufactories being established within a very brief period. These were Bow, 1744, Chelsea, 1748 and Worcester, 1751. The work of each was in almost close imitation of the French in technical treatment but influenced by the Chinese as to motif. The china made at Bow contained as one of the ingredients a white earth which was imported from America, from the "back of Virginia" a locality whence china-clays are now procured. There was a factory in Derby which was flourishing in 1756 though the exact date of its origin is unknown. Worcester, now known as "Royal Worcester" is the only one of these old establishments which survives, though a new factory has been set up at Derby.

Hard porcelain in England has had but two exponents. When, in 1756, William Cookworthy discovered china-clay in the county of Cornwall he set up a factory at Plymouth, the nearest important town, for the purpose of using the clay. He made a kaolinic porcelain after the manner of the Chinese but so imperfect were his methods that a piece of Plymouth poreclain without a flaw is almost unknown. The venture did not succeed and in 1770 was removed to Bristol where Richard Champion was already engaged in making a similar porcelain. The works at Bristol are now engaged in the manufacture of earthenware only.

About this time the characteristic English china was perfected. This is known as "bone china" from the fact that the paste contains about forty per cent calcined bone. This differs from both soft and hard porcelains and may be regarded as a compromise. It is not as tender as the French soft paste and is glazed with a compound which is much softer than that necessary for hard porcelain. Much of the success of English table wares may be attributed to this china for there is nothing better for the finest services.

English Types.—While the manufacture of porcelain came to England as an alien the production of pottery is indigenous to the soil. From the days of the ancient Britons there were potters in the land. They wrought the native clays and evolved the slip painted wares, the combed and marbled wares, the tortoise shell the agate and the mottled of modern museums. They also made a beautiful white stoneware, glazed with salt after the German fashion and decorated with transparent colors. From the ranks of these men arose Dwight and Toft and Astbury and Wheildon to be topped in turn by Josiah Wedgwood. The potters foregathered in North Staffordshire where clays and coal were abundant and thus were founded the Staffordshire potteries, a federation of small towns which have separate entities but one interest. Here are the famous Minton, Copeland, Wedgwood, Doulton, Meakin, Johnson and a hundred other flourishing factories whose wares are on every table. Nearly all of the English potters make both china and earthenware. The latter is a white ware, light and porous, which is much cheaper than china. Native clays are almost exclusively employed but feldspar is imported from Sweden.

The types of ware known as "Gros de Flandres" originated in Germany and was exported from the low countries, hence the name. It was also, from its hardness, known as stoneware and was the forerunner of the recent wares of this type. The first glazing was by a unique and hitherto unknown process. When the pottery was in the kiln and at a glowing heat a quantity of common salt was thrown upon the fire. This was vaporized by the heat and the fumes attacked the hot clay forming a glassy coating over the surface. This process, while still in demand for decorative wares has been superseded in the manufacture of common jars by a cheaper method.

Kaolin or porcelain clay was discovered in France in the year 1768 and after some experiments the manufacture of hard porcelain was begun. For some years both wares were produced at Sevres but in 1804 the soft paste was finally abandoned.

Pottery in America.—The aboriginal pottery of the United States constitutes a rich field of study to those who are specially interested but it has no connection whatever with the product of the present day. American pottery apart from the work of the Indian began with the industries of the early settlers in Virginia and Pennsylvania. Brick and roofing tile were probably the first to be made for there is evidence that in Virginia brick were burned in the year 1612 and Prof. Morse states that the German immigrants to Pennsylvania introduced the manufacture of roofing tile after the German pattern. Very early in the settlement of the country white or light colored wares were made by those who brought with them a knowledge of the potter's art. Native clays were used but at that time the country had been so little explored that the finer clays were unknown. Naturally the potters settled where the clays were found and so the pottery centers were established. As a foil to the importation of American clays by English potters it is related that Joseph Wedgwood was greatly exercised in mind over the fact that an English workman named Bartlem emigrated to South Carolina in 1766 and attempted to establish a pottery there. Wedgwood, in a private letter, deplored this, stating that "an amazing quantity of white stoneware" was being exported to the "continent of North America" and expressing the fear that if English potters should begin to practice their art in the "colonies" the trade of the mother country would suffer. Recent developments have shown that his fears were without foundation.

Eighteenth Century.—During the eighteenth century a number of small potteries were established in the Eastern counties of Pennsylvania, mainly by the German settlers. Dr. E. A. Barber has made a special study of the wares produced in this district and has written a good deal upon the subject. He thus describes the process of 'sgraffiato' as practised by the Pennsylvania potters—"The decorative process consisted in covering the red clay with a thin layer of lighter colored slip, through which the designs were scratched with a style to expose the darker color below. A coating of transparent glaze, slightly clouded with green and yellow oxides, was then applied to the surface, and, after the final firing, the ware presented the appearance of a rich red intaglio beneath a greenish or mottled-yellow ground."

The slip decoration which was a contemporary of this consisted in using a fluid clay as a pigment. It was usually a light clay painted upon a darker surface but the reverse was also used. Many interesting pieces of these wares are to be found in most museums.

Nineteenth Century.—During the opening years of the nineteenth century attempts were made in many parts of the Eastern states to establish the industry of pottery manufacture. At first the potters paid but little heed to the location of the clays, thus departing from the practice of their predecessors. Stoneware was attempted in more than one place in New York state where no stoneware clays are to be found. Gradually, however, the matter of the raw material prevailed and segregation began. The first pottery in East Liverpool, Ohio, now one of the most important seats of the industry, was built in 1839 by James Bennett who selected this location on account of the superior quality of the clay for the manufacture of yellow ware. It is interesting to note, as an evidence of the progress of the art, that while this clay is still used, the bulk of East Liverpool wares are now made from clays found elsewhere. Mr. Bennett was joined by his three brothers one of whom the late Edwin Bennett of Baltimore was in 1851, the originator of the well known teapot with the bas-relief of Rebeckah at the well, a design which has been copied by teapot makers all over the world. The next few years saw some important developments. Men bearing the now well-known names of Harker, Taylor, Goodwin, Knowles, Vodrey and Lee settled on the Ohio river and built their kilns until there are now in East Liverpool nearly fifty establishments engaged in the manufacture of clay products.

The first kiln in Trenton, New Jersey, was set up in the year 1852 by Taylor and Speeler, according to Barber. As in the Ohio field the first product was yellow ware made from local clay. In order to improve the quality of the wares extensive search was made for better material with the result that kaolin deposits were found in Delaware and Pennsylvania. Feldspar was also found in Pennsylvania and quartz in Maryland. The potters, coming for the most part from England, were able only with difficulty to adjust themselves to the new materials and heavy losses resulted. Gradually, however, the obstacles were overcome and distinctive wares developed. One of these, known as "Hotel China" is a fine earthenware which closely approaches hard porcelain in character, being white and translucent This ware is in constant demand whereve

severe usage is expected and under such conditions has no superior. The body is composed of kaolin or porcelain clay, a plastic clay known as ball-clay, feldspar and quartz. The glaze is a compound of lead oxide, lime, potash, soda, boron sesquioxide, alumina and silica. These ingredients, when melted, form a hard glass which protects the body and offers great resistance to wear. The decoration is usually printed beneath the glaze and therefore lasts as long as the china itself.

Belleek.—Another development was the soft porcelain known as "Belleek." The name refers to a village in Ireland where a porcelain of similar character was formerly made. Not finding any natural substance which would fuse at a sufficiently low temperature the experimenters, Messrs. Brewer and Bromley, constructed an artificial feldspar or "fritt" to which they added a sufficient amount of plastic clay, thus following the plan of the early workers in France. Belleek ware is of a soft yellow color and is made extremely thin. It is much in demand for decorative pieces but is too tender for severe use on the table. Two or three factories are now making this ware in Trenton. The demands of recent years have given rise to the manufacture of sanitary goods in large quantities, some important concerns being exclusively engaged in their production. A strong earthenware which goes by the name of "granite" is extensively made for general trade, constituting, in fact, the bulk of the household pottery used in the country.

American Decorative Pottery.—In pottery which claims to be decorative and ornamental America has achieved some notable results. The general type of wares made is best defined as faience, that is, glazed earthenware produced at a low or moderate temperature. The glazes are both brilliant and matt and the decorations are either beneath the glaze or consist in colors added to the glaze itself. The pioneer in this field has been the Rookwood Pottery Company of Cincinnati, Ohio.

Rookwood has become, by reason of the variety and technical excellence of its products, a household word among ceramists and a study of the career of the concern will prove to be very instructive. In addition to the production of rare and beautiful vases in the standard brilliant glaze, Iris, Matt glaze and the inimitable vellum, Rookwood has embarked in the manufacture of tiles and architectural faience. Some very important works in interior decoration have been carried out in the cities of the middle West and it is evident that there are unlimited opportunities for development.

The Grueby Faience Co. of Boston, Mass., has devoted itself chiefly to the production of vases, wheel made and modeled, in a sober Matt green. Some other colors have been attempted but the green is the most successful. The glaze possesses an interesting reticulated surface which is peculiar to itself. Tile are also made in the same glaze. The Newcomb pottery as a department of Tulane University, New Orleans, has established a reputation for a decoration in blues and greens, under the glaze, which is now well recognized.

Commerical and Structural Pottery. On commercial lines large numbers of pieces are being made at Zanesville, Ohio, and elsewhere. This so called "art pottery" has a large sale but can scarcely be classed with the above named as both shapes and decorations are repeated again and again according to the demand.

In structural pottery, brick, roofing tile and terra cotta, great progress has been made in America in recent years. Common brick, made from soft clay in wooden molds, stands first as to quantity for all structural work needs it in the concealed parts. Many alluvial clays are used in the manufacture.

Refractory wares such as fire-brick, tuyeres, locomotive blocks, gas retorts and furnace linings in general form an important section of the ceramic field.

Architectural Terra Cotta is now recognized as the most satisfactory fire-proof building material. Red clay or shale is sometimes used but for the most part the same coal-measure clays are the best because of the demand for light colors. These clays are buff colored when burned and therefore do not destroy the light surface tints as red clays would. All terra cotta, except the red, is either glazed with a dull face or coated with a thin film of prepared clay which both secures uniformity of tint and also the desired color effect. The surface is impervious to water and is self cleansing. The weight of the pieces makes it impossible to dip them in the liquid so that the coating is sprayed on by means of compressed air.

Recent advances in the use of electric power have made it necessary to transmit high tension currents for long distances. This has created a large demand for insulators capable of resisting the strain. Glass, while suitable for currents of low voltage will not, on account of the irregularities of structure caused by rapid cooling, stand the heating which is inseparable from the transmission of currents at high pressure and recourse has been had to porcelain. The body structure is the same as that used for all porcelain wares except that color is not of great importance. It is found, however, that the white porcelains are the best because they can be burned at a higher temperature than those of impure color, in fact the color of the ware is an indication of the purity of the clay. The wares are generally burned at a low heat at first to insure safety in handling, the pieces are then glazed with the lime-feldspar compound already mentioned and are burned at an intense heat, approximating 1400 C., and are tested under an enormous voltage for the detection of flaws.

TABLE I—POTTERY AND EARTHENWARE

Country	Date	Nature of Product	Remarks
Egypt	B. C circa 300	Unglazed pottery.	Household vessels, mostly wheel made.
Egypt	1900	Glazed stoneware.	Rich blue glaze. Figures and charms molded.
Assyria	800	Unglazed pottery	Utensils both hand and wheel made.
Assyria	700	Inscribed tablets.	Cylinders and slabs with impressed letters.
Babylonia	700	Unglazed pottery.	Utensils.
Greece	800	Pottery both rough and polished.	Primitive style. Simple bands of dark color. Wheel made.
Greece	700	Polished pottery, also called Mycenæan.	Geometric style. Interlaced lines in dark color. Wheel made.
Greece	600	Polished pottery, also called Mycenæan.	Wheel made. Archaic style. Birds and animals in black silhouettes, the tails scratched in.
Greece	600	Polished pottery, black figured ware.	Wheel made. Human figures in black, faces in profile, eyes fronting.
Greece	500	Polished pottery. Red figured ware. Finest period.	Wheel made. Background in black, figures in natural color of clay. Faces and eyes in profile; drapery in detail.
Greece	400	Polished and ornamental ware. Decadent period.	Figures and embossments in color.
Rome	100 to A. D. 40	Black and gray ware, called "Upchurch" from the English locality where much is found. Found also in France and Germany.	Wheel made. Lines polished. Black color produced by smoke in burning.
Rome	B. C. 50	Dark ware with white decoration. Called Castor from the English locality.	The beginning of "slip" painting. Hunting scenes and scrolls.
Rome	400	Samian ware from the island of Samos; also called Aretine.	Bright red glazed pottery. Molded with decorative scenes and scrolls.
India	900 et seq.	Pottery of natural clay with colored glazes.	Wheel made. Decorated with floral arabesques under the glaze.
Japan	A. D. 200	Common pottery glazed and unglazed.	The art introduced by Korean potters.
Persia	1300	Eryobe or slip coated pottery.	A natural dark clay covered or veneered with a white coating, colored and glazed.
Persia	1200	So-called "Gombroon ware," attributed by some to the Chinese.	A porcelanous earthenware of fine quality. Perforated and filled in with semitransparent glaze. Sometimes decorated in blue.
Syria and Arabia	1400	Eryobe ware of the same general type as the Persians.	Decorated under the glaze with fine arabesques in color.
Rhodes and Asia Minor	1500	Eryobe ware of the same general type as the Persians.	Characterized by the use of a red earth as a pigment.
Spain	1320	Tin enameled ware, known as Majolica.	A dark natural clay covered with an enamel opacified by tin oxide. Lustered and decorated in color.

TABLE I. POTTERY AND EARTHENWARE,—Continued

Country	Date	Nature of Product	Remarks
Italy	1350	Tin enameled ware, known as Majolica. A most extensive and important product which emanated from many centers.	Elaborately decorated in color and embellished with rich paintings. Lustered and sometimes with a brilliant overglaze.
Italy (Luca della Robbia)	1450	Architectural modeled work coated with the characteristic tin enamel.	Luca della Robbia is believed to have greatly improved the quality of the enamel.
Italy (Giorgis Andreoli)	1520	Ruby pots, dishes and platters.	The Maestro Giorgis worked at Gubbie and his ruby lusters are unique.
France (Nevers)	1580	Tin enameled wares in Italian style.	The maker of these wares came from Faenza, hence the term "faience."
France (Rouen)	1540	Tin enameled wares of superior quality.	The style is entirely French. Figures and conventional ornament.
France (Moustiers)	1680	Tin enameled wares of superior quality.	Painted with hunting and domestic scenes on a very pure enamel.
France (Henri Deux)	1520	Glazed cream-colored pottery, inlaid with dark clays.	Also called Faience d' Oiron from the supposed place of origin. A very rare and valuable ware; only 53 pieces are known.
France (Palissy)	1560	Light colored earthenware with richly toned glazes.	Modeled embossments of natural objects glazed in proper colors. Also some modeled figures.
Germany	1540	Salt glazed stoneware.	Brown, gray or cream clays, embossed and sometimes decorated in blue.
Holland	1600	Tin enameled pottery decorated in blue.	The well-known Delft ware.
England	B.C.400	Primitive hand-formed pottery.	Found in burial mounds used in funeral ceremonies.
England	A.D. 490	Anglo-Saxon pottery.	Crude and unglazed.
England (Malvern and other places)	1250	Encaustic tiles. Parti-colored clays.	Made for church use, by the monks.
England (Tulham, Mortlake and Staffordshire)	1550	Salt glazed ware.	The knowledge derived from Germany.
England (Staffordshire)	1610	Lead glazed pottery on colored clays.	Primitive in character. Either wheel made or shaped by hand.
England (Wrotham and Staffordshire)	1620	Slip decorated wares.	A characteristic English product. Dark clay with ornamentation in light-colored slips.
England (Lambeth, Staffordshire, Liverpool)	1635	Tin enameled wares.	Introduced from Holland.
England (Staffordshire)	1680	Combed and marbled wares in parti-colored clays.	A domestic pottery largely made in cottage homes.
England (Etruria)	1762-1776	Wedgwood wares, queensware and jasper.	The beginnings of modern manufacture.
England (Leeds)	1770	White earthenware.	Perforated and glazed.
England (Staffordshire)	1784	Willow pattern, introduced by Spode.	Spode was the forerunner of the house of Copeland.
England (Lambeth (Doulton)	1818 (still working)	Stoneware.	A salt glazed ware, decorated in Sgraffiato and otherwise commonly known as "Doulton-ware."
England Staffordshire (Furnivals)	The date of origin of these factories is unknown. They developed from the domestic industry of the seventh century		A fine quality of earthenware for table use.
England Staffordshire (Meakin's)			An excellent earthenware, largely in demand for table services.
England Staffordshire (Johnson's)			One of the best of the English earthenwares.
China	Circa B.C. 185	The first hard porcelain.	It is quite uncertain when porcelain was invented; the Chinese themselves assign a much earlier date.
China	A. D. 583	Hard porcelain, decorated under the glaze in blue.	The blue of cobalt is quite indestructible by fire and has been universally employed as a pigment.
China	618–907	Pure white hard porcelain (Ihang dynasty).	The early porcelains were rather dark in color.
China	954	The first "celadon" porcelain.	This tint was called "the sky after rain" and was produced from iron.
China	1368	Minz dynasty. The finest period.	The works of this time constitute the crowning glory of Chinese porcelain.
China	1661	"Famille vert." (Jacquemart).	The porcelain was finished and glazed in the usual way, then decorated in black and covered with a fusible green enamel.
China	1723	"Famille rose" (Jacquemart).	Overglaze decoration in which a rose color made from gold is the characteristic feature.
Italy (Florence)	1580	A semihard porcelain with blue decoration.	The famous and rare Medici porcelain. Only 26 pieces are known.
Italy (Capo di Monte near Naples)	1743	Soft porcelain.	Modeled figures colored over the glaze.
Spain (Buen Retiro)	1760	Soft porcelain.	Removed from Capo di Monte when king Charles of Naples became King Charles III. of Spain.
France (St. Cloud)	1695 to 1773	Soft porcelain.	The first French porcelain and the first distinctive soft porcelain.
France (Vincennes)	1745	Soft porcelain.	Vincennes was the forerunner of Sèvres. In 1753 the king of France purchased one-third of the stock and gave the title "Royal" to the factory.
France (Sèvres)	1756	Soft porcelain (pâte tendre).	Removed from Vincennes. In 1759 Louis XV. became sole proprietor.
France	1769	Hard porcelain (pâte dure)	Kaolin or porcelain clay was discovered at St. Yrieix in 1768 and the production of hard porcelain followed. The pâte tendre was finally discontinued in 1804. The factory still exists as the most important national porcelain works in the world.
France (Limoges)	1779 et seq.	Hard porcelain	The famous works of Haviland, Guerin, Pouyat and others now manufacture very large quantities of the well known French china.
Germany (Mussen or Dresden)	1709	Hard porcelain.	No porcelain was made in Germany until the discovery of kaolin. Böttger was the first man to make hard porcelain in Europe.
Germany (Vienna, Anspach, Bayreuth, Höchst, Fürstenberg, Berlin, Frankenthal, Nymphenburg, Ludwigsbury, etc.)	1718 to 1758	Hard porcelain	Nearly every German prince desired a porcelain works during this period. There is not much to choose between the wares as regards quality, but the decorations, largely over the glaze, bore different characteristics. Few of these factories are now in existence.
Denmark (Copenhagen)	1760	Soft porcelain.	This factory was closed in 1768. The paste is good and the painting of excellent quality.
Denmark	1772	Hard porcelain.	Became a royal manufactory in 1779. Is now noted as one of the first in the world.
England (Bow)	1744	Soft porcelain.	Bow was at one time called "New Canton." It is believed that bone ash was here first used in English china. The factory was closed in 1776 when Duesbury removed the equipment to Derby.
England (Chelsea)	1745	Soft porcelain.	Patronized by the king and the duke of Cumberland. The style of treatment was French. Purchased in 1769 by Duesbury and the equipment removed to Derby.

TABLE I. POTTERY AND EARTHENWARE—Continued

Country	Date	Nature of Product	Remarks
England (Derby)	1750 (uncertain)	Soft porcelain.	Derby was concerned in the making of china probably as early as 1745. In 1769 Duesbury combined with the Derby works the resources of Bow and Chelsea. Hence the term Chelsea-Derby.
England (Derby)	1877	Bone porcelain and other wares.	Mr. Edward Phillips of the Worcester factory built the new Derby works and began the manufacture of "Royal Crown Derby" porcelain. The factory now stands among the foremost in England.
England (Worcester)	1751	Soft porcelain. Ivory porcelain. Bone porcelain.	Founded by Dr. Wall and for a time occupied chiefly in producing Chinese patterns. Consolidated with Chamberlains in 1840. The present company formed in 1862 and now manufactures the famous Royal Worcester wares.
England (Coalport)	1814	Soft porcelain. Bone porcelain.	The successor of Jackfield and Caughley. This factory is still in existence and produces fine wares.
England (Plymouth)	1768	Hard porcelain.	This, the first factory in England for the manufacture of hard porcelain, was established by Cookworthy as a consequence of the discovery of porcelain clay in Cornwall. Removed to Bristol in 1771.
England (Bristol)	1768	Hard porcelain.	Champion began to make porcelain in Bristol and in 1771 purchased the Plymouth patent. The works still exist, but for the production of earthenware only.
England Burslem (Doulton)	1880 (still working)	Bone porcelain, and other wares.	The factory of Pindar, Bourne, etc., was purchased by the firm of Doultons, Lambeth, and the work produced now ranks with the first of English wares.
England Stoke-on-Trent (Mintons)	1793 (still working)	Bone porcelain, earthenware and pottery.	Begun as a manufactory of earthenware, the house of Minton, under the leadership of Campbell and Arnoux, took the lead in the well known Staffordshire potteries. The wares are of the finest.
England Stoke-on-Trent (Copeland)	1779 (still working)	Bone porcelain, ironstone china and other wares.	Copeland was the successor to Spode. Considerable success has been achieved in all kinds of table services. Ornamental wares have been made also.
England Cauldon Place (Brown-Westhead, Moore, etc.)	1794 (still working)	Bone porcelain and earthenware.	The present house is the successor of Ridgway & Sons. They are noted for china dinner ware.
England Etruria (Wedgwood)	1762 (still working)	Bone porcelain and earthenware.	The original house of Wedgwood has taken up and developed all the modern styles with much success.

TABLE II. GLASS

Locality or Country	Date	Nature of Product	Remarks
Egypt	Circa B.C. 2400	Dark blue glass. Semi-opaque.	The earliest dated specimen is a small lion's head in the British Museum.
Egypt	1450	Transparent green glass.	A bead found at Thebes.
Nineveh	712	Pale green transparent.	A small vase in the British Museum bears the name of Layon, king of Assyria.
Greece	Circa 400	Colored glass. Waved, striated and sometimes carved.	Numerous small bottles. Beads and ornaments.
or Phenicia			
Rome	Circa 30 B. C. to 309 A. D.	Common green glass. Colored and ornamental glass, carved, cut and woven glass.	Enormous quantities of glass of every description, even including window glass, were produced.
China	Circa B. C. 140	Small vessels ornamented and embossed.	The statements regarding early glass in China are very uncertain. But few specimens remain.
Constantinople (Byzantium)	A. D. 800 to 1200	Heavy molded glass in dark colors. Some window glass.	Classic models were followed, but the wars of the period caused much interchange of plunder, and the origin of many specimens is doubtful.
Damascus and the East	1200 to 1400	Vessels of clear glass often richly ornamented.	Many lamps and vessels for religious use are found in mosques.
Italy (Venice and (Urviano)	1090	Every description of fancy glass.	Glass mosaics preceded the general manufacture of glass in Venice. The furnaces were removed to Murano probably about 1300. Venetian glass is the model for the world.
Italy (Murano)	1490	Mille fiore glass.	This had been made by the Romans. Canes of colored glass were cut into short lengths and these, with the cut ends showing, were fused into the body of the vessel.
Italy (Murano)	1500	Vitro di Trina (lace glass)	Threads of opaque white glass were fused in a geometric pattern into the clear glass of the vessel.
France	A. D. Circa 500 to 800	Glass vessels.	Scarcely any specimens remain. The work was probably of Roman origin.
France	1400 to 1600	Utensils of various sorts colored and decorated. Window glass.	Small manufactories of glass existed in many parts of France but most of the product was unimportant.
Spain	Circa 500 to 800	Cups, vials and bottles.	As in the case of France, the Roman influence was felt in Spain.
Spain	1400 to 1600	Utensils and drinking cups.	Some Spanish glass bears evidence of Venetian influence. Colored and reticulated forms are found.
Germany	Circa 700	Drinking cups.	The influence of Rome is apparent here also.
Germany	1400 et seq.	Steins and goblets. Window glass.	The stein was even then a feature in Germany. A great variety of form and treatment is found. Some highly ornate pieces are preserved.
Great Britain	Circa 600	Beads, crude cups, window glass.	Both Roman and Saxon specimens are found. The original "tumbler" was a glass drinking horn which could not be set down until empty.
Great Britain	1300 to 1600	Cathedral glass. Vessels of many sorts.	English stained glass for church windows is of the finest. The vessels were generally plain and useful.

Modern Productions

Venice and Murano	The glass made is much on the old style. Every description of colored, blown, woven and reticulated glass is produced. The material is still of the lime-soda mixture.
France	A great deal of modern French glass is crystal of the lead-potash compound. The molded glass is very fine. Some French craftsmen have produced wonderful effects in colors.
Bohemia	This glass is well known in the small and inexpensive bric-a-brac of the stores. A good deal of it is decorated in color and gold.
Germany (Jena)	In optical and chemical glass the Jena works lead the world.
England	The English glassmakers are surpassed by none. Table glass of pure crystal, cut glass and ornamental pieces are made in great variety. The Stourbridge district is the most famous.
America	Much of the American glass is molded in the form of tumblers and household vessels. Fine cut glass is made at Corning, Toledo and other places. Plate glass is an important part of the industry.

NOTED ARTISTS

MUSIC AND MUSICIANS

MUSIC.—No definition of music has ever been found that would satisfy musicians, to say nothing of explaining the art to the laity. Emotionally, it is based upon the outcry, the audible expression of grief, joy, love, and infinite varieties of agitation or contemplation. To make an art of these noises some sense of form and design is necessary. For its record, some form of writing is necessary. For its reproduction, numberless mechanical devices are required.

Music, therefore, includes dramatic expression, structural form, mathematical measurement, machinery, its construction and repair, and visual writing. Though it is founded upon an appeal to the ear, it has other elements and one of the greatest of composers, Beethoven, wrote some of his best work after he became deaf; while a trained musician can be almost as deeply stirred by merely casting his eye over a score, as an ordinary reader is moved by reading a book.

Music is familiarly called "the universal language" and it has flourished in some form in every age among every people. But music, as we understand it today, is the newest and youngest of the high arts. It is perhaps the only art in which the modern European and American civilization does not pay homage to Grecian ideals and achievements.

There is not a single truly great name in music until we come down to the Belgian Orland di Lassus and the Italian Palestrina, in the sixteenth century. The compositions of these men were of such simplicity and grandeur that many of them are still in occasional use after nearly four centuries.

Forms of Music.—There were three careers open to an ambitious composer at that time, the church, the opera, and the salons of nobility and royalty. From these sources rose the chief of the larger forms of music; the mass, the opera, the symphony, the overture, the oratorio, suite, sonata and the song.

The **Mass** is the most ponderous and elaborate form of religious music. It accompanies the consecration of the Host, and derives its name from the dismissal of those not permitted to assist in this service: "Depart, the congregation is dismissed," or in Latin, "*Ite, missa est ecclesia*)." The Latin word for mass is "*missa*" and our word is a corruption from it.

Divisions.—The mass is divided into four or more portions of the liturgy. They take their names from the first words of the text: first, the *Kyrie*, which is subdivided into the *Kyrie Eleison*, the *Christe Eleison*, and the *Kyrie Eleison;* second, the *Gloria*, or Doxology, which is subdivided into the *Gratias agimus*, the *Qui tollis*, the *Quoniam*, and the *Cum sancto spiritus;* third, the *Credo*, which is subdivided into the *Et incarnatus*, the *Crucifixus*, and the *Et resurrexit;* fourth, the *Sanctus*, subdivided into the *Benedictus* and the *Hosanna;* fifth, the *Agnus dei*, and the *Dona Nobis.*

At its best, the mass is a peculiarly sublime expression of human emotion, performed as it is in the resounding vault of a cathedral with the awe of adoration.

When the Mass is for the dead it is known as a Requiem Mass from the opening words, *Requiem aeternam dona eis, domine.*

Composers of Masses. Nearly every ambitious composer has written one or more masses. Dufay (1400-1474) is said to have invented white notes. His pupil was Okeghem (1430-1495) founder of the second Netherland School. His great pupil was Josquin Deprès (1450-1521) whom Burney called "the father of modern harmony" and of whom Ambros says, "he was the first musician who impresses us as being a genius." He was one of the many eminent Flemish composers who carried their gifts into Italy. Orland di Lassus (1520-1594) was another and he was the most notable composer of his time except Palestrina. Palestrina's own teacher was Claude Goudimel (1505-1572) a Frenchman, who went into Italy and became the "Father of the Roman School," before he went back to France to perish in the Saint Bartholomew massacre.

Palestrina.—It was in 1564 that the Council of Trent and a committee of eight cardinals determined to purify church music of its ribaldry and its frippery and commissioned Palestrina (1514-1594) to write a mass which should serve as a model. He wrote three, all of them wonderful, and won the name "the savior of music." The best of his masses is known as the "*Missa papae Mercelli.*" He would generally be accounted the greatest of all composers for the church.

Later Composers. There followed the great J. S. Bach who wrote four small masses and his Grand Mass in B. minor. Haydn wrote fourteen masses including The Seven Words on the Cross. Mozart wrote fifteen and was engaged at his death on his wonderful *Requiem* which he left unfinished, but which is rated among the immortal works. Beethoven composed two masses, including the famous *Missa Solennis.* Schubert left six including the *Deutsche Messe.* Schumann a *Missa sacra* and a *Requiem Mass* with orchestra. Even Liszt wrote his *Graner* festival mass, and a requiem. Cherubini wrote a famous mass for the Prince of Chimay. Verdi wrote a noble *Requiem.* Among the French contributions are the masses of Gounod, Saint-Saëns, Widor and others. In America John Knowles Paine composed a fine mass. Doubtless the greatest of modern attainments in this field is Brahms' tremendous *German Requiem* (1867).

Oratorio.—Between the mass and the opera exists a third great form, which serves as a bridge between them. This is the oratorio, dramatic in its story, but meant for performance in a church, or at least without theatrical effects.

The oratorio gained its name from the chapel or "oratory," because St. Philip of Neri (1515-1595) seeing the inroads of the Reformation upon the populace by the use of simple hymn-tunes, resolved to interest the common people in Catholic music. He commissioned the composition of short songs and gradually of short sacred legends, often enacted in costume. These were performed in the oratorio.

Early Composers. Dramatic recitative was just gaining favor and it fell in with his purposes. Cavaliere's allegory *The Soul and the Body* was the first oratorio along modern lines. Other Italians, Carissimi, Cesti, and Alessandro Scarlatti (1659-1725) carried it on toward perfection.

Simultaneously the Protestants in Germany found it of immense power. Heinrich Schütz, called "the father of German music," studied in Italy and brought inspiration back to Germany. He composed *The Seven Words of Christ on the Cross* and a *Passion* for use in Passion Week.

Under the name of Passion-Music, J. S. Bach (1685-1750) wrote his immortal *Passion according to St. Matthew* and *according to St. John.* His *Christmas Oratorio* and many cantatas both sacred and secular, are also the masterpieces of a master.

Handel. The Passion form, however, lost its vogue with composers, and music followed rather the outlines established by the greatest of oratorio composers, George Frederick Handel (1685-1759) who became a national institution in England. He anglicised his name from Händel to Handel, but he managed to Handelize English music forever after.

With Handel, who was born in the same year as Bach, oratorio became more epic and dramatic, for he took it up after a glorious career in opera, which ended in a sudden disfavor and bankruptcy. His *Messiah*, first produced in Dublin in 1742, made him a new fortune, and to this day it is still one of the most popular of all musical compositions. His powers of declamatory vigor, and of choral thrill have hardly been approached. His *Judas Maccabæus, Israel in Egypt* and *Samson* are among his other famous works in this form.

His Great Successors. The next great oratorios were Haydn's *The Creation* (1795) and *The Seasons* (1801). They are still beautiful. Beethoven's *Mount of Olives* does not rank among his best works, but Mendelssohn's *St. Paul* (1836) and his *Elijah* (1846), attained the heights of achievement. *Elijah* has at times a fire and an exaltation quite equal to Handel at his best, and it has also the infinitely human and homely pathos of the widow whose son has died, and of the prophet in his dejection.

Gounod wrote successful oratorios and the *Samson and Delilah* of Saint-Saëns has been sung both as an opera and as an oratorio. Berlioz' *The Damnation of Faust* a great and greatly popular work wears the rather ill-fitting title of oratorio, yet includes a burlesque of Handel's *Amen* fugue. Liszt's *St. Elizabeth* and Rubinstein's *Moses* are also nearer the theatre than the church.

Recent Oratorios. In Italy a young priest Lorenzo Perosi made a sensation in 1897 by a number of works which promised to restore oratorio to a more religious frame of mind; but his vogue was brief.

England has been more successful in oratorio than in any other musical form, among the most important of the composers being Benedict, Bennet, Sullivan, Parry, Stanford. Most successful of all is perhaps Sir Edward Elgar's *The Dream of Gerontius* (1900).

America has contributed a splendid achievement in Horatio Parker's *Hora Novissima* (1893).

The Cantata is a smaller oratorio, usually far less ambitious, and frequently entirely secular. Thus, J. S. Bach wrote a coffee-cantata (a humorous protest against drinking too much) as well as many religious cantatas. Haydn set a Greek subject *Ariadne at Naxos*, while Mozart composed a Masonic cantata (as well as a Masonic opera).

The mere list of genuinely delightful or deeply impressive works in this easy and elastic form would fill pages.

Opera.—In the field of opera the composer must be song-writer, symphonist, choir-master, and dramatist. Opera is the most popular of all forms of music, and has been from earliest times. The classic Greek tragedies were always sung; and when opera had its renaissance in 1594, the composers Peri and Caccini definitely announced that their intention was to revive the Greek tragic art. The first opera was called *Dafne*. It was followed in 1600 by *Eurydice*.

Early Impulses. The once popular and historically important operas of Monteverde, Scarlatti, Pergolesi, Sacchini, Piccinni and others carried Italian influence all over Europe. Practically all the singers were Italians and the librettos in Italian.

Even the staunch Germanic-British Handel was trained in Italy, and wrote in the Italian manner, however greatly his personality tinged everything. All the capitals were battle grounds of rival Italian operas. In London Handel and Buononcini almost provoked civil war. The exquisite influence of England's one native genius in opera, Henry Purcell (1658-1695), who wrote to English text in an English manner, was smothered forever by the Italian tidal wave.

Opera in France. The Italian composer Lulli, who, after Handel's fashion, naturalized himself as a Frenchman and became Lully (1633-1687) is looked upon as the founder of French opera, under the patronage of Louis XIV. Later, Rameau (1683-1764) Lesueur (1764-1837) Méhul (1763-1817) Boieldieu (1775-1834) Grétry (1741-1813) Auber (1782-1871) Hérold (1791-1833) Halévy (1799-1862) and others established, developed and sustained a natural French opera with French texts and spirit.

But Paris was still a center of Italian influence and when the Austrian Glück (who had Marie Antoinette for pupil and protectress) essayed to purge opera of its insincerities and artificial vocalization, he was opposed by the Italian devotees of Piccinni.

History has awarded Glück the victory and dealt rather unfairly by Piccinni, who was a good man, a sincere artist and an unwilling opponent. But his work is in oblivion while Glück's *Orfeo* is still beautiful, and still heard about the world.

Living opera, however, begins for us really in what Rockstro calls its "thirteenth period."

Mozart. While Paris was shaken with the Glück-Piccinni war, another Austrian, young Mozart, was in the city, suffering from complete neglect. He had travelled in Italy and his first operas were in the Italian style. His greatest successes, indeed, were his settings of the librettos of an Italian, Da Ponte; but Mozart wrote also German operas.

He was a wonderful being. In his thirty-five years of life (1756-1791) were crowded supreme triumphs as an infant prodigy, a piano virtuoso, a composer of sonatas, symphonies, suites, songs, church-music and operas. He faced poverty and his art with a certain boyish ingenuousness of joy and of sorrow, of bravado and of superstitious dread, that gives all his work an eternal youthfulness. His greatest operas *Don Giovanni* and *Le Nozze di Figaro*, one of them epic, the other high comedy bordering on farce, are fascinating in the highest degree, to this day. Both of these works are Italian in text, but his *Magic Flute*, a Masonic opera, of uneven merits, is German in book and spirit.

Famous Failures. Haydn, Schubert, Schumann, and Mendelssohn, could not succeed in opera, and Beethoven found only one libretto, *Fidelio*, that interested him, and this failed twice before it succeeded. It has a German libretto but its scenes are Spanish.

Strictly German opera found its world-wide success first in the *Der Freischutz* of Weber (1786-1826), which is Teutonic in every idea, and has had enormous vitality. In Germany, Marschner, Lortzing, and others gained national success, but had little hearing abroad. It remained for Wagner to place German opera on the general height of German music.

Meanwhile came another tidal wave of Italian opera—a wave that has not yet ceased to penetrate the farthest reaches of music. Wagner's success overtopped it, but never set it back, and since his death it still sweeps on.

Great Italian Operas. There are few corners of our civilization that have not resounded with Rossini's *Barber of Seville* and his *William Tell;* with Donizetti's *Elixir of Love, Lucia di Lammermoor, Daughter of the Regiment* and *La Favorita;* with Bellini's *I Puritani, La Sonnambula,* and *Norma;* and with Verdi's *Ernani, Rigoletto, Il Trovatore, La Traviata, Aida, Otello* and *Falstaff.*

The most world-wide successes in opera today are again written by Italians. Mascagni's *Cavalleria Rusticana*, Leoncavallo's *I Pagliacci*, Puccini's *La Boheme, Madame Butterfly*, and the like. Neither England nor America has ever contributed to world-literature a really great opera, though both countries have made excellent audiences.

French School. During the last century French composers also have managed to create several world-conquering operas in addition to the numberless works, successful only to native audiences.

Meyerbeer (1791-1864), though of German birth, failed in Germany as a composer, and established himself at Paris, writing French works for the French. His *Robert le Diable* founded the wealth of the Opera, and was heard throughout the world. His *Les Huguenots, Le Prophète*, and *L'Africaine* have been among the most successful of operas. Wagner owed much to their influence, and had personal help from Meyerbeer in his earlier struggles.

Meyerbeer belongs to French opera, and so does Gounod (1818-1893) whose setting of the German legend *Faust* has been sung innumerable times and is still almost the staff of life of an opera troupe. His *Romeo and Juliet* has also had great success, though not so much as the *Carmen* of Bizet (1838-1875) which has rivalled the greatest successes in the entire operatic field. Among contemporaries Massenet (1842-1912) has enjoyed most cosmopolitan vogue, though a new note has been struck by Charpentier's *Louise*, a realistic story of the Paris of today, and by Claude Debussy, whose extraordinarily original music found its opportunity in Maeterlinck's *Pelléas and Mélisande.*

Wagner. Of all operatic names, however, the greatest remains that of Richard Wagner (1813-1833). He wrote his own librettos and revolutionized the art in nearly every detail, including scenic effect, and orchestral management and development.

In opera, Wagner is as supreme as Beethoven in the symphony. He met an inconceivably bitter opposition, which provoked riots in Paris and threatened revolution in Bavaria. The chief hostility to Wagner was aroused by his theory of harmonic flow and continuous melody. Though it seems natural enough to us now, it was completely bewildering to his early hearers who found his continuous melody continuously non-melodic.

It is difficult to single out any of Wagner's operas, where all are so great. His earlier works, *The Flying Dutchman, Tannhauser*, and *Lohengrin*, seem today so melodious that they are played at popular concerts and ground out by the very barrel organs. To the critics of their own day they were chaos and poison. His *Tristan and Isolde* is perhaps the most intensely passionate expression of love ever given voice. His comic opera, *Die Meistersinger* is unsurpassed in its field, and his *Parsifal* is the loftiest of efforts at religious opera. His monument is the cycle summing up German myth, the so-called *Ring of the Nibelungen*, divided into four evenings: *The Rheingold, The Valkyrs* (or *Die Walküre*) *Siegfried* and *The Twilight of the Gods*, (or *Götterdammerung*).

Wagner's great figure typifies German operatic ambitions and has overshadowed subsequent composers; almost the only personality emerging into foreign notice being Humperdinck, with his delicious children's opera, *Hänsel and Gretel.*

Strauss. More recently, however, Richard Strauss (born 1864), who stirred the world with his daring symphonic music has provoked an almost Wagnerian war with his opera *Salome*, and his *Elektra.* Curiously enough the Wagnerians are his chief enemies and they fling at him the very same taunts of non-melodic cacophony and immoral sensationalism that were formerly hurled at Wagner. The end of this war is not yet, but the victory will probably rest with Strauss, since the innovator, and the darer usually overwhelm the conservative and the cynic.

Lesser Forms. There remain untouched the fields of the chorale, the hymn, the part-song, and the solo song, not to mention the entire realm of comic opera. It seems inadvisable to include comic opera here, though many of its masterpieces are not inferior in ingenuity or in ultimate value, to more solemn works.

As for attempting to describe the composers of short songs, it were as easy to catalogue the sounds of the sea. Some of the most perfect have been written by unknown composers, and there is hardly a respectable musician who has not been moved to write at least one fine lyric. Even America has contributed splendid songs. The foremost important place would be given probably to Schubert, always a melodist, yet intensely dramatic and true to his text. Robert Schumann and Robert Franz (1815-1892) would come next in importance.

But, admitting, as one should, that a perfect song is as much better than a slovenly opera, as a perfect sonnet or a perfect short story is better than a limping epic or a loose-jointed novel, let us leave the infinite field to itself. The best songs have a way of promulgating their own virtues.

Instrumental Music. In turning to instrumental music, we might first take the piano. Though believed to be less expressive than the violin and other instruments, because less like the voice, it is more nearly universal, and, above all, is the only home instrument that is self-supporting. The violin, 'cello, flute and even the voice sound thin when they are alone. The piano is sufficient unto itself. The number of perfect works for the piano would rival the stars, many of the most exquisite being written by minor composers. We, however, cannot deal with the Milky Way. The planets are more than enough.

John Sebastian Bach wrote vastly for the piano and had immense influence on all subsequent music. His monumental work is *The Well-Tempered Clavier*, made up of four compositions, preludes and fugues for each of the twelve keys, both in major and minor. It has immense historical and technical value to the professional musician, and includes many single compositions and numberless passages which will appeal to the laity by their tenderness, solemnity, grace and wit, or by that peculiar and indescribable felicity of expression that keeps Bach hale and hearty to this day. In his *Chromatic Fantasia and Fugue* he wrote a composition that is more modern and pianistic in its treatment and nobility of expression.

A fugue, it may be well to say, is a composition in which a melody is chosen that may be accompanied by a perfect imitation of itself. It is hard to explain it without using terms that must themselves be explained; but everybody has sung *Three Blind Mice* or some other "round," in which different voices strike in with the same tune at different points. On such a principle of "imitation" is built up what is called a "canon." A fugue is a freer and more elaborate canonic structure.

For the orchestra, as in Mozart's *Jupiter* symphony, and for the organ with its different instrumental colors, as in many of Bach's great organ fugues, there are cumulative and variegated effects which render the fugue a noble form.

Sonata. The popularity of the fugue gave way to the vogue of the sonata, which is itself going out of use. The word "sonata" originally meant merely something "played," as contrasted with something "sung," or "cantata." But gradually the term crystallized, just as the poetic term "sonnet" assumed a definite and restricted meaning.

A sonata, as it is now understood, is a group of three or four somewhat related pieces. The first and the last are built on a certain formula; the other two are for contrast's sake and may be, first, a sad little elegy or a funeral march, or something sombre: second, a lighter piece, as a minuet, a rondo or a waltz.

The formula which is strictly called the "sonata form" is easily explained. It is simply a close welding of two melodies with an effort at variety of key and treatment. Thus, a melody is selected and played through; then a second melody in a contrasting rhythm and another key is played through; then follows a so-called "development" of these two melodies in as many keys and as many moods and with as many embellishments or dissections as one pleases; then, to bind all together, the first melody is played over again in its original key; the second melody is repeated in this same key; there are a few bars of conclusion and that is all. It is as logical and natural as anything could well be.

But this is only the first movement. There usually follow, to repeat, two different compositions—one sad, one usually more brilliant. This group of four (sometimes three) movements is the completed sonata. It is a form of great elasticity and great scope.

Adaptations and Variations. Sonatas have been written not only for the piano but for almost every other instrument in combination with it. A String Quartet is a sonata for two violins, a viola and a 'cello. An *Overture* is only an orchestral work based on the same form as the first movement of a sonata. A *Concerto* is a brilliant sonata for some instrument, as piano or violin, with orchestral accompaniment. A *Symphony* is simply a sonata for the full orchestra with the enlargements natural to the enlarged resources.

Composers of Sonatas. "The father of the sonata" was Carl Philip Emmanuel Bach (1714-1788). He was the son of J. S. Bach, "the father of modern music." His compositions are more lyrical, therefore more modern, than those of his father, though not so deep. Joseph Haydn (1732-1809) developed the sonata-form more completely and made such further use of it that he is called "the father of the string quartet and the symphony." If Haydn was lyrical, Mozart was more so. He had a singularly gracious spirit and it is shown in his fascinating melodies, though he added nothing to the form.

Beethoven's Sonatas. It was Beethoven who reached the highest point in this field, and his sonatas are far more dramatic, passionate and resourceful than any before him. He substituted the scherzo ("joke") for the minuet, and some of the wittiest things ever said were said by him in the scherzos he put into his sonatas and symphonies. He took great liberties with both the sonata and symphonic forms and in both stands supreme. His so-called *Moonlight* and *Appassionata* sonatas for the piano are perhaps best known.

Since his time, many composers have written sonatas. Even Chopin wrote one, in which he included his famous funeral march, as Beethoven had included in one of his own *A funeral march on the death of Hero.* Schumann, Brahms and others wrote sonatas of the highest importance and among the few real contributions made by America to really important piano music are the *Tragic, Heroic* and *Celtic* sonatas of Edward MacDowell (1861-1907).

The sonata, however, has suffered some obsolescence because its formality became somewhat oppressive to the freer flights of the modern spirit.

Chopin. About 1810 were born several composers who developed intensely romantic tendencies and let the mood shape the form rather than compress the mood into a rigid mold. Among these was Frédéric Chopin (1809-1849) son of a Frenchman, but born in Poland of a Polish mother. Chopin's music is so beautiful that it is hard to think of him as one of the most radical innovators in musical history. But he was none the less a revolutionist for being a gorgeous one; no less an earthquake for not wrecking buildings. He certainly altered the landscape and the very harmonic materials of music. He transformed all future piano music by his harmonic and melodic richnesses. It would be impossible to say which of his works are best where almost all are best: nocturnes, ballades, valses, preludes, polonaises. He gave his dances passionate meaning, and even his finger exercises, or études, are more important than the iceberg symphonies of most composers.

Robert Schumann (1810-1856) also wrote with absolute novelty and individuality a multitude of piano works, hardly two of them alike in shape or spirit. Mendelssohn (1809-1847) conceived his *Songs without Words.* Liszt (1811-1886) developed unheard-of skill as a pianist and wrote his tremendous *Hungarian Rhapsodies* for the piano, as well as great program symphonies and symphonic poems. Rubinstein (1830-1894) who was inferior only to Liszt as executant, composed much that caught the world's ear. Paderewski, equally brilliant as a pianist, has also written splendid music for the instrument.

The Norwegian, Edvard Grieg (born 1843) has been among the most individual of piano composers since Chopin, and has written superbly in nearly every form. Edward MacDowell, the American, also developed a distinct and distinguished personality in writing lyrics and poems for the piano.

Of recent years, the piano seems rather to have suffered the neglect of the most ambitious composers. While there is the usual rain of compositions, no personality is commanding wide attention.

Other Instruments. Every instrument has a literature of its own, but the pipe-organ, while its resources are greater far than the piano's, is too unwieldy to have its popularity. The violin has perhaps the richest library, next to the piano. It includes a bewildering series of compositions, from the time of Corelli (1653-1713) "the father of violin music," through such work as Tartini's *Devil's Trill Sonata* (which was inspired by a dream in which the devil played for him with black magic), and on through such of Beethoven's as the *Kreutzer Sonata*, to the uncanny works of Paganini (1782-1840) and the inspired fabrics of Mendelssohn, Spohr, Vieuxtemps, De Bériot, Sarasate, and Brahms.

Chamber Music. One of the most delightful fields is that of so-called "chamber music," written for a small string orchestra, usually a quartet, or, with some other instrument, a quintet. Human ingenuity has never been more gracious than in this form, which Haydn developed, Mozart improved, and Beethoven, Schubert and Brahms reveled in. But as these pieces are usually labelled with uncouth titles such as "C sharp minor," "B flat major" and the like, it would be unprofitable to name them here.

The Orchestra is employed to its fullest capabilities in opera and oratorio and often in church music, but it has also a field of its own, and here it finds one of the sublimest realms of human art and invention.

The difficulties of expressing one's self at all through the medium of sixty or a hundred instruments are great enough. To wield these as a painter wields his brushes, but without seeing how the canvases will look, or hearing them sound; and to retain a unity of idea and a dramatic thrill and progress to climax—these things place orchestral music on a plane with cathedral architecture.

Orchestral Works are chiefly *overtures, symphonic poems* or *symphonies*. Haydn is called the father of the modern symphony and the overture. He composed one hundred and twenty-five works in these forms, some of them very simple and even humorous, such as the *Toy Symphony* for toy drums, trumpets and the like, and the *Surprise Symphony*, which was written "to keep the King awake and make the ladies jump." He removed the piano from the orchestra and added the minuet to the four movements, but it is a long walk from his *Surprise* to the *Fate* symphony of Beethoven.

Mozart gave his symphonies further depth and breadth. He composed no less than forty-one of them, including the superb *Jupiter*. But it remained for Beethoven (1770-1827) to set the high-tide mark, beyond which nobody has gone. He took such liberties with the hallowed form that he was called a madman, but time has justified and dignified his every explosion of the great emotional frenzy that made him Beethoven.

Beethoven's Symphonies. Like Shakespeare, Beethoven sounded the depths of tragedy, reached the heights of joy and travelled the sunny levels of contentment. His third symphony, the *Eroica* was written "to celebrate the memory of a great man," meaning Napoleon, whom Beethoven thought of as already dead in 1804 because he had by then betrayed the great cause of freedom. His fifth symphony opens with the tremendous idea of "Fate knocking at the door," and typifies the individual in deadly combat with that destiny which visited Beethoven with deafness and despair. His sixth is the open-air *Pastorale* in which he set "all outdoors" to music. His seventh is the most romantic. The most massive is his ninth or *Choral Symphony* in which he reinforced the orchestra with an army of voices to chant Schiller's *Hymn to Joy*, with which the symphony concludes.

Schubert. Of the symphonies of Schubert there are two which are of heavenly beauty, the *Unfinished* and that in *C Major* in both of which melody of most popular appeal is joined with majestic profundity of thought.

Schumann wrote four important symphonies; Mendelssohn three (named the *Scotch, Italian,* and *Reformation*, this last ending with Luther's sonorous hymn). The brilliant French composer, Berlioz, (1803-1869) wrote two famous symphonies, the *Fantastic* and *Harold in Italy*. Raff is celebrated for his *Forest* and his *Lenore*, and Brahms reached the highest of recent levels with his four works, the last the best.

Tschaikowsky. From Russia came the *Pathetique Symphony*, perhaps the most emotionally appealing of all works in this form. It was the work of the most eminent of Russians, Tschaikowsky (1841-1893) who composed five other symphonies; seven famous symphonic poems on such subjects as *The Tempest, Manfred* and *Hamlet;* also various overtures, suites songs, and operas.

The Bohemians Smetana and Dvorak (1841-1904) achieved important symphonies, the latter after a sojourn in America, composing his *New World Symphony*, based on negro melodies.

The best of Italian symphonies is that of Pietro Floridia, also one of the foremost of Italian operatic composers, now domiciled in America.

Richard Strauss is undoubtedly first of living composers, and his *Domestic Symphony*, portraying a day of family life, has opened a new field for "program" music. In the symphonic poem he has also written marvelous works, such as his *Death and Transfiguration*, his *Heldenlebe*, *Don Quixote* and *Thus Spake Zarathustra*, in which he has enormously enlarged orchestral resources, as Haydn, Beethoven and Wagner did before him.

An American symphonist is Edgar Stillman Kelley (born 1857) who has created a humorous masterpiece in his *Gulliver*. Edward MacDowell never wrote a symphony, but in the kindred form of the symphonic poem his *Hamlet and Ophelia* and his *Launcelot and Elaine* are notable, while his *Indian Suite* magnificently employed themes drawn from the American Indians.

Musical Instruments have had long and elaborate evolutions, but a glance at the instruments in use today will suffice to acquaint us with the media of interpretation.

Pianoforte. Most popular is the pianoforte, an almost ubiquitous instrument, developed from the one-stringed monochord, and the harp, through different stages when the strings were plucked with quills, down to Cristofori's invention of the *forte-piano* with a hammer-mechanism, in 1711.

The piano has a compass of about seven octaves. A new value has been given to it by the recent invention of various forms of piano-player, by whose aid the difficulties of performance are overcome while leaving the control of expression in the hands of the veriest tyro.

The educational value of this is incalculable, and it is possible now to enjoy the most complicated forms of music without the years of finger-training previously required.

The Organ originated in some form of Pan's pipes. Two centuries before Christ, it already had a keyboard and bellows supplying the pipes with air. Pedals were invented about 1325, and in the fifteenth century the reed-pipe was invented. This made possible the cheap melodeons and "American organs" which preceded the piano in the home of the more modest sort.

The Pipe-Organ exists in almost every form, extending to huge mechanism run by electricity and compressed air, with from one to five keyboards and almost unlimited combination-effects known as "stops," imitating almost every other instrument and permitting effects that rival a full orchestra.

Other Wind Instruments are usually classified according to their material, as "woodwind" and "brasswind."

The *windwood* are subdivided into those sounded by a reed and those sounded through a side-hole. Of the latter are the *flute* and the *small flute*, or *piccolo*. It was to the invention of the system of keys by Theobald Boehm (1794-1881) that the flute owes its modern facility and range.

Of the instruments sounded by a single reed, are the various *clarinets* and the *saxophones* (made of brass, but classified with the woodwind) invented by Adolphe Sax (1814-1894), who may be called the Christopher Columbus of metallic instruments. The saxophone combines the tone qualties of the 'cello, the English horn and the clarinet.

The double-reeded wood instruments are the *oboe*, an instrument of quaintly pastoral tone capable of exceeding pathos; the *alto oboe* (or English Horn, or Cor-anglais); the *bass oboe* (or fagot, or bassoon) a nine-foot conical tube doubled on itself and played with a long mouthpiece; the *double bassoon* (or contrafagot); and the *sarrusophone*, which was invented by Sarrus in 1863; it looks like a bassoon, while sounding like a trombone.

Brasswind. The brass instruments originally could play only in one key, the length of the tube determining the key. Later the plan was evolved of inserting extra portions or crooks to lengthen or shorten the tube. This required a pause, and immediately altered the key. In 1790 and 1813 Claggett and Bluhmel developed the valve idea. By this means, stationary crooks are so arranged on the instrument that the pressure of a valve cuts off one crook and opens another. By the use of three valves the horn can play in any key. Valve instruments are practically universal now.

The *cornet* is the high tenor of the brass-wind, and one of the most familiar of instruments. The *trumpet, horn,* and *trombone* are equally well known. The *tuba*, a huge instrument invented by Sax, and the *bass tuba* (Saxhorn or Bombardon) carry the lowest notes. The term *Saxhorn* usually includes a series of instruments much used in street-bands.

Stringed Instruments. These are the *piano* played with hammers, and the *harp* in which the fingers pluck the strings. Sebastian Erard in 1820 perfected the double-action harp of seven pedals enabling quick shifts to all the keys.

Of stringed instruments played with a bow, the modern orchestra uses great numbers of *violins, violas, violincellos,* and *double-basses*, each supplementing the other. The *violin* holds perhaps the first place in the affections, because of its singing qualities. These are influenced by minute details of construction and the qualities of the wood. There has risen an almost religious reverence for the work of certain violin-makers, particularly those flourishing at Cremona in the sixteenth, seventeenth and eighteenth centuries. First came the famous family of Amati, of whom Niccolo trained Andrea Guarneri and Antonio Stradivari, each of whom founded an equally famous family. The violins of these makers are cherished as treasures of fabulous value, and they are constantly forged.

The *human voice* may be called a wind instrument with a double reed. It is the original musical instrument, and the more nearly other instruments suggest the human speech or outcry, the more immediate is their appeal. As the human voice can express almost every mood of interest of the soul, so music can hardly be denied any subject. It was for centuries hampered by restrictions and rules and imaginary laws. Its chief need now is for enlarged resources. As the youngest of the arts, perhaps it has the greatest future.

Imitative music suggests something external to the mere melody and harmony, as *motion, noises,* and objects of sight. By ascending and descending strains and cadences modern composers express soaring, sinking, etc. The varied sounds of battle, funeral processions, domestic sounds, tempests, notes of birds, etc., are produced by variations of tone.

References — For general histories of music see those by Burney, Hawkins, Fetis, Ritter Naumann, Rockstro, and Parry; also *The Oxford History of Music;* Chappel's *Popular Music of the Olden Time;* Hullah's *Modern Music;* Davy's *History of English Music;* Riemann's *Dictionary of Musicians;* Grove's *Dictionary of Music and Musicians;* and Hughes' *The Musical Guide.*

Manual of Classified Questions for Examinations, Reading, and Study Courses

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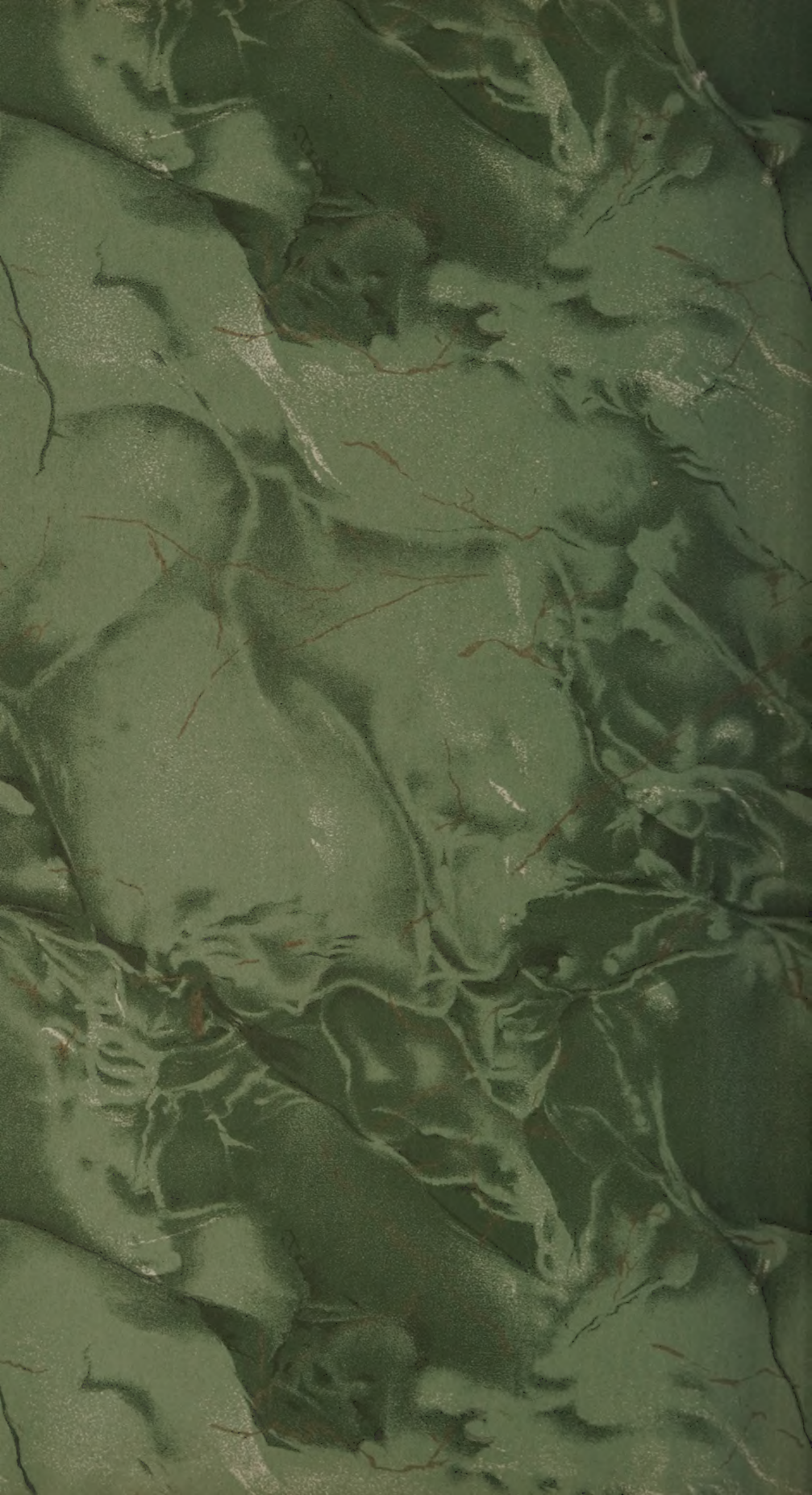
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